



**PARALLEL GRIPPERS**

**ANGULAR GRIPPERS**

**LINEAR ACTUATORS**

**ROTARY ACTUATORS**

**ROBOTIC TOOLING**

**FEED ESCAPEMENTS**

# AUTOMATION SOLUTIONS

March 2011



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# DE-STA-CO OVERVIEW

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## TEAM DE-STA-CO

Team DE-STA-CO represents our efforts to provide consistent, standard-setting service and products to every DE-STA-CO customer, regardless of geographic location. Through this commitment, we are able to draw on our extensive knowledge base to always provide the perfect solution specific to your unique applications. This progressive global approach to doing business provides a level of expertise that is unmatched in the industry.



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# What's **NEW** from



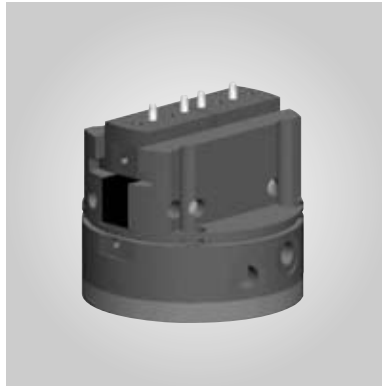
A DOVER COMPANY

**Automation**  
**Robohand FERGUSON**  
**CAMCO**



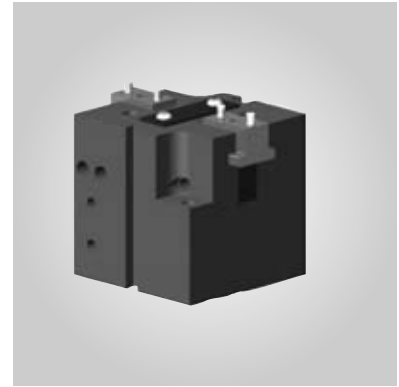
**DPE ELECTRICAL  
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**2P 2-JAW PRECISION  
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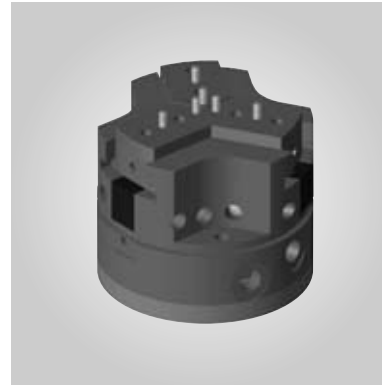
**CP 2-JAW COMPACT  
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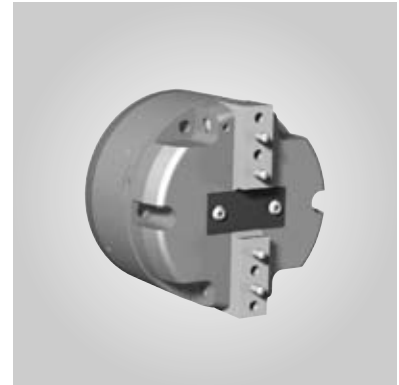
**RPR GLADIATOR  
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**3P 3-JAW PRECISION  
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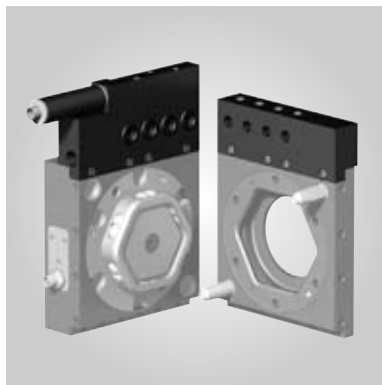
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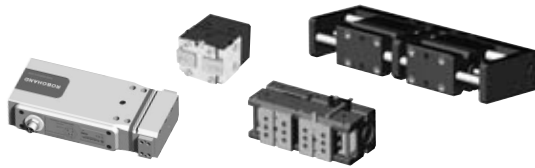
Information  
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**RSD INDEX DRIVES**

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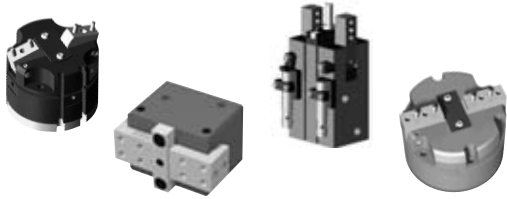
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## PARALLEL GRIPPERS

1.8 <i>DPE</i>	1.90 RPL	1.146 DPDL	1.214 RPW
1.14 <i>RPE</i>	1.98 RPLC	1.158 DPL	1.222 <i>RPR</i>
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1.58 <i>CP</i>	1.122 DPG	1.186 GC	1.252 <i>Precision 3P</i>
1.74 DPP	1.134 DPDS	1.196 DPW	1.268 PPC

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2.22 RA-5, 6, & 10
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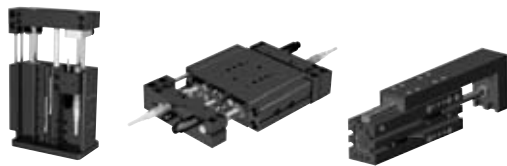
2



## ROTARY ACTUATORS

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4.32 DLT-B
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4.56 DLT-TANRU
4.70 DLM

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## ROBOTIC TOOL CHANGERS COMPLIANCE/OVERLOAD DEVICES

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# Terms & Conditions

**GENERAL** — All quotations, acceptance and orders submitted by or to and all contracts made with Destaco-Robohand shall be upon and subject to the following terms and conditions except in so far as specifically agreed to by Destaco-Robohand in writing upon or annexed to a copy thereof.

**QUOTATIONS AND PRICES** — Prices are subject to change without notice. Written quotations expire 30 calendar days from the date of issue and are subject to termination by notice within that period.

**PURCHASE ORDER** — If this quotation is accepted and Buyer's order form is used for the purpose, it is expressly understood and agreed that the terms and conditions herein set forth shall prevail, insofar as the same may in any way conflict with the terms and conditions set forth in such order form, and the issuance of such order by Buyer shall be deemed to note Buyer's assent to the foregoing.

**PAYMENT** — Unless expressly agreed to the contrary by Destaco-Robohand, all accounts shall be paid net within 30 days from the date of invoice. All checks and money orders should be made payable to Destaco-Robohand. Destaco-Robohand reserves the right to charge interest 1% above the base lending rate of Bank of America for the period that the account is overdue for payment and the Buyer shall reimburse Destaco-Robohand for all costs of collection including reasonable attorneys fee on all overdue amounts. In so case will the property of any of the goods pass to the Buyer until payment of the full price has been made to Destaco-Robohand. So long as any payment under this contract is overdue, Destaco-Robohand reserves the right to withhold or suspend performance of any contractual obligation.

**DELIVERY** — Any times quoted for delivery or dispatch are to date from the receipt by Destaco-Robohand of written order to proceed and all necessary information and drawings to enable Destaco-Robohand to put the work in hand and Destaco-Robohand's acceptance in writing of such terms. The time for delivery or dispatch shall be extended by a reasonable period if caused by any industrial dispute or by any cause beyond Destaco-Robohand's reasonable control.

**TAXES** — The amount of the present or future sales, revenue, excise, or other taxes applicable to the products listed herein shall be added to the purchase price and shall be paid by the Buyer or in lieu thereof the Buyer shall provide Destaco-Robohand with a tax exemption certificate acceptable to the taxing authorities.

**INSTALLMENT DELIVERIES** — Destaco-Robohand shall have the right to make delivery by installments of such quantities and at such intervals as it may decide and any express

provisions as to installments in the contract shall be in addition to and not in derogation of this right.

**GOODS LOST OR DAMAGED IN TRANSIT** — Unless Destaco-Robohand receives a complaint in writing within 3 days of the receipt by the Buyer of the goods, the goods shall be deemed to be in good condition and of the quality and description invoiced or in the case of non-delivery, Buyer shall furnish written notice within such time from the date of dispatch as shall enable Destaco-Robohand to make a reasonable claim on the carrier.

**DEFECTS AFTER DELIVERY** — Destaco-Robohand will make good by repair or at it's option by the supply of a replacement: defects, which under proper use, appear in the goods within a period of one (1) year after the goods have been delivered and arise solely from faulty design (other than a design made, furnished, or specified by the buyer. Materials or workmanship provided that have defective parts will be returned to Destaco-Robohand if so required, Destaco-Robohand will refund the cost of carriage on such returned goods and the repaired or new parts will be delivered free of charge.

**SHIPMENT** — All prices are F.O.B. Our factory, Monroe, CT and route of shipment are at our discretion, unless the Buyer supplies implicit instructions. All shipments are insured at the Buyer's expense and made at the Buyer's risk. Identification of the goods to the contract shall occur as each shipment is placed in the hands of the carrier.

**DRAWINGS** — All descriptive and forwarding specifications, drawings and particulars of weight and dimensions submitted with Destaco-Robohand's proposal are approximate only and the descriptions and illustrations contained in Destaco-Robohand's catalogs, price list and other advertisement matter are intended merely to present a general idea of the goods described therein and none of these shall form part of a contract and any statement or representation made by or on behalf of Destaco-Robohand is executed to the extent authorized by The Misrepresentation Act, 1967.

**EXCLUSIONS OF LIABILITY** — Any warranties given by Destaco-Robohand in these Conditions of Sale are in lieu of all other warranties or conditions express or implied by common or statute law and Destaco-Robohand shall not be liable to the Buyer for any consequential damage or loss whatsoever nature resulting from defects in material of workmanship, except as herein provided, or from any other breaches of this contract by Destaco-Robohand whatsoever with the exception of damage or loss caused through death or personal injury resulting solely from negligence of the seller in the manufacture, supply or repair of the goods.

**DESTACO-ROBOHAND'S RIGHT OF POSSESSION** —

Destaco-Robohand shall have the right, in addition to all others it may possess, at any time, for credit reasons or because of Buyer's default or defaults, to withhold shipments, in whole or in part, and to recall goods in transit, retake same, and repossess all goods which may be stored with Destaco-Robohand for Buyer's account, without the necessity of taking any other proceedings, and Buyer consents that all the merchandise so recalled, retaken or repossessed shall become Destaco-Robohand's absolute property, provided that Buyer is given full credit therefor. The foregoing shall not be construed as limiting, in any manner, any of the rights or remedies available to Destaco-Robohand because of any default of Buyer under the Uniform Commercial Code as in force and effect in the State of Connecticut on the date of the signing of this agreement.

**SPECIFICATIONS** — Normal tolerances in specifications shall be acceptable. **GOODS NOT OF DESTACO-ROBOHAND'S MANUFACTURE** — Destaco-Robohand will give the Buyer a guarantee equivalent to guarantee (if any) which the supplier of such goods in respect thereof but not so as to impose on Destaco-Robohand in respect of such goods a liability greater than those contained in these Conditions of Sale.

**RETURNED MATERIAL** — In no case are goods to be returned without first obtaining Destaco-Robohand's permission. Only unused material as currently manufactured, which has been invoiced to Buyer within 90 days, will be considered for return.

**REPAIR WORK** — Quotations for repair are made on a preliminary examination of the goods to be repaired. To assure a satisfactory repair, it is frequently necessary to replace parts which on first inspection appear to be reusable and/or carry out additional work to that originally quoted for Destaco-Robohand therefore reserves the right to invoice repair work on the basis of ascertained costs. If following receipt of a quotation for the repair of goods the Buyer decides not to proceed, Destaco-Robohand reserves the right to charge for dismantling and installation.

If within 30 days from receipt of a quotation for the repair of goods the Buyer does not give any instructions, Destaco-Robohand will not therefore accept any liability for loss of or damage to any of the Buyer's property remaining in its hands.

**PATENTS** — In the event of any claim being made or action taken being brought against the Buyer in respect of infringement of patents by the manufactured or sale by Destaco-Robohand or goods supplied to the Buyer being goods manufactured according to the designs and specifications of Destaco-Robohand, the Buyer shall notify Destaco-Robohand immediately of any such claim being made or action being brought and Destaco-Robohand shall be at liberty with the

assistance of the Buyer, if required, but at Destaco-Robohand's expense, to conduct all negotiations for the settlement of the same and/or litigations that may arise therefrom. The Buyer shall indemnify Destaco-Robohand against all costs, claims, expenses, damages, charges or liability whatsoever in respect of or arising from any claim for infringement of any patent, trademark or registered design relating to any product supplied to the design of the Buyer or following the instructions of the buyer.

**LEGAL CONSTRUCTION** — Unless otherwise agreed in writing, contracts shall, in all respects, be construed in accordance with the laws of the State of Connecticut and operate as a contract conforming to American law.

**CONTROLLING PROVISIONS** — These terms and conditions shall supersede and terms, provisions and conditions contained on any confirmation order, or other writing Buyer may give or receive and the rights of the parties shall be governed exclusively by the terms and conditions hereof. Destaco-Robohand makes no representations or warranties concerning this order except such as are expressly contained herein, and this order may not be changed or modified orally.

**LIMITATION OF WARRANTY** — All Destaco-Robohand products are to be free of actual defects in material and workmanship, provided any such defect be reported to Destaco-Robohand in writing within one (1) year of shipment from factory. This warranty is limited to replacing or repairing at the company's option, F.O.B. the company's factory any part which, upon company inspection, is found to have a defect in material and/or workmanship. The Company, in no event shall be liable for indirect or consequential damages arising out of the use of Destaco-Robohand products. Components purchased by the company from others for inclusion by the company shall be warranted to the extent set out and/or to the guarantee or warranty, if any, made by the supplier of said component. **APART FROM THE ABOVE WARRANTY, THERE ARE NO WARRANTIES EXPRESS, WRITTEN, IMPLIED OR STATUTORY, INCLUDING, WITHOUT LIMITATION, WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, WHICH EXTENDED BEYOND THE DESCRIPTION ON THE FACE HEREOF AND ROBOHAND SHALL NOT BE LIABLE DIRECTLY OR INDIRECTLY ARISING FROM THE USE OF SUCH PRODUCTS OR FOR ANY CONSEQUENTIAL DAMAGES.** Destaco-Robohand expressly reserves the right to substitute materials in the products described in the catalogs and any supplements thereto: however, this shall not apply to special order products and/or custom products where Destaco-Robohand is advised in writing of specific material requirements and agrees in writing to comply with the request for such materials.

# Applications Form

## Company Information:

Company Name: \_\_\_\_\_ Date \_\_\_\_\_

Address: \_\_\_\_\_

City: \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

Phone: \_\_\_\_\_ Fax: \_\_\_\_\_ Web: \_\_\_\_\_

## Key Contact Information:

Name: \_\_\_\_\_

Phone: ( ) \_\_\_\_\_ Ext. \_\_\_\_\_ Fax: ( ) \_\_\_\_\_ Email: \_\_\_\_\_

## What is your time frame to purchase?

Immediate     3-6 Month     6-12 Months     Other: \_\_\_\_\_

What is your expectations on delivery? \_\_\_\_\_ weeks

What is the Quantity Required? \_\_\_\_\_ pcs.

## Specifications:

Air Pressure: \_\_\_\_\_ psi    Finger Length: \_\_\_\_\_ in.    Part Weight: \_\_\_\_\_ lbs.

Stroke Required: \_\_\_\_\_ in.    Cycle Time: \_\_\_\_\_ Sec    Cycle Rate: \_\_\_\_\_ cycles/hour    Duty Cycle: \_\_\_\_\_ %

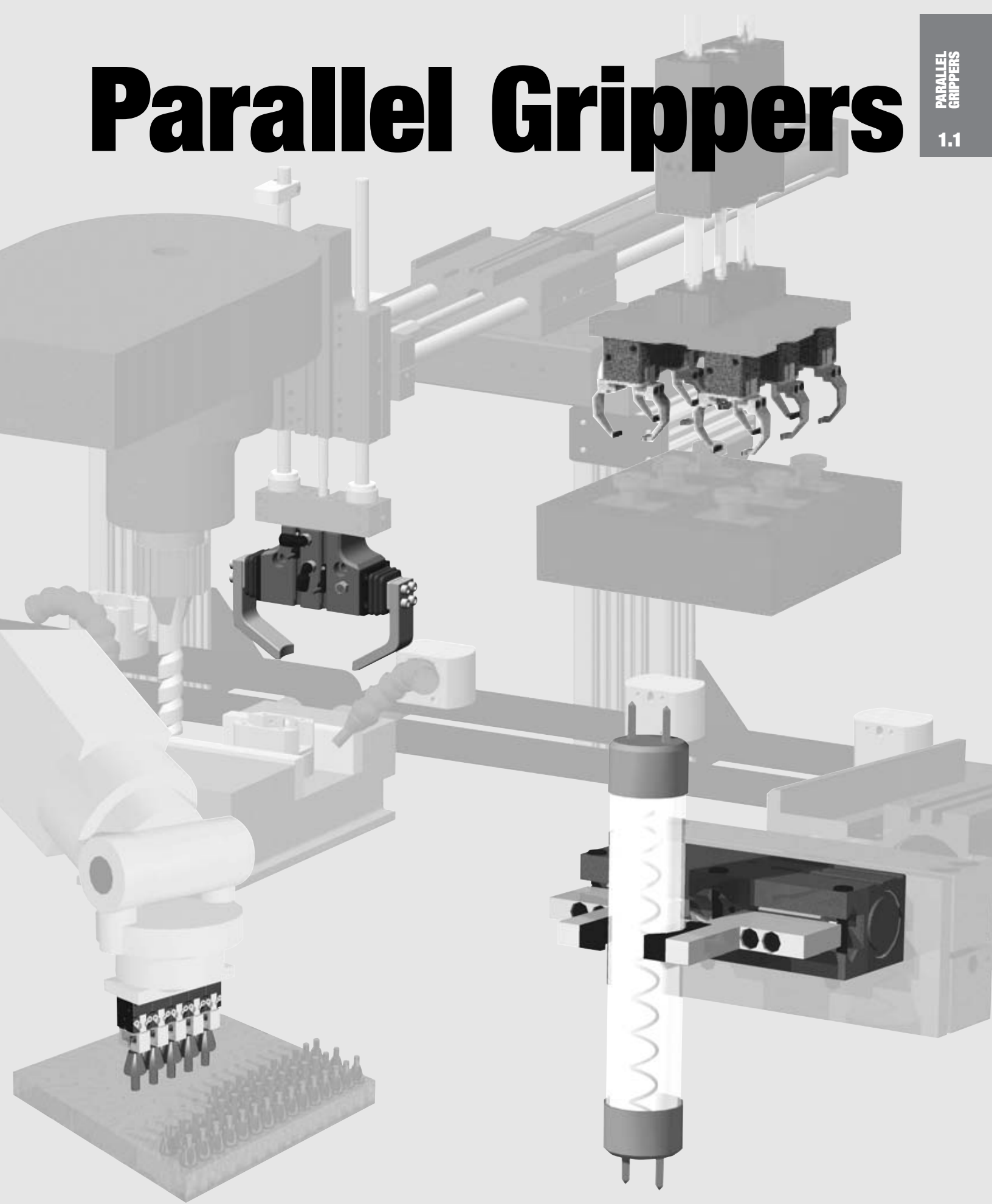
Environment:  Dirty     Corrosive     Clean Room     High Temp     Other \_\_\_\_\_

## Description:

Please describe your application. Include a sketch or attach additional sheets if necessary. Please provide any photos you have available.



# Parallel Grippers



# Parallel Motion Gripper

## DPE/RPE E-Gripper Electric Gripper

- Clean room class 100, class 10 with scavenge
- Cost comparable to pneumatic systems
- Eliminates need for pneumatics
- Utilizes 24VDC signal
- No programming or software required
- 60 parts per minute—no problem!
- Compact, lightweight design

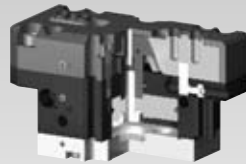


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Preferred Market: ● Global

## RDH Series Two Jaw Parallel Gripper

- Shielded design deflects chips and other particulate away from the internal components
- Large surface area of the jaws allows for use of long fingers
- All gripper sizes are available in 2 strokes sizes.



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Preferred Market: ● Global

## 2P Series Precision Two Jaw Parallel Gripper

- Precision operation
- Cylindrical design
- Optional springs for failsafe operation or for increased gripforces
- Side or rear airports
- Tandem piston for double grip force
- Optional Protective Boot for harsh environments
- All gripper sizes are available in 2 strokes sizes

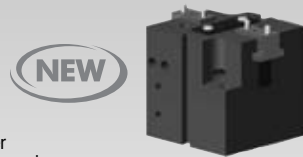


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Preferred Market: ■ EU ◆ SA

## CP Series Compact Two Jaw Parallel Gripper

- Rugged, compact design
- Shielded design deflects chips and other particulate away from the internal components
- Optional springs for failsafe operation or for increased gripforces
- Side or rear airports
- Multi-sensor capable design
- All gripper sizes are available in 2 strokes sizes



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Preferred Market: ■ EU

## DPP Series DIRECTCONNECT Precision Gripper

- Featuring our DIRECTCONNECT™ mounting pattern
- "Dual-V" precision roller bearing design provides zero side play for excellent part position repeatability
- Optional double acting spring assist for increased force or failsafe operation
- Low friction design allows for delicate part handling
- Synchronized and non-synchronized versions available

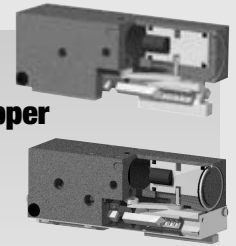


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Preferred Market: ● Global

## RPL/RPLC Series Low Profile/Clean Room Gripper

- Lightweight, Compact
- Patented Dual "V" Roller Bearing System
- Excellent accuracy and repeatability
- Synchronized and non-synchronized versions available
- Designed for use in Class 10 clean rooms as well as in harsh environments
- Stainless Steel hardware and covers for durability
- Vacuum/Pressure port

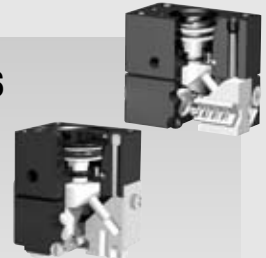


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Preferred Market: ● Global

## RPM/RPMC Series Micro/Clean Room Gripper

- Extremely small size—as small as 5/8" wide!
- Compact design allows for gripping small parts in small spaces
- Top air manifold eliminates the need for air fittings and allows grippers to be mounted in close array
- Ultra low friction mechanism allows for consistent, repeatable gripping forces
- Shielded with purge port



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Preferred Market: ● Global

## DPG Series DIRECTCONNECT Modular Gripper

- Multiple DIRECTCONNECT™ mounting locations
- Multiple air port locations
- Spring assisted design for failsafe operation or increased grip force
- Shielded design repels contaminants
- Synchronized and non-synchronized versions

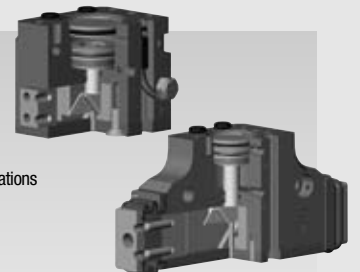


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Preferred Market: ● Global

## DPDS & DPDL DIRECTCONNECT Modular Gripper

- Multiple DIRECTCONNECT™ mounting locations
- Multiple air port locations
- Multiple strokes per size
- Front-to-back thru-body mounting
- Extended strokes (DPDL)
- Purge/scavenge ports for harsh environments
- Optional corrosion resistant hardware, high temperature seals, and sealed jaw boot (DPDL)

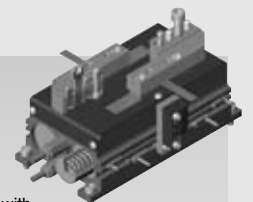


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Preferred Market: ● Global

## DPL Series DIRECTCONNECT Long Stroke Gripper

- For use in confined spaces, combining long strokes with the high gripping force provided by two simultaneously acting pistons.
- Offers wide range of options and accessories (safety springs, in-line jaws, magneto resistive or inductive sensors).
- Enclosed, shielded design repels chips and other particulate from internal drive mechanism.



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Preferred Market: ● Global

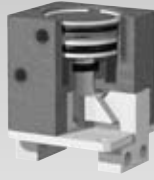
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# Products Overview

## RP Series Miniature Double Wedge Gripper

- Compact size, high gripping force, and extended jaw design facilitates finger attachment for smaller parts.
- High grip force to weight ratio make these grippers very popular on small robots.
- Miniature size allows banks of grippers to be mounted in close proximity for multiple part picking and placing.
- Internally sealed for use in hostile environments

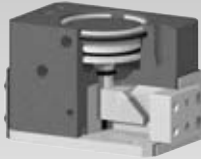


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Preferred Market: ● Global

## RP Series Double Wedge Gripper

- Patented "Double Wedge Design" for extreme high grip force to size ratio
- Internally sealed for use in hostile environments
- Superior accuracy and repeatability
- Made from 7075-T6 aircraft quality aluminum hardcoat anodized to RC60 with Teflon® impregnation
- Highest grip force to weight/size ratio in the industry

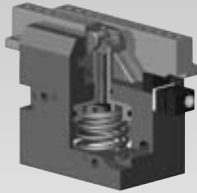


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Preferred Market: ● Global

## GC Series Precision Parallel Gripper

- Precision operation
- Spring assist
- Grippers are fitted with 2 sensor holders (sensor available separately)
- Side or rear airports
- Optional 3rd sensor for part sensing, Viton® seals for high temperature applications, and encoder available



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Preferred Market: ● Global

## DPW Series *DIRECTCONNECT™* Wide Body Gripper

- Features our DIRECTCONNECT™ mounting pattern
- Excellent jaw support through the full body of the gripper
- Highly configurable gripper featuring multiple options and accessories
- Synchronized and non-synchronized versions available
- Each gripper is offered in 2 different strokes



See Page **1.196**

Preferred Market: ● Global

## RPW Series Large Format Wide Body Gripper

- Excellent jaw support through the full body of the gripper
- High gripping forces utilizing two opposing pistons
- Synchronized and non-synchronized versions available
- Superior accuracy and repeatability
- Sealed design for harsh environments



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Preferred Market: ● Global

## RPR Gladiator Heavy Duty Parallel Gripper Gripper

NEW

- Wide body, long stroke design
- Designed for machining and foundry applications
- Rigid design and full body support of jaws allows for longer finger lengths
- High temperature design available



See Page **1.222**

Preferred Market: ▲ NA ◆ SA

## B-Series Industrial Grippers

- For large and wide parts in machining and foundry applications
- Heavy duty, rugged designs
- Extremely high grip forces and moment loads



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Preferred Market: ▲ NA ◆ SA

## RTH Series Three Jaw Centering Gripper

- Shielded design (DTH) deflects chips and other particulate away from the internal components
- Large surface area of the jaws allows for use of long fingers



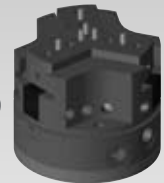
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Preferred Market: ● Global

## 3P Series Precision Three Jaw Parallel Gripper

- Precision operation
- Cylindrical design
- Optional springs for failsafe operation or for increased grip forces
- Side or rear airports
- Tandem piston for double grip force
- Optional Protective Boot for harsh environments
- All gripper sizes are available in 2 strokes sizes

NEW

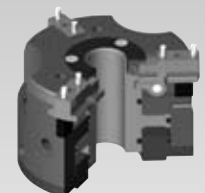


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Preferred Market: ■ EU ◆ SA

## PPC Series Through Hole Gripper

- Unique through hole design
- 3 jaw concentric parallel gripper
- Shielded design protects internal components for increased life in harsh environments
- Optional safety springs, extended strokes, sensors, and high temperature seals



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Preferred Market: ● Global



# Destaco-Robohand Parallel Gripper Product Selector

Model #	Stroke Range	Total Grip Force Range	Maximum Finger Length @ 60 PSI [4 bar]	Actuation Time	Operating Pressure	Environment	Failsafe Operation	Inductive Sensors	Magnetic Resistive Sensors	Double Acting Cylinder	Single Acting/Spring Return	Double Acting/Spring Assist	Non-Synchronous Option
<p>Two Jaws Three Jaws</p> <p>0 - 0.25 in. [0 - 6.3mm] 0.25 - 0.50 in. [6.3 - 12.7mm] 0.50 - 0.75 in. [12.7 - 19.1mm] 0.75 - 1.00 in. [19.1 - 25.4mm] 1.00 - 1.25 in. [25.4 - 31.8mm] 1.25 - 1.50 in. [31.8 - 38.1mm] 1.50 - 1.75 in. [38.1 - 44.5mm] 1.75 - 2.00 in. [44.5 - 50.8mm] 2.00 - 2.25 in. [50.8 - 57.1mm] 2.25 - 2.50 in. [57.1 - 63.5mm] 2.50 - 2.75 in. [63.5 - 69.8mm] 2.75 - 3.00 in. [69.8 - 76.2mm] 3.00+ [76.2mm+]</p> <p>1 - 10 lbs. [0.45 - 45N] 10 - 25 lbs. [45 - 111N] 25 - 50 lbs. [111 - 223N] 50 - 100 lbs. [223 - 445N] 100 - 300 lbs. [2225 - 13350N]</p> <p>0 - 2 in. [0 - 50.8mm] 2 - 4 in. [50.8 - 102mm] 4 - 6 in. [102 - 152mm] 6 - 8 in. [152 - 203mm] 8 - 10 in. [203 - 254mm] 10 - 12 in. [254 - 305mm] 12 - 14 in. [305 - 356mm] 14 - 16 in. [356 - 406mm] 16 - 18 in. [406 - 457mm] 18 - 20 in. [457 - 508mm] 20 in.+ [508mm+]</p> <p>0.05 - 0.1 sec. 0.1 - 0.5 sec. 0.5 - 0.75 sec. 0.75 - 1 sec.</p> <p>5 - 100 psi [0.3 - 7 bar] 20 - 100 psi [1.5 - 7 bar] 40 - 100 psi [3 - 7 bar] 50 - 100 psi [3.5 - 7 bar]</p> <p>24VDC Electric Actuation</p> <p>Clean Room Environment Normal Environment Harsh/Dirty Environment</p> <p>Failsafe Operation</p> <p>Inductive Sensors Magnetic Resistive Sensors</p> <p>Double Acting Cylinder Single Acting/Spring Return Double Acting/Spring Assist</p> <p>Non-Synchronous Option</p>													
<b>DPE ELECTRIC GRIPPER</b>													
DPE-200-25													
<b>RPE ELECTRIC GRIPPER</b>													
RPE-100													
RPE-101													
<b>RDH/DDH SHIELDED 2 JAW DESIGN</b>													
RDH-1													
RDH-1-L													
RDH-2													
RDH-2-L													
RDH-3													
RDH-3-L													
RDH-4													
RDH-4-L													
RDH-5													
RDH-5-L													
RDH-6													
RDH-6-L													
RDH-7													
RDH-7-L													
RDH-8													
RDH-8-L													
<b>ZP PRECISION DESIGN</b>													
6002P													
6002P-C													
8002P													
8002P-C													
11002P													
11002P-C													
14002P													
14002P-C													
16502P													
16502P-C													
16502PGR													
<b>CP SQUARE DESIGN</b>													
CP-1													
CP-1-C													
CP-2													
CP-2-C													
CP-3													
CP-3-C													
CP-4													
CP-4-C													
CP-5													
CP-5-C													
CP-6													
CP-6-C													
<b>DIRECTCONNECT PRECISION "DUAL-V" DESIGN</b>													
DPP-10M-06													
DPP-10M-12													
DPP-14M-15													
DPP-14M-25													
DPP-20M-25													
DPP-20M-38													
<b>LOW PROFILE DESIGN</b>													
RPL-1													
RPL-2													
RPL-3													
RPL-4													
<b>LOW PROFILE CLEAN ROOM DESIGN</b>													
RPLC-1													
RPLC-2													
RPLC-3													
RPLC-4													
<b>MICRO DESIGN</b>													
RPM-1													
RPM-2													
RPM-3													
<b>MICRO CLEAN ROOM DESIGN</b>													
RPMC-1													
RPMC-2													
RPMC-3													

Continued on next page

# Destaco-Robohand Parallel Gripper Product Selector

Model #	Stroke Range	Total Grip Force Range	Maximum Finger Length @ 60 PSI (4 bar)	Actuation Time	Operating Pressure	Environment	Failsafe Operation	Inductive Sensors	Magneto Resistive Sensors	Double Acting Cylinder	Single Acting/Spring Return	Double Acting/Spring Assist	Non-Synchronous Option
<div style="display: flex; justify-content: space-between; font-size: 8px; margin-bottom: 5px;"> <span>Two Jaws</span> <span>Three Jaws</span> </div> <div style="display: flex; justify-content: space-between; font-size: 8px; margin-bottom: 5px;"> <span>0 - 0.25 in. [0 - 6.3mm]</span> <span>0.25 - 0.50 in. [6.3 - 12.7mm]</span> <span>0.50 - 0.75 in. [12.7 - 19.1mm]</span> <span>0.75 - 1.00 in. [19.1 - 25.4mm]</span> <span>1.00 - 1.25 in. [25.4 - 31.8mm]</span> <span>1.25 - 1.50 in. [31.8 - 38.1mm]</span> <span>1.50 - 1.75 in. [38.1 - 44.5mm]</span> <span>1.75 - 2.00 in. [44.5 - 50.8mm]</span> <span>2.00 - 2.25 in. [50.8 - 57.1mm]</span> <span>2.25 - 2.50 in. [57.1 - 63.5mm]</span> <span>2.50 - 2.75 in. [63.5 - 69.8mm]</span> <span>2.75 - 3.00 in. [69.8 - 76.2mm]</span> <span>3.00+ [76.2mm+]</span> </div> <div style="display: flex; justify-content: space-between; font-size: 8px; margin-bottom: 5px;"> <span>1 - 10 lbs. [0.45 - 45N]</span> <span>10 - 25 lbs. [45 - 111N]</span> <span>25 - 50 lbs. [111 - 223N]</span> <span>50 - 100 lbs. [223 - 445N]</span> <span>100 - 500 lbs. [445 - 2225N]</span> <span>500 - 3000 lbs. [2225 - 13350N]</span> </div> <div style="display: flex; justify-content: space-between; font-size: 8px; margin-bottom: 5px;"> <span>0 - 2 in. [0 - 50.8mm]</span> <span>2 - 4 in. [50.8 - 102mm]</span> <span>4 - 6 in. [102 - 152mm]</span> <span>6 - 8 in. [152 - 203mm]</span> <span>8 - 10 in. [203 - 254mm]</span> <span>10 - 12 in. [254 - 305mm]</span> <span>12 - 14 in. [305 - 356mm]</span> <span>14 - 16 in. [356 - 406mm]</span> <span>16 - 18 in. [406 - 457mm]</span> <span>18 - 20 in. [457 - 508mm]</span> <span>20 in.+ [508mm+]</span> </div> <div style="display: flex; justify-content: space-between; font-size: 8px; margin-bottom: 5px;"> <span>0.05 - 0.1 sec.</span> <span>0.1 - 0.5 sec.</span> <span>0.5 - 0.75 sec.</span> <span>0.75 - 1 sec.</span> </div> <div style="display: flex; justify-content: space-between; font-size: 8px; margin-bottom: 5px;"> <span>5 - 100 psi [0.3 - 7 bar]</span> <span>20 - 100 psi [1.5 - 7 bar]</span> <span>40 - 100 psi [3 - 7 bar]</span> <span>50 - 100 psi [3.5 - 7 bar]</span> <span>70 - 150 psi [5 - 7 bar]</span> </div> <div style="display: flex; justify-content: space-between; font-size: 8px; margin-bottom: 5px;"> <span>Clean Room Environment</span> <span>Normal Environment</span> <span>Harsh/Dirty Environment</span> </div> <div style="display: flex; justify-content: space-between; font-size: 8px; margin-bottom: 5px;"> <span>Failsafe Operation</span> <span>Inductive Sensors</span> <span>Magneto Resistive Sensors</span> </div> <div style="display: flex; justify-content: space-between; font-size: 8px; margin-bottom: 5px;"> <span>Double Acting Cylinder</span> <span>Single Acting/Spring Return</span> <span>Double Acting/Spring Assist</span> <span>Non-Synchronous Option</span> </div>													
<b>DIRECTCONNECT GIB DESIGN</b>													
DPG-10-1	•	•	•	•	•	•	•	•	•	•	•	•	•
DPG-10-2	•	•	•	•	•	•	•	•	•	•	•	•	•
DPG-10-3	•	•	•	•	•	•	•	•	•	•	•	•	•
DPG-10-4	•	•	•	•	•	•	•	•	•	•	•	•	•
<b>DIRECTCONNECT DOUBLE WEDGE DESIGN</b>													
DPDS-047	•	•	•	•	•	•	•	•	•	•	•	•	•
DPDS-056	•	•	•	•	•	•	•	•	•	•	•	•	•
DPDS-088	•	•	•	•	•	•	•	•	•	•	•	•	•
DPDS-125	•	•	•	•	•	•	•	•	•	•	•	•	•
DPDL-047	•	•	•	•	•	•	•	•	•	•	•	•	•
DPDL-056	•	•	•	•	•	•	•	•	•	•	•	•	•
DPDL-088	•	•	•	•	•	•	•	•	•	•	•	•	•
DPDL-125	•	•	•	•	•	•	•	•	•	•	•	•	•
<b>DIRECTCONNECT LONG STROKE DESIGN</b>													
DPL-2520	•	•	•	•	•	•	•	•	•	•	•	•	•
DPL-2535	•	•	•	•	•	•	•	•	•	•	•	•	•
DPL-3230	•	•	•	•	•	•	•	•	•	•	•	•	•
DPL-3250	•	•	•	•	•	•	•	•	•	•	•	•	•
DPL-4040	•	•	•	•	•	•	•	•	•	•	•	•	•
DPL-4070	•	•	•	•	•	•	•	•	•	•	•	•	•
<b>DOUBLE WEDGE DESIGN</b>													
RP-5	•	•	•	•	•	•	•	•	•	•	•	•	•
RP-10	•	•	•	•	•	•	•	•	•	•	•	•	•
RP-11	•	•	•	•	•	•	•	•	•	•	•	•	•
RP-12	•	•	•	•	•	•	•	•	•	•	•	•	•
RP-15	•	•	•	•	•	•	•	•	•	•	•	•	•
RP-17	•	•	•	•	•	•	•	•	•	•	•	•	•
RP-18	•	•	•	•	•	•	•	•	•	•	•	•	•
RP-19	•	•	•	•	•	•	•	•	•	•	•	•	•
<b>PRECISION DESIGN</b>													
DGC-25	•	•	•	•	•	•	•	•	•	•	•	•	•
DGC-45	•	•	•	•	•	•	•	•	•	•	•	•	•
DGC-65	•	•	•	•	•	•	•	•	•	•	•	•	•
GC-85	•	•	•	•	•	•	•	•	•	•	•	•	•
GC-105	•	•	•	•	•	•	•	•	•	•	•	•	•
<b>DIRECTCONNECT WIDE BODY DESIGN</b>													
DPW-250M-1	•	•	•	•	•	•	•	•	•	•	•	•	•
DPW-250M-2	•	•	•	•	•	•	•	•	•	•	•	•	•
DPW-375M-1	•	•	•	•	•	•	•	•	•	•	•	•	•
DPW-375M-2	•	•	•	•	•	•	•	•	•	•	•	•	•
DPW-500M-1	•	•	•	•	•	•	•	•	•	•	•	•	•
DPW-500M-2	•	•	•	•	•	•	•	•	•	•	•	•	•
<b>LARGE FORMAT WIDE BODY DESIGN</b>													
RPW-625-1	•	•	•	•	•	•	•	•	•	•	•	•	•
RPW-625-2	•	•	•	•	•	•	•	•	•	•	•	•	•
RPW-750	•	•	•	•	•	•	•	•	•	•	•	•	•
<b>GLADIATOR GRIPPER</b>													
RPR-57-200	•	•	•	•	•	•	•	•	•	•	•	•	•
<b>"B-SERIES" INDUSTRIAL GRIPPERS</b>													
BPW-1600	•	•	•	•	•	•	•	•	•	•	•	•	•
BPW-2000	•	•	•	•	•	•	•	•	•	•	•	•	•
BRP-20	•	•	•	•	•	•	•	•	•	•	•	•	•
BRP-21	•	•	•	•	•	•	•	•	•	•	•	•	•
BRP-21-D	•	•	•	•	•	•	•	•	•	•	•	•	•
BPG-160	•	•	•	•	•	•	•	•	•	•	•	•	•
<b>RTH/DTH SHIELDED 3 JAW DESIGN</b>													
RTH/DTH-1	•	•	•	•	•	•	•	•	•	•	•	•	•
RTH/DTH-1-L	•	•	•	•	•	•	•	•	•	•	•	•	•
RTH/DTH-2	•	•	•	•	•	•	•	•	•	•	•	•	•
RTH/DTH-2-L	•	•	•	•	•	•	•	•	•	•	•	•	•
RTH/DTH-3	•	•	•	•	•	•	•	•	•	•	•	•	•
RTH/DTH-3-L	•	•	•	•	•	•	•	•	•	•	•	•	•
RTH/DTH-4	•	•	•	•	•	•	•	•	•	•	•	•	•
RTH/DTH-4-L	•	•	•	•	•	•	•	•	•	•	•	•	•
RTH/DTH-5	•	•	•	•	•	•	•	•	•	•	•	•	•
RTH/DTH-5-L	•	•	•	•	•	•	•	•	•	•	•	•	•
RTH/DTH-6	•	•	•	•	•	•	•	•	•	•	•	•	•
RTH/DTH-6-L	•	•	•	•	•	•	•	•	•	•	•	•	•
RTH/DTH-7	•	•	•	•	•	•	•	•	•	•	•	•	•
RTH/DTH-7-L	•	•	•	•	•	•	•	•	•	•	•	•	•
RTH/DTH-8	•	•	•	•	•	•	•	•	•	•	•	•	•
RTH/DTH-8-L	•	•	•	•	•	•	•	•	•	•	•	•	•

Continued on next page

# Destaco-Robohand Parallel Gripper Product Selector

Model #	Stroke Range	Total Grip Force Range	Maximum Finger Length @ 60 PSI [4 bar]	Actuation Time	Operating Pressure	Environment	FailSafe Operation	Inductive Sensors	Magneto Resistive Sensors	Double Acting Cylinder	Single Acting/Spring Return	Double Acting/Spring Assist	Non-Synchronous Option
<p>Two Jaws Three Jaws</p> <p>0 - 0.25 in. [0 - 6.3mm] 0.25 - 0.50 in. [6.3 - 12.7mm] 0.50 - 0.75 in. [12.7 - 19.1mm] 0.75 - 1.00 in. [19.1 - 25.4mm] 1.00 - 1.25 in. [25.4 - 31.8mm] 1.25 - 1.50 in. [31.8 - 38.1mm] 1.50 - 1.75 in. [38.1 - 44.5mm] 1.75 - 2.00 in. [44.5 - 50.8mm] 2.00 - 2.25 in. [50.8 - 57.1mm] 2.25 - 2.50 in. [57.1 - 63.5mm] 2.50 - 2.75 in. [63.5 - 69.8mm] 2.75 - 3.00 in. [69.8 - 76.2mm] 3.00+ [76.2mm+]</p> <p>1 - 10 lbs. [0.45 - 45N] 10 - 25 lbs. [45 - 111N] 25 - 50 lbs. [111 - 223N] 50 - 100 lbs. [223 - 445N] 100 - 500 lbs. [445 - 2225N] 500 - 3000 lbs. [2225 - 13350N]</p> <p>0 - 2 in. [0 - 50.8mm] 2 - 4 in. [50.8 - 102mm] 4 - 6 in. [102 - 152mm] 6 - 8 in. [152 - 203mm] 8 - 10 in. [203 - 254mm] 10 - 12 in. [254 - 306mm] 12 - 14 in. [306 - 356mm] 14 - 16 in. [356 - 406mm] 16 - 18 in. [406 - 457mm] 18 - 20 in. [457 - 508mm] 20 in.+ [508mm+]</p> <p>0.05 - 0.1 sec. 0.1 - 0.5 sec. 0.5 - 0.75 sec. 0.75 - 1 sec.</p> <p>5 - 100 psi [0.3 - 7 bar] 20 - 100 psi [1.5 - 7 bar] 40 - 100 psi [3 - 7 bar] 50 - 100 psi [3.5 - 7 bar] 70 - 150 psi [5 - 7 bar]</p> <p>Clean Room Environment Normal Environment Harsh/Dirty Environment</p> <p>FailSafe Operation</p> <p>Inductive Sensors Magneto Resistive Sensors</p> <p>Double Acting Cylinder Single Acting/Spring Return Double Acting/Spring Assist Non-Synchronous Option</p>													
<b>3P PRECISION DESIGN</b>													
6003P	•	•	•	•	•	•	•	•	•	•	•	•	•
6003P-C	•	•	•	•	•	•	•	•	•	•	•	•	•
8003P	•	•	•	•	•	•	•	•	•	•	•	•	•
8003P-C	•	•	•	•	•	•	•	•	•	•	•	•	•
11003P	•	•	•	•	•	•	•	•	•	•	•	•	•
11003P-C	•	•	•	•	•	•	•	•	•	•	•	•	•
14003P	•	•	•	•	•	•	•	•	•	•	•	•	•
14003P-C	•	•	•	•	•	•	•	•	•	•	•	•	•
16503P	•	•	•	•	•	•	•	•	•	•	•	•	•
16503P-C	•	•	•	•	•	•	•	•	•	•	•	•	•
<b>PPC THROUGH HOLE DESIGN</b>													
PPC-12	•	•	•	•	•	•	•	•	•	•	•	•	•
PPC-12-C	•	•	•	•	•	•	•	•	•	•	•	•	•
PPC-25	•	•	•	•	•	•	•	•	•	•	•	•	•
PPC-25-C	•	•	•	•	•	•	•	•	•	•	•	•	•
PPC-34	•	•	•	•	•	•	•	•	•	•	•	•	•
PPC-34-C	•	•	•	•	•	•	•	•	•	•	•	•	•





# DPE Parallel Gripper- Electric Gripper Series

- **Electrically Actuated**

24 VDC, 4-wire input: power, ground, open & closed signals.  
100% duty cycle for high throughput.

- **“Light Switch” Simplicity**

Plug and play. No programming, tuning or adjusting required.  
As easy as a pneumatic gripper to control and operate.

- **Energy Efficient**

Only 3W required. Can be driven directly by most PLC's  
without a separate power supply. Can be battery driven  
for remote applications.

- **High Cycle Life**

20+ million cycles with zero maintenance!  
High reliability eliminates down time.  
Lowest cost of ownership of any gripper,  
pneumatic or electric.

- **Built-in Electronics**

All electronics are sealed  
within the gripper. No external  
control board needed.  
4-pin/wire control cable  
sold separately.

**NO  
ADAPTER  
PLATES!**



**DIRECTCONNECT™**  
ADVANCED MODULAR AUTOMATION TECHNOLOGY

- **Long Stroke, Fast Actuation**

25mm stroke for picking multiple sized parts.  
Full actuation in 0.25 second. Pick up to 150  
parts per minute (with reduced stroke).

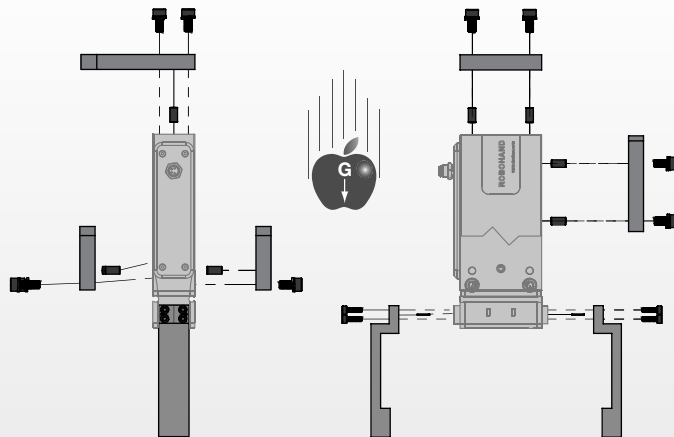
- **Failsafe operation**

In case of a power loss, the jaws will not  
separate but grip force will be diminished.  
Finger design should include features other  
than just friction to retain part for critical  
applications.

Patent Pending.

## Mounting Information:

Gripper can be mounted and operated in any orientation



Body mounts with screws  
and locates with slip fit  
dowel pins for accuracy

Fingers attach to jaws  
with screws and locate  
with dowel pins

## Technical Specifications:

### Product Specifications

Voltage	24 VDC
Power Max.	40 W
Operating Temperature	5° / 50° C (40° / 120°F)
Protection Class	IP54
Clean Room	100
Clean Room with Scavenge Port*	10

\*Contact Tech Support.

### Maintenance Specifications

Field Repairable	Yes
------------------	-----

### Application Restrictions

- Timing, power and load beyond specifications
- Suitable for external gripping only

## Product Features

### Multiple Position Sensing

Slot mounted magneto-resistive sensing. Sense up to 4 gripping positions. Internal magnetic targets and external sensor mounting slots come standard. Sensors & quick disconnect cables sold separately.

### DirectConnect Mounting

Mounts directly to other automation products without adaptor plates. Versatile mounting on top, side front and back of body.

### One-Piece Body

One-piece, lightweight aircraft quality aluminum body ensures product accuracy.

### Hardcoat Anodize

The body and jaws are hardcoat anodized to 60Rc with Teflon impregnation.

### Superior Jaw Support

Ridged design and full body support of the jaws allows for long finger lengths.



### Sealed Design

IP 54 rating for tough application environments.

### Slip Fit Dowel Pin Holes

Located in body and jaws for precision mounting.

### Rack & Pinion Drive

Precision drive components for smooth actuation. Zero backlash while gripping ensures excellent repeatability and accuracy.

## Style-DPE

### Size -200-25

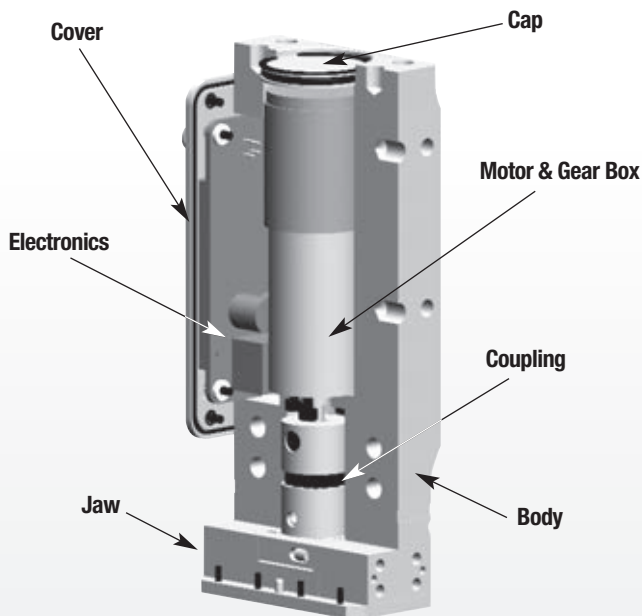


<b>Style:</b>	DPE-200-25	
<b>Stroke:</b>	25 mm	0.98 in
<b>Grip Force:</b>	90 N	20 lbs
<b>Weight:</b>	0.53 Kg	1.16 lbs

See Page **1.10**



## Operating Principle



- Apply +24 VDC from the PLC to the gripper "Close" wire.
- The motor rotates a planetary gear reduction box that is connected to the drive pinion by a coupling
- The pinion drives the integral jaw racks causing the jaws to close synchronously
- Power is maintained to the closed signal to continue gripping force throughout the grip cycle.
- To open, remove signal to "Close" wire and apply +24 VDC from the PLC to the gripper "Open" wire
- Design is suitable for internal or external gripping

**Patent Pending**

# PARALLEL GRIPPER DPE-200-25 E-GRIPPER SERIES

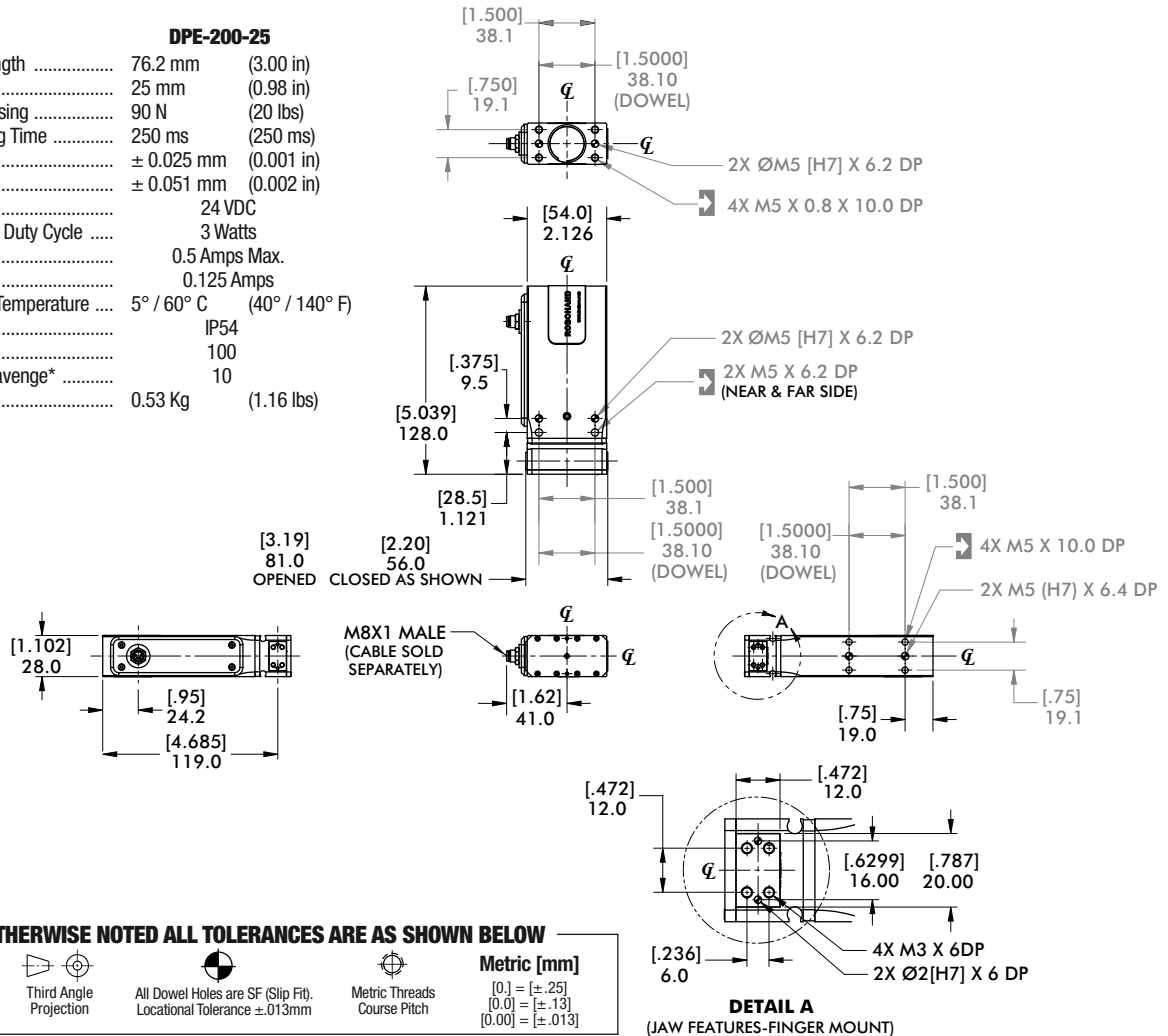
DPE SERIES

1.10

## Specifications

	DPE-200-25	
Maximum Finger Length	76.2 mm	(3.00 in)
Stroke	25 mm	(0.98 in)
Gripping Force in Closing	90 N	(20 lbs)
Closing Time/Opening Time	250 ms	(250 ms)
Repeatability	± 0.025 mm	(0.001 in)
Accuracy	± 0.051 mm	(0.002 in)
Voltage	24 VDC	
Power Req. @ 100% Duty Cycle	3 Watts	
Current - Peak	0.5 Amps Max.	
Current - Continuous	0.125 Amps	
Min./Max Operating Temperature	5° / 60° C (40° / 140° F)	
Protection Class	IP54	
Clean Room	100	
Clean Room with Scavenge*	10	
Weight	0.53 Kg	(1.16 lbs)

\*Contact Tech Support.

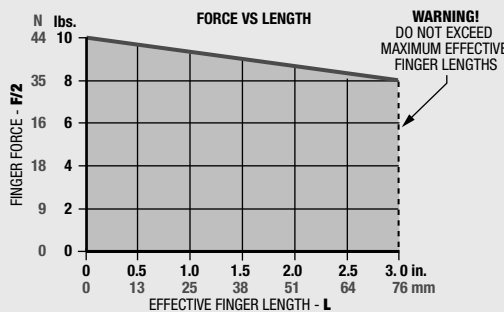


### UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

				<b>Metric [mm]</b>
Dimensions are symmetrical about centerline	Third Angle Projection	All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.013mm	Metric Threads Course Pitch	[0.] = [±.25] [0.0] = [±.13] [0.00] = [±.013]

## Loading Information

## How to Order: (Order Accessories separately from Basic Model)



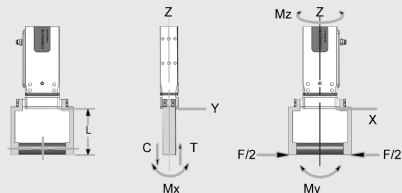
BASIC MODEL

**DPE-200-25**

### ACCESSORIES\*

4-wire Power and Signal Cable, 5m long	<b>CABL-046</b>	<b>1</b>
NPN Magneto Resistive Sensor (with Qk. Disc.)*†	<b>OHSN-017</b>	<b>1 or 2</b>
PNP Magneto Resistive Sensor (with Qk. Disc.)*†	<b>OHSP-017</b>	<b>1 or 2</b>
Quick Disconnect 5 Meter Cable Length*†	<b>CABL-013</b>	<b>1 or 2</b>

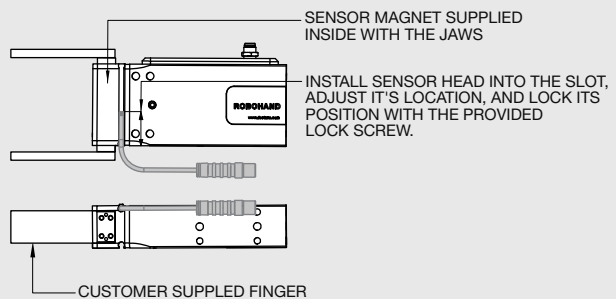
\*Sensor and cables sold separately. † Power cable plus 1 or 2 sensor cables.



### Loading Capacity†

	Static
Maximum Tensile <b>T</b>	75 lbs [10 N]
Maximum Compressive <b>C</b>	75 lbs [10 N]
Maximum Moment <b>M<sub>x</sub></b>	120 lbf-in [14 Nm]
Maximum Moment <b>M<sub>y</sub></b>	150 lbf-in [17 Nm]
Maximum Moment <b>M<sub>z</sub></b>	120 lbf-in [14 Nm]

† Capacities are per set of jaws and are not simultaneous







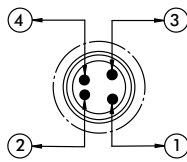
### Installation and Operation:

1. Mount fingers (customer supplied) to gripper jaws using dowel pins and threaded fasteners. See dimensional drawing for hole sizes. Use Loctite® 242 threadlocker or equivalent.
2. Mount gripper using dowel pins and threaded fasteners. Gripper can be mounted and operated in any orientation. See dimensional drawing for mounting hole pattern and sizes. Use Loctite® 242 threadlocker or equivalent.
3. To operate the DPE gripper, follow the instructions below:  
Apply +24VDC to pin 1 (brown) and Ground to pin 3 (blue) to turn on the gripper. To open the fingers, apply +24VDC to pin 2 (white). To close the fingers, remove +24VDC from pin 2, and apply +24VDC to pin 4 (black). +24VDC signal must remain present on the open / close line to maintain the force output. The gripper will do nothing if a +24VDC signal is present on the open and close lines at the same time.

### WARNING:

- Operating gripper outside of power voltages and can cause damage and void warranty
- Disconnect power from gripper before performing maintenance or making adjustments.

### ELECTRICAL INTERFACE

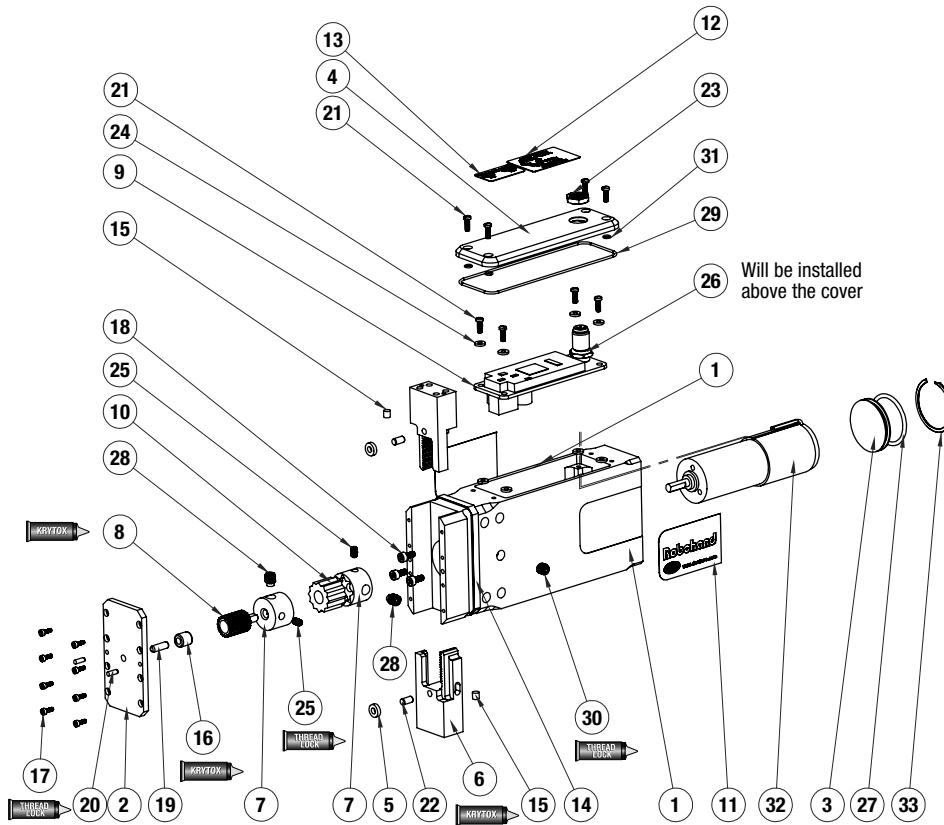


### PIN OUT (LOOKING INTO HEADER CONNECTOR ON GRIPPER)

- |   |       |       |                                  |
|---|-------|-------|----------------------------------|
| 1 | ..... | BROWN | (+ 24 VDC)                       |
| 2 | ..... | WHITE | (OPEN GRIPPER) +24 VDC = ACTIVE  |
| 3 | ..... | BLUE  | (GROUND)                         |
| 4 | ..... | BLACK | (CLOSE GRIPPER) +24 VDC = ACTIVE |

CABLE # CABL-046

## DPE Series Exploded View



Item	Qty	Name
01	1	Body
02	1	Bottom Plate
03	1	Cap
04	1	Cover
05	2	Bumper
06	2	Jaw
07	2	Coupling Pin
08	1	Drive Pin
09	1	Motor Control Board
10	1	Coupling Insert
11	2	Tag-Destaco-Robohand
12	1	Tag-Electric Pin Out
13	1	Tag-Production
14	1	Tag-VBL Collar
15	2	Magnet
16	1	Bearing
17	8	SHCS, M1.6*5mm, Alloy
18	3	SHCS, M2.5*5mm, Alloy
19	1	Dowel Pin: 1/8 Dia X 3/8
20	2	Dowel Pin: 2mm dia*6mm lg
21	8	Screw, Fillister HD, M2x6mm
22	2	Dowel Pin: 3mm dia*6mm lg.
23	0	Jam Nut-Ref Only (Part Of Motor Control Board)
24	8	Washer
25	2	Set Screw
26	0	O-Ring - Ref Only (Comes With Connector)
27	1	O-Ring
28	2	Set Screw
29	1	O-Ring
30	1	Set Screw
31	4	O-Ring, Buna, 70d, 0.026 CS, .097id
32	1	Gear Motor
33	1	Ret. Ring

**Assembly Procedure**

- 1) Clean all make details free of dirt, oil and other contaminants.
- 2) Insert # 32 motor into the # 1 body, line up the motor holes and assemble motor to the body by using # 18 screws. Make sure that the motor wires are carefully routed to the top for it's connection to the motor control board.
- 3) Assemble # 25 set screws one of the # 7 coupling hubs, but not all the way in. Assemble the coupling to the motor shaft, with flat on the motor shaft facing one of the set screws and adjust the inside face of the coupling, flat with end face of the motor shaft. Tighten the set screw on the motor shaft thru the access hole at set screw # 30 location.
- 4) Assemble the # 10 coupling insert into the # 7 hub, as assembled to the motor shaft, as above.
- 5) Assemble # 8 drive pinion with it's shaft all the way into the second # 7 coupling hub and tighten the set screws. Assemble # 16 bearing and # 19 dowel pin into the drive pinion. Now install this assembly hub / insert assembly installed earlier to the motor shaft.
- 7) Assemble # 15 magnets into # 6 jaws, using lok-tite as recommended.
- 8) Lubricate the pinion, the bearing, the jaws and inside surfaces of jaw-ways with lubricant as recommended.
- 9) Install the jaws into the body, meshed with the pinion and symmetrically positioned w.r.t the pinion.
- 10) Install # 5 stop and # 22 dowel pins into the jaws.
- 11) Assemble # 2 cover to the body, with dowel pins # 19 and # 29 aligned to the corresponding holes in the cover. Install fasteners # 17 to secure the cover to the body.
- 12) Install / connect the motor cable connector the motor control board. Use # 21 & # 24 fasteners and install the motor control board to the body. Note: Remove the hex nut supplied with the connector on the motor control board. This hex nut will be re-installed after # 4 cover is installed.
- 13) Install # 4 cover to the body with # 29 gasket and # 21 screws as shown.
- 14) Installed the previously removed hex nut back to the connector. Caution: Only snug tighten this hex nut.
- 15) Install # 3 cap with O ring and snap ring, as shown.
- 16) Install tags and labels as shown.

**NOTE:** Contact the DE-STA-CO Customer Service for a complete spare parts list with order numbers and prices.



Seal Kit Items



Thread Locker



Krytox™ Lubricant



Lightweight Machine Oil



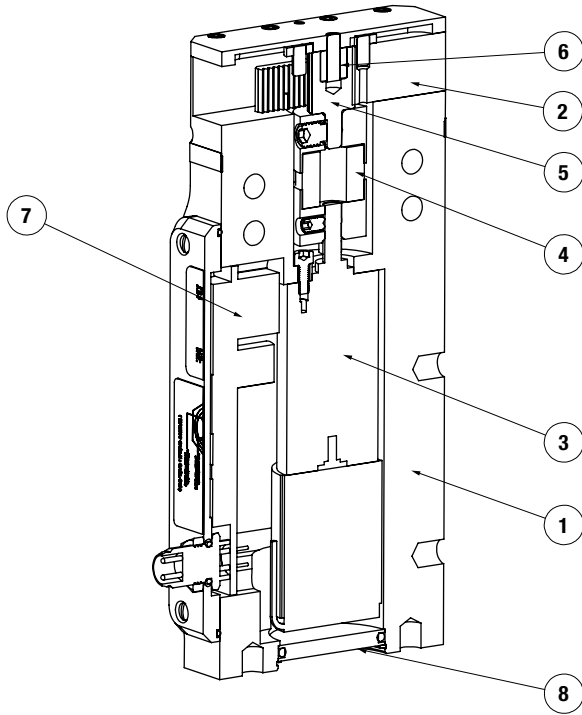
Teflon™ Based Grease



Super Bonder










Third Angle Projection



Item	Qty	Name
01	1	Body
02	2	Jaw
03	1	Motor/Gear ASM
04	1	Coupling Asm
05	1	Pinion
06	1	Bearing
07	1	Motor Control Board
84	1	End Cap

**NOTE:** Contact the DE-STA-CO Customer Service for a complete spare parts list with order numbers and prices.

 Seal Kit Items	 Thread Locker	 Krytox™ Lubricant	 Lightweight Machine Oil	 Teflon™ Based Grease	 Super Bonder	 Third Angle Projection
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# RPE Parallel Gripper- Electric Gripper Series

- **Failsafe Operation:**

Spring closed feature allows for full grip force during power off conditions.

- **Electrically Actuated:**

Requires simple 24VDC pulsed signal.  
**No programmable or expensive controller required.**

- **Sensing:**

Adjustable inductive proximity sensors available.

- **Low System Impact:**

Easily integrated into current engineering and manufacturing processes.

- **Miniature size:**

Compact design allows for gripping small parts in small spaces.

- **Precision applications:**

Preloaded "Dual-V" roller bearings eliminate side play for excellent part position repeatability.

- **Delicate part handling:**

Low friction mechanism allows for repeatable gripping forces for holding delicate parts. Grip force is constant throughout stroke.

- **Clean room suitable:**

A corrosion resistant shield protects the drive and bearing mechanism. All internal components are lubricated with Krytox™ grease.

- **Harsh environments:**

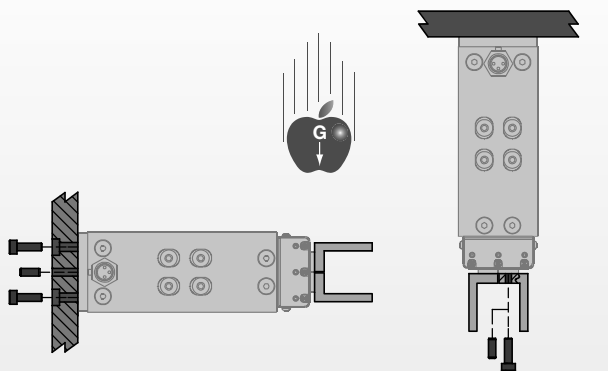
All moving components are located within the corrosion resistant cover.

Patent Pending.

The RPE is CE marked.

## Mounting Information:

Gripper can be mounted and operated in any orientation



Body mounts with screws and locates with slip fit dowel pins for accuracy

Fingers attach to jaws with screws and locate with dowel pins

## Technical Specifications:

### Product Specifications

Voltage	24 VDC
Power Max.	40 W
Operating Temperature	5° / 50° C (40° / 120°F)
Protection Class	IP54
Clean Room	100
Clean Room with Scavenge Port*	10

\*Contact Tech Support.

### Maintenance Specifications

Field Repairable **Yes**

### Application Restrictions

- Timing, power and load beyond specifications
- Suitable for external gripping only

## Product Features

### Quality Components

Body made from aluminum alloy with Teflon™ impregnated hardcoat anodize. Jaws, housing, and end cap nickel plated for use in medical parts handling applications.

### Energy Efficient

Power is only required for 50 msec to open and close the gripper, no power is required to keep the part gripped or to keep the gripper fully opened.

### Adjustable Preloaded Bearings

Adjustable preload screw allows for adjustment of preload on roller bearings. Bearings are preloaded for maximum support and zero side play.

### Spring Close

Spring closed feature for failsafe operation

### Slip Fit Dowel Pin Holes

Located in body and jaws

### Sensor Option

Reads position of jaw (sold separately—see "How to order" Section for more info)

### Stainless Steel Cover

Stationary and non-contacting cover eliminates the possibility of particle generation

### Clean Room

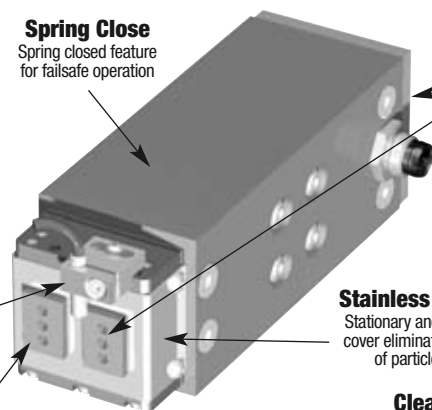
Krytox™ clean-room grade lubricant standard. FDA approved lubricants available. Vacuum scavenge ports are available

### Hardened Plated Jaws

For wear resistance and longer life

### Roller Bearings

Patented Dual-"V" roller bearings provide low friction rolling motion and maximum rigidity for fingers



## Style-RPE

### Size -100M



**Style:** RPE-100M  
**Stroke:** 4 mm (0.16 in)  
**Grip Force:** 5 N (1.1 lbs)  
**Weight:** 226 g (0.50 lbs)

See Page **1.16**

## Style-RPE

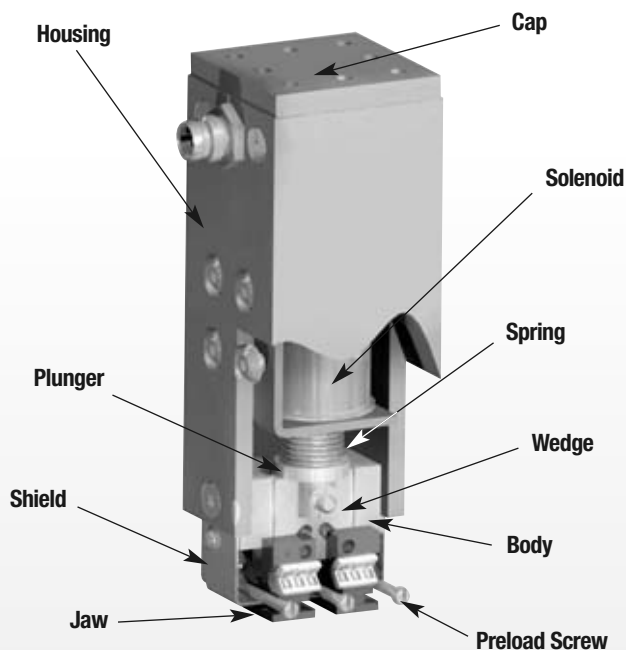
### Size -101M



**Style:** RPE-101M  
**Stroke:** 4 mm (0.16 in)  
**Grip Force:** 5 N (1.1 lbs)  
**Weight:** 226 g (0.50 lbs)

See Page **1.16**

## Operating Principle

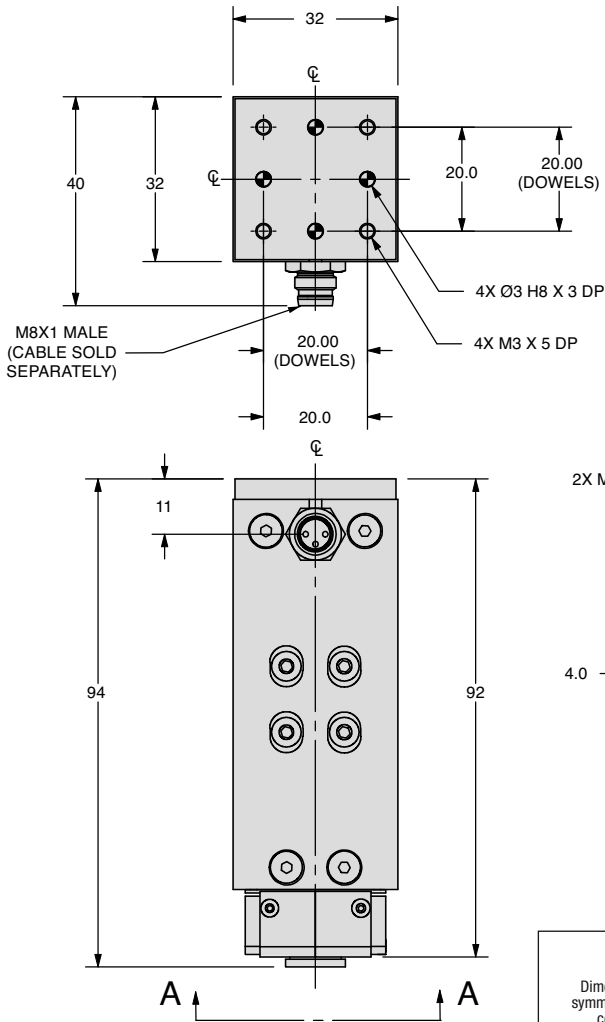


- A short power pulse releases the latching solenoid's plunger, allowing the spring to drive the wedge mechanism.
- The spring driven wedge drives the jaws towards one another to grip the part. No power is required to maintain grip force.
- To open the gripper, a short power pulse to the solenoid retracts the plunger to the latched position, which opens the jaws. No power is required to maintain the open position.
- Suitable for external gripping only.

**U.S. Patent # 5,529,359. Other Patents Pending.**



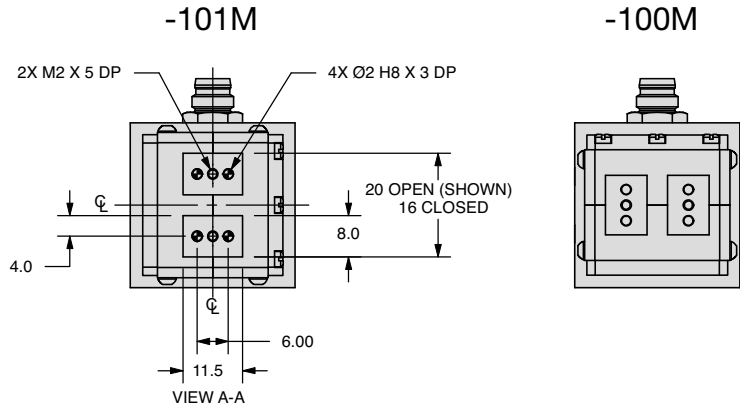
# PARALLEL GRIPPER RPE-100M/-101M E-GRIPPER SERIES



### Specifications

	RPE-100M/-101M	
Maximum Finger Length	50 mm	(1.9 in)
Stroke	4 mm	(0.16 in)
Gripping Force in Closing	5 N	(1.1 lbs)
Closing Time/Opening Time	0.1 sec	(0.1 sec)
Repeatability	± 0.02 mm	(0.0008 in)
Accuracy	± 0.05 mm	(0.002 in)
Voltage	24 VDC	
Power Max.	40 Watts	
Min./Max Operating Temperature	5° / 50° C (40° / 120° F)	
Protection Class	IP54	
Clean Room	100	
Clean Room with Scavenge*	10	
Weight	226 g	(0.50 lbs)

\*Contact Tech Support.

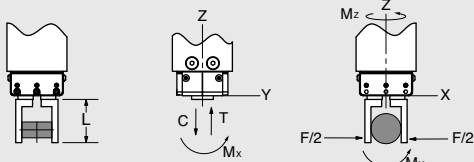
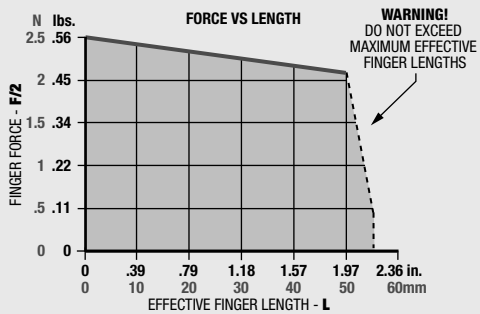


### UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

Dimensions are symmetrical about centerline	Third Angle Projection	All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.013mm	Metric Threads Course Pitch	<b>Metric [mm]</b> [.] = [± .25] [0.] = [± .13] [0.00] = [± .013]
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## Loading Information

## How to Order: (Order Accessories separately from Basic Model)



### Loading Capacity†

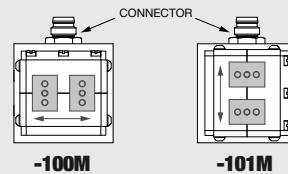
	Static		Dynamic	
Maximum Tensile <b>T</b>	13 lbs	[59 N]	4.5 lbs	[20 N]
Maximum Compressive <b>C</b>	13 lbs	[59 N]	4.5 lbs	[20 N]
Maximum Moment <b>M<sub>x</sub></b>	2.7 lbf-in	[0.75 Nm]	6.6 lbf-in	[0.3 Nm]
Maximum Moment <b>M<sub>y</sub></b>	10.6 lbf-in	[1.2 Nm]	3.5 lbf-in	[0.4 Nm]
Maximum Moment <b>M<sub>z</sub></b>	6.6 lbf-in	[0.75 Nm]	9.7 lbf-in	[1.1 Nm]

†Capacities are per set of jaws and are not simultaneous

## BASIC MODEL GRIPPING ORIENTATION

# RPE - 100M

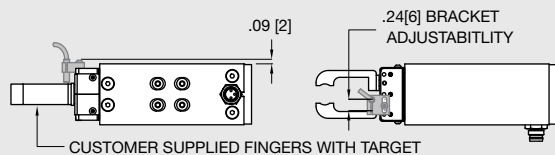
**GRIPPING ORIENTATION -100M** Gripping Direction Perpendicular to Connector  
**-101M** Gripping Direction In-line to Connector



### ACCESSORIES\*

Inductive Sensor Mounting Kit (mounts one sensor)	<b>OSMK-130</b>	<b>1 or 2</b>
NPN Inductive Sensor with Quick Disconnect*	<b>OISN-019</b>	<b>1 or 2</b>
PNP Inductive Sensor with Quick Disconnect*	<b>OISP-019</b>	<b>1 or 2</b>
Quick Disconnect 2 Meter Cable Length*	<b>CABL-010</b>	<b>1, 2, or 3†</b>
Quick Disconnect 5 Meter Cable Length*	<b>CABL-013</b>	<b>1, 2, or 3†</b>

\*Sensor and cables sold separately. † Power cable plus 1 or 2 sensor cables.

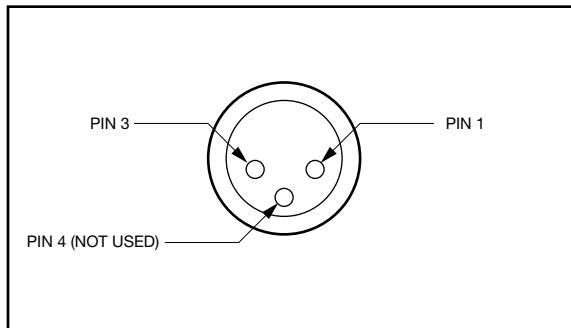


### Installation and Operation:

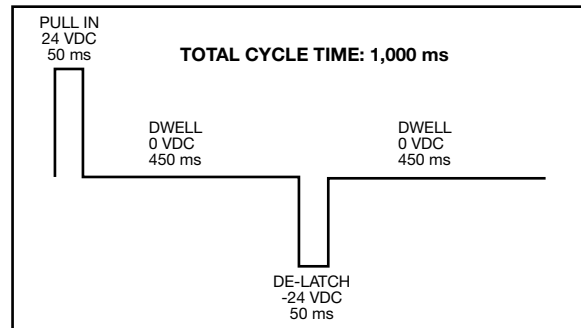
1. Mount fingers (customer supplied) to gripper jaws using dowel pins and threaded fasteners. See dimensional drawing for hole sizes. Use Loctite® 242 threadlocker or equivalent.
2. Mount gripper using dowel pins and threaded fasteners. Gripper can be mounted and operated in any orientation. See dimensional drawing for mounting hole pattern and sizes. Use Loctite® 242 threadlocker or equivalent.
3. The following instructions apply to standard operation and require a 24VDC power supply:  
To open gripper, connect positive lead of power supply to Pin 1 of the connector and negative lead to Pin 3 of the connector. See below for pin orientation. Pulse for 50msec maximum as shown in Timing Diagram. After 50 msec pulse, allow 450msec minimum dwell time. To close gripper, connect positive lead of power supply to Pin 3 of connector and negative lead to Pin 1 of connector. Pulse for 50msec maximum as shown in Timing Diagram. After 50msec pulse, allow 450msec minimum dwell time.

### WARNING:

- Operating gripper outside of power voltages and pulse times will cause damage and void warranty
- Do not insert any foreign objects (tools, body parts, etc) between gripper fingers when power is applied.
- Disconnect power from gripper before performing maintenance or making adjustments.
- Do not apply power to gripper for more than 100msec maximum. Observe 10% duty cycle at all times.



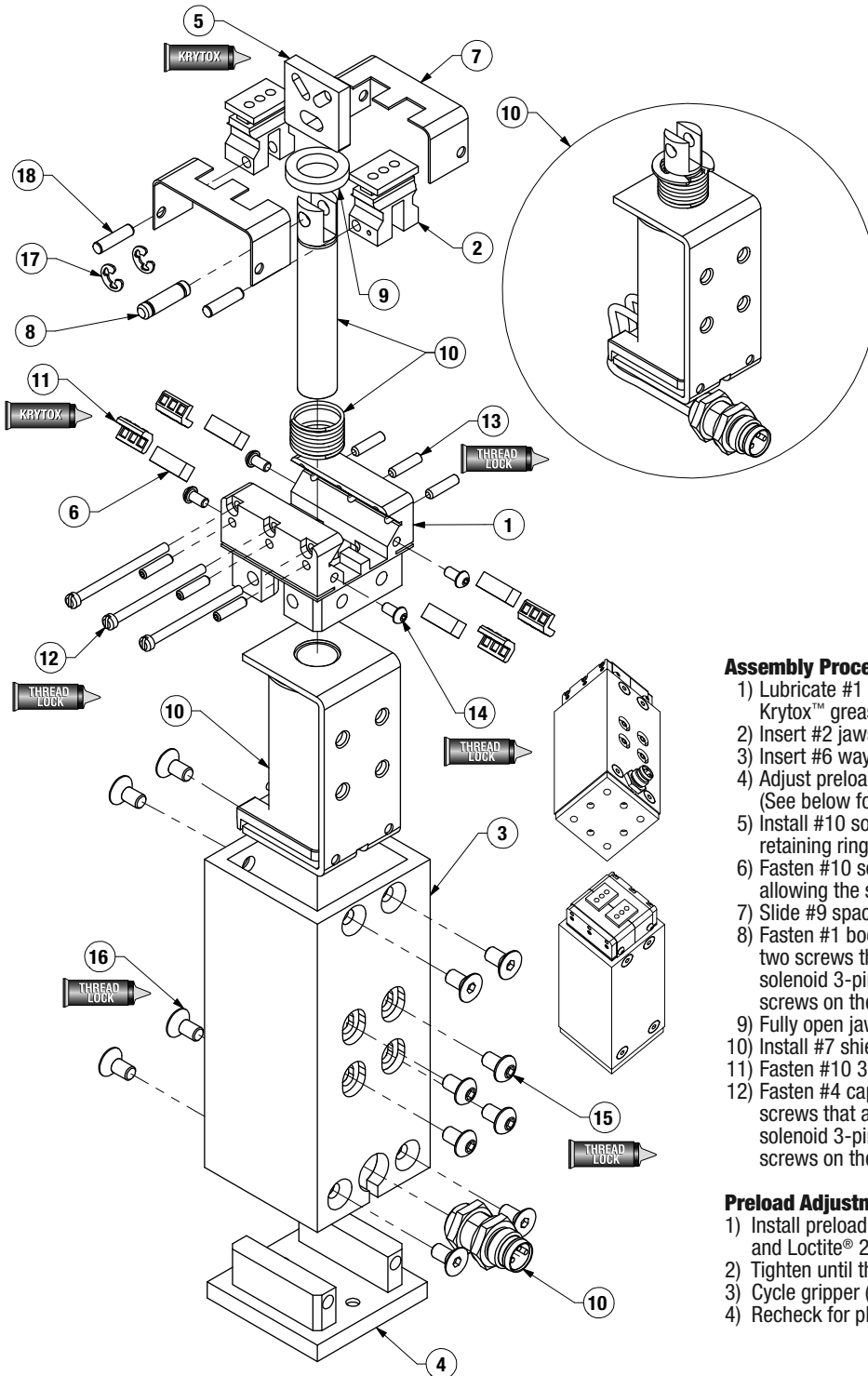
**PIN ORIENTATION**



**TIMING DIAGRAM**

**NOTE:** The RPE is CE marked.

## RPE Series Exploded View



Item	Qty	Name
01	1	Body
02	2	Jaw
03	1	Housing
04	1	Cap
05	1	Wedge
06	4	Way
07	2	Shield
08	1	Clevis Pin
09	1	Spacer
10	1	Solenoid
11	4	Kit, Roller Bearing and Cage
12	3	Preload Screw
13	6	Set Screw-Way Locating
14	4	BHCS-Shield Mounting Screw
15	4	BHCS Solenoid Mounting Screw
16	8	FHCS-Housing Mounting Screw
17	2	Retaining Ring
18	2	Dowel Pin

**NOTE:** Contact the DE-STA-CO Customer Service for a complete spare parts list with order numbers and prices.

#### Assembly Procedure

- 1) Lubricate #1 body, #5 wedge, and #11 bearings using Krytox™ grease.
- 2) Insert #2 jaws and #5 wedge into body.
- 3) Insert #6 way and #11 bearings into each end of the body. (See below for procedure)
- 4) Adjust preload by adjusting #12 preload screws.
- 5) Install #10 solenoid plunger with #8 clevis pin and #17 retaining rings.
- 6) Fasten #10 solenoid to housing. Do not tighten yet, allowing the solenoid to freely move within slots.
- 7) Slide #9 spacer and #10 solenoid spring onto plunger.
- 8) Fasten #1 body into #3 housing. Completely fasten the two screws that are located on the same side as the #10 solenoid 3-pin connector then fasten the two remaining screws on the opposite side.
- 9) Fully open jaws and tighten #15 screws securely.
- 10) Install #7 shields to gripper.
- 11) Fasten #10 3-pin connector.
- 12) Fasten #4 cap into housing. Completely fasten the two screws that are located on the same side as the #10 solenoid 3-pin connector then fasten the two remaining screws on the opposite side.

#### Preload Adjustment Procedure

- 1) Install preload screws (12) with Loctite® 7649 primer and Loctite® 242 thread locker on threads.
- 2) Tighten until there is no side play in the jaws.
- 3) Cycle gripper (w/finger assembly)
- 4) Recheck for play in jaws & tighten or loosen as needed.



Seal Kit Items



Thread Locker



Krytox™ Lubricant



Lightweight Machine Oil



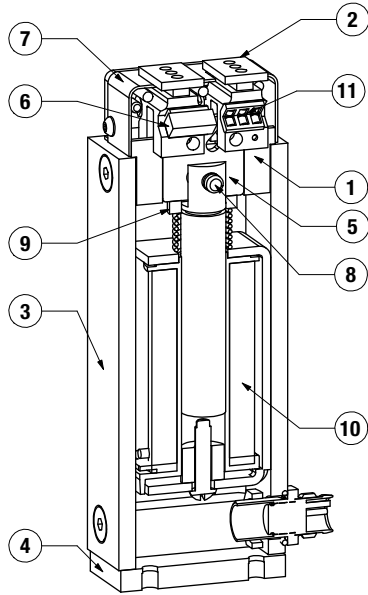
Teflon™ Based Grease



Super Bonder



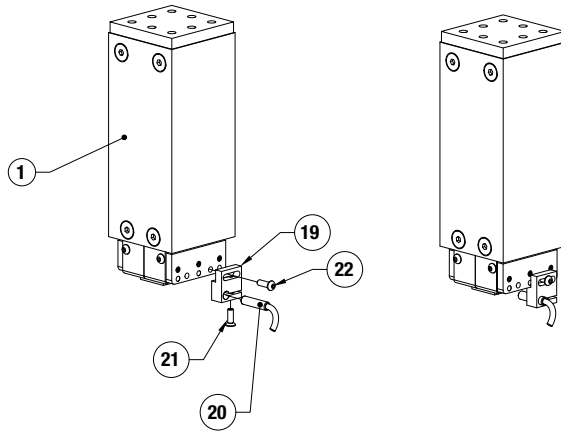
Third Angle Projection



Item	Qty	Name
01	1	Body
02	2	Jaw
03	1	Housing
04	1	Cap
05	1	Wedge
06	4	Way
07	2	Shield
08	1	Clevis Pin
09	1	Spacer
10	1	Solenoid
11	4	Kit, Roller Bearing and Cage

**NOTE:** Contact the DE-STA-CO Customer Service for a complete spare parts list with order numbers and prices.

## Accessory Installation & Adjustment Instructions



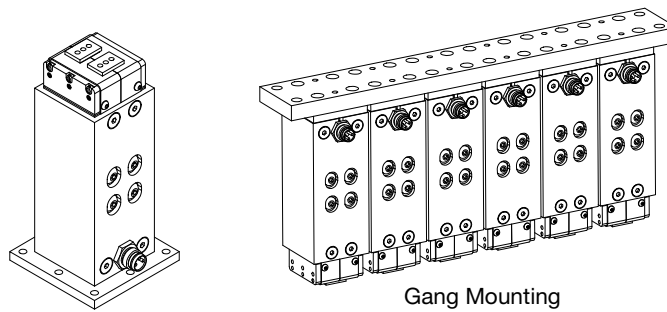
### Installation\*

- 1) Install sensors as shown.
- 2) Adjust for desired end of stroke detection.

\* Fingers should be designed to act as target for inductive sensor. Sensing range is 0.031 [0.8]. The center line of the sensor diameter is located 0.094 [2.4] off of jaw mounting surface.

Fingers supplied by customer.

## Flange Mounting Plate, Gang Mounting and more...



Flange Mounting Plate

Gang Mounting

Drawings shown are for concept only. Contact DE-STA-CO Tech Support with project requirements.



Seal Kit Items



Thread Locker



Krytox™ Lubricant



Lightweight Machine Oil



Teflon™ Based Grease



Super Bonder



Third Angle Projection

# Parallel Grippers - 2-Jaw Parallel Series

## Machine applications:

The 2 symmetric jaws and excellent repeatability allow for precise handling of various parts.

## Harsh environments:

Shielded design repels chips and other particulate from internal drive mechanism.

## Compact, robust and powerful gripper:

This gripper is designed for use in confined spaces, combining long strokes with a high grip force. Optional safety springs retain the components, should the air supply fail or to increase grip force.

## Different strokes:

All gripper sizes are available in 2 strokes sizes.

## For long fingers applications:

The large surface area of the jaws, coupled with the encapsulated bottom case design allows for long fingers applications.

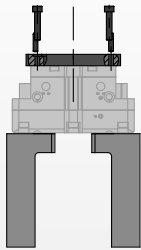
## Multi-purpose gripper:

A wide range of options and accessories (extended stroke, safety springs for internal or external gripping, magneto resistive or inductive sensors) allow these grippers to be used in a wide number of applications.

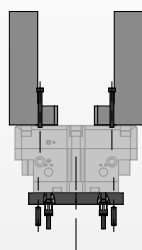
## Mounting Information:

### Grippers can be mounted & operated in any orientation

Gripper is located using 2 dowel pins and assembled from the top with 4 screws.

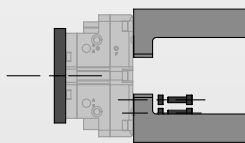


Gripper can also be assembled from the bottom with 4 through body screws.



Gripper is protected from debris when operated upside down.

Gripper can be operated utilizing top manifold air ports



Fingers are located on jaws with 2 dowel sleeves (provided) and assembled with 2 screws.

## Technical Specifications:

### Pneumatic Specifications

Pressure Operating Range  
without Springs  
Cylinder Type

### Imperial

30-100 psi

### Metric

2-7 bar

Double Acting  
or Double Acting Spring Assist  
or Single Acting Spring Return  
Internally Lubricated Buna-N

### Dynamic Seals

Valve Required to Operate:

Double Acting  
Single Acting (-C or -O Option)

4-way, 2-position  
3-way, 2-position

### Air Quality Requirements

Air Filtration  
Air Lubrication  
Air Humidity

40 Micron or Better  
Not Necessary\*  
Low Moisture Content (dry)

### Temperature Operating Range

Buna-N Seals (Standard)  
Viton® Seals (Optional)

-30°~180° F    -35°~80° C  
-20°~300° F    -30°~150° C

### Maintenance Specifications<sup>†</sup>

Expected Life  
Normal Application  
w/ Preventative Maintenance  
Field Repairable  
Seal Repair Kits Available

5 million cycles  
10+ million cycles\*  
Yes  
Yes

\*Addition of lubrication will greatly increase service life  
† See Maintenance Section

## Product Features

### Viton® Seals (-V) Option

Optional Viton® seals for high temperatures (-20°F to +300°F / -30°~150° C)

### Finger Locating Sleeves

For precise finger mounting (standard)

### Jaw Components

Hardened and precision ground steel for minimum jaw play with hard plating for wear resistance and long life

### Multiple Air Ports

Side or top air ports (top ports require O-ring)

### Optional Spring Assist

Optional spring assist retains the component should the air supply fail, to assist the gripper for internal (-D) or external (-C) gripping, or in single acting or spring assist mode

### Standard and Extended Stroke (-L)

Each model of gripper is available in two stroke lengths

### Multiple Mounting Locations

Gripper can be mounted from the top or bottom

### Shielded Design

Gripper body is shielded to repel chips and other particulate from internal drive mechanism

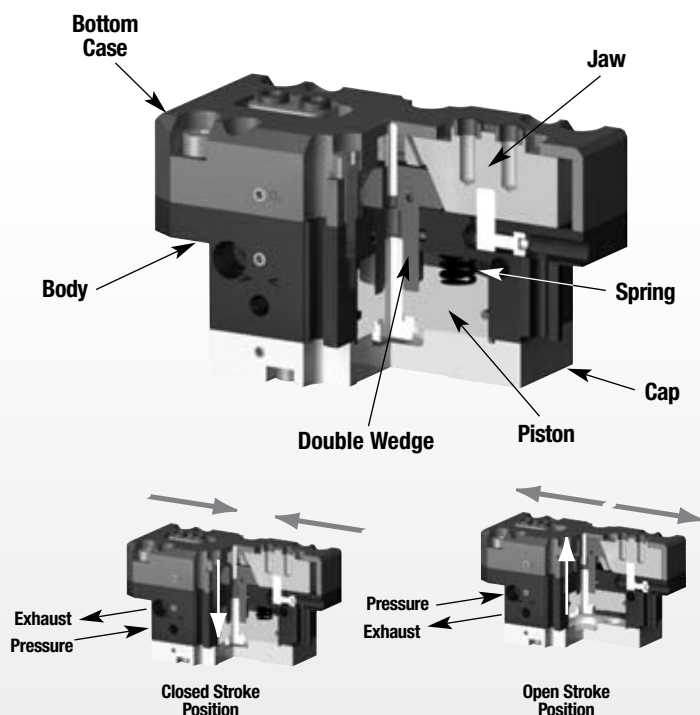
### Multiple Sensing Capabilities

Up to 4 magneto resistive sensors (magnets built-in). Inductive sensors available [except -1M]

### Standard Purge/Scavenge Port

Used with a vacuum for clean room environments or positive pressure for harsh environments

## Operating Principle



- A double acting piston is connected to a double sided wedge.
- The double wedge slides into a slot in each of the jaws converting the vertical motion of the wedge into a horizontal motion of the jaws.
- Each jaw moves within the bottom case, the closed design increases the rigidity and permits the use of longer fingers. The large surface area of the guiding system allows for higher moments loads.
- This gripper is suitable for internal or external gripping using single or double acting mode.

### Style -RDH Parallel Gripper

#### Size -1M

	RDH-1M	RDH-1M-L
Total Stroke:	0.16 in. 4 mm	0.31 in. 8 mm
Grip Force:	156 lbs 693 N	102 lbs 452 N
Weight:	0.4 lbs 0.19 Kg	0.4 lbs 0.19 Kg

See Page **1.22**

### Style -RDH Parallel Gripper

#### Size -2M

	RDH-2M	RDH-2M-L
Total Stroke:	0.23 in. 6 mm	0.47 in. 12 mm
Grip Force:	226 lbs 1006 N	149 lbs 661 N
Weight:	0.9 lbs 0.39 Kg	0.9 lbs 0.39 Kg

See Page **1.24**

### Style -RDH Parallel Gripper

#### Size -3M

	RDH-3M	RDH-3M-L
Total Stroke:	0.31 in. 8 mm	0.62 in. 16 mm
Grip Force:	379 lbs 1683 N	246 lbs 1094 N
Weight:	1.8 lbs 0.82 Kg	1.8 lbs 0.82 Kg

See Page **1.26**

### Style -RDH Parallel Gripper

#### Size -4M

	RDH-4M	RDH-4M-L
Total Stroke:	0.39 in. 10 mm	0.78 in. 20 mm
Grip Force:	628 lbs 2789 N	408 lbs 1814 N
Weight:	3.1 lbs 1.43 Kg	3.1 lbs 1.43 Kg

See Page **1.28**

### Style -RDH Parallel Gripper

#### Size -5M

	RDH-5M	RDH-5M-L
Total Stroke:	0.51 in. 13 mm	1.01 in. 26 mm
Grip Force:	1037 lbs 4609 N	675 lbs 2999 N
Weight:	6.1 lbs 2.75 Kg	6.1 lbs 2.75 Kg

See Page **1.30**

### Style -RDH Parallel Gripper

#### Size -6M

	RDH-6M	RDH-6M-L
Total Stroke:	0.62 in. 16 mm	1.25 in. 32 mm
Grip Force:	1944 lbs 8640 N	1265 lbs 5623 N
Weight:	12.7 lbs 5.77 Kg	12.7 lbs 5.77 Kg

See Page **1.32**

### Style -RDH Parallel Gripper

#### Size -7M

	RDH-7M	RDH-7M-L
Total Stroke:	0.98 in. 25 mm	1.95 in. 50 mm
Grip Force:	2822 lbs 12542 N	1830 lbs 8135 N
Weight:	24.8 lbs 11.25 Kg	24.8 lbs 11.25 Kg

See Page **1.34**

### Style -RDH Parallel Gripper

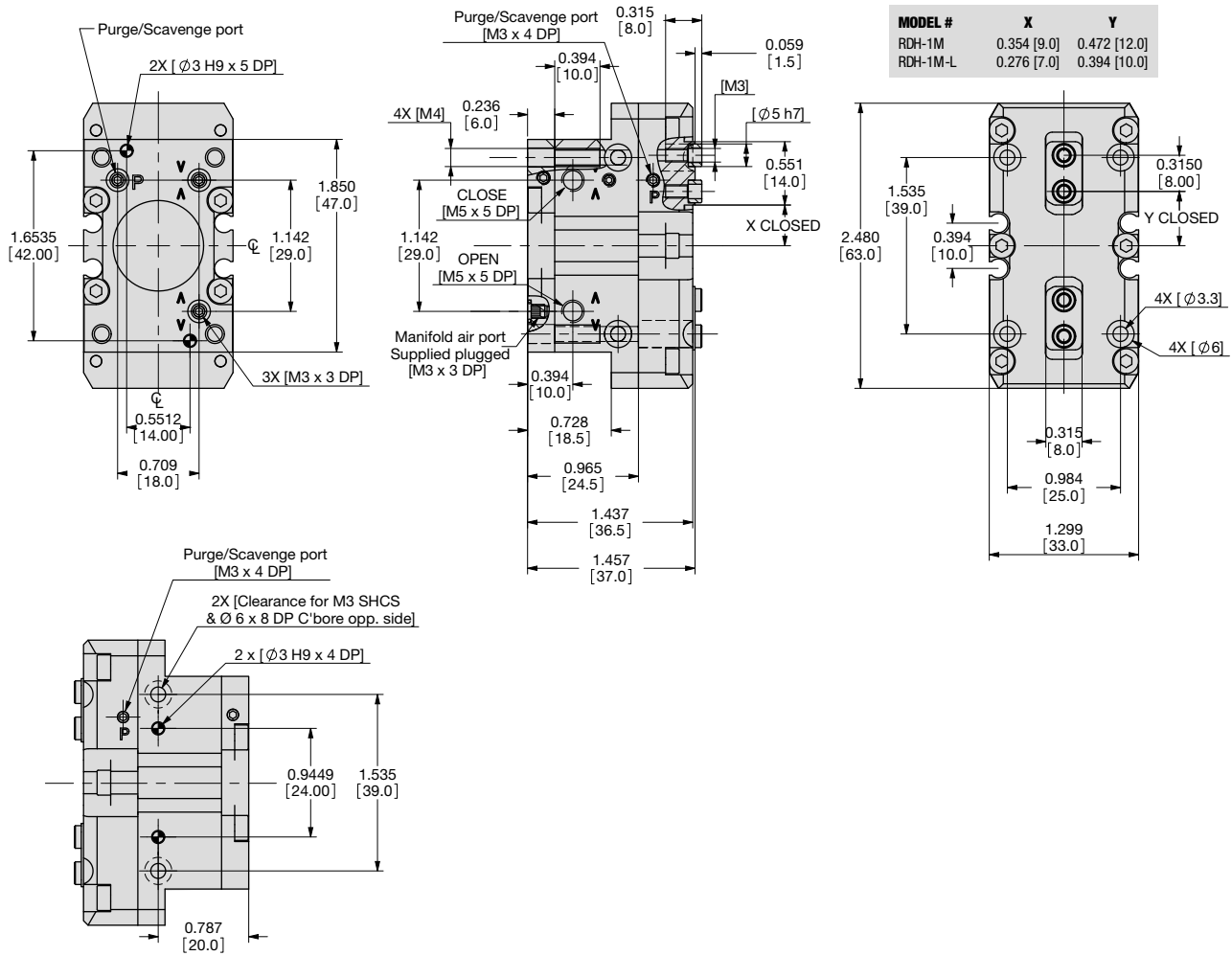
#### Size -8M

	RDH-8M	RDH-8M-L
Total Stroke:	1.37 in. 35 mm	2.73 in. 70 mm
Grip Force:	6300 lbs 28002 N	4076 lbs 18115 N
Weight:	71.1 lbs 32.3 Kg	71.1 lbs 32.3 Kg

See Page **1.36**



# PARALLEL GRIPPER RDH-1M 2-JAW PARALLEL SERIES



MODEL #	X	Y
RDH-1M	0.354 [9.0]	0.472 [12.0]
RDH-1M-L	0.276 [7.0]	0.394 [10.0]

UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

Dimensions are symmetrical about centerline	Third Angle Projection	All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or ±.013mm	Metric Threads Course Pitch	<b>Imperial in.</b> 0.00 = ±.01 0.000 = ±.005 0.0000 = ±.0005	<b>Metric [mm]</b> [0.] = [±.25] [0.0] = [±.13] [0.00] = [±.013]
---	------------------------	--	-----------------------------	--	---

## How to Order: (Order Accessories separately from Basic Model)

BASIC MODEL SIZE METRIC SPRING ASSIST

**RDH-1M-L-V**

EXTENDED STROKE VITON SEALS®

**BASIC MODEL RDH**

**SIZE 1**

**METRIC M**

**EXTENDED STROKE** L 0.16" [4mm] Leave Blank (standard)

L 0.32" [8mm]

**SPRING C** Spring Closed

O Spring Open

— Leave Blank. No Spring Option (standard)

**VITON® SEALS V** High Temperature Viton® Seals

### SENSOR ACCESSORIES\*

PNP Magneto Resistive Sensor Short Barrel w/Qk Disc*	<b>OHSP-017</b>	<b>1 or 4</b>
NPN Magneto Resistive Sensor Short Barrel w/Qk Disc*	<b>OHSN-017</b>	<b>1 or 4</b>
PNP Magneto Resistive Sensor (90° barrel) w/Qk. Disc*	<b>OHSP-011</b>	<b>1 or 4</b>
NPN Magneto Resistive Sensor (90° barrel) w/Qk. Disc*	<b>OHSN-011</b>	<b>1 or 4</b>
Quick Disconnect 2 Meter Cable Length*	<b>CABL-010</b>	<b>1 or 4</b>
Quick Disconnect 5 Meter Cable Length*	<b>CABL-013</b>	<b>1 or 4</b>

### PNEUMATIC ACCESSORIES

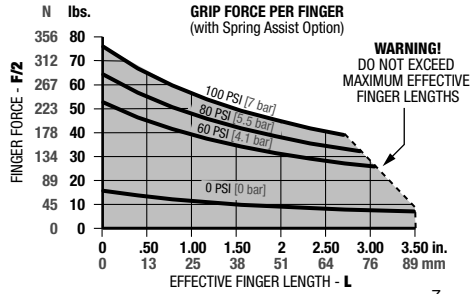
Buna-N Seal Repair Kit	<b>SLKT-416</b>	<b>1</b>
Buna-N Rear Inlet Seal Repair Kit	<b>SLKT-363</b>	<b>1</b>
Viton® Seal Repair Kit	<b>SLKT-416V</b>	<b>1</b>
Viton® Rear Inlet Seal Repair Kit	<b>SLKT-363V</b>	<b>1</b>
M5 Adjustable Flow Control	<b>VLVF-008</b>	<b>1 or 2</b>

\*Sensor and cable sold separately.

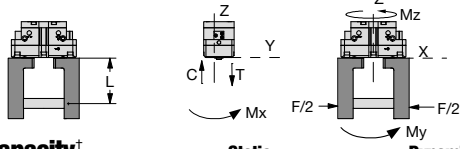
### SAMPLE ORDER: RDH-1M-L-C-V

Ex: RDH-1M Parallel Gripper, Metric, 8mm Extended Stroke, Spring Closed, Viton® Seals

## RDH-1M Loading Information



**WARNING!**  
DO NOT EXCEED  
MAXIMUM EFFECTIVE  
FINGER LENGTHS

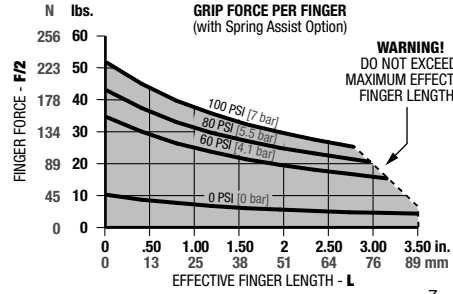


### Loading Capacity†

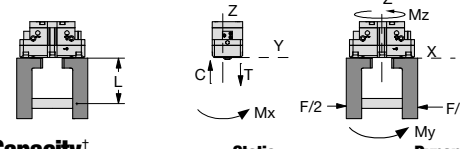
	Static	Dynamic
Maximum Tensile <b>T</b>	134 lbs. [594 N]	17 lbs. [74 N]
Maximum Compressive <b>C</b>	175 lbs. [779 N]	17 lbs. [74 N]
Maximum Moment <b>M<sub>x</sub></b>	159 in.-lbs. [18 Nm]	18 in.-lbs. [2 Nm]
Maximum Moment <b>M<sub>y</sub></b>	204 in.-lbs. [23 Nm]	18 in.-lbs. [2 Nm]
Maximum Moment <b>M<sub>z</sub></b>	124 in.-lbs. [14 Nm]	18 in.-lbs. [2 Nm]

†Capacities are per set of jaws and are not simultaneous

## RDH-1M-L Loading Information



**WARNING!**  
DO NOT EXCEED  
MAXIMUM EFFECTIVE  
FINGER LENGTHS



### Loading Capacity†

	Static	Dynamic
Maximum Tensile <b>T</b>	121 lbs. [540 N]	11 lbs. [48 N]
Maximum Compressive <b>C</b>	159 lbs. [708 N]	11 lbs. [48 N]
Maximum Moment <b>M<sub>x</sub></b>	142 in.-lbs. [16 Nm]	9 in.-lbs. [1 Nm]
Maximum Moment <b>M<sub>y</sub></b>	168 in.-lbs. [19 Nm]	9 in.-lbs. [1 Nm]
Maximum Moment <b>M<sub>z</sub></b>	106 in.-lbs. [12 Nm]	9 in.-lbs. [1 Nm]

†Capacities are per set of jaws and are not simultaneous

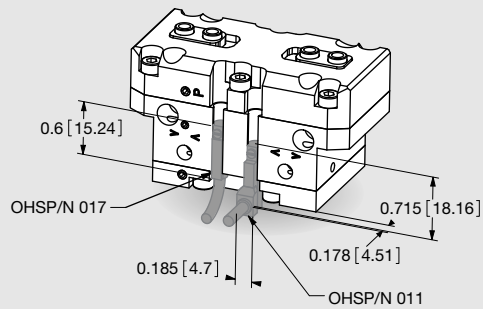
### Specifications

Total Rated Grip Force, <b>F</b> @ 100 psi [7 bar]:		
Without Spring Assist	125 lbs.	555 N
Without Spring Assist <b>-L</b>	81 lbs.	361 N
With Spring Assist	156 lbs.	693 N
With Spring Assist <b>-L</b>	102 lbs.	452 N
Total Stroke:		
Standard	0.16 in.	4 mm
Extended <b>-L</b>	0.32 in.	8 mm
Weight (RDH)	0.4/0.5 lbs.	0.19/0.21 Kg
Pressure Range without Spring	30-100 psi	2-7 Bar
Pressure Range with Spring	50-100 psi	3.5-7 Bar

### Specifications (cont.)

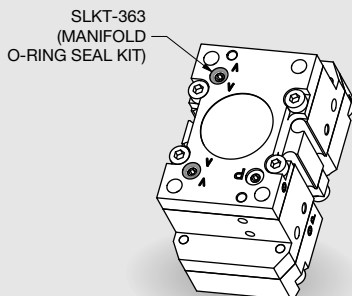
Max. Vacuum for Scavenge Port	8 in. Hg	20 mm Hg
Max. Pressure for Purge Port	30 psi	2.1 Bar
Cylinder Surface	0.9 in <sup>2</sup>	5.8 cm <sup>2</sup>
Displacement	0.31 in <sup>3</sup>	5 cm <sup>3</sup>
Temperature Range	-30°~180° F	-35°~80° C
Actuation (open/close)	0.06 sec./0.06 sec.	
Accuracy	±0.0016 in.	±0.04 mm
Repeatability	±0.001 in.	±0.02 mm
Valve required to actuate single acting		3-way, 2-position
Valve required to actuate double acting		4-way, 2-position

## Accessory Mounting Technical Data



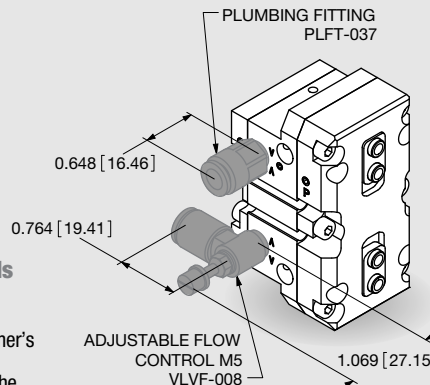
### Magneto Resistive Sensors

- PNP and NPN Magneto Resistive available
- Sensors are slot mounted, no mounting kits required
- Simple adjustment with slotted screw driver
- Built in LED for ease of positioning and troubleshooting
- Available with 2M Quick Disconnect mating cable (order separately)



### Manifold O-Ring Seals

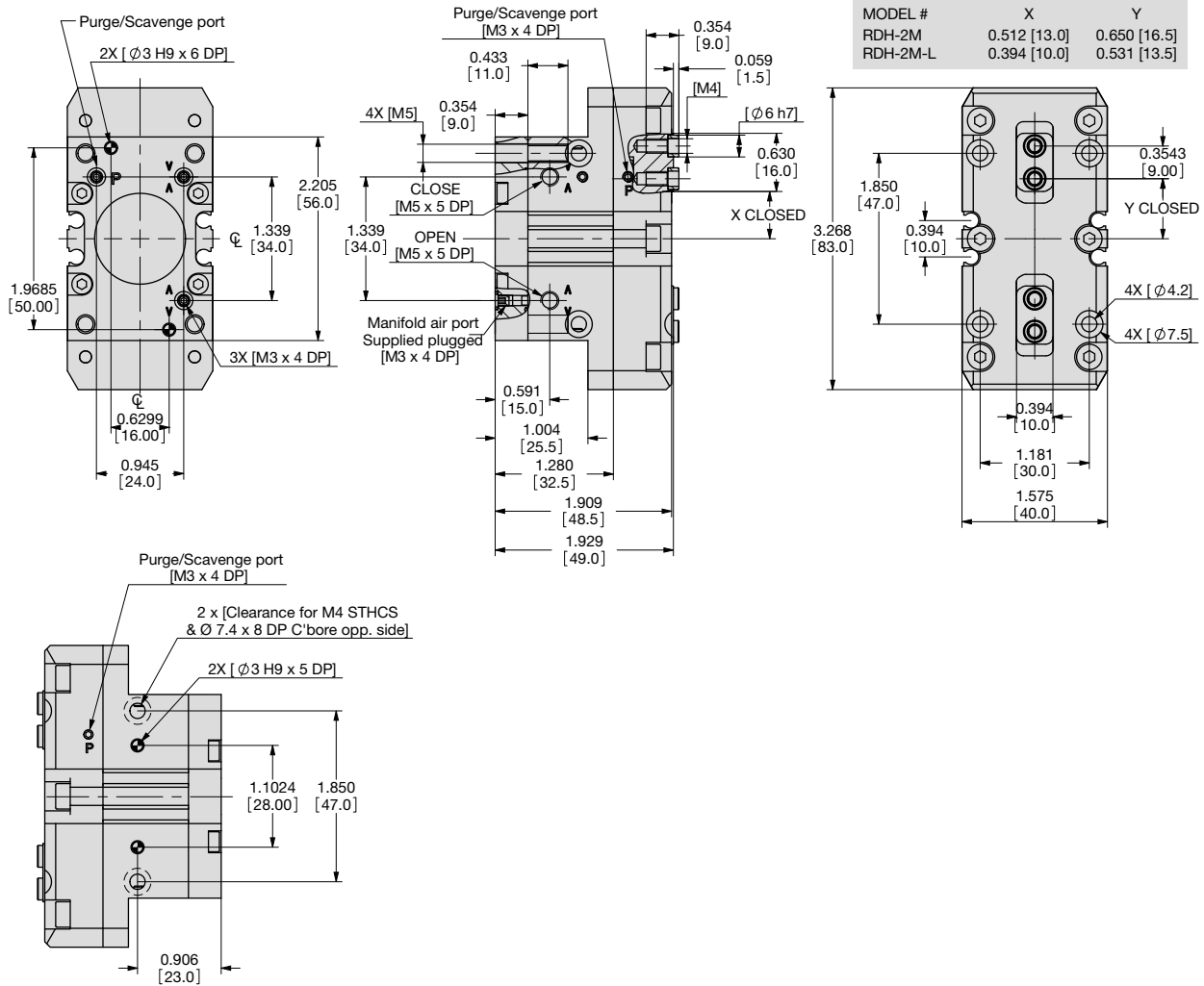
- Used to seal top air ports and purge/scavenge port
- No C'bore holes in customer's mounting plate required (C'bore are machined in the gripper's body)
- Seals in manifold kit are Buna-N (Viton® seal kit SLKT-363V)



### Plumbing Fittings

- Adjustable flow controls:
  - Have thumb screw adjust with locking nut for adjusting actuation time
  - Available for 6mm OD tubing
- Plumbing fittings:
  - For side air port location
  - Top air port are plugged as standard

# PARALLEL GRIPPER RDH-2M 2-JAW PARALLEL SERIES



UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

Symbol	Imperial in.	Metric [mm]
	0.00 = ±.01	[0.] = [±.25]
	0.000 = ±.005	[0.0] = [±.13]
	0.0000 = ±.0005	[0.00] = [±.013]

Dimensions are symmetrical about centerline  
Third Angle Projection  
All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or [±.013mm]  
Metric Threads Course Pitch

## How to Order: (Order Accessories separately from Basic Model)

BASIC MODEL SIZE METRIC SPRING ASSIST

**RDH-2M-L-V**

EXTENDED STROKE VITON SEALS®

**BASIC MODEL RDH**

**SIZE 2**

**METRIC M**

**EXTENDED STROKE** L 0.24" [6mm] Leave Blank (standard)

L 0.47" [12mm]

**SPRING** C Spring Closed  
O Spring Open  
— Leave Blank. No Spring Option (standard)

**VITON® SEALS** V High Temperature Viton® Seals

### SENSOR ACCESSORIES\*

PNP Magneto Resistive Sensor Short Barrel w/ M8 Qk Disc*	<b>OHSP-017</b>	<b>1 or 4</b>
NPN Magneto Resistive Sensor Short Barrel w/ M8 Qk Disc*	<b>OHSN-017</b>	<b>1 or 4</b>
PNP Magneto Resistive Sensor (90° barrel) w/ M8 Qk. Disc*	<b>OHSP-011</b>	<b>1 or 4</b>
NPN Magneto Resistive Sensor (90° barrel) w/ M8 Qk. Disc*	<b>OHSN-011</b>	<b>1 or 4</b>
Quick Disconnect 2 Meter Cable Length*	<b>CABL-010</b>	<b>1 or 4</b>
Quick Disconnect 5 Meter Cable Length*	<b>CABL-013</b>	<b>1 or 4</b>

### PNEUMATIC ACCESSORIES

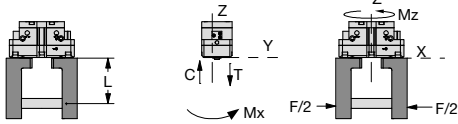
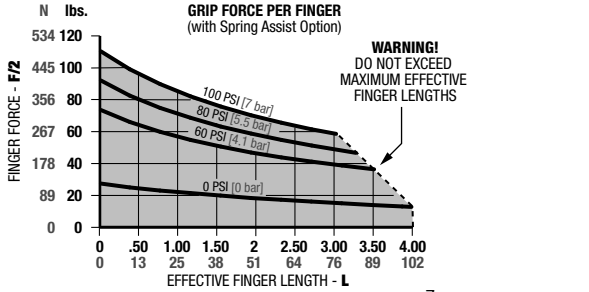
Buna-N Seal Repair Kit	<b>SLKT-417</b>	<b>1</b>
Buna-N Rear Inlet Seal Repair Kit	<b>SLKT-363</b>	<b>1</b>
Viton® Seal Repair Kit	<b>SLKT-417V</b>	<b>1</b>
Viton® Rear Inlet Seal Repair Kit	<b>SLKT-363V</b>	<b>1</b>
M5 Adjustable Flow Control	<b>VLVF-008</b>	<b>1 or 2</b>

\*Sensor and cable sold separately.

### SAMPLE ORDER: RDH-2M-L-C-V

Ex: RDH-2M Parallel Gripper, Metric, 12mm Extended Stroke, Spring Closed, Viton® Seals

## RDH-2M Loading Information

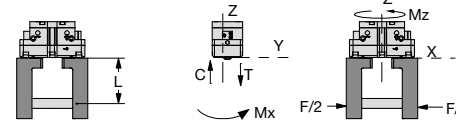
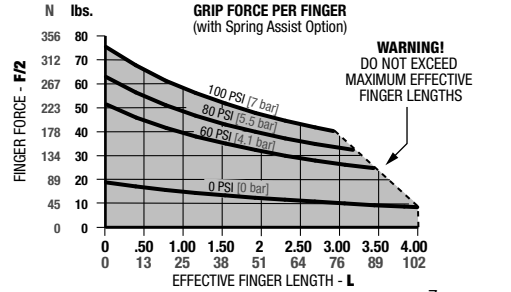


### Loading Capacity†

	Static	Dynamic
Maximum Tensile <b>T</b>	191 lbs. [849 N]	18 lbs. [81 N]
Maximum Compressive <b>C</b>	248 lbs. [1103 N]	18 lbs. [81 N]
Maximum Moment <b>M<sub>x</sub></b>	319 in.-lbs. [36 Nm]	27 in.-lbs. [3 Nm]
Maximum Moment <b>M<sub>y</sub></b>	451 in.-lbs. [51 Nm]	35 in.-lbs. [4 Nm]
Maximum Moment <b>M<sub>z</sub></b>	283 in.-lbs. [32 Nm]	35 in.-lbs. [4 Nm]

†Capacities are per set of jaws and are not simultaneous

## RDH-2M-L Loading Information



### Loading Capacity†

	Static	Dynamic
Maximum Tensile <b>T</b>	172 lbs. [764 N]	12 lbs. [53 N]
Maximum Compressive <b>C</b>	223 lbs. [993 N]	12 lbs. [53 N]
Maximum Moment <b>M<sub>x</sub></b>	283 in.-lbs. [32 Nm]	18 in.-lbs. [2 Nm]
Maximum Moment <b>M<sub>y</sub></b>	363 in.-lbs. [41 Nm]	18 in.-lbs. [2 Nm]
Maximum Moment <b>M<sub>z</sub></b>	230 in.-lbs. [26 Nm]	18 in.-lbs. [2 Nm]

†Capacities are per set of jaws and are not simultaneous

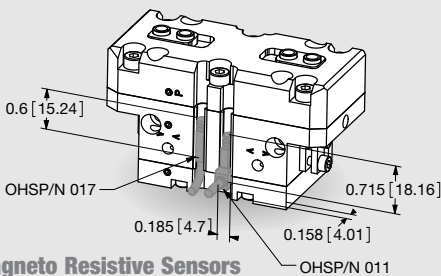
### Specifications

Total Rated Grip Force, <b>F</b> @ 100 psi [7 bar]:		
Without Spring Assist	170 lbs.	754 N
Without Spring Assist <b>-L</b>	111 lbs.	494 N
With Spring Assist	226 lbs.	1006 N
With Spring Assist <b>-L</b>	149 lbs.	661 N
Total Stroke:		
Standard	0.24 in.	6 mm
Extended <b>-L</b>	0.47 in.	12 mm
Weight (RDH)	0.86/0.93 lbs.	0.39/0.42 Kg
Pressure Range without Spring	30-100 psi	2-7 Bar
Pressure Range with Spring	65-100 psi	4.5-7 Bar

### Specifications (cont.)

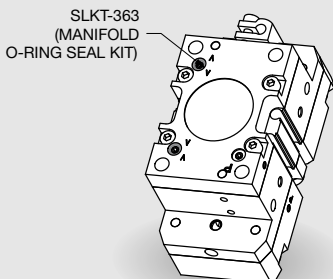
Max. Vacuum for Scavenge Port	8 in. Hg	20 mm Hg
Max. Pressure for Purge Port	30 psi	2.1 Bar
Cylinder Surface	1.24 in <sup>2</sup>	8 cm <sup>2</sup>
Displacement	0.63 in <sup>3</sup>	10.3 cm <sup>3</sup>
Temperature Range	-30°~180° F	-35°~80° C
Actuation (open/close)	0.07 sec./0.07 sec.	
Accuracy	±0.0016 in.	±0.04 mm
Repeatability	±0.001 in.	±0.02 mm
Valve required to actuate single acting		3-way, 2-position
Valve required to actuate double acting		4-way, 2-position

## Accessory Mounting Technical Data



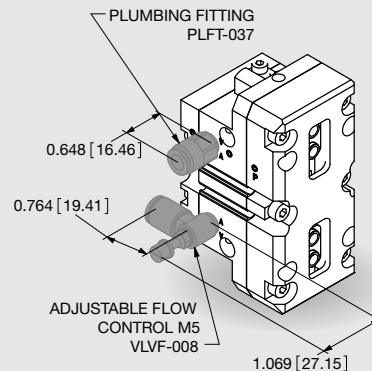
### Magneto Resistive Sensors

- PNP and NPN Magneto Resistive available
- Sensors are slot mounted, no mounting kits required
- Simple adjustment with slotted screw driver
- Built in LED for ease of positioning and troubleshooting
- Available with 2M Quick Disconnect mating cable (order separately)



### Manifold O-Ring Seals

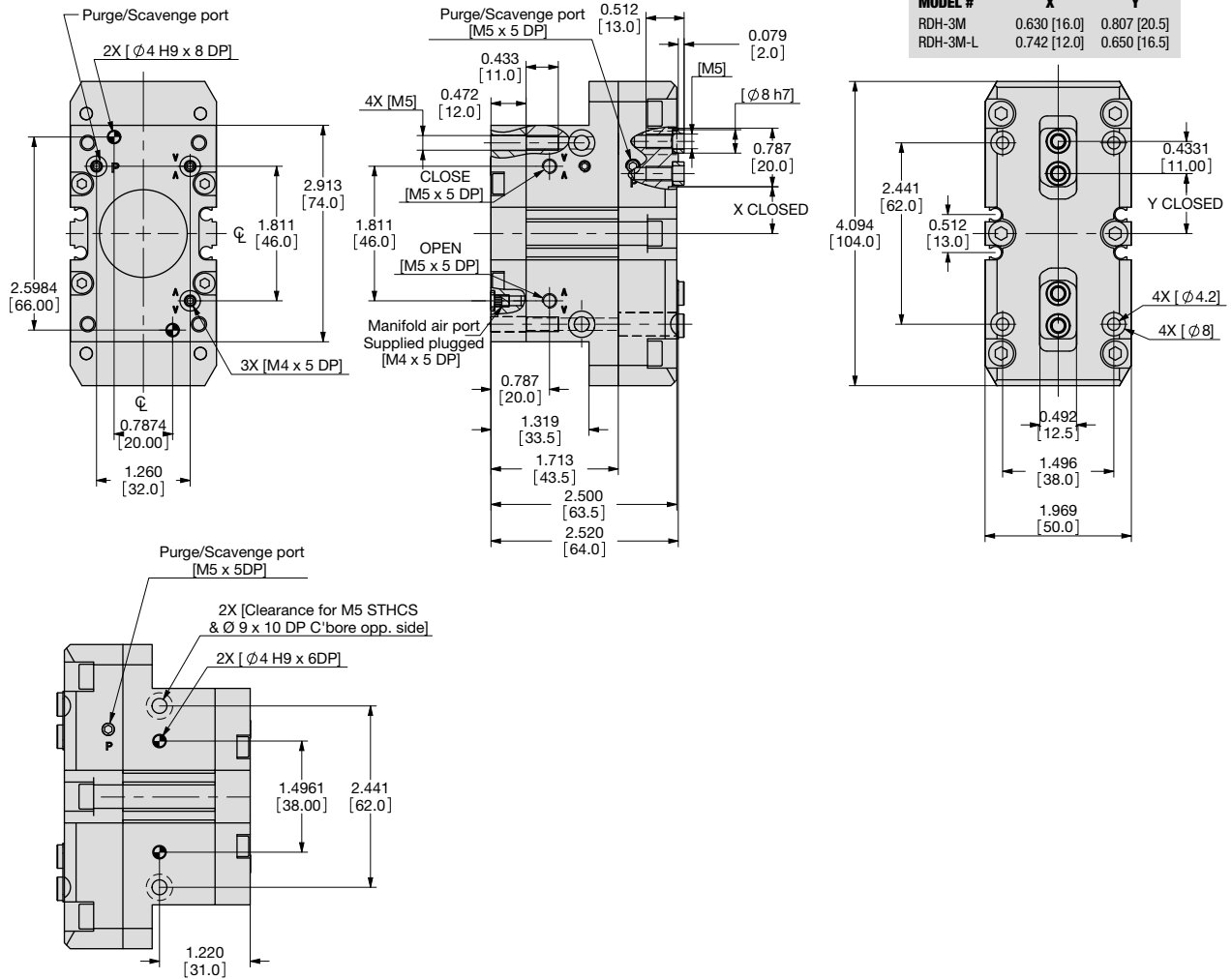
- Used to seal top air ports and purge/scavenge port
- No C'bore holes in customer's mounting plate required (C'bore are machined in the gripper's body)
- Seals in manifold kit are Buna-N (Viton® seal kit SLKT-363V)



### Plumbing Fittings

- Adjustable flow controls:
  - Have thumb screw adjust with locking nut for adjusting actuation time
  - Available for 6mm OD tubing
- Plumbing fittings:
  - For side air port location
  - Top air port are plugged as standard

# PARALLEL GRIPPER RDH-3M 2-JAW PARALLEL SERIES



UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

Symbol	Imperial in.	Metric [mm]
	0.00 = ±.01	[0.] = [±.25]
	0.000 = ±.005	[0.0] = [±.13]
	0.0000 = ±.0005	[0.00] = [±.013]

Dimensions are symmetrical about centerline  
Third Angle Projection  
All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or ±.013mm  
Metric Threads Course Pitch

## How to Order: (Order Accessories separately from Basic Model)

BASIC MODEL SIZE METRIC SPRING ASSIST

**RDH-3M-L-V**

EXTENDED STROKE VITON SEALS®

BASIC MODEL **RDH**

SIZE **3**

METRIC **M**

EXTENDED STROKE **L** 0.31" [8mm] Leave Blank (standard)

**L** 0.63" [16mm]

SPRING **C** Spring Closed  
**O** Spring Open  
Leave Blank. No Spring Option (standard)

VITON® SEALS **V** High Temperature Viton® Seals

### SENSOR ACCESSORIES\*

PNP Magneto Resistive Sensor Short Barrel w/ M8 Qk Disc*	<b>OHSP-017</b>	<b>1 or 4</b>
NPN Magneto Resistive Sensor Short Barrel w/ M8 Qk Disc*	<b>OHSN-017</b>	<b>1 or 4</b>
PNP Magneto Resistive Sensor (90° barrel) w/ M8 Qk. Disc*	<b>OHSP-011</b>	<b>1 or 4</b>
NPN Magneto Resistive Sensor (90° barrel) w/ M8 Qk. Disc*	<b>OHSN-011</b>	<b>1 or 4</b>
Quick Disconnect 2 Meter Cable Length*	<b>CABL-010</b>	<b>1 or 4</b>
Quick Disconnect 5 Meter Cable Length*	<b>CABL-013</b>	<b>1 or 4</b>

### PNEUMATIC ACCESSORIES

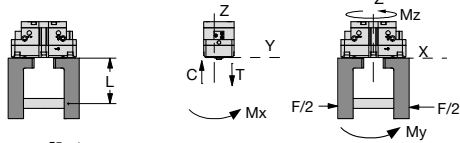
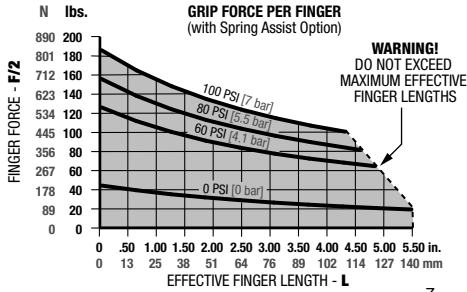
Buna-N Seal Repair Kit	<b>SLKT-418</b>	<b>1</b>
Buna-N Rear Inlet Seal Repair Kit	<b>SLKT-364</b>	<b>1</b>
Viton® Seal Repair Kit	<b>SLKT-418V</b>	<b>1</b>
Viton® Rear Inlet Seal Repair Kit	<b>SLKT-364V</b>	<b>1</b>
M5 Adjustable Flow Control	<b>VLVF-008</b>	<b>1 or 2</b>

\*Sensor and cable sold separately.

### SAMPLE ORDER: RDH-3M-L-C-V

Ex: RDH-3M Parallel Gripper, Metric, 16mm Extended Stroke, Spring Closed, Viton® Seals

## RDH-3M Loading Information

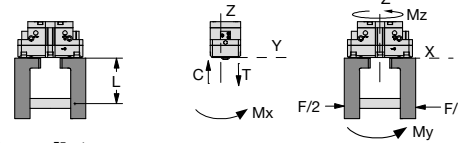
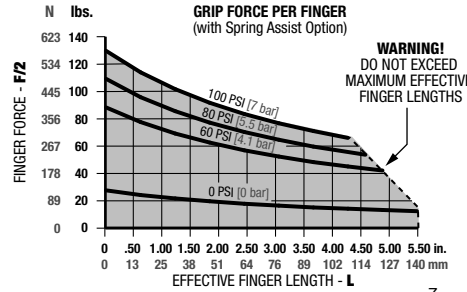


### Loading Capacity†

	Static	Dynamic
Maximum Tensile <b>T</b>	289 lbs. [1284 N]	44 lbs. [196 N]
Maximum Compressive <b>C</b>	374 lbs. [1665 N]	44 lbs. [196 N]
Maximum Moment <b>M<sub>x</sub></b>	513 in.-lbs. [58 Nm]	62 in.-lbs. [7 Nm]
Maximum Moment <b>M<sub>y</sub></b>	735 in.-lbs. [83 Nm]	97 in.-lbs. [11 Nm]
Maximum Moment <b>M<sub>z</sub></b>	478 in.-lbs. [54 Nm]	97 in.-lbs. [11 Nm]

†Capacities are per set of jaws and are not simultaneous

## RDH-3M-L Loading Information



### Loading Capacity†

	Static	Dynamic
Maximum Tensile <b>T</b>	258 lbs. [1146 N]	29 lbs. [127 N]
Maximum Compressive <b>C</b>	334 lbs. [1485 N]	29 lbs. [127 N]
Maximum Moment <b>M<sub>x</sub></b>	460 in.-lbs. [52 Nm]	44 in.-lbs. [5 Nm]
Maximum Moment <b>M<sub>y</sub></b>	584 in.-lbs. [66 Nm]	53 in.-lbs. [6 Nm]
Maximum Moment <b>M<sub>z</sub></b>	381 in.-lbs. [43 Nm]	53 in.-lbs. [6 Nm]

†Capacities are per set of jaws and are not simultaneous

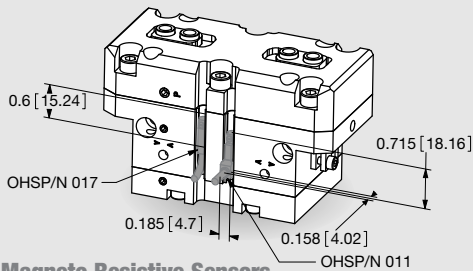
### Specifications

Total Rated Grip Force, <b>F</b> @ 100 psi [7 bar]:		
Without Spring Assist	296 lbs.	1317 N
Without Spring Assist <b>-L</b>	192 lbs.	854 N
With Spring Assist	379 lbs.	1683 N
With Spring Assist <b>-L</b>	246 lbs.	1094 N
Total Stroke:		
Standard	0.31 in.	8 mm
Extended <b>-L</b>	0.63 in.	16 mm
Weight (RDH)	1.81/1.94 lbs.	0.82/0.88 Kg
Pressure Range without Spring	30-100 psi	2-7 Bar
Pressure Range with Spring	50-100 psi	3.5-7 Bar

### Specifications (cont.)

Max. Vacuum for Scavenge Port	8 in. Hg	20 mm Hg
Max. Pressure for Purge Port	30 psi	2.1 Bar
Cylinder Surface	2.14 in. <sup>2</sup>	13.8 cm <sup>2</sup>
Displacement	1.43 in. <sup>3</sup>	23.4 cm <sup>3</sup>
Temperature Range	-30°-180° F	-35°-80° C
Actuation (open/close)	0.08 sec./0.08 sec.	
Accuracy	±0.0016 in.	±0.04 mm
Repeatability	±0.001 in.	±0.02 mm
Valve required to actuate single acting		3-way, 2-position
Valve required to actuate double acting		4-way, 2-position

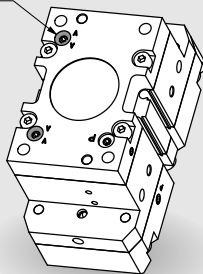
## Accessory Mounting Technical Data



### Magneto Resistive Sensors

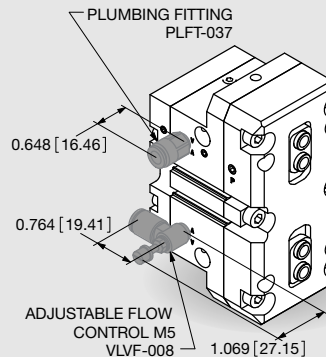
- PNP and NPN Magneto Resistive available
- Sensors are slot mounted, no mounting kits required
- Simple adjustment with slotted screw driver
- Built in LED for ease of positioning and troubleshooting
- Available with 2M Quick Disconnect mating cable (order separately)

SLKT-364  
(MANIFOLD  
O-RING SEAL KIT)



### Manifold O-Ring Seals

- Used to seal top air ports and purge/scavenge port
- No C'bore holes in customer's mounting plate required (C'bore are machined in the gripper's body)
- Seals in manifold kit are Buna-N (Viton® seal kit SLKT-364V)

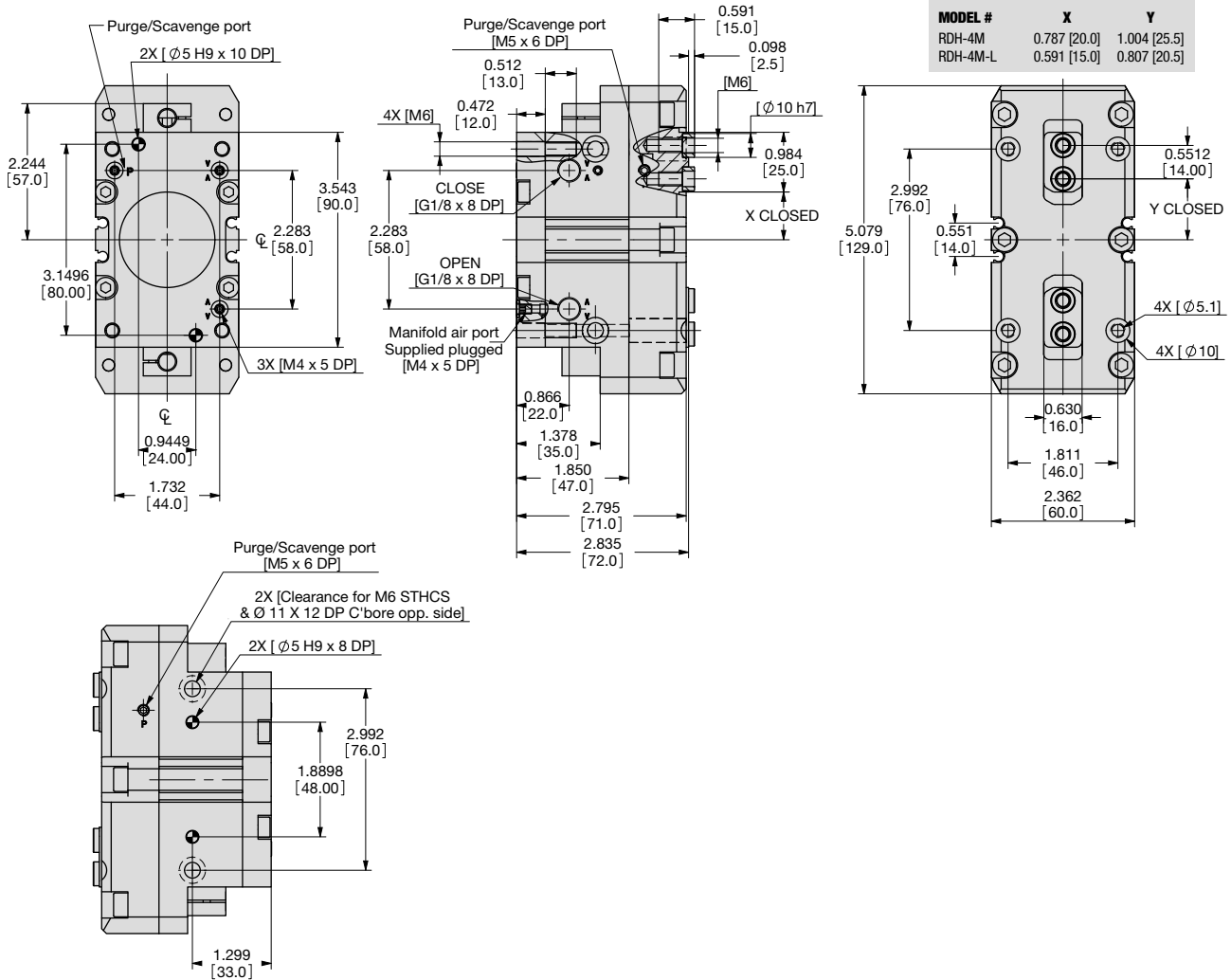


### Plumbing Fittings

- Adjustable flow controls:
  - Have thumb screw adjust with locking nut for adjusting actuation time
  - Available for 6mm OD tubing
- Plumbing fittings:
  - For side air port location
  - Top air port are plugged as standard



# PARALLEL GRIPPER RDH-4M 2-JAW PARALLEL SERIES



UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

				<b>Imperial in.</b>	<b>Metric [mm]</b>
Dimensions are symmetrical about centerline	Third Angle Projection	All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or ±.013mm	Metric Threads Course Pitch	0.00 = ±.01 0.000 = ±.005 0.0000 = ±.0005	[0.] = [±.25] [0.0] = [±.13] [0.00] = [±.013]

## How to Order: (Order Accessories separately from Basic Model)

BASIC MODEL SIZE METRIC SPRING ASSIST

**RDH-4M-L-V**

EXTENDED STROKE VITON SEALS

**BASIC MODEL RDH**

**SIZE 4**

**METRIC M**

**EXTENDED STROKE L** 0.39" [10mm] Leave Blank (standard)

**L** 0.79" [20mm]

**SPRING C** Spring Closed  
**O** Spring Open  
— Leave Blank. No Spring Option (standard)

**VITON® SEALS V** High Temperature Viton® Seals

### SENSOR ACCESSORIES\*

8mm PNP Inductive Sensor w/ M8 Quick Disconnect*	<b>OISP-011</b>	<b>1 or 2</b>
8mm NPN Inductive Sensor w/ M8 Quick Disconnect*	<b>OISN-011</b>	<b>1 or 2</b>
PNP Magneto Resistive Sensor Short Barrel w/ M8 Qk Disc*	<b>OHSP-017</b>	<b>1 or 4</b>
NPN Magneto Resistive Sensor Short Barrel w/ M8 Qk Disc*	<b>OHSN-017</b>	<b>1 or 4</b>
PNP Magneto Resistive Sensor (90° barrel) w/ M8 Qk. Disc*	<b>OHSP-011</b>	<b>1 or 4</b>
NPN Magneto Resistive Sensor (90° barrel) w/ M8 Qk. Disc*	<b>OHSN-011</b>	<b>1 or 4</b>
Quick Disconnect 2 Meter Cable Length*	<b>CABL-010</b>	<b>1 or 4</b>
Quick Disconnect 5 Meter Cable Length*	<b>CABL-013</b>	<b>1 or 4</b>

### PNEUMATIC ACCESSORIES

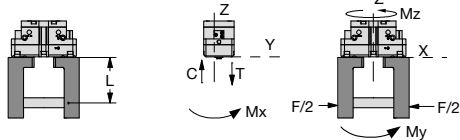
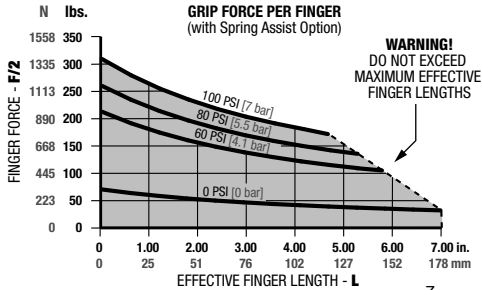
Buna-N Seal Repair Kit	<b>SLKT-419</b>	<b>1</b>
Buna-N Rear Inlet Seal Repair Kit	<b>SLKT-364</b>	<b>1</b>
Viton® Seal Repair Kit	<b>SLKT-419V</b>	<b>1</b>
Viton® Rear Inlet Seal Repair Kit	<b>SLKT-364V</b>	<b>1</b>
G 1/8" Adjustable Flow Control	<b>VLVF-005</b>	<b>1 or 2</b>

\*Sensor and cable sold separately.

### SAMPLE ORDER: RDH-4M-L-C-V

Ex: RDH-4M Parallel Gripper, Metric, 20mm Extended Stroke, Spring Closed, Viton® Seals

## RDH-4M Loading Information

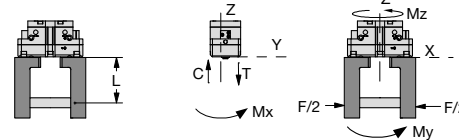
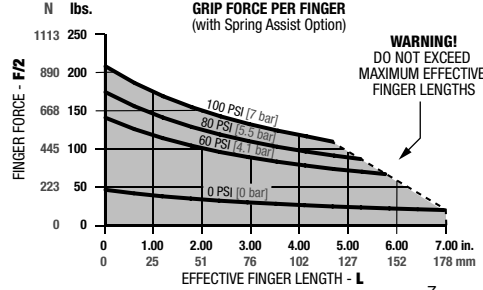


### Loading Capacity†

	Static	Dynamic
Maximum Tensile <b>T</b>	352 lbs. [1564 N]	58 lbs. [259 N]
Maximum Compressive <b>C</b>	465 lbs. [2070 N]	58 lbs. [259 N]
Maximum Moment <b>M<sub>x</sub></b>	673 in.-lbs. [76 Nm]	89 in.-lbs. [10 Nm]
Maximum Moment <b>M<sub>y</sub></b>	938 in.-lbs. [106 Nm]	124 in.-lbs. [14 Nm]
Maximum Moment <b>M<sub>z</sub></b>	620 in.-lbs. [70 Nm]	124 in.-lbs. [14 Nm]

†Capacities are per set of jaws and are not simultaneous

## RDH-4M-L Loading Information



### Loading Capacity†

	Static	Dynamic
Maximum Tensile <b>T</b>	313 lbs. [1394 N]	38 lbs. [168 N]
Maximum Compressive <b>C</b>	415 lbs. [1845 N]	38 lbs. [168 N]
Maximum Moment <b>M<sub>x</sub></b>	602 in.-lbs. [68 Nm]	53 in.-lbs. [6 Nm]
Maximum Moment <b>M<sub>y</sub></b>	743 in.-lbs. [84 Nm]	71 in.-lbs. [8 Nm]
Maximum Moment <b>M<sub>z</sub></b>	496 in.-lbs. [56 Nm]	71 in.-lbs. [8 Nm]

†Capacities are per set of jaws and are not simultaneous

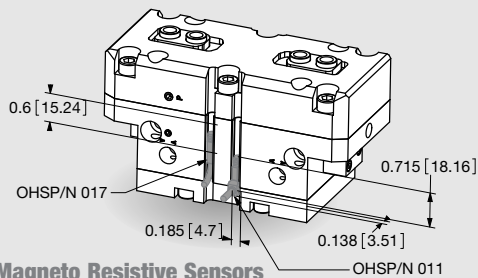
### Specifications

Total Rated Grip Force, <b>F</b> @ 100 psi [7 bar]:		
Without Spring Assist	490 lbs.	2177 N
Without Spring Assist <b>-L</b>	318 lbs.	1414 N
With Spring Assist	628 lbs.	2789 N
With Spring Assist <b>-L</b>	408 lbs.	1814 N
Total Stroke:		
Standard	0.39 in.	10 mm
Extended <b>-L</b>	0.79 in.	20 mm
Weight (RDH)	3.15/3.33 lbs.	1.43/1.51 Kg
Pressure Range without Spring	30-100 psi	2-7 Bar
Pressure Range with Spring	50-100 psi	3.5-7 Bar

### Specifications (cont.)

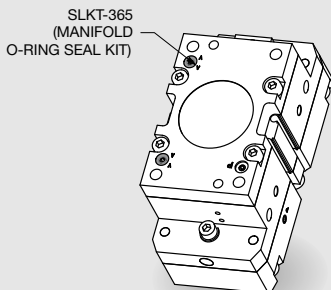
Max. Vacuum for Scavenge Port	8 in. Hg	20 mm Hg
Max. Pressure for Purge Port	30 psi	2.1 Bar
Cylinder Surface	3.52 in <sup>2</sup> .	22.7 cm <sup>2</sup>
Displacement	2.90 in <sup>3</sup> .	47.5 cm <sup>3</sup>
Temperature Range	-30°~180° F	-35°~80° C
Actuation (open/close)	0.08 sec./0.08 sec.	
Accuracy	±0.0024 in.	±0.06 mm
Repeatability	±0.0012 in.	±0.03 mm
Valve required to actuate single acting		3-way, 2-position
Valve required to actuate double acting		4-way, 2-position

## Accessory Mounting Technical Data



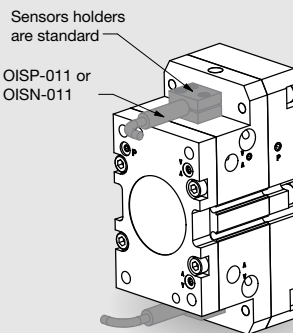
### Magneto Resistive Sensors

- PNP and NPN Magneto Resistive available
- Sensors are slot mounted, no mounting kits required
- Simple adjustment with slotted screw driver
- Built in LED for ease of positioning and troubleshooting
- Available with 2M Quick Disconnect mating cable (order separately)



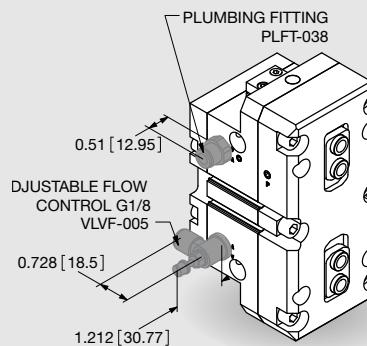
### Manifold O-Ring Seals

- Used to seal top air ports and purge/scavenge port
- No C'bore holes in customer's mounting plate required (C'bore are machined in the gripper's body)
- Seals in manifold kit are Buna-N (Viton® seal kit SLKT-364V)



### Inductive Sensors

- PNP and NPN Magneto Resistive available
- Sensors holders and targets are standard mounted
- Simple adjustment of the target with screw driver
- Available with 2M Quick Disconnect mating cable (order separately)

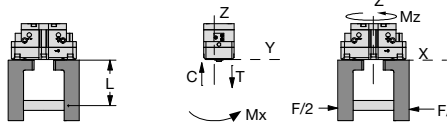
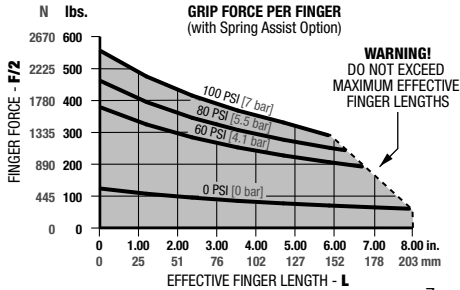


### Plumbing Fittings

- Adjustable flow controls:
  - Have thumb screw adjust with locking nut for adjusting actuation time
  - Available for 6mm OD tubing
- Plumbing fittings:
  - For side air port location
  - Top air port are plugged as standard



## RDH-5M Loading Information

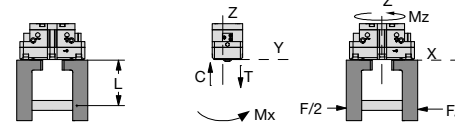
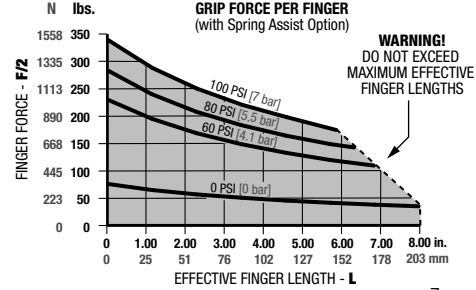


### Loading Capacity†

	Static	Dynamic
Maximum Tensile <b>T</b>	493 lbs. [2192 N]	96 lbs. [428 N]
Maximum Compressive <b>C</b>	657 lbs. [2923 N]	96 lbs. [428 N]
Maximum Moment <b>M<sub>x</sub></b>	929 in.-lbs. [105 Nm]	142 in.-lbs. [16 Nm]
Maximum Moment <b>M<sub>y</sub></b>	1310 in.-lbs. [148 Nm]	195 in.-lbs. [22 Nm]
Maximum Moment <b>M<sub>z</sub></b>	859 in.-lbs. [97 Nm]	195 in.-lbs. [22 Nm]

†Capacities are per set of jaws and are not simultaneous

## RDH-5M-L Loading Information



### Loading Capacity†

	Static	Dynamic
Maximum Tensile <b>T</b>	442 lbs. [1966 N]	62 lbs. [278 N]
Maximum Compressive <b>C</b>	589 lbs. [2621 N]	62 lbs. [278 N]
Maximum Moment <b>M<sub>x</sub></b>	832 in.-lbs. [94 Nm]	89 in.-lbs. [10 Nm]
Maximum Moment <b>M<sub>y</sub></b>	1053 in.-lbs. [119 Nm]	115 in.-lbs. [13 Nm]
Maximum Moment <b>M<sub>z</sub></b>	690 in.-lbs. [78 Nm]	115 in.-lbs. [13 Nm]

†Capacities are per set of jaws and are not simultaneous

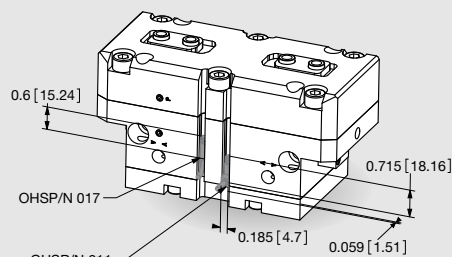
## Specifications

Total Rated Grip Force, <b>F</b> @ 100 psi [7 bar]:		
Without Spring Assist	808 lbs.	3593 N
Without Spring Assist <b>-L</b>	525 lbs.	2333 N
With Spring Assist	1037 lbs.	4609 N
With Spring Assist <b>-L</b>	675 lbs.	2999 N
Total Stroke:		
Standard	0.51 in.	13 mm
Extended <b>-L</b>	1.02 in.	26 mm
Weight (RDH)	6.06/6.57 lbs.	2.75/2.98 Kg
Pressure Range without Spring	30-100 psi	2-7 Bar
Pressure Range with Spring	60-100 psi	4-7 Bar

## Specifications (cont.)

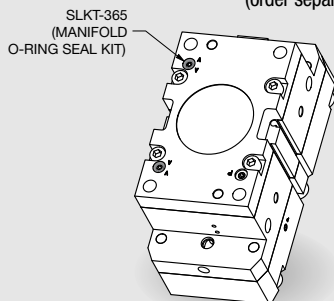
Max. Vacuum for Scavenge Port	8 in. Hg	20 mm Hg
Max. Pressure for Purge Port	30 psi	2.1 Bar
Cylinder Surface	5.81 in <sup>2</sup> .	37.5 cm <sup>2</sup>
Displacement	6.22 in <sup>3</sup> .	102 cm <sup>3</sup>
Temperature Range	-30°~180° F	-35°~80° C
Actuation (open/close)	0.14 sec./0.14 sec.	
Accuracy	±0.0024 in.	±0.06 mm
Repeatability	±0.0012 in.	±0.03 mm
Valve required to actuate single acting		3-way, 2-position
Valve required to actuate double acting		4-way, 2-position

## Accessory Mounting Technical Data



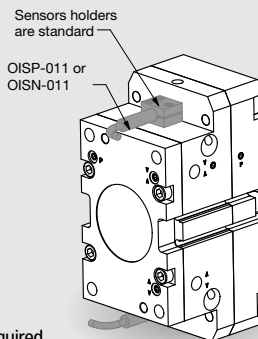
### Magneto Resistive Sensors

- PNP and NPN Magneto Resistive available
- Sensors are slot mounted, no mounting kits required
- Simple adjustment with slotted screw driver
- Built in LED for ease of positioning and troubleshooting
- Available with 2M Quick Disconnect mating cable (order separately)



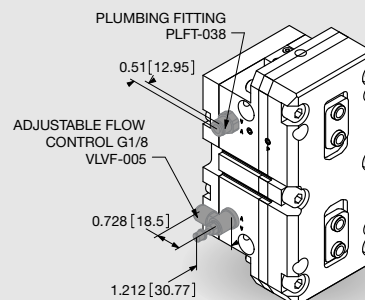
### Manifold O-Ring Seals

- Used to seal top air ports and purge/scavenge port
- No C'bore holes in customer's mounting plate required (C'bore are machined in the gripper's body)
- Seals in manifold kit are Buna-N (Viton® seal kit SLKT-365V)



### Inductive Sensors

- PNP and NPN Magneto Resistive available
- Sensors holders and targets are standard mounted
- Simple adjustment of the target with screw driver
- Available with 2M Quick Disconnect mating cable (order separately)

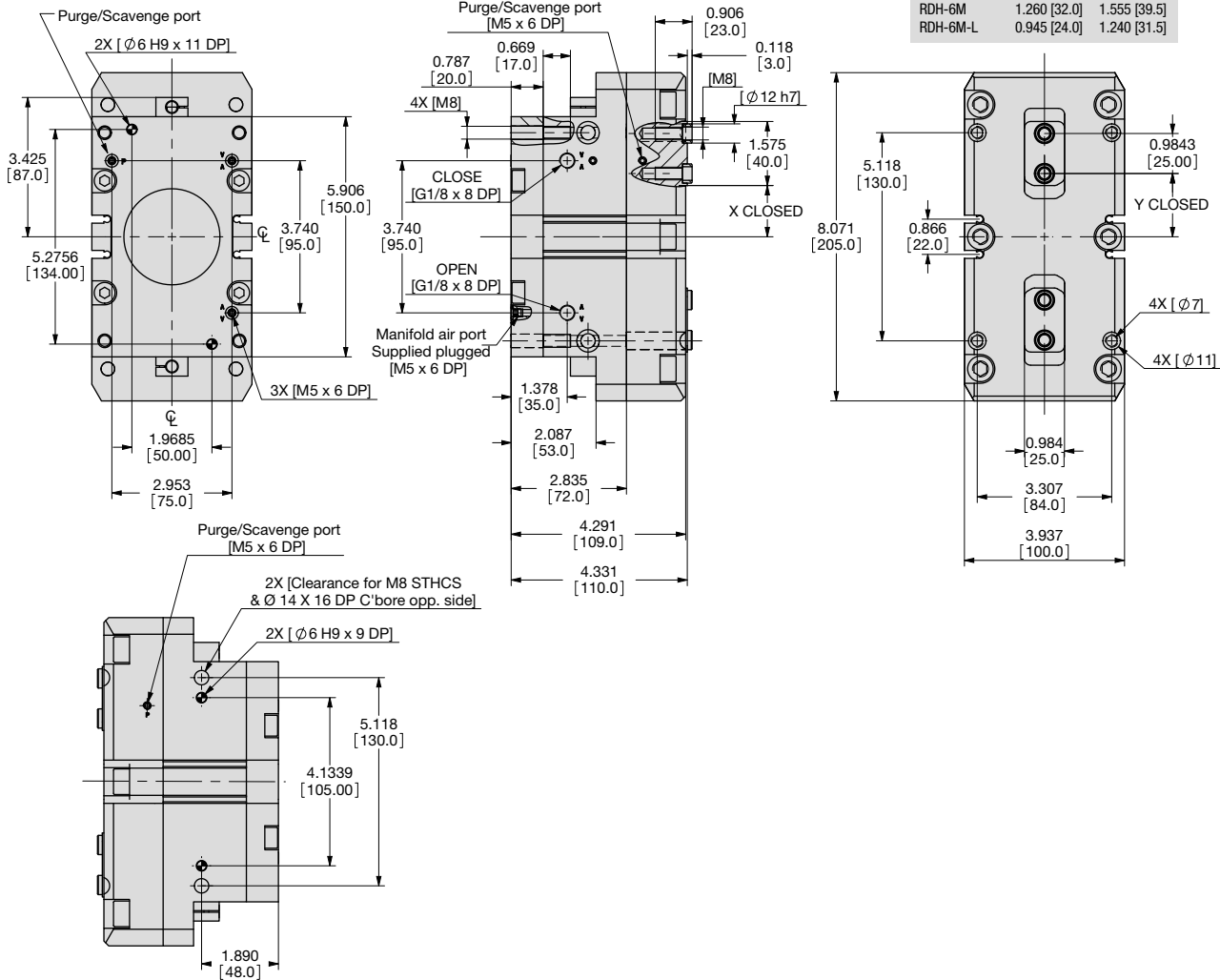


### Plumbing Fittings

- Adjustable flow controls:
  - Have thumb screw adjust with locking nut for adjusting actuation time
  - Available for 6mm OD tubing
- Plumbing fittings:
  - For side air port location
  - Top air port are plugged as standard

# PARALLEL GRIPPER RDH-6M 2-JAW PARALLEL SERIES

1.32



UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

				<b>Imperial in.</b>	<b>Metric [mm]</b>
Dimensions are symmetrical about centerline	Third Angle Projection	All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or ±.013mm	Metric Threads Course Pitch	0.00 = ±.01 0.000 = ±.005 0.0000 = ±.0005	[0.] = [±.25] [0.0] = [±.13] [0.00] = [±.013]

## How to Order: (Order Accessories separately from Basic Model)

BASIC MODEL SIZE METRIC SPRING ASSIST

**RDH-6M-L-V**

EXTENDED STROKE VITON SEALS®

**BASIC MODEL RDH**

**SIZE 6**

**METRIC M**

**EXTENDED STROKE** L 0.63" [16mm] Leave Blank (standard)

L 1.26" [32mm]

**SPRING** C Spring Closed  
O Spring Open  
— Leave Blank. No Spring Option (standard)

**VITON® SEALS V** High Temperature Viton® Seals

### SENSOR ACCESSORIES\*

8mm PNP Inductive Sensor w/ M8 Quick Disconnect*	<b>OISP-011</b>	<b>1 or 2</b>
8mm NPN Inductive Sensor w/ M8 Quick Disconnect*	<b>OISN-011</b>	<b>1 or 2</b>
PNP Magneto Resistive Sensor Short Barrel w/ M8 Qk Disc*	<b>OHSP-017</b>	<b>1 or 4</b>
NPN Magneto Resistive Sensor Short Barrel w/ M8 Qk Disc*	<b>OHSN-017</b>	<b>1 or 4</b>
PNP Magneto Resistive Sensor (90° barrel) w/ M8 Qk. Disc*	<b>OHSP-011</b>	<b>1 or 4</b>
NPN Magneto Resistive Sensor (90° barrel) w/ M8 Qk. Disc*	<b>OHSN-011</b>	<b>1 or 4</b>
Quick Disconnect 2 Meter Cable Length*	<b>CABL-010</b>	<b>1 or 4</b>
Quick Disconnect 5 Meter Cable Length*	<b>CABL-013</b>	<b>1 or 4</b>

### PNEUMATIC ACCESSORIES

Buna-N Seal Repair Kit	<b>SLKT-421</b>	<b>1</b>
Buna-N Rear Inlet Seal Repair Kit	<b>SLKT-365</b>	<b>1</b>
Viton® Seal Repair Kit	<b>SLKT-421V</b>	<b>1</b>
Viton® Rear Inlet Seal Repair Kit	<b>SLKT-365V</b>	<b>1</b>
G 1/8" Adjustable Flow Control	<b>VLVF-005</b>	<b>1 or 2</b>

\*Sensor and cable sold separately.

### SAMPLE ORDER: RDH-6M-L-C-V

Ex: RDH-6M Parallel Gripper, Metric, 32mm Extended Stroke, Spring Closed, Viton® Seals

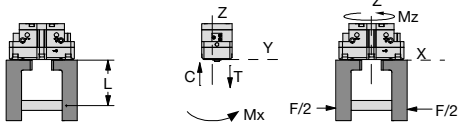
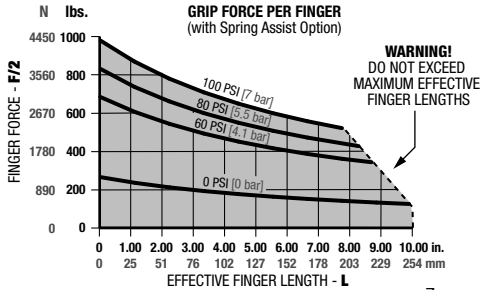


# PARALLEL GRIPPER RDH-6M 2-JAW PARALLEL SERIES

RDH SERIES

1.33

## RDH-6M Loading Information

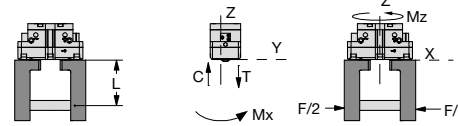
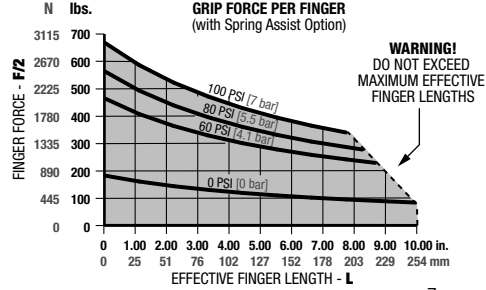


### Loading Capacity†

	Static	Dynamic
Maximum Tensile <b>T</b>	779 lbs. [3463 N]	186 lbs. [827 N]
Maximum Compressive <b>C</b>	1045 lbs. [4649 N]	186 lbs. [827 N]
Maximum Moment <b>M<sub>x</sub></b>	1204 in.-lbs. [136 Nm]	248 in.-lbs. [28 Nm]
Maximum Moment <b>M<sub>y</sub></b>	1744 in.-lbs. [197 Nm]	363 in.-lbs. [41 Nm]
Maximum Moment <b>M<sub>z</sub></b>	1151 in.-lbs. [130 Nm]	363 in.-lbs. [41 Nm]

†Capacities are per set of jaws and are not simultaneous

## RDH-6M-L Loading Information



### Loading Capacity†

	Static	Dynamic
Maximum Tensile <b>T</b>	694 lbs. [3089 N]	121 lbs. [537 N]
Maximum Compressive <b>C</b>	932 lbs. [4146 N]	121 lbs. [537 N]
Maximum Moment <b>M<sub>x</sub></b>	1071 in.-lbs. [121 Nm]	159 in.-lbs. [18 Nm]
Maximum Moment <b>M<sub>y</sub></b>	1390 in.-lbs. [157 Nm]	212 in.-lbs. [24 Nm]
Maximum Moment <b>M<sub>z</sub></b>	912 in.-lbs. [103 Nm]	212 in.-lbs. [24 Nm]

†Capacities are per set of jaws and are not simultaneous

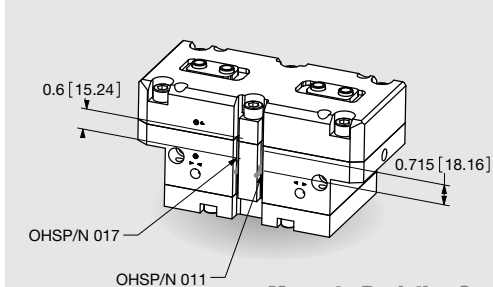
### Specifications

Total Rated Grip Force, <b>F</b> @ 100 psi [7 bar]:		
Without Spring Assist	1406 lbs.	6250 N
Without Spring Assist <b>-L</b>	914 lbs.	4062 N
With Spring Assist	1944 lbs.	8640 N
With Spring Assist <b>-L</b>	1265 lbs.	5623 N
Total Stroke:		
Standard	0.63 in.	16 mm
Extended <b>-L</b>	1.26 in.	32 mm
Weight	12.72 lbs.	5.77 Kg
Pressure Range without Spring	30-100 psi	2-7 Bar
Pressure Range with Spring	65-100 psi	4.5-7 Bar

### Specifications (cont.)

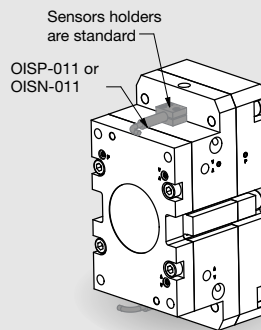
Max. Vacuum for Scavenge Port	8 in. Hg	20 mm Hg
Max. Pressure for Purge Port	30 psi	2.1 Bar
Cylinder Surface	10.08 in <sup>2</sup>	65 cm <sup>2</sup>
Displacement	13.18 in <sup>3</sup>	216 cm <sup>3</sup>
Temperature Range	-30°~180° F	-35°~80° C
Actuation (open/close)	0.20 sec./0.20 sec.	
Accuracy	±0.0031 in.	±0.08 mm
Repeatability	±0.0016 in.	±0.04 mm
Valve required to actuate single acting		3-way, 2-position
Valve required to actuate double acting		4-way, 2-position

## Accessory Mounting Technical Data



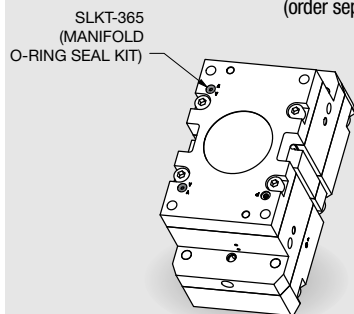
### Magneto Resistive Sensors

- PNP and NPN Magneto Resistive available
- Sensors are slot mounted, no mounting kits required
- Simple adjustment with slotted screw driver
- Built in LED for ease of positioning and troubleshooting
- Available with 2M Quick Disconnect mating cable (order separately)



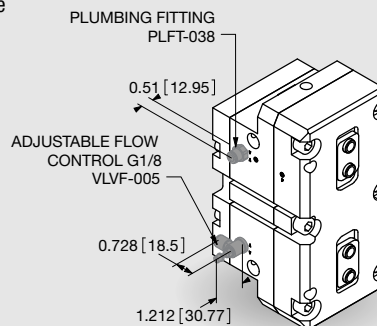
### Inductive Sensors

- PNP and NPN Magneto Resistive available
- Sensors holders and targets are standard mounted
- Simple adjustment of the target with screw driver
- Available with 2M Quick Disconnect mating cable (order separately)



### Manifold O-Ring Seals

- Used to seal top air ports and purge/scavenge port
- No C'bore holes in customer's mounting plate required (C'bore are machined in the gripper's body)
- Seals in manifold kit are Buna-N (Viton® seal kit SLKT-365V)



### Plumbing Fittings

- Adjustable flow controls:
  - Have thumb screw adjust with locking nut for adjusting actuation time
  - Available for 6mm OD tubing
- Plumbing fittings:
  - For side air port location
  - Top air port are plugged as standard

Please see back cover for DE-STA-CO Global Locations. [www.destaco.com](http://www.destaco.com)

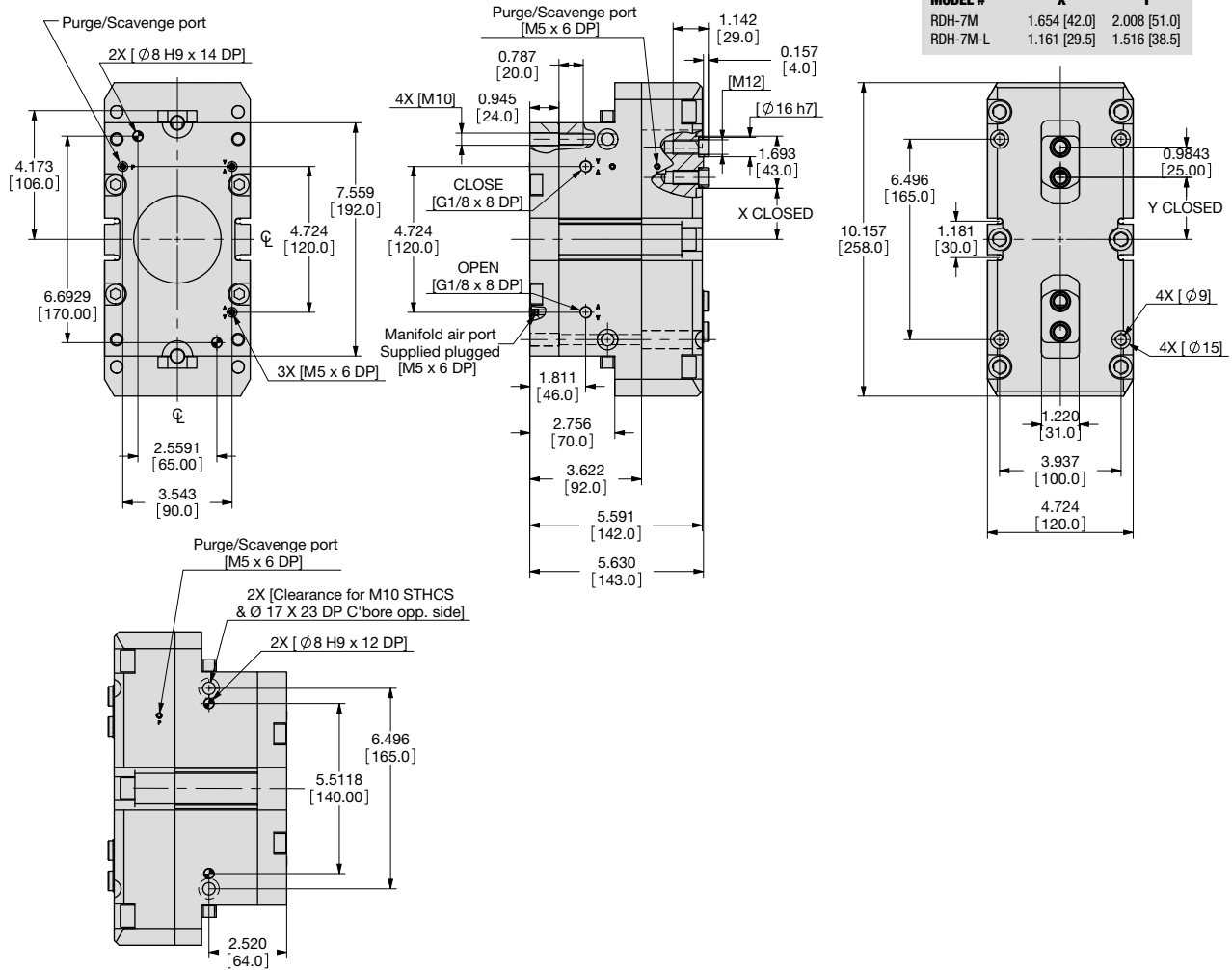
[www.comoso.com](http://www.comoso.com)



# PARALLEL GRIPPER RDH-7M

## 2-JAW PARALLEL SERIES

1.34



UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

Symbol	Imperial in.	Metric [mm]
	0.00 = ±.01	0.] = [±.25]
	0.000 = ±.005	0.0] = [±.13]
	0.0000 = ±.0005	0.00] = [±.013]

Dimensions are symmetrical about centerline  
 Third Angle Projection  
 All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or ±.013mm  
 Metric Threads Course Pitch

### How to Order: (Order Accessories separately from Basic Model)

BASIC MODEL SIZE METRIC SPRING ASSIST

**RDH-7M-L-V**

EXTENDED STROKE VITON SEALS®

BASIC MODEL **RDH**

SIZE **7**

METRIC **M**

EXTENDED STROKE **L** 0.98" [25mm] Leave Blank (standard)

**L** 1.97" [50mm]

SPRING **C** Spring Closed  
**O** Spring Open  
 Leave Blank. No Spring Option (standard)

VITON® SEALS **V** High Temperature Viton® Seals

#### SENSOR ACCESSORIES\*

12mm PNP Inductive Sensor w/ M12 Quick Disconnect*	<b>OISP-017</b>	<b>1 or 2</b>
12mm NPN Inductive Sensor w/ M12 Quick Disconnect*	<b>OISN-017</b>	<b>1 or 2</b>
PNP Magneto Resistive Sensor Short Barrel w/ M8 Qk Disc*	<b>OHSP-017</b>	<b>1 or 4</b>
NPN Magneto Resistive Sensor Short Barrel w/ M8 Qk Disc*	<b>OHSN-017</b>	<b>1 or 4</b>
PNP Magneto Resistive Sensor (90° barrel) w/ M8 Qk. Disc*	<b>OHSP-011</b>	<b>1 or 4</b>
NPN Magneto Resistive Sensor (90° barrel) w/ M8 Qk. Disc*	<b>OHSN-011</b>	<b>1 or 4</b>
M8 Quick Disconnect 2 Meter Cable Length*	<b>CABL-010</b>	<b>1 or 4</b>
M8 Quick Disconnect 5 Meter Cable Length*	<b>CABL-013</b>	<b>1 or 4</b>
M12 Quick Disconnect 2 Meter Cable Length*	<b>CABL-014</b>	<b>1 or 2</b>
M12 Quick Disconnect 5 Meter Cable Length*	<b>CABL-018</b>	<b>1 to 2</b>

#### PNEUMATIC ACCESSORIES

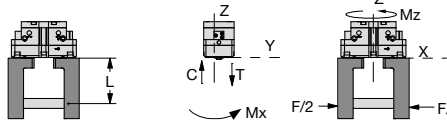
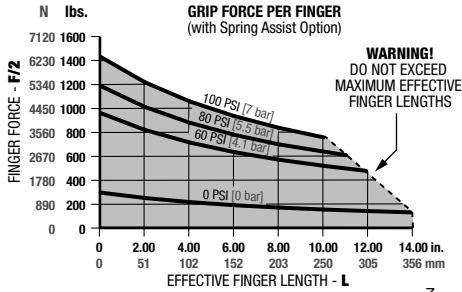
Buna-N Seal Repair Kit	<b>SLKT-422</b>	<b>1</b>
Buna-N Rear Inlet Seal Repair Kit	<b>SLKT-365</b>	<b>1</b>
Viton® Seal Repair Kit	<b>SLKT-422V</b>	<b>1</b>
Viton® Rear Inlet Seal Repair Kit	<b>SLKT-365V</b>	<b>1</b>
G 1/8" Adjustable Flow Control	<b>VLVF-005</b>	<b>1 or 2</b>

\*Sensor and cable sold separately.

#### SAMPLE ORDER: RDH-7M-L-C-V

Ex: RDH-7M Parallel Gripper, Metric, 50mm Extended Stroke, Spring Closed, Viton® Seals

## RDH-7M Loading Information

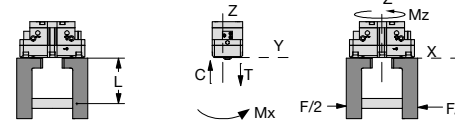
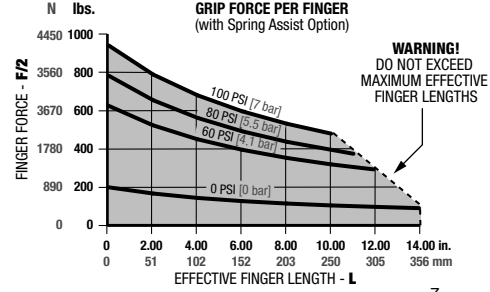


### Loading Capacity†

	Static	Dynamic
Maximum Tensile <b>T</b>	1013 lbs. [4505 N]	236 lbs. [1048 N]
Maximum Compressive <b>C</b>	1335 lbs. [5938 N]	236 lbs. [1048 N]
Maximum Moment <b>M<sub>x</sub></b>	1478 in.-lbs. [167 Nm]	319 in.-lbs. [36 Nm]
Maximum Moment <b>M<sub>y</sub></b>	2106 in.-lbs. [238 Nm]	451 in.-lbs. [51 Nm]
Maximum Moment <b>M<sub>z</sub></b>	1425 in.-lbs. [161 Nm]	451 in.-lbs. [51 Nm]

†Capacities are per set of jaws and are not simultaneous

## RDH-7M-L Loading Information



### Loading Capacity†

	Static	Dynamic
Maximum Tensile <b>T</b>	879 lbs. [3911 N]	152 lbs. [678 N]
Maximum Compressive <b>C</b>	1159 lbs. [5155 N]	152 lbs. [678 N]
Maximum Moment <b>M<sub>x</sub></b>	1283 in.-lbs. [145 Nm]	204 in.-lbs. [23 Nm]
Maximum Moment <b>M<sub>y</sub></b>	1584 in.-lbs. [179 Nm]	257 in.-lbs. [29 Nm]
Maximum Moment <b>M<sub>z</sub></b>	1080 in.-lbs. [122 Nm]	257 in.-lbs. [29 Nm]

†Capacities are per set of jaws and are not simultaneous

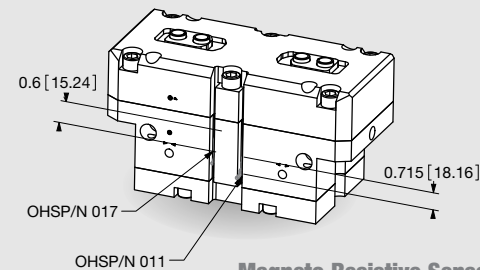
### Specifications

Total Rated Grip Force, <b>F</b> @ 100 psi [7 bar]:		
Without Spring Assist	2228 lbs.	9901 N
Without Spring Assist <b>-L</b>	1441 lbs.	6404 N
With Spring Assist	2822 lbs.	12542 N
With Spring Assist <b>-L</b>	1830 lbs.	8135 N
Total Stroke:		
Standard	0.98 in.	25 mm
Extended <b>-L</b>	1.97 in.	50 mm
Weight	24.8 lbs.	11.25 Kg
Pressure Range without Spring	30-100 psi	2-7 Bar
Pressure Range with Spring	60-100 psi	4-7 Bar

### Specifications (cont.)

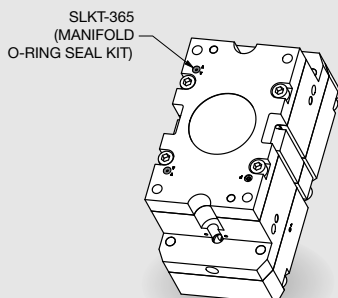
Max. Vacuum for Scavenge Port	8 in. Hg	20 mm Hg
Max. Pressure for Purge Port	30 psi	2.1 Bar
Cylinder Surface	16.12 in. <sup>2</sup>	104 cm <sup>2</sup>
Displacement	32.95 in. <sup>3</sup>	540 cm <sup>3</sup>
Temperature Range	-30°~180° F	-35°~80° C
Actuation (open/close)	0.55 sec./0.55 sec.	
Accuracy	±0.0039 in.	±0.1 mm
Repeatability	±0.002 in.	±0.05 mm
Valve required to actuate single acting		3-way, 2-position
Valve required to actuate double acting		4-way, 2-position

## Accessory Mounting Technical Data



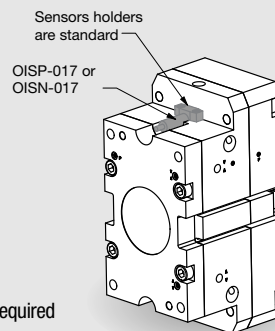
### Magneto Resistive Sensors

- PNP and NPN Magneto Resistive available
- Sensors are slot mounted, no mounting kits required
- Simple adjustment with slotted screw driver
- Built in LED for ease of positioning and troubleshooting
- Available with 2M Quick Disconnect mating cable (order separately)



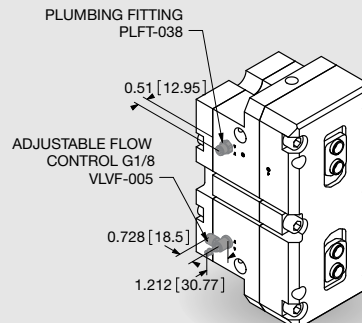
### Manifold O-Ring Seals

- Used to seal top air ports and purge/scavenge port
- No C'bore holes in customer's mounting plate required (C'bore are machined in the gripper's body)
- Seals in manifold kit are Buna-N (Viton® seal kit SLKT-365V)



### Inductive Sensors

- PNP and NPN Magneto Resistive available
- Sensors holders and targets are standard mounted
- Simple adjustment of the target with screw driver
- Available with 2M Quick Disconnect mating cable (order separately)

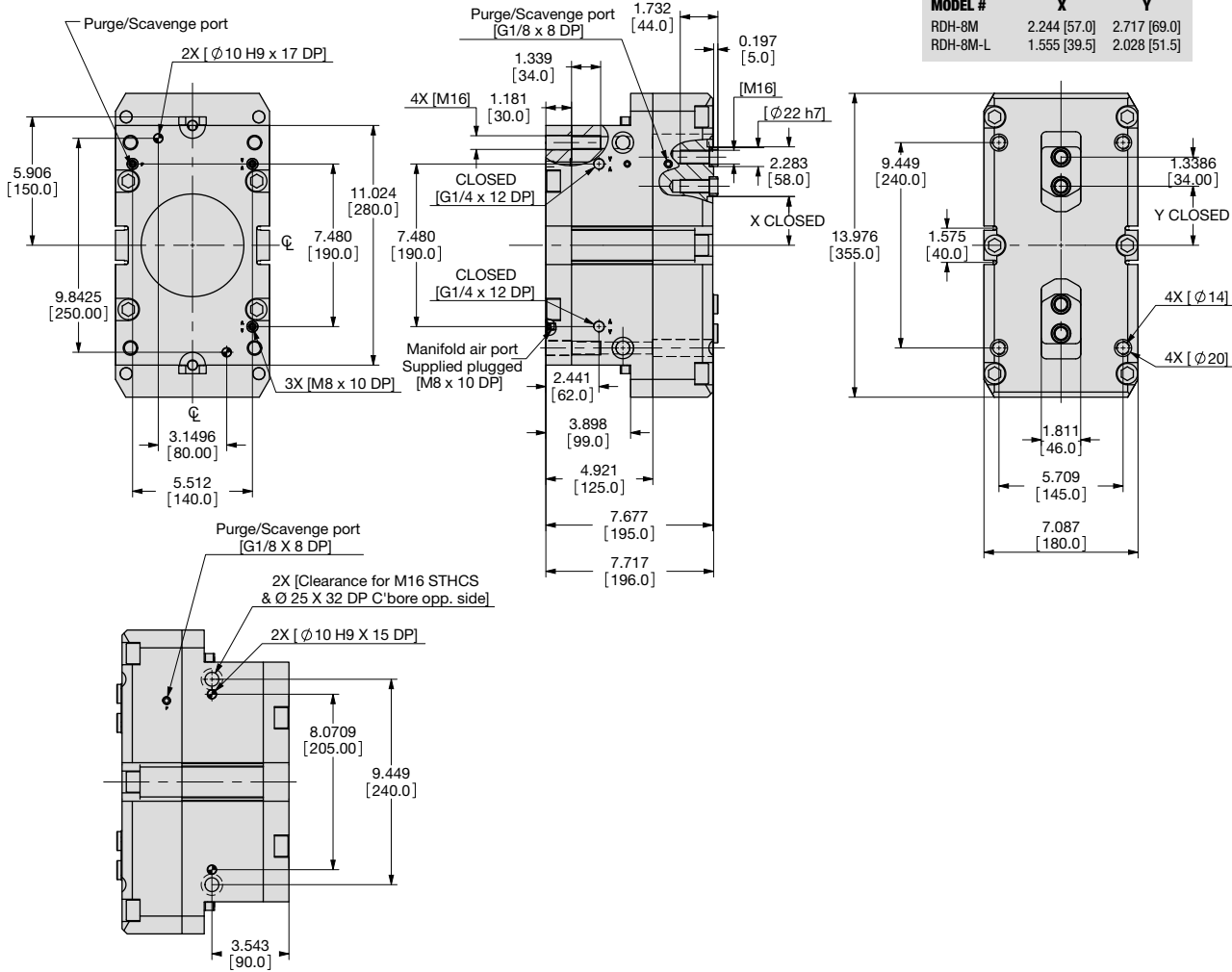


### Plumbing Fittings

- Adjustable flow controls:
  - Have thumb screw adjust with locking nut for adjusting actuation time
  - Available for 6mm OD tubing
- Plumbing fittings:
  - For side air port location
  - Top air port are plugged as standard

# PARALLEL GRIPPER RDH-8M 2-JAW PARALLEL SERIES

1.36



UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

				<b>Imperial in.</b>	<b>Metric [mm]</b>
Dimensions are symmetrical about centerline	Third Angle Projection	All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or ±.013mm	Metric Threads Course Pitch	0.00 = ±.01 0.000 = ±.005 0.0000 = ±.0005	0.0 = [±.25] 0.0 = [±.13] 0.00 = [±.013]

## How to Order: (Order Accessories separately from Basic Model)

BASIC MODEL SIZE METRIC SPRING ASSIST

**RDH-8M-L-V**

EXTENDED STROKE VITON SEALS®

<b>BASIC MODEL</b>	<b>RDH</b>
<b>SIZE</b>	<b>8</b>
<b>METRIC</b>	<b>M</b>
<b>EXTENDED STROKE</b>	<b>L</b> 1.38" [35mm] Leave Blank (standard) <b>L</b> 2.76" [70mm]
<b>SPRING</b>	<b>C</b> Spring Closed <b>O</b> Spring Open — Leave Blank. No Spring Option (standard)
<b>VITON® SEALS</b>	<b>V</b> High Temperature Viton® Seals

### SENSOR ACCESSORIES\*

12mm PNP Inductive Sensor w/ M12 Quick Disconnect*	<b>OISP-017</b>	<b>1 or 2</b>
12mm NPN Inductive Sensor w/ M12 Quick Disconnect*	<b>OISN-017</b>	<b>1 or 2</b>
PNP Magneto Resistive Sensor Short Barrel w/ M8 Qk Disc*	<b>OHSP-017</b>	<b>1 or 4</b>
NPN Magneto Resistive Sensor Short Barrel w/ M8 Qk Disc*	<b>OHSN-017</b>	<b>1 or 4</b>
PNP Magneto Resistive Sensor (90° barrel) w/ M8 Qk. Disc*	<b>OHSP-011</b>	<b>1 or 4</b>
NPN Magneto Resistive Sensor (90° barrel) w/ M8 Qk. Disc*	<b>OHSN-011</b>	<b>1 or 4</b>
M8 Quick Disconnect 2 Meter Cable Length*	<b>CABL-010</b>	<b>1 or 4</b>
M8 Quick Disconnect 5 Meter Cable Length*	<b>CABL-013</b>	<b>1 or 4</b>
M12 Quick Disconnect 2 Meter Cable Length*	<b>CABL-014</b>	<b>1 or 2</b>
M12 Quick Disconnect 5 Meter Cable Length*	<b>CABL-018</b>	<b>1 to 2</b>

### PNEUMATIC ACCESSORIES

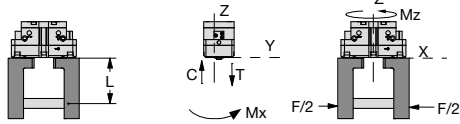
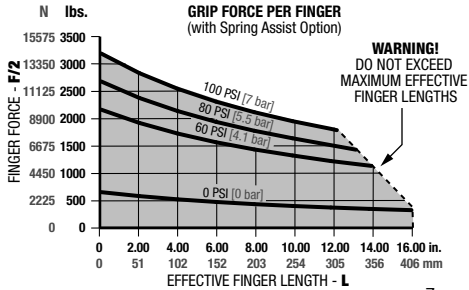
Buna-N Seal Repair Kit	<b>SLKT-423</b>	<b>1</b>
Buna-N Rear Inlet Seal Repair Kit	<b>SLKT-366</b>	<b>1</b>
Viton® Seal Repair Kit	<b>SLKT-423V</b>	<b>1</b>
Viton® Rear Inlet Seal Repair Kit	<b>SLKT-366V</b>	<b>1</b>
G 1/4" Adjustable Flow Control	<b>VLVF-010</b>	<b>1 or 2</b>

\*Sensor and cable sold separately.

### SAMPLE ORDER: RDH-8M-L-C-V

Ex: RDH-8M Parallel Gripper, Metric, 70mm Extended Stroke, Spring Closed, Viton® Seals

## RDH-8M Loading Information

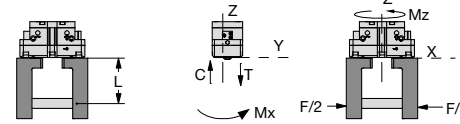
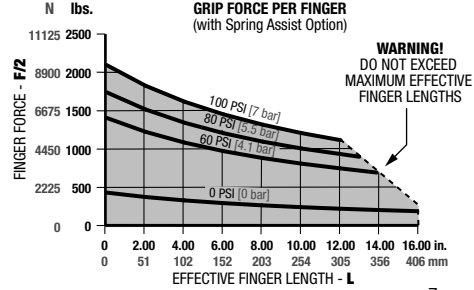


### Loading Capacity†

	Static	Dynamic
Maximum Tensile <b>T</b>	1543 lbs. [6863 N]	392 lbs. [1743 N]
Maximum Compressive <b>C</b>	2006 lbs. [8921 N]	392 lbs. [1743 N]
Maximum Moment <b>M<sub>x</sub></b>	3354 in.-lbs. [379 Nm]	743 in.-lbs. [84 Nm]
Maximum Moment <b>M<sub>y</sub></b>	4257 in.-lbs. [481 Nm]	947 in.-lbs. [107 Nm]
Maximum Moment <b>M<sub>z</sub></b>	2664 in.-lbs. [301 Nm]	947 in.-lbs. [107 Nm]

†Capacities are per set of jaws and are not simultaneous

## RDH-8M-L Loading Information



### Loading Capacity†

	Static	Dynamic
Maximum Tensile <b>T</b>	1328 lbs. [5906 N]	253 lbs. [1125 N]
Maximum Compressive <b>C</b>	1726 lbs. [7678 N]	253 lbs. [1125 N]
Maximum Moment <b>M<sub>x</sub></b>	2885 in.-lbs. [326 Nm]	478 in.-lbs. [54 Nm]
Maximum Moment <b>M<sub>y</sub></b>	3160 in.-lbs. [357 Nm]	522 in.-lbs. [59 Nm]
Maximum Moment <b>M<sub>z</sub></b>	1974 in.-lbs. [223 Nm]	522 in.-lbs. [59 Nm]

†Capacities are per set of jaws and are not simultaneous

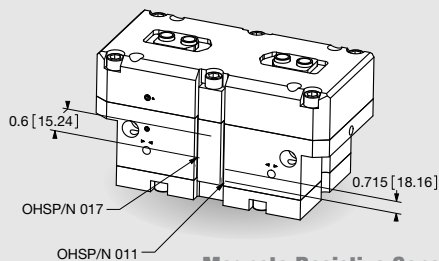
### Specifications

Total Rated Grip Force, <b>F</b> @ 100 psi [7 bar]:		
Without Spring Assist	4941 lbs.	21958 N
Without Spring Assist -L	3190 lbs.	14178 N
With Spring Assist	6300 lbs.	28002 N
With Spring Assist -L	4076 lbs.	18115 N
Total Stroke:		
Standard	1.38 in.	35 mm
Extended -L	2.76 in.	70 mm
Weight	71.1 lbs.	32.3 Kg
Pressure Range without Spring	30-100 psi	2-7 Bar
Pressure Range with Spring	50-100 psi	3.5-7 Bar

### Specifications (cont.)

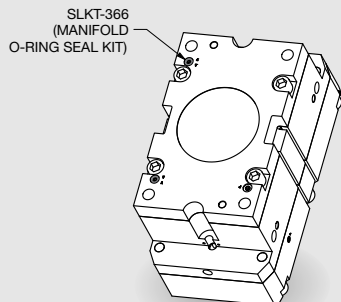
Max. Vacuum for Scavenge Port	8 in. Hg	20 mm Hg
Max. Pressure for Purge Port	30 psi	2.1 Bar
Cylinder Surface	35.81 in. <sup>2</sup>	231 cm <sup>2</sup>
Displacement	103.1 in. <sup>3</sup>	1689 cm <sup>3</sup>
Temperature Range	-30°~180° F	-35°~80° C
Actuation (open/close)	1.3 sec./1.3 sec.	
Accuracy	±0.0039 in.	±0.1 mm
Repeatability	±0.002 in.	±0.05 mm
Valve required to actuate single acting	3-way, 2-position	
Valve required to actuate double acting	4-way, 2-position	

## Accessory Mounting Technical Data



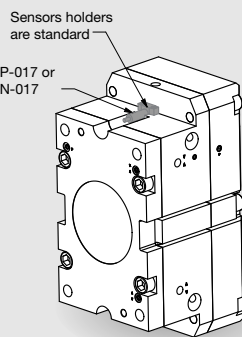
### Magneto Resistive Sensors

- PNP and NPN Magneto Resistive available
- Sensors are slot mounted, no mounting kits required
- Simple adjustment with slotted screw driver
- Built in LED for ease of positioning and troubleshooting
- Available with 2M Quick Disconnect mating cable (order separately)



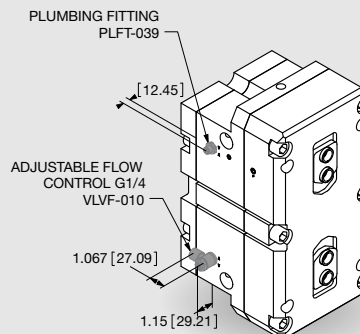
### Manifold O-Ring Seals

- Used to seal top air ports and purge/scavenge port
- No C'bore holes in customer's mounting plate required (C'bore are machined in the gripper's body)
- Seals in manifold kit are Buna-N (Viton® seal kit SLKT-366V)



### Inductive Sensors

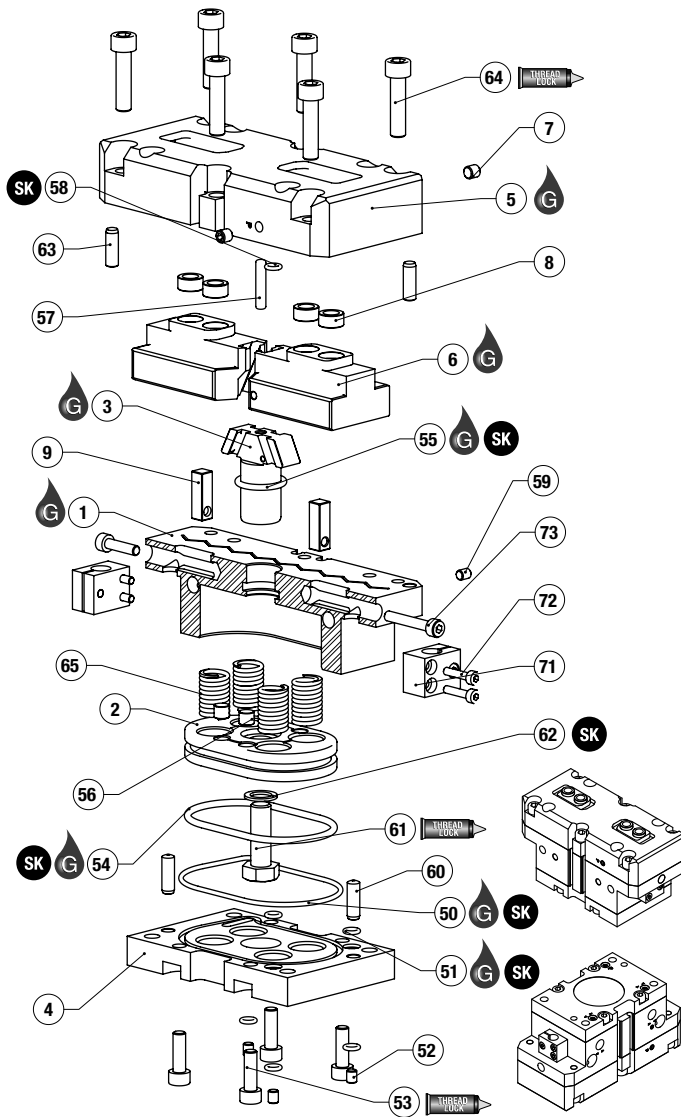
- PNP and NPN Magneto Resistive available
- Sensors holders and targets are standard mounted
- Simple adjustment of the target with screw driver
- Available with 2M Quick Disconnect mating cable (order separately)



### Plumbing Fittings

- Adjustable flow controls:
  - Have thumb screw adjust with locking nut for adjusting actuation time
  - Available for 6mm OD tubing
- Plumbing fittings:
  - For side air port location
  - Top air port are plugged as standard

## RDH Series Exploded View



Item	Qty	Name
01	1	Body
02	1	Piston
03	1	Double wedge
04	1	Cap
05	1	Bottom Case
06	2	Jaws
07	2	Bottom Case, SS Screw
08	4	Locating sleeve
09	2	Sensing nut
50	1	Cap, O-ring
51	2	Cap, O-ring
52	3	Cap, SS screw
53	4	Cap, SHC screw
54	1	Piston, O-ring
55	1	Body, O-ring
56	4	Piston, Magnet
57	1	Piston, Pin
58	1	Bottom case, O-ring
59	1	Body, SS screw
60	2	Cap, Pin
61	1	Double wedge, HH screw
62	1	Double wedge, Seal
63	2	Bottom case, Pin
64	6	Bottom case, SHC Screw
65	4 or 8	Spring
71	2	Sensor holder
72	4	Sensor holder, SHC screw
73	2	Sensing nut, SHC screw

**NOTE:** Contact the Destaco-Robohand Sales Department for a complete spare parts list with order numbers and prices.

**SK Seal Repair Kit Order #'s  
See Product Data Sheets**

### Assembly Procedure

- Lubricate and install seal #55 into the body #1
- Install #59 screw with thread locker into the body #1
- Sub assemble the sensing nuts #9 into the jaws #6
- Sub assemble the jaws #6 on either side of the double wedge #3 with lubrication
- Insert the jaws and double wedge sub assembly into the body
- Install seal #58 into the bottom case #5
- Insert the screws #7 into the bottom case #5
- Install bottom case #5 with pressed-in pins #63 onto the body and fasten with #64 screws with thread locker
- Lubricate and install seal #54 into the piston #2
- Mount magnets #56 to piston #2 with thread locker
- For -C option, insert the springs #65 into the body #1 counterbore holes
- Insert the piston #2 with pressed-in pin #57 onto the double wedge #3 and fasten with screw #61 with thread locker and washer #62. Face mount the piston counterbore holes to the body counterbore holes for -C option. Opposite mount for -O option.
- For -O option, insert the springs #65 into the piston #2 counterbore holes
- Install the screws #52 with thread locker onto the cap #4
- Install seals #50 and #51 into the cap #4
- Insert the cap #4 into the body #1 and locate it using cap dowel pins #60
- Fasten the cap #4 with #53 screws with thread locker
- Install the sensor holders #71 onto the body and fasten with screws #72
- Insert screws #73 into the sensing nuts #9 from the body holes
- Insert locating sleeves #8 into the jaws



Seal Kit  
Items



Thread  
Locker



Krytox™  
Lubricant



Lightweight  
Machine Oil



Teflon® Based  
Grease



Super  
Bonder

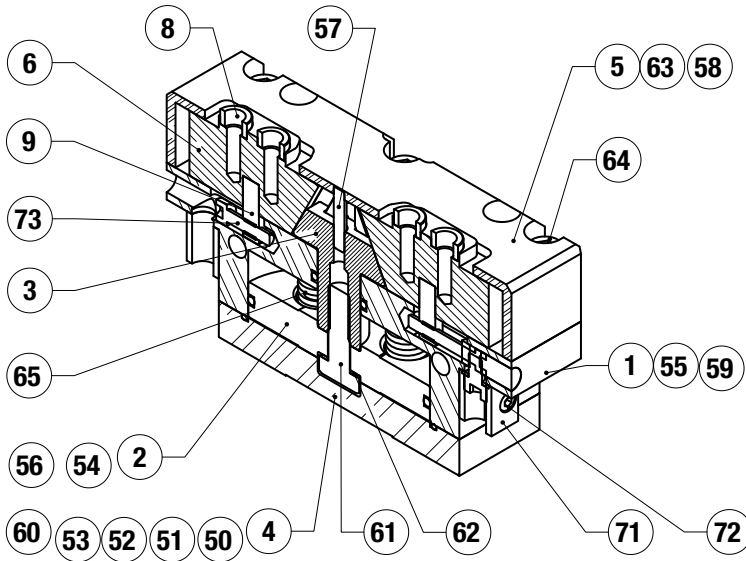


Third Angle  
Projection

Please see back cover for DE-STA-CO Global Locations. [www.destaco.com](http://www.destaco.com)

[www.comoso.com](http://www.comoso.com)

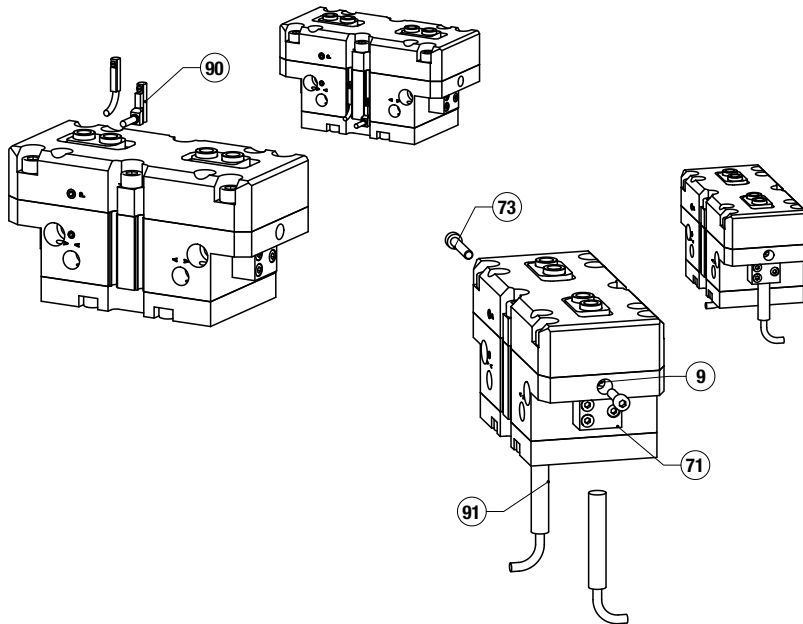




Item	Qty	Name
01	1	Body
02	1	Piston
03	1	Double wedge
04	1	Cap
05	1	Bottom Case
06	2	Jaws
07	2	Bottom Case, SS Screw
08	4	Locating sleeve
09	2	Sensing nut
50	1	Cap, O-ring
51	2	Cap, O-ring
52	3	Cap, SS screw
53	4	Cap, SHC screw
54	1	Piston, O-ring
55	1	Body, O-ring
56	4	Piston, Magnet
57	1	Piston, Pin
58	1	Bottom case, O-ring
59	1	Body, SS screw
60	2	Cap, Pin
61	1	Double wedge, HH screw
62	1	Double wedge, Seal
63	2	Bottom case, Pin
64	6	Bottom case, SHC Screw
65	4 or 8	Spring
71	2	Sensor holder
72	4	Sensor holder, SHC screw
73	2	Sensing nut, SHC screw

**NOTE:** Contact the Destaco-Robohand Sales Department for a complete spare parts list with order numbers and prices.

## Accessory Installation & Adjustment Instructions



### Magneto Resistive Sensor #90

- 1) Insert sensor #90 from either end of the profile slot
- 2) Adjust the sensor #90 into the profile slot, depending on the position to sense
- 3) Set the sensor with the integrated screw

### Inductive Sensor #91

- 1) Insert sensor #91 into the sensor holder #71
- 2) Tighten the sensor using the SHC screw onto the sensor holder #71
- 3) Insert the SHC screw #73 into the sensing nut #9. The SHC screws are the targets to be adjusted in front of the sensor. The SHC screws #73 are supplied with 2 different lengths: depending on the position to sense, use the shortest for open position, or the longest for close position. The sensing nut #9 has a thread insert that prevents the target from loosening (this may make the target harder to tighten into the nut).



Seal Kit Items



Thread Locker



Krytox™ Lubricant



Lightweight Machine Oil



Teflon® Based Grease



Super Bonder



Third Angle Projection



# 2P Parallel Gripper- 2-Jaw Precision Series

## Precision Gripper

Two centering jaws and very good repeatability [0.02mm] allow loading and unloading accurate cylindrical parts.

## Harsh Environments

Shielded design (-E) repels chips and other particulate from internal drive mechanism depending on the chosen material of the shield.

## Compact and Powerful

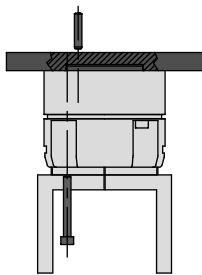
This gripper is designed for use in confined spaces, combining long strokes with a high grip force. Optional safety springs retain the components, should the air supply fail or to increase grip force.

## Multipurpose Gripper

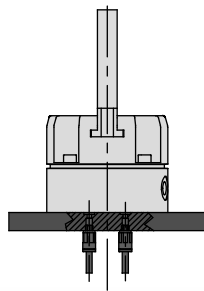
A wide range of options and accessories (extended stroke, hydraulic power, safety springs for internal or external gripping, inductive sensors, tandem cylinder, Viton® seals, and protective boot) allow these grippers to be used in a number of applications.

## Mounting Information:

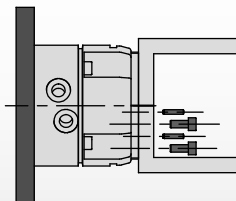
**Gripper can be mounted and operated in any orientation.**



Gripper is located using pilot boss and a dowel pin and assembled with 4 or 6 through body screws.



Gripper can be operated utilizing top manifold air ports.



Fingers are located on jaw with 2 dowel pins and assembled with 1 or 2 screws.

## Technical Specifications:

### Pneumatic Specifications

Pressure Operating Range

**Imperial** 30-100 psi  
**Metric** 2-7 bar

Cylinder Type

**Double or double acting spring-assisted or single acting with spring**

Dynamic Seals

**Buna-N**

Valve Required to Operate:

Double Acting  
Single acting (Option RE or RI)

**4-way, 2-position**  
**3-way, 2-position**

### Air Quality Requirements

Filtration

**40 Micron or Better**

Lubrication

**Not Necessary\***

### Temperature Operating Range

Buna-N Seals (standard)

**-30°~180° F -35°~80° C**

Viton® Seals (optional)

**-20°~300° F -30°~150° C**

### Application Restrictions

Expected Life

Normal Application  
w/ Preventative Maintenance

**5 million cycles**  
**10+ million cycles\***

Field Repairable

**Yes**

Seal Repair Kits Available

**Yes**

\*Addition of lubrication will greatly increase service life

## Product Features

### Quality Components

Body made from aluminum alloy with Teflon™ impregnated hardcoat anodize. Other essential parts of the gripper are made of hardened and precision ground steel

### Standard and Extended Stroke (-C)

Each model of gripper is available in two stroke lengths

### Sensor Target

Option (-T) to control the jaw position at the rear of the clamp

### Sensor Unit

Option (-K) to benefit from integrated detection

### Pneumatic Power

Side or top ports (sealing face / face)

### Hydraulic Power

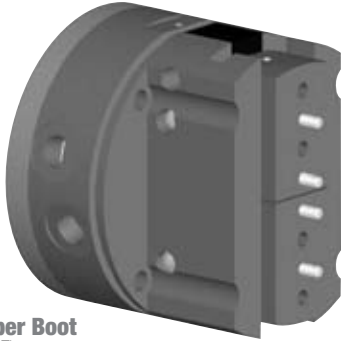
Option (-H) up to 20 bar max, (-H80) up to 80 bar max.

### Versatile Finger Mounting

2 finger mounting surfaces on each jaw

### Viton® Seals

Optional Viton® seals for high temperatures



### Protective Gripper Boot

Optional Gripper Boot (-E) to protect the mechanism of the clamp are liquid and large external impurities.

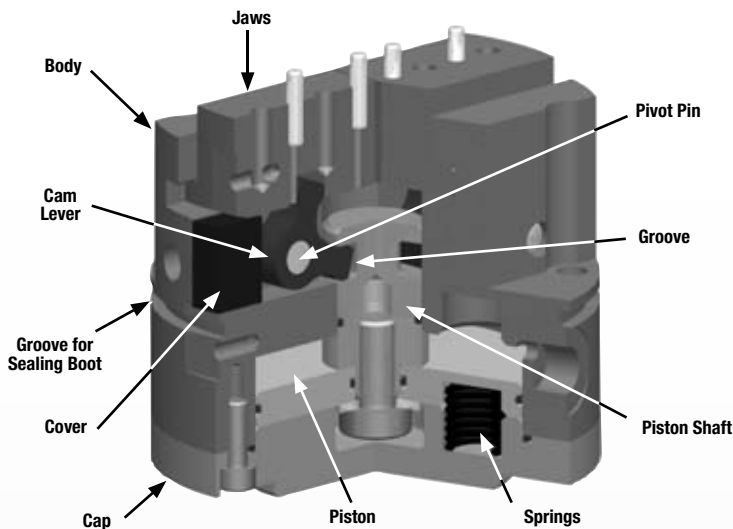
### Optional Spring Assist

Optional spring assist retains the component should the air supply fail, to assist the gripper for internal (-RE) or external (-RI) gripping, or in single acting mode

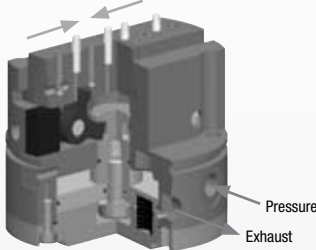
### Tandem Cylinder

Option (-M) doubles the grip force

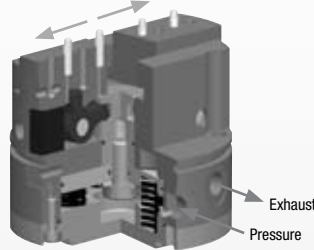
## Operating Principle



Closed Stroke Position



Open Stroke Position



- A large double-acting piston is connected to the piston shaft at its end with a driving groove.
- Levers pivot in the body about an axis of articulation. Their two heads agree precisely on one side in the groove of the small piston, the other in a groove cut in each jaw holder.
- The rotation of the levers converts the vertical movement of the piston in a horizontal motion and synchronized two-bit gates, which are guided in grooves in «T» fitting body.
- This gripper is suitable for internal or external gripping and can be mounted in any orientation
- Optional failsafe spring can be used to maintain gripping force if gripper loses air pressure or as a single acting return gripper.

## Style: 2P Precision Parallel Gripper



	6002P	6002P-C
Total Stroke:	10 mm	16 mm
Force at 6bar: <sup>1</sup>	694 N	432 N
Force w/o air: <sup>2</sup>	176 N	109 N
Weight:	0.51 kg	0.51 kg

See Page **1.42 & 1.43**

## Style: 2P Precision Parallel Gripper



	8002P	8002P-C
Total Stroke:	13 mm	20 mm
Force at 6bar: <sup>1</sup>	1946 N	1256 N
Force w/o air: <sup>2</sup>	635 N	410 N
Weight:	0.84 kg	0.84 kg

See Page **1.44 & 1.45**

## Style: 2P Precision Parallel Gripper



	11002P	11002P-C
Total Stroke:	20 mm	30 mm
Force at 6bar: <sup>1</sup>	3043 N	2030 N
Force w/o air: <sup>2</sup>	965 N	644 N
Weight:	2.04 kg	2.04 kg

See Page **1.46 & 1.47**

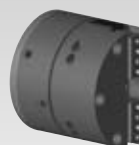
## Style: 2P Precision Parallel Gripper



	14002P	14002P-C
Total Stroke:	26 mm	40 mm
Force at 6bar: <sup>1</sup>	6232 N	4031 N
Force w/o air: <sup>2</sup>	2305 N	1490 N
Weight:	4.20 kg	4.20 kg

See Page **1.48 & 1.49**

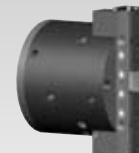
## Style: 2P Precision Parallel Gripper



	16502P	16502P-C
Total Stroke:	30 mm	50 mm
Force at 6bar: <sup>1</sup>	11475 N	6878 N
Force w/o air: <sup>2</sup>	3825 N	2292 N
Weight:	8.74 kg	8.74 kg

See Page **1.50 & 1.51**

## Style: 2P Precision Parallel Gripper



	16502PGR
Total Stroke:	30 mm
Force at 6bar: <sup>1</sup>	11475 N
Force w/o air: <sup>2</sup>	3825 N
Weight:	11.5 kg

See Page **1.52**

## OPTIONS & ACCESSORIES

See Pages **1.53-1.56**

1. Force with spring and air at 6bar  
2. Force with spring without air





# PARALLEL GRIPPER 6002P-C PRECISION 2P GRIPPER SERIES

PRECISION 2P  
1.43

### Specifications

	6002P-C
Grip Force (F6+R) <sup>1</sup> , 6 bars, Springs Mid-Way, L=0	432 N
Grip Force (F0+R) <sup>2</sup> , 0 bars, Springs Mid-Way, L=0	109 N
Total Stroke	16 mm
Weight	0.51 kg
Pressure Range	2 - 7 bar
Pressure Range with Springs	3 - 7 bar
Ø Cylinder Bore	40 mm
Displacement	12 cm <sup>3</sup>
Actuation (open / close)	0.07s / 0.07 s
Repeatability	± 0.02 mm

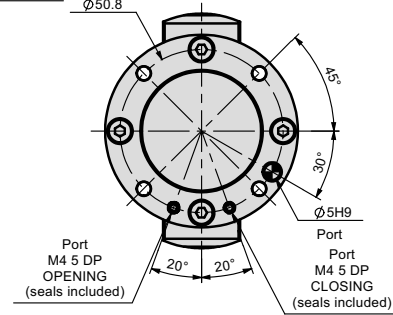
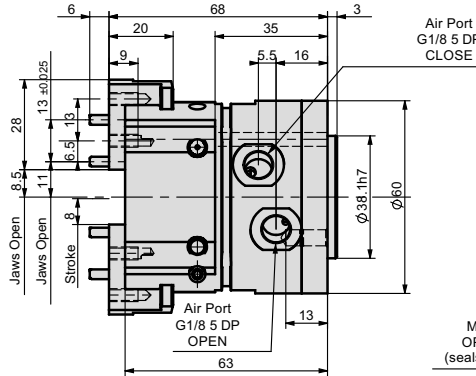
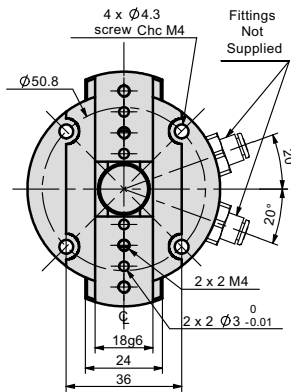
1. Force with spring and air at 6bar  
2. Force with spring without air

### UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

Dimensions are symmetrical about centerline	Third Angle Projection	All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or [±.013mm]	Metric Threads Course Pitch	<b>Imperial in.</b> 0.00 = ±.01 0.000 = ±.005 0.0000 = ±.0005	<b>Metric [mm]</b> [0.] = [±.25] [0.0] = [±.13] [0.00] = [±.013]
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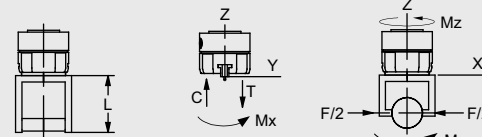
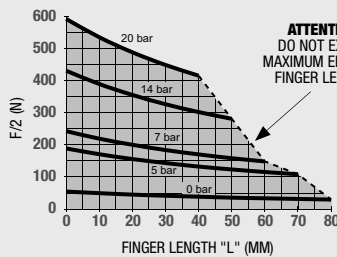
Grippers are supplied with open side air ports and top manifold air ports plugged. Top manifold sealing dimensions shown.

Rear inlet operation  
O-Ring (Ø1.5 x Ø4)



## Loading Information:

Sum of forces transmitted by the jaws on the workpiece  
(Springs compressed at 50% stroke)



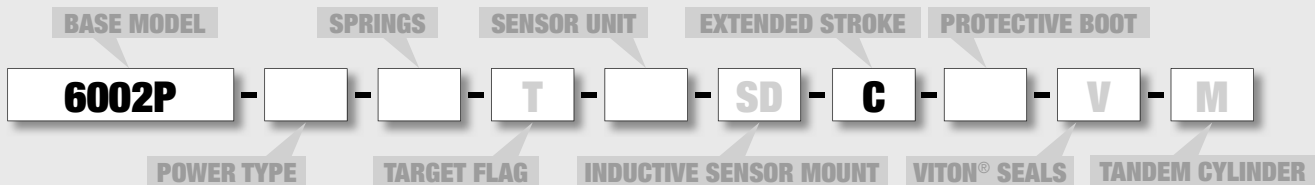
### Loading Capacity\*

	Static	Dynamic
Maximum Tensile <b>T</b>	410 N	95 N
Maximum Compressive <b>C</b>	780 N	95 N
Maximum Moment <b>Mx</b>	21 Nm	3 Nm
Maximum Moment <b>My</b>	16 Nm	3 Nm
Maximum Moment <b>Mz</b>	27 Nm	3 Nm

\* The Capacities are per set of jaws and are not simultaneous.

## How To Order:

See Pages 53-56 for incompatible accessory combinations



POWER TYPE	
P	Pneumatic
H	Hydraulic (page 1.53)
(One of two options is mandatory P or H)	
SPRINGS	
RE	External Gripping
RI	Internal Gripping
SENSOR UNIT	
• KT1	• KT2
• KX1	• KX2
PROTECTIVE BOOT	
• E	• E3

### PROTECTIVE BOOT ACCESSORIES

	Model Code	Order #	Qty/Unit
PVC Protective Boot, Brown or Black	<b>E</b>	<b>ER62P</b>	1
Fireproof KEVLAR Protective Boot, Red	<b>E3</b>	<b>E3R62P</b>	1

### SENSOR ACCESSORIES

	Model Code	Order #	Qty/Unit
Inductive Sensor Kit (1 holder, 1 flag)	<b>SD</b>	<b>SD60-80P</b>	1 or 2
M8 Inductive Sensor PNP with M8 connector		<b>OISP-011-C</b>	1 or 4
M8 Inductive Sensor NPN with M8 connector		<b>OISN-011-C</b>	1 or 4
Cable (2 meters) with M8 screw right gold		<b>CABL-010</b>	1 or 4

### PNEUMATIC ACCESSORIES

	Order #	Qty/Unit
Standard Seal Repair Kit	<b>SLKT-156</b>	1
Viton® Seal Repair Kit	<b>SLKT-156V</b>	1
Hydraulic Seal Repair Kit	<b>SLKT-330</b>	1

Options and Accessories:  
See Page 1.53

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[www.comoso.com](http://www.comoso.com)



# PARALLEL GRIPPER 8002P PRECISION 2P GRIPPER SERIES

### Specifications

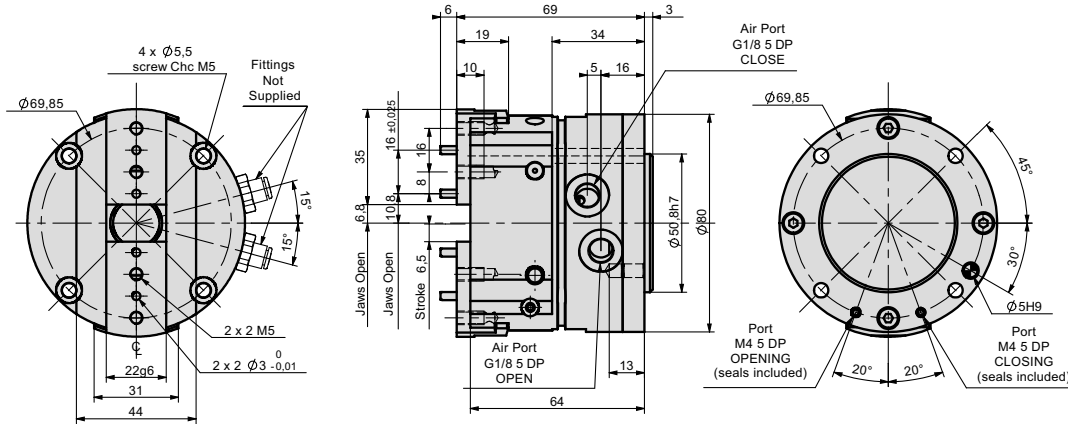
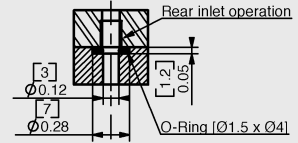
Grip Force (F6+R) <sup>1</sup> , 6 bars, Springs Mid-Way, L=0	<b>8002P</b> 1946 N
Grip Force (F0+R) <sup>2</sup> , 0 bars, Springs Mid-Way, L=0	635 N
Total Stroke	13 mm
Weight	0.84 kg
Pressure Range	2 - 7 bar
Pressure Range with Springs	4 - 7 bar
Ø Cylinder Bore	60 mm
Displacement	35 cm <sup>3</sup>
Actuation (open / close)	0.08 s / 0.08 s
Repeatability	± 0.02 mm

- Force with spring and air at 6bar
- Force with spring without air

### UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

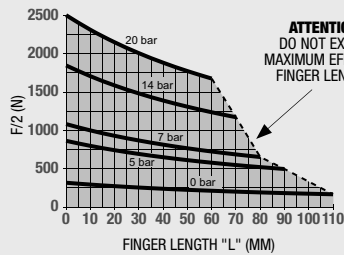
Dimensions are symmetrical about centerline	Third Angle Projection	All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or (±.013mm)	Metric Threads Course Pitch	<b>Imperial in.</b> 0.00 = ±.01 0.000 = ±.005 0.0000 = ±.0005	<b>Metric [mm]</b> [0.] = [±.25] [0.0] = [±.13] [0.00] = [±.013]
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Grippers are supplied with open side air ports and top manifold air ports plugged. Top manifold sealing dimensions shown.

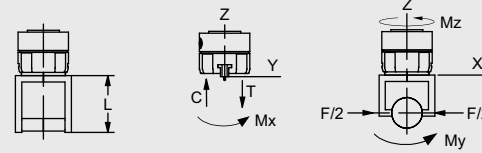


## Loading Information:

Sum of forces transmitted by the jaws on the workpiece  
(Springs compressed at 50% stroke)



**ATTENTION:**  
DO NOT EXCEED  
MAXIMUM EFFECTIVE  
FINGER LENGTHS



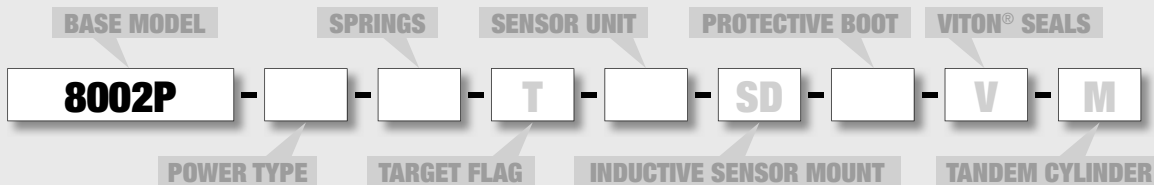
### Loading Capacity\*

	Static	Dynamic
Maximum Tensile <b>T</b>	819 N	348 N
Maximum Compressive <b>C</b>	1383 N	348 N
Maximum Moment <b>Mx</b>	40 Nm	13 Nm
Maximum Moment <b>My</b>	45 Nm	15 Nm
Maximum Moment <b>Mz</b>	25 Nm	15 Nm

\* The Capacities are per set of jaws and are not simultaneous.

## How To Order:

See Pages 53-56 for incompatible accessory combinations



POWER TYPE	
P	Pneumatic
H	Hydraulic (page 1.53)
(One of two options is mandatory P or H)	
SPRINGS	
RE	External Gripping
RI	Internal Gripping
SENSOR UNIT	
• KT1	• KT2
• KX1	• KX2
PROTECTIVE BOOT	
• E	• E3

### PROTECTIVE BOOT ACCESSORIES

PVC Protective Boot, Brown or Black	<b>E</b>	<b>ER82P</b>	1
Fireproof KEVLAR Protective Boot, Red	<b>E3</b>	<b>E3R82P</b>	1

### SENSOR ACCESSORIES

Inductive Sensor Kit (1 holder, 1 flag)	<b>SD</b>	<b>SD60-80P</b>	1 or 2
M8 Inductive Sensor PNP with M8 connector		<b>OISP-011-C</b>	1 or 4
M8 Inductive Sensor NPN with M8 connector		<b>OISN-011-C</b>	1 or 4
Cable (2 meters) with M8 screw right gold		<b>CABL-010</b>	1 or 4

### PNEUMATIC ACCESSORIES

Standard Seal Repair Kit	<b>S80</b>	1
Viton® Seal Repair Kit	<b>S80V</b>	1
Hydraulic Seal Repair Kit	<b>S80H</b>	1

Options and Accessories:  
See Page 1.53









# PARALLEL GRIPPER 11002P-C PRECISION 2P GRIPPER SERIES

PRECISION 2P  
1.47

### Specifications

Grip Force (F6+R)<sup>1</sup>, 6 bars, Springs Mid-Way, L=0  
644 N  
Grip Force (F0+R)<sup>2</sup>, 0 bars, Springs Mid-Way, L=0  
30 mm  
Total Stroke  
2.04 kg  
Weight  
2 - 7 bar  
Pressure Range  
4 - 7 bar  
Pressure Range with Springs  
Ø Cylinder Bore  
76 mm  
Displacement  
87 cm<sup>3</sup>  
Actuation (open / close)  
0.10 s / 0.10 s  
Repeatability  
± 0.02 mm

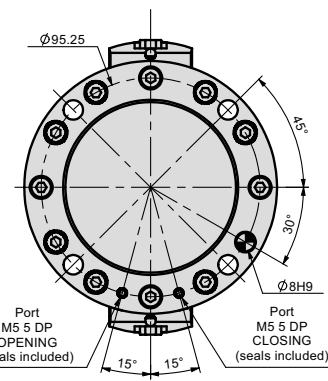
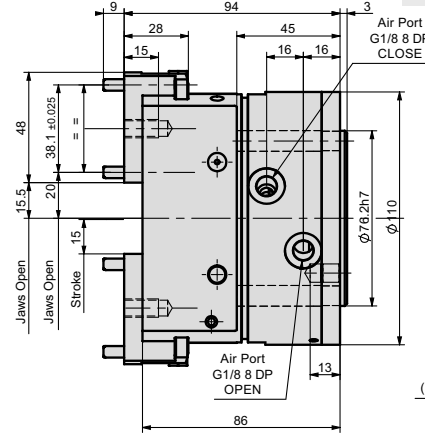
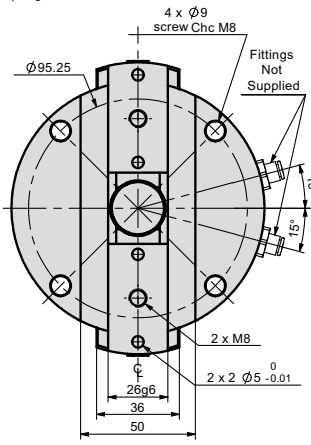
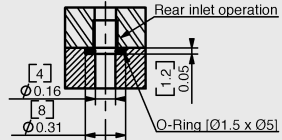
### 11002P-C

2030 N  
644 N  
30 mm  
2.04 kg  
2 - 7 bar  
4 - 7 bar  
76 mm  
87 cm<sup>3</sup>  
0.10 s / 0.10 s  
± 0.02 mm

### UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

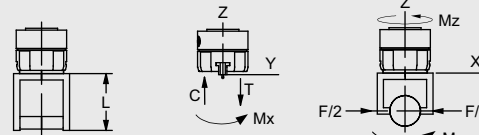
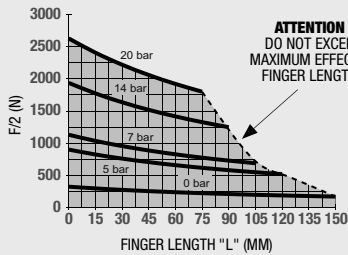
Dimensions are symmetrical about centerline	Third Angle Projection	All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or [±.013mm]	Metric Threads Course Pitch	<b>Imperial in.</b> 0.00 = ±.01 0.000 = ±.005 0.0000 = ±.0005	<b>Metric [mm]</b> [0.] = [±.25] [0.0] = [±.13] [0.00] = [±.013]
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Grippers are supplied with open side air ports and top manifold air ports plugged. Top manifold sealing dimensions shown.



## Loading Information:

Sum of forces transmitted by the jaws on the workpiece  
(Springs compressed at 50% stroke)

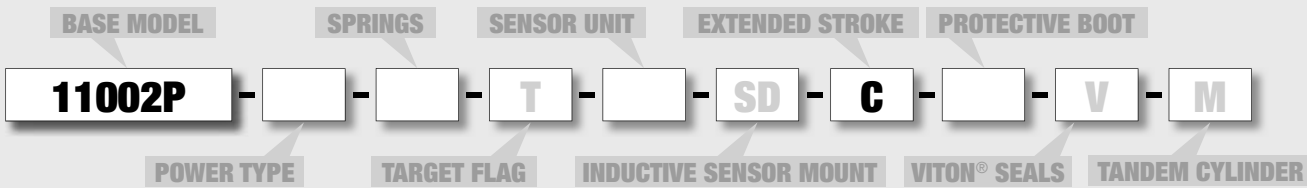


Loading Capacity*	Static	Dynamic
Maximum Tensile <b>T</b>	945 N	370 N
Maximum Compressive <b>C</b>	1607 N	370 N
Maximum Moment <b>Mx</b>	35 Nm	18 Nm
Maximum Moment <b>My</b>	47 Nm	24 Nm
Maximum Moment <b>Mz</b>	56 Nm	24 Nm

\* The Capacities are per set of jaws and are not simultaneous.

## How To Order:

See Pages 53-56 for incompatible accessory combinations



POWER TYPE	
P	Pneumatic
H	Hydraulic (page 1.53)
(One of two options is mandatory P or H)	
SPRINGS	
RE	External Gripping
RI	Internal Gripping
SENSOR UNIT	
• KT1	• KT2
• KX1	• KX2
PROTECTIVE BOOT	
• E	• E3

### PROTECTIVE BOOT ACCESSORIES

PVC Protective Boot, Brown or Black  
Fireproof KEVLAR Protective Boot, Red

### SENSOR ACCESSORIES

Inductive Sensor Kit (1 holder, 1 flag)  
M8 Inductive Sensor PNP with M8 connector  
M8 Inductive Sensor NPN with M8 connector  
Cable (2 meters) with M8 screw right gold

### PNEUMATIC ACCESSORIES

Standard Seal Repair Kit  
Viton® Seal Repair Kit  
Hydraulic Seal Repair Kit

Model Code	Order #	Qty/Unit
<b>E</b>	<b>ER112P</b>	1
<b>E3</b>	<b>E3R112P</b>	1
<b>SD</b>	<b>SD110P</b>	1 or 2
	<b>OISP-011-C</b>	1 or 4
	<b>OISN-011-C</b>	1 or 4
	<b>CABL-010</b>	1 or 4

Options and Accessories:  
See Page 1.53

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[www.comoso.com](http://www.comoso.com)



# PARALLEL GRIPPER 14002P PRECISION 2P GRIPPER SERIES

### Specifications

	14002P
Grip Force (F6+R) <sup>1</sup> , 6 bars, Springs Mid-Way, L=0	6232 N
Grip Force (F0+R) <sup>2</sup> , 0 bars, Springs Mid-Way, L=0	2305 N
Total Stroke	26 mm
Weight	4.20 kg
Pressure Range	2 - 7 bar
Pressure Range with Springs	4 - 7 bar
Ø Cylinder Bore	105 mm
Displacement	220 cm <sup>3</sup>
Actuation (open / close)	0.16 s / 0.16 s
Repeatability	± 0.02 mm

- Force with spring and air @ 6bar
- Force with spring without air

### UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

Imperial in.	Metric [mm]
0.00 = ±.01	[0.1] = [±.25]
0.000 = ±.005	[0.0] = [±.13]
0.0000 = ±.0005	[0.00] = [±.013]

Dimensions are symmetrical about centerline

Third Angle Projection

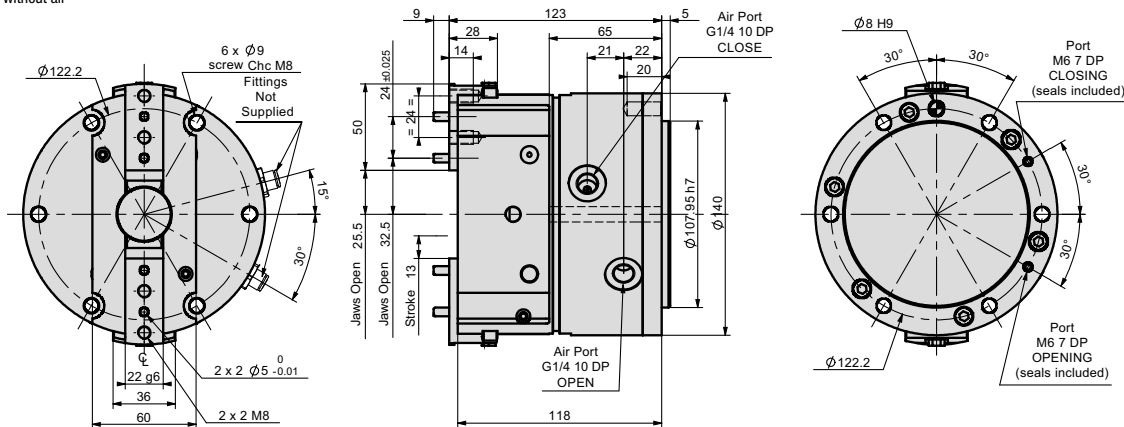
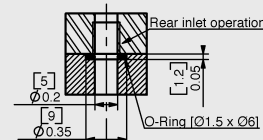
All Dowel Holes are SF (Slip Fit).  
Locational Tolerance  
±.0005" or [±.013mm]

Metric Threads  
Course Pitch

Imperial in.  
0.00 = ±.01  
0.000 = ±.005  
0.0000 = ±.0005

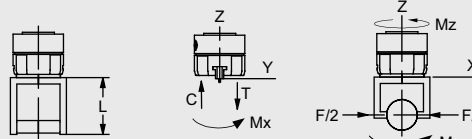
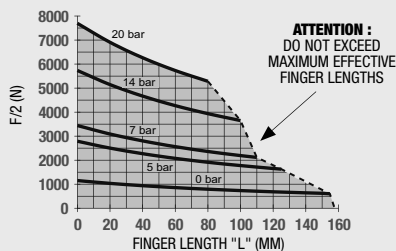
Metric [mm]  
[0.1] = [±.25]  
[0.0] = [±.13]  
[0.00] = [±.013]

Grippers are supplied with open side air ports and top manifold air ports plugged. Top manifold sealing dimensions shown.



## Loading Information:

Sum of forces transmitted by the jaws on the workpiece  
(Springs compressed at 50% stroke)



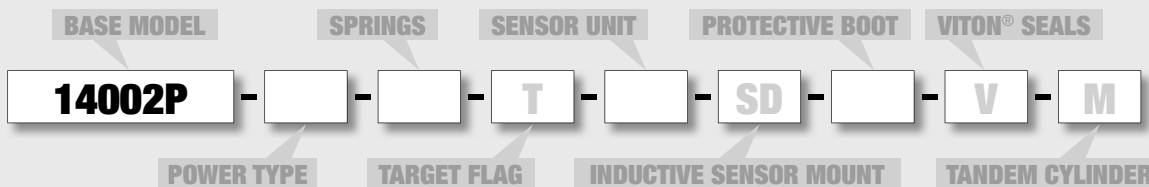
### Loading Capacity\*

	Static	Dynamic
Maximum Tensile <b>T</b>	1600 N	550 N
Maximum Compressive <b>C</b>	1820 N	550 N
Maximum Moment <b>Mx</b>	55 Nm	18 Nm
Maximum Moment <b>My</b>	90 Nm	30 Nm
Maximum Moment <b>Mz</b>	90 Nm	30 Nm

\* The Capacities are per set of jaws and are not simultaneous.

## How To Order:

See Pages 53-56 for incompatible accessory combinations



POWER TYPE
P Pneumatic
H Hydraulic (page 1.53)
(One of two options is mandatory P or H)
SPRINGS
RE External Gripping
RI Internal Gripping
SENSOR UNIT
• KT1 • KT2 • KX1 • KX2
PROTECTIVE BOOT
• E • E3

### PROTECTIVE BOOT ACCESSORIES

Model Code	Order #	Qty/Unit	
PVC Protective Boot, Brown or Black	<b>E</b>	<b>KP-311</b>	1
Fireproof KEVLAR Protective Boot, Red	<b>E3</b>	<b>KP-313</b>	1

### SENSOR ACCESSORIES

Model Code	Order #	Qty/Unit	
Inductive Sensor Kit (1 holder, 1 flag)	<b>SD</b>	<b>OSMK-114</b>	1 or 2
M8 Inductive Sensor PNP with M12 connector		<b>OISP-017-C</b>	1 or 4
M8 Inductive Sensor NPN with M12 connector		<b>OISN-017-C</b>	1 or 4
Cable (2 meters) with M12 screw right gold		<b>CABL-014</b>	1 or 4

### PNEUMATIC ACCESSORIES

Model Code	Order #	Qty/Unit	
Standard Seal Repair Kit		<b>SLKT-333</b>	1
Viton® Seal Repair Kit		<b>SLKT-333V</b>	1
Hydraulic Seal Repair Kit		<b>SLKT-334</b>	1

Options and Accessories:  
See Page 1.53



# PARALLEL GRIPPER 14002P-C PRECISION 2P GRIPPER SERIES

PRECISION 2P  
1.49

### Specifications

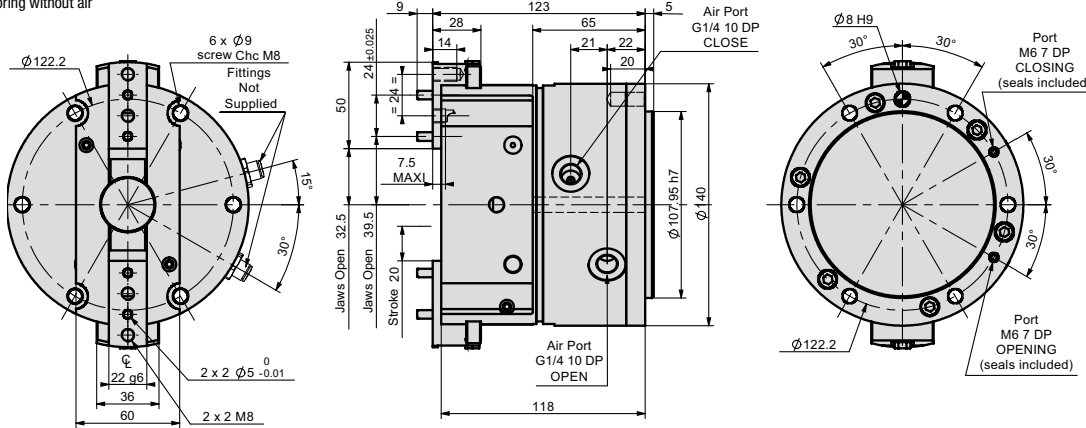
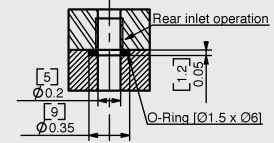
Grip Force (F6+R) <sup>1</sup> , 6 bars, Springs Mid-Way, L=0	4031 N
Grip Force (F0+R) <sup>2</sup> , 0 bars, Springs Mid-Way, L=0	1490 N
Total Stroke	40 mm
Weight	4.20 kg
Pressure Range	2 - 7 bar
Pressure Range with Springs	4 - 7 bar
Ø Cylinder Bore	105 mm
Displacement	220 cm <sup>3</sup>
Actuation (open / close)	0.16 s / 0.16 s
Repeatability	± 0.02 mm

1. Force with spring and air at 6bar
2. Force with spring without air

### UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

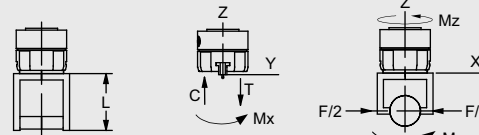
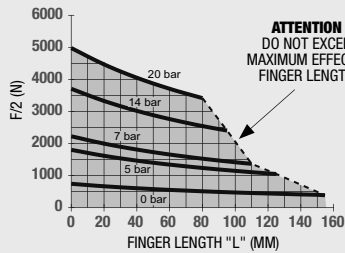
Dimensions are symmetrical about centerline	Third Angle Projection	All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or [±.013mm]	Metric Threads Course Pitch	<b>Imperial in.</b> 0.00 = ±.01 0.000 = ±.005 0.0000 = ±.0005	<b>Metric [mm]</b> [0.] = [±.25] [0.0] = [±.13] [0.00] = [±.013]
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Grippers are supplied with open side air ports and top manifold air ports plugged. Top manifold sealing dimensions shown.



## Loading Information:

Sum of forces transmitted by the jaws on the workpiece  
(Springs compressed at 50% stroke)

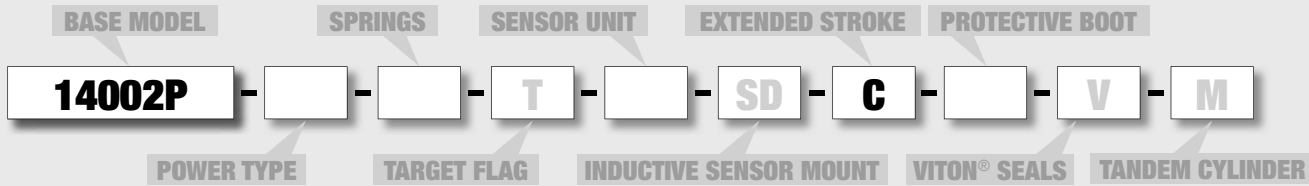


Loading Capacity*	Static		Dynamic
	T	C	M
Maximum Tensile <b>T</b>	1450 N	400 N	400 N
Maximum Compressive <b>C</b>	1660 N	400 N	400 N
Maximum Moment <b>Mx</b>	50 Nm	15 Nm	15 Nm
Maximum Moment <b>My</b>	75 Nm	25 Nm	25 Nm
Maximum Moment <b>Mz</b>	75 Nm	25 Nm	25 Nm

\* The Capacities are per set of jaws and are not simultaneous.

## How To Order:

See Pages 53-56 for incompatible accessory combinations



POWER TYPE	
P	Pneumatic
H	Hydraulic (page 1.53)
(One of two options is mandatory P or H)	
SPRINGS	
RE	External Gripping
RI	Internal Gripping
SENSOR UNIT	
• KT1	• KT2
• KX1	• KX2
PROTECTIVE BOOT	
• E	• E3

PROTECTIVE BOOT ACCESSORIES	Model Code	Order #	Qty/Unit
PVC Protective Boot, Brown or Black	<b>E</b>	<b>KP-311</b>	1
Fireproof KEVLAR Protective Boot, Red	<b>E3</b>	<b>KP-313</b>	1
SENSOR ACCESSORIES			
Inductive Sensor Kit (1 holder, 1 flag)	<b>SD</b>	<b>OSMK-114</b>	1 or 2
M8 Inductive Sensor PNP with M12 connector		<b>OISP-017-C</b>	1 or 4
M8 Inductive Sensor NPN with M12 connector		<b>OISN-017-C</b>	1 or 4
Cable (2 meters) with M12 screw right gold		<b>CABL-014</b>	1 or 4
PNEUMATIC ACCESSORIES			
Standard Seal Repair Kit		<b>SLKT-333</b>	1
Viton® Seal Repair Kit		<b>SLKT-333V</b>	1
Hydraulic Seal Repair Kit		<b>SLKT-334</b>	1

Options and Accessories:  
See Page 1.53

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# PARALLEL GRIPPER 16502P

## PRECISION 2P GRIPPER SERIES

**Specifications**

	<b>16502P</b>
Grip Force (F <sub>6+R</sub> ) <sup>1</sup> , 6 bars, Springs Mid-Way, L=0	11475 N
Grip Force (F <sub>0+R</sub> ) <sup>2</sup> , 0 bars, Springs Mid-Way, L=0	3825 N
Total Stroke	30 mm
Weight	8.74 kg
Pressure Range	2 - 7 bar
Pressure Range with Springs	4 - 7 bar
Ø Cylinder Bore	120 mm
Displacement	494 cm <sup>3</sup>
Actuation (open / close)	0.29 s / 0.29 s
Repeatability	± 0.02 mm

- Force with spring and air @ 6bar
- Force with spring without air

**UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW**

Dimensions are symmetrical about centerline

Third Angle Projection

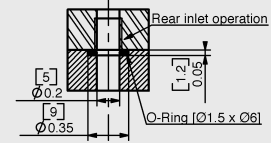
All Dowel Holes are SF (Slip Fit).  
Locational Tolerance  
±.0005" or (±.013mm)

Metric Threads  
Course Pitch

**Imperial in.**  
0.00 = ±.01  
0.000 = ±.005  
0.0000 = ±.0005

**Metric [mm]**  
[0.] = [±.25]  
[0.0] = [±.13]  
[0.00] = [±.013]

Grippers are supplied with open side air ports and top manifold air ports plugged. Top manifold sealing dimensions shown.





# PARALLEL GRIPPER 16502P-C PRECISION 2P GRIPPER SERIES

PRECISION 2P  
1.51

### Specifications

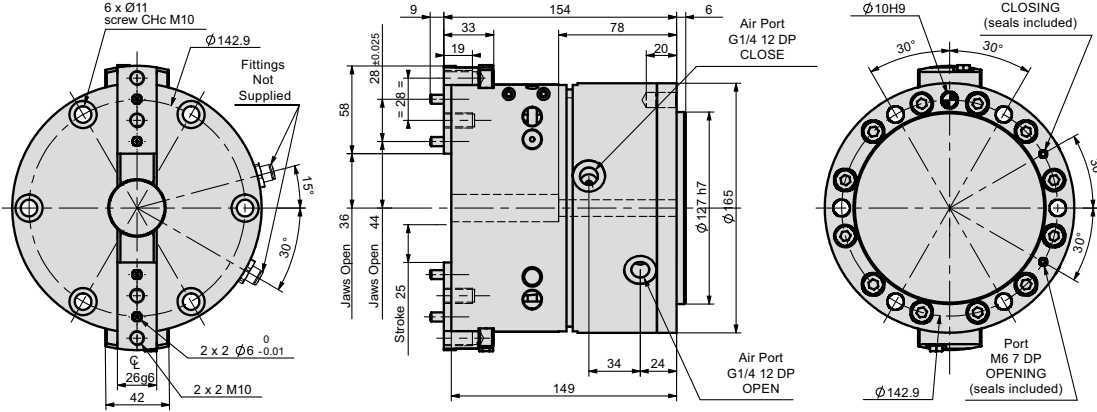
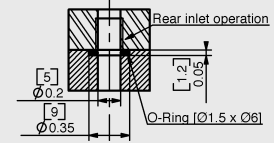
Grip Force (F6+R) <sup>1</sup> , 6 bars, Springs Mid-Way, L=0	6878 N
Grip Force (F0+R) <sup>2</sup> , 0 bars, Springs Mid-Way, L=0	2292 N
Total Stroke	50 mm
Weight	8.74 kg
Pressure Range	2 -7 bar
Pressure Range with Springs	4 -7 bar
Ø Cylinder Bore	120 mm
Displacement	494 cm <sup>3</sup>
Actuation (open / close)	0.29 s / 0.29 s
Repeatability	± 0.02 mm

1. Force with spring and air at 6bar  
2. Force with spring without air

### UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

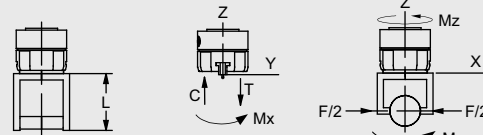
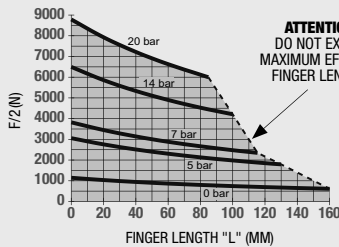
Dimensions are symmetrical about centerline	Third Angle Projection	All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or [±.013mm]	Metric Threads Course Pitch	<b>Imperial in.</b> 0.00 = ±.01 0.000 = ±.005 0.0000 = ±.0005	<b>Metric [mm]</b> [0.] = [±.25] [0.0] = [±.13] [0.00] = [±.013]
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Grippers are supplied with open side air ports and top manifold air ports plugged. Top manifold sealing dimensions shown.



## Loading Information:

Sum of forces transmitted by the jaws on the workpiece  
(Springs compressed at 50% stroke)

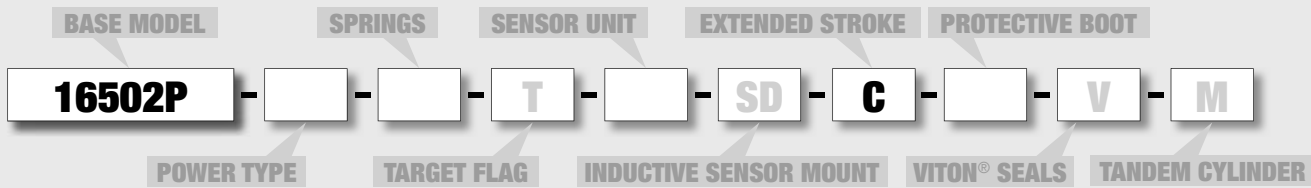


Loading Capacity*	Static	Dynamic
Maximum Tensile <b>T</b>	1550 N	580 N
Maximum Compressive <b>C</b>	1950 N	580 N
Maximum Moment <b>Mx</b>	60 Nm	20 Nm
Maximum Moment <b>My</b>	80 Nm	25 Nm
Maximum Moment <b>Mz</b>	90 Nm	25 Nm

\* The Capacities are per set of jaws and are not simultaneous.

## How To Order:

See Pages 53-56 for incompatible accessory combinations



POWER TYPE	
P	Pneumatic
H	Hydraulic (page 1.53)
(One of two options is mandatory P or H)	
SPRINGS	
RE	External Gripping
RI	Internal Gripping
SENSOR UNIT	
• KT1	• KT2
• KX1	• KX2
PROTECTIVE BOOT	
• E	• E3

PROTECTIVE BOOT ACCESSORIES	Model Code	Order #	Qty/Unit
PVC Protective Boot, Brown or Black	<b>E</b>	<b>KP-314</b>	1
Fireproof KEVLAR Protective Boot, Red	<b>E3</b>	<b>KP-316</b>	1
SENSOR ACCESSORIES			
Inductive Sensor Kit (1 holder, 1 flag)	<b>SD</b>	<b>OSMK-115</b>	1 or 2
M8 Inductive Sensor PNP with M12 connector		<b>OISP-017-C</b>	1 or 4
M8 Inductive Sensor NPN with M12 connector		<b>OISN-017-C</b>	1 or 4
Cable (2 meters) with M12 screw right gold		<b>CABL-014</b>	1 or 4
PNEUMATIC ACCESSORIES			
Standard Seal Repair Kit		<b>SLKT-335</b>	1
Viton® Seal Repair Kit		<b>SLKT-335V</b>	1
Hydraulic Seal Repair Kit		<b>SLKT-336</b>	1

Options and Accessories:  
See Page 1.53

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[www.comoso.com](http://www.comoso.com)



# PARALLEL GRIPPER 16502PGR PRECISION 2P GRIPPER SERIES



### Specifications

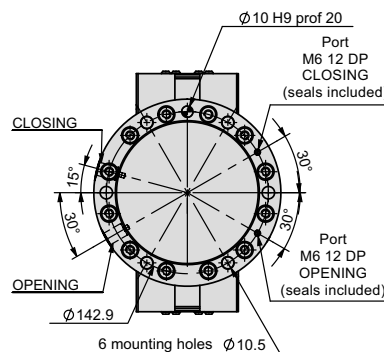
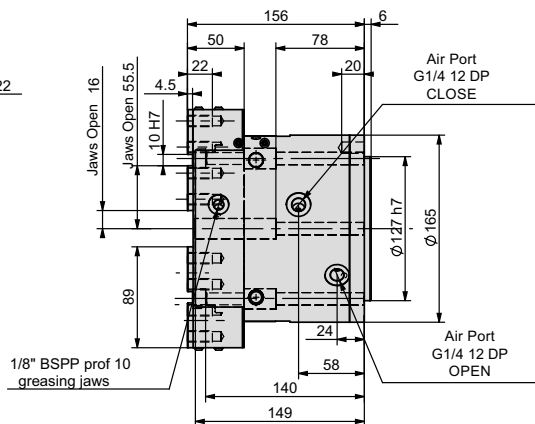
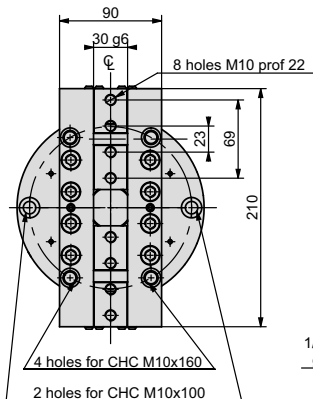
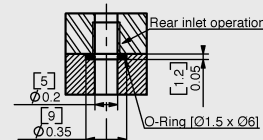
Grip Force (F6+R) <sup>1</sup> , 6 bars, Springs Mid-Way, L=0	11475 N
Grip Force (F0+R) <sup>2</sup> , 0 bars, Springs Mid-Way, L=0	3825 N
Total Stroke	30 mm
Weight	8.74 kg
Pressure Range	2 - 7 bar
Pressure Range with Springs	4 - 7 bar
Ø Cylinder Bore	120 mm
Displacement	494 cm <sup>3</sup>
Actuation (open / close)	0.29 s / 0.29 s
Repeatability	± 0.02 mm

- Force with spring and air at 6bar
- Force with spring without air

### UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

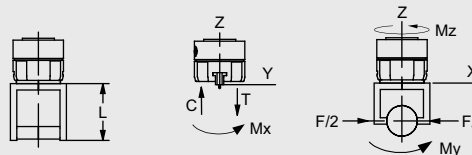
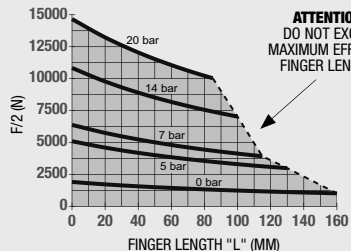
Dimensions are symmetrical about centerline	Third Angle Projection	All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or [±.013mm]	Metric Threads Course Pitch	<b>Imperial in.</b> 0.00 = ±.01 0.000 = ±.005 0.0000 = ±.0005	<b>Metric [mm]</b> [0.] = [±.25] [0.0] = [±.13] [0.00] = [±.013]
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Grippers are supplied with open side air ports and top manifold air ports plugged. Top manifold sealing dimensions shown.



## Loading Information:

Sum of forces transmitted by the jaws on the workpiece  
(Springs compressed at 50% stroke)



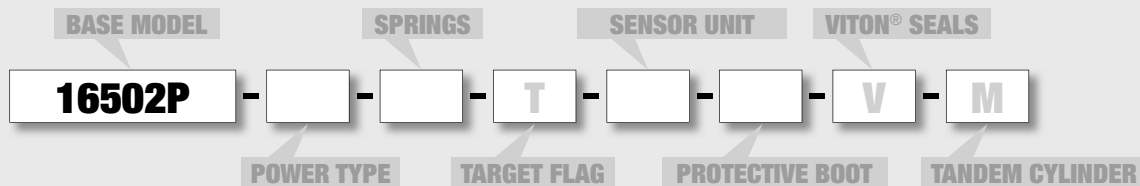
### Loading Capacity\*

	Static
Maximum Tensile <b>T</b>	5200 N
Maximum Compressive <b>C</b>	6400 N
Maximum Moment <b>Mx</b>	270 Nm
Maximum Moment <b>My</b>	350 Nm
Maximum Moment <b>Mz</b>	300 Nm

\*The Capacities are per set of jaws and are not simultaneous.

## How to Order:

See Pages 53-56 for incompatible accessory combinations



<b>POWER TYPE</b>
P Pneumatic
H Hydraulic (page 1.53)
(One of two options is mandatory P or H)
<b>SPRINGS</b>
RE External Gripping
RI Internal Gripping
<b>SENSOR UNIT</b>
• KT1 • KT2 • KX1 • KX2
<b>PROTECTIVE BOOT</b>
• E • E3

### ACCESSOIRES ENVELOPPE DE PROTECTION

	Model Code	Order #	Qty/Unit
Fireproof KEVLAR Protective Boot, Red	<b>E3</b>	<b>KENVE2-21384</b>	1

### PNEUMATIC ACCESSORIES

Standard Seal Repair Kit	<b>SLKT-335</b>	1
Viton® Seal Repair Kit	<b>SLKT-335V</b>	1
Hydraulic Seal Repair Kit	<b>SLKT-336</b>	1

Options and Accessories:  
See Page 1.53

## SUPPLY: (P) Pneumatic (H) (H80) Hydraulic

As standard, the clamp is supplied with air to a pressure of 7 bar. The clamp is fitted with Viton O-ring seals for high temperatures.

On request (contact us) the gripper can be supplied with hydraulic fluid. The clamp is fitted with seals Viton Quad-Ring.

- Choice **(H)** allows a hydraulic power to a pressure of 20 bar max. In this case the overall dimensions do not change. For better security the gripper must be fixed on their support before being fired. **CAUTION: Hydraulic cycle times are longer.**
- Choice **(H80)** allows a hydraulic power to a pressure of 80 bar max. In this case the total height of the gripper is increased (contact us).

**The hydraulic power is incompatible with the option tandem (M).**

## Option (RE) or (RI): Spring Assist

The internal springs of the gripper ensures failsafe operation by retaining the component during pressure loss, to increase the gripforce, or allows the usage of the gripper in single acting operation.

Option **(RE)** for external gripping. Option **(RI)** for internal gripping.

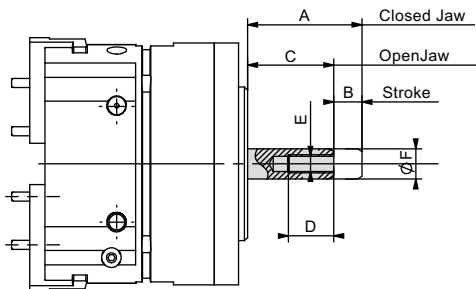
**The (RE) is incompatible with the option (RI).**

## Option (T): Sensor Rod

Option **(T)** is a steel rod which comes out on the rear side of the gripper. The rod is fixed with the piston and has the same stroke movement. The open end of the rod allows for mounting a cam which allows to control the position of the jaws by using inductive sensors, micro switches, etc

**WARNING:** when screwing on cam rod, make sure the sensor rod does not rotate to prevent twisting of the springs of options **(RE)** or **(RI)**.

**Option (T) is incompatible with option (K).**



Model	A	B	C	D	E	F
6002P & 6002P-C	35	5	30	15	M6	10
8002P & 8002P-C	35	6.5	28.5	15	M6	10
11002P & 11002P-C	35	10	25	15	M6	15
14002P & 14002P-C	55	13	42	20	M8	15
16502P & 16502P-C	53	23	30	20	M8	15

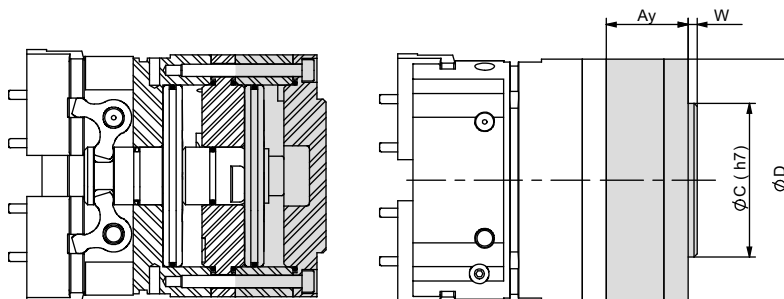
## Option (M): Tandem Cylinder

The **(M)** is a cylinder light-alloy that fits behind the bottom plate. This actuator's integral action allows to double the gripforce by using the same pressure.

The combination of tandem option tandem **(M)** and Option **(RE)** or **(RI)** can double the clamping forces of the spring assist option. For cycle times of the tandem option, apply a factor of 3 to the actuation time.

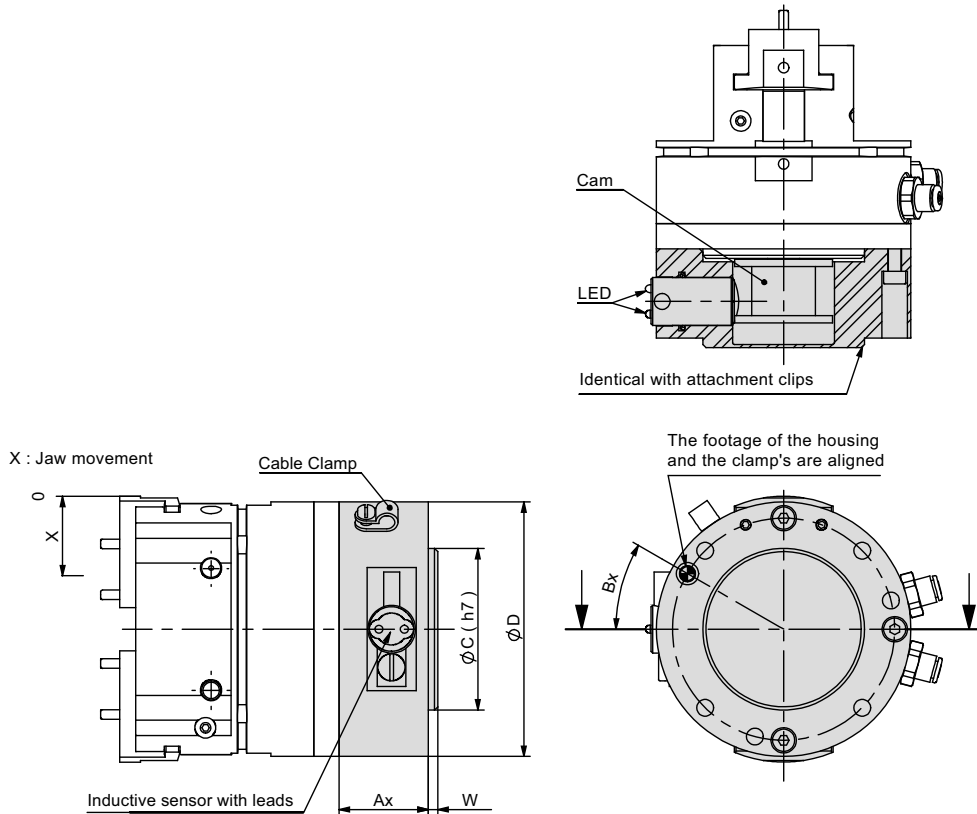
**The (M) is incompatible with the option (H).**

Model	Ay	ØC	ØD	W	Weight (kg)
6002P & 6002P-C	28.5	38.1	60	3	0.200
8002P & 8002P-C	27	50.8	80	3	0.300
11002P & 11002P-C	34	76.2	110	3	0.750
14002P & 14002P-C	49	107.95	140	5	2.100
16502P & 16502P-C	65	127	165	6	3.600



### Option (KT1), (KX1), (KT2), (KX2): Sensor Unit

The **(K)** is a lightweight alloy housing that fits on the back of the gripper. An integrated shaft follows the movement of the piston to provide information to the sensor attached to the side of the unit. It can control two positions of the grippers jaws. 2 types of inductive sensors (**KT, KX**) and 2 detection zones (**1, 2**) are possible to allow for the combination of 2 to 4 possible positions (**KT1, KX1, KT2, KX2**). For **KT, KX** sensor specifications.



Model #	Ax	Bx	ØC	ØD	W	Weight (kg)	No. of Sensing Postions (please specify when ordering)	Information area from the open grip position (green LED)	Area information relative to the closed grip position (yellow LED)
								X (mm)	X (mm)
6002P	23	30°	38.1	60	3	0.180	1	0 or 1 $\begin{matrix} +0,5 \\ -0 \end{matrix}$	4 $\begin{matrix} +0 \\ -0,5 \end{matrix}$ or 5
							2	0 or 2 $\begin{matrix} +0,5 \\ -0 \end{matrix}$	3 $\begin{matrix} +0 \\ -0,5 \end{matrix}$ or 5
6002P-C	23	30°	38.1	60	3	0.180	1	0 or 1.6 $\begin{matrix} +0,8 \\ -0 \end{matrix}$	7 $\begin{matrix} +0 \\ -0,8 \end{matrix}$ or 8
							2	0 or 3.2 $\begin{matrix} +0,8 \\ -0 \end{matrix}$	4.8 $\begin{matrix} +0 \\ -0,8 \end{matrix}$ or 8
8002P	28	30°	50.8	80	3	0.400	1	0 or 1 $\begin{matrix} +0,5 \\ -0 \end{matrix}$	5.5 $\begin{matrix} +0 \\ -0,5 \end{matrix}$ or 6,5
							2	0 or 2 $\begin{matrix} +0,5 \\ -0 \end{matrix}$	4.5 $\begin{matrix} +0 \\ -0,5 \end{matrix}$ or 6,5
8002P-C	28	30°	50.8	80	3	0.400	1	0 or 1.5 $\begin{matrix} +0,8 \\ -0 \end{matrix}$	8.5 $\begin{matrix} +0 \\ -0,8 \end{matrix}$ or 10
							2	0 or 3.1 $\begin{matrix} +0,8 \\ -0 \end{matrix}$	6.9 $\begin{matrix} +0 \\ -0,8 \end{matrix}$ or 10
11002P	36	30°	76.2	110	3	0.900	1	0 or 1 $\begin{matrix} +0,5 \\ -0 \end{matrix}$	9 $\begin{matrix} +0 \\ -0,5 \end{matrix}$ or 10
							2	0 or 3 $\begin{matrix} +0,5 \\ -0 \end{matrix}$	7 $\begin{matrix} +0 \\ -0,5 \end{matrix}$ or 10
11002P-C	36	30°	76.2	110	3	0.900	1	0 or 1.5 $\begin{matrix} +0,8 \\ -0 \end{matrix}$	13.5 $\begin{matrix} +0 \\ -0,8 \end{matrix}$ or 15
							2	0 or 4.5 $\begin{matrix} +0,8 \\ -0 \end{matrix}$	10.5 $\begin{matrix} +0 \\ -0,8 \end{matrix}$ or 15
14002P	45.5	165°	107.95	140	5	1.670	1	0 or 2 $\begin{matrix} +0,5 \\ -0 \end{matrix}$	11 $\begin{matrix} +0 \\ -0,5 \end{matrix}$ or 13
							2	0 or 4 $\begin{matrix} +0,5 \\ -0 \end{matrix}$	9 $\begin{matrix} +0 \\ -0,5 \end{matrix}$ or 13
14002P-C	45.5	165°	107.95	140	5	1.670	1	0 or 3 $\begin{matrix} +0,8 \\ -0 \end{matrix}$	17 $\begin{matrix} +0 \\ -0,8 \end{matrix}$ or 20
							2	0 or 6.2 $\begin{matrix} +0,8 \\ -0 \end{matrix}$	13.8 $\begin{matrix} +0 \\ -0,8 \end{matrix}$ or 20
16502P	65.5	165°	127	165	6	2.670	1	0 or 2 $\begin{matrix} +0,5 \\ -0 \end{matrix}$	13 $\begin{matrix} +0 \\ -0,5 \end{matrix}$ or 15
							2	0 or 4 $\begin{matrix} +0,5 \\ -0 \end{matrix}$	11 $\begin{matrix} +0 \\ -0,5 \end{matrix}$ or 15
16502P-C	65.5	165°	127	165	6	2.670	1	0 or 3.3 $\begin{matrix} +0,8 \\ -0 \end{matrix}$	21.7 $\begin{matrix} +0 \\ -0,8 \end{matrix}$ or 25
							2	0 or 7 $\begin{matrix} +0,8 \\ -0 \end{matrix}$	18 $\begin{matrix} +0 \\ -0,8 \end{matrix}$ or 25

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**Option (V): Viton® Seals**

Gripper with Viton® seals allows for use in high temperature environments [-30 ° C or 150 ° C].

**Accessory (E): Protective Boot**

The accessory (E) is a protective boot that fits over the gripper. It protects the mechanism and thus improves the life of the gripper in hostile environments. The accessory (E) causes a different location of the fingers on the jaws as compared to the standard installation. Before attaching the boot, perform the following steps:

1. Mount gripper to machine.
2. Slip boot over gripper and secure in place.
3. Attached fingers to jaws using finger adapter.

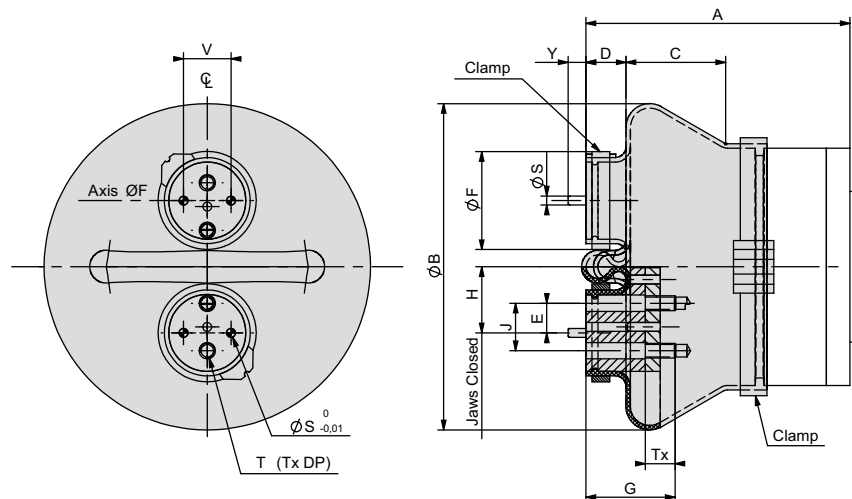
Depending on the environment 2 types of envelopes are available:

- (E) Envelope of black or brown PVC for environmental grinding with emery presence.
- (E3) red envelope containing KEVLAR fireproof silicone environment for hot chips and weld spatter.

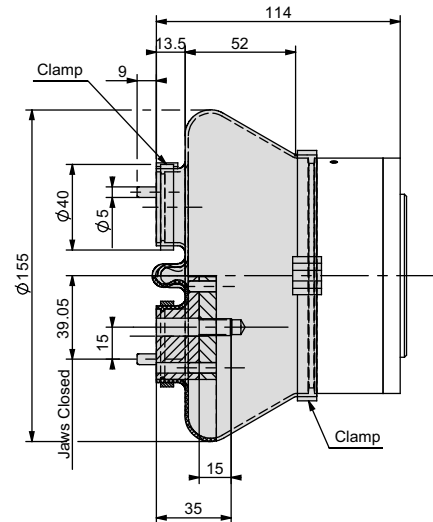
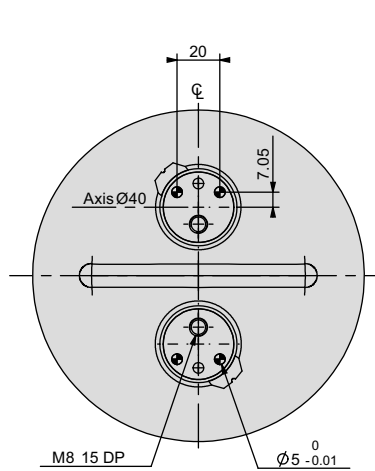
The accessory (E) is incompatible with the accessory (SD)

Model Code	Order #	Model	A	B	C	D	E	F	G	H	J	K	S	T	TX	V	Y
E	ER62P	6002P &	88	98	35	13.5	8	29	29	17.5	13	-	3	M4	9	13	6
E3	E3R62P	6002P-C															
E	ER82P	8002P &	89	110	34	13.5	10	33	30	22.3	16	-	3	M5	10	16	6
E3	E3R82P	8002P-C															
E	ER112P	11002P &	See drawing														
E3	E3R112P	11002P-C															
E	KP-311	14002P &	143	185	50	18	12	55	34	19.5	24	18	5	M8	14	-	8
E3	KP-313	14002P-C															
E	KP-314	16502P &	172	220	70	16	14	67	37	24 19	28	23	6	M10	19	-	8
E3	KP-316	16502P-C															

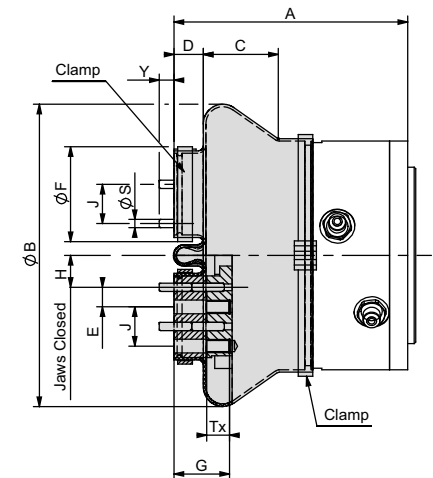
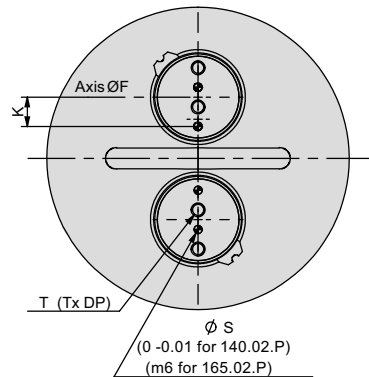
6002P  
8002P



11002P



14002P  
16502P



**Accessory (SD): Inductive Sensor Mounting Kit**

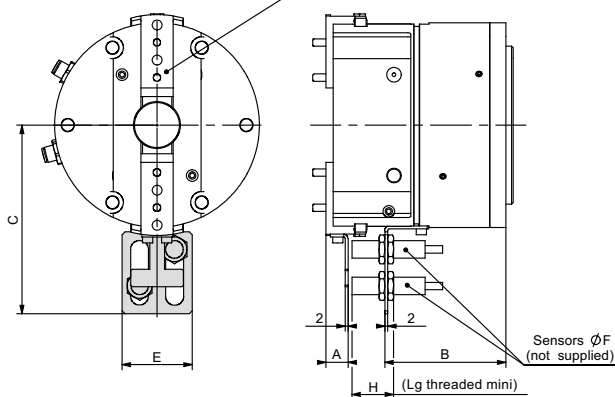
Allows for sensing of two positions: open and closed jaw. The accessory kit (SD) includes: 1 sensor bracket, 1 flag and screws.  
**Sensors are not provided.**

**NOTES:**

To be usable, the cylindrical inductive sensors selected by the customer must have tapped their bodies to a minimum depth H (see table below).

Depending on their length, the cylindrical inductive sensors can extend below the clamp, requiring provision of suitable housing in the surrounding parts. It is possible to control more than 2 positions using a second attachment (SD).

Ability to adapt a second set of sensors on this jaw



Order #	Model	A	B	C	E	F	H
<b>SD60-80P</b>	6002P & 6002P-C	20	35	67	32	8	35
<b>SD60-80P</b>	8002P & 8002P-C	19	34	77	32	8	35
<b>SD110P</b>	11002P & 11002P-C	19.5	45	97	32	8	35
<b>OSMK-114</b>	14002P & 14002P-C	15	83	129	48	12	28.5
<b>OSMK-115</b>	16502P & 16502P-C	29	96	147	48	12	33





# Parallel Gripper- CP Square Jaw Series

## Compact and Powerful

This gripper is designed for use in confined spaces, combining long strokes with a high grip force. Optional safety springs retain the components, should the air supply fail or to increase grip force.

## Multipurpose Gripper

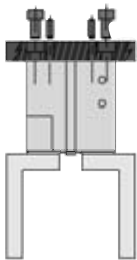
A wide range of options and accessories (extended stroke, safety springs for internal or external gripping, inductive sensors and Viton® seals) allow these grippers to be used in a number of applications.

## Harsh Environments

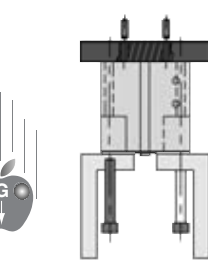
Shielded design repels chips and other particulate from internal drive mechanism depending on the chosen material of the shield.

## Mounting Information:

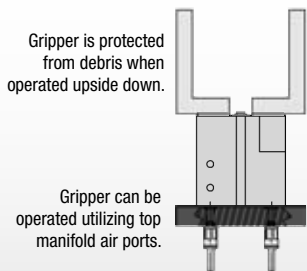
### Gripper can be mounted and operated in any orientation.



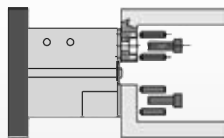
Gripper is located using 2 dowel pins and assembled from the top with 2 screws.



Gripper can also be assembled from the bottom with 2 through body screws.



Gripper is protected from debris when operated upside down.



Fingers are located on jaw with 2 dowel pins and assembled with 1 screw.

## Technical Specifications:

### Pneumatic Specifications

Pressure Operating Range

**3-10 bar**

Cylinder Type

**Double Acting**

Dynamic Seals

**Buna-N**

Valve Required to Operate:

Double Acting

**4-way, 2-position**

Single acting (Option RE or RI)

**3-way, 2-position**

### Air Quality Requirements

Air Filtration

**40 Micron or Better**

Air Lubrication

**Not Necessary\***

### Temperature Operating Range

Buna-N Seals (standard)

**-35°~80° C**

Viton® Seals (optional)

**-30°~150° C**

### Application Restrictions

Expected Life

Normal Application

**3 million cycles**

w/ Preventative Maintenance

**6 million cycles\***

Field Repairable

**Yes**

Seal Repair Kits Available

**Yes**

\*Addition of lubrication will greatly increase service life

## Product Features

### Multiple Air Ports

Side or top air ports (top ports require O-ring)

### Angular Finger Jaws Option (-Q)

**Quality Components**  
Body made from aluminum alloy with Teflon™ impregnated hardcoat anodize. Other essential parts of the gripper are made of hardened and precision ground steel

### Shielded Design

Gripper body is shielded to repel chips and other particulate from internal drive mechanism

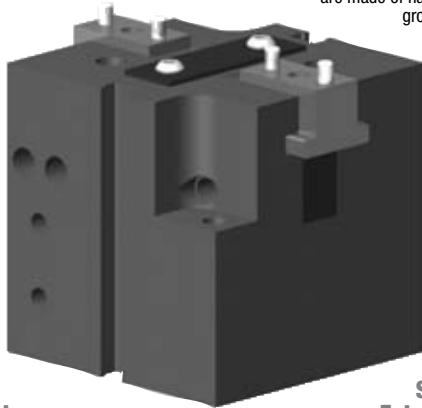
Optional: the front (push) or backward (pulling).

### Inductive Sensors

Accessory (SD) for control jaw position. Support for two sensors, adjustable screen and spacer.

### Viton® Seals

Optional Viton® seals (-V) for high temperatures



### Optional Spring Assist

Optional spring assist retains the component should the air supply fail, to assist the gripper for internal (-RE) or external (-RI) gripping, or in single acting mode

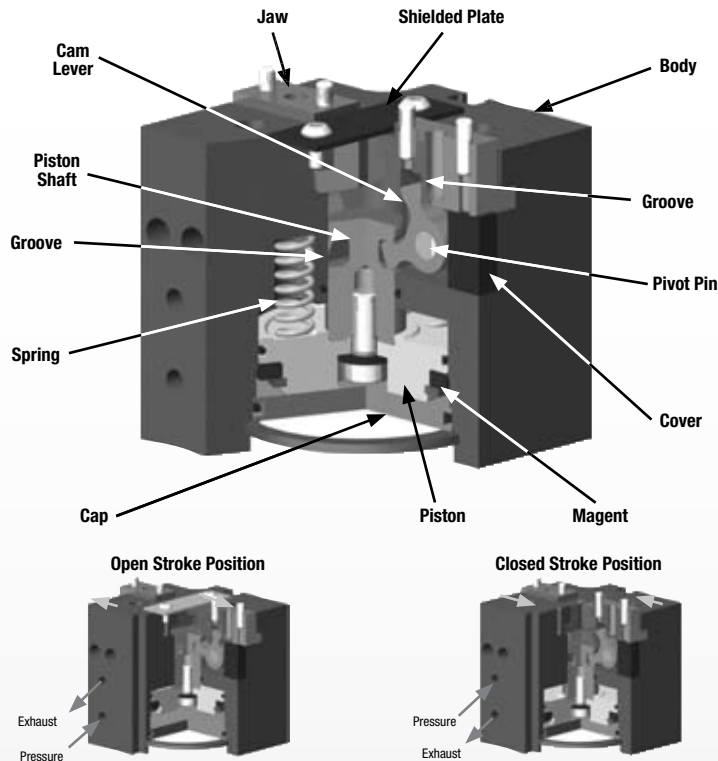
### Magnetic Sensing

Gripper is pre-equipped with 2 magnets for sensors, adjustable in grooves (for sensing the position of the jaw).

### Standard and Extended Stroke (-C)

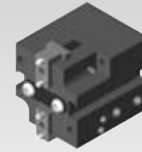
Each model of gripper is available in two stroke lengths

## Operating Principle



- A double-acting piston is connected to the piston shaft at its end with a driving groove. The piston is pre-fitted with a ring magnet for sensor detection.
- Levers pivot in the body about an axis of articulation. Their two heads agree precisely on one side in the groove of the small piston, the other in a groove cut in each jaw holder.
- The rotation of the levers converts the vertical movement of the piston in a horizontal motion and synchronized two-bit gates, which are guided in grooves in «T» fitting body.
- This gripper is suitable for internal or external gripping and can be mounted in any orientation
- Optional failsafe spring can be used to maintain gripping force if gripper loses air pressure or as a single acting return gripper.

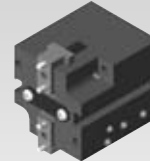
## Style: CP Parallel Gripper



Model	CP-1	CP-1-C
Total Stroke:	4 mm	6 mm
Force at 6bar: <sup>1</sup>	88 N	60 N
Force w/o air: <sup>2</sup>	15 N	10 N
Weight:	0.09 kg	0.09 kg

See Pages **1.60 & 1.61**

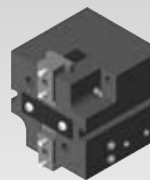
## Style: CP Parallel Gripper



Model	CP-2	CP-2-C
Total Stroke:	6 mm	9 mm
Force at 6bar: <sup>1</sup>	238 N	161 N
Force w/o air: <sup>2</sup>	43 N	29 N
Weight:	0.21 kg	0.20 kg

See Pages **1.62 & 1.63**

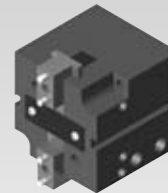
## Style: CP Parallel Gripper



Model	CP-3	CP-3-C
Total Stroke:	10 mm	16 mm
Force at 6bar: <sup>1</sup>	677 N	407 N
Force w/o air: <sup>2</sup>	161 N	97 N
Weight:	0.45 kg	0.47 kg

See Pages **1.64 & 1.65**

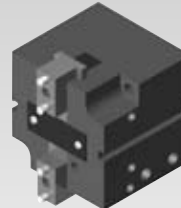
## Style: CP Parallel Gripper



Model	CP-4	CP-4-C
Total Stroke:	13 mm	20 mm
Force at 6bar: <sup>1</sup>	1016 N	665 N
Force w/o air: <sup>2</sup>	222 N	145 N
Weight:	0.73 kg	0.75 kg

See Pages **1.66 & 1.67**

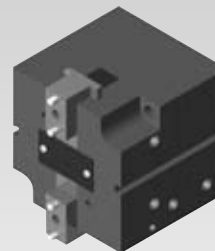
## Style: CP Parallel Gripper



Model	CP-5	CP-5-C
Total Stroke:	18 mm	27 mm
Force F <sub>6-R</sub> :	1591 N	1081 N
Force F <sub>0-R</sub> :	322 N	219 N
Weight:	1.25 kg	1.27 kg

See Pages **1.68 & 1.69**

## Style: CP Parallel Gripper



Model	CP-6	CP-6-C
Total Stroke:	24 mm	32 mm
Force at 6bar: <sup>1</sup>	2749 N	2092 N
Force w/o air: <sup>2</sup>	711 N	541 N
Weight:	2.50 kg	2.56 kg

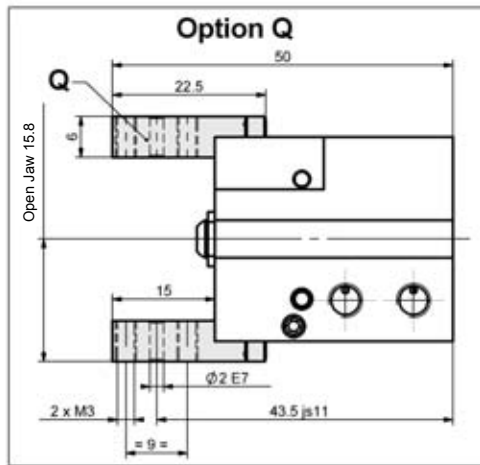
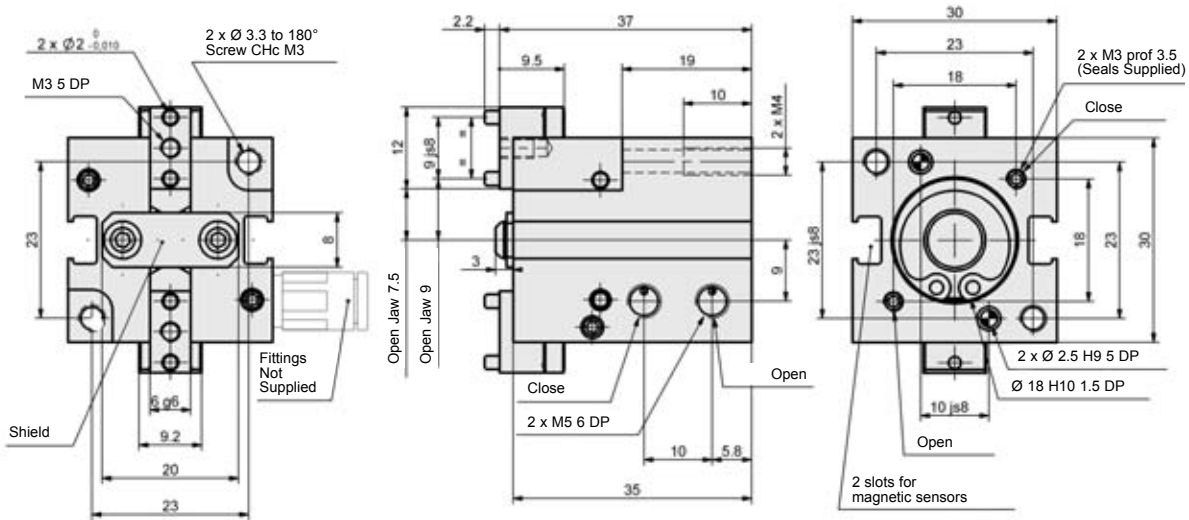
See Pages **1.70 & 1.71**

## OPTIONS & ACCESSOIRES

See Page **1.72**

1. Force with spring and air at 6bar
2. Force with spring without air



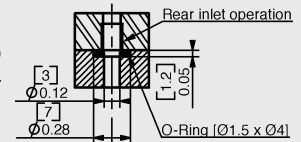


### Specifications

	<b>CP-1-C</b>
Grip Force (F6+R) <sup>1</sup> , 6 bars, Springs Mid-Way, L=0	60 N
Grip Force (F0+R) <sup>2</sup> , 0 bars, Springs Mid-Way, L=0	10 N
Total Stroke	6 mm
Weight	0.09 kg
Pressure Range	2-10 bar
Pressure Range with Springs	2.5-10 bar
$\varnothing$ Cylinder Bore	16 mm
Displacement	0.7 cm <sup>3</sup>
Actuation (open / close)	0.06 s / 0.06 s
Repeatability	$\pm 0.025$

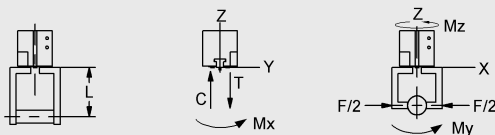
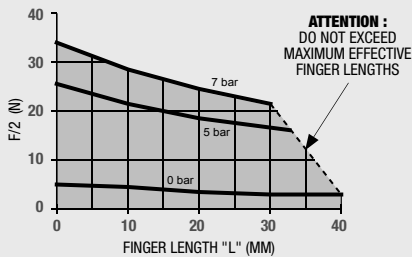
- Force with spring and air at 6bar
- Force with spring without air

Grippers are supplied with open side air ports and top manifold air ports plugged. Top manifold sealing dimensions shown.



## Loading Information

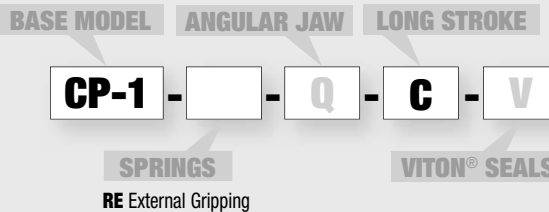
Sum of forces transmitted by the jaws on the workpiece  
(Springs compressed at 50% stroke)



Loading Capacity*	Static		Dynamic	
	T	C	Mx	My
Maximum Tensile <b>T</b>	110 N	8 N	8 N	8 N
Maximum Compressive <b>C</b>	190 N	8 N	0.2 Nm	0.3 Nm
Maximum Moment <b>Mx</b>	1 Nm	0.2 Nm	2 Nm	0.3 Nm
Maximum Moment <b>My</b>	2 Nm	0.3 Nm	2 Nm	0.3 Nm
Maximum Moment <b>Mz</b>	2 Nm	0.3 Nm		

\* The Capacities are per set of jaws and are not simultaneous.

## How to Order: (Order Accessories separately from Basic Model)



### SENSOR ACCESSORIES

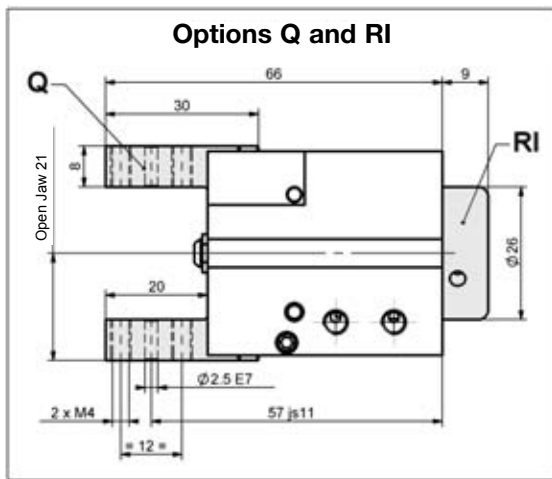
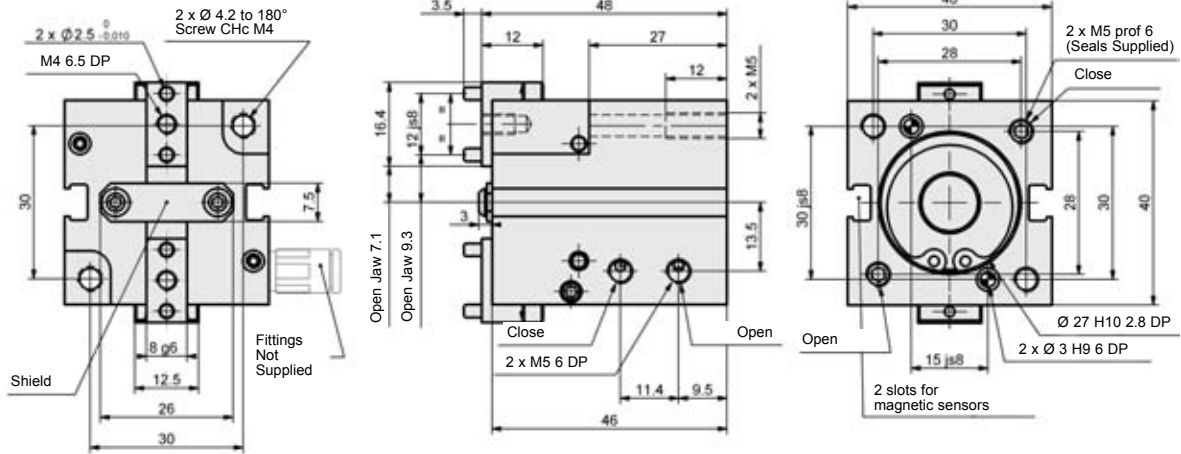
	ORDER #	QTY/UNIT
PNP Sensor with 0.3m Output Cable with 90° with M8 connector	<b>D1</b>	1 or 2
PNP Sensor with 0.3m Output Cable with M8 connector	<b>D4</b>	1 or 2
Quick Disconnect 2 Meter Cable Length	<b>CABL-010</b>	1 or 2

### PNEUMATIC ACCESSORIES

Standard Seal Repair Kit	<b>SCP1</b>	1
Viton® Seal Repair Kit	<b>SCP1V</b>	1
Repair Kit (screws, springs, standard seals)	<b>KSCP1</b>	1
Repair Kit (screws, springs, seals Viton)	<b>KSCP1V</b>	1

Accessories: see page 70

# PARALLEL GRIPPER CP-2 COMPACT GRIPPER SERIES

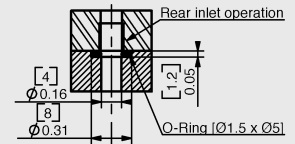


### Specifications

	CP-2
Grip Force (F6+R) <sup>1</sup> , 6 bars, Springs Mid-Way, L=0	238 N
Grip Force (F0+R) <sup>2</sup> , 0 bars, Springs Mid-Way, L=0	43 N
Total Stroke	6 mm
Weight	0.21 kg
Pressure Range	2-10 bar
Pressure Range with Springs	2.5-10 bar
Ø Cylinder Bore	25 mm
Displacement	2.7 cm <sup>3</sup>
Acuation (open / close)	0.06 s / 0.06 s
Repeatability	± 0.025

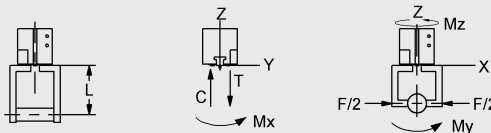
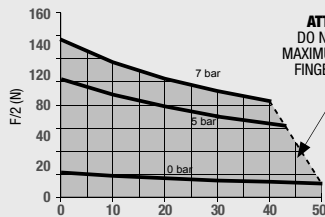
1. Force with spring and air at 6bar  
2. Force with spring without air

Grippers are supplied with open side air ports and top manifold air ports plugged. Top manifold sealing dimensions shown.



## Loading Information

Sum of forces transmitted by the jaws on the workpiece  
(Springs compressed at 50% stroke)



Loading Capacity*	Static	Dynamic
Maximum Tensile <b>T</b>	260 N	26 N
Maximum Compressive <b>C</b>	375 N	26 N
Maximum Moment <b>Mx</b>	5 Nm	0.9 Nm
Maximum Moment <b>My</b>	8 Nm	1.5 Nm
Maximum Moment <b>Mz</b>	8 Nm	1.5 Nm

\* The Capacities are per set of jaws and are not simultaneous.

## How to Order: (Order Accessories separately from Basic Model)

BASE MODEL    ANGULAR JAW    VITON® SEALS

CP-2 - Q - SD - V

RE External Gripping  
RI Internal Gripping

SPRINGS

SENSOR MOUNTS

### SENSOR ACCESSORIES

	ORDER #	QTY/UNIT
PNP Sensor with 0.3m Output Cable with 90° with M8 connector	<b>D1</b>	1 or 2
NPN Sensor with 0.3m Output Cable with 90° with M8 connector	<b>D10</b>	1 or 2
PNP Sensor with 0.3m Output Cable with M8 connector	<b>D4</b>	1 or 2
NPN Sensor with 0.3m Output Cable with M8 connector	<b>D7</b>	1 or 2
Inductive Sensor Mounting Kit for (mounts 2 sensors) (SD)	<b>SDCP2</b>	1
Inductive PNP Sensor with M8 Connector	<b>OISP-011-C</b>	1 or 2
Inductive NPN Sensor with M8 Connector	<b>OINP-011-C</b>	1 or 2
Quick Disconnect 2 Meter Cable Length	<b>CABL-010</b>	1 or 2

### PNEUMATIC ACCESSORIES

Standard Seal Repair Kit	<b>SCP2</b>	1
Viton® Seal Repair Kit	<b>SCP2V</b>	1
Repair Kit (screws, springs, standard seals)	<b>KSCP2</b>	1
Repair Kit (screws, springs, seals Viton)	<b>KSCP2V</b>	1

Accessories: see page 70

Please see back cover for DE-STA-CO Global Locations. [www.destaco.com](http://www.destaco.com)

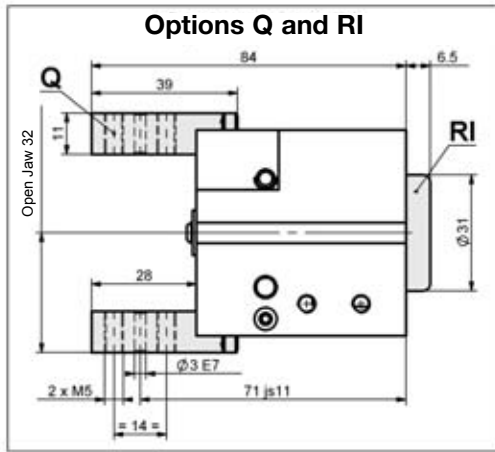
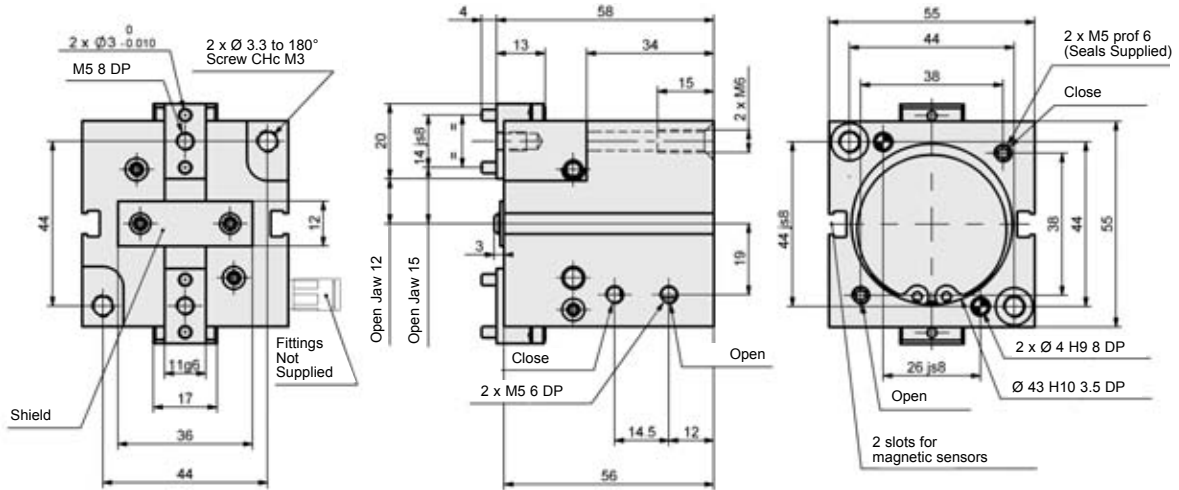
[www.comoso.com](http://www.comoso.com)







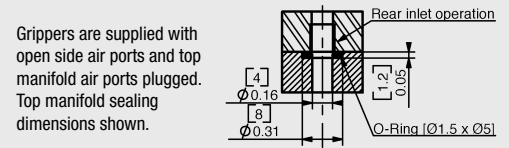
# PARALLEL GRIPPER CP-3 COMPACT GRIPPER SERIES



### Specifications

Grip Force (F6+R) <sup>1</sup> , 6 bars, Springs Mid-Way, L=0	677 N
Grip Force (F0+R) <sup>2</sup> , 0 bars, Springs Mid-Way, L=0	161 N
Total Stroke	10 mm
Weight	0.45 kg
Pressure Range	2-10 bar
Pressure Range with Springs	3-10 bar
Ø Cylinder Bore	40 mm
Displacement	11.7 cm <sup>3</sup>
Acuation (open / close)	0.07 s / 0.07 s
Repeatability	± 0.025

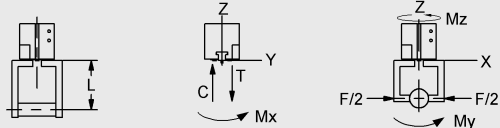
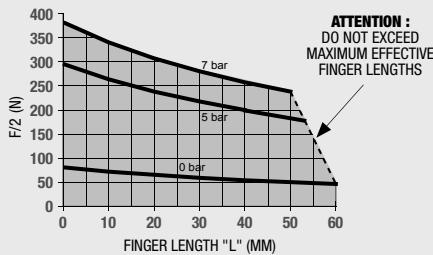
1. Force with spring and air @ 6bar  
2. Force with spring without air



Grippers are supplied with open side air ports and top manifold air ports plugged. Top manifold sealing dimensions shown.

## Loading Information

Sum of forces transmitted by the jaws on the workpiece  
(Springs compressed at 50% stroke)



Loading Capacity*	Static	Dynamic
Maximum Tensile <b>T</b>	520 N	72 N
Maximum Compressive <b>C</b>	690 N	72 N
Maximum Moment <b>Mx</b>	11 Nm	3.5 Nm
Maximum Moment <b>My</b>	18 Nm	6 Nm
Maximum Moment <b>Mz</b>	17 Nm	6 Nm

\* The Capacities are per set of jaws and are not simultaneous.

## How to Order: (Order Accessories separately from Basic Model)

BASE MODEL    ANGULAR JAW    VITON® SEALS

**CP-3** - [ ] - **Q** - **SD** - **V**

RE External Gripping  
RI Internal Gripping

SPRINGS

SENSOR MOUNTS

### SENSOR ACCESSORIES

	ORDER #	QTY/UNIT
PNP Sensor with 0.3m Output Cable with 90° with M8 connector	<b>D1</b>	1 or 2
NPN Sensor with 0.3m Output Cable with 90° with M8 connector	<b>D10</b>	1 or 2
PNP Sensor with 0.3m Output Cable with M8 connector	<b>D4</b>	1 or 2
NPN Sensor with 0.3m Output Cable with M8 connector	<b>D7</b>	1 or 2
Inductive Sensor Mounting Kit for (mounts 2 sensors) ( <b>SD</b> )	<b>SDCP3</b>	1
Inductive PNP Sensor with M8 Connector	<b>OISP-011-C</b>	1 or 2
Inductive NPN Sensor with M8 Connector	<b>OINP-011-C</b>	1 or 2
Quick Disconnect 2 Meter Cable Length	<b>CABL-010</b>	1 or 2

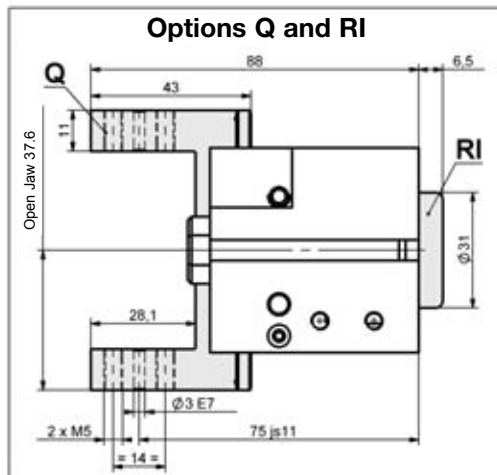
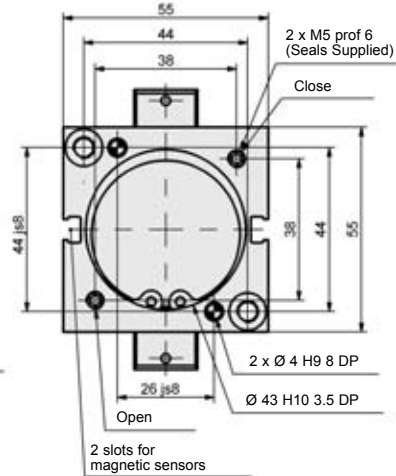
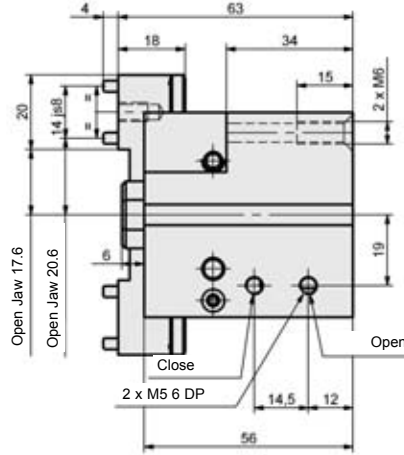
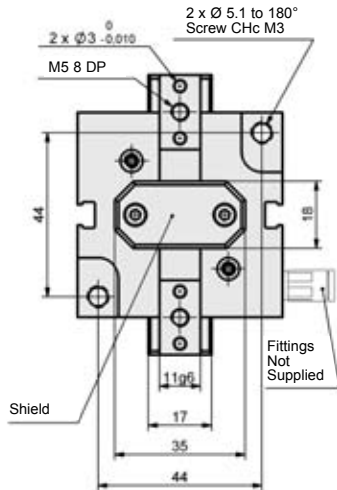
### PNEUMATIC ACCESSORIES

Standard Seal Repair Kit	<b>SCP3</b>	1
Viton® Seal Repair Kit	<b>SCP3V</b>	1
Repair Kit (screws, springs, standard seals)	<b>KSCP3</b>	1
Repair Kit (screws, springs, seals Viton)	<b>KSCP3V</b>	1

Accessories: see page 70

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[www.comoso.com](http://www.comoso.com)



### Specifications

- Grip Force (F<sub>6+R</sub>)<sup>1</sup>, 6 bars, Springs Mid-Way, L=0
- Grip Force (F<sub>0+R</sub>)<sup>2</sup>, 0 bars, Springs Mid-Way, L=0
- Total Stroke
- Weight
- Pressure Range
- Pressure Range with Springs
- Ø Cylinder Bore
- Displacement
- Acuation (open / close)
- Repeatability

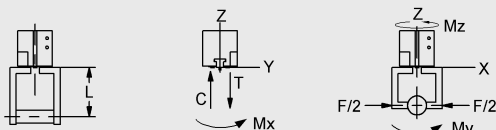
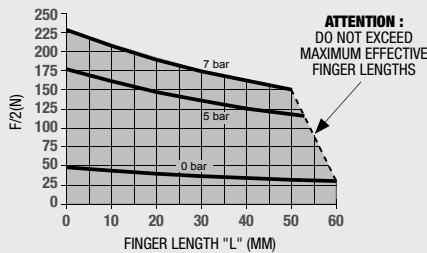
### CP-3-C

- 407 N
- 97 N
- 16 mm
- 0.47 kg
- 2-10 bar
- 3-10 bar
- 40 mm
- 11.7 cm<sup>3</sup>
- 0.07 s / 0.07 s
- ± 0.025

Grippers are supplied with open side air ports and top manifold air ports plugged. Top manifold sealing dimensions shown.

## Loading Information

Sum of forces transmitted by the jaws on the workpiece  
(Springs compressed at 50% stroke)



Loading Capacity*	Static	Dynamic
Maximum Tensile <b>T</b>	500 N	55 N
Maximum Compressive <b>C</b>	675 N	55 N
Maximum Moment <b>Mx</b>	9 Nm	2.5 Nm
Maximum Moment <b>My</b>	16 Nm	4 Nm
Maximum Moment <b>Mz</b>	17 Nm	4 Nm

\* The Capacities are per set of jaws and are not simultaneous.

## How to Order: (Order Accessories separately from Basic Model)

BASE MODEL    ANGULAR JAW    LONG STROKE

**CP-3** - [ ] - **Q** - **SD** - **C** - **V**

**RE** External Gripping  
**RI** Internal Gripping

**SPRINGS**    **SENSOR MOUNTS**    **VITON® SEALS**

### SENSOR ACCESSORIES

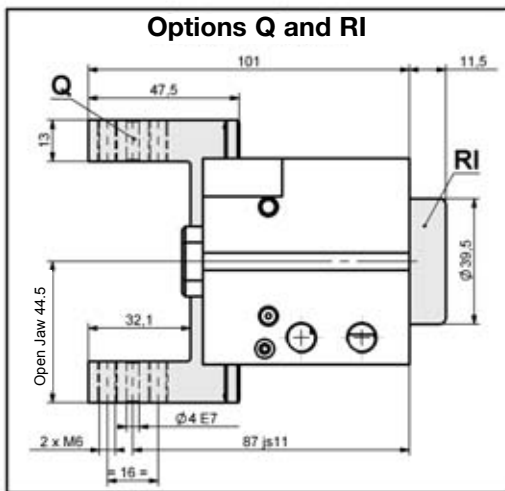
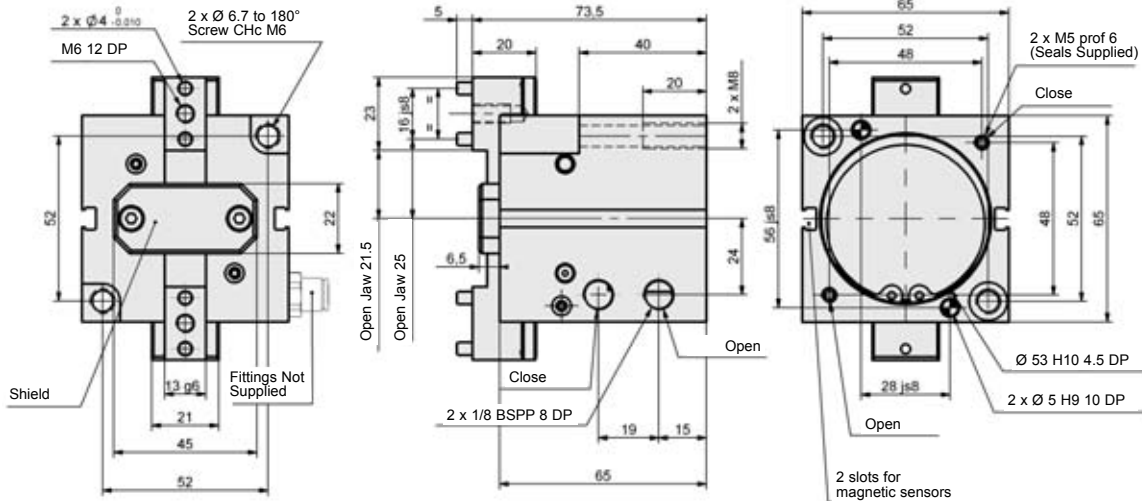
	ORDER #	QTY/UNIT
PNP Sensor with 0.3m Output Cable with 90° with M8 connector	<b>D1</b>	1 or 2
NPN Sensor with 0.3m Output Cable with 90° with M8 connector	<b>D10</b>	1 or 2
PNP Sensor with 0.3m Output Cable with M8 connector	<b>D4</b>	1 or 2
NPN Sensor with 0.3m Output Cable with M8 connector	<b>D7</b>	1 or 2
Inductive Sensor Mounting Kit for (mounts 2 sensors) ( <b>SD</b> )	<b>SDCP3</b>	1
Inductive PNP Sensor with M8 Connector	<b>OISP-011-C</b>	1 or 2
Inductive NPN Sensor with M8 Connector	<b>OINP-011-C</b>	1 or 2
Quick Disconnect 2 Meter Cable Length	<b>CABL-010</b>	1 or 2

### PNEUMATIC ACCESSORIES

Standard Seal Repair Kit	<b>SCP3</b>	1
Viton® Seal Repair Kit	<b>SCP3V</b>	1
Repair Kit (screws, springs, standard seals)	<b>KSCP3</b>	1
Repair Kit (screws, springs, seals Viton)	<b>KSCP3V</b>	1

Accessories: see page 70



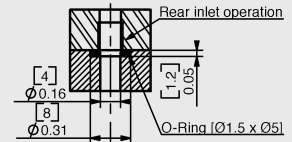


### Specifications

	CP-4-C
Grip Force (F6+R) <sup>1</sup> , 6 bars, Springs Mid-Way, L=0	665 N
Grip Force (F0+R) <sup>2</sup> , 0 bars, Springs Mid-Way, L=0	145 N
Total Stroke	20 mm
Weight	0.75 kg
Pressure Range	2-10 bar
Pressure Range with Springs	3-10 bar
$\varnothing$ Cylinder Bore	50 mm
Displacement	24.2 cm <sup>3</sup>
Acuation (open / close)	0.07 s / 0.07 s
Repeatability	$\pm 0.025$

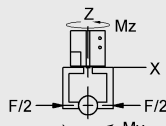
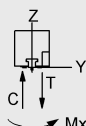
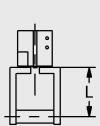
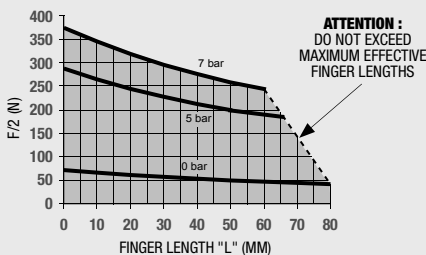
1. Force with spring and air at 6bar  
2. Force with spring without air

Grippers are supplied with open side air ports and top manifold air ports plugged. Top manifold sealing dimensions shown.



## Loading Information

Sum of forces transmitted by the jaws on the workpiece  
(Springs compressed at 50% stroke)



Loading Capacity*	Static	Dynamic
Maximum Tensile <b>T</b>	710 N	89 N
Maximum Compressive <b>C</b>	800 N	89 N
Maximum Moment <b>Mx</b>	18 Nm	4.7 Nm
Maximum Moment <b>My</b>	30 Nm	7.6 Nm
Maximum Moment <b>Mz</b>	25 Nm	7.6 Nm

\* The Capacities are per set of jaws and are not simultaneous.

## How to Order: (Order Accessories separately from Basic Model)

BASE MODEL

ANGULAR JAW

LONG STROKE

**CP-4** - [ ] - **Q** - **SD** - **C** - **V**

RE External Gripping  
RI Internal Gripping

SPRINGS

SENSOR MOUNTS

VITON® SEALS

### SENSOR ACCESSORIES

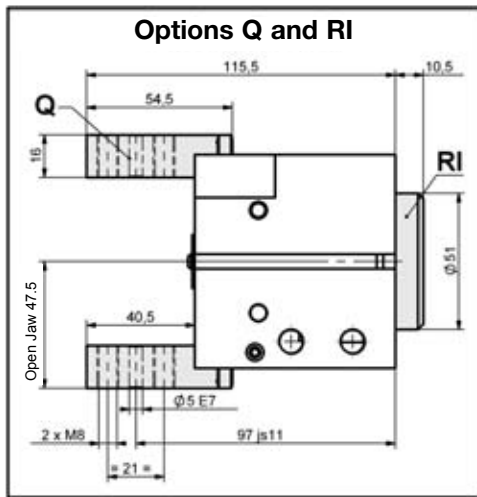
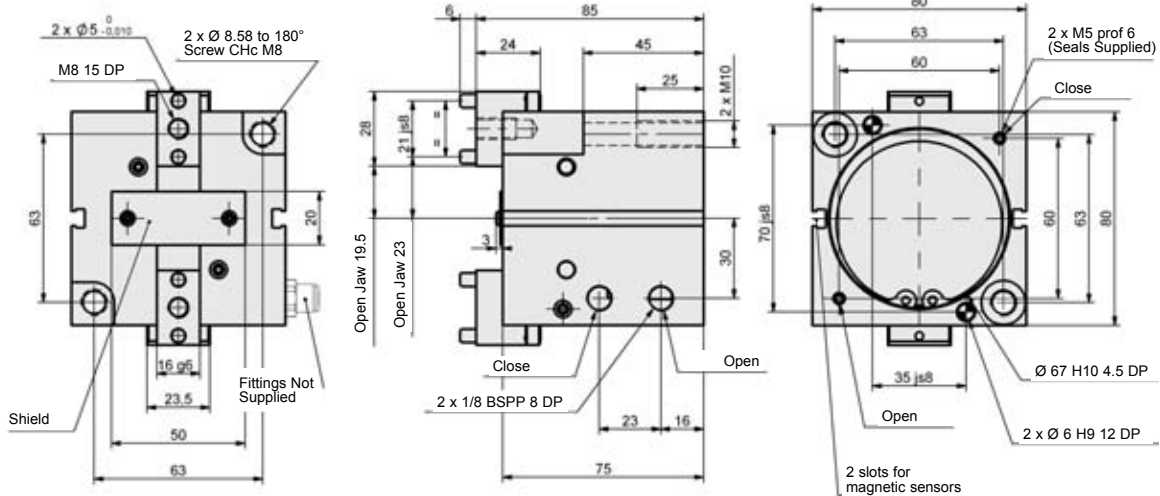
	ORDER #	QTY/UNIT
PNP Sensor with 0.3m Output Cable with 90° with M8 connector	<b>D1</b>	1 or 2
NPN Sensor with 0.3m Output Cable with 90° with M8 connector	<b>D10</b>	1 or 2
PNP Sensor with 0.3m Output Cable with M8 connector	<b>D4</b>	1 or 2
NPN Sensor with 0.3m Output Cable with M8 connector	<b>D7</b>	1 or 2
Inductive Sensor Mounting Kit for (mounts 2 sensors) ( <b>SD</b> )	<b>SDCP4</b>	1
Inductive PNP Sensor with M8 Connector	<b>OISP-011-C</b>	1 or 2
Inductive NPN Sensor with M8 Connector	<b>OINP-011-C</b>	1 or 2
Quick Disconnect 2 Meter Cable Length	<b>CABL-010</b>	1 or 2

### PNEUMATIC ACCESSORIES

Standard Seal Repair Kit	<b>SCP4</b>	1
Viton® Seal Repair Kit	<b>SCP4V</b>	1
Repair Kit (screws, springs, standard seals)	<b>KSCP4</b>	1
Repair Kit (screws, springs, seals Viton)	<b>KSCP4V</b>	1

Accessories: see page 70

# PARALLEL GRIPPER CP-5 COMPACT GRIPPER SERIES

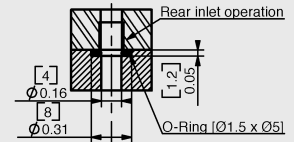


### Specifications

	CP-5
Grip Force (F6+R) <sup>1</sup> , 6 bars, Springs Mid-Way, L=0	1591 N
Grip Force (F0+R) <sup>2</sup> , 0 bars, Springs Mid-Way, L=0	322 N
Total Stroke	18 mm
Weight	1.25 kg
Pressure Range	2-10 bar
Pressure Range with Springs	3-10 bar
$\phi$ Cylinder Bore	63 mm
Displacement	53.5 cm <sup>3</sup>
Actuation (open / close)	0.09 s / 0.09 s
Repeatability	$\pm 0.025$

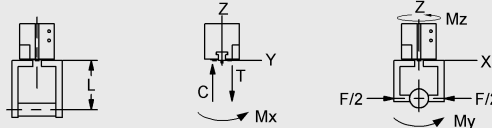
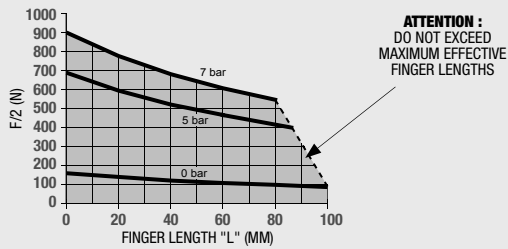
1. Force with spring and air at 6bar  
2. Force with spring without air

Grippers are supplied with open side air ports and top manifold air ports plugged. Top manifold sealing dimensions shown.



## Loading Information

Sum of forces transmitted by the jaws on the workpiece  
(Springs compressed at 50% stroke)



Loading Capacity*	Static	Dynamic
Maximum Tensile <b>T</b>	830 N	169 N
Maximum Compressive <b>C</b>	940 N	169 N
Maximum Moment <b>Mx</b>	27 Nm	9 Nm
Maximum Moment <b>My</b>	44 Nm	14 Nm
Maximum Moment <b>Mz</b>	30 Nm	10 Nm

\* The Capacities are per set of jaws and are not simultaneous.

## How to Order: (Order Accessories separately from Basic Model)

BASE MODEL    ANGULAR JAW    VITON® SEALS

**CP-5** - [ ] - **Q** - **SD** - **V**

RE External Gripping    SPRINGS    SENSOR MOUNTS  
RI Internal Gripping

### SENSOR ACCESSORIES

	ORDER #	QTY/UNIT
PNP Sensor with 0.3m Output Cable with 90° with M8 connector	<b>D1</b>	1 or 2
NPN Sensor with 0.3m Output Cable with 90° with M8 connector	<b>D10</b>	1 or 2
PNP Sensor with 0.3m Output Cable with M8 connector	<b>D4</b>	1 or 2
NPN Sensor with 0.3m Output Cable with M8 connector	<b>D7</b>	1 or 2
Inductive Sensor Mounting Kit for (mounts 2 sensors) ( <b>SD</b> )	<b>SDCP5</b>	1
Inductive PNP Sensor with M12 Connector	<b>OISP-017-C</b>	1 or 2
Inductive NPN Sensor with M12 Connector	<b>OINP-017-C</b>	1 or 2
Quick Disconnect 2 Meter M12 Cable Length	<b>CABL-014</b>	1 or 2

### PNEUMATIC ACCESSORIES

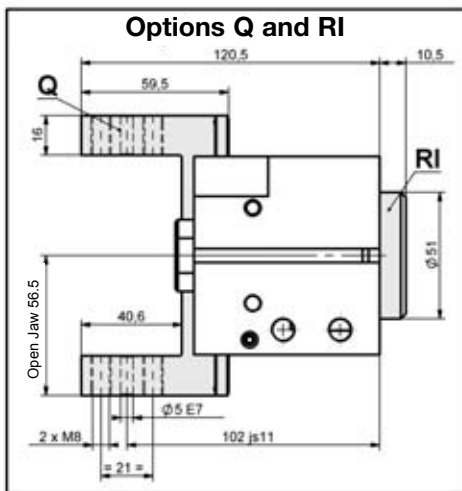
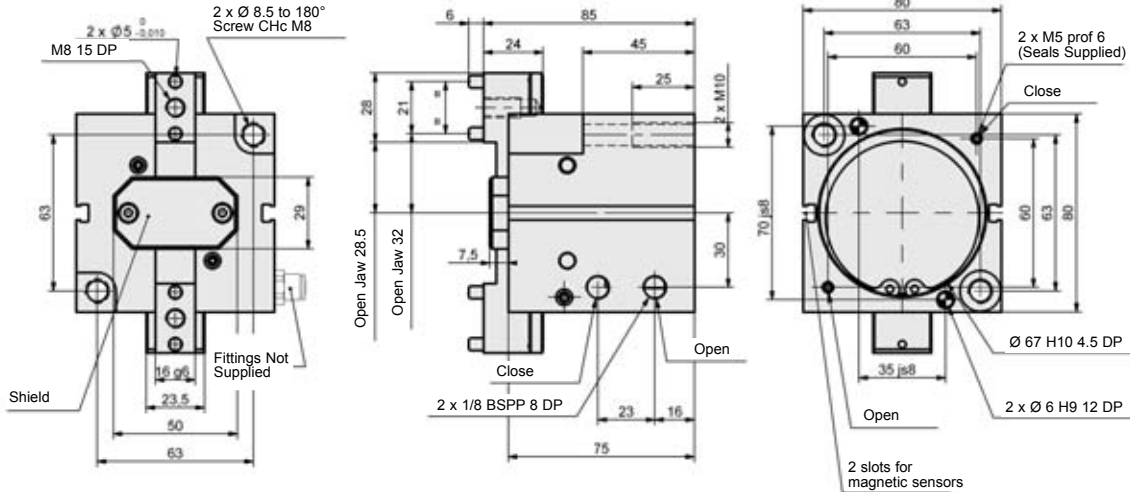
Standard Seal Repair Kit	<b>SCP5</b>	1
Viton® Seal Repair Kit	<b>SCP5V</b>	1
Repair Kit (screws, springs, standard seals)	<b>KSCP5</b>	1
Repair Kit (screws, springs, seals Viton)	<b>KSCP5V</b>	1

Accessories: see page 70

Please see back cover for DE-STA-CO Global Locations. [www.destaco.com](http://www.destaco.com)

[www.comoso.com](http://www.comoso.com)





### Specifications

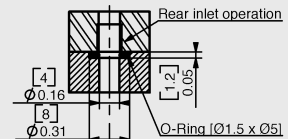
- Grip Force (F6+R)<sup>1</sup>, 6 bars, Springs Mid-Way, L=0
- Grip Force (F0+R)<sup>2</sup>, 0 bars, Springs Mid-Way, L=0
- Total Stroke
- Weight
- Pressure Range
- Pressure Range with Springs
- Ø Cylinder Bore
- Displacement
- Acuation (open / close)
- Repeatability

### CP-5-C

- 1081 N
- 219 N
- 27 mm
- 1.27 kg
- 2-10 bar
- 3-10 bar
- 63 mm
- 53.5 cm<sup>3</sup>
- 0.09 s / 0.09 s
- ± 0.025

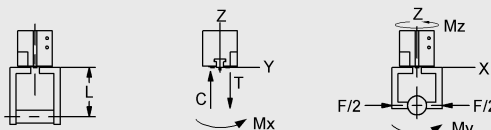
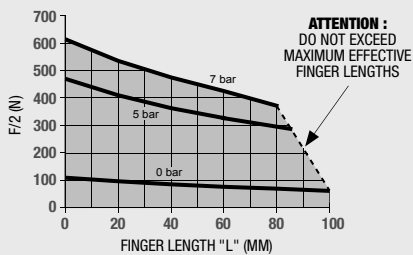
- Force with spring and air at 6bar
- Force with spring without air

Grippers are supplied with open side air ports and top manifold air ports plugged. Top manifold sealing dimensions shown.



## Loading Information

Sum of forces transmitted by the jaws on the workpiece  
(Springs compressed at 50% stroke)

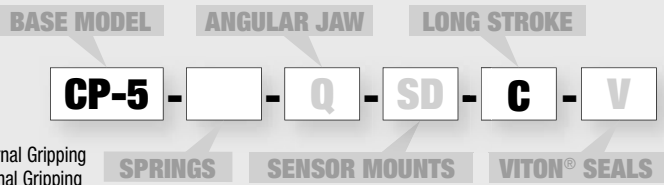


### Loading Capacity\*

	Static	Dynamic
Maximum Tensile <b>T</b>	820 N	144 N
Maximum Compressive <b>C</b>	930 N	144 N
Maximum Moment <b>Mx</b>	22 Nm	7 Nm
Maximum Moment <b>My</b>	40 Nm	13 Nm
Maximum Moment <b>Mz</b>	30 Nm	10 Nm

\* The Capacities are per set of jaws and are not simultaneous.

## How to Order: (Order Accessories separately from Basic Model)



RE External Gripping  
RI Internal Gripping

### SENSOR ACCESSORIES

	ORDER #	QTY/UNIT
PNP Sensor with 0.3m Output Cable with 90° with M8 connector	<b>D1</b>	1 or 2
NPN Sensor with 0.3m Output Cable with 90° with M8 connector	<b>D10</b>	1 or 2
PNP Sensor with 0.3m Output Cable with M8 connector	<b>D4</b>	1 or 2
NPN Sensor with 0.3m Output Cable with M8 connector	<b>D7</b>	1 or 2
Inductive Sensor Mounting Kit for (mounts 2 sensors) ( <b>SD</b> )	<b>SDCP5</b>	1
Inductive PNP Sensor with M8 Connector	<b>OISP-017-C</b>	1 or 2
Inductive NPN Sensor with M8 Connector	<b>OINP-017-C</b>	1 or 2
Quick Disconnect 2 Meter Cable Length	<b>CABL-014</b>	1 or 2

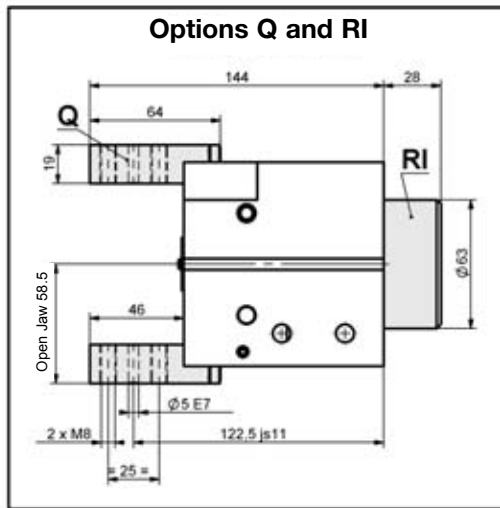
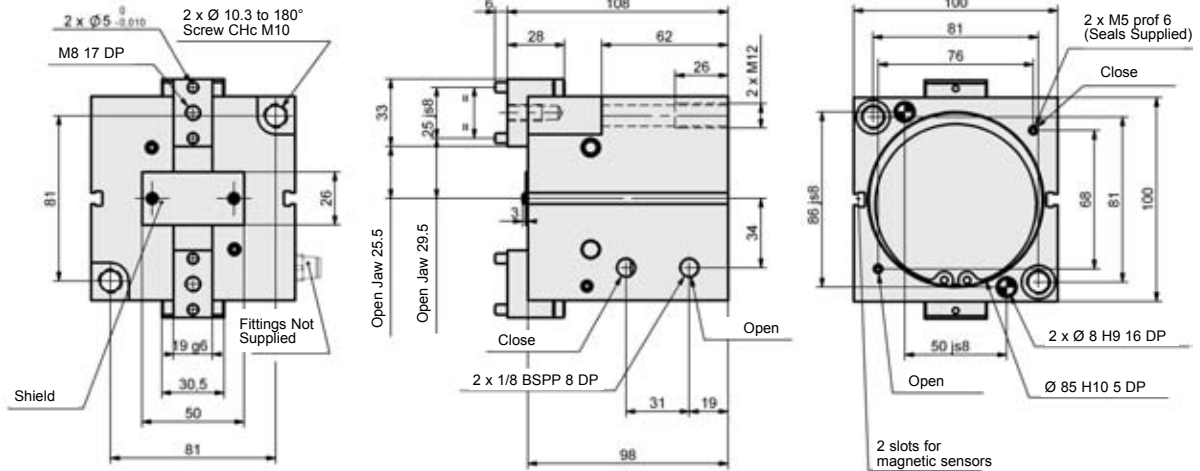
### PNEUMATIC ACCESSORIES

Standard Seal Repair Kit	<b>SCP5</b>	1
Viton® Seal Repair Kit	<b>SCP5V</b>	1
Repair Kit (screws, springs, standard seals)	<b>KSCP5</b>	1
Repair Kit (screws, springs, seals Viton)	<b>KSCP5V</b>	1

Accessories: see page 70



# PARALLEL GRIPPER CP-6 COMPACT GRIPPER SERIES

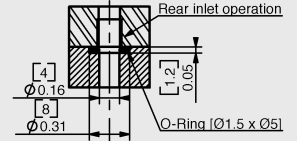


### Specifications

Specifications	CP-6
Grip Force (F6+R) <sup>1</sup> , 6 bars, Springs Mid-Way, L=0	2749 N
Grip Force (F0+R) <sup>2</sup> , 0 bars, Springs Mid-Way, L=0	711 N
Total Stroke	24 mm
Weight	2.50 kg
Pressure Range	2-10 bar
Pressure Range with Springs	3.5-10 bar
Ø Cylinder Bore	80 mm
Displacement	114.8 cm <sup>3</sup>
Acuation (open / close)	0.12 s / 0.12 s
Repeatability	± 0.025

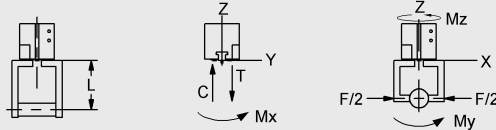
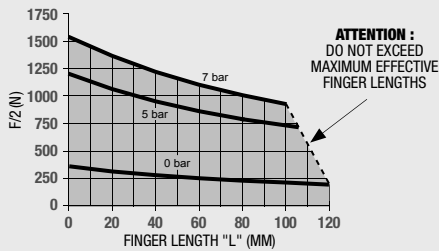
1. Force with spring and air at 6bar  
2. Force with spring without air

Grippers are supplied with open side air ports and top manifold air ports plugged. Top manifold sealing dimensions shown.



## Loading Information

Sum of forces transmitted by the jaws on the workpiece  
(Springs compressed at 50% stroke)



Loading Capacity*	Static	Dynamic
Maximum Tensile <b>T</b>	1375 N	209 N
Maximum Compressive <b>C</b>	1500 N	209 N
Maximum Moment <b>Mx</b>	48 Nm	16 Nm
Maximum Moment <b>My</b>	72 Nm	24 Nm
Maximum Moment <b>Mz</b>	68 Nm	22 Nm

\* The Capacities are per set of jaws and are not simultaneous.

## How to Order: (Order Accessories separately from Basic Model)

BASE MODEL    ANGULAR JAW    VITON® SEALS

**CP-6** - [ ] - **Q** - **SD** - **V**

**RE** External Gripping  
**RI** Internal Gripping

**SPRINGS**

**SENSOR MOUNTS**

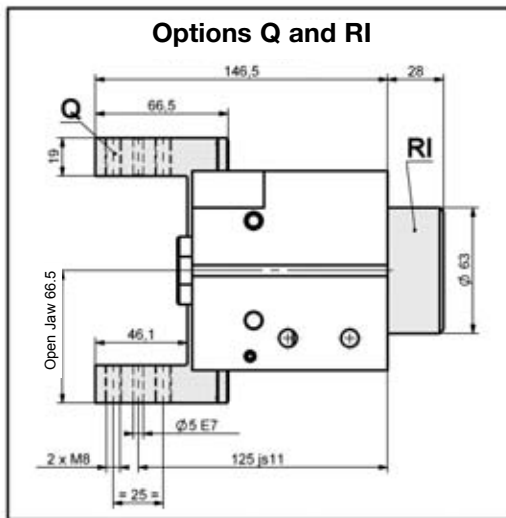
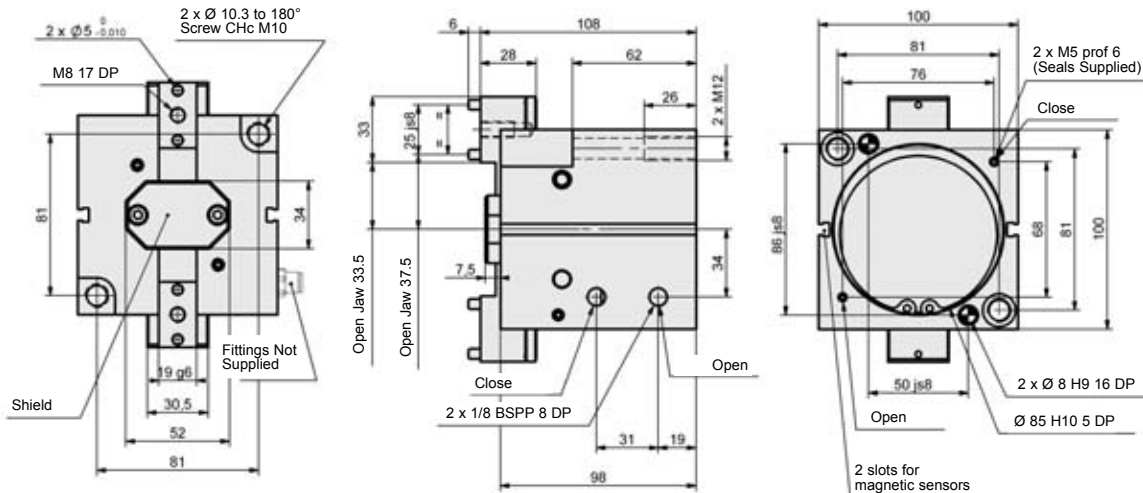
### SENSOR ACCESSORIES

	ORDER #	QTY/UNIT
PNP Sensor with 0.3m Output Cable with 90° with M8 connector	<b>D1</b>	1 or 2
NPN Sensor with 0.3m Output Cable with 90° with M8 connector	<b>D10</b>	1 or 2
PNP Sensor with 0.3m Output Cable with M8 connector	<b>D4</b>	1 or 2
NPN Sensor with 0.3m Output Cable with M8 connector	<b>D7</b>	1 or 2
Inductive Sensor Mounting Kit for (mounts 2 sensors) ( <b>SD</b> )	<b>SDCP6</b>	1
Inductive PNP Sensor with M12 Connector	<b>OISP-017-C</b>	1 or 2
Inductive NPN Sensor with M12 Connector	<b>OINP-017-C</b>	1 or 2
Quick Disconnect 2 Meter M12 Cable Length	<b>CABL-014</b>	1 or 2

### PNEUMATIC ACCESSORIES

Standard Seal Repair Kit	<b>SCP6</b>	1
Viton® Seal Repair Kit	<b>SCP6V</b>	1
Repair Kit (screws, springs, standard seals)	<b>KSCP6</b>	1
Repair Kit (screws, springs, seals Viton)	<b>KSCP6V</b>	1

Accessories: see page 70



### Specifications

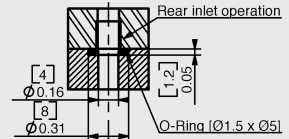
- Grip Force (F<sub>6+R</sub>)<sup>1</sup>, 6 bars, Springs Mid-Way, L=0
- Grip Force (F<sub>0+R</sub>)<sup>2</sup>, 0 bars, Springs Mid-Way, L=0
- Total Stoke
- Weight
- Pressure Range
- Pressure Range with Springs
- Ø Cylinder Bore
- Displacement
- Acuation (open / close)
- Repeatability

### CP-6-C

- 2092 N
- 541 N
- 32 mm
- 2.56 kg
- 2-10 bar
- 3.5-10 bar
- 80 mm
- 114.8 cm<sup>3</sup>
- 0.12 s / 0.12 s
- ± 0.025

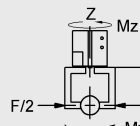
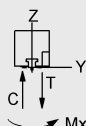
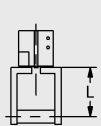
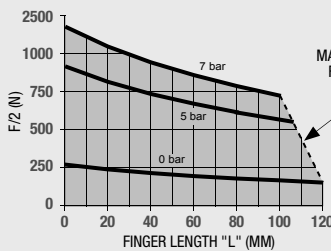
- Force with spring and air at 6bar
- Force with spring without air

Grippers are supplied with open side air ports and top manifold air ports plugged. Top manifold sealing dimensions shown.



## Loading Information

Sum of forces transmitted by the jaws on the workpiece  
(Springs compressed at 50% stroke)



Loading Capacity*	Static	Dynamic
Maximum Tensile <b>T</b>	1340 N	279 N
Maximum Compressive <b>C</b>	1450 N	279 N
Maximum Moment <b>Mx</b>	42 Nm	14 Nm
Maximum Moment <b>My</b>	70 Nm	23 Nm
Maximum Moment <b>Mz</b>	64 Nm	21 Nm

\* The Capacities are per set of jaws and are not simultaneous.

## How to Order: (Order Accessories separately from Basic Model)

BASE MODEL

ANGULAR JAW

LONG STROKE

**CP-6** - [ ] - **Q** - **SD** - **C** - **V**

**RE** External Gripping  
**RI** Internal Gripping

**SPRINGS**

**SENSOR MOUNTS**

**VITON® SEALS**

### SENSOR ACCESSORIES

	ORDER #	QTY/UNIT
PNP Sensor with 0.3m Output Cable with 90° with M8 connector	<b>D1</b>	1 or 2
NPN Sensor with 0.3m Output Cable with 90° with M8 connector	<b>D10</b>	1 or 2
PNP Sensor with 0.3m Output Cable with M8 connector	<b>D4</b>	1 or 2
NPN Sensor with 0.3m Output Cable with M8 connector	<b>D7</b>	1 or 2
Inductive Sensor Mounting Kit for (mounts 2 sensors) ( <b>SD</b> )	<b>SDCP6</b>	1
Inductive PNP Sensor with M8 Connector	<b>OISP-017-C</b>	1 or 2
Inductive NPN Sensor with M8 Connector	<b>OINP-017-C</b>	1 or 2
Quick Disconnect 2 Meter Cable Length	<b>CABL-014</b>	1 or 2

### PNEUMATIC ACCESSORIES

Standard Seal Repair Kit	<b>SCP6</b>	1
Viton® Seal Repair Kit	<b>SCP6V</b>	1
Repair Kit (screws, springs, standard seals)	<b>KSCP6</b>	1
Repair Kit (screws, springs, seals Viton)	<b>KSCP6V</b>	1

Accessories: see page 70

# OPTIONS AND ACCESSORIES

1.72

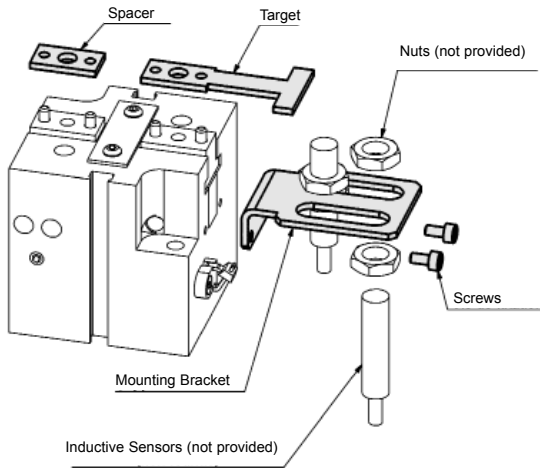
## Accessories (SD): Inductive Sensor Mounting Kit

Allows for sensing of two positions: open and closed jaw. The accessory kit (SD) includes: 1 sensor bracket, 1 flag and screws. **Sensors are not provided.**

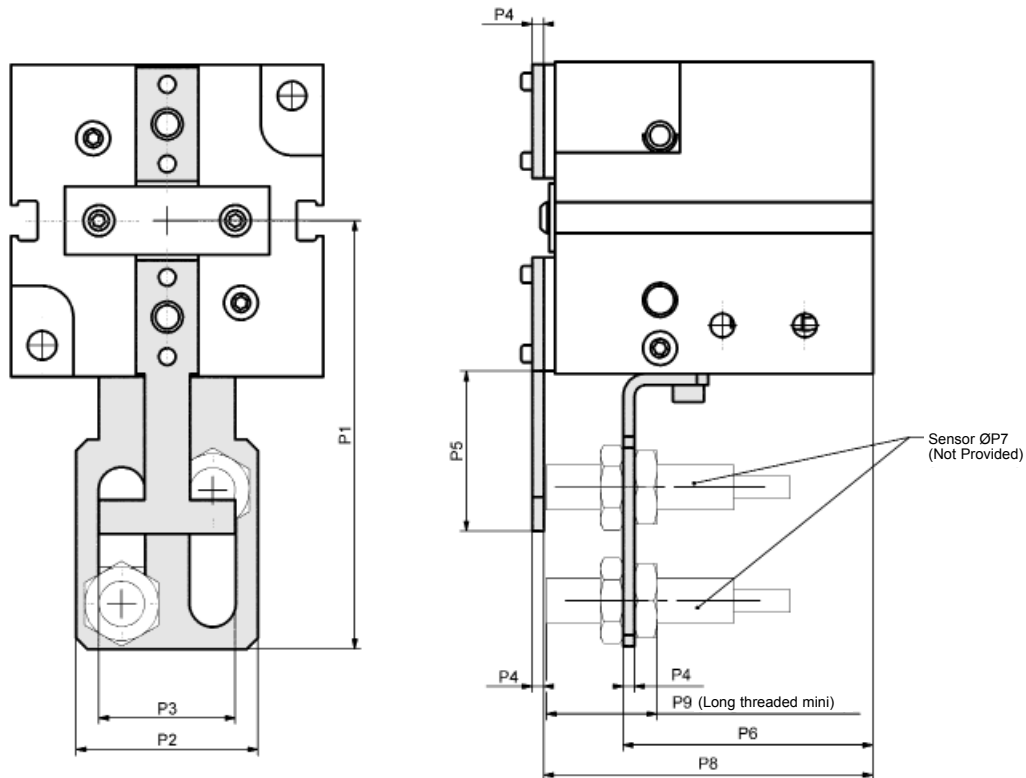
**NOTES:**

To be usable, the cylindrical inductive sensors selected by the customer must have tapped their bodies to a minimum depth H (see table below).

Depending on their length, the cylindrical inductive sensors can extend below the clamp, requiring provision of suitable housing in the surrounding parts. It is possible to control more than 2 positions using a second attachment (SD).



MODELS	P1	P2	P3	P4	P5	P6	P7	P8	P9	Order #
CP-1										accessory not available
CP-1-C										accessory not available
CP-2	58	32	24	2	21.9	35.5	8	48	18	<b>SDCP2</b>
CP-2-C	58	32	24	2	21.9	35.5	8	48	18	<b>SDCP2</b>
CP-3	75.5	32	24	2	28.2	44	8	58	20	<b>SDCP3</b>
CP-3-C	75.5	32	24	2	28.2	44	8	63	24	<b>SDCP3</b>
CP-4	80.5	32	24	2	27	52.5	8	73	26	<b>SDCP4</b>
CP-4-C	80.5	32	24	2	27	52.5	8	73.5	27	<b>SDCP4</b>
CP-5	108	43	28	2.5	38	60	12	85	33	<b>SDCP5</b>
CP-5-C	108	43	28	2.5	38	60	12	85	33	<b>SDCP5</b>
CP-6	118	43	28	2.5	39	76.5	12	108	39	<b>SDCP6</b>
CP-6-C	118	43	28	2.5	39	76.5	12	108	39	<b>SDCP6</b>



## Option (V) : Viton® Seals

Gripper with Viton® seals allows for use in high temperature environments [-30 ° C or 150 ° C].



# Parallel Grippers - DPP DIRECTCONNECT™ Precision Series

## • Multiple Mounting Locations:

All sizes have DIRECTCONNECT top mounting and DIRECTCONNECT thru hole mounting on back side.

## • Multiple Air Port Locations:

Multiple air port locations: tapped air ports on front, top and both sides are standard. Top port is also manifold ready.

## • Sensing options:

Magneto resistive or inductive proximity sensors available. Up to 4 positions can be sensed.

## • Precision applications:

Preloaded "Dual-V" roller bearings eliminate side play for excellent part position repeatability.

## • Longer finger applications:

Rigid design and low friction design allows for longer gripper finger lengths to be used when compared to other grippers of equal weight & size.

## • Delicate part handling:

Low friction mechanism allows for repeatable gripping forces for holding delicate parts. Grip force is easily adjusted by regulating air pressure.

## • Non-synchronous motion:

Non-synchronous option provides independent jaw motion allowing the gripper to pick or place at a point other than its center.

## • Spring return:

Optional double acting spring assist for increased force or fail-safe operation or operate as a single acting to open and to spring closed.

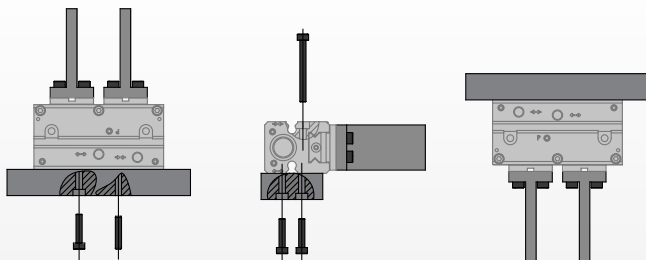
**NO  
ADAPTER  
PLATES!**



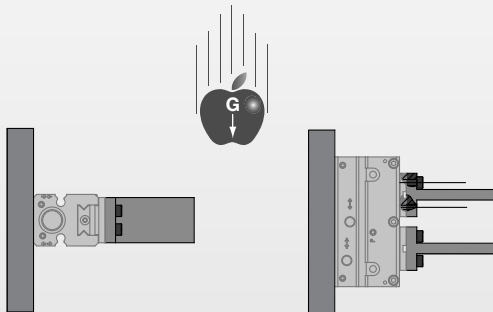
**DIRECTCONNECT™**  
ADVANCED MODULAR AUTOMATION TECHNOLOGY

## Mounting Information:

Grippers can be mounted & operated in any orientation



Body mounts with screws and locates with H7 dowel pins for accuracy



Fingers attach to jaws with screws and locate by key slot and/or H7 dowel pins

## Technical Specifications:

### Pneumatic Specifications

Pressure Operating Range  
Standard  
-C Spring Closed Option  
Cylinder Type

Dynamic Seals  
Valve Required to Operate

### Air Quality Requirements

Air Filtration  
Air Lubrication  
Air Humidity

### Temperature Operating Range

Buna-N Seals (standard)  
Viton® Seals (optional)

### Maintenance Specifications†

Expected Life  
Normal Application  
w/Preventative Maintenance  
Field Repairable  
Seal Repair Kits Available

### Application Restrictions

- Dirty or gritty environments
- Machine operations generating chips
- Environments with loose particulate
- Applications where mechanism lubricant could cause contamination

\*Addition of lubrication will greatly increase service life  
†See Maintenance Section

### Imperial

5-100 psi  
20-100 psi

Double Acting or  
Single Acting Spring Return or  
Double Acting Spring Assist  
Internally Lubricated Buna-N  
4-way, 2-position for Double Acting  
or  
3-way, 2-position for Single Acting

### Metric

0.3-7 bar  
1.5-7 bar

40 Micron or Better

Not Necessary\*

Low Moisture Content (dry)

-30°~180° F  
-20°~250° F

-35°~80° C  
-30°~120° C

5 million cycles

10+ million cycles\*

Yes  
Yes

## Product Features

### Excellent Accuracy

Excellent parallelism and accuracy between gripper mounting surface and jaw surfaces

### Standard Purge/Scavenge Port

Used with a vacuum for clean room environments or positive pressure for harsh environments and jaw surfaces

### Shielded Design

Shielded design repels contamination from penetrating the "Dual-V" roller bearings

### Accessory Mounting Slots

For Magneto Resistive and Inductive sensors (Sensors sold separately)

### Top Manifold Air Ports

Eliminates the need for airlines

### Hard Coat Anodize

One piece, aircraft quality aluminum body, has hard-coat anodize 60 RC with Teflon impregnation

### Multiple Air Port Locations

4 standard locations; front, top and both sides

### DIRECTCONNECT Mounting Patterns

DIRECTCONNECT™ tapped and dowel mounting surfaces on top and side of body.

### Superior Jaw Support

Jaws are supported using our patented "Dual-V" roller bearing design

### Dowel Holes

H7 dowel pin holes in body and jaws. Jaws also have key slot for better finger alignment

### Hardened Plated Jaws

For wear resistance and longer life

### "Dual-V" Roller Bearings

Provide low friction motion and are preloaded for maximum support and zero side play

### Adjustable Pre-load Screws

Allows for adjustment of preload on roller bearings

### Multiple Sensor Capabilities

Capable of sensing both jaws in the open and closed positions (up to 4 sensors can be used for multi-position sensing)

Sensor magnets on pistons come standard for Magneto Resistive Sensing

### Viton Seals

Available for high temperature applications

### High Grip Force

With respect to weight due to extremely efficient drive mechanism

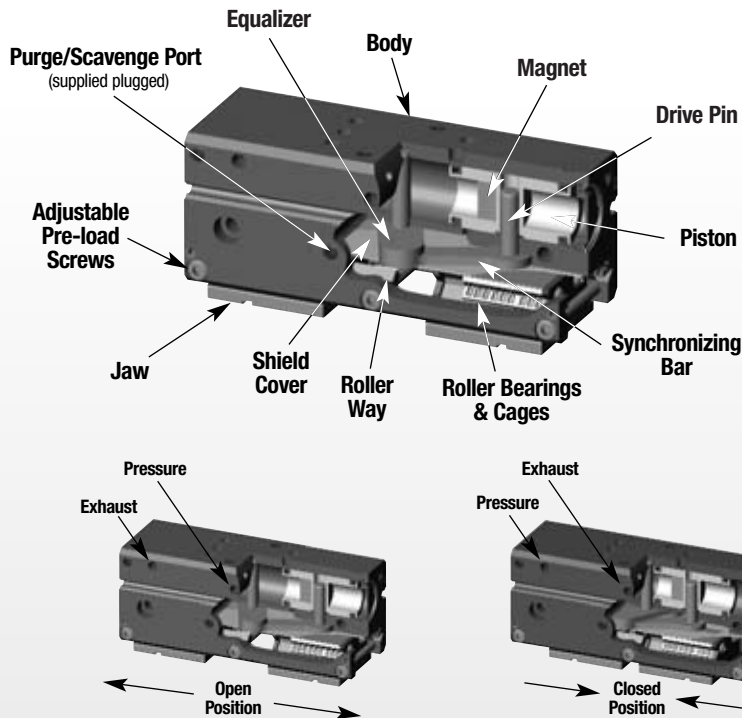
### Optional Spring Assist

For close stroke

### Self Lubricating Dynamic Seals

(Buna-N only)

## Operating Principle



- Dual double acting opposed pistons, connected to both a jaw and a synchronizing bar by a drive pin, actuate in opposite directions.
- The synchronizing bars are connected to the equalizer which synchronizes the motion.
- Suitable for internal or external gripping.
- The synchronizing elements can be removed for non-synchronous operation.

**Designed, manufactured and assembled in the USA**

## Style -DPP Parallel Gripper

### Size -10M-06

Style:	10M-06
Stroke:	0.25 in. 6.4 mm
Grip Force:	25 lbs. 111 N
Weight:	0.35 lbs. 0.16 Kg



See Page **1.76**

### Size -10M-12

Style:	10M-12
Stroke:	0.50 in. 12.7 mm
Grip Force:	25 lbs. 111 N
Weight:	0.45 lbs. 0.20 Kg



See Page **1.78**

## Style -DPP Parallel Gripper

### Size -14M-15

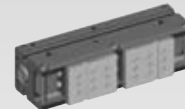
Style:	14M-15
Stroke:	0.63 in. 15.9 mm
Grip Force:	45 lbs. 200 N
Weight:	1.05 lbs. 0.48 Kg



See Page **1.80**

### Size -14M-25

Style:	14M-25
Stroke:	1.00 in. 25.4 mm
Grip Force:	45 lbs. 200 N
Weight:	1.25 lbs. 0.57 Kg



See Page **1.82**

## Style -DPP Parallel Gripper

### Size -20M-25

Style:	20M-25
Stroke:	1.00 in. 25.4 mm
Grip Force:	95 lbs. 423 N
Weight:	2.25 lbs. 1.02 Kg



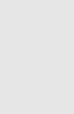
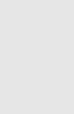
See Page **1.84**

### Size -20M-38

Style:	20M-38
Stroke:	1.50 in. 38.1 mm
Grip Force:	95 lbs. 423 N
Weight:	3.10 lbs. 1.41 Kg



See Page **1.86**

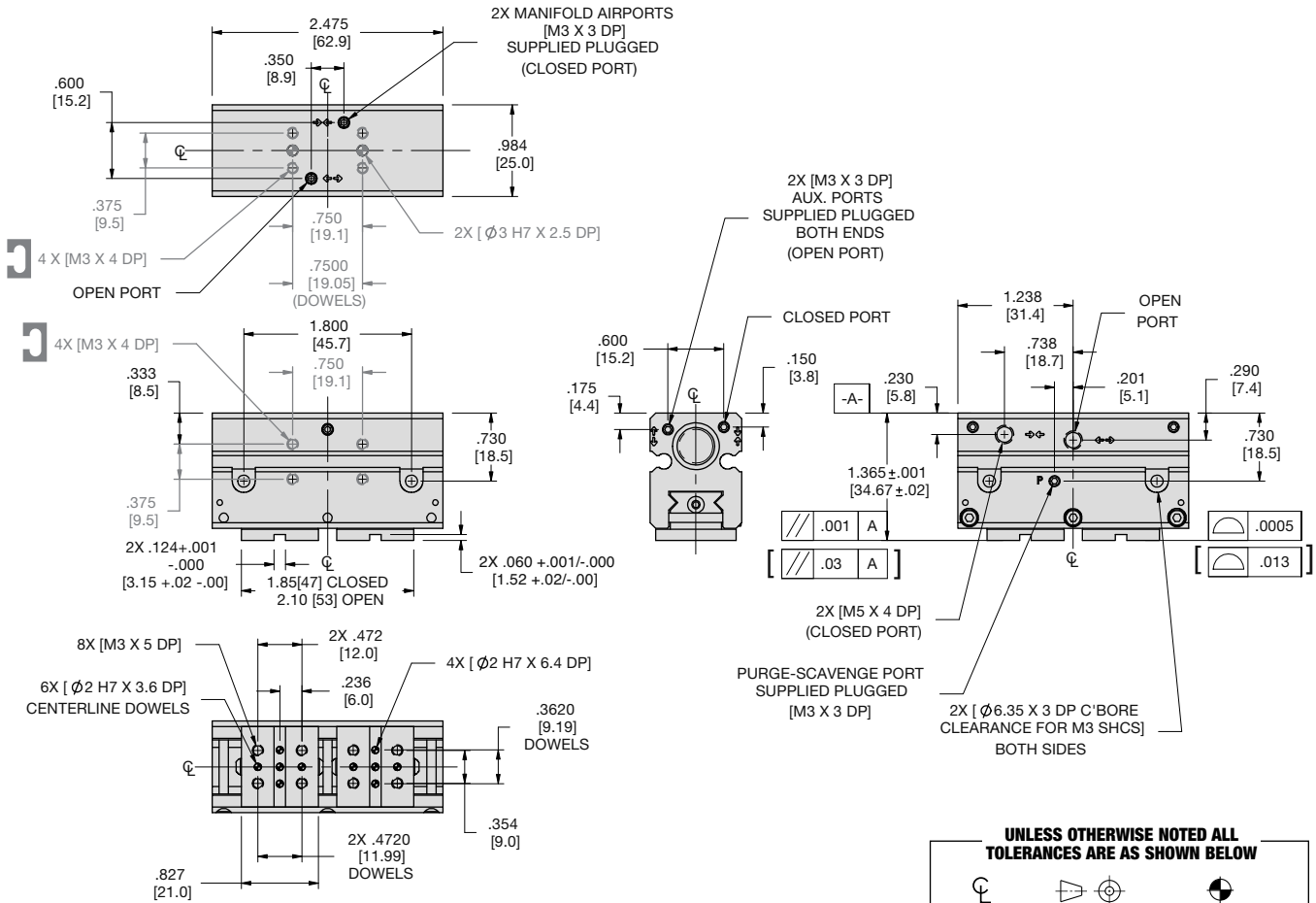




# PARALLEL GRIPPERS DPP-10M-06 DIRECTCONNECT PRECISION SERIES

DPP SERIES

1.76



**UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW**

Dimensions are symmetrical about centerline	Third Angle Projection	All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or (±.013mm)
Metric Threads Course Pitch	<b>Imperial in.</b> 0.00 = ±.01 0.000 = ±.005 0.0000 = ±.0005	<b>Metric [mm]</b> [0] = (±.25) [0.0] = (±.13) [0.00] = (±.013)

NOTE: DIRECTCONNECT™ DIMENSIONS ARE SHOWN IN BLUE

## How to Order: (Order Accessories separately from Basic Model)

BASIC MODEL    SPRING    VITON SEALS

**DPP-10M-06 - C - NS - V**

NON-SYNCHRONOUS

**SPRING C** Spring Closed  
— Leave Blank. No Spring Option (standard)

**JAW SYNCHRONIZATION NS** Non-Synchronous Operation  
— Leave Blank for Synchronous (standard)

**VITON® SEALS V** High Temperature Viton Seals

### SENSOR ACCESSORIES

	ORDER #	QTY/UNIT
Inductive Sensor Mounting Kit (Mounts 2 sensors)	<b>OSMK-119</b>	<b>1 or 2</b>
NPN Inductive Sensor (with Qk. Disc.)*	<b>OISN-014</b>	<b>1, 2, 3 or 4</b>
PNP Inductive Sensor (with Qk. Disc.)*	<b>OISP-014</b>	<b>1, 2, 3 or 4</b>
NPN Magneto Resistive Sensor (with Qk. Disc.)*†	<b>OHSN-017</b>	<b>1, 2, 3 or 4</b>
PNP Magneto Resistive Sensor (with Qk. Disc.)*†	<b>OHSP-017</b>	<b>1, 2, 3 or 4</b>
NPN Magneto Resistive Sensor 90° (with Qk. Disc.)*†	<b>OHSN-011</b>	<b>1, 2, 3 or 4</b>
PNP Magneto Resistive Sensor 90° (with Qk. Disc.)*†	<b>OHSP-011</b>	<b>1, 2, 3 or 4</b>
Quick Disconnect Cable (2 meters long)*	<b>CABL-010</b>	<b>1, 2, 3 or 4</b>
Quick Disconnect Cable (5 meters long)*	<b>CABL-013</b>	<b>1, 2, 3 or 4</b>

### PNEUMATIC ACCESSORIES

	ORDER #	QTY/UNIT
Seal Repair Kit (Standard Buna-N)	<b>SLKT-343</b>	<b>1</b>
Seal Repair Kit (Viton)	<b>SLKT-343V</b>	<b>1</b>
Manifold Seal Kit (Viton® only)	<b>SLKT-241V</b>	<b>1</b>
Adjustable Flow Control-M3 Elbow-3MM OD Tube Push-in Style	<b>VLVF-018</b>	<b>1 or 2</b>
Adjustable Flow Control-M5 Elbow-6MM OD Tube Push-in Style	<b>VLVF-008</b>	<b>1 or 2</b>
Fail Safe Valve- M5	<b>OFSV-004</b>	<b>1</b>

\*Sensor and cable sold separately. †Piston Magnet standard

### SAMPLE ORDER: DPP-10M-06-C-NS-V

Ex: DPP-10 Metric Gripper, 6mm Stroke, Spring Closed, Non Synchronous, Viton Seals

DIRECTCONNECT™



# PARALLEL GRIPPERS DPP-10M-06 DIRECTCONNECT PRECISION SERIES

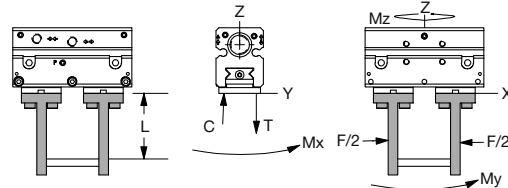
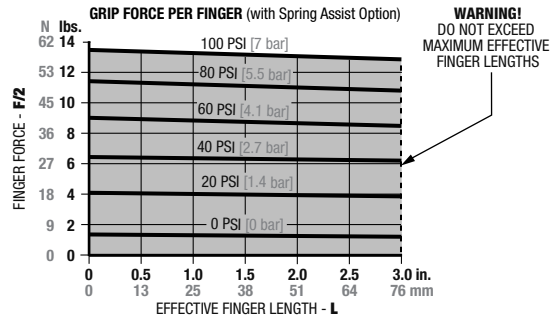
DPP SERIES

1.77



Specifications	DPP-10M-06	
Total Rated Grip Force <b>F</b> @ 100 psi, 7 bar*	27 lbs.	120 N
Stroke	0.25 in.	6.4 mm
Weight	0.35 lbs.	0.16 Kg
Pressure Range (Without Springs)	5-100 psi	0.3-7 bar
Pressure Range (With Springs)	20-100 psi	1.4-7 bar
Cylinder Bore (2X)	0.406 in.	10.3 mm
Displacement	0.032 in <sup>3</sup>	0.5 cm <sup>3</sup>
Temperature Range: Standard Seals	-30°~180° F	-35°~80° C
Viton® Seals	-20°~250° F	-30°~150° C
Actuation (Without Spring/With Spring)	0.10/0.11 sec.	0.10/0.11 sec.
Accuracy	±0.001 in.	±0.03 mm
Repeatability	±0.0005 in.	±0.01 mm
Valve required to actuate single acting	3-way, 2-position	
Valve required to actuate double acting	4-way, 2-position	

\*With Springs

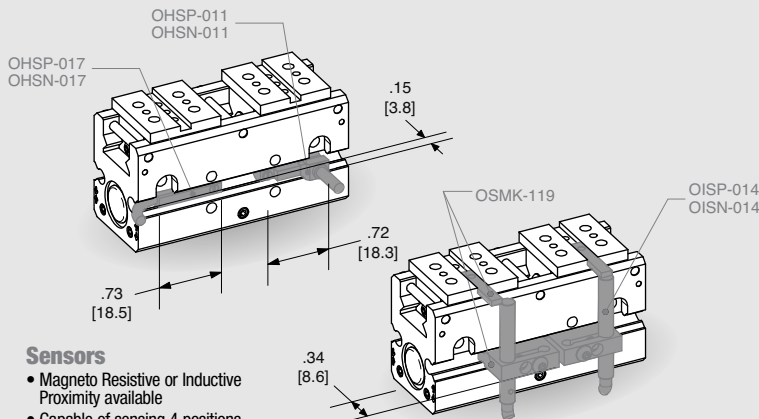


### Loading Capacity

	Static	Dynamic
Maximum Tensile <b>T</b>	60 lbs. [267 N]	20 lbs. [89 N]
Maximum Compressive <b>C</b>	60 lbs. [267 N]	20 lbs. [89 N]
Maximum Moment <b>M<sub>x</sub></b>	35 in.-lbs. [4.0 Nm]	12 in.-lbs. [1.4 Nm]
Maximum Moment <b>M<sub>y</sub></b>	50 in.-lbs. [5.6 Nm]	17 in.-lbs. [1.9 Nm]
Maximum Moment <b>M<sub>z</sub></b>	35 in.-lbs. [4.0 Nm]	12 in.-lbs. [1.4 Nm]

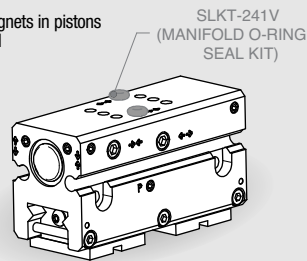
Note: Capacities are per set of jaws and are not simultaneous.

## Accessory Mounting Technical Data



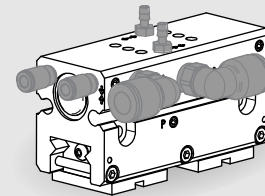
### Sensors

- Magneto Resistive or Inductive Proximity available
- Capable of sensing 4 positions open and closed on both jaws
- PNP and NPN available
- Magneto resistive sensors are slot mounted, no mounting kits required
- Threaded Quick Disconnect with Built-in LED output
- Sensors mount on either side of gripper
- Sensors magnets in pistons are standard



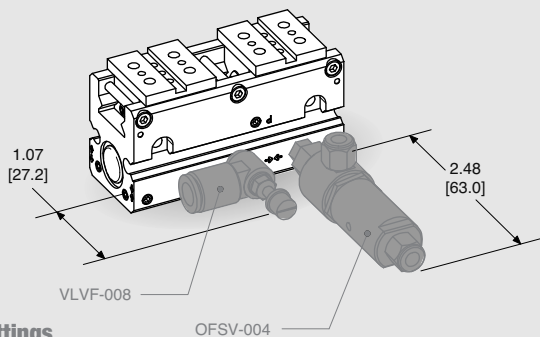
### Manifold O-Ring Seals

- Can be used to seal top Air Ports
- Seals in manifold kit are Viton
- O-Ring C'bores in customer's mounting plate must be: 0.215 [05.5] X .060±.002 [1.52±.05] deep
- Kit is supplied with all seals, plugs and wrenches needed



### Multiple Air Port Locations

- Standard M5 Air Ports on front surface
- 3 M3 Air Port locations (Left, right, and top surface) are plugged as standard



### Plumbing Fittings

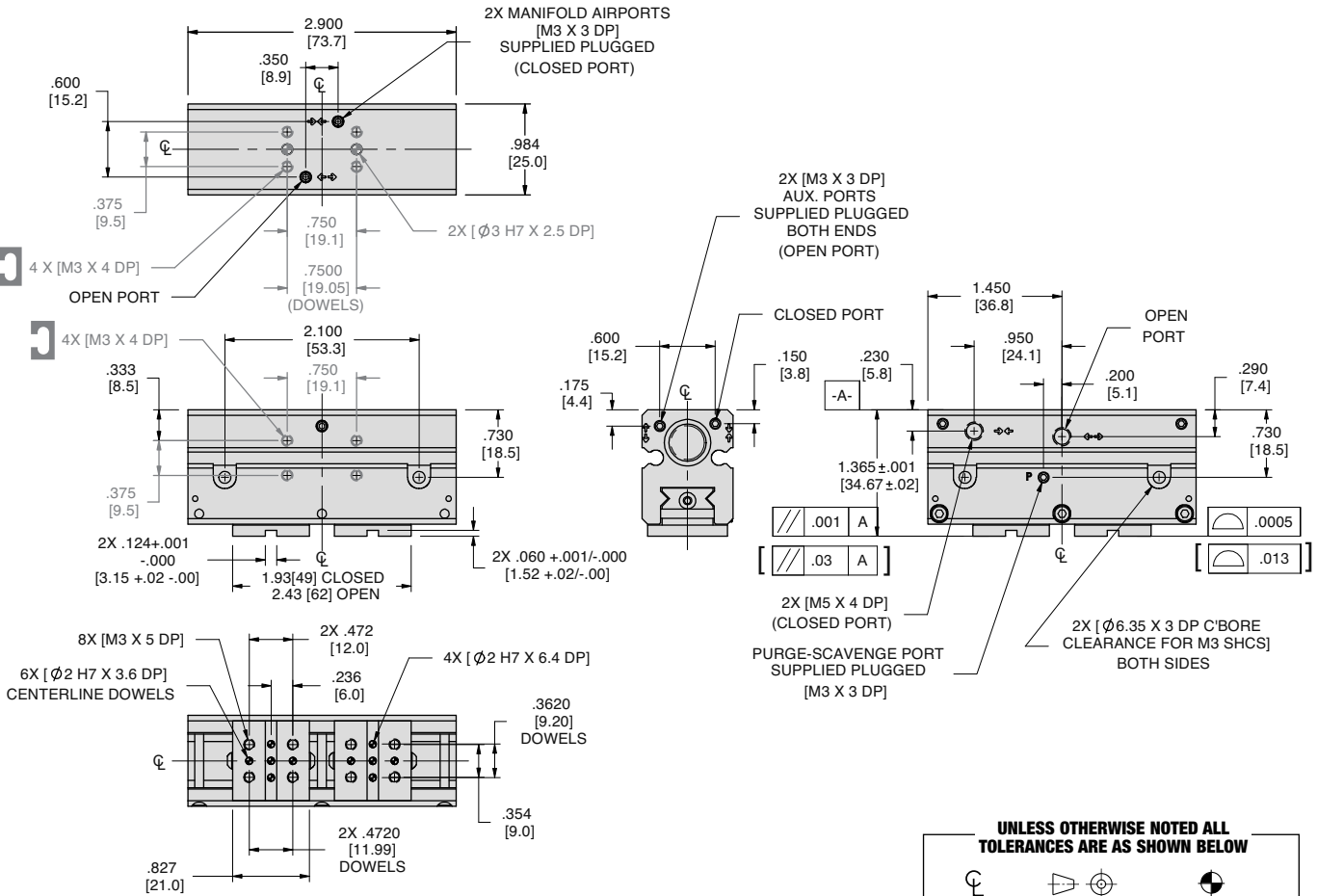
- Adjustable flow controls
  - Have thumb screw adjust with locking nut for adjusting actuation time
  - Available for 3mm or 6mm O.D. Tubing
- Failsafe valve for applications
  - Where it is critical that the part being gripped not be dropped if air pressure is lost
  - Can mount directly to gripper or in-line with plumbing to gripper
  - For M5 Air Ports
- Consult factory for additional plumbing fittings

DIRECTCONNECT™

# PARALLEL GRIPPERS DPP-10M-12 DIRECTCONNECT PRECISION SERIES

DPP SERIES

1.78



**UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW**

Dimensions are symmetrical about centerline	Third Angle Projection	All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or (±.013mm)
	<b>Imperial in.</b>	<b>Metric [mm]</b>
Metric Threads Course Pitch	0.00 = ±.01 0.000 = ±.005 0.0000 = ±.0005	[0] = (±.25) [0.0] = (±.13) [0.00] = (±.013)

NOTE: DIRECTCONNECT™ DIMENSIONS ARE SHOWN IN BLUE

## How to Order: (Order Accessories separately from Basic Model)

**BASIC MODEL**    **SPRING**    **VITON SEALS**

**DPP-10M-12 - C - NS - V**

**NON-SYNCHRONOUS**

**SPRING**    **C** Spring Closed  
 — Leave Blank. No Spring Option (standard)

**JAW SYNCHRONIZATION**    **NS** Non-Synchronous Operation  
 — Leave Blank for Synchronous (standard)

**VITON® SEALS**    **V** High Temperature Viton Seals

SENSOR ACCESSORIES	ORDER #	QTY/UNIT
Inductive Sensor Mounting Kit (Mounts 2 sensors)	<b>OSMK-119</b>	<b>1 or 2</b>
NPN Inductive Sensor (with Qk. Disc.)*	<b>OISN-014</b>	<b>1, 2, 3 or 4</b>
PNP Inductive Sensor (with Qk. Disc.)*	<b>OISP-014</b>	<b>1, 2, 3 or 4</b>
NPN Magneto Resistive Sensor (with Qk. Disc.)*†	<b>OHSN-017</b>	<b>1, 2, 3 or 4</b>
PNP Magneto Resistive Sensor (with Qk. Disc.)*†	<b>OHSP-017</b>	<b>1, 2, 3 or 4</b>
NPN Magneto Resistive Sensor 90° (with Qk. Disc.)*†	<b>OHSN-011</b>	<b>1, 2, 3 or 4</b>
PNP Magneto Resistive Sensor 90° (with Qk. Disc.)*†	<b>OHSP-011</b>	<b>1, 2, 3 or 4</b>
Quick Disconnect Cable (2 meters long)*	<b>CABL-010</b>	<b>1, 2, 3 or 4</b>
Quick Disconnect Cable (5 meters long)*	<b>CABL-013</b>	<b>1, 2, 3 or 4</b>
PNEUMATIC ACCESSORIES	ORDER #	QTY/UNIT
Seal Repair Kit (Standard Buna-N)	<b>SLKT-343</b>	<b>1</b>
Seal Repair Kit (Viton)	<b>SLKT-343V</b>	<b>1</b>
Manifold Seal Kit (Viton® only)	<b>SLKT-241V</b>	<b>1</b>
Adjustable Flow Control-M3 Elbow-3MM OD Tube Push-in Style	<b>VLVF-018</b>	<b>1 or 2</b>
Adjustable Flow Control-M5 Elbow-6MM OD Tube Push-in Style	<b>VLVF-008</b>	<b>1 or 2</b>
Fail Safe Valve- M5	<b>OFSV-004</b>	<b>1</b>

\*Sensor and cable sold separately. †Piston Magnet standard

**SAMPLE ORDER: DPP-10M-12-C-NS-V**  
 Ex: DPP-10 Metric Gripper, 12mm Stroke, Spring Closed, Non Synchronous, Viton Seals

DIRECTCONNECT™



# PARALLEL GRIPPERS DPP-10M-12 DIRECTCONNECT PRECISION SERIES

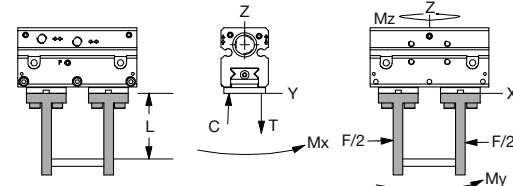
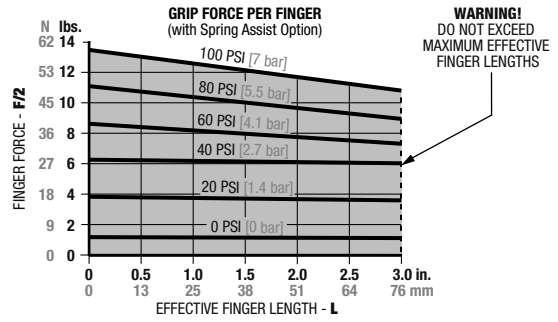
DPP SERIES

1.79



Specifications	DPP-10M-12	
Total Rated Grip Force <b>F</b> @ 100 psi, 7 bar*	27 lbs.	120 N
Stroke	0.50 in.	12.7 mm
Weight	0.45 lbs.	0.20 Kg
Pressure Range (Without Springs)	5-100 psi	0.3-7 bar
Pressure Range (With Springs)	20-100 psi	1.4-7 bar
Cylinder Bore (2X)	0.406 in.	10.3 mm
Displacement	0.065 in <sup>3</sup>	1.1 cm <sup>3</sup>
Temperature Range: Standard Seals	-30°~180° F	-35°~80° C
Viton® Seals	-20°~250° F	-30°~120° C
Actuation (Without Spring/With Spring)	0.11/0.12 sec.	0.11/0.12 sec.
Accuracy	±0.001 in.	±0.03 mm
Repeatability	±0.0005 in.	±0.01 mm
Valve required to actuate single acting	3-way, 2-position	
Valve required to actuate double acting	4-way, 2-position	

\*With Springs

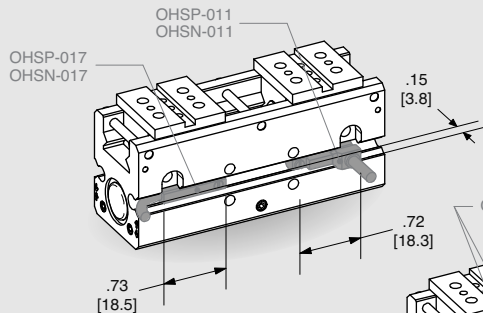


### Loading Capacity

	Static	Dynamic
Maximum Tensile <b>T</b>	70 lbs. [311 N]	23 lbs. [102 N]
Maximum Compressive <b>C</b>	70 lbs. [311 N]	23 lbs. [102 N]
Maximum Moment <b>M<sub>x</sub></b>	50 in.-lbs. [5.6 Nm]	17 in.-lbs. [1.9 Nm]
Maximum Moment <b>M<sub>y</sub></b>	65 in.-lbs. [7.3 Nm]	22 in.-lbs. [2.5 Nm]
Maximum Moment <b>M<sub>z</sub></b>	50 in.-lbs. [5.6 Nm]	17 in.-lbs. [1.9 Nm]

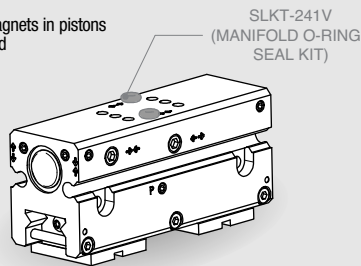
Note: Capacities are per set of jaws and are not simultaneous.

## Accessory Mounting Technical Data



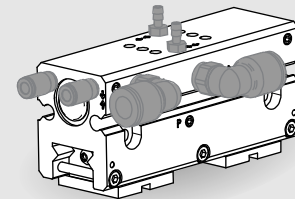
### Sensors

- Magneto Resistive or Inductive Proximity available
- Capable of sensing 4 positions open and closed on both jaws
- PNP and NPN available
- Magneto resistive sensors are slot mounted, no mounting kits required
- Threaded Quick Disconnect with Built-in LED output
- Sensors mount on either side of gripper
- Sensors magnets in pistons are standard



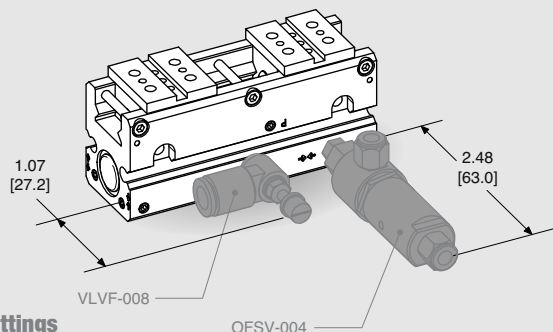
### Manifold O-Ring Seals

- Can be used to seal top Air Ports
- Seals in manifold kit are Viton
- O-Ring C'bores in customer's mounting plate must be:  $\varnothing.215 [\varnothing 5.5] \times .060 \pm .002 [1.52 \pm .05]$  deep
- Kit is supplied with all seals, plugs and wrenches needed



### Multiple Air Port Locations

- Standard M5 Air Ports on front surface
- 3 M3 Air Port locations (Left, right, and top surface) are plugged as standard



### Plumbing Fittings

- Adjustable flow controls
  - Have thumb screw adjust with locking nut for adjusting actuation time
  - Available for 3mm or 6mm O.D. Tubing
- Failsafe valve for applications
  - Where it is critical that the part being gripped not be dropped if air pressure is lost
  - Can mount directly to gripper or in-line with plumbing to gripper
  - For M5 Air Ports
- Consult factory for additional plumbing fittings

DIRECTCONNECT™

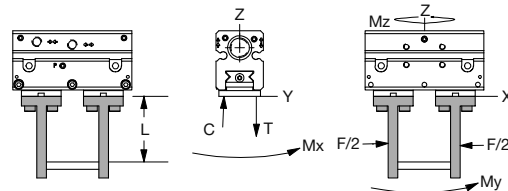
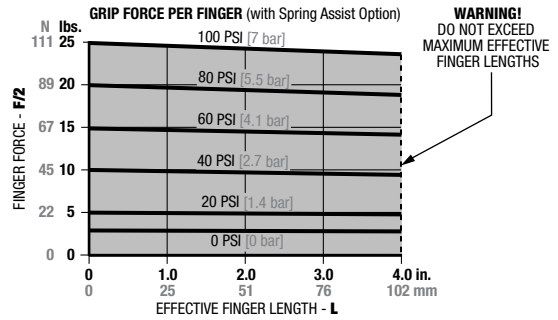






Specifications	DPP-14M-15	
Total Rated Grip Force <b>F</b> @ 100 psi, 7 bar*	51 lbs.	227 N
Stroke	0.63 in.	15.9 mm
Weight	1.05 lbs.	0.48 Kg
Pressure Range (Without Springs)	5-100 psi	0.3-7 bar
Pressure Range (With Springs)	50-100 psi	3.4-7 bar
Cylinder Bore (2X)	0.563 in.	14.3 mm
Displacement	0.156 in <sup>3</sup>	2.5 cm <sup>3</sup>
Temperature Range: Standard Seals	-30°~180° F	-35°~80° C
Viton® Seals	-20°~250° F	-30°~120° C
Actuation (Without Spring/With Spring)	0.15/0.16 sec.	0.15/0.16 sec.
Accuracy	±0.001 in.	±0.03 mm
Repeatability	±0.0005 in.	±0.01 mm
Valve required to actuate single acting	3-way, 2-position	
Valve required to actuate double acting	4-way, 2-position	

\*With Springs

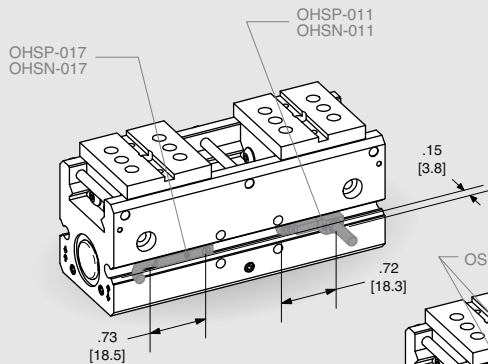


### Loading Capacity

	Static	Dynamic
Maximum Tensile <b>T</b>	125 lbs. [556 N]	42 lbs. [187 N]
Maximum Compressive <b>C</b>	125 lbs. [556 N]	42 lbs. [187 N]
Maximum Moment <b>M<sub>x</sub></b>	80 in.-lbs. [9.0 Nm]	27 in.-lbs. [3.1 Nm]
Maximum Moment <b>M<sub>y</sub></b>	105 in.-lbs. [12 Nm]	35 in.-lbs. [4.0 Nm]
Maximum Moment <b>M<sub>z</sub></b>	80 in.-lbs. [9.0 Nm]	27 in.-lbs. [3.1 Nm]

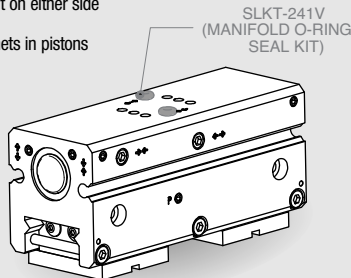
Note: Capacities are per set of jaws and are not simultaneous.

## Accessory Mounting Technical Data



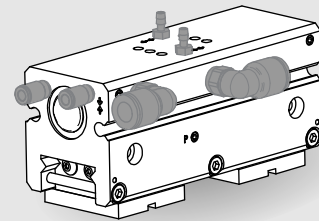
### Sensors

- Magneto Resistive or Inductive Proximity available
- Capable of sensing 4 positions open and closed on both jaws
- PNP and NPN available
- Magneto resistive sensors are slot mounted, no mounting kits required
- Threaded Quick Disconnect with Built-in LED output
- Sensors mount on either side of gripper
- Sensors magnets in pistons are standard



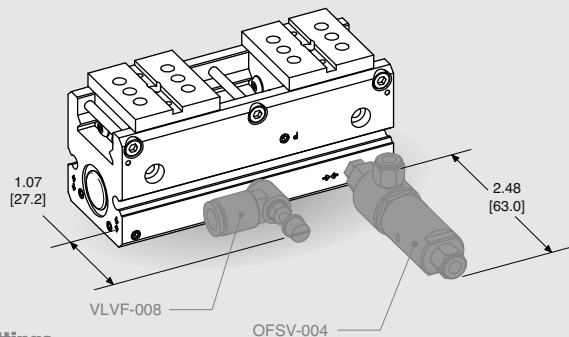
### Manifold O-Ring Seals

- Can be used to seal top Air Ports
- Seals in manifold Kit are Viton
- O-Ring C'bores in customer's mounting plate must be:  $\varnothing.215 [\varnothing5.5] \times .060 \pm .002 [1.52 \pm .05]$  deep
- Kit is supplied with all seals, plugs and wrenches needed



### Multiple Air Port Locations

- Standard M5 Air Ports on front surface
- 3 M3 Air Port locations (Left, right, and top surface) are plugged as standard



### Plumbing Fittings

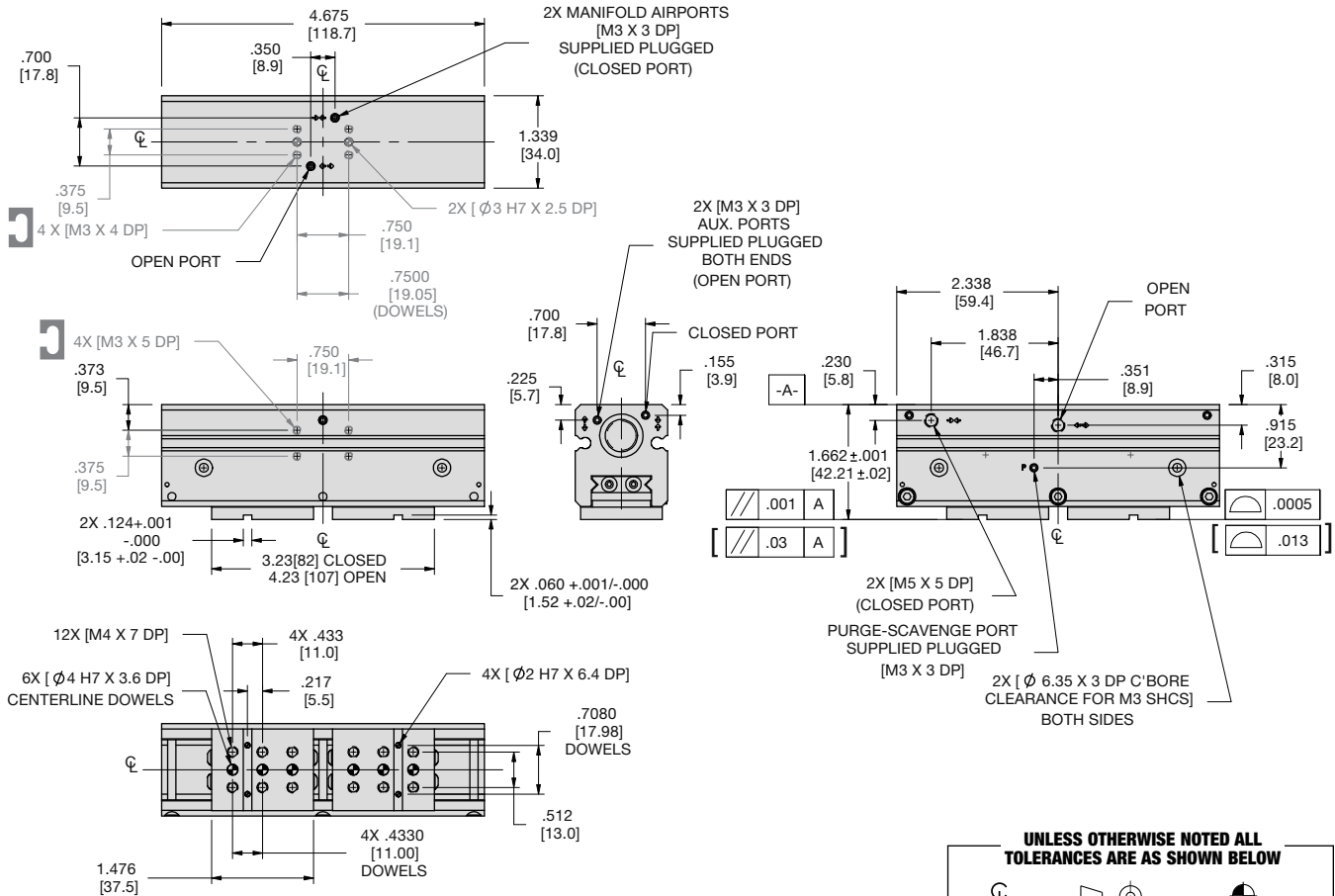
- Adjustable flow controls
  - Have thumb screw adjust with locking nut for adjusting actuation time
  - Available for 3mm or 6mm O.D. Tubing
- Failsafe valve for applications
  - Where it is critical that the part being gripped not be dropped if air pressure is lost
  - Can mount directly to gripper or in-line with plumbing to gripper
  - For M5 Air Ports
- Consult factory for additional plumbing fittings



# PARALLEL GRIPPERS DPP-14M-25 DIRECTCONNECT PRECISION SERIES

DPP SERIES

1.82



**UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW**

Dimensions are symmetrical about centerline	Third Angle Projection	All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or (±.013mm)
Metric Threads Course Pitch	<b>Imperial in.</b> 0.00 = ± .01 0.000 = ± .005 0.0000 = ± .0005	<b>Metric [mm]</b> [0] = (±.25) [0.0] = (±.13) [0.00] = (±.013)

NOTE: DIRECTCONNECT™ DIMENSIONS ARE SHOWN IN BLUE

## How to Order: (Order Accessories separately from Basic Model)

**BASIC MODEL**    **SPRING**    **VITON SEALS**

**DPP-14M-25 - C - NS - V**

**NON-SYNCHRONOUS**

**SPRING C** Spring Closed  
— Leave Blank. No Spring Option (standard)

**JAW SYNCHRONIZATION NS** Non-Synchronous Operation  
— Leave Blank for Synchronous (standard)

**VITON® SEALS V** High Temperature Viton Seals

### SENSOR ACCESSORIES

	ORDER #	QTY/UNIT
Inductive Sensor Mounting Kit (Mounts 2 sensors)	<b>OSMK-119</b>	<b>1 or 2</b>
NPN Inductive Sensor (with Qk. Disc.)*	<b>OISN-014</b>	<b>1, 2, 3 or 4</b>
PNP Inductive Sensor (with Qk. Disc.)*	<b>OISP-014</b>	<b>1, 2, 3 or 4</b>
NPN Magneto Resistive Sensor (with Qk. Disc.)*†	<b>OHSN-017</b>	<b>1, 2, 3 or 4</b>
PNP Magneto Resistive Sensor (with Qk. Disc.)*†	<b>OHSP-017</b>	<b>1, 2, 3 or 4</b>
NPN Magneto Resistive Sensor 90° (with Qk. Disc.)*†	<b>OHSN-011</b>	<b>1, 2, 3 or 4</b>
PNP Magneto Resistive Sensor 90° (with Qk. Disc.)*†	<b>OHSP-011</b>	<b>1, 2, 3 or 4</b>
Quick Disconnect Cable (2 meters long)*	<b>CABL-010</b>	<b>1, 2, 3 or 4</b>
Quick Disconnect Cable (5 meters long)*	<b>CABL-013</b>	<b>1, 2, 3 or 4</b>

### PNEUMATIC ACCESSORIES

	ORDER #	QTY/UNIT
Seal Repair Kit (Standard Buna-N)	<b>SLKT-344</b>	<b>1</b>
Seal Repair Kit (Viton)	<b>SLKT-344V</b>	<b>1</b>
Manifold Seal Kit (Viton® only)	<b>SLKT-241V</b>	<b>1</b>
Adjustable Flow Control-M3 Elbow-3MM OD Tube Push-in Style	<b>VLVF-018</b>	<b>1 or 2</b>
Adjustable Flow Control-M5 Elbow-6MM OD Tube Push-in Style	<b>VLVF-008</b>	<b>1 or 2</b>
Fail Safe Valve- M5	<b>OFSV-004</b>	<b>1</b>

\*Sensor and cable sold separately. †Piston Magnet standard

### SAMPLE ORDER: DPP-14M-25-C-NS-V

Ex: DPP-14 Metric Gripper, 25mm Stroke, Spring Closed, Non Synchronous, Viton Seals



# PARALLEL GRIPPERS DPP-14M-25 DIRECTCONNECT PRECISION SERIES

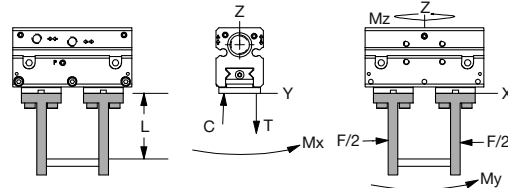
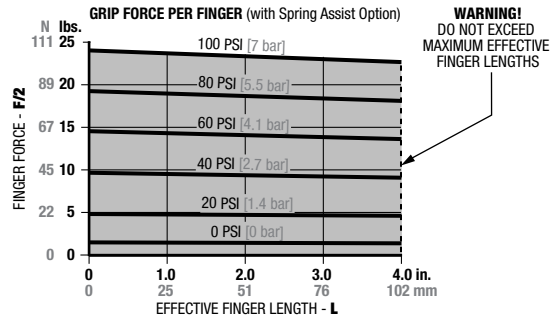
DPP SERIES

1.83



Specifications	DPP-14M-25	
Total Rated Grip Force <b>F</b> @ 100 psi, 7 bar*	48 lbs.	214 N
Stroke	1.00 in.	25.4 mm
Weight	1.25 lbs.	0.57 Kg
Pressure Range (Without Springs)	5-100 psi	0.3-7 bar
Pressure Range (With Springs)	50-100 psi	3.4-7 bar
Cylinder Bore (2X)	0.563 in.	14.3 mm
Displacement	0.249 in <sup>3</sup>	4.1 cm <sup>3</sup>
Temperature Range: Standard Seals	-30°~180° F	-35°~80° C
Viton® Seals	-20°~250° F	-30°~120° C
Actuation (Without Spring/With Spring)	0.19/0.20 sec.	0.19/0.20 sec.
Accuracy	±0.001 in.	±0.03 mm
Repeatability	±0.0005 in.	±0.01 mm
Valve required to actuate single acting	3-way, 2-position	
Valve required to actuate double acting	4-way, 2-position	

\*With Springs

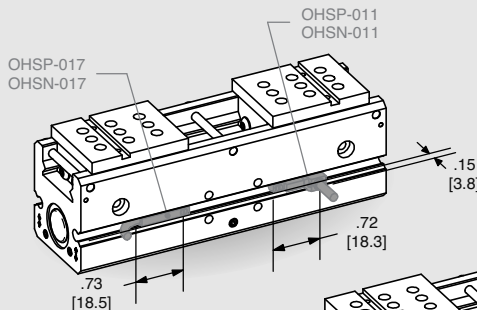


### Loading Capacity

	Static	Dynamic
Maximum Tensile <b>T</b>	165 lbs. [734 N]	55 lbs. [245 N]
Maximum Compressive <b>C</b>	165 lbs. [734 N]	55 lbs. [245 N]
Maximum Moment <b>M<sub>x</sub></b>	100 in.-lbs. [11 Nm]	33 in.-lbs. [3.7 Nm]
Maximum Moment <b>M<sub>y</sub></b>	125 in.-lbs. [14 Nm]	42 in.-lbs. [4.7 Nm]
Maximum Moment <b>M<sub>z</sub></b>	100 in.-lbs. [11 Nm]	33 in.-lbs. [3.7 Nm]

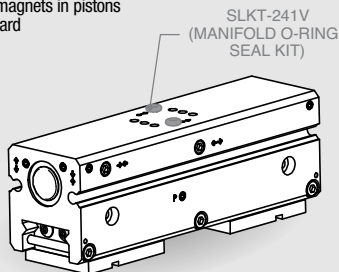
Note: Capacities are per set of jaws and are not simultaneous.

## Accessory Mounting Technical Data



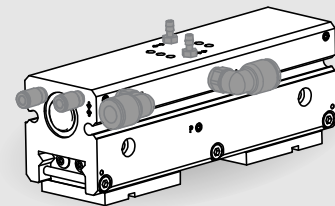
### Sensors

- Magneto Resistive or Inductive Proximity available
- Capable of sensing 4 positions open and closed on both jaws
- PNP and NPN available
- Magneto resistive sensors are slot mounted, no mounting kits required
- Threaded Quick Disconnect with Built-in LED output
- Sensors mount on either side of gripper
- Sensors magnets in pistons are standard



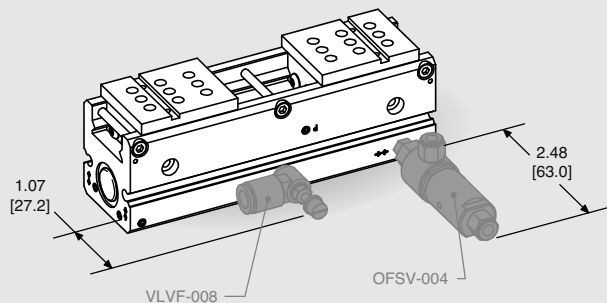
### Manifold O-Ring Seals

- Can be used to seal top Air Ports
- Seals in manifold kit are Viton
- O-Ring C'bores in customer's mounting plate must be:  $\varnothing.215 [\varnothing5.5] \times .060 \pm .002 [1.52 \pm .05]$  deep
- Kit is supplied with all seals, plugs and wrenches needed



### Multiple Air Port Locations

- Standard M5 Air Ports on front surface
- 3 M3 Air Port locations (Left, right, and top surface) are plugged as standard



### Plumbing Fittings

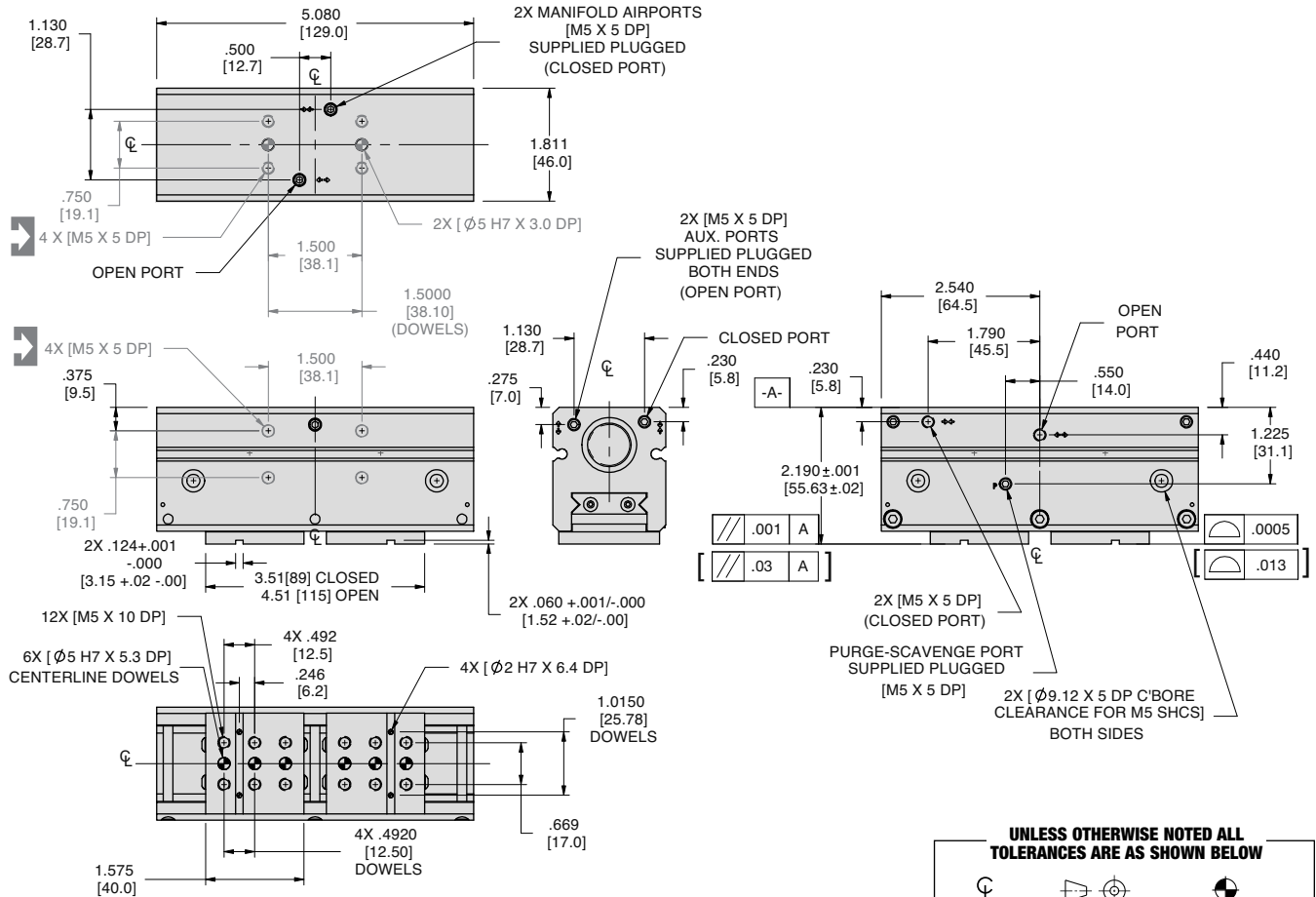
- Adjustable flow controls
  - Have thumb screw adjust with locking nut for adjusting actuation time
  - Available for 3mm or 6mm O.D. Tubing
- Failsafe valve for applications
  - Where it is critical that the part being gripped not be dropped if air pressure is lost
  - Can mount directly to gripper or in-line with plumbing to gripper
  - For M5 Air Ports
- Consult factory for additional plumbing fittings

DIRECTCONNECT™

# PARALLEL GRIPPERS DPP-20M-25 DIRECTCONNECT PRECISION SERIES

DPP SERIES

1.84

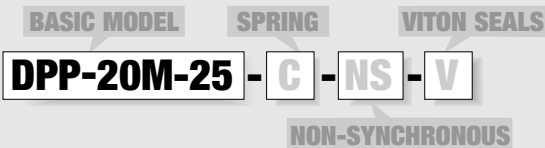


**UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW**

Dimensions are symmetrical about centerline	Third Angle Projection	All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or (±.013mm)
Metric Threads Course Pitch	<b>Imperial in.</b> 0.00 = ±.01 0.000 = ±.005 0.0000 = ±.0005	<b>Metric [mm]</b> [0] = (±.25) [0.0] = (±.13) [0.00] = (±.013)

NOTE: DIRECTCONNECT™ DIMENSIONS ARE SHOWN IN BLUE

## How to Order: (Order Accessories separately from Basic Model)



**SPRING C** Spring Closed  
— Leave Blank. No Spring Option (standard)

**JAW SYNCHRONIZATION NS** Non-Synchronous Operation  
— Leave Blank for Synchronous (standard)

**VITON® SEALS V** High Temperature Viton Seals

### SENSOR ACCESSORIES

	ORDER #	QTY/UNIT
Inductive Sensor Mounting Kit (Mounts 2 sensors)	<b>OSMK-120</b>	<b>1 or 2</b>
NPN Inductive Sensor (with Qk. Disc.)*	<b>OISN-014</b>	<b>1, 2, 3 or 4</b>
PNP Inductive Sensor (with Qk. Disc.)*	<b>OISP-014</b>	<b>1, 2, 3 or 4</b>
NPN Magneto Resistive Sensor (with Qk. Disc.)*†	<b>OHSN-017</b>	<b>1, 2, 3 or 4</b>
PNP Magneto Resistive Sensor (with Qk. Disc.)*†	<b>OHSP-017</b>	<b>1, 2, 3 or 4</b>
NPN Magneto Resistive Sensor 90° (with Qk. Disc.)*†	<b>OHSN-011</b>	<b>1, 2, 3 or 4</b>
PNP Magneto Resistive Sensor 90° (with Qk. Disc.)*†	<b>OHSP-011</b>	<b>1, 2, 3 or 4</b>
Quick Disconnect Cable (2 meters long)*	<b>CABL-010</b>	<b>1, 2, 3 or 4</b>
Quick Disconnect Cable (5 meters long)*	<b>CABL-013</b>	<b>1, 2, 3 or 4</b>

### PNEUMATIC ACCESSORIES

	ORDER #	QTY/UNIT
Seal Repair Kit (Standard Buna-N)	<b>SLKT-345</b>	<b>1</b>
Seal Repair Kit (Viton)	<b>SLKT-345V</b>	<b>1</b>
Manifold Seal Kit (Viton® only)	<b>SLKT-242V</b>	<b>1</b>
Adjustable Flow Control-M5 Elbow-6MM OD Tube Push-in Style	<b>VLVF-008</b>	<b>1 or 2</b>
Fail Safe Valve- M5	<b>OFSV-004</b>	<b>1</b>

\*Sensor and cable sold separately. †Piston Magnet standard

### SAMPLE ORDER: DPP-20M-25-C-NS-V

Ex: DPP-20 Metric Gripper, 25mm Stroke, Spring Closed, Non Synchronous, Viton Seals



# PARALLEL GRIPPERS DPP-20M-25 DIRECTCONNECT PRECISION SERIES

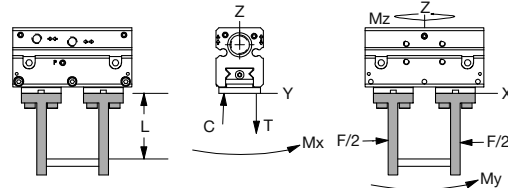
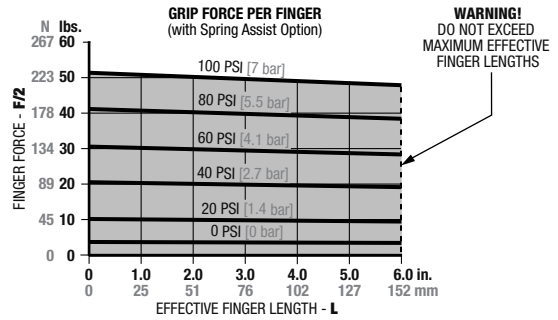
DPP SERIES

1.85



Specifications	DPP-20M-25	
Total Rated Grip Force <b>F</b> @ 100 psi, 7 bar*	103 lbs.	458 N
Stroke	1.00 in.	25.4 mm
Weight	2.25 lbs.	1.02 Kg
Pressure Range (Without Springs)	5-100 psi	0.3-7 bar
Pressure Range (With Springs)	40-100 psi	2.8-7 bar
Cylinder Bore (2X)	0.813 in.	20.7 mm
Displacement	0.519 in <sup>3</sup>	8.5 cm <sup>3</sup>
Temperature Range: Standard Seals	-30°~180° F	-35°~80° C
Viton® Seals	-20°~250° F	-30°~120° C
Actuation (Without Spring/With Spring)	0.20/0.22 sec.	0.20/0.22 sec.
Accuracy	±0.001 in.	±0.03 mm
Repeatability	±0.0005 in.	±0.01 mm
Valve required to actuate single acting	3-way, 2-position	
Valve required to actuate double acting	4-way, 2-position	

\*With Springs

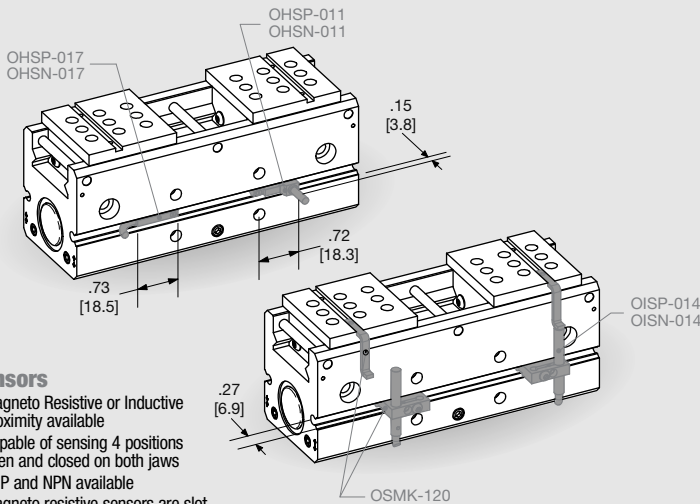


### Loading Capacity

	Static	Dynamic
Maximum Tensile <b>T</b>	150 lbs. [667 N]	50 lbs. [222 N]
Maximum Compressive <b>C</b>	150 lbs. [667 N]	50 lbs. [222 N]
Maximum Moment <b>M<sub>x</sub></b>	300 in.-lbs. [34 Nm]	100 in.-lbs. [11 Nm]
Maximum Moment <b>M<sub>y</sub></b>	350 in.-lbs. [40 Nm]	117 in.-lbs. [13 Nm]
Maximum Moment <b>M<sub>z</sub></b>	300 in.-lbs. [34 Nm]	100 in.-lbs. [11 Nm]

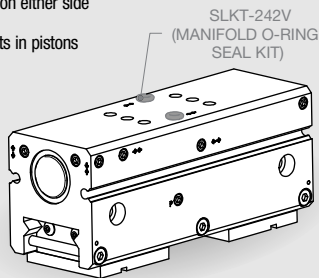
Note: Capacities are per set of jaws and are not simultaneous.

## Accessory Mounting Technical Data



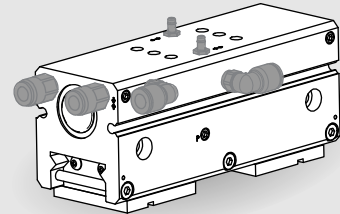
### Sensors

- Magneto Resistive or Inductive Proximity available
- Capable of sensing 4 positions open and closed on both jaws
- PNP and NPN available
- Magneto resistive sensors are slot mounted, no mounting kits required
- Threaded Quick Disconnect with Built-in LED output
- Sensors mount on either side of gripper
- Sensors magnets in pistons are standard



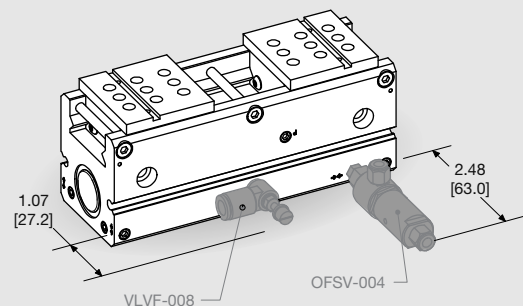
### Manifold O-Ring Seals

- Can be used to seal top Air Ports
- Seals in manifold kit are Viton
- O-Ring C'bores in customer's mounting plate must be: 0.290 [07.4] X .060±.002 [1.52±.05] deep
- Kit is supplied with all seals, plugs and wrenches needed



### Multiple Air Port Locations

- Standard M5 Air Ports on front surface
- 3 M5 Air Port locations (Left, right, and top surface) are plugged as standard



### Plumbing Fittings

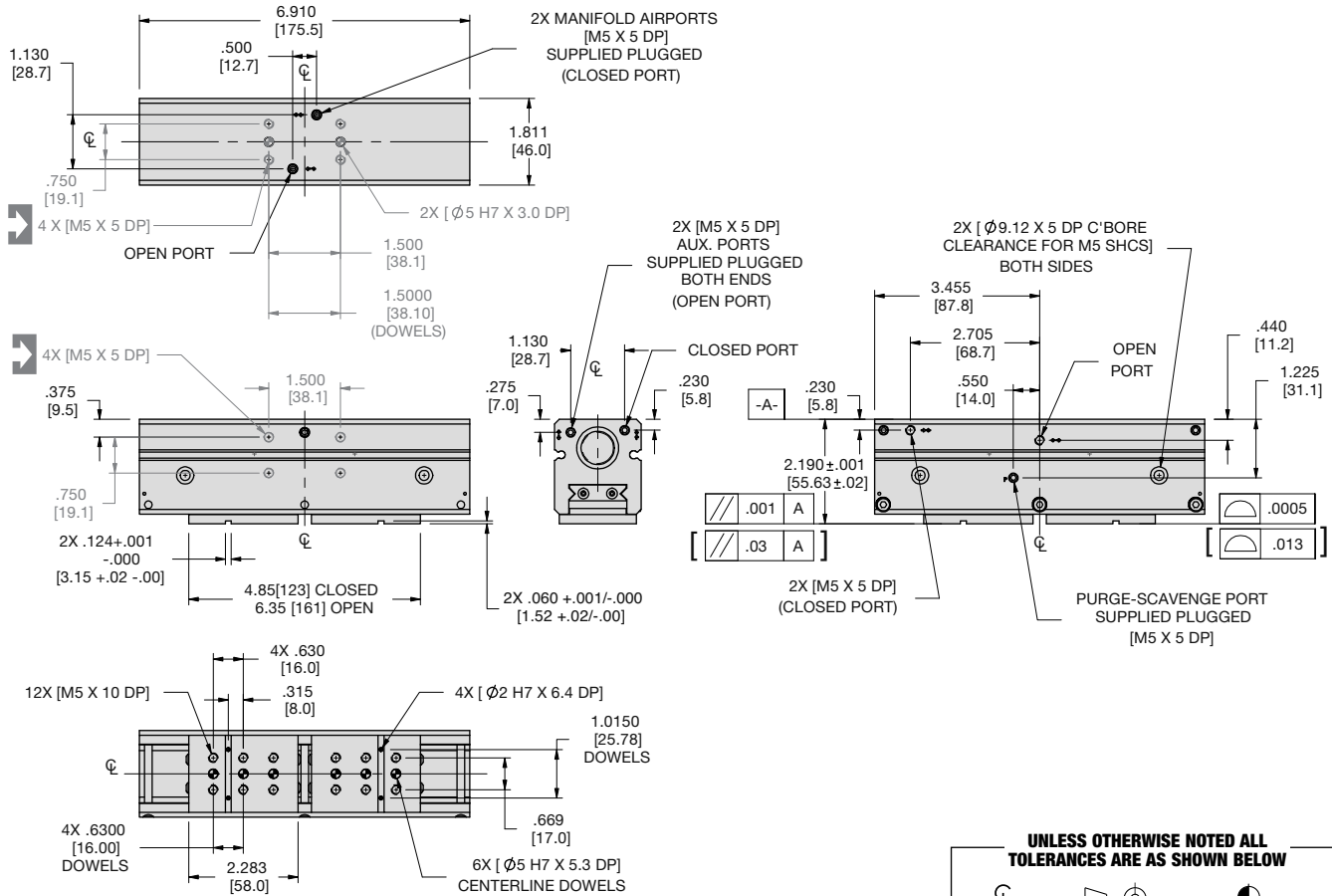
- Adjustable flow controls
  - Have thumb screw adjust with locking nut for adjusting actuation time
  - Available for 6mm O.D. Tubing
- Failsafe valve for applications
  - Where it is critical that the part being gripped not be dropped if air pressure is lost
  - Can mount directly to gripper or in-line with plumbing to gripper
  - For M5 Air Ports
- Consult factory for additional plumbing fittings

DIRECTCONNECT™

# PARALLEL GRIPPERS DPP-20M-38 DIRECTCONNECT PRECISION SERIES

DPP SERIES

1.86



UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

Dimensions are symmetrical about centerline	Third Angle Projection	All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or (±.013mm)
Metric Threads Course Pitch	<b>Imperial in.</b> 0.00 = ±.01 0.000 = ±.005 0.0000 = ±.0005	<b>Metric [mm]</b> [0] = (±.25) [0.0] = (±.13) [0.00] = (±.013)

NOTE: DIRECTCONNECT™ DIMENSIONS ARE SHOWN IN BLUE

**How to Order:** (Order Accessories separately from Basic Model)

BASIC MODEL    SPRING    VITON SEALS

**DPP-20M-38 - C - NS - V**

NON-SYNCHRONOUS

**SPRING C** Spring Closed  
— Leave Blank. No Spring Option (standard)

**JAW SYNCHRONIZATION NS** Non-Synchronous Operation  
— Leave Blank for Synchronous (standard)

**VITON® SEALS V** High Temperature Viton Seals

**SENSOR ACCESSORIES**

	ORDER #	QTY/UNIT
Inductive Sensor Mounting Kit (Mounts 2 sensors)	<b>OSMK-120</b>	<b>1 or 2</b>
NPN Inductive Sensor (with Qk. Disc.)*	<b>OISN-014</b>	<b>1, 2, 3 or 4</b>
PNP Inductive Sensor (with Qk. Disc.)*	<b>OISP-014</b>	<b>1, 2, 3 or 4</b>
NPN Magneto Resistive Sensor (with Qk. Disc.)*†	<b>OHSN-017</b>	<b>1, 2, 3 or 4</b>
PNP Magneto Resistive Sensor (with Qk. Disc.)*†	<b>OHSP-017</b>	<b>1, 2, 3 or 4</b>
NPN Magneto Resistive Sensor 90° (with Qk. Disc.)*†	<b>OHSN-011</b>	<b>1, 2, 3 or 4</b>
PNP Magneto Resistive Sensor 90° (with Qk. Disc.)*†	<b>OHSP-011</b>	<b>1, 2, 3 or 4</b>
Quick Disconnect Cable (2 meters long)*	<b>CABL-010</b>	<b>1, 2, 3 or 4</b>
Quick Disconnect Cable (5 meters long)*	<b>CABL-013</b>	<b>1, 2, 3 or 4</b>

**PNEUMATIC ACCESSORIES**

	ORDER #	QTY/UNIT
Seal Repair Kit (Standard Buna-N)	<b>SLKT-345</b>	<b>1</b>
Seal Repair Kit (Viton)	<b>SLKT-345V</b>	<b>1</b>
Manifold Seal Kit (Viton® only)	<b>SLKT-242V</b>	<b>1</b>
Adjustable Flow Control-M5 Elbow-6MM OD Tube Push-in Style	<b>VLVF-008</b>	<b>1 or 2</b>
Fail Safe Valve- M5	<b>OFSV-004</b>	<b>1</b>

\*Sensor and cable sold separately. †Piston Magnet standard

**SAMPLE ORDER: DPP-20M-38-C-NS-V**

Ex: DPP-20 Metric Gripper, 38mm Stroke, Spring Closed, Non Synchronous, Viton Seals

DIRECTCONNECT™





# PARALLEL GRIPPERS DPP-20M-38 DIRECTCONNECT PRECISION SERIES

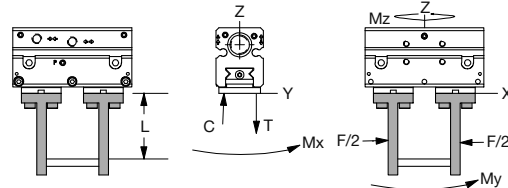
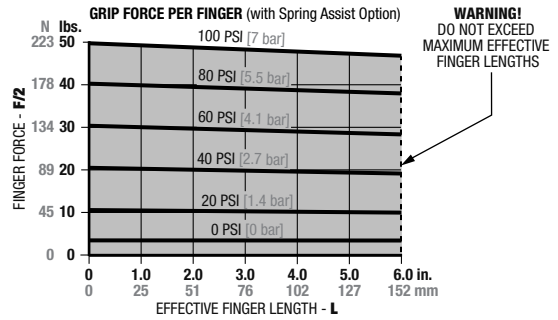
DPP SERIES

1.87



Specifications	DPP-20M-38	
Total Rated Grip Force <b>F</b> @ 100 psi, 7 bar*	101 lbs.	449 N
Stroke	1.50 in.	38.1 mm
Weight	3.10 lbs.	1.41 Kg
Pressure Range (Without Springs)	5-100 psi	0.3-7 bar
Pressure Range (With Springs)	30-100 psi	2.1-7 bar
Cylinder Bore (2X)	0.813 in.	20.7 mm
Displacement	0.779 in <sup>3</sup>	12.8 cm <sup>3</sup>
Temperature Range: Standard Seals	-30°~180° F	-35°~80° C
Viton® Seals	-20°~250° F	-30°~120° C
Actuation (Without Spring/With Spring)	0.24/0.29 sec.	0.24/0.29 sec.
Accuracy	±0.001 in.	±0.03 mm
Repeatability	±0.0005 in.	±0.01 mm
Valve required to actuate single acting	3-way, 2-position	
Valve required to actuate double acting	4-way, 2-position	

\*With Springs

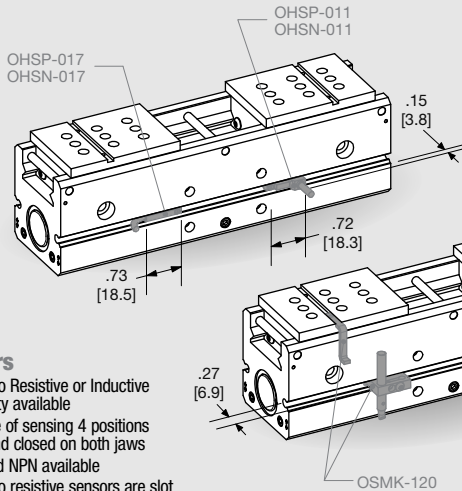


### Loading Capacity

	Static	Dynamic
Maximum Tensile <b>T</b>	200 lbs. [890 N]	67 lbs. [298 N]
Maximum Compressive <b>C</b>	200 lbs. [890 N]	67 lbs. [298 N]
Maximum Moment <b>M<sub>x</sub></b>	400 in.-lbs. [45 Nm]	133 in.-lbs. [15 Nm]
Maximum Moment <b>M<sub>y</sub></b>	450 in.-lbs. [51 Nm]	150 in.-lbs. [17 Nm]
Maximum Moment <b>M<sub>z</sub></b>	400 in.-lbs. [45 Nm]	133 in.-lbs. [15 Nm]

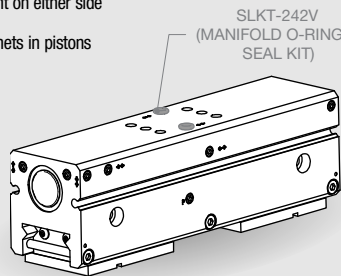
Note: Capacities are per set of jaws and are not simultaneous.

## Accessory Mounting Technical Data



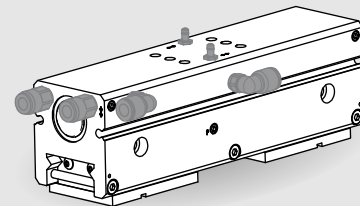
### Sensors

- Magneto Resistive or Inductive Proximity available
- Capable of sensing 4 positions open and closed on both jaws
- PNP and NPN available
- Magneto resistive sensors are slot mounted, no mounting kits required
- Threaded Quick Disconnect with Built-in LED output
- Sensors mount on either side of gripper
- Sensors magnets in pistons are standard



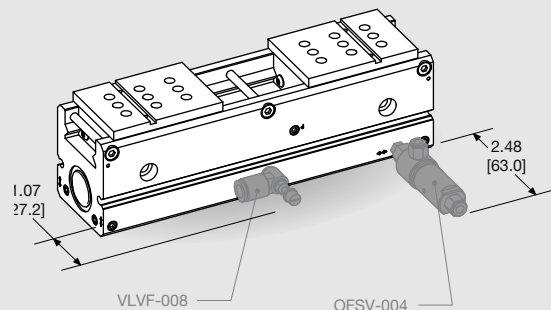
### Manifold O-Ring Seals

- Can be used to seal top Air Ports
- Seals in manifold kit are Viton
- O-Ring C'bores in customer's mounting plate must be: 0.290 [07.4] X .060±.002 [1.52±.05] deep
- Kit is supplied with all seals, plugs and wrenches needed



### Multiple Air Port Locations

- Standard M5 Air Ports on front surface
- 3 M5 Air Port locations (Left, right, and top surface) are plugged as standard



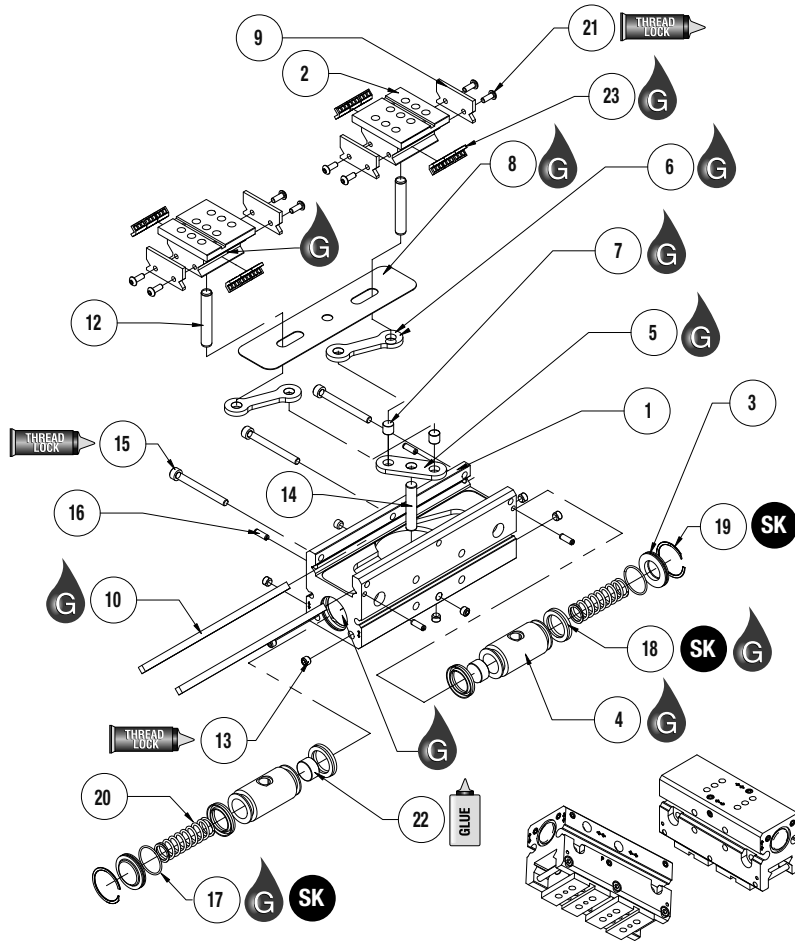
### Plumbing Fittings

- Adjustable flow controls
  - Have thumb screw adjust with locking nut for adjusting actuation time
  - Available for 6mm O.D. Tubing
- Failsafe valve for applications
  - Where it is critical that the part being gripped not be dropped if air pressure is lost
  - Can mount directly to gripper or in-line with plumbing to gripper
  - For M5 Air Ports
- Consult factory for additional plumbing fittings

DIRECTCONNECT™



# DPP SERIES EXPLODED VIEW



Item	Qty	Name
01	1	Body
02	2	Jaw
03	2	Cap
04	2	Piston
05	1	Equalizer
06	2	Link
07	2	Equalizer Pin
08	1	Linkage Cover
09	4	Wiper
10	2	Way
12	2	Drive Pin
13	10	Set Screw – Air & Purge Plug
14	1	Pivot Pin
15	3	Preload Screw
16	4	Way Locating Pin
17	2	O-Ring – Cap Seal
18	4	U-Cup – Piston Seal
19	2	Retaining Ring
20	2	Spring for -C Spring Closed Option
21*	–	BHCS – Wiper Mounting Screw
22*	–	Magnet
23*	–	S'assy, Cage & Roller Bearings

### Notes:

- 1) Contact the Robohand Sales Department for a complete spare parts list with order number and prices.
- 2)\* Item #21 quantity varies per gripper size. Size -10M has 4 per unit. Sizes -14M, -20M have 8 per unit.
- 3)\* Item #22 quantity varies per gripper size. Size -10M has 4 per unit. Sizes -14M, -20M have 2 per unit.
- 4)\* Item #23 quantity and number of different sub-assemblies varies per gripper model. Contact Sales to determine the correct quantity and part numbers needed.

**SK Seal Repair Kit Order #'s**  
See Product Data Sheets

### Assembly Procedure:

- 1) Lubricate #1 body (jaw cavity & bore).
- 2) Plug cross ports in body with #13 set screws.
- 3) Press #14 pivot pin into body.
- 4) Insert #22 magnet(s) into each #4 piston making sure magnets repel each other between pistons.
- 5) Lubricate and install #18 seals onto pistons.
- 6) Insert pistons into body with magnet sides facing in toward pivot pin.
- 7) Press #7 equalizer pins into #5 equalizer.
- 8) Assemble equalizer with #6 links and place onto pivot pin in body making sure holes in links line up with holes in pistons.
- 9) Place #8 linkage cover over equalizer and link assembly and seat in body pocket.
- 10) Press #12 drive pin into each #2 jaw.
- 11) Lubricate jaw bearing surfaces and install #9 wiper on each jaw end with #21 mounting screws.
- 12) Place #23 cage and roller bearing assemblies on jaw bearing grooves.
- 13) Place jaws into body aligning the drive pins with the holes in the linkage cover, links, and pistons. If jaws have off center key slot in them, jaws should be installed with this slot farther away from the gripper's center.
- 14) Slide #10 ways into body trapping them between body and jaws.
- 15) Install #16 way locating pins at each end of body to secure ways.
- 16) For -C spring closed option, insert #20 springs into pistons.
- 17) Place #17 seals onto #3 caps and install onto body with #19 retaining rings.
- 18) Install #15 preload screws and torque per preload adjustment procedure.

### Preload Adjustment Procedure:

- 1) Tighten center preload screw first and then outer ones to the torque specification in step 2.
- 2) Use the following torque specification per gripper.
  - DPP-10M – 6 in-lb [0.68 Nm]
  - DPP-14M – 8 in-lb [0.90 Nm]
  - DPP-20M – 13 in-lb [1.47 Nm]

**Note:** Torque specifications provided are factory settings. Fine adjustment may be needed based on intent & application.

### Non-Synchronous Procedure:

- 1) Remove preload screws, press out way locating pins, and slide out ways.
- 2) Pull out jaws and roller bearing assemblies. (If -C spring closed option, remove retaining rings, caps, and springs first.)
- 3) Remove linkage cover from body.
- 4) Remove equalizer and links from body.
- 5) Re-install linkage cover into body.
- 6) Re-install jaws and roller bearing assemblies into body aligning the drive pins with the hole in the linkage cover and each piston.
- 7) Re-install ways, press in way locating pins, and re-install preload screws. (If -C spring closed option, re-install springs, caps and retaining rings.)



Seal Kit Items



Thread Locker



Krytox™ Lubricant



Lightweight Machine Oil



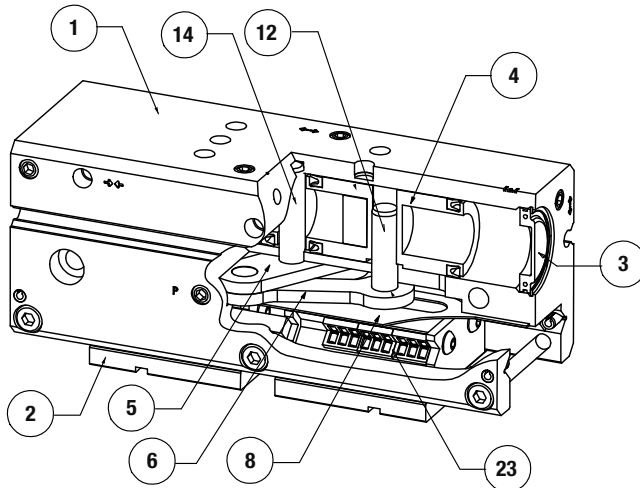
Teflon™ Based Grease



Super Bonder



Third Angle Projection

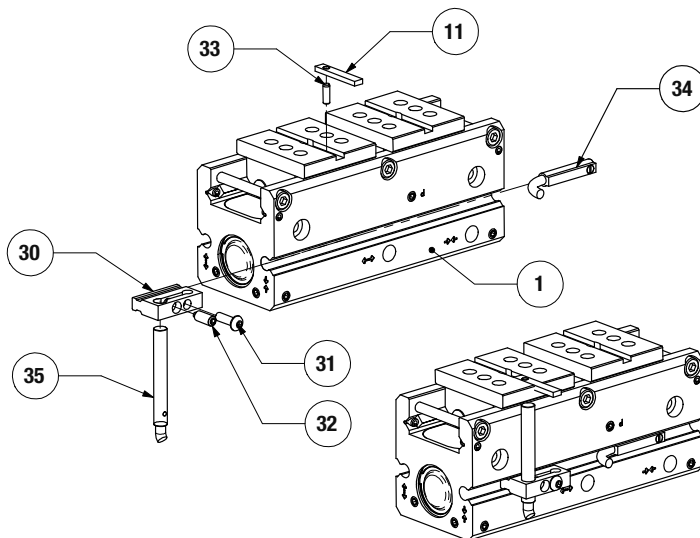


Item	Qty	Name
01	1	Body
02	2	Jaw
03	2	Cap
04	2	Piston
05	1	Equalizer
06	2	Link
08	1	Linkage Cover
12	2	Drive Pin
14	1	Pivot Pin
23*	-	S'assy, Cage & Roller Bearings

**Notes:**

- 1) Contact the Robohand Sales Department for a complete spare parts list with order number and prices.
- 2)\* Item #23 quantity and number of different sub-assemblies varies per gripper model. Contact Sales to determine the correct quantity and part numbers needed.

## Accessory Installation & Adjustment Instructions



**Magneto-Resistive Sensors:**

- 1) Install sensors in profile slots of gripper body as shown.
- 2) Set sensors with integrated screw.

**Inductive Sensors:**

- 1) Insert sensor bracket (#30) into slot of body.
- 2) Insert dowel pin (#33) and target (#11) into jaw slot.
- 3) Insert sensor into bracket and adjust sensor depth so that sensor light indicates on target.
- 4) Tighten sensor locking screw (#31) to hold sensor depth.
- 5) Position sensor bracket for desired stroke detection.
- 6) Tighten sensor bracket with set screw (#32) to lock stroke detection position.



Seal Kit Items



Thread Locker



Krytox™ Lubricant



Lightweight Machine Oil



Teflon™ Based Grease



Super Bonder



Third Angle Projection

# Parallel Grippers - Low Profile Series

- **Precision applications:**

Preloaded "Dual-V" roller bearings eliminate side play for excellent part position repeatability.

- **Repeatable grip force:**

Low friction mechanism allows for consistent, repeatable gripping forces. To grip delicate parts, grip force can be easily altered by adjusting air pressure.

- **Longer finger applications:**

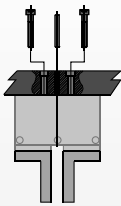
Rigid design allows for longer gripper finger lengths to be used when compared to other grippers of equal weight & size.

- **Non-synchronous motion:**

The unit can be made non-synchronous providing independent jaw motion allowing the gripper to pick or place at a point other than it's center.

## Mounting Information:

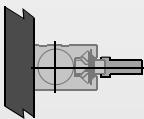
Grippers can be mounted & operated in any orientation



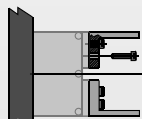
Body mounts with screws and locates with slip fit dowel pins for accuracy



**Warning!** Protect drive and bearing mechanism from falling debris when mounted upside down



Fingers attach to jaws with screws and locate by keying



## Technical Specifications:

### Pneumatic Specifications

Pressure Operating Range  
Cylinder Type  
Dynamic Seals  
Valve Required to Operate

<b>Imperial</b>	<b>Metric</b>
5-100 psi	.3-7 bar
Dual Double Acting	
Internally Lubricated Buna-N	
4-way, 2-position	

### Air Quality Requirements

Air Filtration  
Air Lubrication  
Air Humidity

40 Micron or Better
Not Necessary*
Low Moisture Content (dry)

### Temperature Operating Range

Buna-N Seals (standard)	-30°~180° F	-35°~80° C
Viton® Seals (optional)	-20°~250° F	-30°~120° C

### Maintenance Specifications†

Expected Life	5 million cycles
Normal Application	10+ million cycles*
w/ Preventative Maintenance	Yes
Field Repairable	Yes
Seal Repair Kits Available	Yes

### Application Restrictions

- Dirty or gritty environments
- Machining operations generating chips
- Environments with loose particulate
- Applications where mechanism lubricant could cause contamination

\*Addition of lubrication will greatly increase service life  
† See Maintenance Section

## Product Features

### Pre-Load Adjustment Screws

Adjustable preload screws allow for adjustment of preload on roller bearings

### Hard Coat Anodize

The body has hard-coat anodize 60 RC with Teflon® impregnation

### Self Lubricating Seals

Self lubricating dynamic seals (Buna-N only)

### Quality Components

Internal components are made from hardened bearing & tool steels

### One Piece Body

One piece lightweight aluminum body

### Dowel Holes

Slip fit dowel pin holes in body

### Accessory Mounting Bracket

### Sensors

Reads position of jaw (Sold Separately- See "How to Order" Section for more info)

### Preloaded Bearings

Roller bearings are preloaded for maximum support and zero side play

### High Grip Force

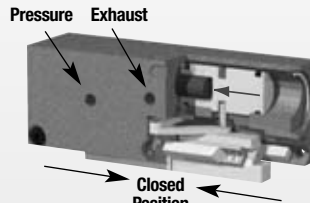
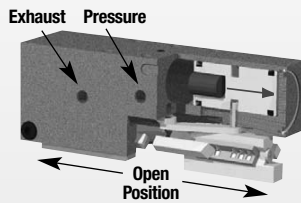
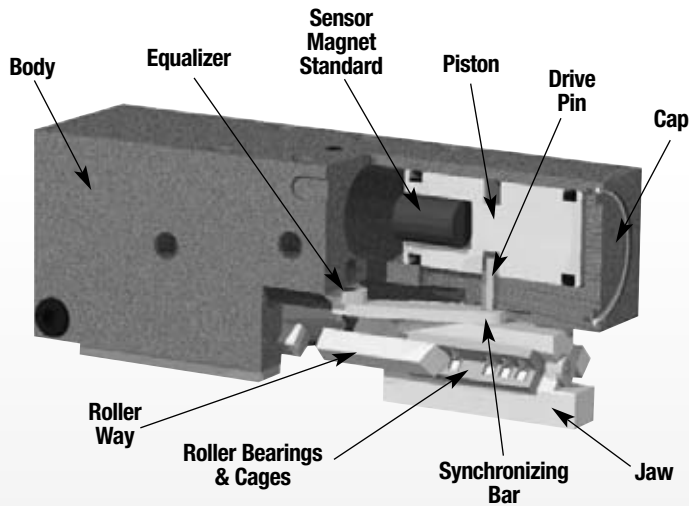
High grip force with respect to weight due to extremely efficient drive mechanism

### Non-Synchronous Operation Available

### Patented Bearing Support

"Dual-V" roller bearings provide low friction rolling motion

## Operating Principle



- Dual double acting opposed pistons, connected to both a jaw and a synchronizing bar by a drive pin, actuate in opposite directions.
- The synchronizing bars are connected to the equalizer which synchronizes the motion.
- Suitable for internal or external gripping.
- The synchronizing elements can be removed for non-synchronous operation.

**U.S. Patent # 5,529,359**

**Designed and manufactured in the USA**

## Style-RPL Parallel Gripper

### Size -1M

Style:	RPL-1	RPL-1M
Stroke:	0.25 in.	6.4 mm
Grip Force:	26 lbs.	116 N
Weight:	.16 lbs.	.07 Kg



See Page **1.92**

## Style-RPL Parallel Gripper

### Size -2M

Style:	RPL-2	RPL-2M
Stroke:	0.50 in.	12.7 mm
Grip Force:	26 lbs.	116 N
Weight:	.20 lbs.	.09 Kg



See Page **1.93**

## Style-RPL Parallel Gripper

### Size -3M

Style:	RPL-3	RPL-3M
Stroke:	0.75 in.	19.1 mm
Grip Force:	36 lbs.	160 N
Weight:	.32 lbs.	.14 Kg



See Page **1.94**

## Style-RPL Parallel Gripper

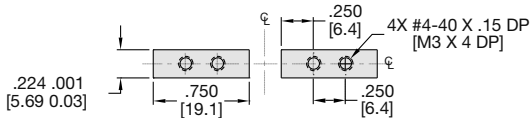
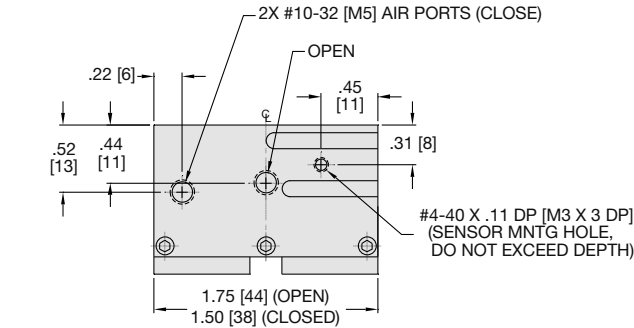
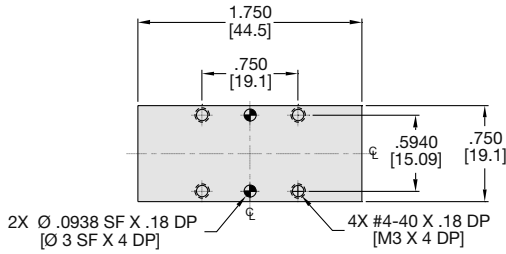
### Size -4M

Style:	RPL-4	RPL-4M
Stroke:	1.00 in.	25.4 mm
Grip Force:	36 lbs.	160 N
Weight:	.38 lbs.	.17 Kg



See Page **1.95**

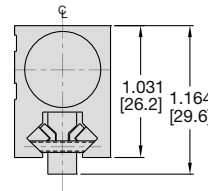
# PARALLEL GRIPPER RPL-1M PRECISION DUAL "V" LOW PROFILE SERIES



JAW MOUNTING PATTERN  
(SHOWN IN OPEN POSITION)

### Specifications

	RPL-1	RPL-1M
Total Rated Grip Force <b>F</b> @ 100 psi, 7 bar	26 lbs.	116 N
Stroke	0.25 in.	6.4 mm
Weight	0.16 lbs.	0.07 Kg
Pressure Range	5-100 psi	0.3-7 bar
Cylinder Bore Ø	0.438 in.	11.1 mm
Displacement	0.038 in <sup>3</sup>	0.6 cm <sup>3</sup>
Temperature Range		
Standard Seals	-30°~180° F	-35°~80° C
Viton® Seals	-20°~250° F	-30°~120° C
Actuation	0.10 sec.	0.10 sec.
Accuracy	±0.002 in.	±0.05 mm
Repeatability	±0.001 in.	±0.03 mm
Valve required to actuate	4-way, 2-position	

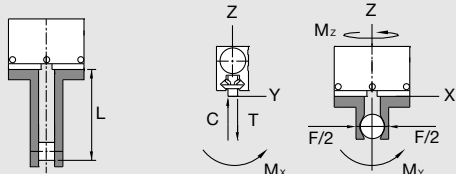
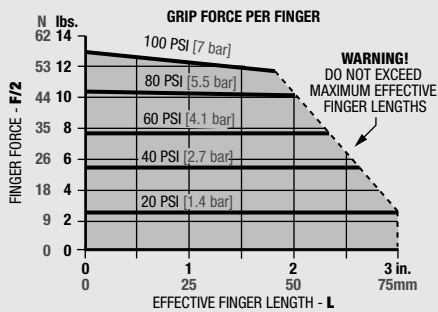


### UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

Symbol	Imperial in.	Metric [mm]
	0.00 ± .01	[0.] = [±.25]
	0.000 ± .005	[0.0] = [±.13]
	0.0000 ± .0005	[0.00] = [±.013]

Dimensions are symmetrical about centerline  
 Third Angle Projection  
 All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or [±.013mm]  
 Metric Threads Course Pitch

## Loading Information

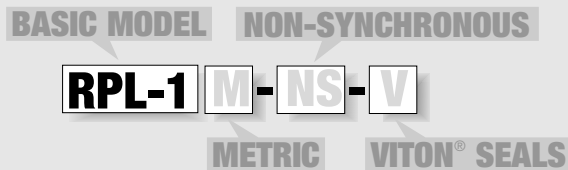


### Loading Capacity†

	Static		Dynamic	
	Imperial	Metric	Imperial	Metric
Maximum Tensile <b>T</b>	50 lbs.	222 N	15 lbs.	67 N
Maximum Compressive <b>C</b>	50 lbs.	222 N	15 lbs.	67 N
Maximum Moment <b>M<sub>x</sub></b>	30 in.-lbs.	3.4 Nm	10 in.-lbs.	1.1 Nm
Maximum Moment <b>M<sub>y</sub></b>	40 in.-lbs.	4.5 Nm	12 in.-lbs.	1.4 Nm
Maximum Moment <b>M<sub>z</sub></b>	30 in.-lbs.	3.4 Nm	10 in.-lbs.	1.1 Nm

†Capacities are per set of jaws and are not simultaneous

## How to Order: (Order Accessories separately from Basic Model)



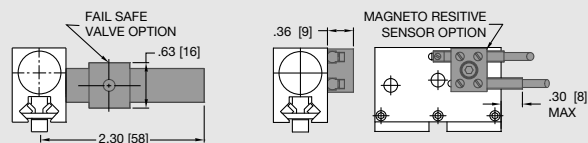
### SENSOR ACCESSORIES\*†

	ORDER #	QTY/UNIT
Sensor Mounting Kit for Imperial & Metric Units (mounts 2 sensors)	<b>OSMK-008</b>	<b>1</b>
NPN Magneto Resistive Sensor with Quick Disconnect*	<b>OHSN-017</b>	<b>1 or 2</b>
PNP Magneto Resistive Sensor with Quick Disconnect*	<b>OHSP-017</b>	<b>1 or 2</b>
Quick Disconnect 2 Meter Cable Length*	<b>CABL-010</b>	<b>1 or 2</b>
Quick Disconnect 5 Meter Cable Length*	<b>CABL-013</b>	<b>1 or 2</b>

### PNEUMATIC ACCESSORIES

Fail Safe Valve (Imperial)	<b>OFSV-001</b>	<b>1</b>
Fail Safe Valve (Metric)	<b>OFSV-004</b>	<b>1</b>
Standard Seal Repair Kit	<b>SLKT-010</b>	<b>1</b>
Viton® Seal Repair Kit	<b>SLKT-010V</b>	<b>1</b>

\*Sensor and cable sold separately †Piston magnet standard



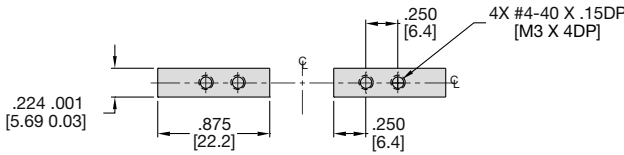
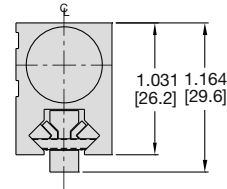
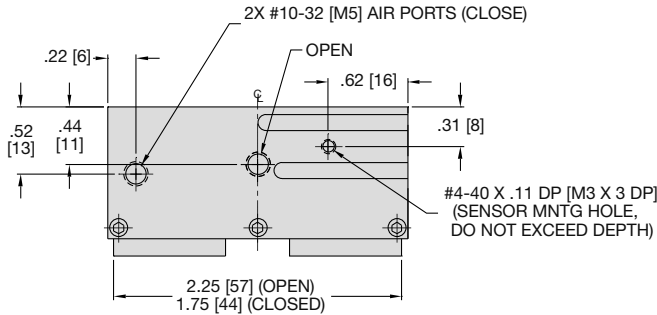
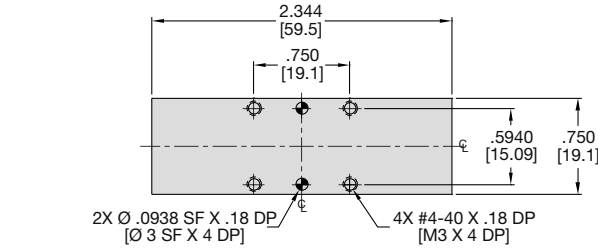




# PARALLEL GRIPPER RPL-2M PRECISION DUAL "V" LOW PROFILE SERIES

RPL SERIES

1.93



JAW MOUNTING PATTERN (SHOWN IN OPEN POSITION)

### Specifications

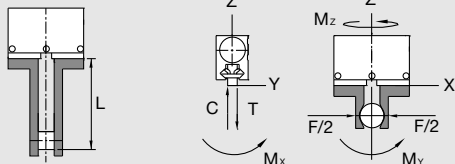
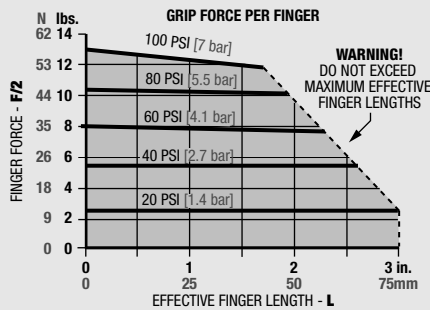
	RPL-2	RPL-2M
Total Rated Grip Force <b>F</b> @ 100 psi, 7 bar	26 lbs.	116 N
Stroke	0.50 in.	12.7 mm
Weight	0.20 lbs.	0.09 Kg
Pressure Range	5-100 psi	0.3-7 bar
Cylinder Bore Ø	0.438 in.	11.1 mm
Displacement	0.075 in <sup>3</sup>	1.2 cm <sup>3</sup>
Temperature Range		
Standard Seals	-30°~180° F	-35°~80° C
Viton® Seals	-20°~250° F	-30°~120° C
Actuation	0.13 sec.	0.13 sec.
Accuracy	±0.002 in.	±0.05 mm
Repeatability	±0.001 in.	±0.03 mm
Valve required to actuate	4-way, 2-position	

UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

	Imperial in.	Metric [mm]
Dimensions are symmetrical about centerline	0.00 = ±.01	[0.] = [±.25]
Third Angle Projection	0.000 = ±.005	[0.0] = [±.13]
All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or [±.013mm]	0.0000 = ±.0005	[0.00] = [±.013]
Metric Threads Course Pitch		

## Loading Information

## How to Order: (Order Accessories separately from Basic Model)



### Loading Capacity†

	Static		Dynamic	
	Imperial	Metric	Imperial	Metric
Maximum Tensile <b>T</b>	65 lbs.	289 N	20 lbs.	89 N
Maximum Compressive <b>C</b>	65 lbs.	289 N	20 lbs.	89 N
Maximum Moment <b>M<sub>x</sub></b>	45 in.-lbs.	5.1 Nm	15 in.-lbs.	1.7 Nm
Maximum Moment <b>M<sub>y</sub></b>	60 in.-lbs.	6.8 Nm	20 in.-lbs.	2.3 Nm
Maximum Moment <b>M<sub>z</sub></b>	45 in.-lbs.	5.1 Nm	15 in.-lbs.	1.7 Nm

†Capacities are per set of jaws and are not simultaneous

BASIC MODEL NON-SYNCHRONOUS

RPL-2 M-NS-V

METRIC VITON® SEALS

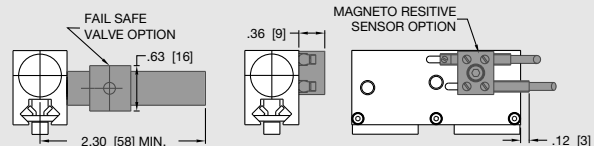
### SENSOR ACCESSORIES\*

	ORDER #	QTY/UNIT
Sensor Mounting Kit for Imperial & Metric Units (mounts 2 sensors)	OSMK-008	1
NPN Magneto Resistive Sensor with Quick Disconnect*	OHSN-017	1 or 2
PNP Magneto Resistive Sensor with Quick Disconnect*	OHSP-017	1 or 2
Quick Disconnect 2 Meter Cable Length*	CABL-010	1 or 2
Quick Disconnect 5 Meter Cable Length*	CABL-013	1 or 2

### PNEUMATIC ACCESSORIES

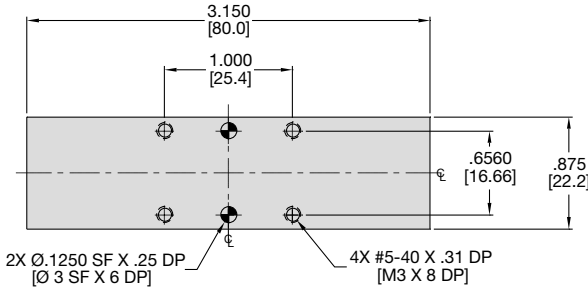
Fail Safe Valve (Imperial)	OFSV-001	1
Fail Safe Valve (Metric)	OFSV-004	1
Standard Seal Repair Kit	SLKT-010	1
Viton® Seal Repair Kit	SLKT-010V	1

\*Sensor and cable sold separately †Piston magnet standard



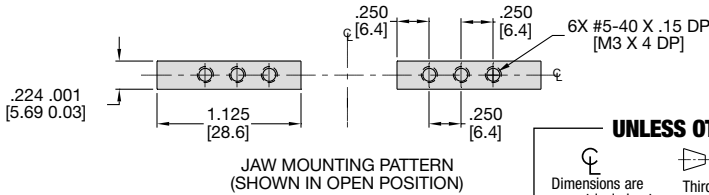
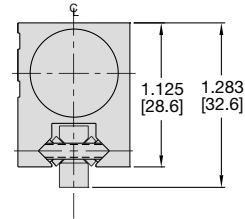
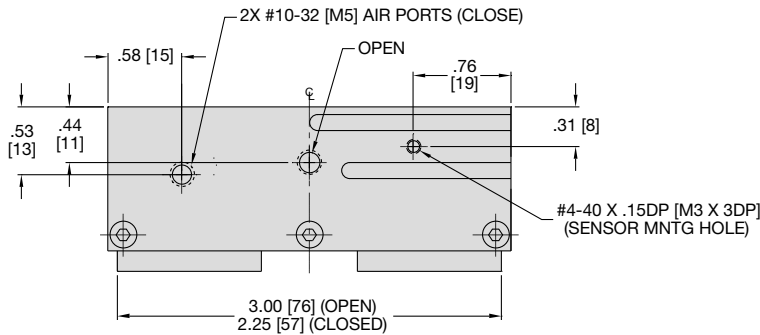


# PARALLEL GRIPPER RPL-3M PRECISION DUAL "V" LOW PROFILE SERIES



### Specifications

	RPL-3	RPL-3M
Total Rated Grip Force <b>F</b> @ 100 psi, 7 bar	36 lbs.	160 N
Stroke	0.75 in.	19.1 mm
Weight	0.32 lbs.	0.15 Kg
Pressure Range	5-100 psi	0.3-7 bar
Cylinder Bore Ø	0.500 in.	12.7 mm
Displacement	0.147 in <sup>3</sup>	2.4 cm <sup>3</sup>
Temperature Range		
Standard Seals	-30°~180° F	-35°~80° C
Viton® Seals	-20°~250° F	-30°~120° C
Actuation	0.14 sec.	0.14 sec.
Accuracy	±0.002 in.	±0.05 mm
Repeatability	±0.001 in.	±0.03 mm
Valve required to actuate	4-way, 2-position	

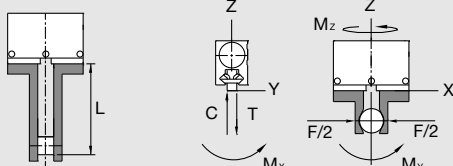
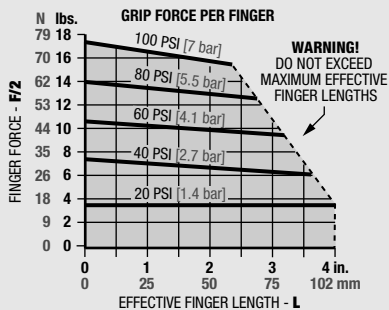


UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

Symbol	Imperial in.	Metric [mm]
	0.00 ± .01	[.0] = [±.25]
	0.000 ± .005	[0.0] = [±.13]
	0.0000 ± .0005	[0.00] = [±.013]

## Loading Information

## How to Order: (Order Accessories separately from Basic Model)



Loading Capacity†	Static		Dynamic	
	Imperial	Metric	Imperial	Metric
Maximum Tensile <b>T</b>	90 lbs.	400 N	30 lbs.	133 N
Maximum Compressive <b>C</b>	90 lbs.	400 N	30 lbs.	133 N
Maximum Moment <b>M<sub>x</sub></b>	60 in.-lbs.	6.8 Nm	20 in.-lbs.	2.3 Nm
Maximum Moment <b>M<sub>y</sub></b>	80 in.-lbs.	9.0 Nm	25 in.-lbs.	2.8 Nm
Maximum Moment <b>M<sub>z</sub></b>	60 in.-lbs.	6.8 Nm	20 in.-lbs.	2.3 Nm

†Capacities are per set of jaws and are not simultaneous

BASIC MODEL NON-SYNCHRONOUS

**RPL-3 M-NS-V**

METRIC VITON® SEALS

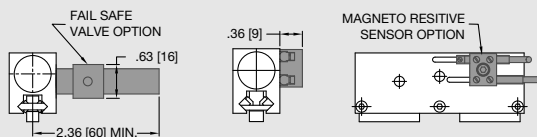
### SENSOR ACCESSORIES†

	ORDER #	QTY/UNIT
Sensor Mounting Kit for Imperial & Metric Units (mounts 2 sensors)	<b>OSMK-008</b>	<b>1</b>
NPN Magneto Resistive Sensor with Quick Disconnect*	<b>OHSN-017</b>	<b>1 or 2</b>
PNP Magneto Resistive Sensor with Quick Disconnect*	<b>OHSP-017</b>	<b>1 or 2</b>
Quick Disconnect 2 Meter Cable Length*	<b>CABL-010</b>	<b>1 or 2</b>
Quick Disconnect 5 Meter Cable Length*	<b>CABL-013</b>	<b>1 or 2</b>

### PNEUMATIC ACCESSORIES

Fail Safe Valve (Imperial)	<b>OFSV-001</b>	<b>1</b>
Fail Safe Valve (Metric)	<b>OFSV-004</b>	<b>1</b>
Standard Seal Repair Kit	<b>SLKT-012</b>	<b>1</b>
Viton® Seal Repair Kit	<b>SLKT-012V</b>	<b>1</b>

\*Sensor and cable sold separately †Piston magnet standard

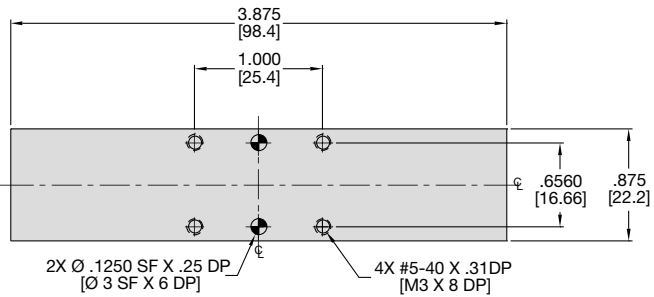




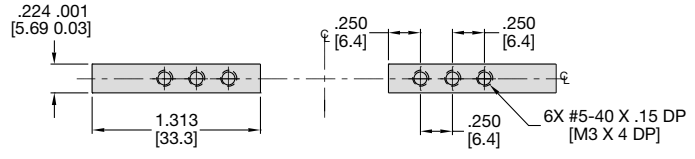
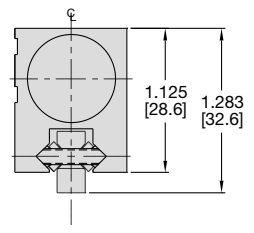
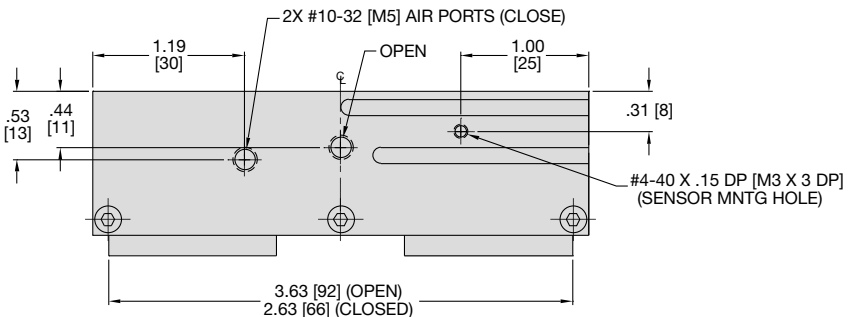
# PARALLEL GRIPPER RPL-4M PRECISION DUAL "V" LOW PROFILE SERIES

RPL SERIES

1.95



Specifications	RPL-4	RPL-4M
Total Rated Grip Force <b>F</b> @ 100 psi, 7 bar	36 lbs.	160 N
Stroke	1.00 in.	25.4 mm
Weight	0.38 lbs.	0.17 Kg
Pressure Range	5-100 psi	0.3-7 bar
Cylinder Bore Ø	0.500 in.	12.7 mm
Displacement	0.196 in <sup>3</sup>	3.2 cm <sup>3</sup>
Temperature Range		
Standard Seals	-30°~180° F	-35°~80° C
Viton® Seals	-20°~250° F	-30°~120° C
Actuation	0.19 sec.	0.19 sec.
Accuracy	±0.002 in.	±0.05 mm
Repeatability	±0.001 in.	±0.03 mm
Valve required to actuate	4-way, 2-position	



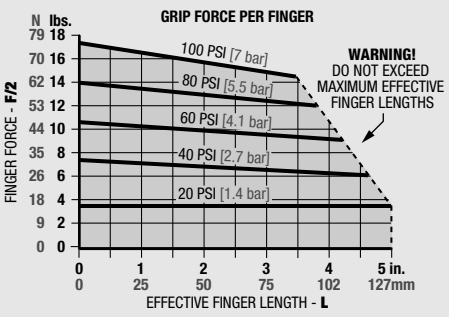
JAW MOUNTING PATTERN (SHOWN IN OPEN POSITION)

UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

Imperial in.	Metric [mm]
0.00 = ±.01	[0.] = ±.25
0.000 = ±.005	[0.0] = ±.13
0.0000 = ±.0005	[0.00] = ±.013

## Loading Information

## How to Order: (Order Accessories separately from Basic Model)



BASIC MODEL NON-SYNCHRONOUS

RPL-4 M - NS - V

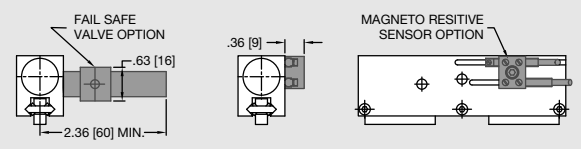
METRIC VITON® SEALS

SENSOR ACCESSORIES*	ORDER #	QTY/UNIT
Sensor Mounting Kit for Imperial & Metric Units (mounts 2 sensors)	<b>OSMK-008</b>	<b>1</b>
NPN Magneto Resistive Sensor with Quick Disconnect*	<b>OHSN-017</b>	<b>1 or 2</b>
PNP Magneto Resistive Sensor with Quick Disconnect*	<b>OHSP-017</b>	<b>1 or 2</b>
Quick Disconnect 2 Meter Cable Length*	<b>CABL-010</b>	<b>1 or 2</b>
Quick Disconnect 5 Meter Cable Length*	<b>CABL-013</b>	<b>1 or 2</b>
<b>PNEUMATIC ACCESSORIES</b>		
Fail Safe Valve (Imperial)	<b>OFSV-001</b>	<b>1</b>
Fail Safe Valve (Metric)	<b>OFSV-004</b>	<b>1</b>
Standard Seal Repair Kit	<b>SLKT-012</b>	<b>1</b>
Viton® Seal Repair Kit	<b>SLKT-012V</b>	<b>1</b>

\*Sensor and cable sold separately \*Piston magnet standard

Loading Capacity*	Static		Dynamic	
	Imperial	Metric	Imperial	Metric
Maximum Tensile <b>T</b>	120 lbs.	534 N	40 lbs.	178 N
Maximum Compressive <b>C</b>	120 lbs.	534 N	40 lbs.	178 N
Maximum Moment <b>M<sub>x</sub></b>	75 in.-lbs.	8.5 Nm	25 in.-lbs.	2.8 Nm
Maximum Moment <b>M<sub>y</sub></b>	100 in.-lbs.	11.3 Nm	35 in.-lbs.	4.0 Nm
Maximum Moment <b>M<sub>z</sub></b>	75 in.-lbs.	8.5 Nm	25 in.-lbs.	2.8 Nm

\*Capacities are per set of jaws and are not simultaneous



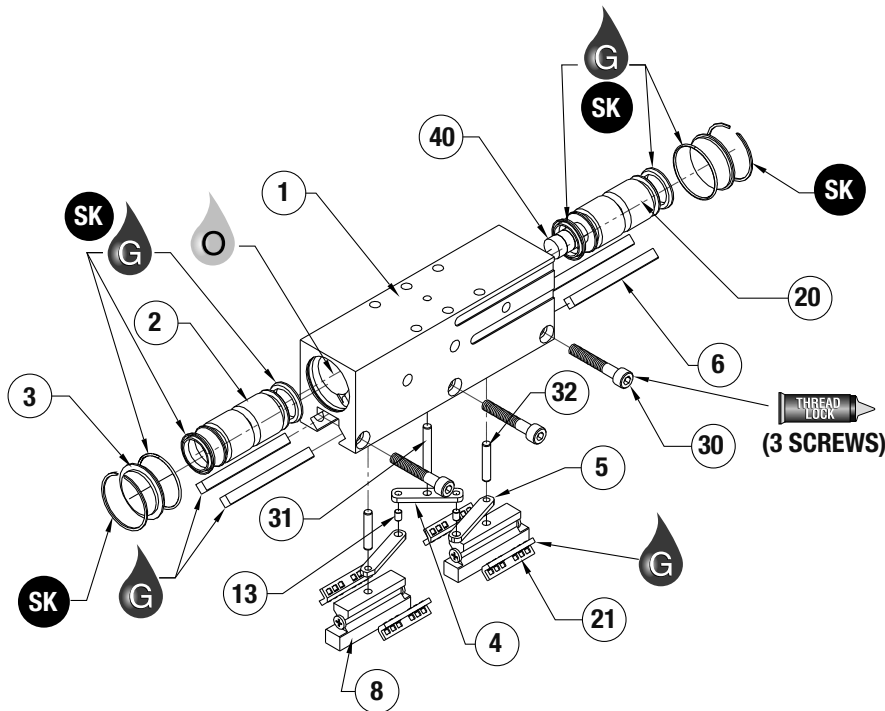
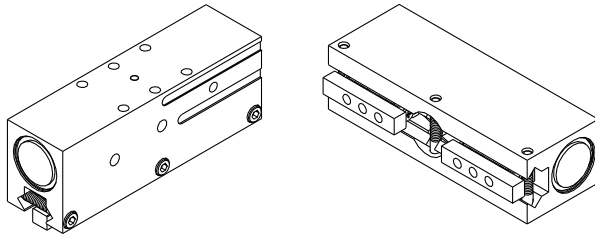
Please see back cover for DE-STA-CO Global Locations. [www.destaco.com](http://www.destaco.com)

[www.comoso.com](http://www.comoso.com)

## RPL Series Exploded View



A J ROBOHAND COMPANY



Item	Qty	Name
01	1	Body
02	1	Piston
03	2	Cap
04	1	Equalizer
05	2	Link
06	4	Way
08	2	Jaw
13	2	Pin
20	1	Piston W/Magnet Slot
21	4	S'assy,Cage & Rollers
30	3	SHCS
31	1	Dowel Pin
32	2	Dowel Pin
40	2	Magnet

**NOTE:** Contact the Robohand Sales Department for a complete spare parts list with order numbers and prices.

#### Assembly Procedure

- 1) Lubricate and install seals.
- 2) Press dowel pin into center of body.
- 3) Place links and equalizers into body.
- 4) Press dowel pins into jaws.
- 5) Place jaws through links and into pistons.
- 6) Install cages on jaws.
- 7) Place ways behind cages with flat facing out and install screws.
- 8) Adjust preload.

#### Preload Adjustment Procedure

- 1) Tighten center screw (#30) so that fingers bind slightly.
- 2) Tighten outer screws in the same fashion.
- 3) Cycle the gripper.
- 4) Re-adjust screws so that when you push the cage, the finger moves freely. (the finger movement should not feel gritty.)

#### Non-Synchronous Procedure

- 1) Remove preload screws (#30) and ways.
- 2) Remove cages, jaws and dowel pins.
- 3) Remove equalizer, links, and roller bearings.
- 4) Re-assemble jaws and dowel pins into pistons.
- 5) Re-install cages on jaws.
- 6) Place ways behind cages with flat facing out and install preload screws.
- 7) Adjust preload.

**SK** Seal Repair Kit Order #'s  
See Product Data Sheets



Seal Kit  
Items



Thread  
Locker



Krytox™  
Lubricant



Lightweight  
Machine Oil



Teflon™ Based  
Grease



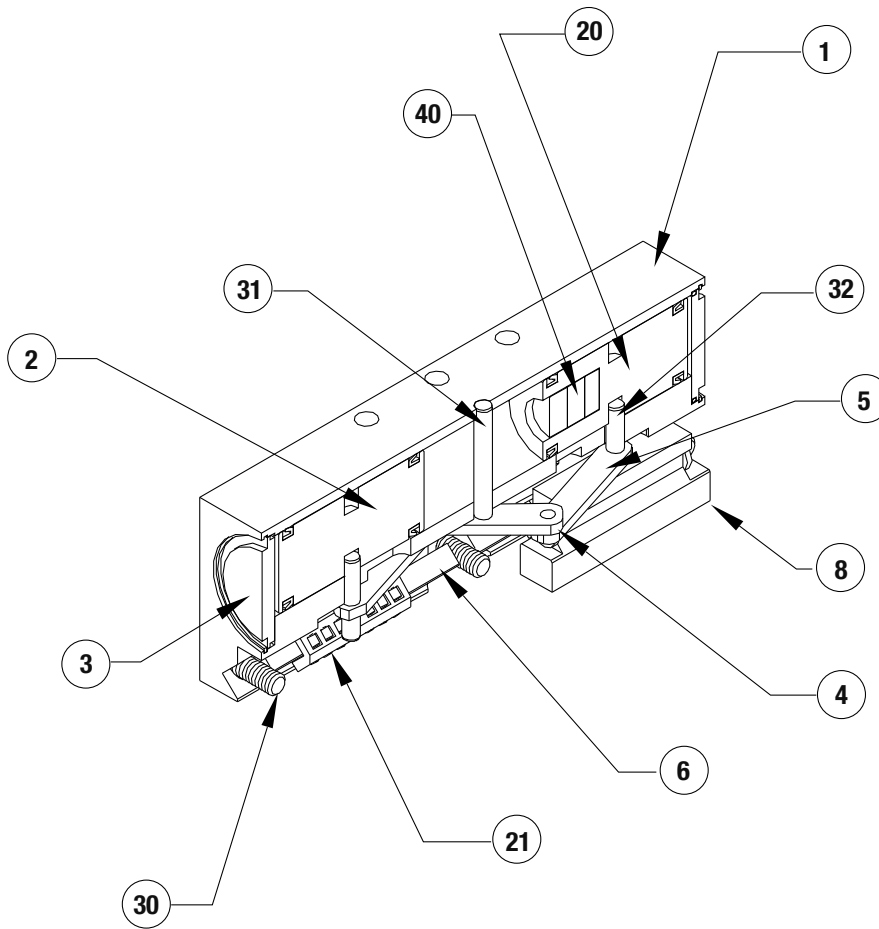
Super  
Bonder



Third Angle  
Projection

Please see back cover for DE-STA-CO Global Locations. [www.destaco.com](http://www.destaco.com)

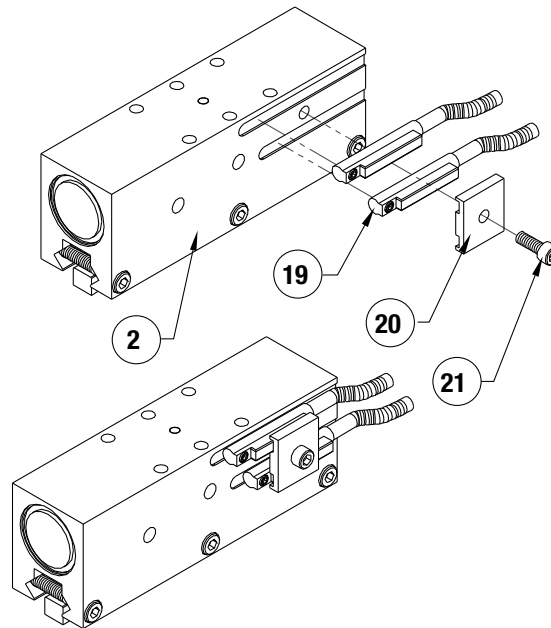
[www.comoso.com](http://www.comoso.com)



Item	Qty	Name
01	1	Body
02	1	Piston
03	2	Cap
04	1	Equalizer
05	2	Link
06	4	Way
08	2	Jaw
13	2	Bearing,Roller
20	1	Piston W/Magnet Slot
21	4	S'assy,Cage & Rollers
30	3	SHCS
31	1	Dowel Pin
32	2	Dowel Pin
40	2	Magnet

**NOTE:** Contact the Robohand Sales Department for a complete spare parts list with order numbers and prices.

## Accessory Installation & Adjustment Instructions



### Installation

1. Install sensors as shown.
2. Adjust for desired end of stroke detection.



Seal Kit Items



Thread Locker



Krytox™ Lubricant



Lightweight Machine Oil



Teflon™ Based Grease



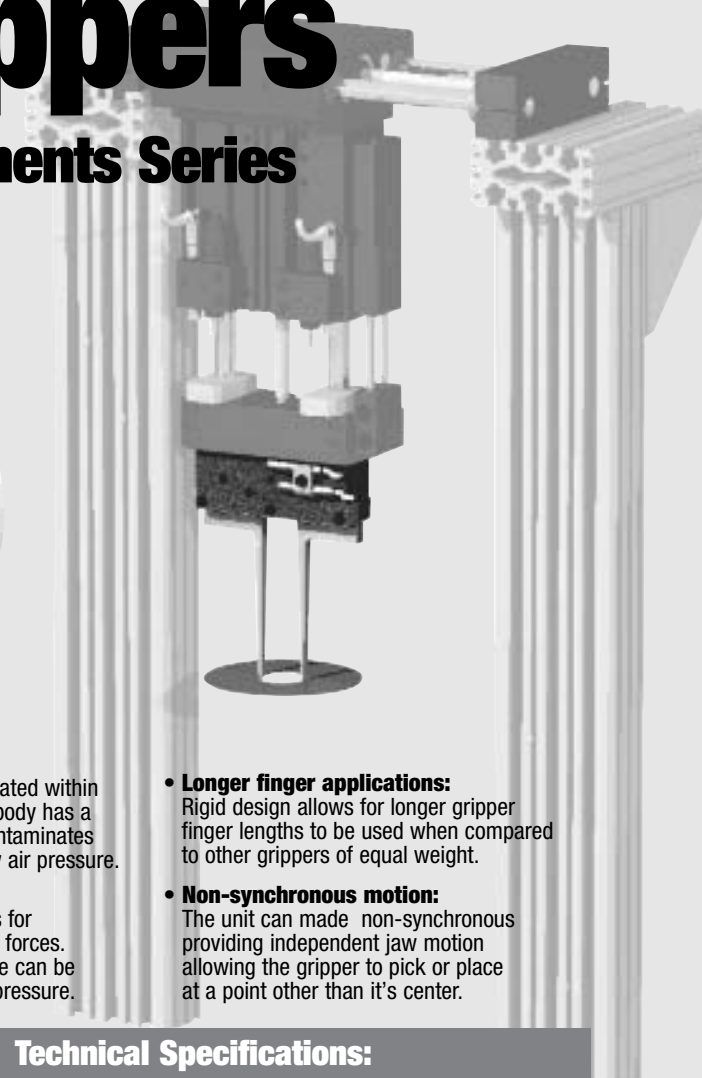
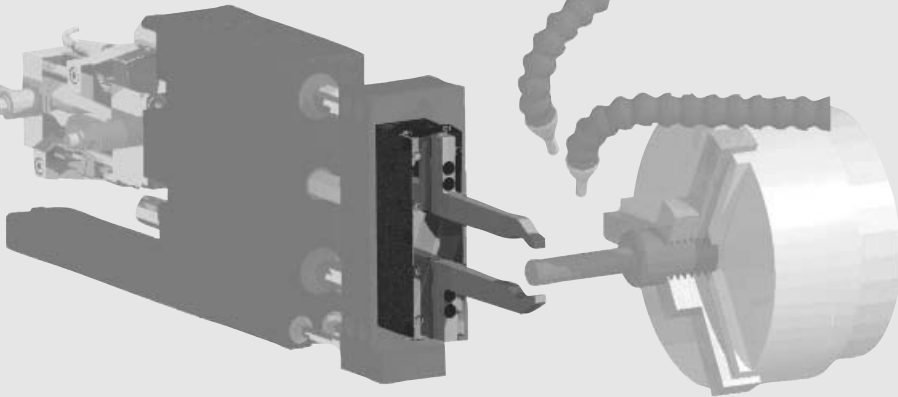
Super Bonder



Third Angle Projection

# Parallel Grippers

## Clean Room / Harsh Environments Series



- **Precision applications:**

Preloaded "Dual-V" roller bearings eliminate side play for excellent part position repeatability.

- **Clean Room rated:**

A corrosion resistant shield protects the drive and bearing mechanism. All internal components are lubricated with clean room grade lubricant. The scavenge port can be used with vacuum pressure to prevent escape of particulate generated by the internal mechanism.

- **Harsh environments:**

All moving components are located within the stainless steel shield. The body has a purge port which can expel contaminants from the mechanism using low air pressure.

- **Repeatable grip force:**

Low friction mechanism allows for consistent, repeatable gripping forces. To grip delicate parts, grip force can be easily altered by adjusting air pressure.

- **Longer finger applications:**

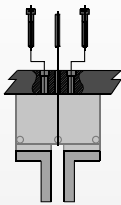
Rigid design allows for longer gripper finger lengths to be used when compared to other grippers of equal weight.

- **Non-synchronous motion:**

The unit can make non-synchronous providing independent jaw motion allowing the gripper to pick or place at a point other than it's center.

### Mounting Information:

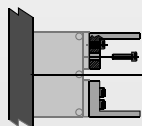
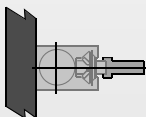
Grippers can be mounted & operated in any orientation



Body mounts with screws and locates with slip fit dowel pins for accuracy



Shields provide protection from falling debris when mounted upside down



Fingers attach to jaws with screws and locate by keying

### Technical Specifications:

#### Pneumatic Specifications

Pressure Operating Range  
Cylinder Type  
Dynamic Seals  
Valve Required to Operate

**Imperial**  
5-100 psi

**Metric**  
.3-7 bar  
Dual Double Acting  
Internally Lubricated Buna-N  
4-way, 2-position

#### Air Quality Requirements

Air Filtration  
Air Lubrication  
Air Humidity

40 Micron or Better  
Not Necessary\*  
Low Moisture Content (dry)

#### Temperature Operating Range

Buna-N Seals (standard)  
Viton® Seals (optional)

-30°~180° F  
-20°~250° F  
-35°~80° C  
-30°~120° C

#### Maintenance Specifications†

Expected Life  
Normal Application  
w/ Preventative Maintenance  
Field Repairable  
Seal Repair Kits Available

5 million cycles  
10+ million cycles\*  
Yes  
Yes

\*Addition of lubrication will greatly increase service life  
†See Maintenance Section

## Product Features

### Pre-Load Adjustment Screws

Adjustable preload screws allow for adjustment of preload on roller bearings

### Hard Coat Anodize

The body has hard-coat anodize 60 RC with Teflon® impregnation

### Clean-Room Lubrication

Units are lubricated with a clean-room grade grease

### Quality Components

Internal components are made from hardened bearing & tool steels  
External components are made from corrosion resistant materials for resistance to de-ionized water or for use in FDA & medical parts handling applications

### Self Lubricating Seals

Self lubricating dynamic seals (Buna-N only)

### One Piece Body

One piece lightweight aluminum body

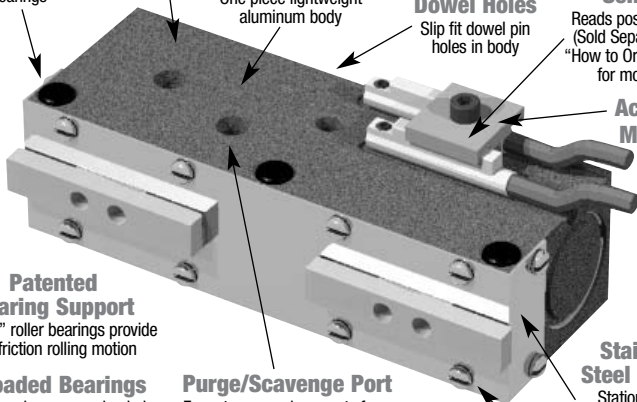
### Dowel Holes

Slip fit dowel pin holes in body

### Sensors

Reads position of jaw (Sold Separately-See "How to Order" Section for more info)

### Accessory Mounting Holes



### Patented Bearing Support

Dual "V" roller bearings provide low friction rolling motion

### Preloaded Bearings

Roller bearings are preloaded for maximum support and zero side play

### Non-Synchronous Operation Available

### Purge/Scavenge Port

For extreme environments from dirty & gritty to clean-room Class 10 or better

### High Grip Force

High grip force with respect to weight due to extremely efficient drive mechanism

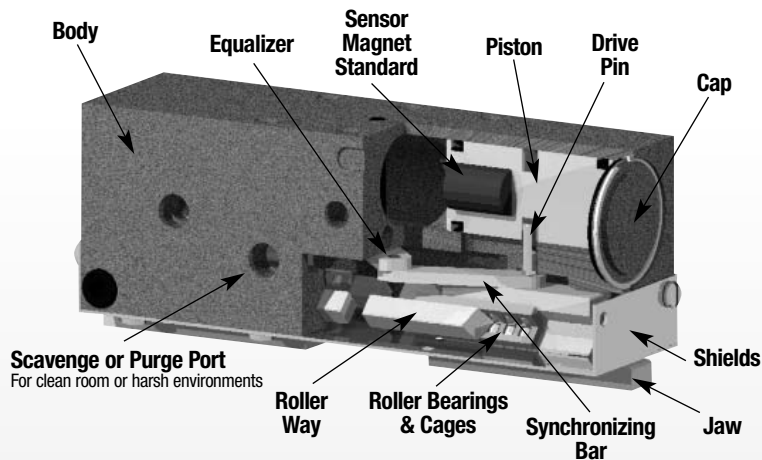
### Stainless Steel Shields

Stationary and non-contacting shields eliminate the possibility of particle generation.

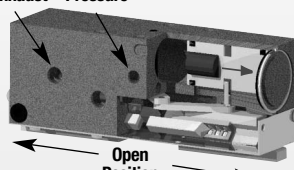
### Stainless Steel Screws

Provides protection against corrosion

## Operating Principle

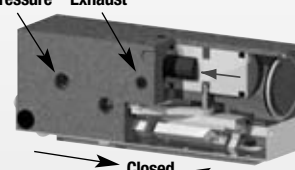


Exhaust Pressure



Open Position

Pressure Exhaust



Closed Position

- Dual double acting opposed pistons, connected to both a jaw and a synchronizing bar by a drive pin, actuate in opposite directions.
- The synchronizing bars are connected to the equalizer which synchronizes the motion.
- The purge/scavenge port can be used to expel or retain contaminants using pressure or vacuum respectively.
- Suitable for internal or external gripping.
- The synchronizing elements can be removed for non-synchronous operation.

U.S. Patent # 5,529,359 Designed and manufactured in the USA

## Style-RPLC Parallel Gripper

### Size -1M

Style:	RPLC-1	RPLC-1M
Stroke:	0.25 in.	6.4 mm
Grip Force:	26 lb	116 N
Weight:	.16 lb	.07 Kg



See Page **1.100**

## Style-RPLC Parallel Gripper

### Size -2M

Style:	RPLC-2	RPLC-2M
Stroke:	0.50 in.	12.7 mm
Grip Force:	26 lb	116 N
Weight:	.20 lb	.09 Kg



See Page **1.101**

## Style-RPLC Parallel Gripper

### Size -3M

Style:	RPLC-3	RPLC-3M
Stroke:	0.75 in.	19.1 mm
Grip Force:	36 lb	160 N
Weight:	.32 lb	.15 Kg



See Page **1.102**

## Style-RPLC Parallel Gripper

### Size -4M

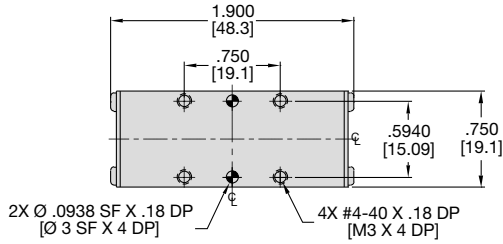
Style:	RPLC-4	RPLC-4M
Stroke:	1.00 in.	25.4 mm
Grip Force:	36 lb	160 N
Weight:	.38 lb	.17 Kg



See Page **1.103**

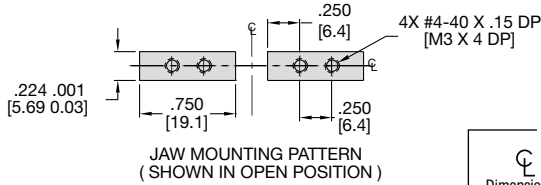
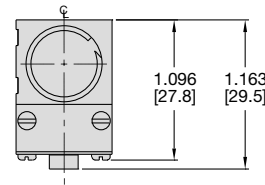
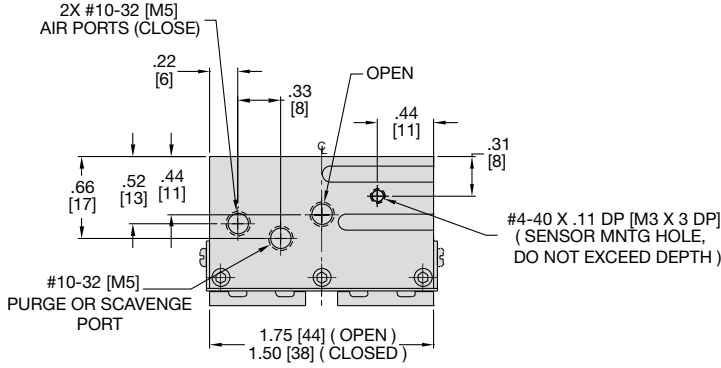


# PARALLEL GRIPPER RPLC-1M PRECISION DUAL "V" CLEAN ROOM SERIES



### Specifications

	RPLC-1	RPLC-1M
Total Rated Grip Force <b>F</b> @ 100 psi, 7 bar	26 lb	116 N
Stroke	0.25 in.	6.4 mm
Weight	0.16 lb	0.07 Kg
Pressure Range	5-100 psi	0.3-7 bar
Cylinder Bore Ø	0.438 in.	11.1 mm
Displacement	0.038 in <sup>3</sup>	0.6 cm <sup>3</sup>
Temperature Range		
Standard Seals	-30°~180° F	-35°~80° C
Viton® Seals	-20°~250° F	-30°~120° C
Actuation	0.10 sec.	0.10 sec.
Accuracy	±0.002 in.	±0.05 mm
Repeatability	±0.001 in.	±0.03 mm
Valve required to actuate	4-way, 2-position	

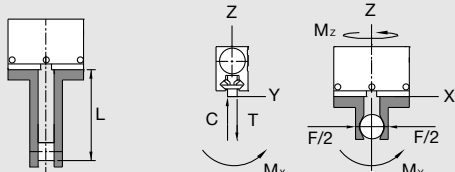
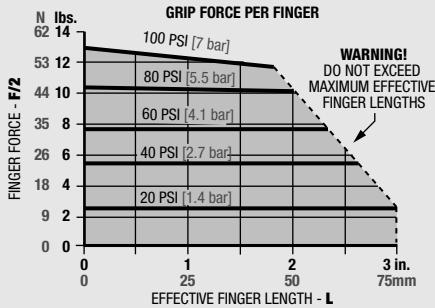


### UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

Imperial in.	Metric [mm]
0.00 ± .01	[0.] = [±.25]
0.000 ± .005	[0.0] = [±.13]
0.0000 ± .0005	[0.00] = [±.013]

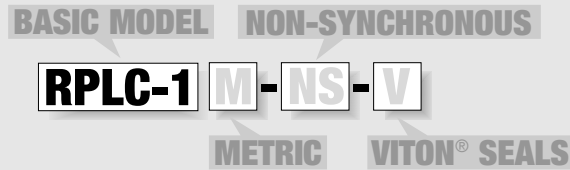
## Loading Information

## How to Order: (Order Accessories separately from Basic Model)



Loading Capacity†	Static		Dynamic	
	Imperial	Metric	Imperial	Metric
Maximum Tensile <b>T</b>	50 lbs.	222 N	15 lbs.	67 N
Maximum Compressive <b>C</b>	50 lbs.	222 N	15 lbs.	67 N
Maximum Moment <b>M<sub>x</sub></b>	30 in.-lbs.	3.4 Nm	10 in.-lbs.	1.1 Nm
Maximum Moment <b>M<sub>y</sub></b>	40 in.-lbs.	4.5 Nm	12 in.-lbs.	1.4 Nm
Maximum Moment <b>M<sub>z</sub></b>	30 in.-lbs.	3.4 Nm	10 in.-lbs.	1.1 Nm

†Capacities are per set of jaws and are not simultaneous



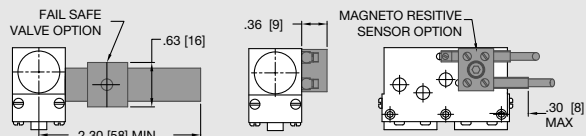
### SENSOR ACCESSORIES\*†

	ORDER #	QTY/UNIT
Sensor Mounting Kit for Imperial & Metric Units (mounts 2 sensors)	<b>OSMK-008</b>	<b>1</b>
NPN Magneto Resistive Sensor with Quick Disconnect*	<b>OHSN-017</b>	<b>1 or 2</b>
PNP Magneto Resistive Sensor with Quick Disconnect*	<b>OHSP-017</b>	<b>1 or 2</b>
Quick Disconnect 2 Meter Cable Length*	<b>CABL-010</b>	<b>1 or 2</b>
Quick Disconnect 5 Meter Cable Length*	<b>CABL-013</b>	<b>1 or 2</b>

### PNEUMATIC ACCESSORIES

Fail Safe Valve (Imperial)	<b>OFSV-001</b>	<b>1</b>
Fail Safe Valve (Metric)	<b>OFSV-004</b>	<b>1</b>
Standard Seal Repair Kit	<b>SLKT-010</b>	<b>1</b>
Viton® Seal Repair Kit	<b>SLKT-010V</b>	<b>1</b>

\*Sensor and cable sold separately †Piston magnet standard

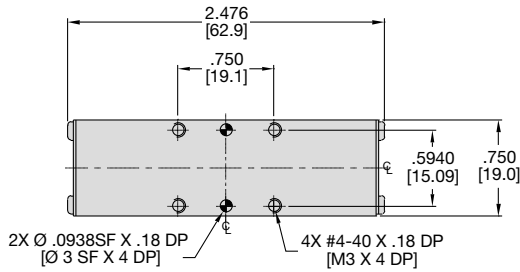




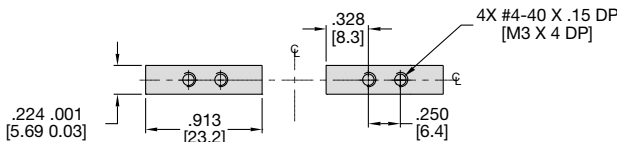
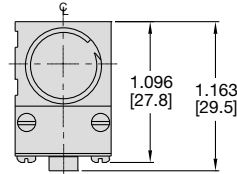
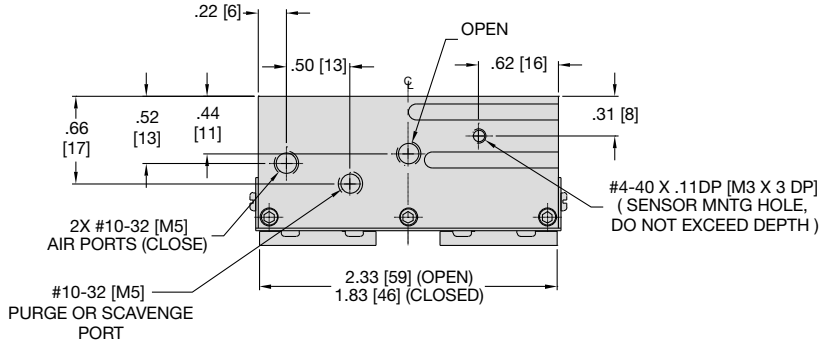
# PARALLEL GRIPPER RPLC-2M PRECISION DUAL "V" CLEAN ROOM SERIES

RPLC SERIES

1.101



Specifications	RPLC-2	RPLC-2M
Total Rated Grip Force <b>F</b> @ 100 psi, 7 bar	26 lb	116 N
Stroke	0.50 in.	12.7 mm
Weight	0.20 lb	0.09 Kg
Pressure Range	5-100 psi	0.3-7 bar
Cylinder Bore Ø	0.438 in.	11.1 mm
Displacement	0.075 in <sup>3</sup>	1.2 cm <sup>3</sup>
Temperature Range		
Standard Seals	-30°~180° F	-35°~80° C
Viton® Seals	-20°~250° F	-30°~120° C
Actuation	0.13 sec.	0.13 sec.
Accuracy	±0.002 in.	±0.05 mm
Repeatability	±0.001 in.	±0.03 mm
Valve required to actuate	4-way, 2-position	



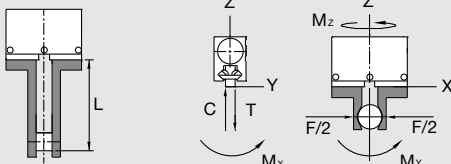
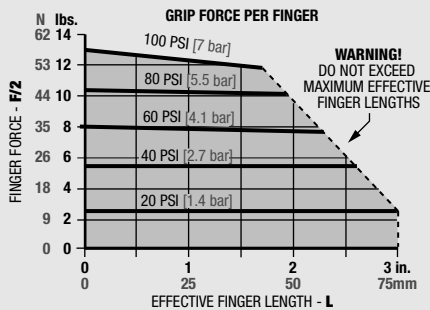
JAW MOUNTING PATTERN  
(SHOWN IN OPEN POSITION)

UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

Dimensions are symmetrical about centerline	Third Angle Projection	All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or [±.013mm]	Metric Threads Course Pitch	<b>Imperial in.</b> 0.00 = ±.01 0.000 = ±.005 0.0000 = ±.0005	<b>Metric [mm]</b> [0.] = [±.25] [0.0] = [±.13] [0.00] = [±.013]
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## Loading Information

## How to Order: (Order Accessories separately from Basic Model)



### Loading Capacity<sup>†</sup>

	Static		Dynamic	
	Imperial	Metric	Imperial	Metric
Maximum Tensile <b>T</b>	65 lbs.	289 N	20 lb	89 N
Maximum Compressive <b>C</b>	65 lbs.	289 N	20 lb	89 N
Maximum Moment <b>M<sub>x</sub></b>	45 in.-lbs.	5.1 Nm	15 in.-lbs.	1.7 Nm
Maximum Moment <b>M<sub>y</sub></b>	60 in.-lbs.	6.8 Nm	20 in.-lbs.	2.3 Nm
Maximum Moment <b>M<sub>z</sub></b>	45 in.-lbs.	5.1 Nm	15 in.-lbs.	1.7 Nm

<sup>†</sup>Capacities are per set of jaws and are not simultaneous

BASIC MODEL NON-SYNCHRONOUS

RPLC-2 M-NS-V

METRIC VITON® SEALS

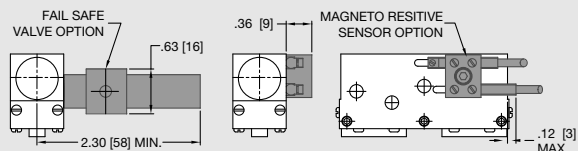
### SENSOR ACCESSORIES<sup>\*</sup>

	ORDER #	QTY/UNIT
Sensor Mounting Kit for Imperial & Metric Units (mounts 2 sensors)	<b>OSMK-008</b>	<b>1</b>
NPN Magneto Resistive Sensor with Quick Disconnect*	<b>OHSN-017</b>	<b>1 or 2</b>
PNP Magneto Resistive Sensor with Quick Disconnect*	<b>OHSP-017</b>	<b>1 or 2</b>
Quick Disconnect 2 Meter Cable Length*	<b>CABL-010</b>	<b>1 or 2</b>
Quick Disconnect 5 Meter Cable Length*	<b>CABL-013</b>	<b>1 or 2</b>

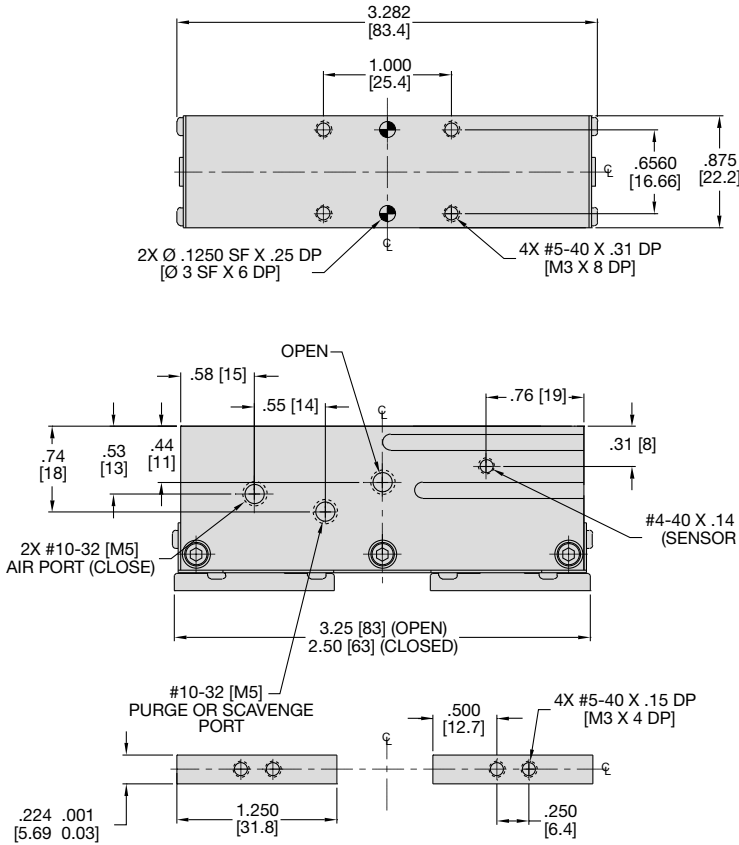
### PNEUMATIC ACCESSORIES

Fail Safe Valve (Imperial)	<b>OFVS-001</b>	<b>1</b>
Fail Safe Valve (Metric)	<b>OFVS-004</b>	<b>1</b>
Standard Seal Repair Kit	<b>SLKT-010</b>	<b>1</b>
Viton® Seal Repair Kit	<b>SLKT-010V</b>	<b>1</b>

\*Sensor and cable sold separately <sup>†</sup>Piston magnet standard

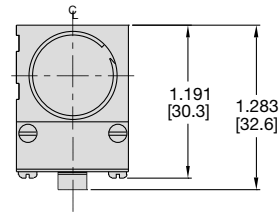


# PARALLEL GRIPPER RPLC-3M PRECISION DUAL "V" CLEAN ROOM SERIES



### Specifications

	RPLC-3	RPLC-3M
Total Rated Grip Force <b>F</b> @ 100 psi, 7 bar	36 lb	160 N
Stroke	0.75 in.	19.1 mm
Weight	0.32 lb	0.15 Kg
Pressure Range	5-100 psi	0.3-7 bar
Cylinder Bore Ø	0.500 in.	12.7 mm
Displacement	0.147 in <sup>3</sup>	2.4 cm <sup>3</sup>
Temperature Range		
Standard Seals	-30°~180° F	-35°~80° C
Viton® Seals	-20°~250° F	-30°~120° C
Actuation	0.14 sec.	0.14 sec.
Accuracy	±0.002 in.	±0.05 mm
Repeatability	±0.001 in.	±0.03 mm
Valve required to actuate	4-way, 2-position	



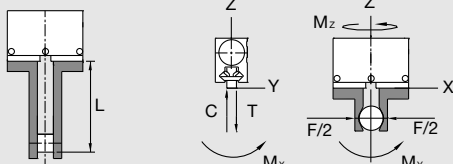
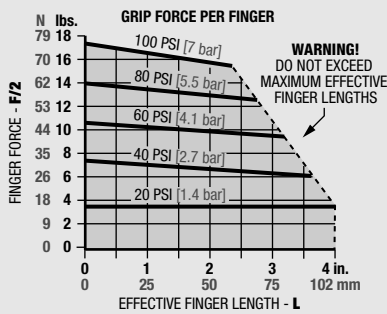
JAW MOUNTING PATTERN (SHOWN IN OPEN POSITION)

UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

	Imperial in.	Metric [mm]
Dimensions are symmetrical about centerline	0.00 = ±.01	[.0] = [±.25]
Third Angle Projection	0.000 = ±.005	[0.0] = [±.13]
All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or [±.013mm]	0.0000 = ±.0005	[0.00] = [±.013]
Metric Threads Course Pitch		

## Loading Information

## How to Order: (Order Accessories separately from Basic Model)



### Loading Capacity†

	Static		Dynamic	
	Imperial	Metric	Imperial	Metric
Maximum Tensile <b>T</b>	90 lbs.	400 N	30 lbs.	133 N
Maximum Compressive <b>C</b>	90 lbs.	400 N	30 lbs.	133 N
Maximum Moment <b>M<sub>x</sub></b>	60 in.-lbs.	6.8 Nm	20 in.-lbs.	2.3 Nm
Maximum Moment <b>M<sub>y</sub></b>	80 in.-lbs.	9.0 Nm	25 in.-lbs.	2.8 Nm
Maximum Moment <b>M<sub>z</sub></b>	60 in.-lbs.	6.8 Nm	20 in.-lbs.	2.3 Nm

†Capacities are per set of jaws and are not simultaneous

BASIC MODEL NON-SYNCHRONOUS  
**RPLC-3 M-NS-V**  
METRIC VITON® SEALS

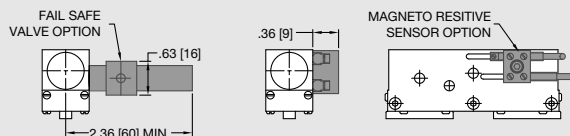
### SENSOR ACCESSORIES\*†

	ORDER #	QTY/UNIT
Sensor Mounting Kit for Imperial & Metric Units (mounts 2 sensors)	<b>OSMK-008</b>	<b>1</b>
NPN Magneto Resistive Sensor with Quick Disconnect*	<b>OHNS-017</b>	<b>1 or 2</b>
PNP Magneto Resistive Sensor with Quick Disconnect*	<b>OHSP-017</b>	<b>1 or 2</b>
Quick Disconnect 2 Meter Cable Length*	<b>CABL-010</b>	<b>1 or 2</b>
Quick Disconnect 5 Meter Cable Length*	<b>CABL-013</b>	<b>1 or 2</b>

### PNEUMATIC ACCESSORIES

Fail Safe Valve (Imperial)	<b>OFSV-001</b>	<b>1</b>
Fail Safe Valve (Metric)	<b>OFSV-004</b>	<b>1</b>
Standard Seal Repair Kit	<b>SLKT-012</b>	<b>1</b>
Viton® Seal Repair Kit	<b>SLKT-012V</b>	<b>1</b>

\*Sensor and cable sold separately †Piston magnet standard

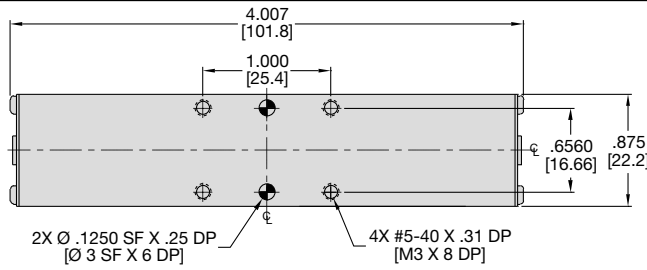




# PARALLEL GRIPPER RPLC-4M PRECISION DUAL "V" CLEAN ROOM SERIES

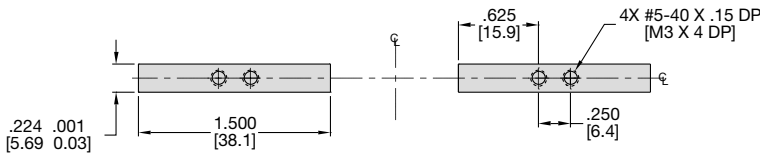
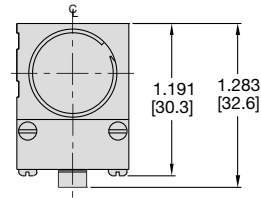
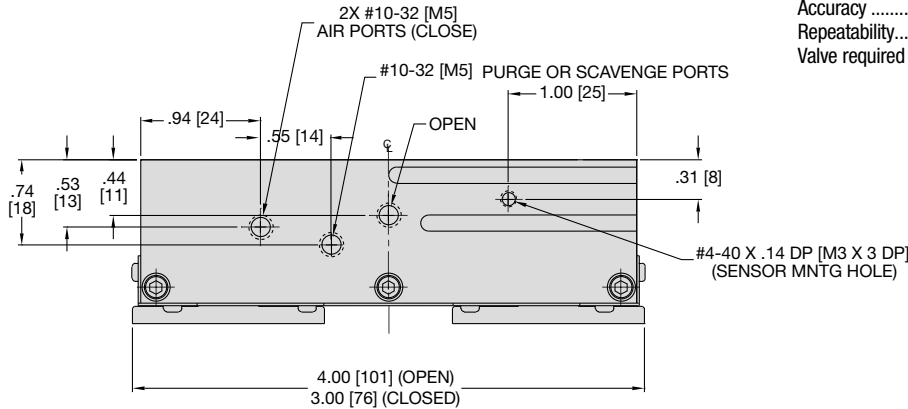
RPLC SERIES

1.103



### Specifications

	RPLC-4	RPLC-4M
Total Rated Grip Force <b>F</b> @ 100 psi, 7 bar	36 lb	160 N
Stroke	1.00 in.	25.4 mm
Weight	0.38 lb	0.17 Kg
Pressure Range	5-100 psi	0.3-7 bar
Cylinder Bore Ø	0.500 in.	12.7 mm
Displacement	0.196 in <sup>3</sup>	3.2 cm <sup>3</sup>
Temperature Range		
Standard Seals	-30°~180° F	-35°~80° C
Viton® Seals	-20°~250° F	-30°~120° C
Actuation	0.19 sec.	0.19 sec.
Accuracy	±0.002 in.	±0.05 mm
Repeatability	±0.001 in.	±0.03 mm
Valve required to actuate	4-way, 2-position	



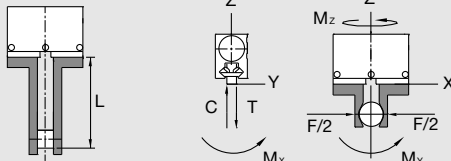
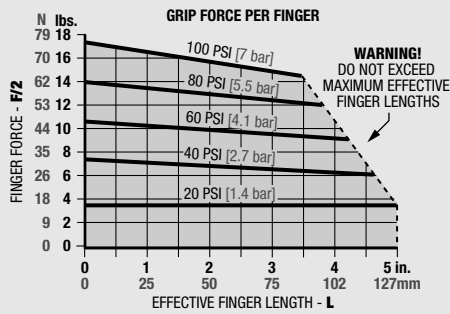
JAW MOUNTING PATTERN  
(SHOWN IN OPEN POSITION)

UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

Imperial in.	Metric [mm]
0.00 ± .01	[0.] = [±.25]
0.000 ± .005	[0.0] = [±.13]
0.0000 ± .0005	[0.00] = [±.013]

## Loading Information

## How to Order: (Order Accessories separately from Basic Model)



	Static		Dynamic	
	Imperial	Metric	Imperial	Metric
Maximum Tensile <b>T</b>	120 lbs.	534 N	40 lbs.	178 N
Maximum Compressive <b>C</b>	120 lbs.	534 N	40 lbs.	178 N
Maximum Moment <b>M<sub>x</sub></b>	75 in.-lbs.	8.5 Nm	25 in.-lbs.	2.8 Nm
Maximum Moment <b>M<sub>y</sub></b>	100 in.-lbs.	11.3 Nm	35 in.-lbs.	4.0 Nm
Maximum Moment <b>M<sub>z</sub></b>	75 in.-lbs.	8.5 Nm	25 in.-lbs.	2.8 Nm

\*Capacities are per set of jaws and are not simultaneous

BASIC MODEL NON-SYNCHRONOUS

RPLC-4 M - NS - V

METRIC VITON® SEALS

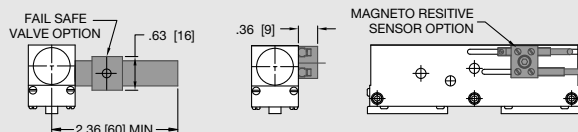
### SENSOR ACCESSORIES\*

	ORDER #	QTY/UNIT
Sensor Mounting Kit for Imperial & Metric Units (mounts 2 sensors)	<b>OSMK-008</b>	<b>1</b>
NPN Magneto Resistive Sensor with Quick Disconnect*	<b>OHSN-017</b>	<b>1 or 2</b>
PNP Magneto Resistive Sensor with Quick Disconnect*	<b>OHSP-017</b>	<b>1 or 2</b>
Quick Disconnect 2 Meter Cable Length*	<b>CABL-010</b>	<b>1 or 2</b>
Quick Disconnect 5 Meter Cable Length*	<b>CABL-013</b>	<b>1 or 2</b>

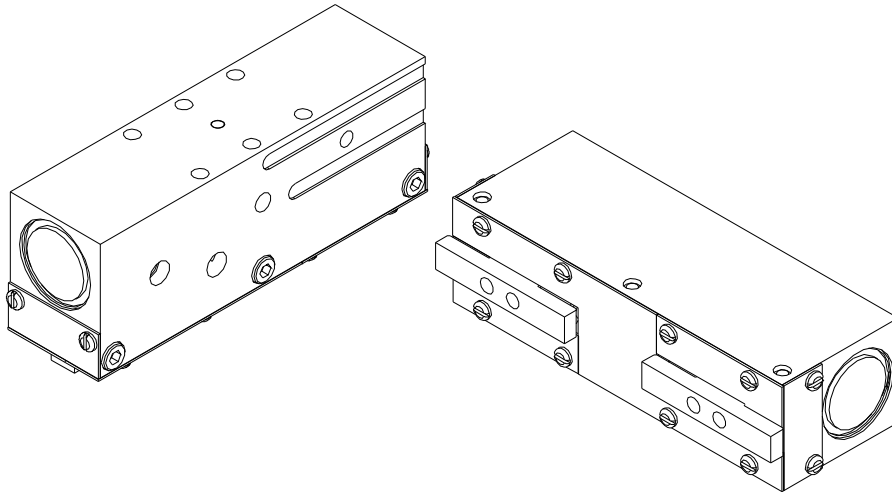
### PNEUMATIC ACCESSORIES

Fail Safe Valve (Imperial)	<b>OFSV-001</b>	<b>1</b>
Fail Safe Valve (Metric)	<b>OFSV-004</b>	<b>1</b>
Standard Seal Repair Kit	<b>SLKT-012</b>	<b>1</b>
Viton® Seal Repair Kit	<b>SLKT-012V</b>	<b>1</b>

\*Sensor and cable sold separately \*Piston magnet standard



# RPLC Series Exploded View



Item	Qty	Name
01	1	Body
02	1	Piston
03	2	Cap
04	1	Equalizer
05	2	Link
06	4	Way
08	2	Jaw
10	1	Cover, Bottom
11	2	Cover, Bottom, Corners
12	2	Cover, End
13	2	Bearing, Roller
20	1	Piston W/Magnet Slot
21	4	S'assy, Cage & Rollers
30	3	SHCS
31	1	Dowel Pin
32	2	Dowel Pin
40	2	Magnet

**Note:** contact the robohand sales department for a complete spare parts list with order numbers and prices.

### Assembly procedure

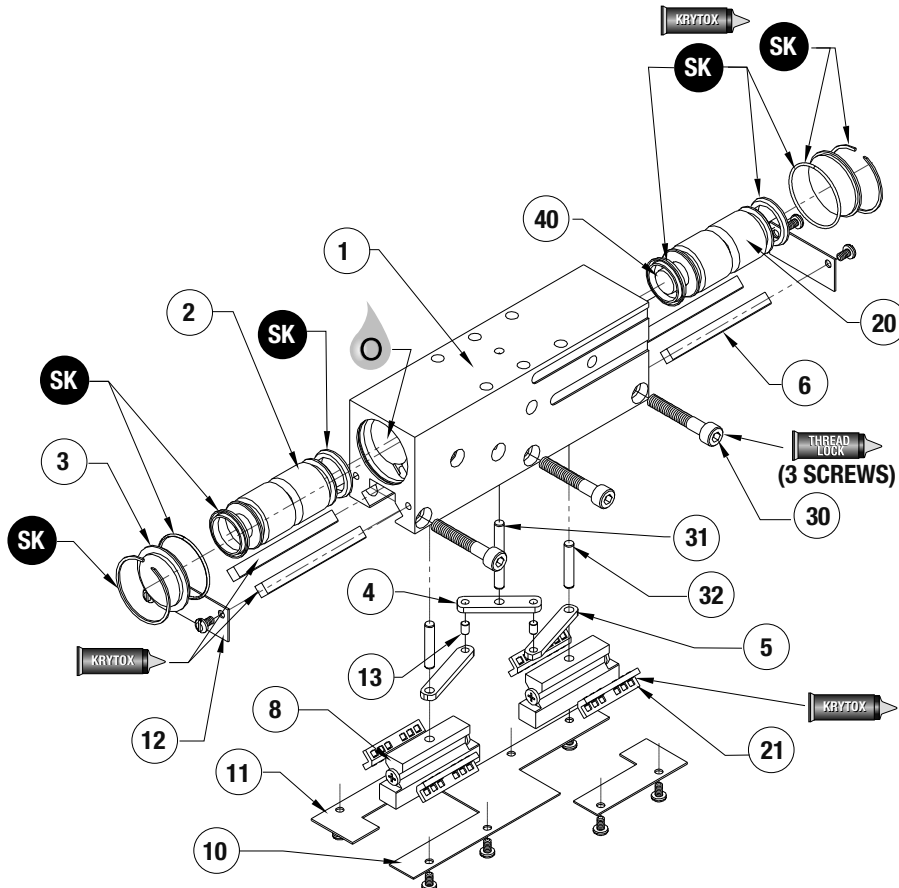
- 1) Lubricate and install seals.
- 2) Glue magnets into one piston, install pistons, caps and retaining rings.
- 3) Press dowel pin into center of body.
- 4) Place links and equalizers into body.
- 5) Press dowel pins into jaws.
- 6) Place ways through links and into pistons.
- 7) Install cages on jaws.
- 8) Place ways behind cages with flat facing out and install screws.
- 9) Adjust preload.
- 10) Install bottom cover, bottom cover corners and end covers.

### Preload adjustment procedure

- 1) Tighten center screw (#30) so that fingers preload adjustment procedure
- 2) Tighten outer screws in the same fashion. Bind slightly.
- 3) Cycle the gripper.
- 4) Re-adjust screws so that when you push the cage, the finger moves freely. (the finger movement should not feel gritty.)

### Non-synchronous procedure

- 1) Remove end covers, bottom cover corners, and bottom cover.
- 2) Remove preload screws (#30) and ways.
- 3) Remove cages, jaws and dowel pins.
- 4) Remove equalizer, links, and roller bearings.
- 5) Re-assemble jaws and dowel pins into pistons.
- 6) Re-install cages on jaws.
- 7) Place ways behind cages with flat facing out and
- 8) Adjust preload. Install preload screws.
- 9) Re-attach bottom cover, bottom cover corners and end covers. Gripper is now non-synchronous.



**SK Seal Repair Kit Order #'s  
See Product Data Sheets**



Seal Kit Items



Thread Locker



Krytox™ Lubricant



Lightweight Machine Oil



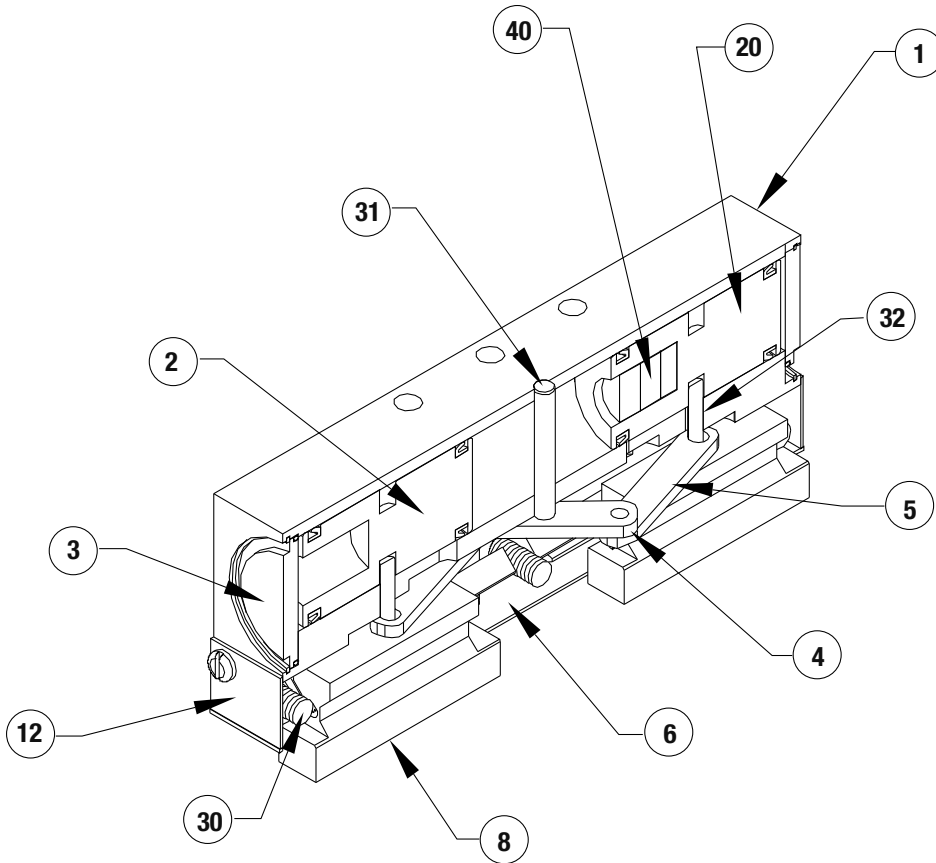
Teflon® Based Grease



Super Bonder



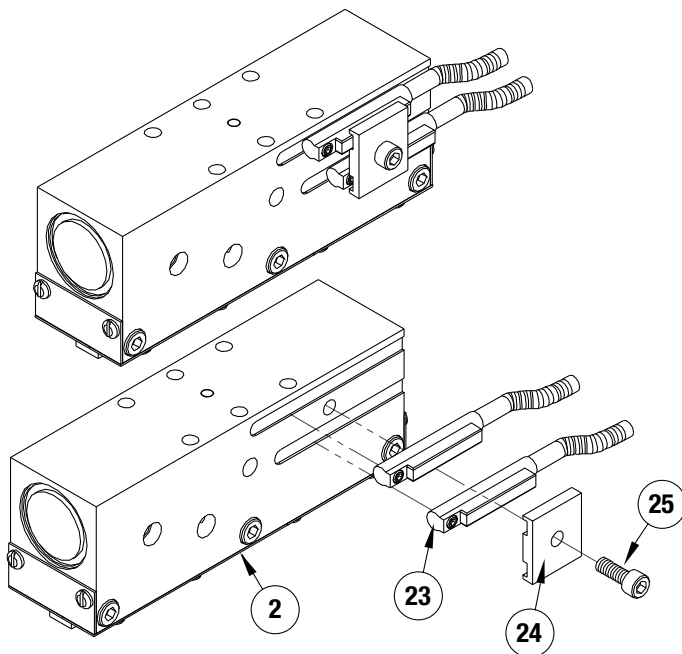
Third Angle Projection



Item	Qty	Name
01	1	Body
02	1	Piston
03	2	Cap
04	1	Equalizer
05	2	Link
06	4	Way
08	2	Jaw
10	1	Cover, Bottom
11	2	Cover, Bottom, Corners
12	2	Cover, End
13	2	Bearing, Roller
20	1	Piston W/Magnet Slot
21	4	S'assy, Cage & Rollers
30	3	SHCS
31	1	Dowel Pin
32	2	Dowel Pin
40	2	Magnet

**Note:** contact the robohand sales department for a complete spare parts list with order numbers and prices.

## Accessory Installation & Adjustment Instructions



### Installation

- 1) Install sensors as shown.
- 2) Adjust for desired end of stroke detection.



Seal Kit  
Items



Thread  
Locker



Krytox™  
Lubricant



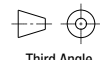
Lightweight  
Machine Oil



Teflon® Based  
Grease



Super  
Bonder



Third Angle  
Projection

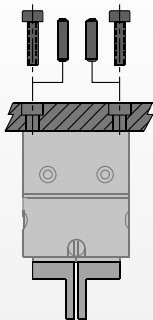


# Parallel Grippers - Miniature Series

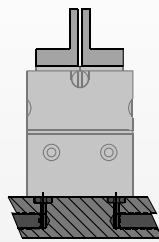
- Precision applications:**  
 Preloaded dual-"V" roller bearings eliminate side play for excellent part position repeatability.
- Miniature size:**  
 Compact design allows for gripping small parts in small spaces.
- Top manifold:**  
 Grippers can be manifolded through the top mounting surface. This eliminates the need for air fittings and allows grippers to be mounted in close array.
- Repeatable grip force:**  
 Low friction mechanism allows for consistent, repeatable gripping forces. To grip delicate parts, grip force can be easily altered by adjusting air pressure.

## Mounting Information:

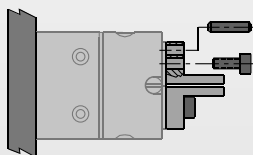
Grippers can be mounted & operated in any orientation



Body mounts with screws and locates with slip fit dowel pins for accuracy



Unit has top manifold ports



Fingers attach to jaws with screws and locate with dowel pins or by keying

## Technical Specifications:

### Pneumatic Specifications

Pressure Operating Range  
Cylinder Type  
Dynamic Seals  
Valve Required to Operate

Imperial	Metric
40-100 psi	1.3-7 bar
<b>Double Acting</b>	
<b>Internally Lubricated Buna-N</b>	
<b>4-way, 2-position</b>	

### Air Quality Requirements

Air Filtration  
Air Lubrication  
Air Humidity

40 Micron or Better
Not Necessary*
Low Moisture Content (dry)

### Temperature Operating Range

Buna-N Seals (standard)  
Viton® Seals (optional)

-30°~180° F	-35°~80° C
-20°~250° F	-30°~120° C

### Maintenance Specifications†

Expected Life

Normal Application  
w/ Preventative Maintenance  
Field Repairable  
Seal Repair Kits Available

5 million cycles
10+ million cycles*
Yes
Yes

### Application restrictions

Dirty or gritty environments  
Machining operations generating chips  
Environments with loose particulate  
Applications where mechanism lubricant could cause contamination

\*Addition of lubrication will greatly increase service life  
† See Maintenance Section

## Product Features

**Slip Fit Dowel Pin Holes**  
Located in body and jaws

**Quality Components**  
Internal drive components are made from hardened bearing and tool steels

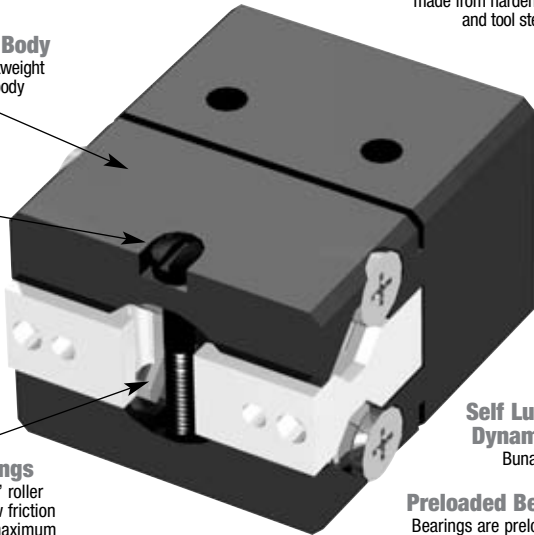
**One Piece Body**  
One piece lightweight aluminum body

**Adjustable Preload**  
Adjustable preload screw allows for adjustment of preload on roller bearings

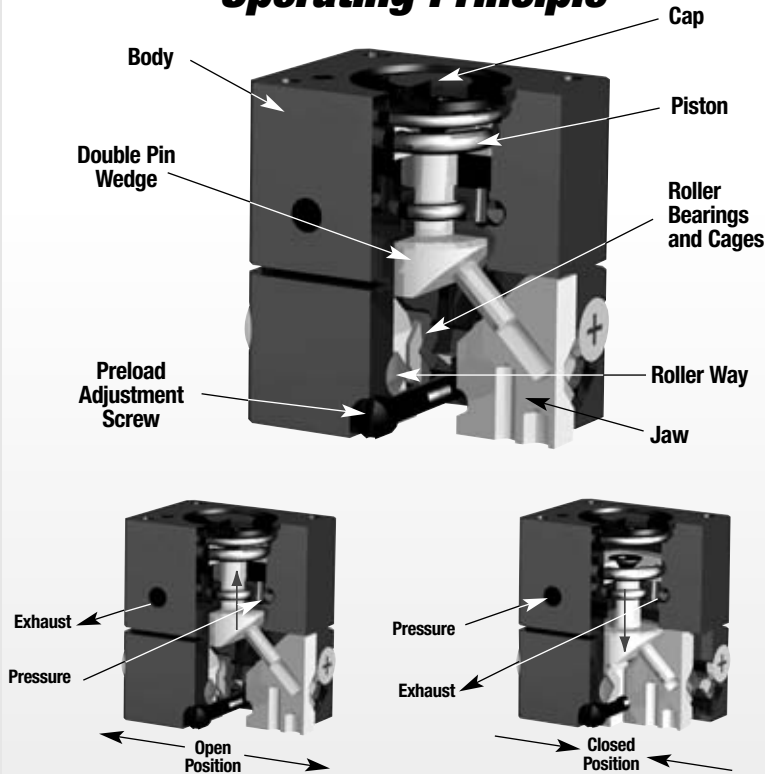
**Roller Bearings**  
Patented Dual-"V" roller bearings provide low friction rolling motion and maximum rigidity for fingers

**Self Lubricating Dynamic Seals**  
Buna-N only

**Preloaded Bearings**  
Bearings are preloaded for maximum support and zero side play



## Operating Principle



- A double acting piston is connected by a shaft to a double sided pin wedge.
- The pin wedge slides in a hole located in each of the jaws converting vertical motion of the wedge into horizontal synchronous motion of the jaws.
- This gripper is suitable for internal or external gripping.

**U.S. Patent #5,529,359 & #5,125,708**  
**Designed and manufactured in the USA**

## Style-RPM Parallel Gripper

### Size -1M

Style:	RPM-1M	
Stroke:	0.13 in.	3.2 mm
Grip Force:	8 lbs.	36 N
Weight:	0.052 lbs.	.02 Kg



See Page **1.108**

## Style-RPM Parallel Gripper

### Size -2M

Style:	RPM-2M	
Stroke:	0.19 in.	4.8 mm
Grip Force:	8 lbs.	36 N
Weight:	0.058 lbs.	.03 Kg



See Page **1.109**

## Style-RPM Parallel Gripper

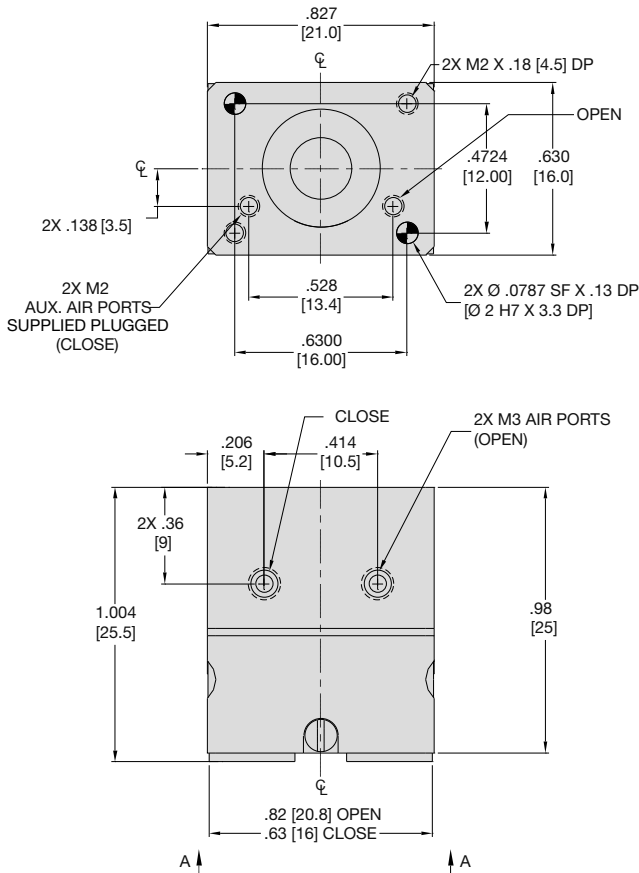
### Size -3M

Style:	RPM-3M	
Stroke:	0.25 in.	6.3 mm
Grip Force:	8 lbs.	36 N
Weight:	0.074 lbs.	.03 Kg



See Page **1.110**

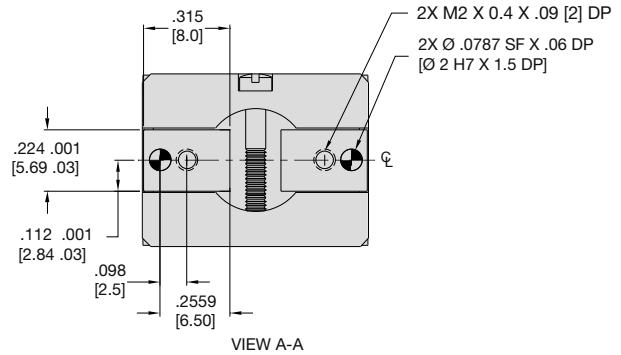




### Specifications

### RPM-2M

Total Rated Grip Force <b>F</b> @ 100 psi, 7 bar	8 lbs.	36 N
Stroke	.19 in.	4.8 mm
Weight	0.058 lbs.	0.026 Kg
Pressure Range	40-100 psi	3-7 bar
Cylinder Bore Ø	0.394 in.	10.0 mm
Displacement	0.012 in <sup>3</sup>	0.20 cm <sup>3</sup>
Temperature Range		
Standard Seals	-30°~180° F	-35°~80° C
Viton® Seals	-20°~250° F	-30°~120° C
Actuation	0.10 sec.	0.10 sec.
Accuracy	±0.002 in.	±0.05 mm
Repeatability	±0.001 in.	±0.03 mm
Valve required to actuate		4-way, 2-position

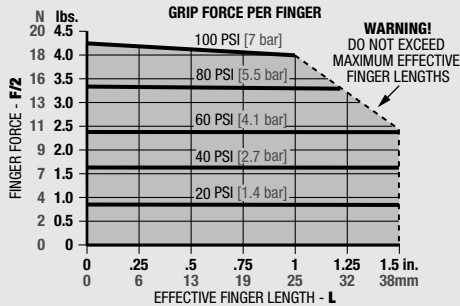


**UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW**

	Dimensions are symmetrical about centerline		Third Angle Projection		All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or [±.013mm]
	Metric Threads	<b>Imperial in.</b>	<b>Metric [mm]</b>		
	Course Pitch	0.00 = ±.01	[0.] = [±.25]		
		0.000 = ±.005	[0.0] = [±.13]		
		0.0000 = ±.0005	[0.00] = [±.013]		

## Loading Information

## How to Order: (Order Separately)



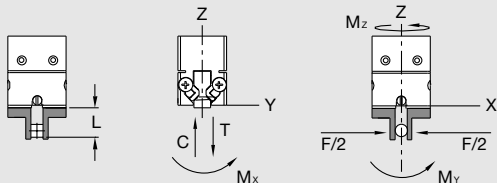
BASIC MODEL

**RPM-2M - V**

VITON® SEALS

### PNEUMATIC ACCESSORIES

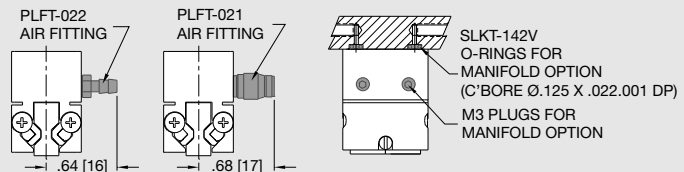
	Order #	QTY/UNIT
M3 Plumbing Fitting Push-in for 3mm O.D. Tube	<b>PLFT-021</b>	<b>2</b>
M3 Plumbing Fitting Barb for 2mm I.D. Tube	<b>PLFT-022</b>	<b>2</b>
Standard Seal Repair Kit	<b>SLKT-121</b>	<b>1</b>
Viton® Seal Repair Kit	<b>SLKT-121V</b>	<b>1</b>
Top Air Ports Manifold Seal Kit (available in Viton® only)	<b>SLKT-142V</b>	<b>1</b>



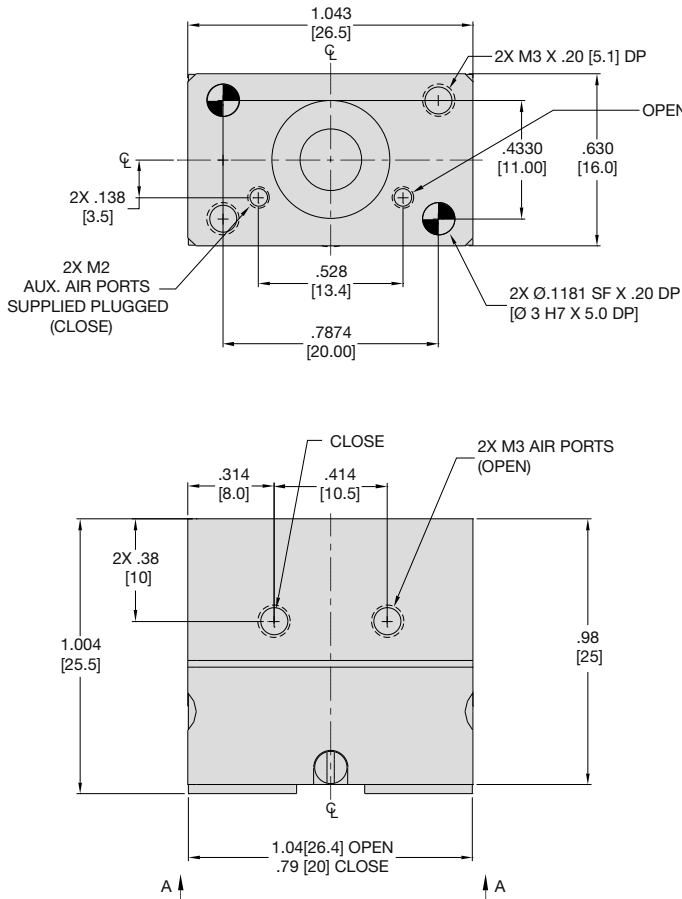
### Loading Capacity<sup>1</sup>

	Static		Dynamic	
	Imperial	Metric	Imperial	Metric
Maximum Tensile <b>T</b>	20 lbs.	89 N	7 lbs.	31 N
Maximum Compressive <b>C</b>	20 lbs.	89 N	7 lbs.	31 N
Maximum Moment <b>M<sub>x</sub></b>	12 in.-lbs.	1 Nm	4 in.-lbs.	0.5 Nm
Maximum Moment <b>M<sub>y</sub></b>	15 in.-lbs.	2 Nm	5 in.-lbs.	0.6 Nm
Maximum Moment <b>M<sub>z</sub></b>	12 in.-lbs.	1 Nm	4 in.-lbs.	0.5 Nm

<sup>1</sup>Capacities are per set of jaws and are not simultaneous

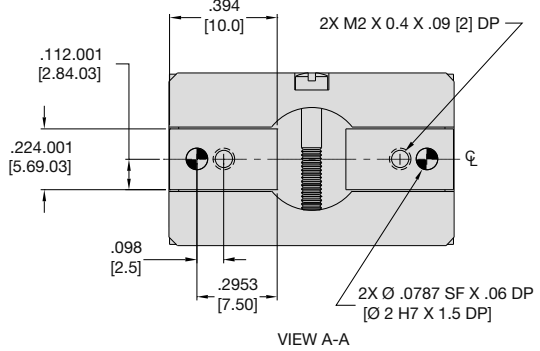


# PARALLEL GRIPPER RPM-3M MINIATURE SERIES



### Specifications

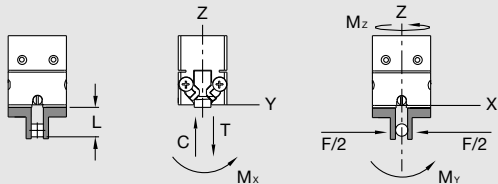
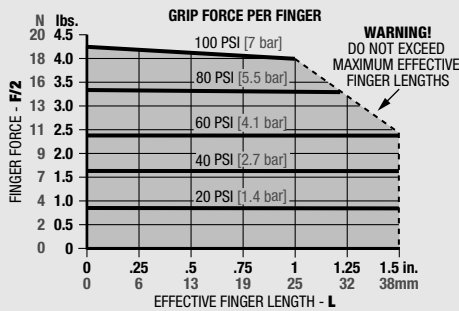
		RPM-3M
Total Rated Grip Force <b>F</b> @ 100 psi, 7 bar	8 lbs.	36 N
Stroke	.25 in.	6.3 mm
Weight	0.074 lbs.	0.034 Kg
Pressure Range	40-100 psi	3-7 bar
Cylinder Bore Ø	0.394 in.	10.0 mm
Displacement	0.015 in <sup>3</sup>	0.25 cm <sup>3</sup>
Temperature Range		
Standard Seals	-30°~180° F	-35°~80° C
Viton® Seals	-20°~250° F	-30°~120° C
Actuation	0.10 sec.	0.10 sec.
Accuracy	±0.002 in.	±0.05 mm
Repeatability	±0.001 in.	±0.03 mm
Valve required to actuate		4-way, 2-position



### UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

Dimensions are symmetrical about centerline	Third Angle Projection	All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or [±.013mm]
Metric Threads Course Pitch	<b>Imperial in.</b> 0.00 = ±.01 0.000 = ±.005 0.0000 = ±.0005	<b>Metric [mm]</b> [0.] = [±.25] [0.0] = [±.13] [0.00] = [±.013]

## Loading Information



### Loading Capacity†

	Static		Dynamic	
	Imperial	Metric	Imperial	Metric
Maximum Tensile <b>T</b>	20 lbs.	89 N	7 lbs.	31 N
Maximum Compressive <b>C</b>	20 lbs.	89 N	7 lbs.	31 N
Maximum Moment <b>M<sub>x</sub></b>	12 in.-lbs.	1 Nm	4 in.-lbs.	0.5 Nm
Maximum Moment <b>M<sub>y</sub></b>	15 in.-lbs.	2 Nm	5 in.-lbs.	0.6 Nm
Maximum Moment <b>M<sub>z</sub></b>	12 in.-lbs.	1 Nm	4 in.-lbs.	0.5 Nm

†Capacities are per set of jaws and are not simultaneous

## How to Order: (Order Separately)

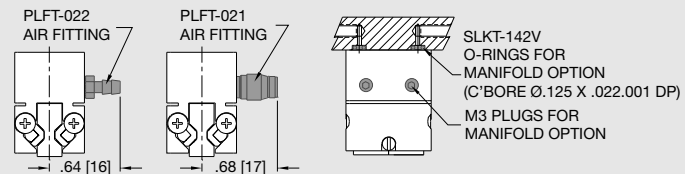
BASIC MODEL

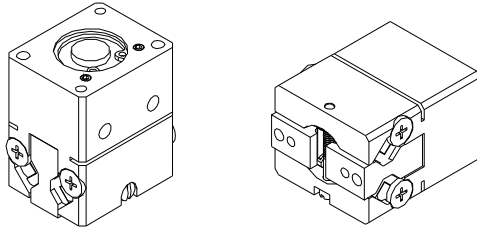
**RPM-3M - V**

VITON® SEALS

### PNEUMATIC ACCESSORIES

	ORDER #	QTY/UNIT
M3 Plumbing Fitting Push-in for 3mm O.D. Tube	PLFT-021	2
M3 Plumbing Fitting Barb for 2mm I.D. Tube	PLFT-022	2
Standard Seal Repair Kit	SLKT-121	1
Viton® Seal Repair Kit	SLKT-121V	1
Top Air Ports Manifold Seal Kit (available in Viton® only)	SLKT-142V	1





Item	Qty	Name
01	1	Body
02	2	Jaw
03	1	Wedge
04	1	Piston
05	1	Cap
06	2	Way
07	4	Kit, Roller Bearings And Cage
08	1	Preload
12	2	Dowel Pin
15	4	Stop Screw

**NOTE:** Contact the Robohand Sales Department for a complete spare parts list with order numbers and prices.

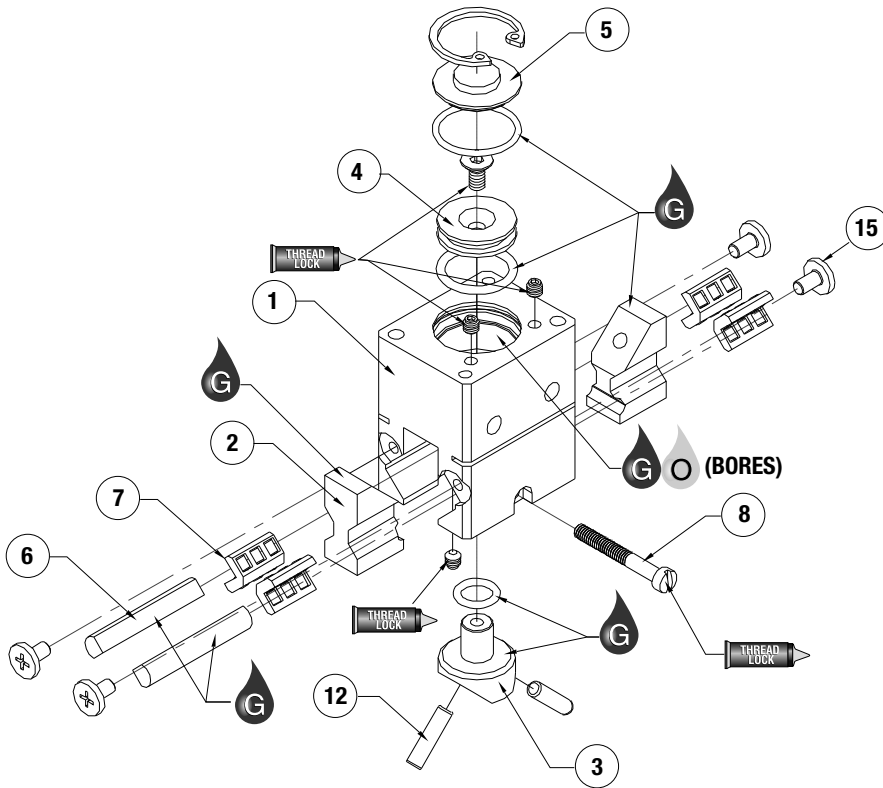
**Assembly Procedure**

- 1) Lubricate and install seals
- 2) Install pins (12) and wedge (3) into body
- 3) Install piston (4), screw, cap (5), & retaining ring
- 4) Install set screws for airport plugs
- 5) Install jaws (2) over pins
- 6) Install ways (6), cages (7), & screws (15)

**Preload Adjustment**

- 1) Install preload screw (8) w/Loctite on 1st 6-8 threads
- 2) Tighten until there is no side-play in the jaws
- 3) Cycle gripper (w/fingers preferably)
- 4) Recheck for play in jaws & tighten or loosen as needed

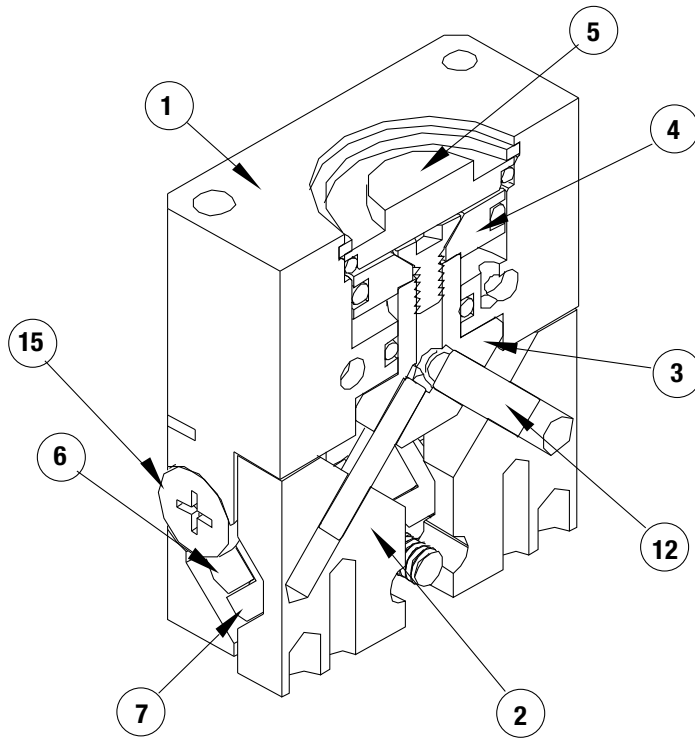
**SK Seal Repair Kit Order #'s See Product Data Sheets**



<b>SK</b> Seal Kit Items	 Thread Locker	 Krytox™ Lubricant	 Lightweight Machine Oil	 Teflon® Based Grease	 Super Bonder	 Third Angle Projection
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## RPM Series Assembled View



Item	Qty	Name
01	1	Body
02	2	Jaw
03	1	Wedge
04	1	Piston
05	1	Cap
06	2	Way
07	4	Kit, Roller Bearings And Cage
08	1	Preload
12	2	Dowel Pin
15	4	Stop Screw

**NOTE:** Contact the Robohand Sales Department for a complete spare parts list with order numbers and prices.

**Non-Repairable Items List**  
NONE



Seal Kit  
Items



Thread  
Locker



Krytox™  
Lubricant



Lightweight  
Machine Oil



Teflon® Based  
Grease



Super  
Bonder



Third Angle  
Projection

Please see back cover for DE-STA-CO Global Locations. [www.destaco.com](http://www.destaco.com)

[www.comoso.com](http://www.comoso.com)



# QUALITY PRECISION DURABILITY DESIGN NOTES

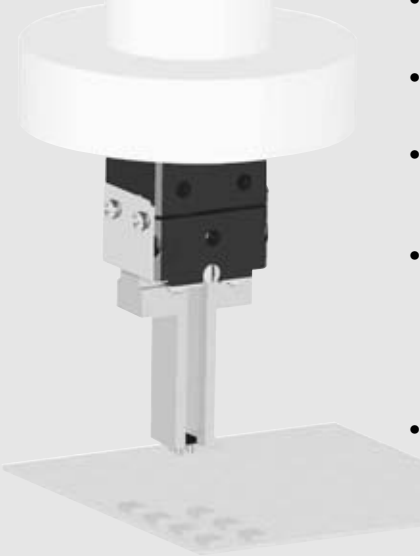
RPM SERIES  
1.113



Please see back cover for DE-STA-CO Global Locations. [www.destaco.com](http://www.destaco.com)

[www.comoso.com](http://www.comoso.com)

# Parallel Grippers - Miniature Clean Room Series

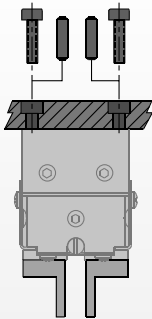


- Precision applications:**  
 Preloaded dual-"V" roller bearings eliminate side play for excellent part position repeatability.
- Miniature size:**  
 Compact design allows for gripping small parts in small spaces.
- Top manifold:**  
 Grippers can be manifolded through the top mounting surface. This eliminates the need for air fittings and allows grippers to be mounted in close array.
- Clean room rated:**  
 A corrosion resistant shield protects the drive and bearing mechanism. All internal components are lubricated with clean room grade grease. The scavenge port can be used with vacuum pressure to prevent escape of particulate generated by the internal mechanism.
- Harsh environments:**  
 All moving components are located within the corrosion resistant cover. The body has a purge port which can expel contaminants from the mechanism using low pressure compressed air.

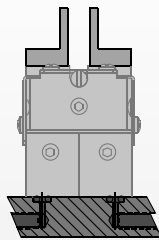


## Mounting Information:

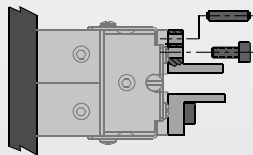
Grippers can be mounted & operated in any orientation



Body mounts with screws and locates with slip fit dowel pins for accuracy



Unit has top manifold ports



Fingers attach to jaws with screws and locate with dowel pins or by keying

## Technical Specifications:

Pneumatic Specifications	Imperial	Metric
Pressure Operating Range	40-100 psi	3-7 bar
Cylinder Type	Double Acting	
Dynamic Seals	Internally Lubricated Buna-N	
Valve Required to Operate	4-way, 2-position	
<b>Air Quality Requirements</b>		
Air Filtration	40 Micron or Better	
Air Lubrication	Not Necessary*	
Air Humidity	Low Moisture Content (dry)	
<b>Temperature Operating Range</b>		
Buna-N Seals (standard)	-30°~180° F	-35°~80° C
Viton® Seals (optional)	-20°~250° F	-30°~120° C
<b>Maintenance Specifications†</b>		
Expected Life	5 million cycles	
Normal Application w/ Preventative Maintenance	10+ million cycles*	
Field Repairable	Yes	
Seal Repair Kits Available	Yes	

\*Addition of lubrication will greatly increase service life  
 †See Maintenance Section

## Product Features

**Preload Bearings**  
Bearings are preloaded for maximum support and zero side play

**Hard Coat Anodize**  
The body has hard-coat anodize 60 RC with Teflon® impregnation

**Quality Components**  
External components are made from corrosion resistant materials for resistance to de-ionized water or for use in FDA & medical parts handling applications

**Clean Room Contaminants**  
Units are lubricated with a clean-room grade grease

**Slip Fit Dowel Pin Holes**  
Located in body and jaws

**Purge/Scavenge Port**

Purge/Scavenge port for extreme environments from dirty & gritty to clean-room Class 10 or better

**Adjustable Preload Screw**

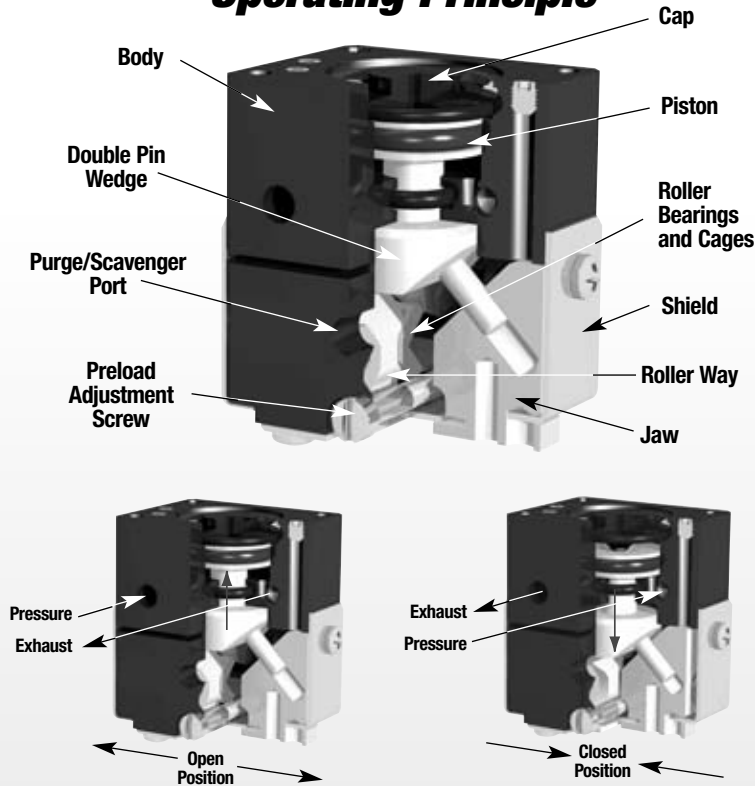
Adjustable preload screw allows for adjustment of preload on roller bearings

**One Piece Body**  
One piece lightweight aluminum body

**Roller Bearings**  
Patented Dual-"V" roller bearings provide low friction rolling motion and maximum rigidity for fingers

**Stainless Steel Cover**  
Stationary and non-contacting cover eliminates the possibility of particle generation

## Operating Principle



- A double acting piston is connected by a shaft to a double sided pin wedge.
- The pin wedge slides in a hole located in each of the jaws converting vertical motion of the wedge into horizontal synchronous motion of the jaws.
- This gripper is suitable for internal or external gripping.

**U.S. Patent #5,529,359 & #5,125,708**  
**Designed and manufactured in the USA**

## Style-RPMC Parallel Gripper

### Size -1M

Style:	RPMC-1M	
Stroke:	0.13 in.	3.2 mm
Grip Force:	8 lb	36 N
Weight:	0.052 lb	.02 Kg



See Page **1.116**

## Style-RPMC Parallel Gripper

### Size -2M

Style:	RPMC-2M	
Stroke:	0.19 in.	4.8 mm
Grip Force:	8 lb	36 N
Weight:	0.058 lb	.03 Kg



See Page **1.117**

## Style-RPMC Parallel Gripper

### Size -3M

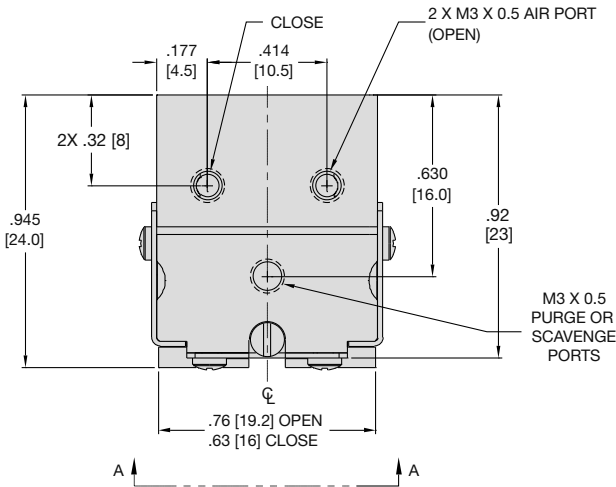
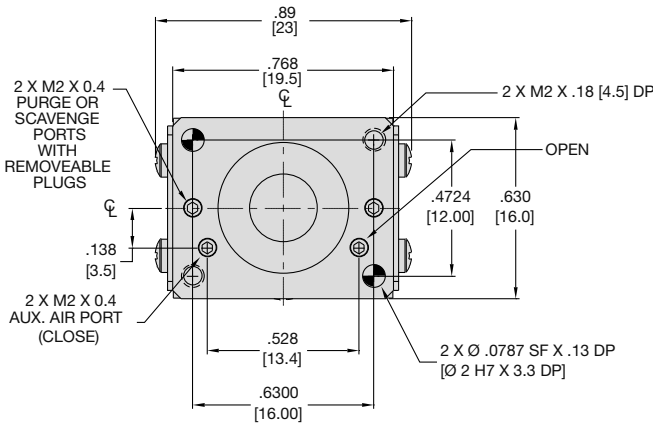
Style:	RPMC-3M	
Stroke:	0.25 in.	6.3 mm
Grip Force:	8 lb	36 N
Weight:	0.074 lb	.03 Kg



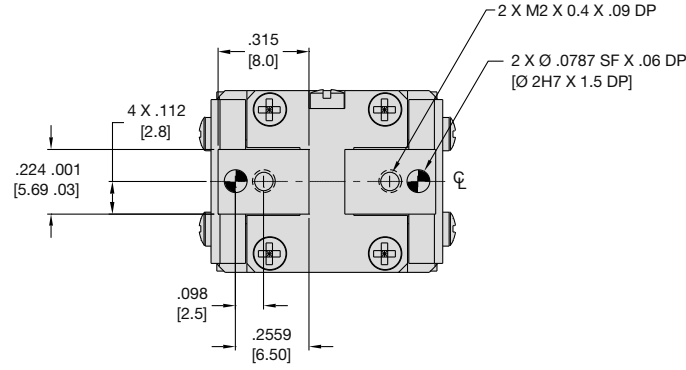
See Page **1.118**



# PARALLEL GRIPPER RPMC-1M MINIATURE CLEAN ROOM SERIES



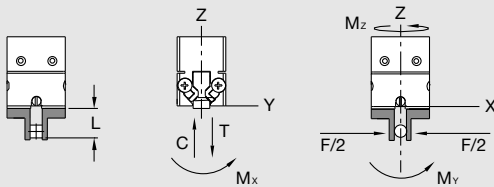
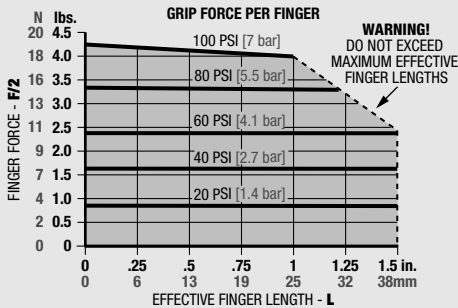
Specifications	RPMC-1M	
Total Rated Grip Force <b>F</b> @ 100 psi, 7 bar	36 N	8.1 lb
Stroke	.13 in.	3.2 mm
Weight	0.052 lb	0.024 Kg
Pressure Range	40-100 psi	3-7 bar
Cylinder Bore Ø	0.394 in.	10.0 mm
Displacement	0.008 in <sup>3</sup>	0.13 cm <sup>3</sup>
Temperature Range		
Standard Seals	-30°~180° F	-35°~80° C
Viton® Seals	-20°~250° F	-30°~120° C
Actuation Time	0.10 sec.	0.10 sec.
Accuracy	±0.002 in.	±0.05 mm
Repeatability	±0.001 in.	±0.03 mm
Valve required to actuate	4-way, 2-position	



**UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW**

	Dimensions are symmetrical about centerline		Third Angle Projection		All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or [±.013mm]
	Metric Threads Course Pitch	<b>Imperial in.</b>	0.00 = ±.01 0.000 = ±.005 0.0000 = ±.0005	<b>Metric [mm]</b>	[0.] = [±.25] [0.0] = [±.13] [0.00] = [±.013]

## Loading Information



Loading Capacity†	Imperial		Metric	
	Static	Dynamic	Static	Dynamic
Maximum Tensile <b>T</b>	20 lbs.	7 lbs.	89 N	31 N
Maximum Compressive <b>C</b>	20 lbs.	7 lbs.	89 N	31 N
Maximum Moment <b>M<sub>x</sub></b>	12 in.-lbs.	4 in.-lbs.	1 Nm	0.5 Nm
Maximum Moment <b>M<sub>y</sub></b>	15 in.-lbs.	5 in.-lbs.	2 Nm	0.6 Nm
Maximum Moment <b>M<sub>z</sub></b>	12 in.-lbs.	4 in.-lbs.	1 Nm	0.5 Nm

†Capacities are per set of jaws and are not simultaneous

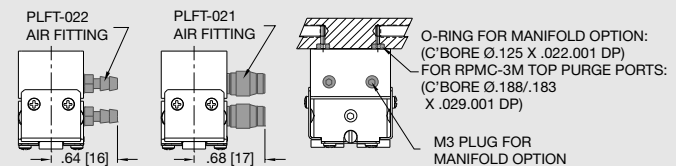
## How to Order: (Order Separately)

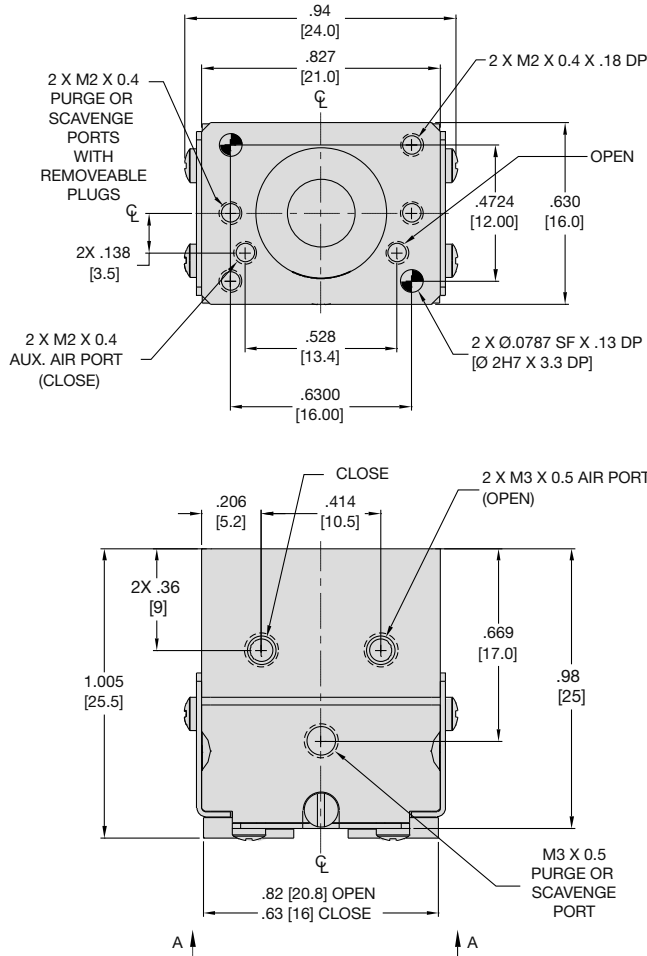
**BASIC MODEL**  
**RPMC-1M - V**  
**VITON® SEALS**

### PNEUMATIC ACCESSORIES

	ORDER #	QTY/UNIT
M3 Plumbing Fitting Push-in for 3mm O.D. Tube	<b>PLFT-021</b>	<b>2</b>
M3 Plumbing Fitting Barb for 2mm I.D. Tube	<b>PLFT-022</b>	<b>2</b>
Standard Seal Repair Kit	<b>SLKT-121</b>	<b>1</b>
Viton® Seal Repair Kit	<b>SLKT-121V</b>	<b>1</b>
Top Air Ports Manifold Seal Kit (available in Viton® only)	<b>SLKT-143V</b>	<b>1</b>

For Detailed Accessory Mounting Technical Data Refer to Accessories Section

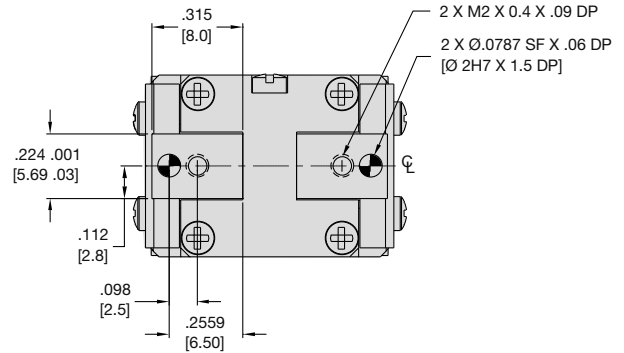




### Specifications

### RPMC-2M

Total Rated Grip Force <b>F</b> @ 100 psi, 7 bar 8 lb	.19 in.	36 N
Stroke	0.058 lb	4.8 mm
Weight	40-100 psi	0.026 Kg
Pressure Range	0.394 in.	3-7 bar
Cylinder Bore Ø	0.012 in <sup>2</sup>	10.0 mm
Displacement	Temperature Range	
	Standard Seals	-30°~180° F -35°~80° C
	Viton® Seals	-20°~250° F -30°~120° C
	Actuation Time	0.10 sec. 0.10 sec.
	Accuracy	±0.002 in. ±0.05 mm
	Repeatability	±0.001 in. ±0.03 mm
	Valve required to actuate	4-way, 2-position

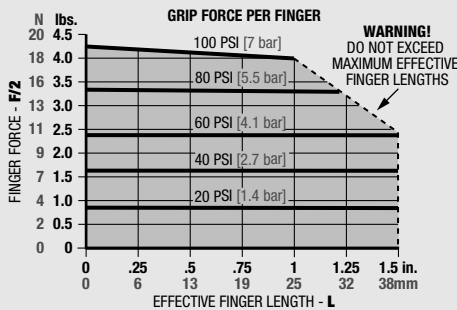


**UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW**

	Dimensions are symmetrical about centerline		Third Angle Projection		All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or [±.013mm]
	Metric Threads Course Pitch	<b>Imperial in.</b>	0.00 = ±.01 0.000 = ±.005 0.0000 = ±.0005	<b>Metric [mm]</b>	[0.] = [±.25] [0.0] = [±.13] [0.00] = [±.013]

## Loading Information

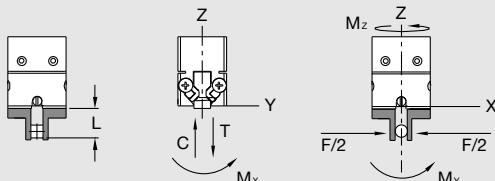
## How to Order: (Order Separately)



BASIC MODEL

**RPMC-2M - V**

VITON® SEALS



### Loading Capacity†

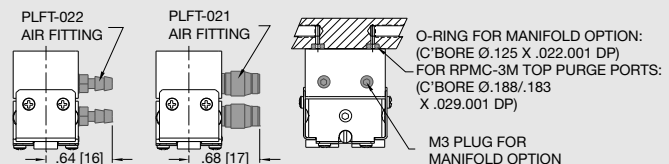
	Imperial		Metric	
	Static	Dynamic	Static	Dynamic
Maximum Tensile <b>T</b>	20 lbs.	7 lbs.	89 N	31 N
Maximum Compressive <b>C</b>	20 lbs.	7 lbs.	89 N	31 N
Maximum Moment <b>M<sub>x</sub></b>	12 in.-lbs.	4 in.-lbs.	1 Nm	0.5 Nm
Maximum Moment <b>M<sub>y</sub></b>	15 in.-lbs.	5 in.-lbs.	2 Nm	0.6 Nm
Maximum Moment <b>M<sub>z</sub></b>	12 in.-lbs.	4 in.-lbs.	1 Nm	0.5 Nm

†Capacities are per set of jaws and are not simultaneous

### PNEUMATIC ACCESSORIES

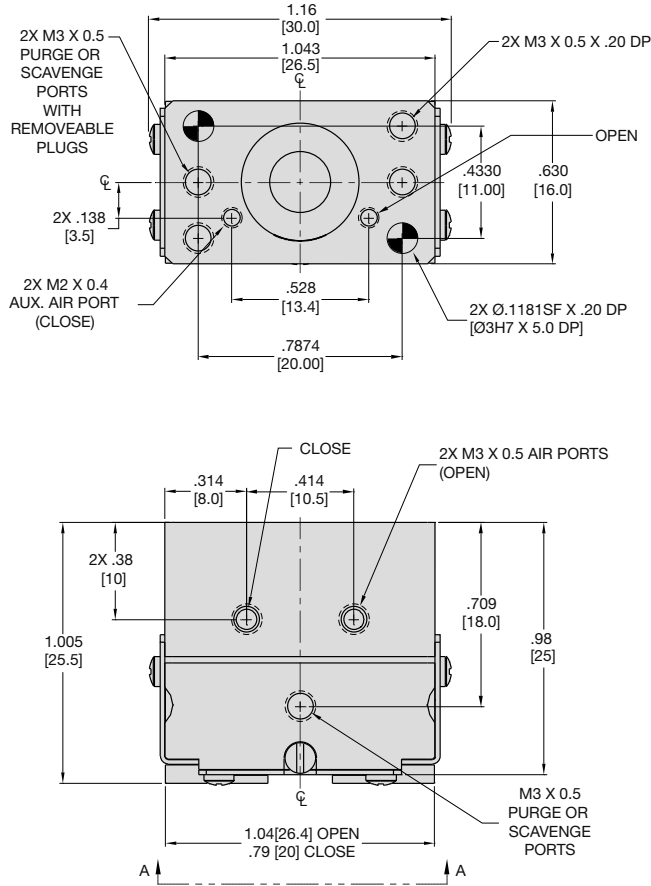
	ORDER #	QTY/UNIT
M3 Plumbing Fitting Push-in for 3mm O.D. Tube	PLFT-021	2
M3 Plumbing Fitting Barb for 2mm I.D. Tube	PLFT-022	2
Standard Seal Repair Kit	SLKT-121	1
Viton® Seal Repair Kit	SLKT-121V	1
Top Air Ports Manifold Seal Kit (available in Viton® only)	SLKT-143V	1

For Detailed Accessory Mounting Technical Data Refer to Accessories Section



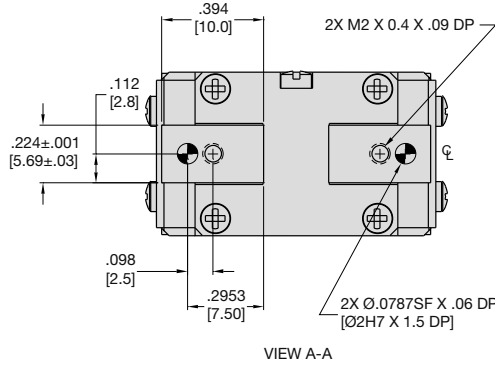


# PARALLEL GRIPPER RPMC-3M MINIATURE CLEAN ROOM SERIES



### Specifications

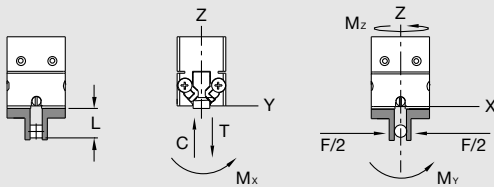
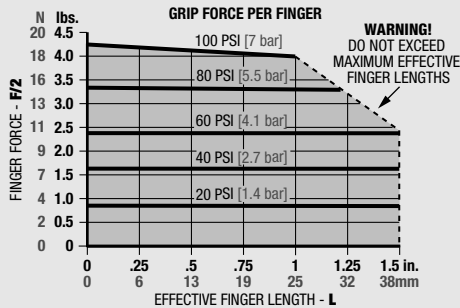
		RPMC-3M
Total Rated Grip Force <b>F</b> @ 100 psi, 7 bar	8 lb	36 N
Stroke	.25 in.	6.3 mm
Weight	0.074 lb	0.034 Kg
Pressure Range	40-100 psi	3-7 bar
Cylinder Bore Ø	0.394 in.	10.0 mm
Displacement	0.015 in <sup>3</sup>	0.25 cm <sup>3</sup>
Temperature Range		
Standard Seals	-30°~180° F	-35°~80° C
Viton® Seals	-20°~250° F	-30°~120° C
Actuation Time	0.10 sec.	0.10 sec.
Accuracy	±0.002 in.	±0.05 mm
Repeatability	±0.001 in.	±0.03 mm
Valve required to actuate		4-way, 2-position



### UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

Dimensions are symmetrical about centerline	Third Angle Projection	All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or [±.013mm]
Metric Threads Course Pitch	<b>Imperial in.</b> 0.00 = ±.01 0.000 = ±.005 0.0000 = ±.0005	<b>Metric [mm]</b> [0.] = [±.25] [0.0] = [±.13] [0.00] = [±.013]

## Loading Information



### Loading Capacity<sup>†</sup>

	Static		Dynamic	
	Imperial	Metric	Imperial	Metric
Maximum Tensile <b>T</b>	20 lbs.	89 N	7 lbs.	31 N
Maximum Compressive <b>C</b>	20 lbs.	89 N	7 lbs.	31 N
Maximum Moment <b>M<sub>x</sub></b>	12 in.-lbs.	1 Nm	4 in.-lbs.	0.5 Nm
Maximum Moment <b>M<sub>y</sub></b>	15 in.-lbs.	2 Nm	5 in.-lbs.	0.6 Nm
Maximum Moment <b>M<sub>z</sub></b>	12 in.-lbs.	1 Nm	4 in.-lbs.	0.5 Nm

<sup>†</sup>Capacities are per set of jaws and are not simultaneous

## How to Order: (Order Separately)

BASIC MODEL

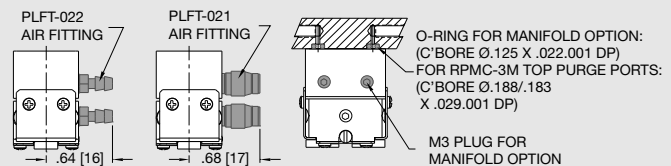
**RPMC-3M - V**

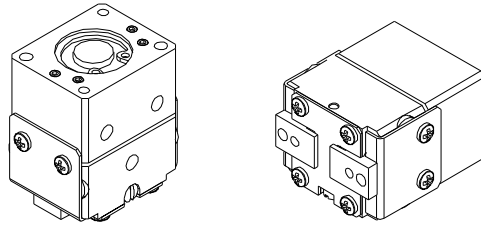
VITON® SEALS

### PNEUMATIC ACCESSORIES

	ORDER #	QTY/UNIT
M3 Plumbing Fitting Push-in for 3mm O.D. Tube	<b>PLFT-021</b>	<b>2</b>
M3 Plumbing Fitting Barb for 2mm I.D. Tube	<b>PLFT-022</b>	<b>2</b>
Standard Seal Repair Kit	<b>SLKT-121</b>	<b>1</b>
Viton® Seal Repair Kit	<b>SLKT-121V</b>	<b>1</b>
Top Air Ports Manifold Seal Kit (available in Viton® only)	<b>SLKT-143V</b>	<b>1</b>

For Detailed Accessory Mounting Technical Data Refer to Accessories Section





Item	Qty	Name
01	1	Body
02	2	Jaw
03	1	Wedge
04	1	Piston
05	1	Cap
06	2	Way
07	4	Kit, Roller Bearings And Cage
08	1	Screw, Preload
10	2	Shield, Side
11	1	Shield, Top
12	2	Dowel Pin
15	4	Stop Screw

NOTE: Contact the Robohand Sales Department for a complete spare parts list with order numbers and prices.

### Assembly Procedures

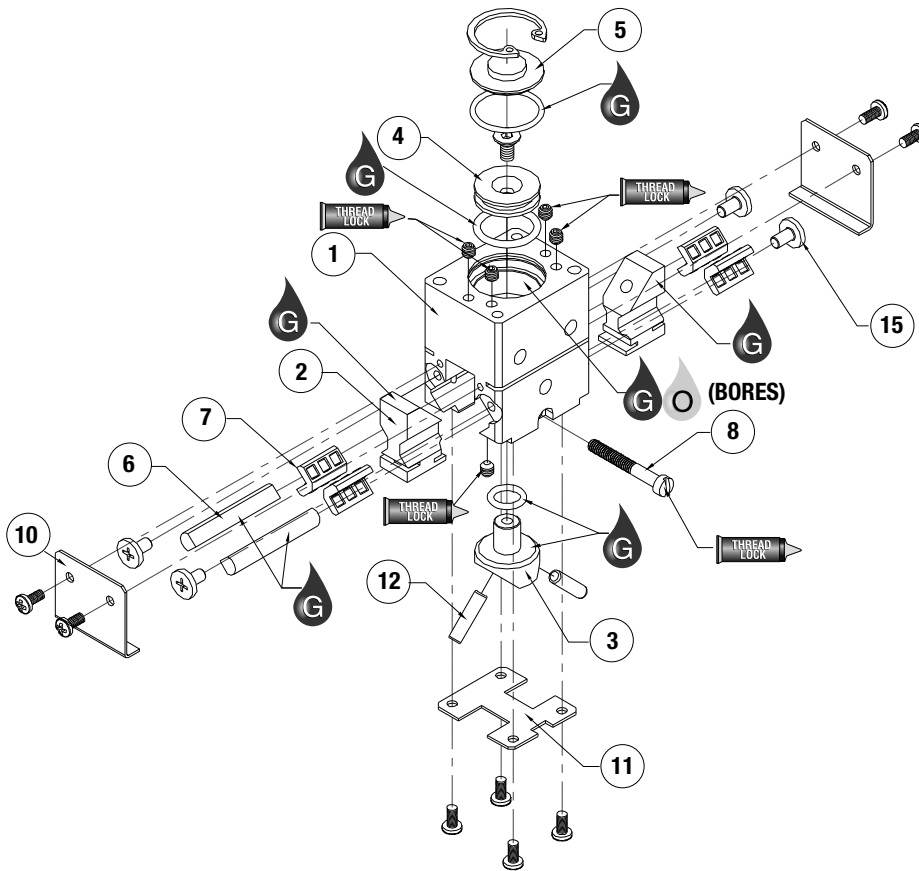
- 1) Lubricate and install seals.
- 2) Install pins (12) and wedge (3) into body.
- 3) Install piston (4), screw, cap (5), & Retaining Ring.
- 4) Install set screws for air port plugs.
- 5) Install jaws (2) over pins.
- 6) Install ways (6), cages (7), & screws (15).

### Preload Adjustment

- 1) Install preload screw (8) with Loctite on first 6 -8 threads.
- 2) Tighten until there is no side play in the jaws.
- 3) Cycle gripper(w/finger assembly)
- 4) Recheck for play in jaws & tighten or loosen as needed.



**Seal Repair Kit Order #'s  
See Product Data Sheets**



Seal Kit Items



Thread Locker



Krytox™ Lubricant



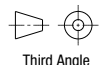
Lightweight Machine Oil



Teflon® Based Grease

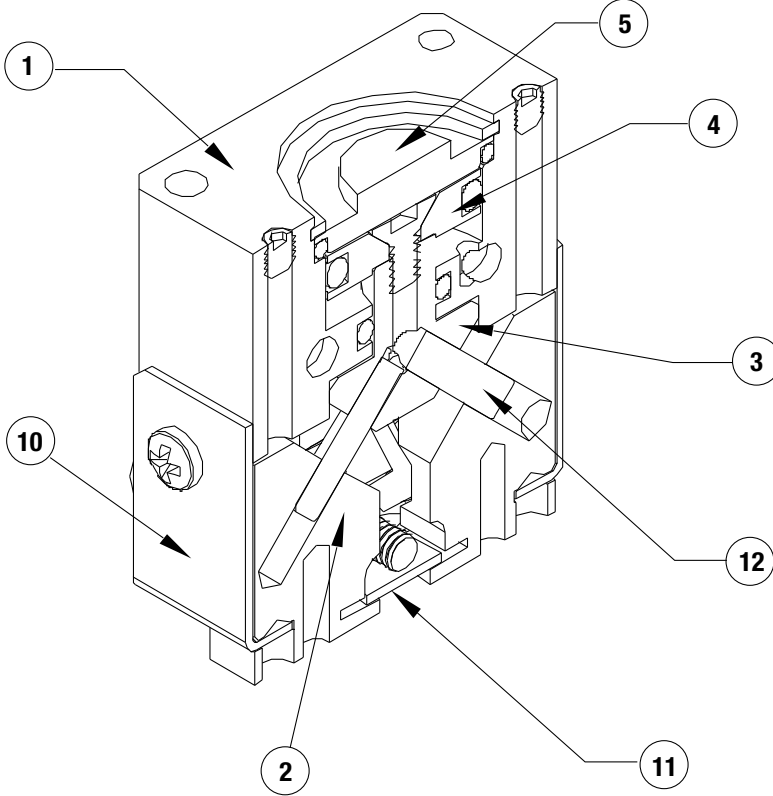


Super Bonder



Third Angle Projection

# RPMC Series Assembled View



Item	Qty	Name
------	-----	------

01	1	Body
02	2	Jaw
03	1	Wedge
04	1	Piston
05	1	Cap
06	2	Way
07	4	Kit, Roller Bearings And Cage
08	1	Screw, Preload
10	2	Shield, Side
11	1	Shield, Top
12	2	Dowel Pin
15	4	Stop Screw

NOTE: Contact the Robohand Sales Department for a complete spare parts list with order numbers and prices.



Seal Kit  
Items



Thread  
Locker



Krytox™  
Lubricant



Lightweight  
Machine Oil



Teflon® Based  
Grease



Super  
Bonder



Third Angle  
Projection

Please see back cover for DE-STA-CO Global Locations. [www.destaco.com](http://www.destaco.com)

[www.comoso.com](http://www.comoso.com)





# Parallel Grippers - DPG DIRECTCONNECT™ Modular Series

**DIRECTCONNECT™**  
ADVANCED MODULAR AUTOMATION TECHNOLOGY

**NO  
ADAPTER  
PLATES!**

**NO  
ADAPTER  
PLATES!**

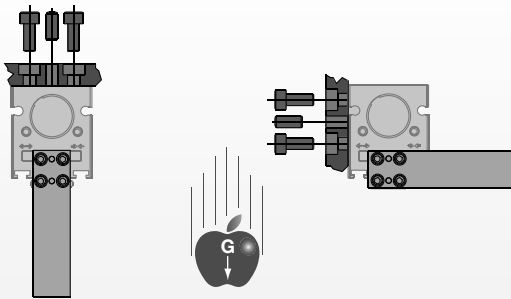
- **Multiple mounting locations:** DIRECTCONNECT™ mounting on top and back of body. Fingers mount to sides or bottom of jaws.
- **Multiple air port positions:** Tapped air ports on front and both sides are standard. Top air ports with counterbores for o-ring manifolded operation and threads for screw-in type fittings are available.

- **Sensing options:** Magneto resistive (Hall Effect) or inductive proximity sensors available.
- **Sense up to four positions:** Up to four jaw positions can be sensed to allow open, closed, part present, or variable part size sensing.
- **Shielded to repel contaminate:** Design repels chips and particulate. Closed jaw position spacing eliminates "chip compactor" effect.
- **Longer finger applications:** Rigid design and full body support of jaw allows for longer finger lengths.

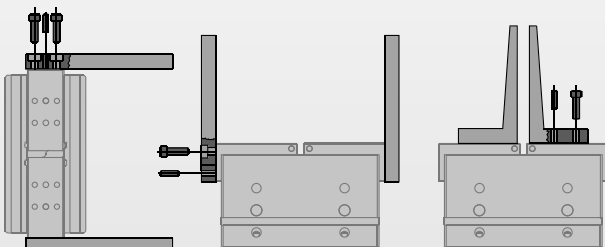
- **Spring assist, spring return:** Cylinders can be double acting, double acting spring assist, failsafe, or single acting in either open or closed direction.
- **Non-synchronous motion:** Non-synchronous motion option provides independent jaw motion allowing the gripper to pick or place at a point other than it's center.
- **Single jaw motion with fixed jaw:** This option locks one jaw in a fixed position while the other jaw is free to move.

## Mounting Information:

Grippers can be mounted & operated in any orientation



Body mounts with screws and locates with slip fit dowel pins for accuracy



Fingers attach with screws and locate on jaws by keying or dowel pin holes

## Technical Specifications:

<b>Pneumatic Specifications</b>	<b>Imperial</b>	<b>Metric</b>
Pressure Operating Range	40-100 psi	3-7 bar
Cylinder Type	Double Acting or Single Acting Spring Return or Double Acting Spring Assist	
Dynamic Seals	Internally Lubricated Buna-N	
Valve Required to Operate	4-way, 2-position for Double Acting or 3-way, 2-position for Single Acting	
<b>Air Quality Requirements</b>	40 Micron or Better	
Air Filtration	Not Necessary*	
Air Lubrication	Low Moisture Content (dry)	
Air Humidity		
<b>Temperature Operating Range</b>		
Buna-N Seals (standard)	-30°~180° F	-35°~80° C
Viton® Seals (optional)	-20°~300° F	-30°~150° C
<b>Maintenance Specifications†</b>		
Expected Life		
Normal Application		5 million cycles
w/ Preventative Maintenance		10+ million cycles*
Field Repairable		Yes
Seal Repair Kits Available		Yes
<b>Application Restrictions</b>		
Applications where mechanism lubricant could cause contamination		

\*Addition of lubrication will greatly increase service life  
†See Maintenance Section

## Product Features

**Hard Coat Anodize**  
The body and jaws have hard-coat anodize 60RC with Teflon® impregnation

**High Temperature**  
Optional Viton® seals are available for high temperature applications

**Multiple Air Port Locations**  
3 standard airport locations (front & both sides)  
Optional top airports available

**Sensor Mounting Slots**  
Standard mounting slots for magneto resistive and inductive sensors (sensors sold separately)

**One Piece Body**  
One piece lightweight aircraft quality aluminum body

**DIRECTCONNECT Mounting Patterns**  
2 DIRECTCONNECT™ mounting surfaces on top and back of body

**Sensor Targets**  
Magnets come standard in pistons for magneto resistive sensors  
Four inductive sensor targets on sides of jaws

**Dowel Holes**  
Slip fit dowel pin holes in body and jaws

**Superior Jaw Support**  
Jaws are supported throughout the length of the body

**Shielded Design**  
Shielded design repels contaminants

**Versatile Finger Mounting**  
2 finger mounting surfaces on each jaw

**Extremely Compact & Robust Design**

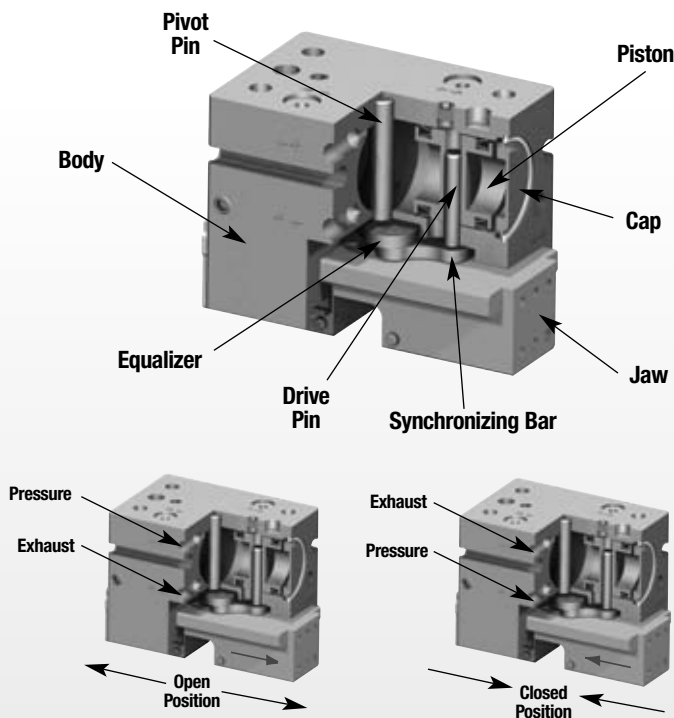
**Multiple Sensor Capabilities**  
Capable of sensing both jaws in the open and closed positions (up to 4 sensors can be used for multi-position sensing)

**Optional Features**

- Top air ports eliminating the need for airlines
- Fixed jaw configurations
- Spring assist for open or close stroke
- Non-synchronous version

**Self-Lubricating Seals**  
Self lubricating dynamic seals (Buna-N only)

## Operating Principle



- Dual double acting opposed pistons, connected to both a jaw and a synchronizing bar by a drive pin, actuate in opposite directions.
- The synchronizing bars are connected to the equalizer which synchronizes the motion.
- Suitable for internal or external gripping.
- The synchronizing elements can be removed for non-synchronous operation.

**Designed and manufactured in the USA**

## Style -DPG-10M Parallel Gripper

### Size -1

Style:	DPG-10M-1	
Stroke:	0.25 in.	6.4 mm
Grip Force:	50 lbs.	222 N
Weight:	0.39 lbs.	0.17 Kg

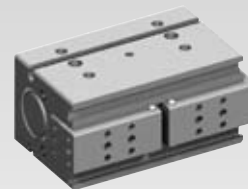


See Page **1.124**

## Style -DPG-10M Parallel Gripper

### Size -2

Style:	DPG-10M-2	
Stroke:	0.50 in.	12.7 mm
Grip Force:	50 lbs.	222 N
Weight:	0.53 lbs.	0.24 Kg

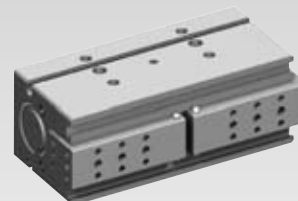


See Page **1.126**

## Style -DPG-10M Parallel Gripper

### Size -3

Style:	DPG-10M-3	
Stroke:	0.75 in.	19.1 mm
Grip Force:	50 lbs.	222 N
Weight:	0.68 lbs.	0.30 Kg

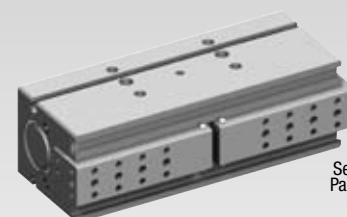


See Page **1.128**

## Style -DPG-10M Parallel Gripper

### Size -4

Style:	DPG-10M-4	
Stroke:	1.00 in.	25.4 mm
Grip Force:	50 lbs.	222 N
Weight:	0.81 lbs.	0.36 Kg



See Page **1.130**



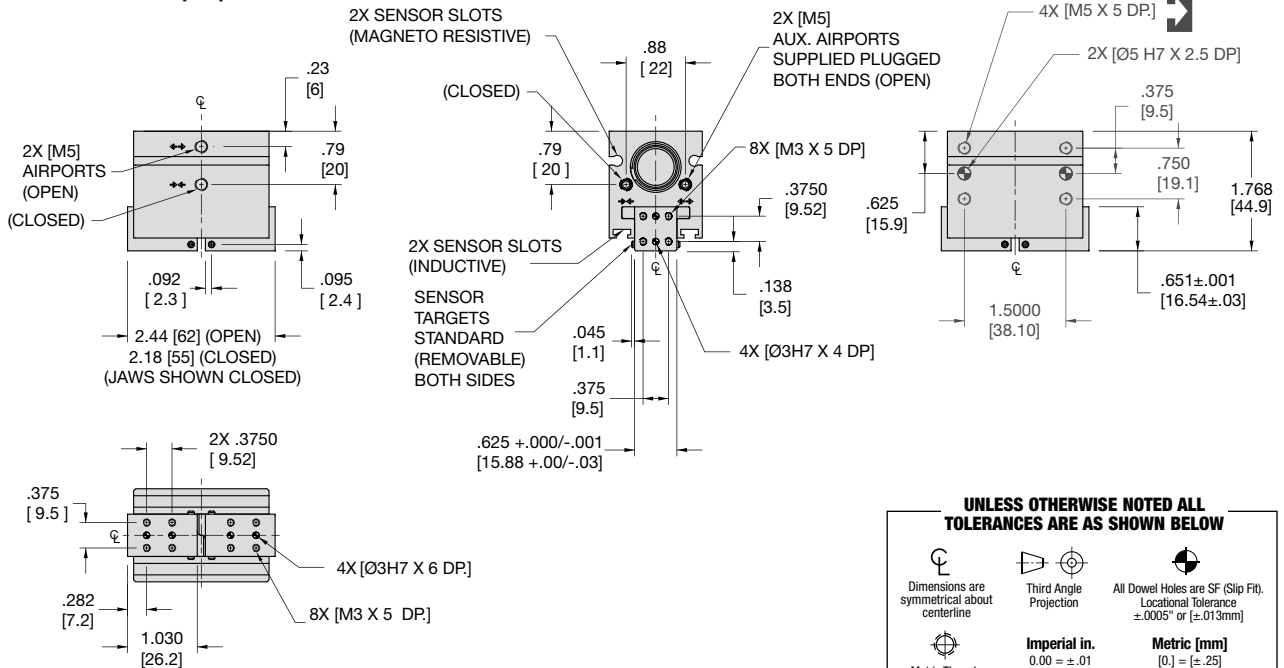
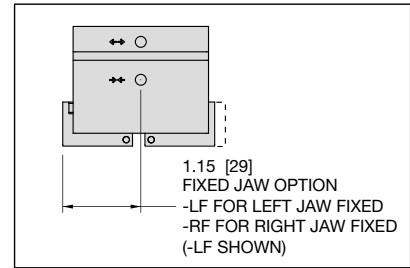
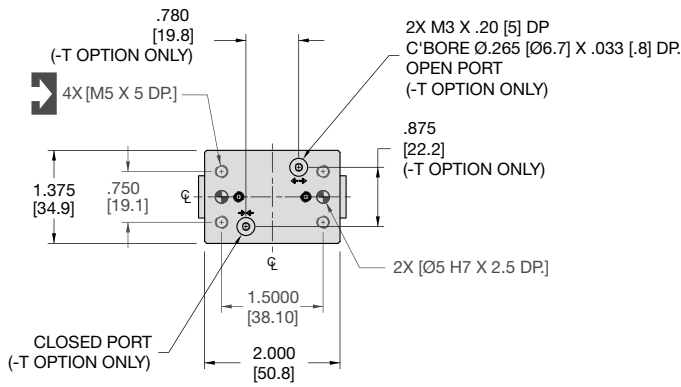
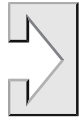




# PARALLEL GRIPPER DPG-10M-1 DIRECTCONNECT™ MODULAR SERIES

DPG SERIES

1.124



**UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW**

Dimensions are symmetrical about centerline	Third Angle Projection	All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or (±.013mm)
Metric Threads Course Pitch	<b>Imperial in.</b> 0.00 = ±.01 0.000 = ±.005 0.0000 = ±.0005	<b>Metric (mm)</b> [0.] = (±.25) [0.0] = (±.13) [0.00] = (±.013)

NOTE: DIRECTCONNECT™ DIMENSIONS ARE SHOWN IN BLUE

## How to Order: (Order Accessories separately from Basic Model)

**BASIC MODEL**    **SIZE**    **SPRING**    **TOP PORTING**

**DPG-10M - 1 - [ ] - [ ] - T - V**

**JAW SYNC**    **VITON® SEALS**

**SPRING DIRECTION**

**O** Spring Open  
**C** Spring Closed  
— Leave Blank. No Spring Option (standard)

**JAW SYNCHRONIZATION CONFIGURATION**

**LF** Left Jaw Fixed  
**RF** Right Jaw Fixed  
**NS** Non-synchronous Jaws  
— Leave Blank for Synchronous (standard)

### SENSOR ACCESSORIES

	ORDER #	QTY/UNIT
Inductive Sensor Mounting Kit (Mounts 2 Sensors)	<b>OSMK-097</b>	<b>1 or 2</b>
NPN Inductive Sensor with Qk. Disconnect*	<b>OISN-019</b>	<b>1,2,3, or 4</b>
PNP Inductive Sensor with Qk. Disconnect*	<b>OISP-019</b>	<b>1,2,3, or 4</b>
NPN Magneto Resistive Sensor w/Qk. Disconnect*	<b>OHSN-017</b>	<b>1,2,3, or 4</b>
PNP Magneto Resistive Sensor w/Qk. Disconnect*	<b>OHSP-017</b>	<b>1,2,3, or 4</b>
NPN Magneto Resistive Sensor (90°) w/Qk. Disconnect*	<b>OHSN-011</b>	<b>1,2,3, or 4</b>
PNP Magneto Resistive Sensor (90°) w/Qk. Disconnect*	<b>OHSP-011</b>	<b>1,2,3, or 4</b>
Quick Disconnect Cable (2 meters long)*	<b>CABL-010</b>	<b>1,2,3, or 4</b>
Quick Disconnect Cable (5 meters long)*	<b>CABL-013</b>	<b>1,2,3, or 4</b>
Quick Disconnect Cable Extension Cord (1 meter long)*	<b>CABL-015</b>	<b>1,2,3, or 4</b>
Quick Disconnect Cable Extension Cord (2 meters long)*	<b>CABL-016</b>	<b>1,2,3, or 4</b>

### PNEUMATIC ACCESSORIES

	ORDER #	QTY/UNIT
Standard Seal Repair Kit	<b>SLKT-183</b>	<b>1</b>
Viton® Seal Repair Kit	<b>SLKT-183V</b>	<b>1</b>
-T Option Plumbing Fitting - M3 male to 3mm OD Tube Push-in Style	<b>PLFT-021</b>	<b>1 or 2</b>
-T Option Plumbing Fitting - M3 male to 2mm ID Tube Barb Style	<b>PLFT-022</b>	<b>1 or 2</b>
Fail Safe Valve - M5 (Metric)	<b>OFSV-004</b>	<b>1</b>
Adjustable Flow Control (Metric)	<b>VLVF-008</b>	<b>1 or 2</b>
Top Port Manifold Seal Kit	<b>SLKT-184V</b>	<b>1</b>

\*Sensor and cable sold separately

### SAMPLE ORDER: DPG-10M-1-C-V

Ex: DPG-10M Gripper, Metric, Size 1, Spring Close, Viton® Seals

Please see back cover for DE-STA-CO Global Locations. [www.destaco.com](http://www.destaco.com)

[www.comoso.com](http://www.comoso.com)

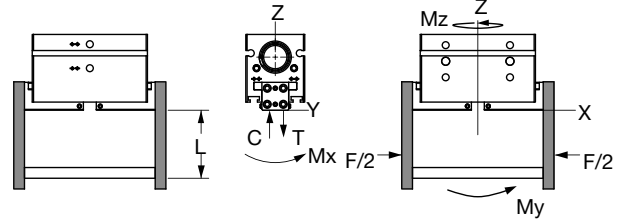
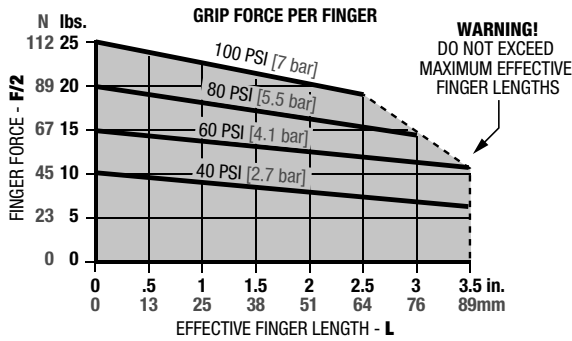
DIRECTCONNECT™



# PARALLEL GRIPPER DPG-10M-1 DIRECTCONNECT™ MODULAR SERIES

DPG SERIES

1.125



### Loading Capacity†

	Static	Dynamic
Maximum Tensile <b>T</b>	175 lbs. [778 N]	20 lbs. [89 N]
Maximum Compressive <b>C</b>	400 lbs. [1779 N]	20 lbs. [89 N]
Maximum Moment <b>M<sub>x</sub></b>	150 in.-lbs. [17 Nm]	20 in.-lbs. [2 Nm]
Maximum Moment <b>M<sub>y</sub></b>	175 in.-lbs. [20 Nm]	30 in.-lbs. [3 Nm]
Maximum Moment <b>M<sub>z</sub></b>	150 in.-lbs. [17 Nm]	20 in.-lbs. [2 Nm]

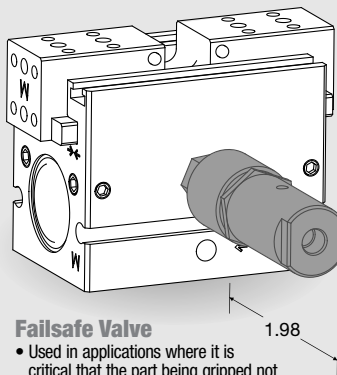
†Capacities are per set of jaws and are not simultaneous

Total Additional Grip Force	Spring Open	Spring Close
@ Full Open .....	6 lbs. 26 N	9 lbs. 40 N
@ Full Close .....	11 lbs. 49 N	6 lbs. 26 N

Specifications	DPG-10M-1	
Total Rated Grip Force <b>F</b> @ 100 psi, 7 bar .....	50 lbs.	222 N
Stroke .....	0.25 in.	6.4 mm
Weight .....	0.39 lbs.	0.17 Kg
Pressure Range .....	40-100 psi	3-7 bar
Cylinder Bore $\emptyset$ .....	0.688 in.	17.5 mm
Displacement .....	0.076 in <sup>3</sup>	1.2 cm <sup>3</sup>

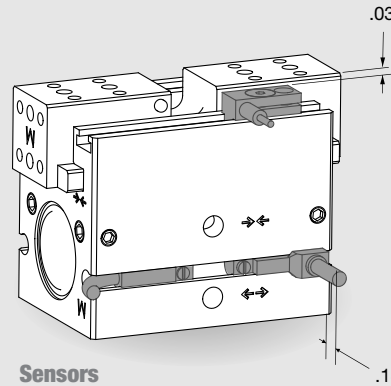
Specifications (cont.)	DPG-10M-1	
Temperature Range: Standard Seals .....	-30°~180° F	-35°~80° C
Viton® Seals .....	-20°~300° F	-30°~150° C
Actuation .....	0.13 sec.	0.13 sec.
Accuracy .....	±0.002 in.	±0.05 mm
Repeatability .....	±0.002 in.	±0.05 mm
Valve required to actuate .....	4-way, 2-position	

## Accessory Mounting Technical Data



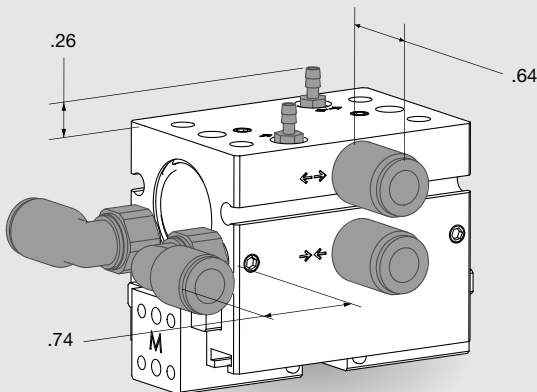
### Failsafe Valve

- Used in applications where it is critical that the part being gripped not be dropped if air pressure is lost
- Mounts directly to gripper
- M5 air port



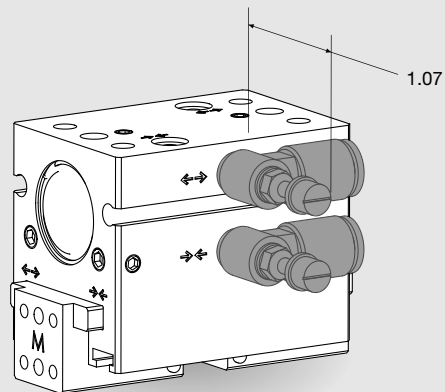
### Sensors

- Choose from magneto resistive and inductive prox
- Capable of sensing 4 positions open and closed on both jaws
- PNP and NPN available
- Magneto resistive sensors are slot mounted, no mounting kits required
- Threaded quick disconnect with built-in led output
- Sensors mount on either side of gripper



### Multiple Air Port Locations

- 3 standard air port locations (front and both sides)
- Optional top ports are tapped for M3 fittings
- Consult factory for plumbing fitting part numbers



### Flow Controls

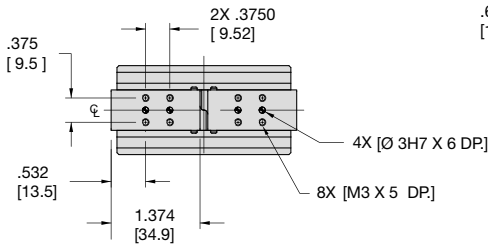
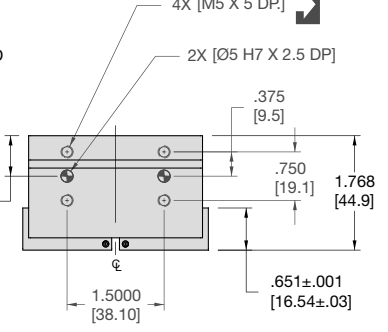
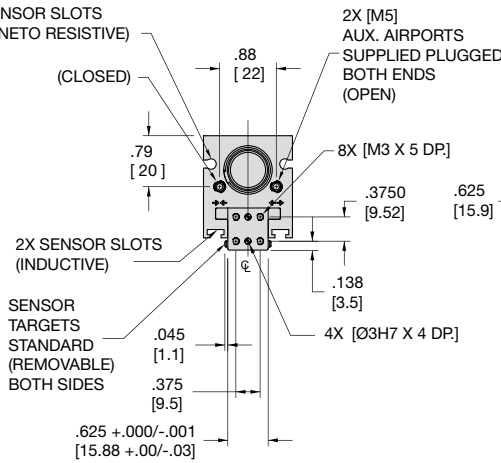
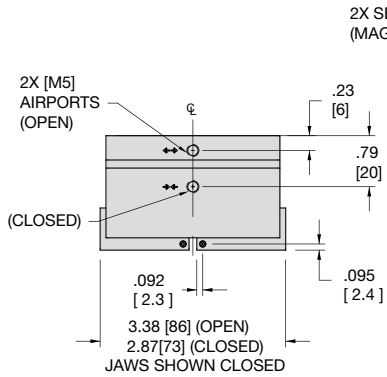
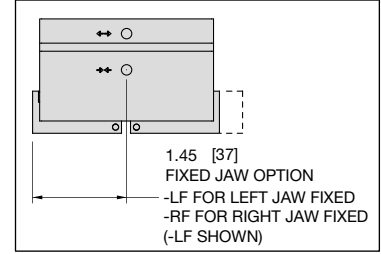
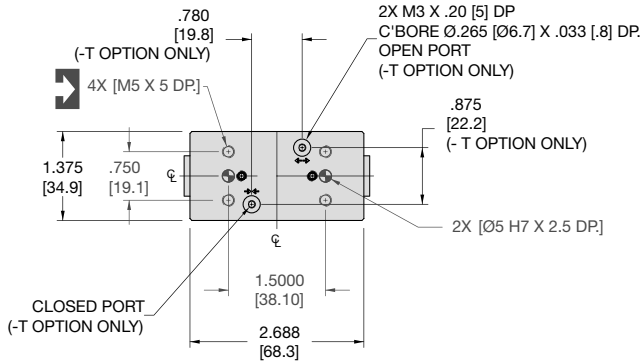
- Thumb screw adjust with locking nut for adjusting actuation time
- Available for 5mm OD tubing

DIRECTCONNECT™

# PARALLEL GRIPPER DPG-10M-2 DIRECTCONNECT™ MODULAR SERIES

DPG SERIES

1.126



UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

Dimensions are symmetrical about centerline	Third Angle Projection	All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or [±.013mm]
Metric Threads Course Pitch	<b>Imperial in.</b> 0.00 = ±.01 0.000 = ±.005 0.0000 = ±.0005	<b>Metric [mm]</b> [0.] = [±.25] [0.0] = [±.13] [0.00] = [±.013]

NOTE: DIRECTCONNECT™ DIMENSIONS ARE SHOWN IN BLUE

## How to Order: (Order Accessories separately from Basic Model)

**BASIC MODEL**    **SIZE**    **SPRING**    **TOP PORTING**  
**DPG-10M - 2 -**    **-**    **-**    **- T - V**

**JAW SYNC**    **VITON® SEALS**  
 (See Below)

**SPRING DIRECTION**  
**O** Spring Open  
**C** Spring Closed  
 — Leave Blank. No Spring Option (standard)

**JAW SYNCHRONIZATION CONFIGURATION**  
**LF** Left Jaw Fixed  
**RF** Right Jaw Fixed  
**NS** Non-synchronous Jaws  
 — Leave Blank for Synchronous (standard)

### SENSOR ACCESSORIES

	ORDER #	QTY/UNIT
Inductive Sensor Mounting Kit (Mounts 2 Sensors)	<b>OSMK-097</b>	<b>1 or 2</b>
NPN Inductive Sensor with Qk. Disconnect*	<b>OISN-019</b>	<b>1,2,3, or 4</b>
PNP Inductive Sensor with Qk. Disconnect*	<b>OISP-019</b>	<b>1,2,3, or 4</b>
NPN Magneto Resistive Sensor w/Qk. Disconnect*	<b>OHSN-017</b>	<b>1,2,3, or 4</b>
PNP Magneto Resistive Sensor w/Qk. Disconnect*	<b>OHSP-017</b>	<b>1,2,3, or 4</b>
NPN Magneto Resistive Sensor (90°) w/Qk. Disconnect*	<b>OHSN-011</b>	<b>1,2,3, or 4</b>
PNP Magneto Resistive Sensor (90°) w/Qk. Disconnect*	<b>OHSP-011</b>	<b>1,2,3, or 4</b>
Quick Disconnect Cable (2 meters long)*	<b>CABL-010</b>	<b>1,2,3, or 4</b>
Quick Disconnect Cable (5 meters long)*	<b>CABL-013</b>	<b>1,2,3, or 4</b>
Quick Disconnect Cable Extension Cord (1 meter long)*	<b>CABL-015</b>	<b>1,2,3, or 4</b>
Quick Disconnect Cable Extension Cord (2 meters long)*	<b>CABL-016</b>	<b>1,2,3, or 4</b>

### PNEUMATIC ACCESSORIES

	ORDER #	QTY/UNIT
Standard Seal Repair Kit	<b>SLKT-183</b>	<b>1</b>
Viton® Seal Repair Kit	<b>SLKT-183V</b>	<b>1</b>
-T Option Plumbing Fitting - M3 male to 3mm OD Tube Push-in Style	<b>PLFT-021</b>	<b>1 or 2</b>
-T Option Plumbing Fitting - M3 male to 2mm ID Tube Barb Style	<b>PLFT-022</b>	<b>1 or 2</b>
Fail Safe Valve - M5 (Metric)	<b>OFSV-004</b>	<b>1</b>
Adjustable Flow Control (Metric)	<b>VLVF-008</b>	<b>1 or 2</b>
Top Port Manifold Seal Kit	<b>SLKT-184V</b>	<b>1</b>

\*Sensor and cable sold separately

### SAMPLE ORDER: DPG-10M-2-C-LF-V

Ex: DPG-10M Gripper, Metric, Size 2, Spring Close, Left Jaw Fixed, Viton® Seals

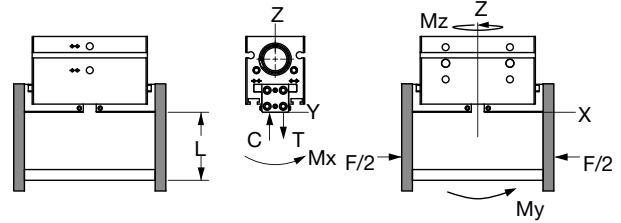
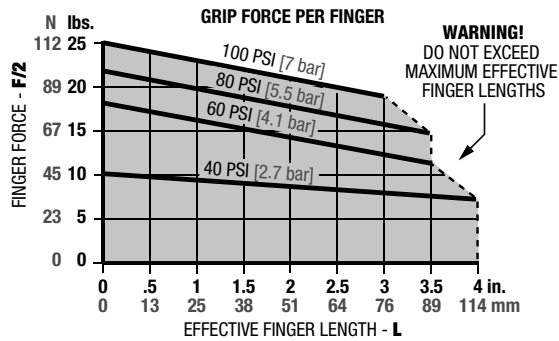
DIRECTCONNECT™



# PARALLEL GRIPPER DPG-10M-2 DIRECTCONNECT™ MODULAR SERIES

DPG SERIES

1.127



### Loading Capacity†

	Static	Dynamic
Maximum Tensile <b>T</b>	200 lbs. [890 N]	25 lbs. [111 N]
Maximum Compressive <b>C</b>	425 lbs. [1890 N]	25 lbs. [111 N]
Maximum Moment <b>M<sub>x</sub></b>	175 in.-lbs. [20 Nm]	25 in.-lbs. [3 Nm]
Maximum Moment <b>M<sub>y</sub></b>	200 in.-lbs. [23 Nm]	35 in.-lbs. [4 Nm]
Maximum Moment <b>M<sub>z</sub></b>	175 in.-lbs. [20 Nm]	25 in.-lbs. [3 Nm]

†Capacities are per set of jaws and are not simultaneous

Total Additional Grip Force	Spring Open	Spring Close
@ Full Open .....	6 lbs. 26 N	14 lbs. 62 N
@ Full Close .....	15 lbs. 66 N	6 lbs. 26 N

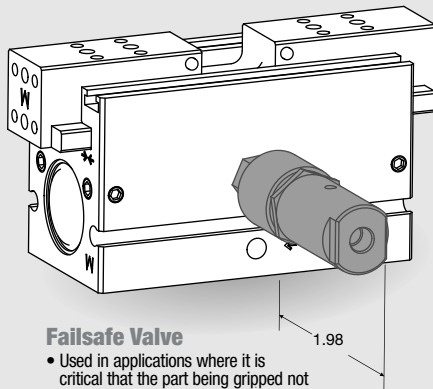
### Specifications DPG-10M-2

Total Rated Grip Force <b>F</b> @ 100 psi, 7 bar .....	50 lbs.	222 N
Stroke .....	0.50 in.	12.7 mm
Weight .....	0.53 lbs.	0.24 Kg
Pressure Range .....	40-100 psi	3-7 bar
Cylinder Bore $\emptyset$ .....	0.688 in.	17.5 mm
Displacement .....	0.153 in <sup>3</sup>	2.5 cm <sup>3</sup>

### Specifications (cont.) DPG-10M-2

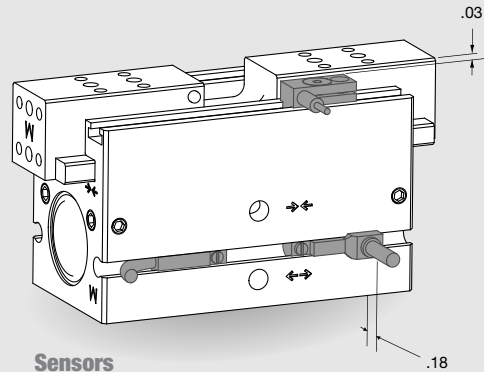
Temperature Range: Standard Seals .....	-30°~180° F	-35°~80° C
Viton® Seals .....	-20°~300° F	-30°~150° C
Actuation .....	0.19 sec.	0.19 sec.
Accuracy .....	±0.002 in.	±0.05 mm
Repeatability .....	±0.002 in.	±0.05 mm
Valve required to actuate .....	4-way, 2-position	

## Accessory Mounting Technical Data



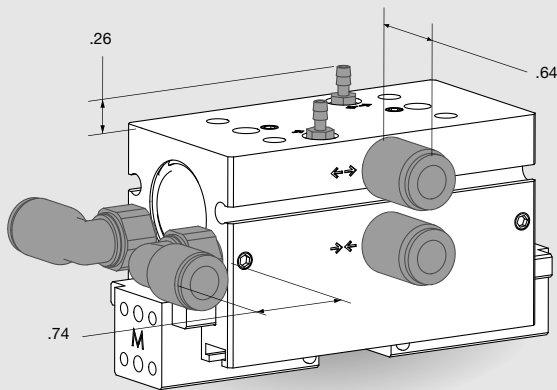
### Failsafe Valve

- Used in applications where it is critical that the part being gripped not be dropped if air pressure is lost
- Mounts directly to gripper
- M5 air port



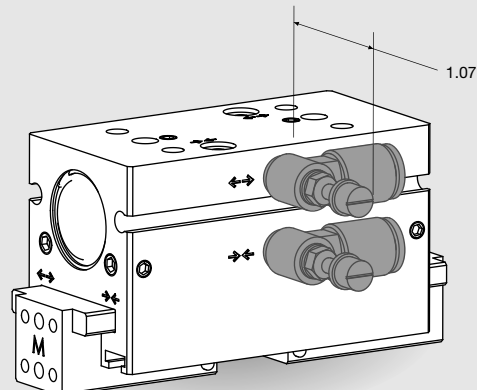
### Sensors

- Choose from magneto resistive and inductive prox
- Capable of sensing 4 positions open and closed on both jaws
- PNP and NPN available
- Magneto resistive sensors are slot mounted, no mounting kits required
- Threaded quick disconnect with built-in led output
- Sensors mount on either side of gripper



### Multiple Air Port Locations

- 3 standard air port locations (front and both sides)
- Optional top ports are tapped for M3 fittings
- Consult factory for plumbing fitting part numbers



### Flow Controls

- Thumb screw adjust with locking nut for adjusting actuation time
- Available for 5mm OD tubing

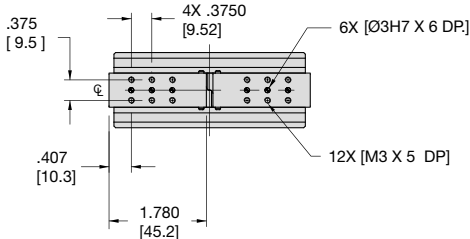
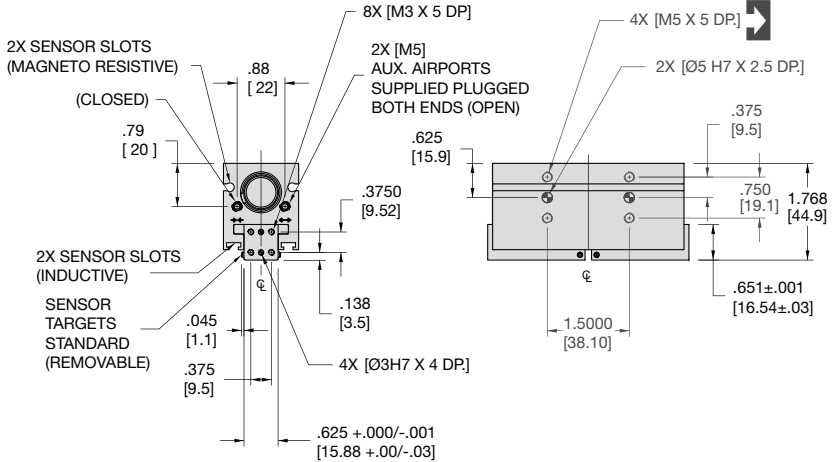
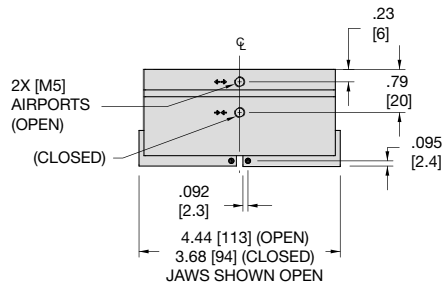
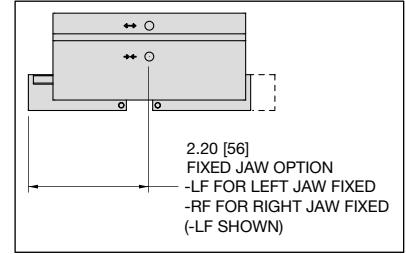
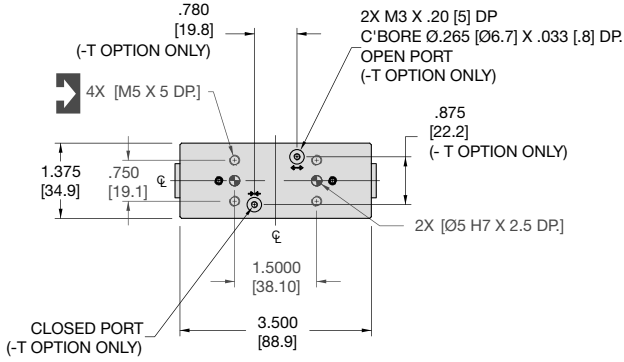
DIRECTCONNECT™



# PARALLEL GRIPPER DPG-10M-3 DIRECTCONNECT™ MODULAR SERIES

DPG SERIES

1.128



NOTE: DIRECTCONNECT™ DIMENSIONS ARE SHOWN IN BLUE

**UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW**

Dimensions are symmetrical about centerline	Third Angle Projection	All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or [±.013mm]
Metric Threads Course Pitch	<b>Imperial in.</b> 0.00 = ±.01 0.000 = ±.005 0.0000 = ±.0005	<b>Metric [mm]</b> [0.] = [±.25] [0.0] = [±.13] [0.00] = [±.013]

## How to Order: (Order Accessories separately from Basic Model)

**BASIC MODEL**    **SIZE**    **SPRING**    **TOP PORTING**

**DPG-10M** - **3** -  -  - **T** - **V**

**JAW SYNC**    **VITON® SEALS**

(See Below)

**SPRING DIRECTION**

**O** Spring Open  
**C** Spring Closed  
— Leave Blank. No Spring Option (standard)

**JAW SYNCHRONIZATION CONFIGURATION**

**LF** Left Jaw Fixed  
**RF** Right Jaw Fixed  
**NS** Non-Synchronous Jaws  
— Leave Blank for Synchronous (standard)

### SENSOR ACCESSORIES

	ORDER #	QTY/UNIT
Inductive Sensor Mounting Kit (Mounts 2 Sensors)	<b>OSMK-097</b>	<b>1 or 2</b>
NPN Inductive Sensor with Qk. Disconnect*	<b>OISN-019</b>	<b>1,2,3, or 4</b>
PNP Inductive Sensor with Qk. Disconnect*	<b>OISP-019</b>	<b>1,2,3, or 4</b>
NPN Magneto Resistive Sensor w/Qk. Disconnect*	<b>OHSN-017</b>	<b>1,2,3, or 4</b>
PNP Magneto Resistive Sensor w/Qk. Disconnect*	<b>OHSP-017</b>	<b>1,2,3, or 4</b>
NPN Magneto Resistive Sensor (90°) w/Qk. Disconnect*	<b>OHSN-011</b>	<b>1,2,3, or 4</b>
PNP Magneto Resistive Sensor (90°) w/Qk. Disconnect*	<b>OHSP-011</b>	<b>1,2,3, or 4</b>
Quick Disconnect Cable (2 meters long)*	<b>CABL-010</b>	<b>1,2,3, or 4</b>
Quick Disconnect Cable (5 meters long)*	<b>CABL-013</b>	<b>1,2,3, or 4</b>
Quick Disconnect Cable Extension Cord (1 meter long)*	<b>CABL-015</b>	<b>1,2,3, or 4</b>
Quick Disconnect Cable Extension Cord (2 meters long)*	<b>CABL-016</b>	<b>1,2,3, or 4</b>

### PNEUMATIC ACCESSORIES

	ORDER #	QTY/UNIT
Standard Seal Repair Kit	<b>SLKT-183</b>	<b>1</b>
Viton® Seal Repair Kit	<b>SLKT-183V</b>	<b>1</b>
-T Option Plumbing Fitting - M3 male to 3mm OD Tube Push-in Style	<b>PLFT-021</b>	<b>1 or 2</b>
-T Option Plumbing Fitting - M3 male to 2mm ID Tube Barb Style	<b>PLFT-022</b>	<b>1 or 2</b>
Fail Safe Valve - M5 (Metric)	<b>OFSV-004</b>	<b>1</b>
Adjustable Flow Control (Metric)	<b>VLVF-008</b>	<b>1 or 2</b>
Top Port Manifold Seal Kit	<b>SLKT-184V</b>	<b>1</b>

\*Sensor and cable sold separately

### SAMPLE ORDER: DPG-10M-3-C-RF-V

Ex: DPG-10M Gripper, Metric, Size 3, Spring Close, Right Jaw Fixed, Viton® Seals

Please see back cover for DE-STA-CO Global Locations. [www.destaco.com](http://www.destaco.com)

[www.comoso.com](http://www.comoso.com)

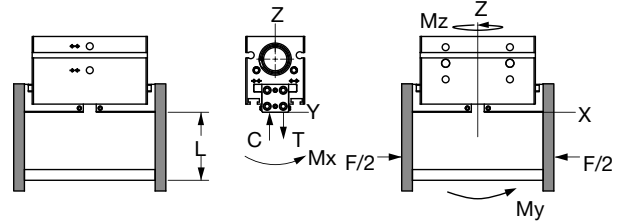
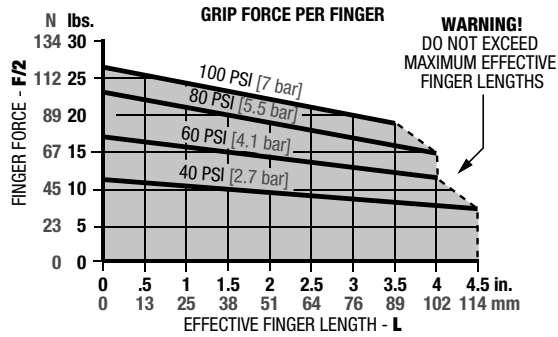
DIRECTCONNECT™



# PARALLEL GRIPPER DPG-10M-3 DIRECTCONNECT™ MODULAR SERIES

DPG SERIES

1.129



### Loading Capacity†

	Static	Dynamic
Maximum Tensile <b>T</b>	225 lbs. [1001 N]	30 lbs. [133 N]
Maximum Compressive <b>C</b>	450 lbs. [2002 N]	30 lbs. [133 N]
Maximum Moment <b>M<sub>x</sub></b>	200 in.-lbs. [23 Nm]	30 in.-lbs. [3 Nm]
Maximum Moment <b>M<sub>y</sub></b>	225 in.-lbs. [25 Nm]	40 in.-lbs. [5 Nm]
Maximum Moment <b>M<sub>z</sub></b>	200 in.-lbs. [23 Nm]	30 in.-lbs. [3 Nm]

†Capacities are per set of jaws and are not simultaneous

Total Additional Grip Force	Spring Open		Spring Close	
@ Full Open .....	6 lbs.	26 N	15 lbs.	66 N
@ Full Close .....	23 lbs.	102 N	6 lbs.	26 N

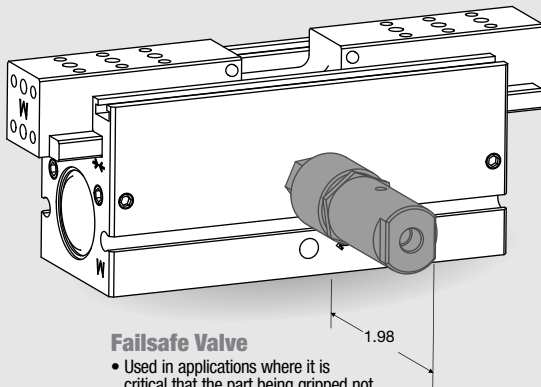
### Specifications DPG-10M-3

Total Rated Grip Force <b>F</b> @ 100 psi, 7 bar .....	50 lbs.	222 N
Stroke .....	0.75 in.	19.1 mm
Weight .....	0.68 lbs.	0.30 Kg
Pressure Range .....	40-100 psi	3-7 bar
Cylinder Bore $\varnothing$ .....	0.688 in.	17.5 mm
Displacement .....	0.230 in. <sup>3</sup>	3.8 cm <sup>3</sup>

### Specifications (cont.) DPG-10M-3

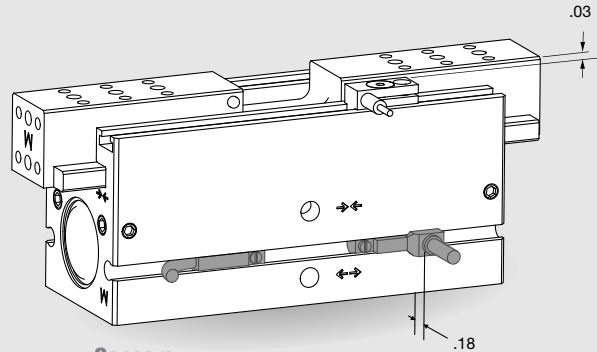
Temperature Range: Standard Seals .....	-30°~180° F	-35°~80° C
Viton® Seals .....	-20°~300° F	-30°~150° C
Actuation .....	0.29 sec.	0.29 sec.
Accuracy .....	±0.002 in.	±0.05 mm
Repeatability .....	±0.002 in.	±0.05 mm
Valve required to actuate .....	4-way, 2-position	

## Accessory Mounting Technical Data



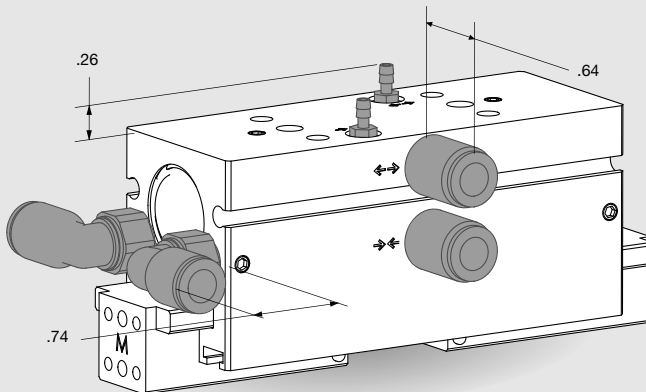
### Failsafe Valve

- Used in applications where it is critical that the part being gripped not be dropped if air pressure is lost
- Mounts directly to gripper
- M5 air port



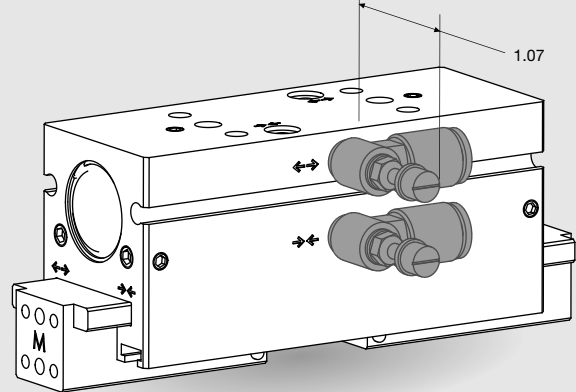
### Sensors

- Choose from magneto resistive and inductive prox
- Capable of sensing 4 positions open and closed on both jaws
- PNP and NPN available
- Magneto resistive sensors are slot mounted, no mounting kits required
- Threaded quick disconnect with built-in led output
- Sensors mount on either side of gripper



### Multiple Air Port Locations

- 3 standard air port locations (front and both sides)
- Optional top ports are tapped for M3 fittings
- Consult factory for plumbing fitting part numbers



### Flow Controls

- Thumb screw adjust with locking nut for adjusting actuation time
- Available for 5mm OD tubing

DIRECTCONNECT™

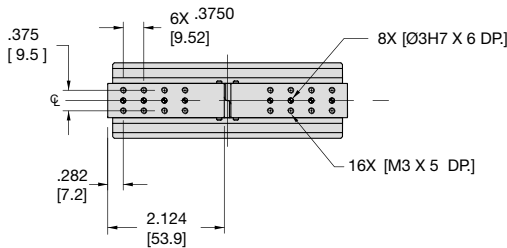
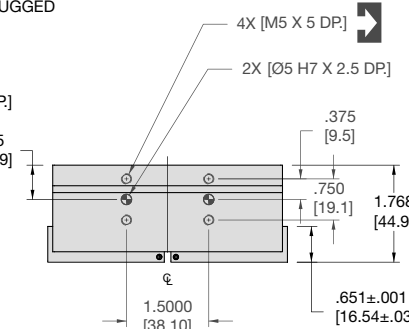
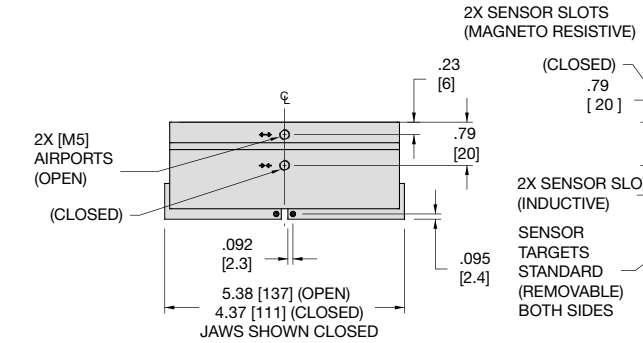
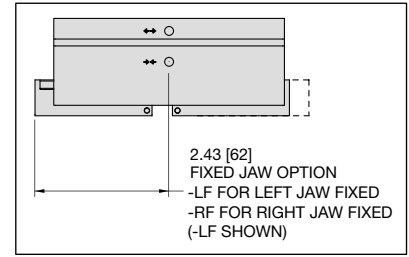
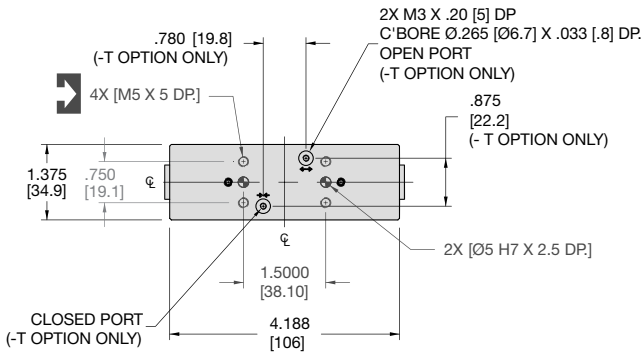




# PARALLEL GRIPPER DPG-10M-4 DIRECTCONNECT™ MODULAR SERIES

DPG SERIES

1.130



UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

Dimensions are symmetrical about centerline	Third Angle Projection	All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or [±.013mm]
Metric Threads Course Pitch	<b>Imperial in.</b> 0.00 = ±.01 0.000 = ±.005 0.0000 = ±.0005	<b>Metric [mm]</b> [0.] = [±.25] [0.0] = [±.13] [0.00] = [±.013]

NOTE: DIRECTCONNECT™ DIMENSIONS ARE SHOWN IN BLUE

## How to Order: (Order Accessories separately from Basic Model)

**BASIC MODEL**    **SIZE**    **SPRING**    **TOP PORTING**

**DPG-10M** - **4** - [ ] - [ ] - **T** - **V**

**JAW SYNC**    **VITON® SEALS**

[ ]    [ ]

**SPRING DIRECTION**

**O** Spring Open  
**C** Spring Closed  
— Leave Blank. No Spring Option (standard)

**JAW SYNCHRONIZATION CONFIGURATION**

**LF** Left Jaw Fixed  
**RF** Right Jaw Fixed  
**NS** Non-Synchronous Jaws  
— Leave Blank for Synchronous (standard)

### SENSOR ACCESSORIES

	ORDER #	QTY/UNIT
Inductive Sensor Mounting Kit (Mounts 2 Sensors)	<b>OSMK-097</b>	<b>1 or 2</b>
NPN Inductive Sensor with Qk. Disconnect*	<b>OISN-019</b>	<b>1,2,3, or 4</b>
PNP Inductive Sensor with Qk. Disconnect*	<b>OISP-019</b>	<b>1,2,3, or 4</b>
NPN Magneto Resistive Sensor w/Qk. Disconnect*	<b>OHSN-017</b>	<b>1,2,3, or 4</b>
PNP Magneto Resistive Sensor w/Qk. Disconnect*	<b>OHSP-017</b>	<b>1,2,3, or 4</b>
NPN Magneto Resistive Sensor (90°) w/Qk. Disconnect*	<b>OHSN-011</b>	<b>1,2,3, or 4</b>
PNP Magneto Resistive Sensor (90°) w/Qk. Disconnect*	<b>OHSP-011</b>	<b>1,2,3, or 4</b>
Quick Disconnect Cable (2 meters long)*	<b>CABL-010</b>	<b>1,2,3, or 4</b>
Quick Disconnect Cable (5 meters long)*	<b>CABL-013</b>	<b>1,2,3, or 4</b>
Quick Disconnect Cable Extension Cord (1 meter long)*	<b>CABL-015</b>	<b>1,2,3, or 4</b>
Quick Disconnect Cable Extension Cord (2 meters long)*	<b>CABL-016</b>	<b>1,2,3, or 4</b>

### PNEUMATIC ACCESSORIES

	ORDER #	QTY/UNIT
Standard Seal Repair Kit	<b>SLKT-183</b>	<b>1</b>
Viton® Seal Repair Kit	<b>SLKT-183V</b>	<b>1</b>
-T Option Plumbing Fitting - M3 male to 3mm OD Tube Push-in Style	<b>PLFT-021</b>	<b>1 or 2</b>
-T Option Plumbing Fitting - M3 male to 2mm ID Tube Barb Style	<b>PLFT-022</b>	<b>1 or 2</b>
Fail Safe Valve - M5 (Metric)	<b>OFSV-004</b>	<b>1</b>
Adjustable Flow Control (Metric)	<b>VLVF-008</b>	<b>1 or 2</b>
Top Port Manifold Seal Kit	<b>SLKT-184V</b>	<b>1</b>

\*Sensor and cable sold separately

### SAMPLE ORDER: DPG-10M-4-0-NS-V

Ex: DPG-10M Gripper, Metric, Size 4, Spring Open, Non-Synchronous Jaws, Viton® Seals

Please see back cover for DE-STA-CO Global Locations. [www.destaco.com](http://www.destaco.com)

[www.comoso.com](http://www.comoso.com)

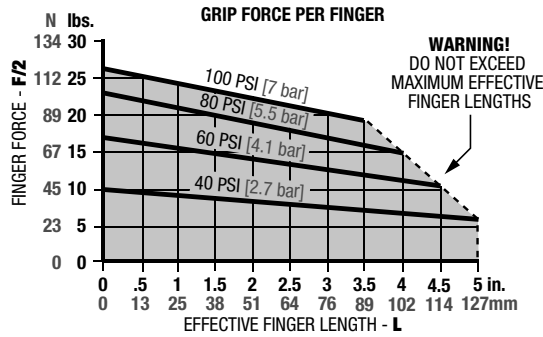
DIRECTCONNECT™



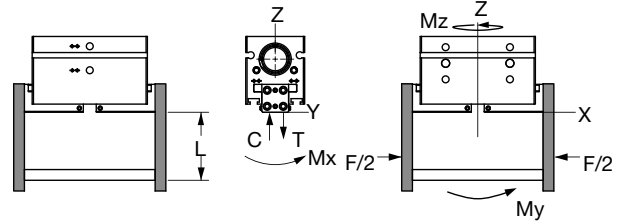
# PARALLEL GRIPPER DPG-10M-4 DIRECTCONNECT™ MODULAR SERIES

DPG SERIES

1.131



Total Additional Grip Force	Spring Open		Spring Close	
@ Full Open .....	6 lbs.	26 N	15 lbs.	66 N
@ Full Close .....	22 lbs.	97 N	6 lbs.	26 N



### Loading Capacity†

	Static	Dynamic
Maximum Tensile <b>T</b>	250 lbs. [1112 N]	35 lbs. [156 N]
Maximum Compressive <b>C</b>	475 lbs. [2113 N]	35 lbs. [156 N]
Maximum Moment <b>M<sub>x</sub></b>	225 in.-lbs. [25 Nm]	35 in.-lbs. [4 Nm]
Maximum Moment <b>M<sub>y</sub></b>	250 in.-lbs. [28 Nm]	45 in.-lbs. [5 Nm]
Maximum Moment <b>M<sub>z</sub></b>	225 in.-lbs. [25 Nm]	35 in.-lbs. [4 Nm]

†Capacities are per set of jaws and are not simultaneous

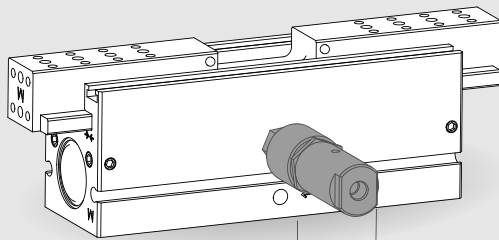
### Specifications DPG-10M-4

Total Rated Grip Force <b>F</b> @ 100 psi, 7 bar .....	50 lbs.	222 N
Stroke .....	1.00 in.	25.4 mm
Weight .....	0.81 lbs.	0.36 Kg
Pressure Range .....	40-100 psi	3-7 bar
Cylinder Bore $\varnothing$ .....	0.688 in.	17.5 mm
Displacement .....	0.306 in <sup>3</sup>	5.0 cm <sup>3</sup>

### Specifications DPG-10M-4

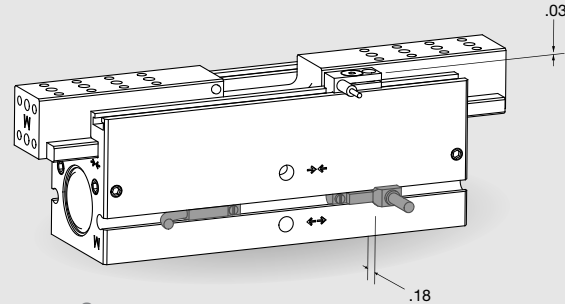
Temperature Range: Standard Seals .....	-30°~180° F	-35°~80° C
	Viton® Seals .....	-20°~300° F
Actuation .....	0.40 sec.	0.40 sec.
Accuracy .....	±0.002 in.	±0.05 mm
Repeatability .....	±0.002 in.	±0.05 mm
Valve required to actuate .....	4-way, 2-position	

## Accessory Mounting Technical Data



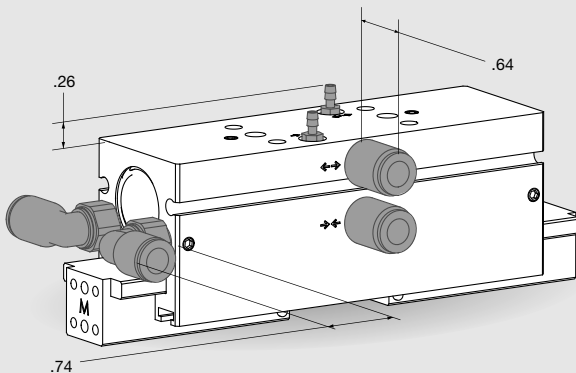
### Failsafe Valve

- Used in applications where it is critical that the part being gripped not be dropped if air pressure is lost
- Mounts directly to gripper
- M5 air port



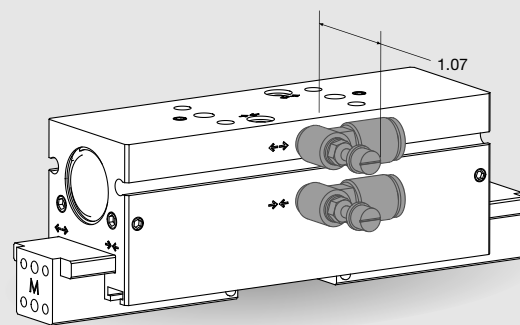
### Sensors

- Choose from magneto resistive and inductive prox
- Capable of sensing 4 positions open and closed on both jaws
- PNP and NPN available
- Magneto resistive sensors are slot mounted, no mounting kits required
- Threaded quick disconnect with built-in led output
- Sensors mount on either side of gripper



### Multiple Air Port Locations

- 3 standard air port locations (front and both sides)
- Optional top ports are tapped for M3 fittings
- Consult factory for plumbing fitting part numbers

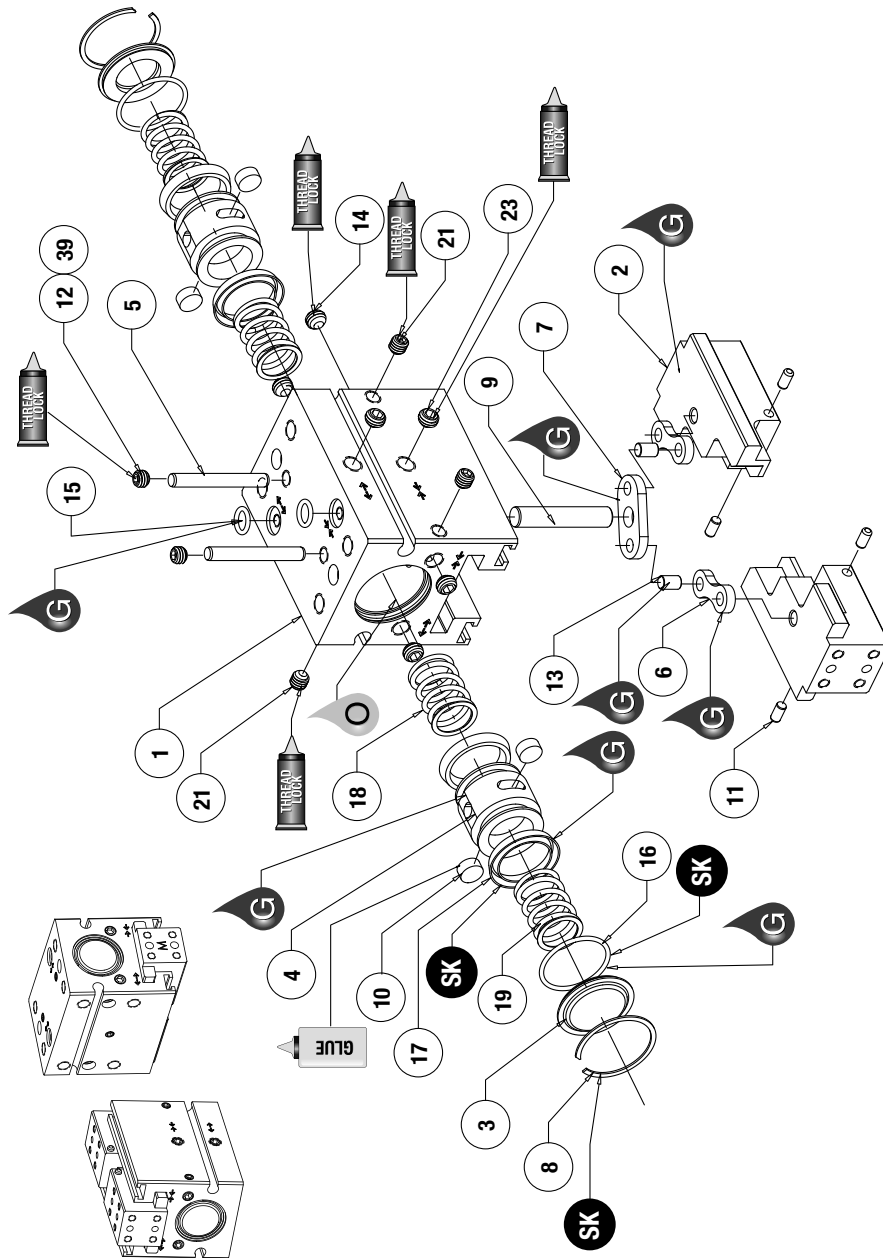


### Flow Controls

- Thumb screw adjust with locking nut for adjusting actuation time
- Available for 5mm OD tubing

DIRECTCONNECT™

# DPG SERIES EXPLODED VIEW



Item	Qty	Name
01	1	Body
02	2	Jaw
03	2	Cap
04	2	Piston
05	2	Drive Pin
06	2	Synchronizing Bar
07	1	Equalizer
08	2	Retaining Ring
09	1	Pivot Pin
10	4	Magnet
11	4	Targets for Inductive Sensors
12	2	Set Screw - Drive Pin Access Plug
13	2	Equalizer/Synchronizing Bar pivot pin
14	4	Set Screw - End Port Plugs
15	2	O-ring - Top Porting Manifold Seals (-T option)
16	2	O-ring - Cap Seals
17	4	U-cup - Piston Seals
18	2	Springs for "-O" Spring-Open Option
19	2	Springs for "-C" Spring-Closed Option
21	3	Set Screw - Internal Porting Plugs
23	2	Set Screw - Side Porting Plugs (-T option)
39	1	Set Screw - Plug (-LF and -RF options only)

**NOTE:** Contact the Robohand Sales Department for a complete spare parts list with order numbers and prices.

**SK Seal Repair Kit Order #'s See Product Data Sheets**

### Assembly Procedure

- 1) Lubricate body.
- 2) Plug cross ports in body.
- 3) Press pivot pin into body.
- 4) Insert magnets into pistons making sure magnets attract to each other.
- 5) Lubricate and install seals onto pistons.
- 6) Insert pistons into body aligning drive pin hole in pistons with the drive pin hole in the body.
- 7) Press pins into equalizer.
- 8) Assemble equalizer with synchronizing bars and place onto pivot pin in body

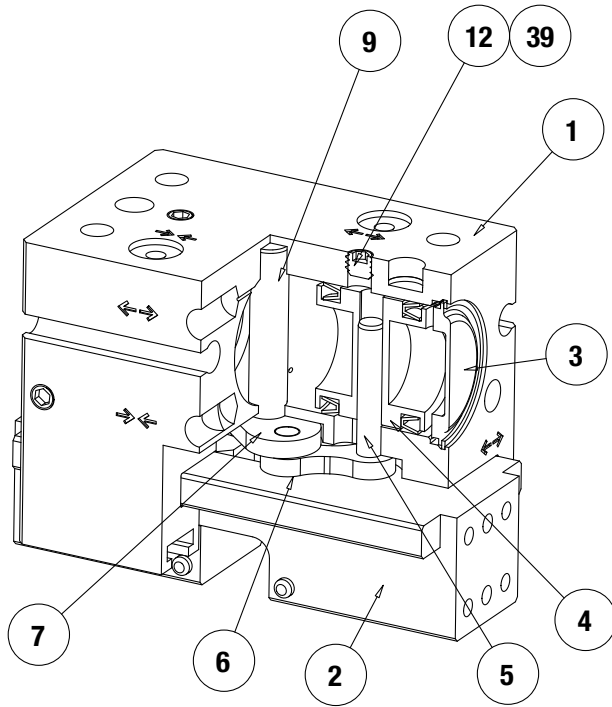
making sure holes in synchronizing bars line up with holes in pistons.

- 9) From top body mounting surface insert drive pins through the pistons and into the synchronizing bars making sure not to go through the synchronizing bars.
- 10) Place jaws into body aligning the drive pins with the hole in the jaws.
- 11) Press drive pins into jaws.
- 12) Install drive pin plugs into body.
- 13) Place seals onto caps and install with retaining rings.

### Non-Synchronous Procedure

- 1) Remove drive pin plugs.
- 2) Press drive pins out of body from jaw side.
- 3) Remove jaws from body.
- 4) Remove equalizer and synchronizing bars from body.
- 5) Re-install jaws into body aligning the drive pin with the hole in the jaws
- 6) Press drive pins into jaws.
- 7) Re-install drive pin plugs into body.

Seal Kit Items	Thread Locker	Krytox™ Lubricant	Lightweight Machine Oil	Teflon™ Based Grease	Super Bonder	Third Angle Projection



Item	Qty	Name
01	1	Body
02	2	Jaw
03	2	Cap
04	2	Piston
05	2	Drive Pin
06	2	Synchronizing Bar
07	1	Equalizer
09	1	Pivot Pin
12	2	Set Screw - Drive Pin Access Plug
39	1	Set Screw - Plug (-LF and -RF options only)

**NOTE:** Contact the Robohand Sales Department for a complete spare parts list with order numbers and prices.

## Accessory Installation & Adjustment Instructions

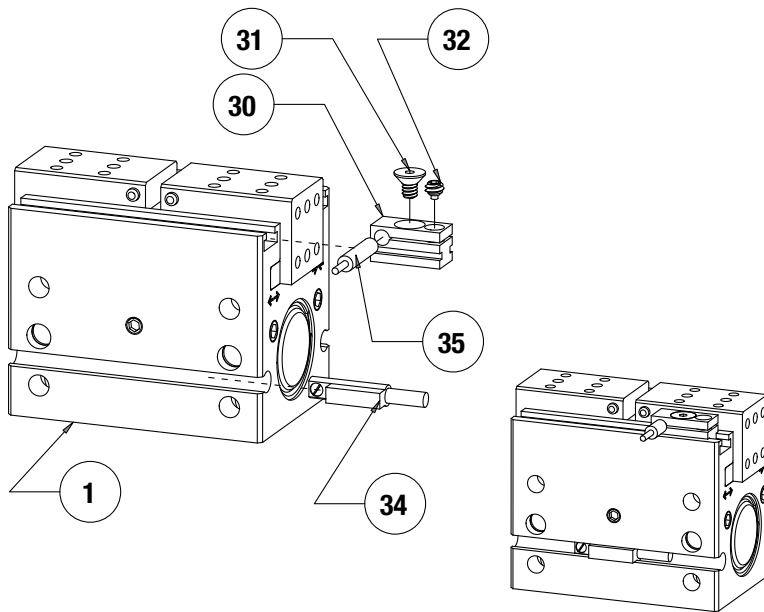
### Installation:

#### Magneto Resistive Sensors

- 1) Install sensors in profile slots of gripper body as shown.
- 2) Set sensors with integrated screw.

#### Inductive Sensors

- 1) Insert sensor bracket into slot of body.
- 2) Insert sensor into bracket and adjust sensor depth so that sensor light indicates on target.
- 3) Tighten sensor locking screw (#31) to hold sensor depth.
- 4) Position sensor bracket for desired stroke detection.
- 5) Tighten sensor bracket with setscrew (#32) to lock stroke detection position.



Seal Kit  
Items



Thread  
Locker



Krytox™  
Lubricant



Lightweight  
Machine Oil



Teflon™ Based  
Grease



Super  
Bonder



Third Angle  
Projection

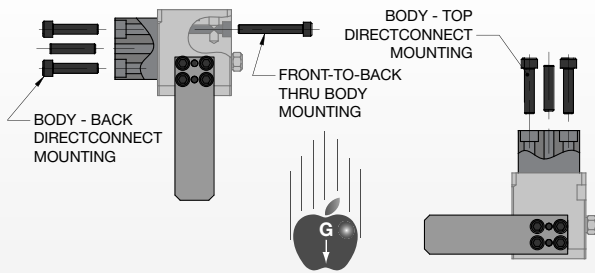
# Parallel Grippers - DPDS DIRECTCONNECT™ Modular Series

**NO ADAPTER PLATES!**

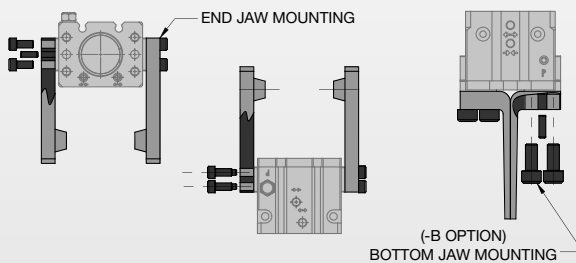
- **Multiple mounting locations:** DIRECTCONNECT™ tapped and dowel mounting on top and back of body.
- **Thru-body mounting:** Front-to-back thru-body mounting.
- **Multiple air port positions:** Tapped air ports on front, top, and back sides are standard.
- **Front purge/scavenge port:** Negative pressure used as a scavenge port for clean room applications. Positive pressure used as a purge port to repel contaminants in harsh environments. Port can also be used for lubrication.
- **Manifold air porting:** Top and back air ports can be manifold o-ring sealed.
- **Sensing:** Full range adjustable magneto resistive sensors.
- **Different strokes:** All gripper sizes are available in 3 different strokes.
- **Multiple jaw styles:** All sizes available with end mounts jaws as standard or bottom mount jaws as an option.
- **Long finger applications:** Rigid design and full body support of jaws allows for longer finger lengths.

## Mounting Information:

Grippers can be mounted & operated in any orientation



Body mounts with screws and locates with slip fit dowel pins for accuracy



Fingers attach with screws and locate on jaws by keying and/or dowel pins. Fingers can be mounted in any orientation with respect to the jaw.

## Technical Specifications:

**Pneumatic Specifications**  
 Pressure Operating Range  
 Cylinder Type  
 Dynamic Seals  
 Valve Required to Operate

<b>Imperial</b>	<b>Metric</b>
20-100 psi	1.5-7 bar
<b>Double Acting</b>	
<b>Internally Lubricated Buna-N</b>	
<b>4-way, 2-position</b>	

**Air Quality Requirements**  
 Air Filtration  
 Air Lubrication  
 Air Humidity

**40 Micron or Better**  
**Not Necessary\***  
**Low Moisture Content (dry)**

**Temperature Operating Range**

Buna-N Seals (standard)	-30°~180° F	-35°~80° C
Viton® Seals (optional)	-20°~300° F	-30°~150° C

**Maintenance Specifications†**

Expected Life	
Normal Application w/ Preventative Maintenance	<b>5 million cycles</b>
Field Repairable	<b>10+ million cycles*</b>
Seal Repair Kits Available	<b>Yes</b>
	<b>Yes</b>

**Application Restrictions**

Applications where mechanism lubricant could cause contamination (use DPDL gripper with -E sealed jaw option)

\*Addition of lubrication will greatly increase service life  
 †See Maintenance Section

DIRECTCONNECT™



## Product Features

**Hard Coat Anodize**  
The body and bottom plate have hard-coat anodize 60RC with Teflon® impregnation

**High Temperature**  
Optional Viton® seals are available for high temperature applications

**Multiple Air Port Locations**  
3 standard air port locations (front, back, & top)

**Sensor Mounting Slots**  
Standard mounting slots for magneto resistive (sensors sold separately)

**One Piece Body**  
One piece lightweight aircraft quality aluminum body

**Manifold Air Ports**  
Back & top air ports can be O-ring manifold sealed to eliminate air lines

**Dowel Holes**  
Slip fit dowel pin holes in body and jaws

**DIRECTCONNECT™ Mounting Patterns**  
DIRECTCONNECT™ tapped & dowel mounting surfaces on top and back of body

**Extremely Rugged Design**  
Jaws are supported throughout the length of the body

**Thru-Body Mounting**  
Front-to-back thru C'bores for socket head cap screw mounting

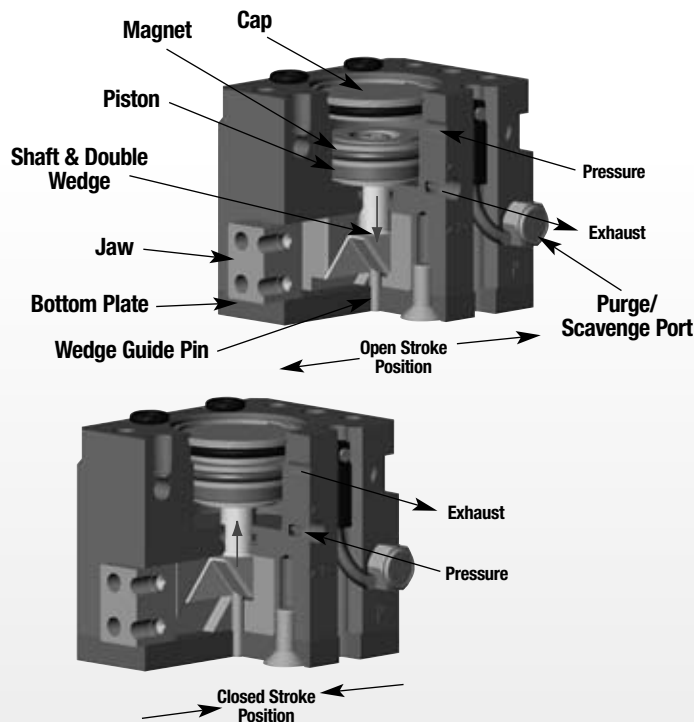
**Bottom Jaw Mounting (-B) Option**  
For alternate finger mounting (standard side mount jaws shown)

**Corrosion Resistant Hardware (-S) or Clean Room (-CR) Options**  
Both options have stainless and brass hardware. Clean room option uses clean room grade greases

**Purge/Scavenge Port**  
Used with a vacuum for clean room environments or positive pressure with harsh environments

**Jaw Components**  
Hardened and precision ground steel for minimum jaw play with hard plating for wear resistance and long life

## Operating Principle



- A double acting piston is connected by a shaft to a double-sided wedge.
- The wedge slides in a slot located in each of the jaws converting vertical motion of the wedge into horizontal synchronous motion of the jaws.
- The large surface area of the wedge minimizes friction wear.
- This gripper is suitable for internal or external gripping and can be mounted in any orientation.

**U.S. Patent # 5,125,708**  
**Designed and manufactured in the USA**

## Style -DPDS Parallel Gripper

### Size -047M

Style: DPDS-047M  
Stroke: 0.13 in. 3.2 mm  
Grip Force: 14 lbs. 62 N  
Weight: 0.086 lbs. 0.04 Kg



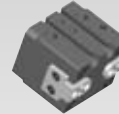
-B Bottom Jaw Mount Shown

See Page **1.136**

## Style -DPDS Parallel Gripper

### Size -056M

Style: DPDS-056M  
Stroke: 0.19 in. 4.8 mm  
Grip Force: 22 lbs. 98 N  
Weight: 0.155 lbs. 0.07 Kg



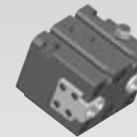
-B Bottom Jaw Mount Shown

See Page **1.138**

## Style -DPDS Parallel Gripper

### Size -088M

Style: DPDS-088M  
Stroke: 0.25 in. 6.4 mm  
Grip Force: 50 lbs. 222 N  
Weight: 0.51 lbs. 0.23 Kg



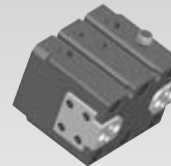
-B Bottom Jaw Mount Shown

See Page **1.140**

## Style -DPDS Parallel Gripper

### Size -125M

Style: DPDS-125M  
Stroke: 0.38 in. 9.5 mm  
Grip Force: 100 lbs. 445 N  
Weight: 1.03 lbs. 0.46 Kg



-B Bottom Jaw Mount Shown

See Page **1.142**



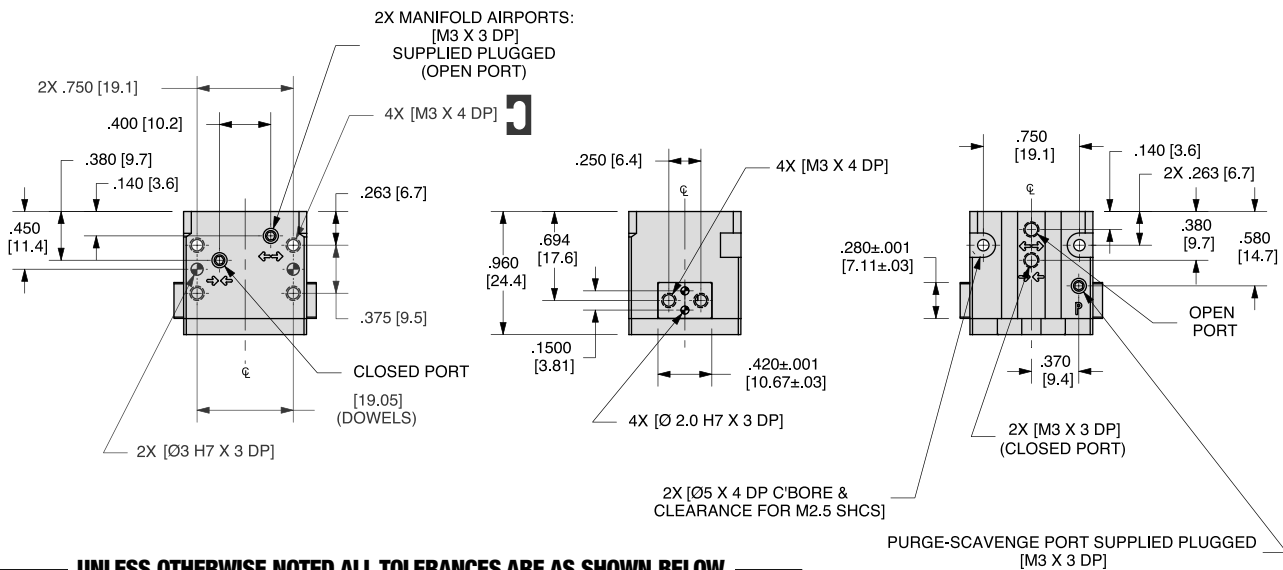
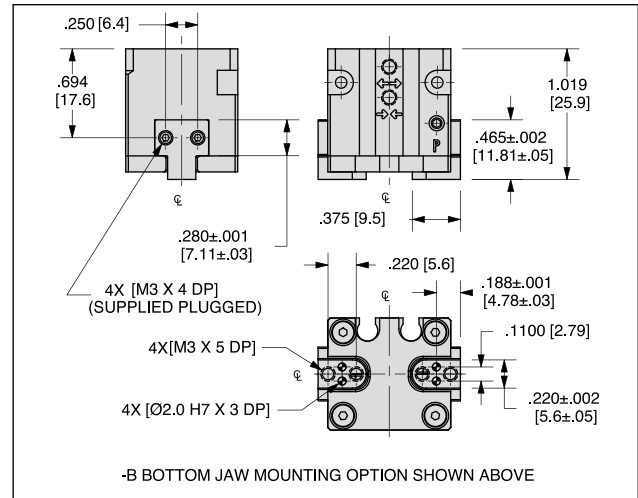
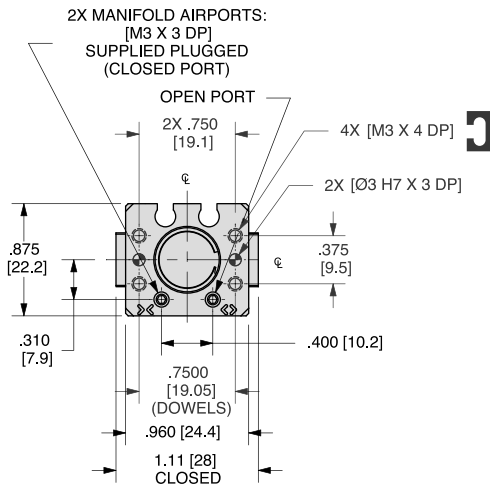




# PARALLEL GRIPPER DPDS-047M DIRECTCONNECT™ MODULAR SERIES

DPDS SERIES

1.136



UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

				<b>Imperial in.</b>	<b>Metric [mm]</b>
Dimensions are symmetrical about centerline	Third Angle Projection	All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or ±.013mm	Metric Threads Course Pitch	0.00 = ±.01 0.000 = ±.005 0.0000 = ±.0005	[0.] = [±.25] [0.0] = [±.13] [0.00] = [±.013]

NOTE: DIRECTCONNECT™ DIMENSIONS ARE SHOWN IN BLUE

## How to Order: (Order Accessories separately from Basic Model)

**BASIC MODEL**      **STROKE**      **HARDWARE**

**DPDS-047M** -  - **B** -  - **V**

**JAW MOUNTING**      **VITON® SEALS**

<b>STROKE</b>	<b>013</b>	.13" [3.2mm]
	<b>009</b>	.09" [2.4mm]
	<b>006</b>	.06" [1.6mm]
<b>JAW MOUNTING</b>	<b>B</b>	Bottom jaw mounting
	—	Leave blank for end jaw mounting (standard)
<b>HARDWARE</b>	<b>S</b>	Corrosion resistant
	<b>CR</b>	Corrosion resistant assembled with clean room grade grease
	—	Leave blank for alloy hardware (standard)
<b>VITON®</b>	<b>V</b>	High Temperature Viton® Seals

### SENSOR ACCESSORIES

	ORDER #	QTY/UNIT
PNP Magneto Resistive Sensor with Quick Disconnect*	<b>OHSP-017</b>	<b>1 or 2</b>
NPN Magneto Resistive Sensor with Quick Disconnect*	<b>OHSN-017</b>	<b>1 or 2</b>
PNP Magneto Resistive Sensor (90° barrel) w/Qk. Disconnect*	<b>OHSP-011</b>	<b>1 or 2</b>
NPN Magneto Resistive Sensor (90° barrel) w/Qk. Disconnect*	<b>OHSN-011</b>	<b>1 or 2</b>
Quick Disconnect Cable (2 meters long)*	<b>CABL-010</b>	<b>1 or 2</b>
Quick Disconnect Cable (5 meters long)*	<b>CABL-013</b>	<b>1 or 2</b>

### PNEUMATIC ACCESSORIES

	ORDER #	QTY/UNIT
Standard Seal Repair Kit	<b>SLKT-185</b>	<b>1</b>
Viton® Seal Repair Kit	<b>SLKT-185V</b>	<b>1</b>
Manifold Seal Kit (Viton®)	<b>SLKT-197V</b>	<b>1</b>
Plumbing Fitting - M3 male to 3mm OD Tube Push-in Style	<b>PLFT-021</b>	<b>1 or 2</b>
Plumbing Fitting - M3 male to 2mm ID Tube Barb Style	<b>PLFT-022</b>	<b>1 or 2</b>

\*Sensor and cable sold separately

### SAMPLE ORDER: DPDS-047M-006-B-CR-V

Ex: DPDS-047M Gripper, Metric, 1.6mm Stroke, Bottom Jaw Mounting, Corrosion Resistant Hardware with Clean Room Grade Grease, Viton® Seals

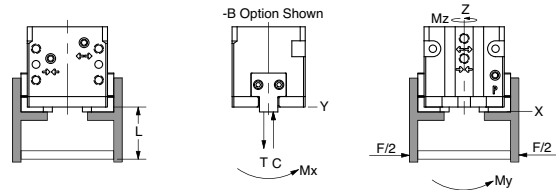
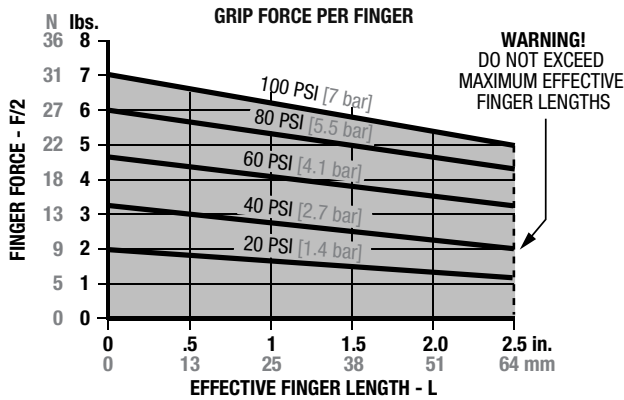
Please see back cover for DE-STA-CO Global Locations. [www.destaco.com](http://www.destaco.com)

[www.comoso.com](http://www.comoso.com)

DIRECTCONNECT™



## Loading Information



### Loading Capacity†

	Static	Dynamic
<b>DPDS-047M</b>		
Maximum Tensile <b>T</b>	30 lbs. [134 N]	6 lbs. [27 N]
Maximum Compressive <b>C</b>	50 lbs. [223 N]	10 lbs. [45 N]
Maximum Moment <b>M<sub>x</sub></b>	20 in.-lbs. [2 Nm]	5 in.-lbs. [0.6 Nm]
Maximum Moment <b>M<sub>y</sub></b>	20 in.-lbs. [2 Nm]	5 in.-lbs. [0.6 Nm]
Maximum Moment <b>M<sub>z</sub></b>	20 in.-lbs. [2 Nm]	5 in.-lbs. [0.6 Nm]

### DPDS-047M-B (Bottom Jaw Mounting Option)

Maximum Tensile <b>T</b>	24 lbs. [107 N]	5 lbs. [22 N]
Maximum Compressive <b>C</b>	40 lbs. [178 N]	8 lbs. [36 N]
Maximum Moment <b>M<sub>x</sub></b>	16 in.-lbs. [2 Nm]	4 in.-lbs. [0.5 Nm]
Maximum Moment <b>M<sub>y</sub></b>	16 in.-lbs. [2 Nm]	4 in.-lbs. [0.5 Nm]
Maximum Moment <b>M<sub>z</sub></b>	16 in.-lbs. [2 Nm]	4 in.-lbs. [0.5 Nm]

†Capacities are per set of jaws and are not simultaneous

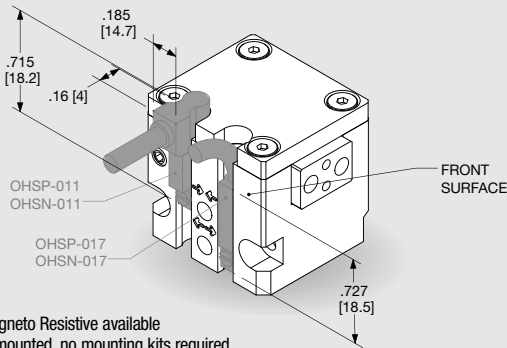
### Specifications DPDS-047M

Total Rated Grip Force <b>F</b> @ 100 psi, 7 bar	14 lbs. — 62 N
Maximum Stroke	0.13 in. — 3.2 mm
Maximum Operating Pressure Range	20-100 psi 1.5-7 bar
Maximum Vacuum for Scavenge Port	8 in. Hg 200 mm Hg
Maximum Pressure for Purge Port	20 psi 1.4 bar
Cylinder Bore $\varnothing$	0.469 in. 11.9 mm
Displacement	0.013 in <sup>3</sup> 0.2 cm <sup>3</sup>

### Specifications (cont.) DPDS-047M

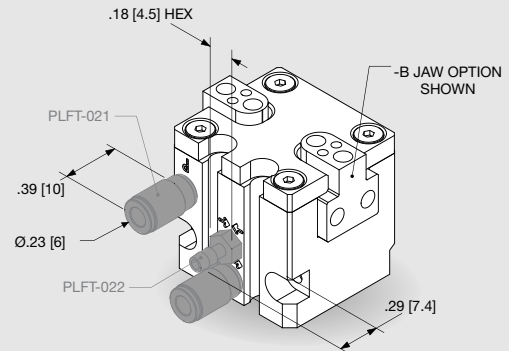
Weight	0.086 lbs.	0.04 Kg
Temperature Range: Standard Seals	-30°~180° F	-35°~80° C
Viton® Seals	-20°~300° F	-30°~150° C
Actuation	0.13 sec.	0.13 sec.
Accuracy	±0.002 in.	±0.05 mm
Repeatability	±0.001 in.	±0.03 mm
Valve Required to Actuate	4-way, 2-position	

## Accessory Mounting Technical Data



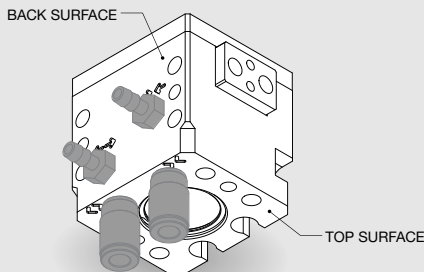
### Sensors

- PNP and NPN Magneto Resistive available
- Sensors are slot mounted, no mounting kits required
- Simple adjustment with slotted screw driver
- Built in LED for ease of positioning and troubleshooting
- Low profile underflush sensor version or 90° wire exit sensor version
- Available with 2M or 5M Quick Disconnect mating cable (order separately)



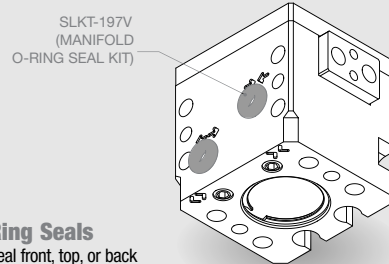
### Plumbing Fittings

- M3 fitting for 2mm I.D. tube (PLFT-022 straight barbed style)
- M3 fitting for 3mm O.D. tube (PLFT-021 straight tube push-in style)
- M3 fittings can be used in any airport including the front purge/scavenge port



### Multiple Air Port Locations

- 3 standard M3 air port locations (front, top, and back surface)
- Top and Back air ports are plugged as standard



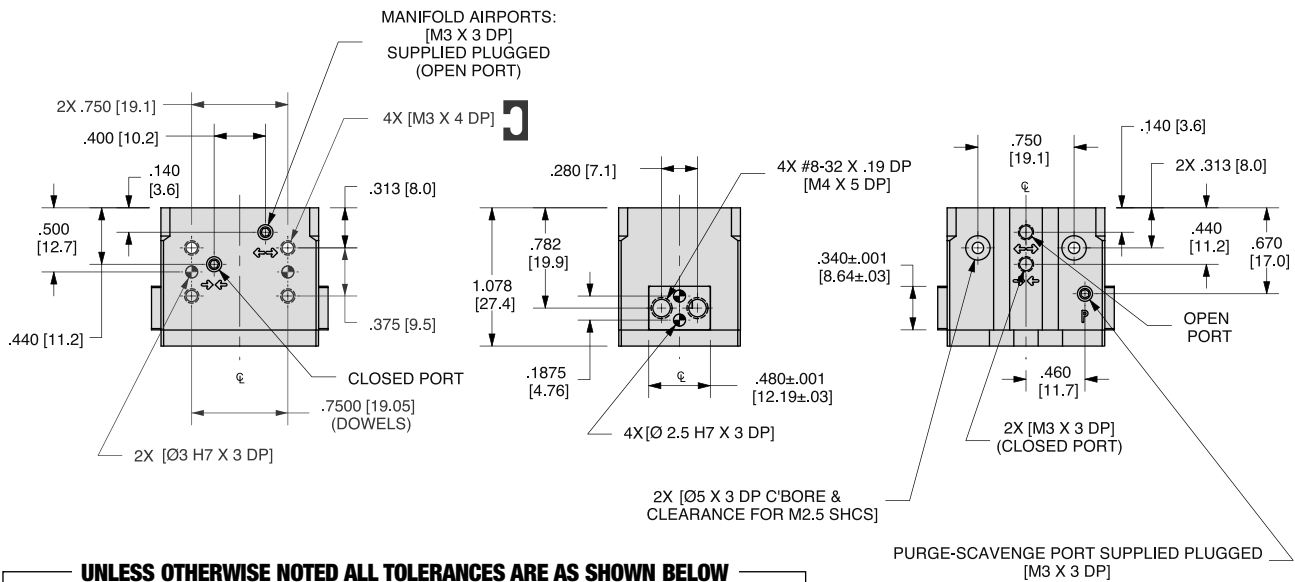
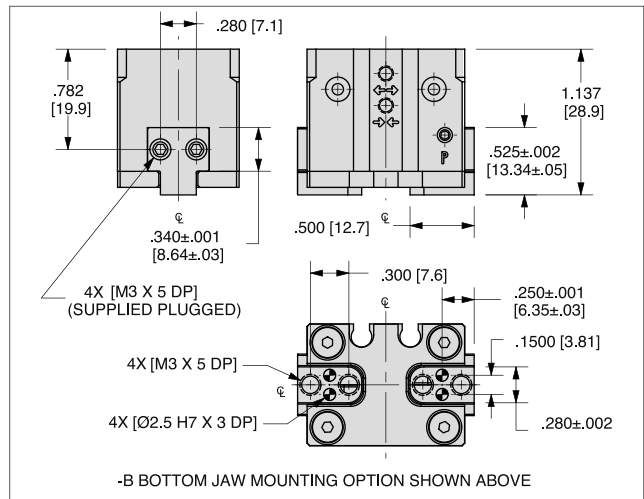
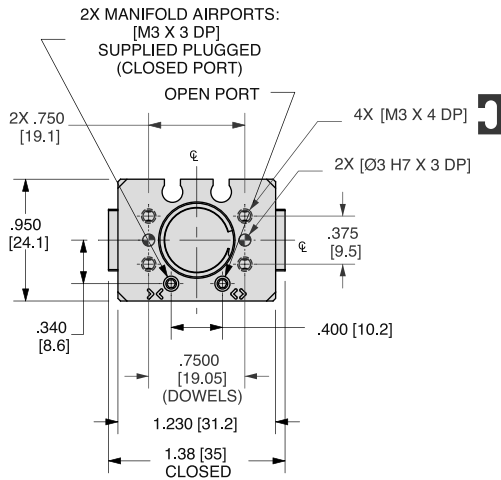
### Manifold O-Ring Seals

- Can be used to seal front, top, or back air ports and front purge/scavenge port
- Seals in Manifold kit are Viton®
- O-Ring C'bores in customer's mounting plate must be:  $\varnothing.215 [5.5] \times .060 \pm .002 [1.52 \pm .05]$  deep
- Kit is supplied with all seals, plugs, & wrenches needed

# PARALLEL GRIPPER DPDS-056M DIRECTCONNECT™ MODULAR SERIES

DPDS SERIES

1.138



UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

				<b>Imperial in.</b>	<b>Metric [mm]</b>
Dimensions are symmetrical about centerline	Third Angle Projection	All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or ±.013mm	Metric Threads Course Pitch	0.00 = ±.01 0.000 = ±.005 0.0000 = ±.0005	[0.] = [±.25] [0.0] = [±.13] [0.00] = [±.013]

NOTE: DIRECTCONNECT™ DIMENSIONS ARE SHOWN IN BLUE

## How to Order: (Order Accessories separately from Basic Model)

**BASIC MODEL**      **STROKE**      **HARDWARE**

**DPDS-056M** - [ ] - **B** - [ ] - **V**

**JAW MOUNTING**      **VITON® SEALS**

<b>STROKE</b>	<b>019</b>	.19" [4.8mm]
	<b>013</b>	.13" [3.2mm]
	<b>009</b>	.09" [2.4mm]
<b>JAW MOUNTING</b>	<b>B</b>	Bottom jaw mounting Leave blank for end jaw mounting (standard)
<b>HARDWARE</b>	<b>S</b>	Corrosion resistant
	<b>CR</b>	Corrosion resistant assembled with clean room grade grease Leave blank for alloy hardware (standard)
<b>VITON®</b>	<b>V</b>	High Temperature Viton® Seals

### SENSOR ACCESSORIES

	ORDER #	QTY/UNIT
PNP Magneto Resistive Sensor with Quick Disconnect*	<b>OHSP-017</b>	<b>1 or 2</b>
NPN Magneto Resistive Sensor with Quick Disconnect*	<b>OHSN-017</b>	<b>1 or 2</b>
PNP Magneto Resistive Sensor (90° barrel) w/Qk. Disconnect*	<b>OHSP-011</b>	<b>1 or 2</b>
NPN Magneto Resistive Sensor (90° barrel) w/Qk. Disconnect*	<b>OHSN-011</b>	<b>1 or 2</b>
Quick Disconnect Cable (2 meters long)*	<b>CABL-010</b>	<b>1 or 2</b>
Quick Disconnect Cable (5 meters long)*	<b>CABL-013</b>	<b>1 or 2</b>

### PNEUMATIC ACCESSORIES

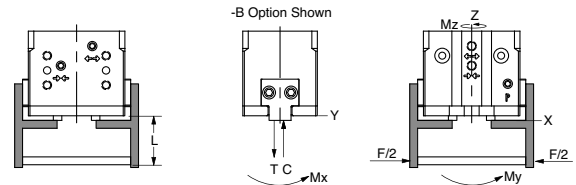
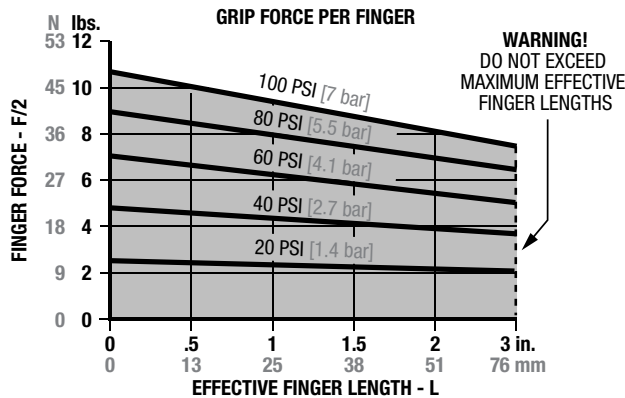
	ORDER #	QTY/UNIT
Standard Seal Repair Kit	<b>SLKT-186</b>	<b>1</b>
Viton® Seal Repair Kit	<b>SLKT-186V</b>	<b>1</b>
Manifold Seal Kit (Viton®)	<b>SLKT-197V</b>	<b>1</b>
Plumbing Fitting - M3 male to 3mm OD Tube Push-in Style	<b>PLFT-021</b>	<b>1 or 2</b>
Plumbing Fitting - M3 male to 2mm ID Tube Barb Style	<b>PLFT-022</b>	<b>1 or 2</b>

\*Sensor and cable sold separately

### SAMPLE ORDER: DPDS-056M-009-B-CR-V

Ex: DPDS-056M Gripper, Metric, 2.4mm Stroke, Bottom Jaw Mounting, Corrosion Resistant Hardware with Clean Room Grade Grease, Viton® Seals

DIRECTCONNECT™



### Loading Capacity†

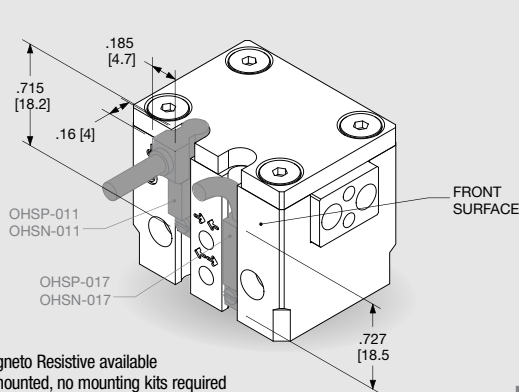
	Static	Dynamic
<b>DPDS-056M</b>		
Maximum Tensile <b>T</b>	60 lbs. [267 N]	10 lbs. [45 N]
Maximum Compressive <b>C</b>	90 lbs. [401 N]	15 lbs. [67 N]
Maximum Moment <b>M<sub>x</sub></b>	40 in.-lbs. [5 Nm]	7 in.-lbs. [0.8 Nm]
Maximum Moment <b>M<sub>y</sub></b>	40 in.-lbs. [5 Nm]	7 in.-lbs. [0.8 Nm]
Maximum Moment <b>M<sub>z</sub></b>	40 in.-lbs. [5 Nm]	7 in.-lbs. [0.8 Nm]
<b>DPDS-056M-B (Bottom Jaw Mounting Option)</b>		
Maximum Tensile <b>T</b>	48 lbs. [214 N]	8 lbs. [36 N]
Maximum Compressive <b>C</b>	72 lbs. [320 N]	12 lbs. [53 N]
Maximum Moment <b>M<sub>x</sub></b>	32 in.-lbs. [4 Nm]	6 in.-lbs. [1 Nm]
Maximum Moment <b>M<sub>y</sub></b>	32 in.-lbs. [4 Nm]	6 in.-lbs. [1 Nm]
Maximum Moment <b>M<sub>z</sub></b>	32 in.-lbs. [4 Nm]	6 in.-lbs. [1 Nm]

†Capacities are per set of jaws and are not simultaneous

Specifications	DPDS-056M	
Total Rated Grip Force <b>F</b> @ 100 psi, 7 bar	22 lbs.	98 N
Maximum Stroke	0.19 in.	4.8 mm
Maximum Operating Pressure Range	20-100 psi	1.5-7 bar
Maximum Vacuum for Scavenge Port	8 in. Hg	200 mm Hg
Maximum Pressure for Purge Port	20 psi	1.4 bar
Cylinder Bore $\varnothing$	0.563 in.	14.3 mm
Displacement	0.028 in. <sup>3</sup>	0.5 cm <sup>3</sup>

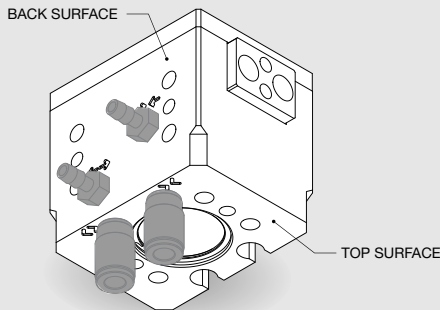
Specifications (cont.)	DPDS-056M	
Weight	0.155 lbs.	0.07 Kg
Temperature Range: Standard Seals	-30°~180° F	-35°~80° C
Viton® Seals	-20°~300° F	-30°~150° C
Actuation	0.16 sec.	0.16 sec.
Accuracy	±0.002 in.	±0.05 mm
Repeatability	±0.001 in.	±0.03 mm
Valve Required to Actuate	4-way, 2-position	

## Accessory Mounting Technical Data



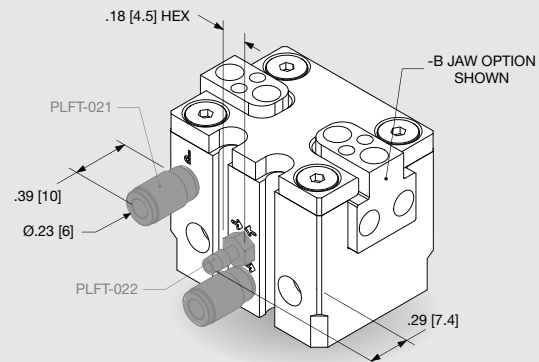
### Sensors

- PNP and NPN Magneto Resistive available
- Sensors are slot mounted, no mounting kits required
- Simple adjustment with slotted screw driver
- Built in LED for ease of positioning and troubleshooting
- Low profile underflush sensor version or 90° wire exit sensor version
- Available with 2M or 5M Quick Disconnect mating cable (order separately)



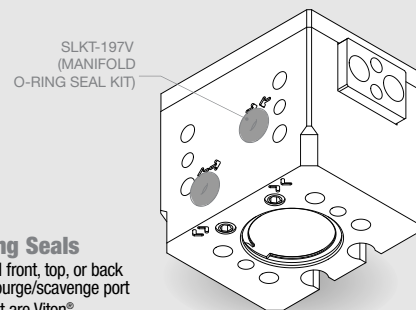
### Multiple Air Port Locations

- 3 standard M3 air port locations (front, top, and back surface)
- Top and Back air ports are plugged as standard



### Plumbing Fittings

- M3 fitting for 2mm I.D. tube (PLFT-022 straight barbed style)
- M3 fitting for 3mm O.D. tube (PLFT-021 straight tube push-in style)
- M3 fittings can be used in any airport including the front purge/scavenge port



### Manifold O-Ring Seals

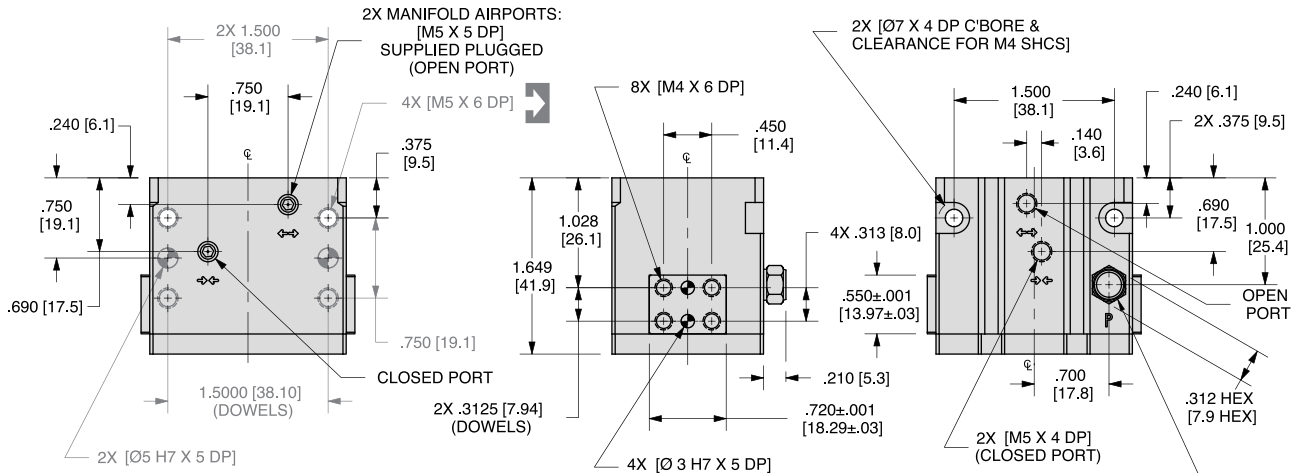
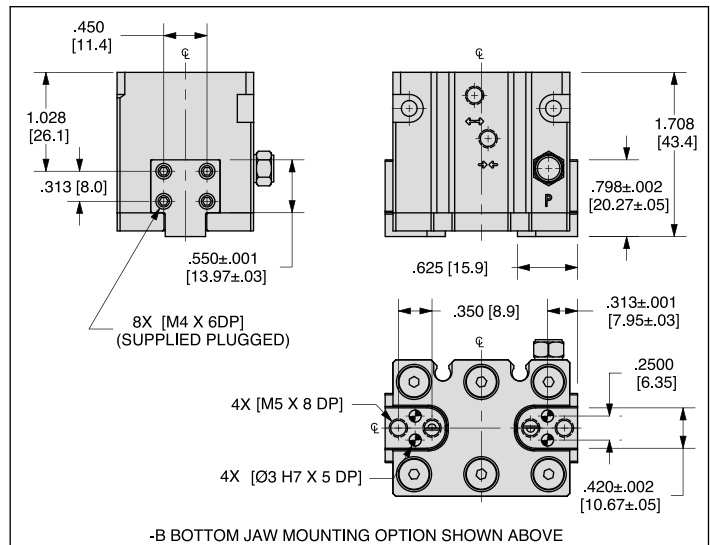
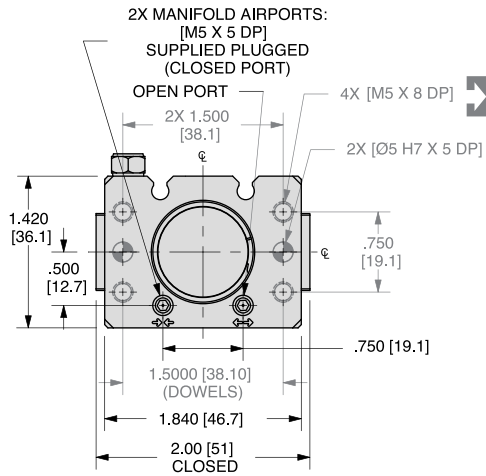
- Can be used to seal front, top, or back air ports and front purge/scavenge port
- Seals in Manifold kit are Viton®
- O-Ring C'bores in customer's mounting plate must be:  $\varnothing.215$  [5.5] X  $.060 \pm .002$  [1.52 ± .05] deep
- Kit is supplied with all seals, plugs, & wrenches needed



# PARALLEL GRIPPER DPDS-088M DIRECTCONNECT™ MODULAR SERIES

DPDS SERIES

1.140



**UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW**

				<b>Imperial in.</b>	<b>Metric [mm]</b>
Dimensions are symmetrical about centerline	Third Angle Projection	All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or ±.013mm	Metric Threads Course Pitch	0.00 = ±.01 0.000 = ±.005 0.0000 = ±.0005	[.] = ±.25 [.0] = ±.13 [0.00] = ±.013

NOTE: DIRECTCONNECT™ DIMENSIONS ARE SHOWN IN BLUE

## How to Order: (Order Accessories separately from Basic Model)

**BASIC MODEL**      **STROKE**      **HARDWARE**

**DPDS-088M** -  - **B** -  - **V**

**JAW MOUNTING**      **VITON® SEALS**

<b>STROKE</b>	<b>025</b>	.25" [6.4mm]
	<b>019</b>	.19" [4.8mm]
	<b>013</b>	.13" [3.2mm]
<b>JAW MOUNTING</b>	<b>B</b>	Bottom jaw mounting
	—	Leave blank for end jaw mounting (standard)
<b>HARDWARE</b>	<b>S</b>	Corrosion resistant
	<b>CR</b>	Corrosion resistant assembled with clean room grade grease
	—	Leave blank for alloy hardware (standard)
<b>VITON®</b>	<b>V</b>	High Temperature Viton® Seals

### SENSOR ACCESSORIES

PNP Magneto Resistive Sensor with Quick Disconnect*	<b>OHSP-017</b>	<b>1 or 2</b>
NPN Magneto Resistive Sensor with Quick Disconnect*	<b>OHSN-017</b>	<b>1 or 2</b>
PNP Magneto Resistive Sensor (90° barrel) w/Qk. Disconnect*	<b>OHSP-011</b>	<b>1 or 2</b>
NPN Magneto Resistive Sensor (90° barrel) w/Qk. Disconnect*	<b>OHSN-011</b>	<b>1 or 2</b>
Quick Disconnect Cable (2 meters long)*	<b>CABL-010</b>	<b>1 or 2</b>
Quick Disconnect Cable (5 meters long)*	<b>CABL-013</b>	<b>1 or 2</b>

### PNEUMATIC ACCESSORIES

Standard Seal Repair Kit	<b>SLKT-187</b>	<b>1</b>
Viton® Seal Repair Kit	<b>SLKT-187V</b>	<b>1</b>
Manifold Seal Kit (Viton®)	<b>SLKT-199V</b>	<b>1</b>
Adjustable Flow Control M5 Elbow - 6mm OD Push-in (Metric)	<b>VLVF-008</b>	<b>1 or 2</b>
Fail Safe Valve M5	<b>OFSV-004</b>	<b>1</b>

\*Sensor and cable sold separately

### SAMPLE ORDER: DPDS-088M-019-B-CR-V

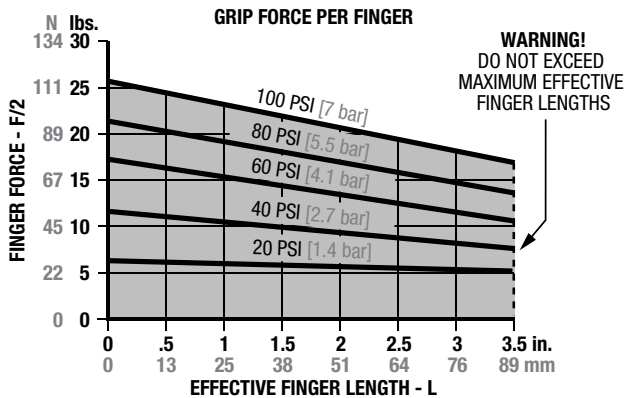
Ex: DPDS-088M Gripper, Metric, 4.8mm Stroke, Bottom Jaw Mounting, Corrosion Resistant Hardware with Clean Room Grade Grease, Viton® Seals

Please see back cover for DE-STA-CO Global Locations. [www.destaco.com](http://www.destaco.com)

[www.comoso.com](http://www.comoso.com)

DIRECTCONNECT™





### Loading Capacity†

	Static	Dynamic
<b>DPDS-088M</b>		
Maximum Tensile <b>T</b>	138 lbs. [614 N]	25 lbs. [111 N]
Maximum Compressive <b>C</b>	275 lbs. [1224 N]	25 lbs. [111 N]
Maximum Moment <b>M<sub>x</sub></b>	120 in.-lbs. [14 Nm]	20 in.-lbs. [2 Nm]
Maximum Moment <b>M<sub>y</sub></b>	120 in.-lbs. [14 Nm]	20 in.-lbs. [2 Nm]
Maximum Moment <b>M<sub>z</sub></b>	120 in.-lbs. [14 Nm]	20 in.-lbs. [2 Nm]

### DPDS-088M-B (Bottom Jaw Mounting Option)

Maximum Tensile <b>T</b>	110 lbs. [490 N]	20 lbs. [89 N]
Maximum Compressive <b>C</b>	220 lbs. [979 N]	20 lbs. [89 N]
Maximum Moment <b>M<sub>x</sub></b>	96 in.-lbs. [11 Nm]	16 in.-lbs. [2 Nm]
Maximum Moment <b>M<sub>y</sub></b>	96 in.-lbs. [11 Nm]	16 in.-lbs. [2 Nm]
Maximum Moment <b>M<sub>z</sub></b>	96 in.-lbs. [11 Nm]	16 in.-lbs. [2 Nm]

†Capacities are per set of jaws and are not simultaneous

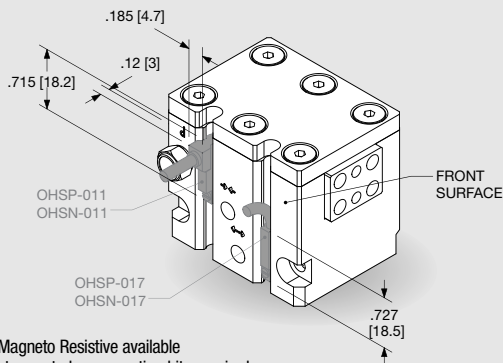
### Specifications DPDS-088M

Total Rated Grip Force <b>F</b> @ 100 psi, 7 bar	50 lbs. — 222 N
Maximum Stroke	0.25 in. — 6.4 mm
Maximum Operating Pressure Range	20-100 psi 1.5-7 bar
Maximum Vacuum for Scavenge Port	8 in. Hg 200 mm Hg
Maximum Pressure for Purge Port	20 psi 1.4 bar
Cylinder Bore $\varnothing$	0.875 in. 22.2 mm
Displacement	0.090 in <sup>3</sup> 1.5 cm <sup>3</sup>

### Specifications (cont.) DPDS-088M

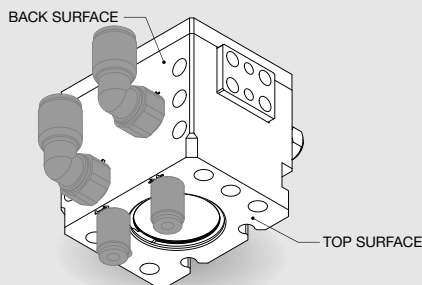
Weight	0.51 lbs.	0.23 Kg
Temperature Range: Standard Seals	-30°~180° F	-35°~80° C
Viton® Seals	-20°~300° F	-30°~150° C
Actuation	0.20 sec.	0.20 sec.
Accuracy	±0.002 in.	±0.05 mm
Repeatability	±0.001 in.	±0.03 mm
Valve Required to Actuate	4-way, 2-position	

## Accessory Mounting Technical Data



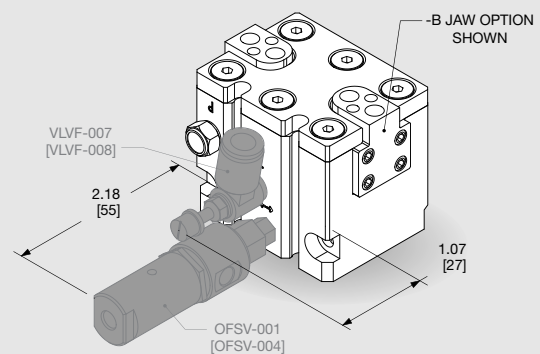
### Sensors

- PNP and NPN Magneto Resistive available
- Sensors are slot mounted, no mounting kits required
- Simple adjustment with slotted screw driver
- Built in LED for ease of positioning and troubleshooting
- Low profile underflush sensor version or 90° wire exit sensor version
- Available with 2M or 5M Quick Disconnect mating cable (order separately)



### Multiple Air Port Locations

- 3 standard M5 air port locations (front, top, and back surface)
- Top and Back air ports are plugged as standard



### Plumbing Fittings

- Adjustable flow controls:
  - Have thumb screw adjust with locking nut for adjusting actuation time:
  - Available for 6mm O.D. tubing
- Failsafe valve for applications:
  - Where it is critical that the part being gripped not be dropped if air pressure is lost
  - Can mount directly to gripper or in-line with plumbing to gripper
  - M5 air port

### Manifold O-Ring Seals

- Can be used to seal front, top, or back air ports and front purge/scavenge port
- Seals in Manifold kit are Viton®
- O-Ring C'bores in customer's mounting plate must be:  $\varnothing$ .290 [07.4] X .060±.002 [1.52±.05] deep
- Kit is supplied with all seals, plugs, & wrenches needed

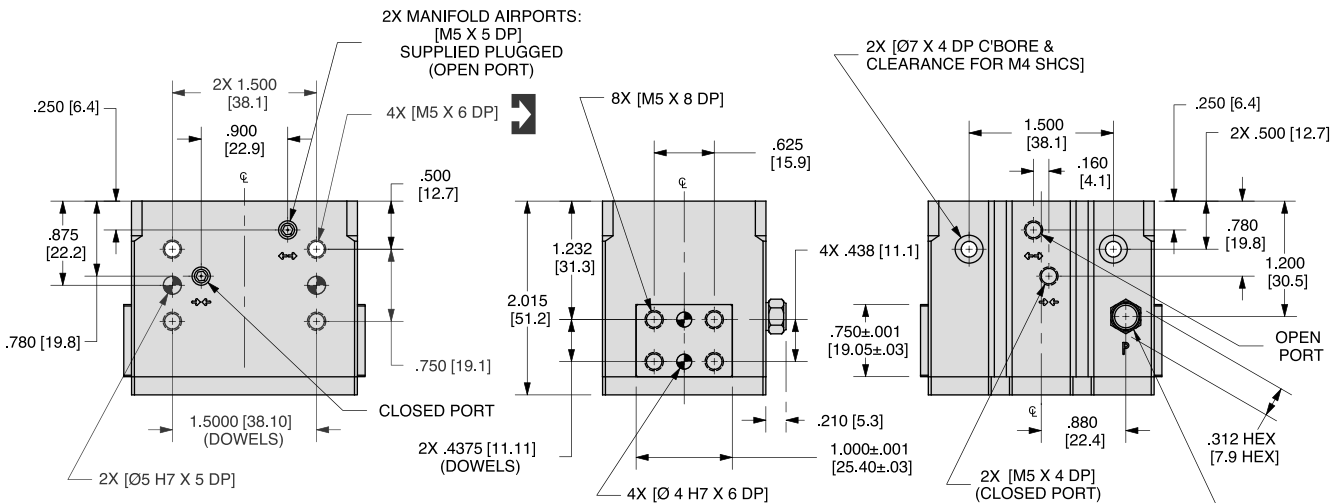
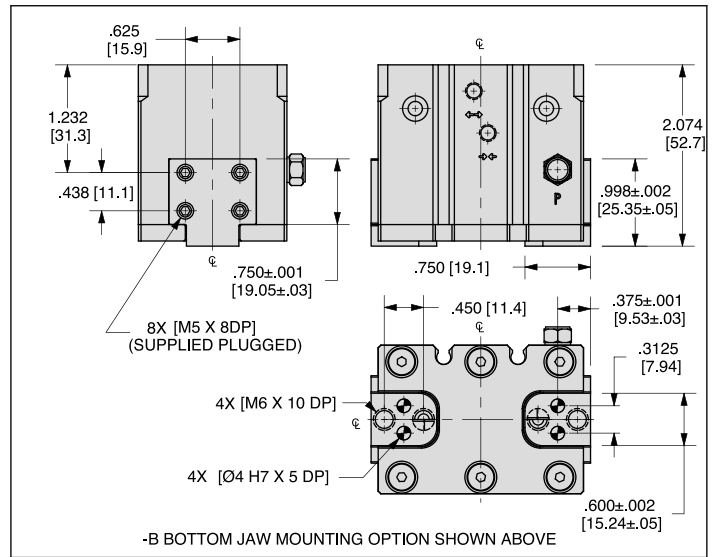
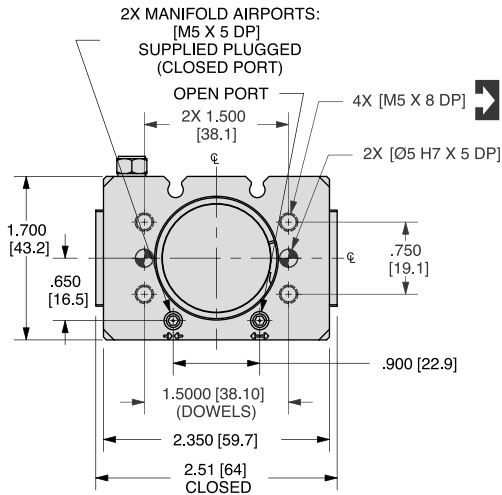




# PARALLEL GRIPPER DPDS-125M DIRECTCONNECT™ MODULAR SERIES

DPDS SERIES

1.142

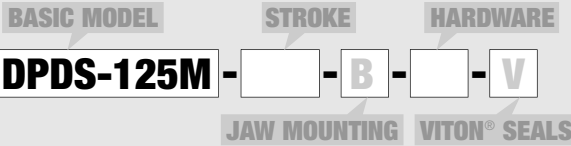


UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

				imperial in.	metric [mm]
Dimensions are symmetrical about centerline	Third Angle Projection	All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or [±.013mm]	Metric Threads Course Pitch	0.00 ± .01 0.000 ± .005 0.0000 ± .0005	[0.] = [±.25] [0.0] = [±.13] [0.00] = [±.013]

NOTE: DIRECTCONNECT™ DIMENSIONS ARE SHOWN IN BLUE

## How to Order: (Order Accessories separately from Basic Model)



STROKE	038	.38" [9.5mm]
	025	.25" [6.4mm]
	019	.19" [4.8mm]

JAW MOUNTING	B	Bottom jaw mounting
	—	Leave blank for end jaw mounting (standard)

HARDWARE	S	Corrosion resistant
	CR	Corrosion resistant assembled with clean room grade grease
	—	Leave blank for alloy hardware (standard)

VITON®	V	High Temperature Viton® Seals
--------	---	-------------------------------

### SENSOR ACCESSORIES

	ORDER #	QTY/UNIT
PNP Magneto Resistive Sensor with Quick Disconnect*	<b>OHSP-017</b>	1 or 2
NPN Magneto Resistive Sensor with Quick Disconnect*	<b>OHSN-017</b>	1 or 2
PNP Magneto Resistive Sensor (90° barrel) w/Qk. Disconnect*	<b>OHSP-011</b>	1 or 2
NPN Magneto Resistive Sensor (90° barrel) w/Qk. Disconnect*	<b>OHSN-011</b>	1 or 2
Quick Disconnect Cable (2 meters long)*	<b>CABL-010</b>	1 or 2
Quick Disconnect Cable (5 meters long)*	<b>CABL-013</b>	1 or 2

### PNEUMATIC ACCESSORIES

	ORDER #	QTY/UNIT
Standard Seal Repair Kit	<b>SLKT-188</b>	1
Viton® Seal Repair Kit	<b>SLKT-188V</b>	1
Manifold Seal Kit (Viton®)	<b>SLKT-199V</b>	1
Adjustable Flow Control M5 Elbow - 6mm OD Push-in (Metric)	<b>VLVF-008</b>	1 or 2
Fail Safe Valve M5	<b>OFSV-004</b>	1

\*Sensor and cable sold separately

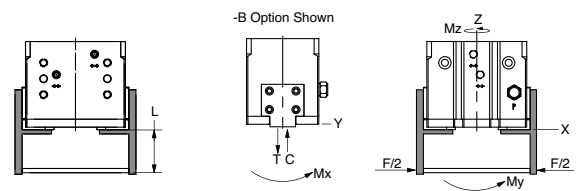
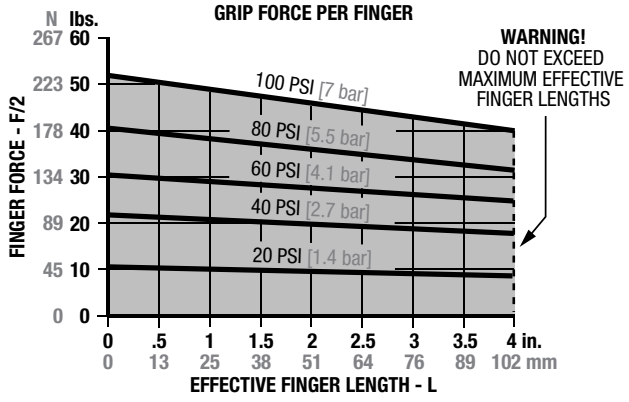
### SAMPLE ORDER: DPDS-125M-025-B-CR-V

Ex. DPDS-125M Gripper, Metric, 6.4mm Stroke, Bottom Jaw Mounting, Corrosion Resistant Hardware with Clean Room Grade Grease, Viton® Seals

Please see back cover for DE-STA-CO Global Locations. [www.destaco.com](http://www.destaco.com)

[www.comoso.com](http://www.comoso.com)

DIRECTCONNECT™



### Loading Capacity†

	Static	Dynamic
<b>DPDS-125M</b>		
Maximum Tensile <b>T</b>	500 lbs. [2225 N]	65 lbs. [289 N]
Maximum Compressive <b>C</b>	950 lbs. [4228 N]	65 lbs. [289 N]
Maximum Moment <b>M<sub>x</sub></b>	425 in.-lbs. [48 Nm]	70 in.-lbs. [8 Nm]
Maximum Moment <b>M<sub>y</sub></b>	425 in.-lbs. [48 Nm]	70 in.-lbs. [8 Nm]
Maximum Moment <b>M<sub>z</sub></b>	425 in.-lbs. [48 Nm]	70 in.-lbs. [8 Nm]
<b>DPDS-125M-B (Bottom Jaw Mounting Option)</b>		
Maximum Tensile <b>T</b>	400 lbs. [1780 N]	52 lbs. [231 N]
Maximum Compressive <b>C</b>	760 lbs. [3382 N]	52 lbs. [231 N]
Maximum Moment <b>M<sub>x</sub></b>	340 in.-lbs. [38 Nm]	56 in.-lbs. [6 Nm]
Maximum Moment <b>M<sub>y</sub></b>	340 in.-lbs. [38 Nm]	56 in.-lbs. [6 Nm]
Maximum Moment <b>M<sub>z</sub></b>	340 in.-lbs. [38 Nm]	56 in.-lbs. [6 Nm]

†Capacities are per set of jaws and are not simultaneous

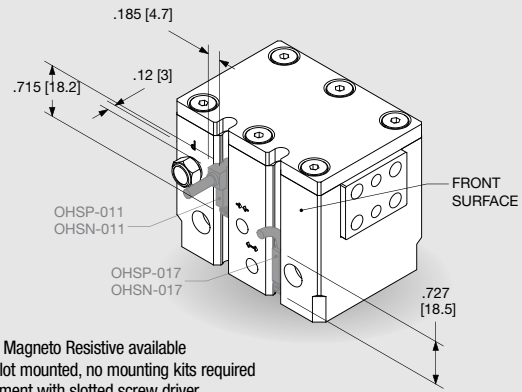
### Specifications DPDS-125M

Total Rated Grip Force <b>F</b> @ 100 psi, 7 bar	100 lbs. — 445 N
Maximum Stroke	0.38 in. — 9.5 mm
Maximum Operating Pressure Range	20-100 psi 1.5-7 bar
Maximum Vacuum for Scavenge Port	8 in. Hg 200 mm Hg
Maximum Pressure for Purge Port	20 psi 1.4 bar
Cylinder Bore $\varnothing$	1.250 in. 31.8 mm
Displacement	0.274 in <sup>3</sup> 4.5 cm <sup>3</sup>

### Specifications (cont.) DPDS-125M

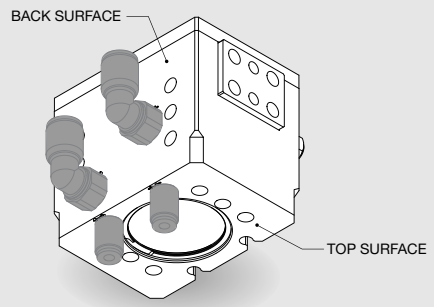
Weight	1.03 lbs. 0.46 Kg
Temperature Range: Standard Seals	-30°~180° F -35°~80° C
Viton® Seals	-20°~300° F -30°~150° C
Actuation	0.30 sec. 0.30 sec.
Accuracy	±0.003 in. ±0.08 mm
Repeatability	±0.001 in. ±0.03 mm
Valve Required to Actuate	4-way, 2-position

## Accessory Mounting Technical Data



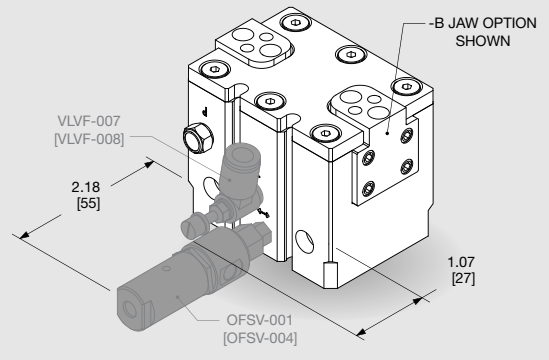
### Sensors

- PNP and NPN Magneto Resistive available
- Sensors are slot mounted, no mounting kits required
- Simple adjustment with slotted screw driver
- Built in LED for ease of positioning and troubleshooting
- Low profile underflush sensor version or 90° wire exit sensor version
- Available with 2M or 5M Quick Disconnect mating cable (order separately)



### Multiple Air Port Locations

- 3 standard M5 air port locations (front, top, and back surface)
- Top and Back air ports are plugged as standard



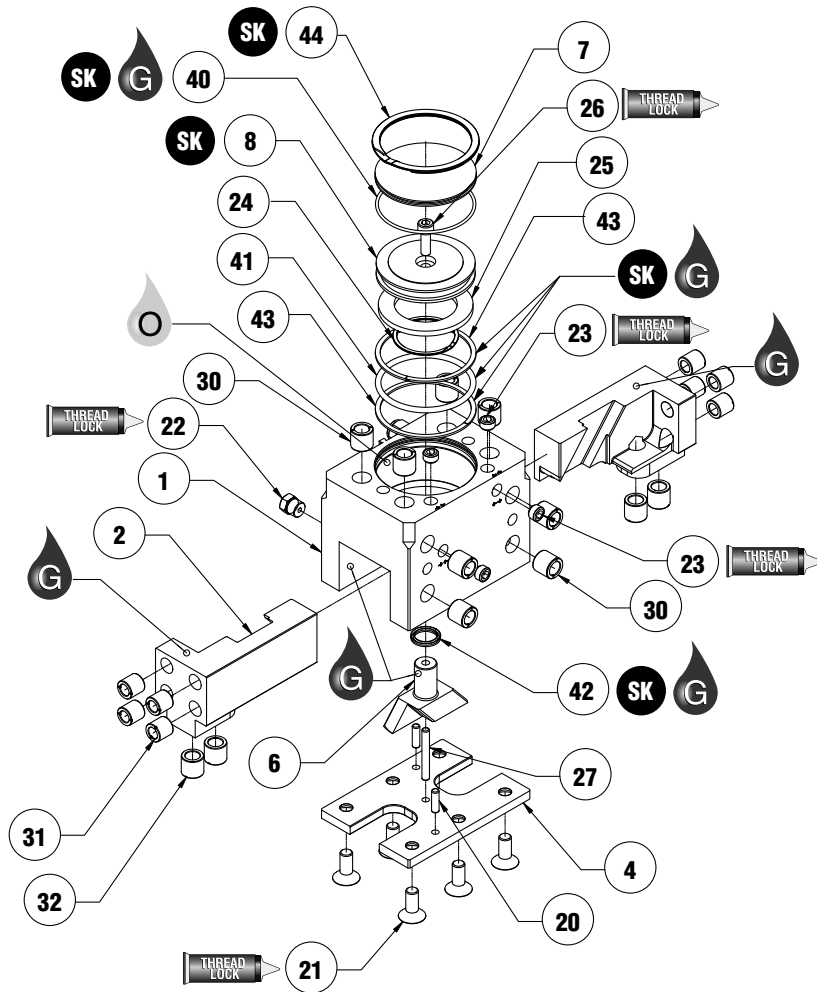
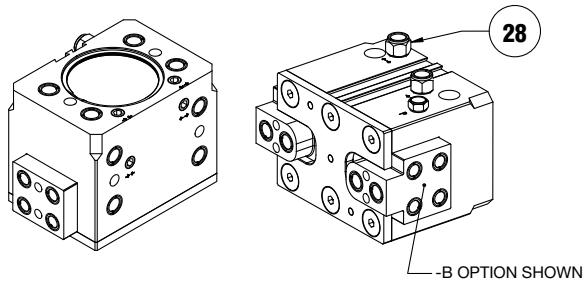
### Plumbing Fittings

- Adjustable flow controls:
  - Have thumb screw adjust with locking nut for adjusting actuation time
  - Available for 6mm O.D. tubing
- Failsafe valve for applications:
  - Where it is critical that the part being gripped not be dropped if air pressure is lost
  - Can mount directly to gripper or in-line with plumbing to gripper
  - M5 air port
- Consult factory for additional plumbing fittings

### Manifold O-Ring Seals

- Can be used to seal front, top, or back air ports and front purge/scavenge port
- Seals in Manifold kit are Viton®
- O-Ring C'bores in customer's mounting plate must be:  $\varnothing.290 [\varnothing 7.4] \times .060 \pm .002 [1.52 \pm .05]$  deep
- Kit is supplied with all seals, plugs, & wrenches needed

# DPDS SERIES EXPLODED VIEW



Item	Qty	Name
01	1	Body
02	2	Jaw
04	1	Bottom Plate
06	1	Shaft Wedge
07	1	Cap
08	1	Piston
20	2	Bottom Plate Locating Dowels
21	6	Bottom Plate Screws
22*	1	Breather Vent Plug (Purge)
23	4	Manifold Port Plugs
24	1	Piston Mag. Ret. Ring
25	1	Piston Magnet
26	1	Piston Mounting Screw
27	1	Shaft guide dowel pin
28*	2	Plumbing Fitting - Adapter - 1/8NPT male to 1/8BSPP female
30*	8	Threaded Inserts (Body)
31*	8	Threaded Inserts (Jaw - End Mount)
32*	4	Threaded Inserts (Jaw - Bottom Mount "B" option only)
40	1	Cap O-ring
41	1	Piston O-ring
42	1	U-cup
43*	2	Piston Teflon Ring
44	1	Cap Ret. Ring

**NOTES:\***

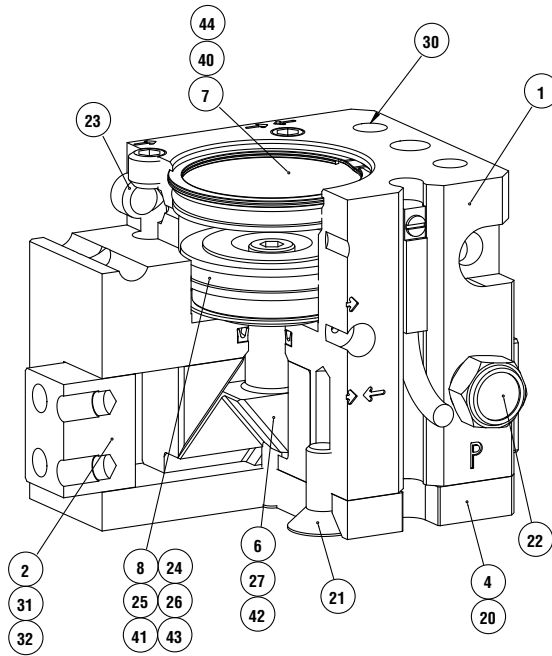
- 1) Contact the Destaco-Robohand Sales Department for a complete spare parts list with order numbers and prices.
- 2) Item #30 is for size -175 and -250 only.
- 3) Item #31 and #32 are for size -250 only.
- 4) Item #22 Breather vent plug is a set screw plug for sizes -047 & -056.
- 5) Item #43 is for size -175 and -250 only.
- 6) Item #28 is for metric size -175M and -250M only.

**SK Seal Repair Kit Order #'s  
See Product Data Sheets**

**Assembly Procedure:**

- 1) Install #23 airport plugs with thread-locker.
- 2) Press pins #20 & #27 Into Plate #4.
- 3) Install threaded inserts #30, #31, & #32.
- 4) Install #22 vent or plug with thread-locker.
- 5) Mount magnet #25 to piston #8 with retainer Ring #24.
- 6) Install #28 metric plumbing fitting adapters.
- 7) Lubricate body #1 (jaw cavity & bores).
- 8) Lubricate & install all seals into body, piston, & cap.
- 9) Sub-assemble the #2 jaws on either side of the #6 shaft wedge with lubrication.
- 10) Insert the jaws and shaft wedge sub-assembly into body.
- 11) Insert piston #8 into the body bore and fasten it to the shaft wedge with Mounting screw # 26 using thread locker.
- 12) Install cap #7 into body with retaining ring #44.
- 13) Insert #4 bottom plate with pressed-in pins onto the body and fasten with #21 screws with thread-locker.

<b>SK</b> Seal Kit Items	<b>THREAD LOCK</b> Thread Locker	<b>KRYTOX</b> Krytox™ Lubricant	<b>O</b> Lightweight Machine Oil	<b>G</b> Teflon™ Based Grease	<b>GLUE</b> Super Bondor	<b>Third Angle Projection</b>
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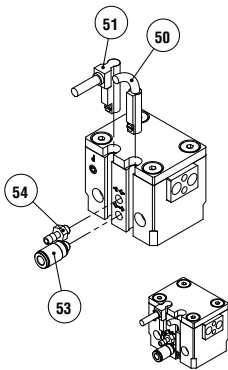
Item	Qty	Name
01	1	Body
02	2	Jaw
04	1	Bottom Plate
06	1	Shaft Wedge
07	1	Cap
08	1	Piston
20	2	Bottom Plate Locating Dowels
21	6	Bottom Plate Screws
22*	1	Breather Vent Plug (Purge)
23	4	Manifold Port Plugs
24	1	Piston Mag. Ret. Ring
25	1	Piston Magnet
26	1	Piston Mounting Screw
27	1	Shaft guide dowel pin
28*	2	Plumbing Fitting - Adapter - 1/8NPT male to 1/8BSPP female
30*	8	Threaded Inserts (Body)
31*	8	Threaded Inserts (Jaw - End Mount)
32*	4	Threaded Inserts (Jaw - Bottom Mount "B" option only)
40	1	Cap O-ring
41	1	Piston O-ring
42	1	U-cup
43*	2	Piston Teflon Ring
44	1	Cap Retainer Ring

**NOTES:\***

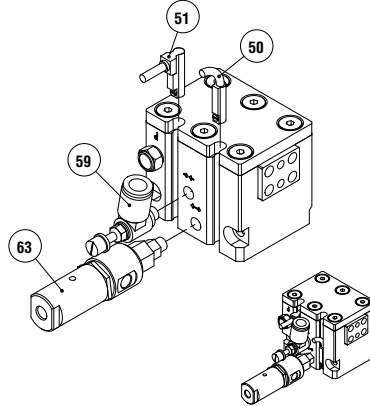
- 1) Contact the Destaco-Robohand Sales Department for a complete spare parts list with order numbers and prices.
- 2) Item #30 is for size -175 and -250 only.
- 3) Item #31 and #32 are for size -250 only.
- 4) Item #22 breather vent plug is a set screw plug for sizes -047 & -056.
- 5) Item #43 is for size -175 and -250 only.
- 6) Item #28 is for metric size -175M and -250M only.

## Accessory Installation & Adjustment Instructions

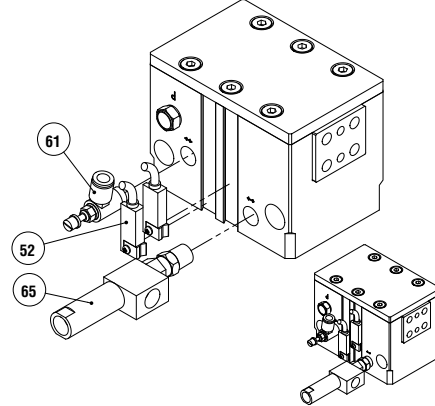
DPDS-047 & DPDS-056



DPDS-088 & DPDS-125



DPDS-175 & DPDS-250



Item	Qty	Name
50	1 or 2	Magneto Resistive Sensor (short barrel) w/Qk. Disconnect
51	1 or 2	Magneto Resistive Sensor (90° barrel) w/Qk. Disconnect
52	1 or 2	Magneto Resistive Sensor (12mm Dovetail) w/Qk. Disconnect
53	1,2 or 3	Plumbing Fitting - M3 male to 3mm OD Push-in Style
54	1,2 or 3	Plumbing Fitting - M3 male to 2mm ID Barb Style
59	1 or 2	Adjustable Flow Control (Metric) M5 elbow - 6mm OD Push-in Style
61	1 or 2	Adjustable Flow Control (Metric) G1/8 elbow - 6mm OD Push-in Style
63	1	Fail Safe Valve (Metric) M5
65	1	Fail Safe Valve (Metric) G1/8 (1/8 BSPP)

**NOTE:** Other Plumbing Fittings are available for each size - Consult Factory

**Magneto-Resistive Sensors:**

- 1) Insert sensors #50 or #51 from either end of the profile slots and set the sensor with the integrated screw.
- 2) Insert sensor #52 into the dovetail slot at any point and set the sensor with the integrated screw & locking shoe.

**Plumbing Fittings:**

- 1) M3 plumbing fittings #53 & #54 can be used in any airport or purge/scavenge port.
- 2) Flow controls can be inserted and used in any open or closed airport to help control the stroke actuation.
- 3) Fail-safe valve can be used in either the open or closed airport to help limit the possibility of dropping the part if air pressure is lost.

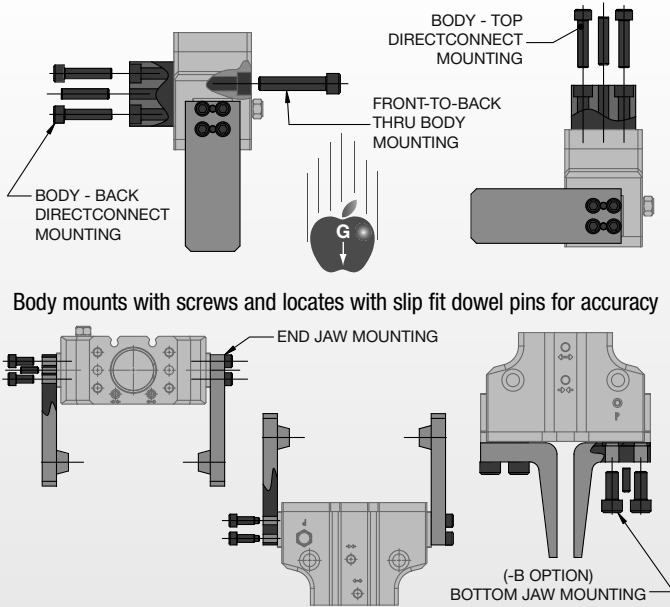
# Parallel Grippers - DPDL DIRECTCONNECT™ Modular Series

**NO  
ADAPTER  
PLATES!**

- **Multiple mounting locations:** DIRECTCONNECT™ tapped and dowel mounting on top and back of body.
- **Thru body mounting:** Front-to-back thru-body mounting.
- **Multiple air port positions:** Tapped air ports on front, top, and back sides are standard.
- **Manifold air porting:** Top and back air ports can be manifold o-ring sealed.
- **Front purge/scavenge port:** Negative pressure used as a scavenge port used for cleanroom applications. Positive pressure used as a purge port to repel contaminants in harsh environment. Port can also be used for lubrication.
- **Sensing:** Full range adjustable magneto resistive sensors.
- **Different strokes:** All gripper sizes are available in 3 different strokes.
- **Multiple jaw styles:** All sizes available with end mounts jaws as standard or bottom mount jaws as an option.
- **True sealed jaw option:** Rugged integral rubber boot seals the unit against harsh environments. Designed to be used in machine coolant and metal chip environment applications.
- **Long finger applications:** Rigid design and full body support of jaws allows for longer finger lengths.

## Mounting Information:

Grippers can be mounted & operated in any orientation



Body mounts with screws and locates with slip fit dowel pins for accuracy  
Fingers attach with screws and locate on jaws by keying and/or dowel pins.  
Fingers can be mounted in any orientation with respect to the jaw.

## Technical Specifications:

Pneumatic Specifications	Imperial	Metric
Pressure Operating Range	20-100 psi	1.5-7 bar
Cylinder Type	Double Acting	
Dynamic Seals	Internally Lubricated Buna-N	
Valve Required to Operate	4-way, 2-position	
<b>Air Quality Requirements</b>	40 Micron or Better	
Air Filtration	Not Necessary*	
Air Lubrication	Low Moisture Content (dry)	
Air Humidity		
<b>Temperature Operating Range</b>		
Buna-N Seals (standard)	-30°~180° F	-35°~80° C
Viton® Seals (optional)	-20°~300° F	-30°~150° C
<b>Maintenance Specifications†</b>		
Expected Life	5 million cycles	
Normal Application	10+ million cycles*	
w/ Preventative Maintenance	Yes	
Field Repairable	Yes	
Seal Repair Kits Available	Yes	
<b>-E Option Seals Jaw Rubber Boot Specifications</b>		
Boot Material	60 Durometer Buna-N (Nitrile)	
Temperature Rating (boot only)	-20°~250° F	-30°~120° C
Compatible Chemicals:	Water, Coolant, Petroleum Oils, Silicone Lubricants, Dilute Acids & Alkalis, Hydraulic Fluid, Transmission Fluid	
Non-Compatible Chemicals:	Ozone, Ketones, Strong Acids, Brake Fluid	
Example Applications:	Grinding Dust, Machine Chip & Coolant, Painting, Paper Dust, Washdown Applications	

### Application Restrictions

Applications where mechanism lubricant could cause contamination (use -E sealed jaw option)

\*Addition of lubrication will greatly increase service life  
†See Maintenance Section



## Product Features

### Hard Coat Anodize

The body and bottom plate have hard-coat anodize 60RC with Teflon® impregnation

### High Temperature

Optional Viton® seals are available for high temperature applications

### Multiple Air Port Locations

3 standard air port locations (front, back, & top)

### Sensor Mounting Slots

Standard mounting slots for magneto resistive (sensors sold separately)

### One Piece Body

One piece lightweight aircraft quality aluminum body

### Manifold Air Ports

Back & top air ports can be O-ring manifold sealed to eliminate air lines

### DIRECTCONNECT™ Mounting Patterns

DIRECTCONNECT™ tapped & dowel mounting surfaces on top and back of body

### Extremely Rugged Design

Jaws are supported throughout the length of the body

### Thru-Body Mounting

Front-to-back thru C'bores for socket head cap screw mounting

### Bottom Jaw Mounting (-B) Option

For alternate finger mounting (standard side mount jaws shown)

### Sealed Jaws (-E) Option

Buna-N bellows seal jaws against damaging hazardous environments (machining chips & coolant, grinding dust, paper mill environments, etc.)

### Purge/Scavenge Port

Used with a vacuum for clean room environments or positive pressure with harsh environments

### Corrosion Resistant Hardware (-S) or Clean Room (-CR) Options

Both options have stainless and brass hardware. Clean room option uses clean room grade greases

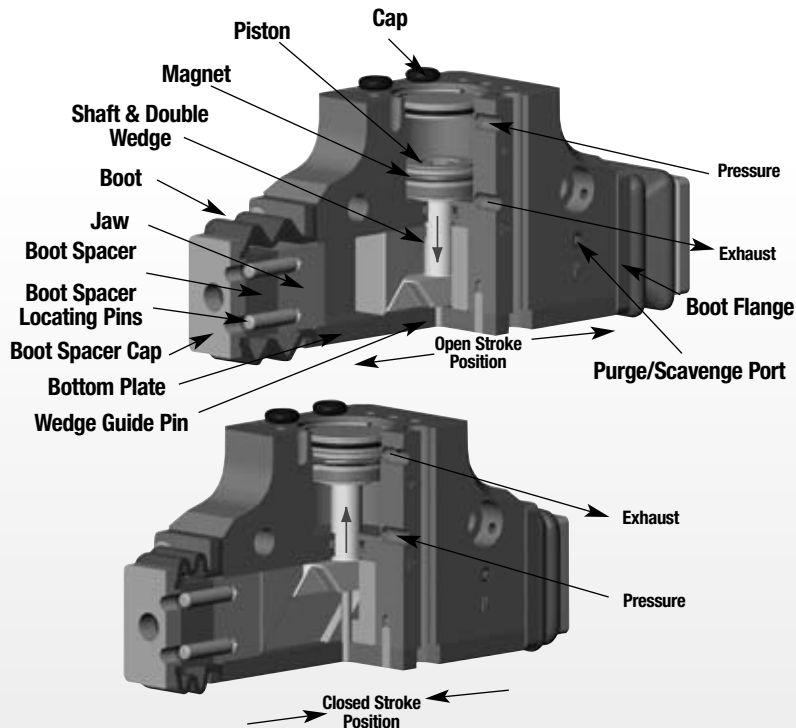
### Dowel Holes

Slip fit dowel pin holes in body and jaws

### Jaw Components

Hardened and precision ground steel for minimum jaw play with hard plating for wear resistance and long life

## Operating Principle



- A double acting piston is connected by a shaft to a double-sided wedge.
- The wedge slides in a slot located in each of the jaws converting vertical motion of the wedge into horizontal synchronous motion of the jaws.
- The large surface area of the wedge minimizes friction wear.
- This gripper is suitable for internal or external gripping and can be mounted in any orientation.

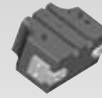
U.S. Patent # 5,125,708

Designed and manufactured in the USA

## Style -DPDL Parallel Gripper

### Size -047M

Style:	DPDL-047M
Stroke:	0.38 in. 9.5 mm
Grip Force:	14 lbs. 62 N
Weight:	0.186 lbs. 0.08 Kg



-B Bottom Jaw Mount Shown

See Page **1.148**

## Style -DPDL Parallel Gripper

### Size -056M

Style:	DPDL-056M
Stroke:	0.50 in. 12.7 mm
Grip Force:	22 lbs. 98 N
Weight:	0.315 lbs. 0.14 Kg



-B Bottom Jaw Mount Shown

See Page **1.150**

## Style -DPDL Parallel Gripper

### Size -088M

Style:	DPDL-088M
Stroke:	0.75 in. 19.1 mm
Grip Force:	50 lbs. 222 N
Weight:	0.95 lbs. 0.43 Kg



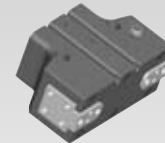
-B Bottom Jaw Mount Shown

See Page **1.152**

## Style -DPDL Parallel Gripper

### Size -125M

Style:	DPDL-125M
Stroke:	1.00 in. 25.4 mm
Grip Force:	100 lbs. 445 N
Weight:	1.99 lbs. 0.90 Kg



-B Bottom Jaw Mount Shown

See Page **1.154**



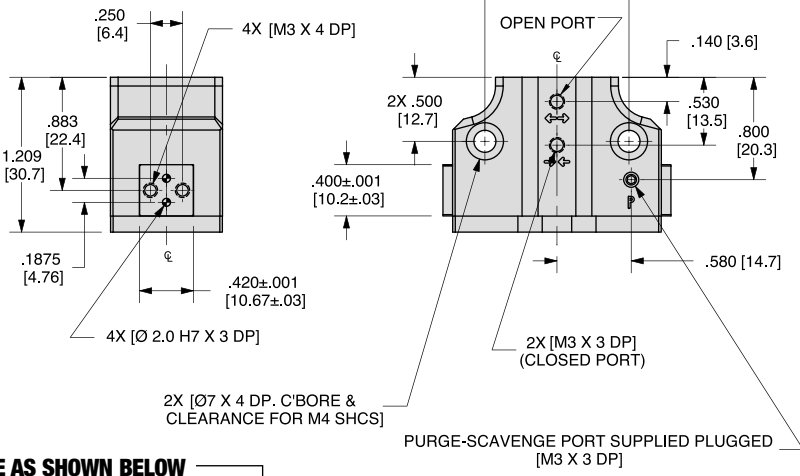
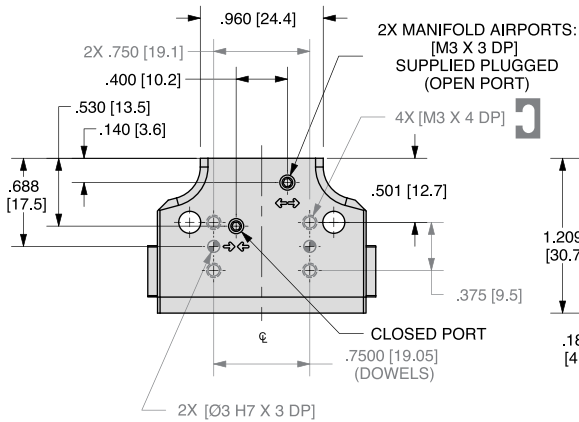
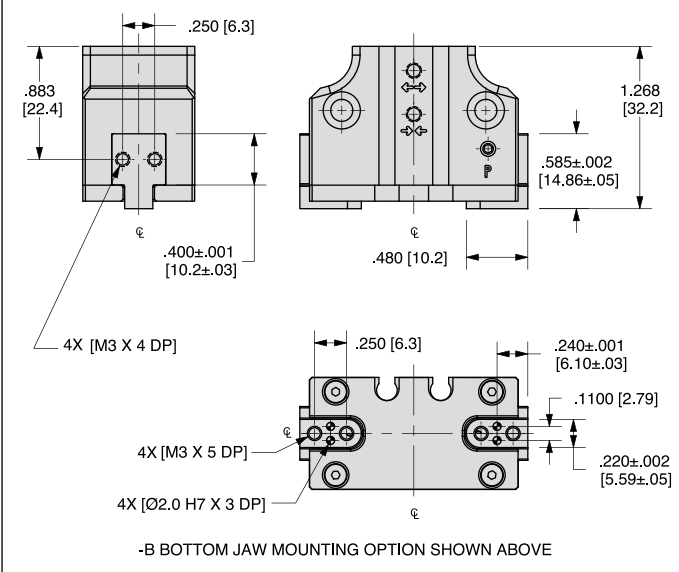
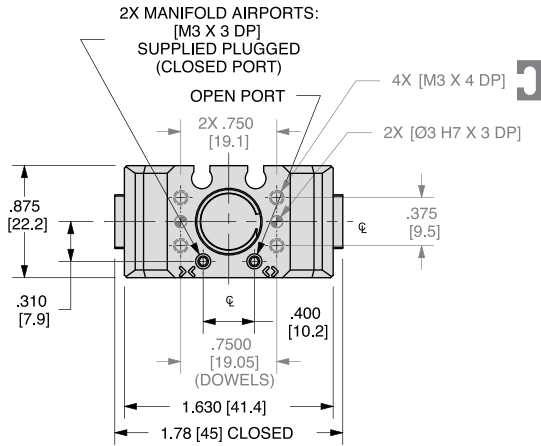




# PARALLEL GRIPPER DPDL-047M DIRECTCONNECT™ MODULAR SERIES

DPDL SERIES

1.148



UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

				<b>Imperial in.</b>	<b>Metric [mm]</b>
Dimensions are symmetrical about centerline	Third Angle Projection	All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or ±.013mm	Metric Threads Course Pitch	0.00 ± .01 0.000 ± .005 0.0000 ± .0005	[.0] = ±.25 [0.0] = ±.13 [0.00] = ±.013

NOTE: DIRECTCONNECT™ DIMENSIONS ARE SHOWN IN BLUE

## How to Order: (Order Accessories separately from Basic Model)

BASIC MODEL	STROKE	JAW SEAL*	HARDWARE
<b>DPDL-047M</b>	<b>-</b>	<b>- B -</b>	<b>- E -</b>
		<b>JAW MOUNTING</b>	<b>VITON® SEALS</b>
<b>STROKE</b>	<b>038</b> .38" [9.5mm] <b>025</b> .25" [6.4mm] <b>019</b> .19" [4.8mm]		
<b>JAW MOUNTING</b>	<b>B</b> Bottom jaw mounting Leave blank for end jaw mounting (standard)		
<b>JAW BOOT SEAL**</b>	<b>E</b> Buna-N rubber bellows		
<b>HARDWARE</b>	<b>S</b> Corrosion resistant <b>CR</b> Corrosion resistant assembled with clean room grade grease Leave blank for alloy hardware (standard)		
<b>VITON®†</b>	<b>V</b> High Temperature Viton® Seals		

### SENSOR ACCESSORIES

	ORDER #	QTY/UNIT
PNP Magneto Resistive Sensor with Quick Disconnect*	<b>OHSP-017</b>	<b>1 or 2</b>
NPN Magneto Resistive Sensor with Quick Disconnect*	<b>OHSN-017</b>	<b>1 or 2</b>
PNP Magneto Resistive Sensor (90° barrel) w/Qk. Disc.*	<b>OHSP-011</b>	<b>1 or 2</b>
NPN Magneto Resistive Sensor (90° barrel) w/Qk. Disc.*	<b>OHSN-011</b>	<b>1 or 2</b>
Quick Disconnect Cable (2 meters long)*	<b>CABL-010</b>	<b>1 or 2</b>
Quick Disconnect Cable (5 meters long)*	<b>CABL-013</b>	<b>1 or 2</b>

### PNEUMATIC ACCESSORIES

	ORDER #	QTY/UNIT
Standard Seal Repair Kit	<b>SLKT-185</b>	<b>1</b>
Viton® Seal Repair Kit	<b>SLKT-185V</b>	<b>1</b>
Manifold Seal Kit (Viton®)	<b>SLKT-197V</b>	<b>1</b>
Sealed Jaw Boot Replacement (1 boot, Buna-N only)	<b>SLKT-191</b>	<b>1 or 2</b>
Plumbing Fitting - M3 male to 3mm OD Tube Push-in Style	<b>PLFT-021</b>	<b>1 or 2</b>
Plumbing Fitting - M3 male to 2mm ID Tube Barb Style	<b>PLFT-022</b>	<b>1 or 2</b>

\* Sensor and cable sold separately

\*\* -E Jaw Boot Seal option is not available with -B Bottom Jaw Mounting option.

See Accessory Mounting Data Section for -E Seal option dimensions.

† -E Rubber Jaw Boot seals are Buna-N (Nitrile) material even if the -V Viton® gripper option is selected. See page 1.66 for more detailed technical specifications on the -E option Jaw Boot material

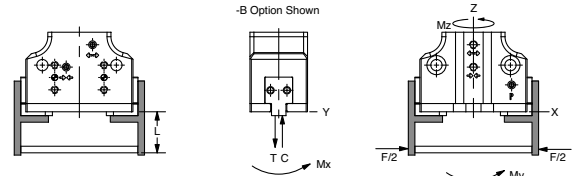
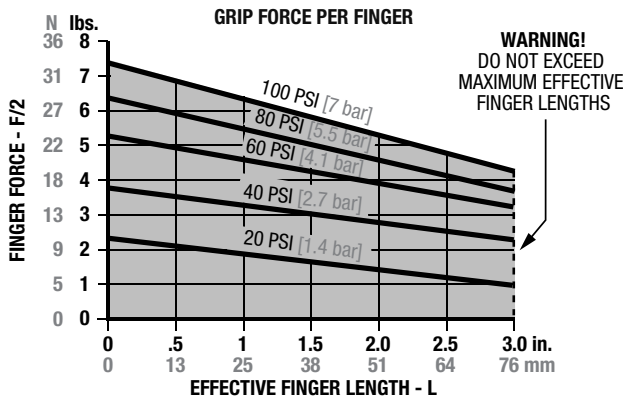
### SAMPLE ORDER: DPDL-047M-038-E-CR-V

Ex: DPDL-047M Gripper, Metric, 6.4mm Stroke, Jaw Boot Seal, Corrosion Resistant Hardware with Clean Room Grade Grease, Viton® Seals

DIRECTCONNECT™



## Loading Information



### Loading Capacity<sup>†</sup>

	Static	Dynamic
<b>DPDL-047M</b>		
Maximum Tensile <b>T</b>	100 lbs. [445 N]	15 lbs. [67 N]
Maximum Compressive <b>C</b>	150 lbs. [668 N]	25 lbs. [111 N]
Maximum Moment <b>M<sub>x</sub></b>	90 in.-lbs. [10 Nm]	15 in.-lbs. [2 Nm]
Maximum Moment <b>M<sub>y</sub></b>	90 in.-lbs. [10 Nm]	15 in.-lbs. [2 Nm]
Maximum Moment <b>M<sub>z</sub></b>	90 in.-lbs. [10 Nm]	15 in.-lbs. [2 Nm]

### DPDL-047M-B (Bottom Jaw Mounting Option)

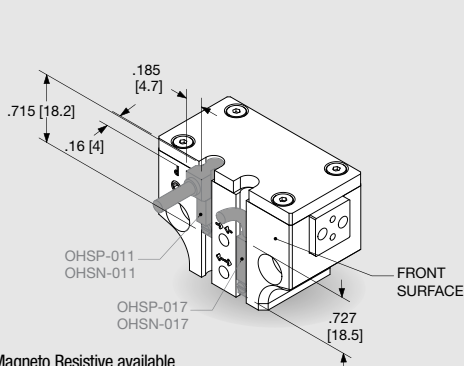
Maximum Tensile <b>T</b>	80 lbs. [356 N]	12 lbs. [53 N]
Maximum Compressive <b>C</b>	120 lbs. [534 N]	20 lbs. [89 N]
Maximum Moment <b>M<sub>x</sub></b>	72 in.-lbs. [8 Nm]	12 in.-lbs. [1 Nm]
Maximum Moment <b>M<sub>y</sub></b>	72 in.-lbs. [8 Nm]	12 in.-lbs. [1 Nm]
Maximum Moment <b>M<sub>z</sub></b>	72 in.-lbs. [8 Nm]	12 in.-lbs. [1 Nm]

<sup>†</sup>Capacities are per set of jaws and are not simultaneous

Specifications	DPDL-047M	
Total Rated Grip Force <b>F</b> @ 100 psi, 7 bar	14 lbs.	62 N
Maximum Stroke	0.38 in.	9.5 mm
Maximum Operating Pressure Range	20-100 psi	1.5-7 bar
Maximum Vacuum for Scavenge Port	8 in. Hg	200 mm Hg
Max Pressure for Purge Port: (Standard)	20 psi	1.4 bar
with <b>-E</b> Jaw Boot	4 psi	0.25 bar
Cylinder Bore $\emptyset$	0.469 in.	11.9 mm
Displacement	0.038 in. <sup>3</sup>	0.6 cm <sup>3</sup>

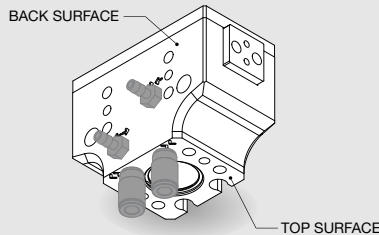
Specifications (cont.)	DPDL-047M	
Weight	0.186 lbs.	0.08 Kg
Temperature Range: Standard Seals	-30°~180° F	-35°~80° C
Viton® Seals	-20°~300° F	-30°~150° C
Actuation	0.20 sec.	0.20 sec.
Accuracy	±0.002 in.	±0.05 mm
Repeatability	±0.001 in.	±0.03 mm
Valve Required to Actuate	4-way, 2-position	

## Accessory Mounting Technical Data



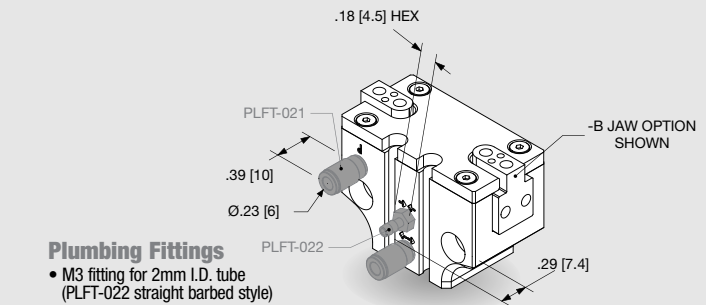
### Sensors

- PNP and NPN Magneto Resistive available
- Sensors are slot mounted, no mounting kits required
- Simple adjustment with slotted screw driver
- Built in LED for ease of positioning and troubleshooting
- Low profile underflush sensor version or 90° wire exit sensor version
- Available with 2M or 5M Quick Disconnect mating cable (order separately)



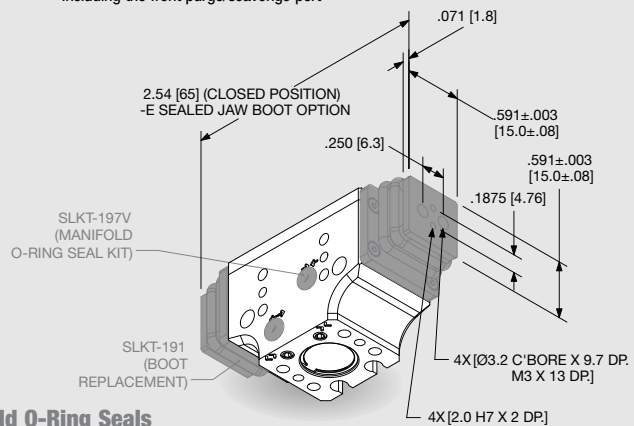
### Multiple Air Port Locations

- 3 standard M3 air port locations (front, top, and back surface)
- Top and Back air ports are plugged as standard



### Plumbing Fittings

- M3 fitting for 2mm I.D. tube (PLFT-022 straight barbed style)
- M3 fitting for 3mm O.D. tube (PLFT-021 straight tube push-in style)
- M3 fittings can be used in any airport including the front purge/scavenge port



### Manifold O-Ring Seals

- Can be used to seal front, top, or back air ports and front purge/scavenge port
- Seals in Manifold kit are Viton®
- O-Ring C'bores in customer's mounting plate must be:  $\emptyset$ .215 [ $\emptyset$ 5.5] X .060±.002 [1.52±.05] deep
- Kit is supplied with all seals, plugs, & wrenches needed

### Sealed Jaw Boot Option

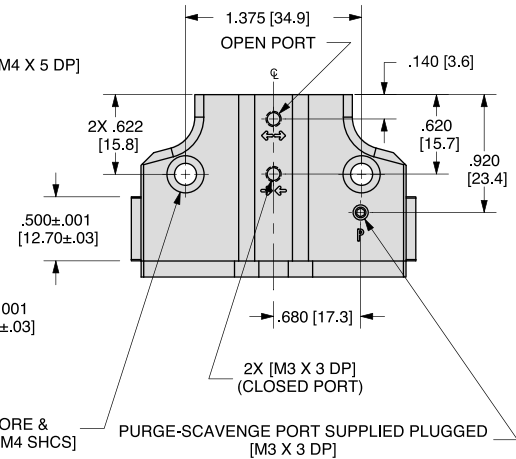
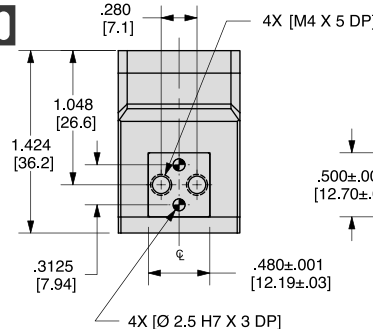
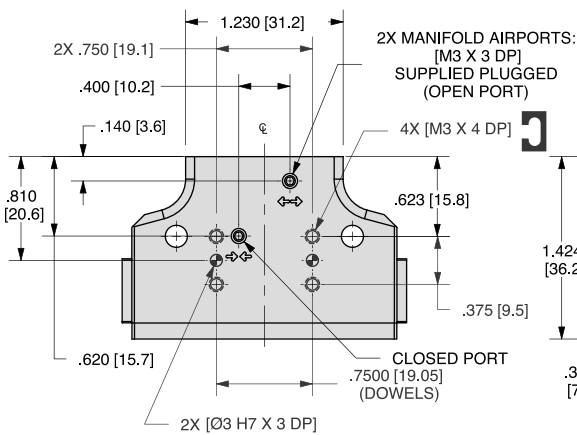
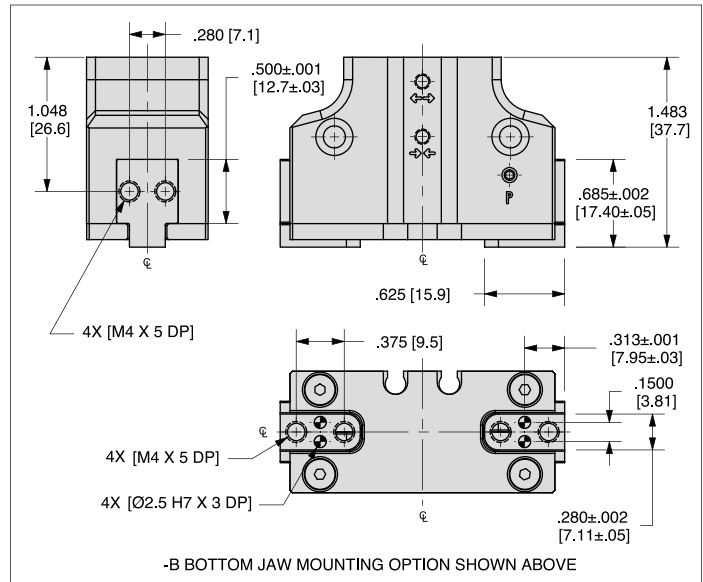
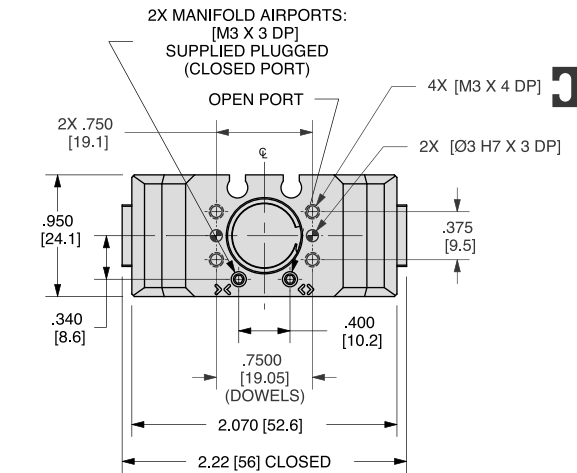
- Can be used to seal jaws in harsh environments
- Boot replacement available as an accessory
- Boot material is Buna-N (Nitrile) only



# PARALLEL GRIPPER DPDL-056M DIRECTCONNECT™ MODULAR SERIES

DPDL SERIES

1.150



UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

				<b>Imperial in.</b>	<b>Metric [mm]</b>
Dimensions are symmetrical about centerline	Third Angle Projection	All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or ±.013mm	Metric Threads Course Pitch	0.00 ± .01 0.000 ± .005 0.0000 ± .0005	[0.] = [±.25] [0.0] = [±.13] [0.00] = [±.013]

NOTE: DIRECTCONNECT™ DIMENSIONS ARE SHOWN IN BLUE

## How to Order: (Order Accessories separately from Basic Model)

BASIC MODEL STROKE JAW SEAL\* HARDWARE

**DPDL-056M** - [ ] - **B** - **E** - [ ] - **V**

JAW MOUNTING VITON® SEALS

**STROKE**  
**050** .50" [12.7mm]  
**038** .38" [9.5mm]  
**025** .25" [6.4mm]

**JAW MOUNTING**  
**B** Bottom jaw mounting  
 Leave blank for end jaw mounting (standard)

**JAW BOOT SEAL\*\***  
**E** Buna-N rubber bellows

**HARDWARE**  
**S** Corrosion resistant  
**CR** Corrosion resistant assembled with clean room grade grease  
 Leave blank for alloy hardware (standard)

**VITON®†**  
**V** High Temperature Viton® Seals

### SENSOR ACCESSORIES

	ORDER #	QTY/UNIT
PNP Magneto Resistive Sensor with Quick Disconnect*	<b>OHSP-017</b>	<b>1 or 2</b>
NPN Magneto Resistive Sensor with Quick Disconnect*	<b>OHSN-017</b>	<b>1 or 2</b>
PNP Magneto Resistive Sensor (90° barrel) w/Qk. Disc.*	<b>OHSP-011</b>	<b>1 or 2</b>
NPN Magneto Resistive Sensor (90° barrel) w/Qk. Disc.*	<b>OHSN-011</b>	<b>1 or 2</b>
Quick Disconnect Cable (2 meters long)*	<b>CABL-010</b>	<b>1 or 2</b>
Quick Disconnect Cable (5 meters long)*	<b>CABL-013</b>	<b>1 or 2</b>

### PNEUMATIC ACCESSORIES

	ORDER #	QTY/UNIT
Standard Seal Repair Kit	<b>SLKT-186</b>	<b>1</b>
Viton® Seal Repair Kit	<b>SLKT-186V</b>	<b>1</b>
Manifold Seal Kit (Viton®)	<b>SLKT-197V</b>	<b>1</b>
Sealed Jaw Boot Replacement (1 boot, Buna-N only)	<b>SLKT-192</b>	<b>1 or 2</b>
Plumbing Fitting - M3 male to 3mm OD Tube Push-in Style	<b>PLFT-021</b>	<b>1 or 2</b>
Plumbing Fitting - M3 male to 2mm ID Tube Barb Style	<b>PLFT-022</b>	<b>1 or 2</b>

\* Sensor and cable sold separately

\*\* -E Jaw Boot Seal option is not available with -B Bottom Jaw Mounting option.

See Accessory Mounting Data Section for -E Seal option dimensions.

† -E Rubber Jaw Boot seals are Buna-N (Nitrile) material even if the -V Viton® gripper option is selected. See page 1.66 for more detailed technical specifications on the -E option Jaw Boot material

## SAMPLE ORDER: DPDL-056M-038-E-CR-V

Ex: DPDL-056M Gripper, Metric, 12.7mm Stroke, Jaw Boot Seal, Corrosion Resistant Hardware with Clean Room Grade Grease, Viton® Seals

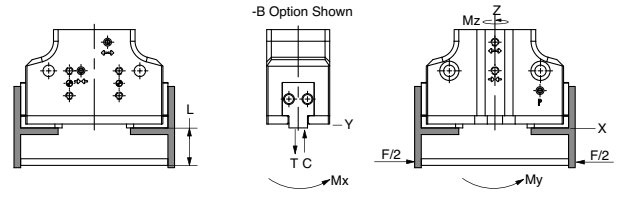
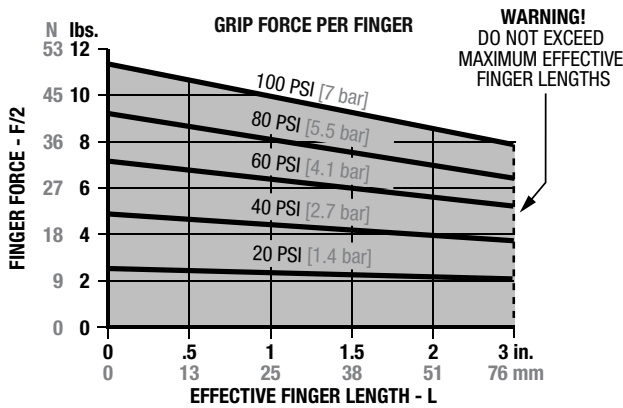
Please see back cover for DE-STA-CO Global Locations. [www.destaco.com](http://www.destaco.com)

[www.comoso.com](http://www.comoso.com)

DIRECTCONNECT™



## Loading Information



### Loading Capacity<sup>†</sup>

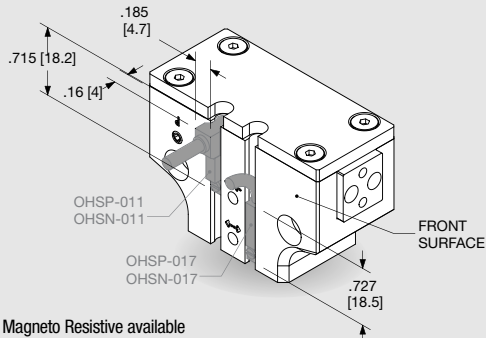
	Static	Dynamic
<b>DPDL-056M</b>		
Maximum Tensile <b>T</b>	125 lbs. [556 N]	25 lbs. [111 N]
Maximum Compressive <b>C</b>	250 lbs. [1113 N]	25 lbs. [111 N]
Maximum Moment <b>M<sub>x</sub></b>	115 in.-lbs. [13 Nm]	20 in.-lbs. [2 Nm]
Maximum Moment <b>M<sub>y</sub></b>	115 in.-lbs. [13 Nm]	20 in.-lbs. [2 Nm]
Maximum Moment <b>M<sub>z</sub></b>	115 in.-lbs. [13 Nm]	20 in.-lbs. [2 Nm]
<b>DPDL-056M-B (Bottom Jaw Mounting Option)</b>		
Maximum Tensile <b>T</b>	100 lbs. [445 N]	20 lbs. [89 N]
Maximum Compressive <b>C</b>	200 lbs. [890 N]	20 lbs. [89 N]
Maximum Moment <b>M<sub>x</sub></b>	92 in.-lbs. [10 Nm]	16 in.-lbs. [2 Nm]
Maximum Moment <b>M<sub>y</sub></b>	92 in.-lbs. [10 Nm]	16 in.-lbs. [2 Nm]
Maximum Moment <b>M<sub>z</sub></b>	92 in.-lbs. [10 Nm]	16 in.-lbs. [2 Nm]

<sup>†</sup>Capacities are per set of jaws and are not simultaneous

Specifications	DPDL-056M	
Total Rated Grip Force <b>F</b> @ 100 psi, 7 bar	22 lbs.	98 N
Maximum Stroke	0.50 in.	12.7 mm
Maximum Operating Pressure Range	20-100 psi	1.5-7 bar
Maximum Vacuum for Scavenge Port	8 in. Hg	200 mm Hg
Max Pressure for Purge Port: (Standard)	20 psi	1.4 bar
with <b>-E</b> Jaw Boot	4 psi	0.25 bar
Cylinder Bore $\emptyset$	0.563 in.	14.3 mm
Displacement	0.074 in. <sup>3</sup>	1.2 cm <sup>3</sup>

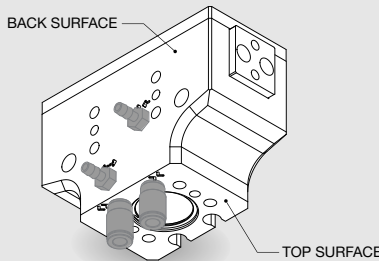
Specifications (cont.)	DPDL-056M	
Weight	0.315 lbs.	0.14 Kg
Temperature Range: Standard Seals	-30°~180° F	-35°~80° C
Viton® Seals	-20°~300° F	-30°~150° C
Actuation	0.25 sec.	0.25 sec.
Accuracy	±0.002 in.	±0.05 mm
Repeatability	±0.001 in.	±0.03 mm
Valve Required to Actuate	4-way, 2-position	

## Accessory Mounting Technical Data



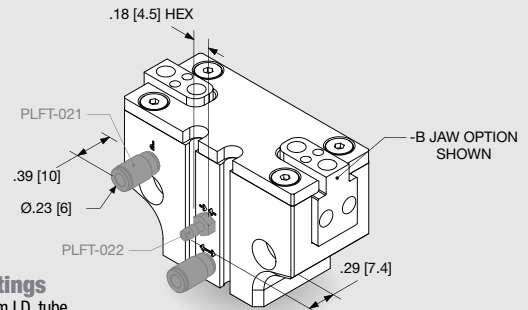
### Sensors

- PNP and NPN Magneto Resistive available
- Sensors are slot mounted, no mounting kits required
- Simple adjustment with slotted screw driver
- Built in LED for ease of positioning and troubleshooting
- Low profile underflush sensor version or 90° wire exit sensor version
- Available with 2M or 5M Quick Disconnect mating cable (order separately)



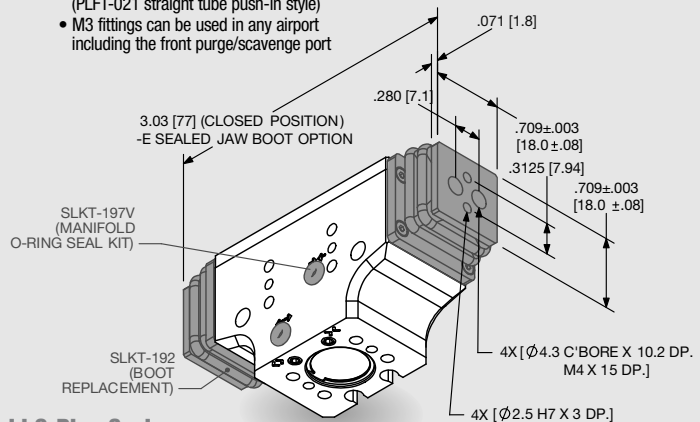
### Multiple Air Port Locations

- 3 standard M3 air port locations (front, top, and back surface)
- Top and Back air ports are plugged as standard



### Plumbing Fittings

- M3 fitting for 2mm I.D. tube (PLFT-022 straight barbed style)
- M3 fitting for 3mm O.D. tube (PLFT-021 straight tube push-in style)
- M3 fittings can be used in any airport including the front purge/scavenge port



### Manifold O-Ring Seals

- Can be used to seal front, top, or back air ports and front purge/scavenge port
- Seals in Manifold kit are Viton®
- O-Ring C'bores in customer's mounting plate must be:  $\emptyset$ .215 [Ø5.5] X .060±.002 [1.52±.05] deep
- Kit is supplied with all seals, plugs, & wrenches needed

### Sealed Jaw Boot Option

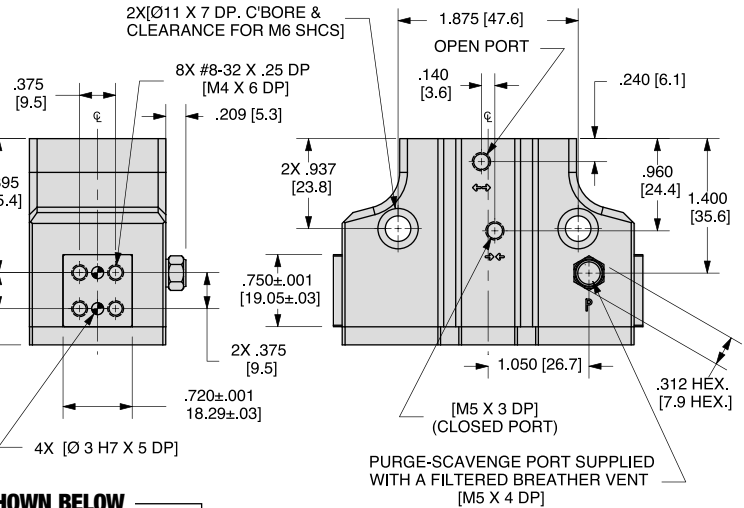
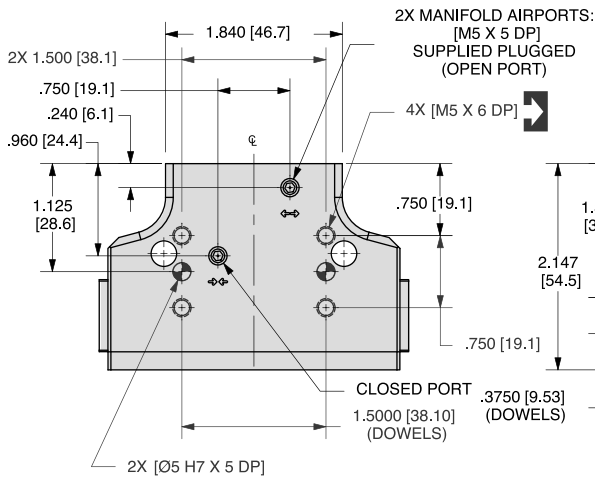
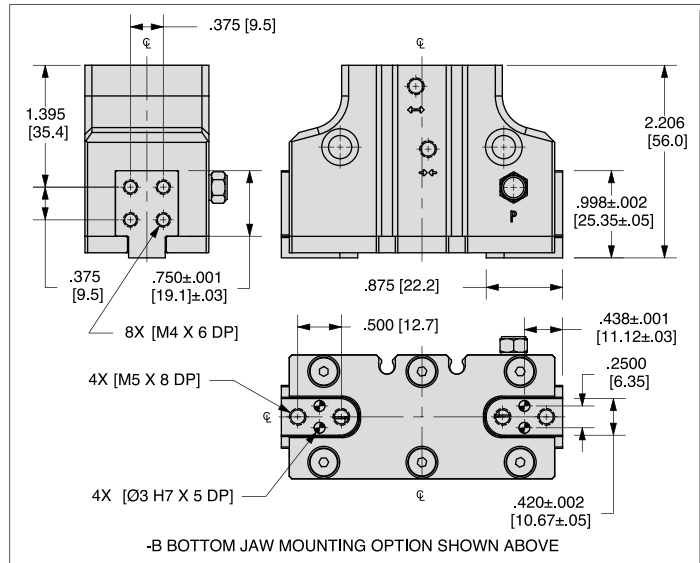
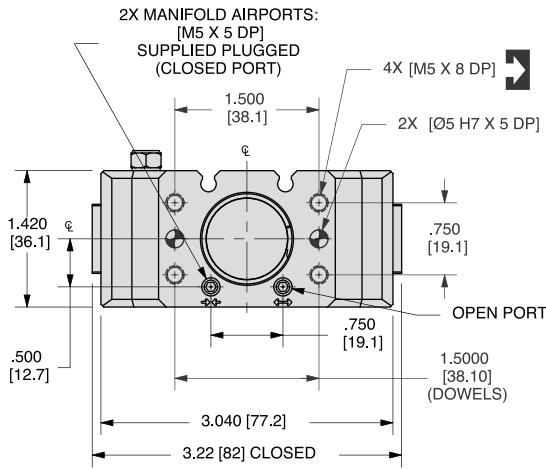
- Can be used to seal jaws in harsh environments
- Boot replacement available as an accessory
- Boot material is Buna-N (Nitrile) only



# PARALLEL GRIPPER DPDL-088M DIRECTCONNECT™ MODULAR SERIES

DPDL SERIES

1.152

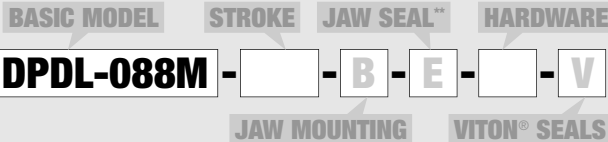


UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

				<b>Imperial in.</b>	<b>Metric [mm]</b>
Dimensions are symmetrical about centerline	Third Angle Projection	All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or ±.013mm	Metric Threads Course Pitch	0.00 ± .01 0.000 ± .005 0.0000 ± .0005	[0.] ± [.25] [0.0] ± [.13] [0.00] ± [.013]

NOTE: DIRECTCONNECT™ DIMENSIONS ARE SHOWN IN BLUE

## How to Order: (Order Accessories separately from Basic Model)



<b>STROKE</b>	<b>075</b>	.75" [19.1mm]
	<b>050</b>	.50" [12.7mm]
	<b>038</b>	.38" [9.5mm]
<b>JAW MOUNTING</b>	<b>B</b>	Bottom jaw mounting
	—	Leave blank for end jaw mounting (standard)
<b>JAW BOOT SEAL**</b>	—	Buna-N rubber bellows
<b>HARDWARE</b>	<b>S</b>	Corrosion resistant
	<b>CR</b>	Corrosion resistant assembled with clean room grade grease
	—	Leave blank for alloy hardware (standard)
<b>VITON®<sup>1</sup></b>	<b>V</b>	High Temperature Viton® Seals

### SENSOR ACCESSORIES

	ORDER #	QTY/UNIT
PNP Magneto Resistive Sensor with Quick Disconnect*	<b>OHSP-017</b>	<b>1 or 2</b>
NPN Magneto Resistive Sensor with Quick Disconnect*	<b>OHSN-017</b>	<b>1 or 2</b>
PNP Magneto Resistive Sensor (90° barrel) w/Qk. Disc.*	<b>OHSP-011</b>	<b>1 or 2</b>
NPN Magneto Resistive Sensor (90° barrel) w/Qk. Disc.*	<b>OHSN-011</b>	<b>1 or 2</b>
Quick Disconnect Cable (2 meters long)*	<b>CABL-010</b>	<b>1 or 2</b>
Quick Disconnect Cable (5 meters long)*	<b>CABL-013</b>	<b>1 or 2</b>

### PNEUMATIC ACCESSORIES

	ORDER #	QTY/UNIT
Standard Seal Repair Kit	<b>SLKT-187</b>	<b>1</b>
Viton® Seal Repair Kit	<b>SLKT-187V</b>	<b>1</b>
Manifold Seal Kit (Viton®)	<b>SLKT-199V</b>	<b>1</b>
Sealed Jaw Boot Replacement (1 boot, Buna-N only)	<b>SLKT-193</b>	<b>1 or 2</b>
Adjustable Flow Control M5 Elbow - 6mm OD Push-in (Metric)	<b>VLVF-008</b>	<b>1 or 2</b>
Fail Safe Valve M5	<b>OFSV-004</b>	<b>1 or 2</b>

\* Sensor and cable sold separately

\*\* -E Jaw Boot Seal option is not available with -B Bottom Jaw Mounting option.

See Accessory Mounting Data Section for -E Seal option dimensions.

† -E Rubber Jaw Boot seals are Buna-N (Nitrile) material even if the -V Viton® gripper option is selected.

See page 1.66 for more detailed technical specifications on the -E option Jaw Boot material

### SAMPLE ORDER: DPDL-088M-050-E-CR-V

Ex: DPDL-088M Gripper, Metric, 12.7mm Stroke, Jaw Boot Seal, Corrosion Resistant Hardware with Clean Room Grade Grease, Viton® Seals

Please see back cover for DE-STA-CO Global Locations. [www.destaco.com](http://www.destaco.com)

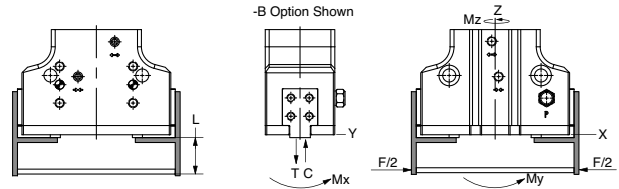
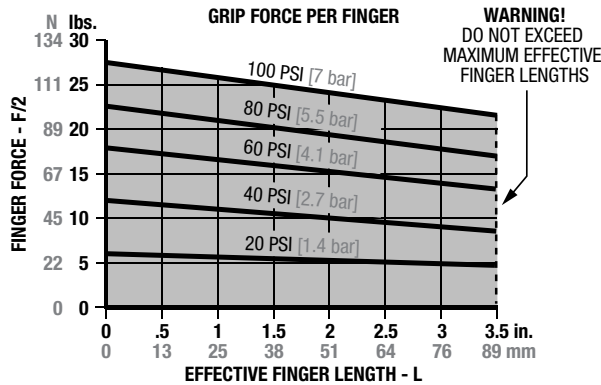
[www.comoso.com](http://www.comoso.com)

DIRECTCONNECT™





## Loading Information



### Loading Capacity<sup>1</sup>

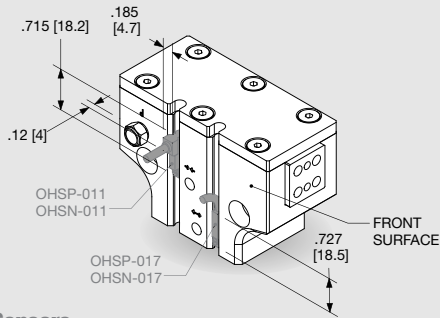
	Static	Dynamic
<b>DPDL-088M</b>		
Maximum Tensile <b>T</b>	350 lbs. [1558 N]	40 lbs. [178 N]
Maximum Compressive <b>C</b>	650 lbs. [2893 N]	40 lbs. [178 N]
Maximum Moment <b>M<sub>x</sub></b>	250 in.-lbs. [28 Nm]	40 in.-lbs. [5 Nm]
Maximum Moment <b>M<sub>y</sub></b>	250 in.-lbs. [28 Nm]	40 in.-lbs. [5 Nm]
Maximum Moment <b>M<sub>z</sub></b>	250 in.-lbs. [28 Nm]	40 in.-lbs. [5 Nm]
<b>DPDL-088M-B (Bottom Jaw Mounting Option)</b>		
Maximum Tensile <b>T</b>	280 lbs. [1246 N]	32 lbs. [142 N]
Maximum Compressive <b>C</b>	520 lbs. [2314 N]	32 lbs. [142 N]
Maximum Moment <b>M<sub>x</sub></b>	200 in.-lbs. [23 Nm]	32 in.-lbs. [4 Nm]
Maximum Moment <b>M<sub>y</sub></b>	200 in.-lbs. [23 Nm]	32 in.-lbs. [4 Nm]
Maximum Moment <b>M<sub>z</sub></b>	200 in.-lbs. [23 Nm]	32 in.-lbs. [4 Nm]

<sup>1</sup>Capacities are per set of jaws and are not simultaneous

Specifications	DPDL-088M	
Total Rated Grip Force <b>F</b> @ 100 psi, 7 bar	50 lbs.	222 N
Maximum Stroke	0.75 in.	19.1 mm
Maximum Operating Pressure Range	20-100 psi	1.5-7 bar
Maximum Vacuum for Scavenge Port	8 in. Hg	200 mm Hg
Max Pressure for Purge Port: (Standard)	20 psi	1.4 bar
with <b>-E</b> Jaw Boot	4 psi	0.25 bar
Cylinder Bore $\emptyset$	0.875 in.	22.2 mm
Displacement	0.269 in <sup>3</sup>	4.4 cm <sup>3</sup>

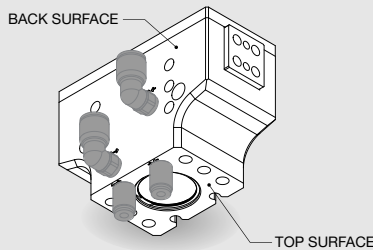
Specifications (cont.)	DPDL-088M	
Weight	0.95 lbs.	0.43 Kg
Temperature Range: Standard Seals	-30°~180° F	-35°~80° C
Viton® Seals	-20°~300° F	-30°~150° C
Actuation	0.30 sec.	0.30 sec.
Accuracy	±0.002 in.	±0.05 mm
Repeatability	±0.001 in.	±0.03 mm
Valve Required to Actuate	4-way, 2-position	

## Accessory Mounting Technical Data



### Sensors

- PNP and NPN Magneto Resistive available
- Sensors are slot mounted, no mounting kits required
- Simple adjustment with slotted screw driver
- Built in LED for ease of positioning and troubleshooting
- Low profile underflush sensor version or 90° wire exit sensor version
- Available with 2M or 5M Quick Disconnect mating cable (order separately)

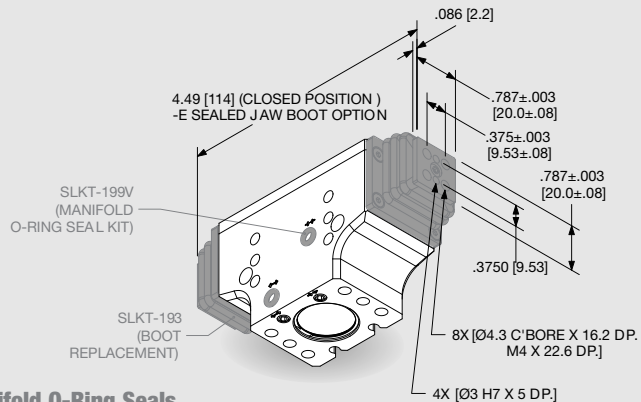
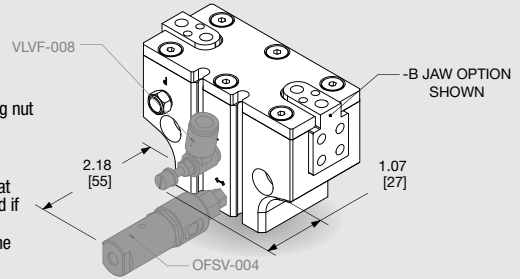


### Multiple Air Port Locations

- 3 standard M5 air port locations (front, top, and back surface)
- Top and Back air ports are plugged as standard

### Plumbing Fittings

- Adjustable flow controls:
  - Have thumb screw adjust with locking nut for adjusting actuation time;
  - Available for 6mm O.D. tubing
- Failsafe valve:
  - For applications where it is critical that the part being gripped not be dropped if air pressure is lost;
  - Can mount directly to gripper or in-line with plumbing to gripper
  - M5 air port
- Consult factory for additional plumbing fittings



### Manifold O-Ring Seals

- Can be used to seal front, top, or back air ports and front purge/scavenge port
- Seals in Manifold kit are Viton®
- O-Ring C'bores in customer's mounting plate must be:  $\emptyset$ 29.0 [Ø7.4] X .060±.002 [1.52±.05] deep
- Kit is supplied with all seals, plugs, & wrenches needed

### Sealed Jaw Boot Option

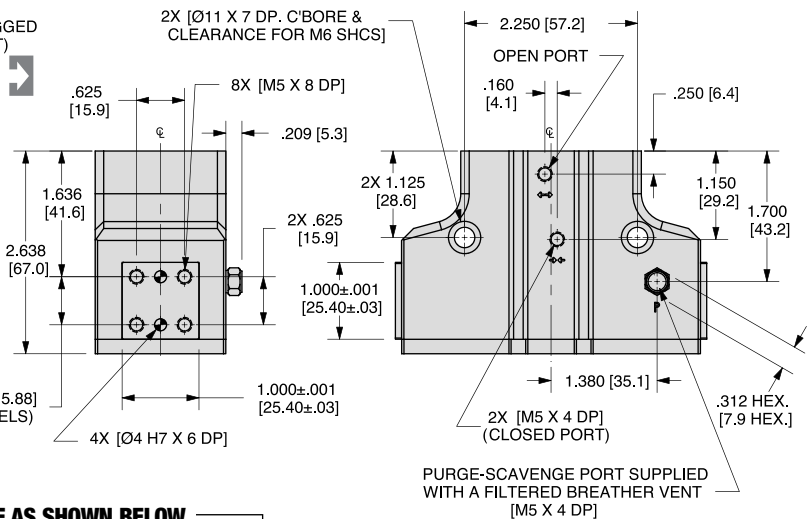
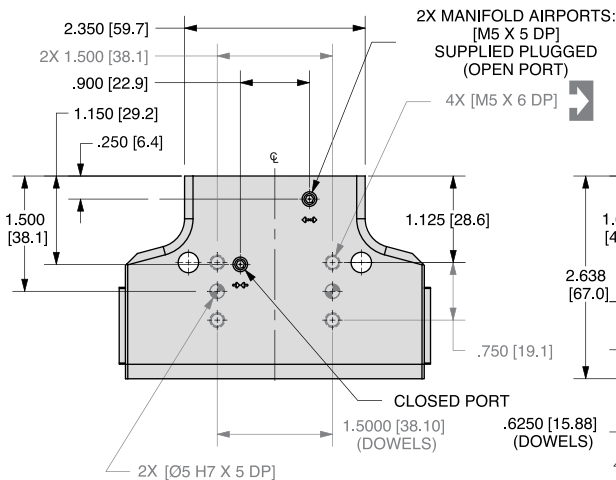
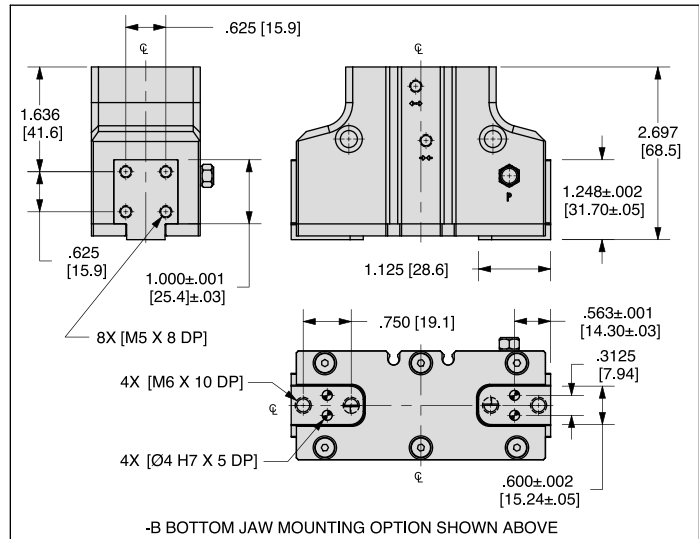
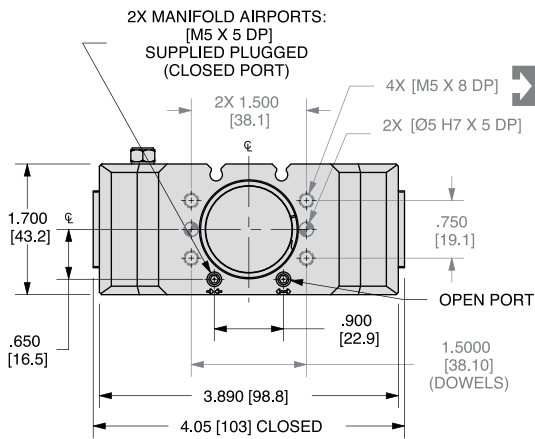
- Can be used to seal jaws in harsh environments
- Boot replacement available as an accessory
- Boot material is Buna-N (Nitrile) only



# PARALLEL GRIPPER DPDL-125M DIRECTCONNECT™ MODULAR SERIES

DPDL SERIES

1.154



UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

				<b>Imperial in.</b>	<b>Metric [mm]</b>
Dimensions are symmetrical about centerline	Third Angle Projection	All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or ±.013mm	Metric Threads Course Pitch	0.00 ± .01 0.000 ± .005 0.0000 ± .0005	[0.] = [±.25] [0.0] = [±.13] [0.00] = [±.013]

NOTE: DIRECTCONNECT™ DIMENSIONS ARE SHOWN IN BLUE

## How to Order: (Order Accessories separately from Basic Model)

**BASIC MODEL**   **STROKE**   **JAW SEAL\***   **HARDWARE**

**DPDL-125M** - [ ] - **B** - **E** - [ ] - **V**

**JAW MOUNTING**   **VITON® SEALS**

**STROKE**   **100** 1.00" [25.4mm]  
**075** .75" [19.1mm]  
**050** .50" [12.7mm]

**JAW MOUNTING**   **B** Bottom jaw mounting  
Leave blank for end jaw mounting (standard)

**JAW BOOT SEAL\*\***   **—** Buna-N rubber bellows

**HARDWARE**   **S** Corrosion resistant  
**CR** Corrosion resistant assembled with clean room grade grease  
Leave blank for alloy hardware (standard)

**VITON®<sup>1</sup>**   **V** High Temperature Viton® Seals

### SENSOR ACCESSORIES

	ORDER #	QTY/UNIT
PNP Magneto Resistive Sensor with Quick Disconnect*	<b>OHSP-017</b>	<b>1 or 2</b>
NPN Magneto Resistive Sensor with Quick Disconnect*	<b>OHSN-017</b>	<b>1 or 2</b>
PNP Magneto Resistive Sensor (90° barrel) w/Qk. Disc.*	<b>OHSP-011</b>	<b>1 or 2</b>
NPN Magneto Resistive Sensor (90° barrel) w/Qk. Disc.*	<b>OHSN-011</b>	<b>1 or 2</b>
Quick Disconnect Cable (2 meters long)*	<b>CABL-010</b>	<b>1 or 2</b>
Quick Disconnect Cable (5 meters long)*	<b>CABL-013</b>	<b>1 or 2</b>

### PNEUMATIC ACCESSORIES

	ORDER #	QTY/UNIT
Standard Seal Repair Kit	<b>SLKT-188</b>	<b>1</b>
Viton® Seal Repair Kit	<b>SLKT-188V</b>	<b>1</b>
Manifold Seal Kit (Viton®)	<b>SLKT-199V</b>	<b>1</b>
Sealed Jaw Boot Replacement (1 boot, Buna-N only)	<b>SLKT-194</b>	<b>1 or 2</b>
Adj. Flow Control M5 Elbow - 6mm OD Push-in (Metric)	<b>VLVF-008</b>	<b>1 or 2</b>
Fail Safe Valve M5	<b>OFSV-004</b>	<b>1 or 2</b>

\* Sensor and cable sold separately

\*\* -E Jaw Boot Seal option is not available with -B Bottom Jaw Mounting option.

See Accessory Mounting Data Section for -E Seal option dimensions.

† -E Rubber Jaw Boot seals are Buna-N (Nitrile) material even if the -V Viton® gripper option is selected. See page 1.66 for more detailed technical specifications on the -E option Jaw Boot material

### SAMPLE ORDER: DPDL-125M-075-E-CR-V

Ex: DPDL-125M Gripper, Metric, 25.4mm Stroke, Jaw Boot Seal, Corrosion Resistant Hardware with Clean Room Grade Grease, Viton® Seals

DIRECTCONNECT™



# PARALLEL GRIPPER DPDL-125M DIRECTCONNECT™ MODULAR SERIES

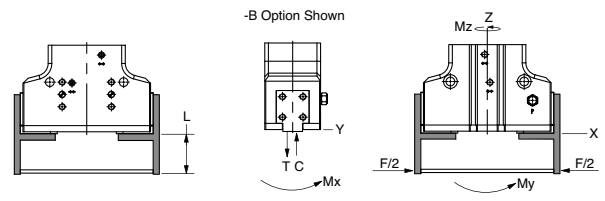
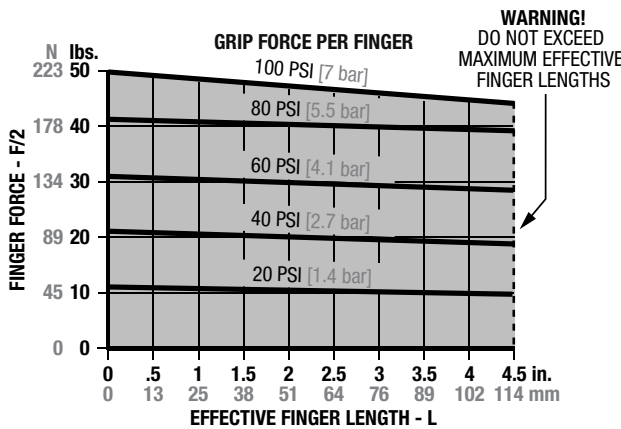
DPDL SERIES

1.155



DIRECTCONNECT™

## Loading Information



### Loading Capacity<sup>†</sup>

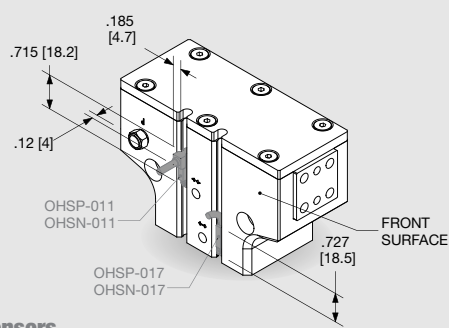
	Static	Dynamic
<b>DPDL-125M</b>		
Maximum Tensile <b>T</b>	675 lbs. [3004 N]	90 lbs. [401 N]
Maximum Compressive <b>C</b>	1300 lbs. [5785 N]	90 lbs. [401 N]
Maximum Moment <b>M<sub>x</sub></b>	650 in.-lbs. [73 Nm]	110 in.-lbs. [12 Nm]
Maximum Moment <b>M<sub>y</sub></b>	650 in.-lbs. [73 Nm]	110 in.-lbs. [12 Nm]
Maximum Moment <b>M<sub>z</sub></b>	650 in.-lbs. [73 Nm]	110 in.-lbs. [12 Nm]
<b>DPDL-125M-B (Bottom Jaw Mounting Option)</b>		
Maximum Tensile <b>T</b>	540 lbs. [2403 N]	72 lbs. [320 N]
Maximum Compressive <b>C</b>	1040 lbs. [4628 N]	72 lbs. [320 N]
Maximum Moment <b>M<sub>x</sub></b>	520 in.-lbs. [59 Nm]	88 in.-lbs. [10 Nm]
Maximum Moment <b>M<sub>y</sub></b>	520 in.-lbs. [59 Nm]	88 in.-lbs. [10 Nm]
Maximum Moment <b>M<sub>z</sub></b>	520 in.-lbs. [59 Nm]	88 in.-lbs. [10 Nm]

<sup>†</sup>Capacities are per set of jaws and are not simultaneous

Specifications	DPDL-125M	
Total Rated Grip Force <b>F</b> @ 100 psi, 7 bar	100 lbs.	445 N
Maximum Stroke	1.00 in.	25.4 mm
Maximum Operating Pressure Range	20-100 psi	1.5-7 bar
Maximum Vacuum for Scavenge Port	8 in. Hg	200 mm Hg
Max Pressure for Purge Port: (Standard)	20 psi	1.4 bar
with <b>-E</b> Jaw Boot	4 psi	0.25 bar
Cylinder Bore $\emptyset$	1.250 in.	31.8 mm
Displacement	0.730 in <sup>3</sup>	12.0 cm <sup>3</sup>

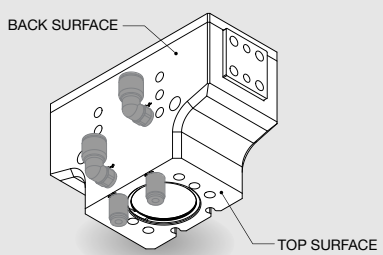
Specifications (cont.)	DPDL-125M	
Weight	1.99 lbs.	0.90 Kg
Temperature Range: Standard Seals	-30°~180° F	-35°~80° C
Viton® Seals	-20°~300° F	-30°~150° C
Actuation	0.50 sec.	0.50 sec.
Accuracy	±0.003 in.	±0.08 mm
Repeatability	±0.001 in.	±0.03 mm
Valve Required to Actuate	4-way, 2-position	

## Accessory Mounting Technical Data



### Sensors

- PNP and NPN Magneto Resistive available
- Sensors are slot mounted, no mounting kits required
- Simple adjustment with slotted screw driver
- Built in LED for ease of positioning and troubleshooting
- Low profile underflush sensor version or 90° wire exit sensor version
- Available with 2M or 5M Quick Disconnect mating cable (order separately)

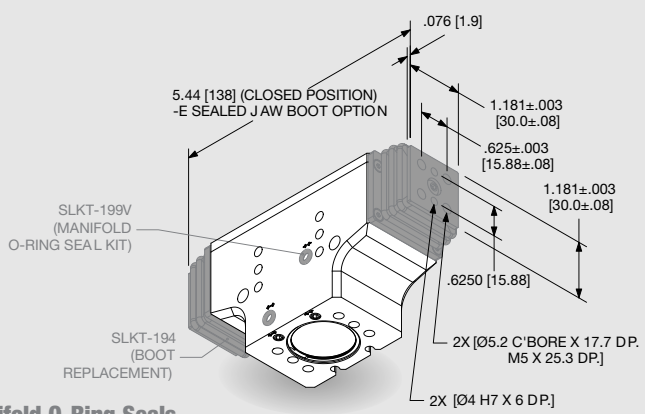
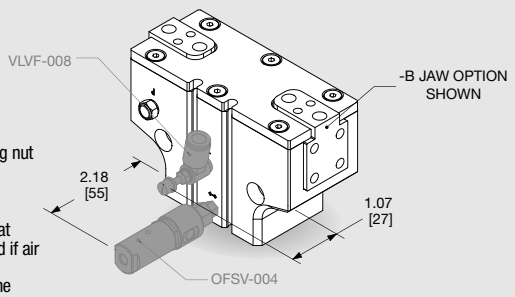


### Multiple Air Port Locations

- 3 standard M5 air port locations (front, top, and back surface)
- Top and Back air ports are plugged as standard

### Plumbing Fittings

- Adjustable flow controls:
  - Have thumb screw adjust with locking nut for adjusting actuation time;
  - Available for 6mm O.D. tubing
- Failsafe valve:
  - For applications where it is critical that the part being gripped not be dropped if air pressure is lost
  - Can mount directly to gripper or in-line with plumbing to gripper
  - M5 air port
- Consult factory for additional plumbing fittings



### Manifold O-Ring Seals

- Can be used to seal front, top, or back air ports and front purge/scavenge port
- Seals in Manifold kit are Viton®
- O-Ring C'bores in customer's mounting plate must be:  $\emptyset$ .290 [Ø7.4] X .060±.002 [1.52±.05] deep
- Kit is supplied with all seals, plugs, & wrenches needed

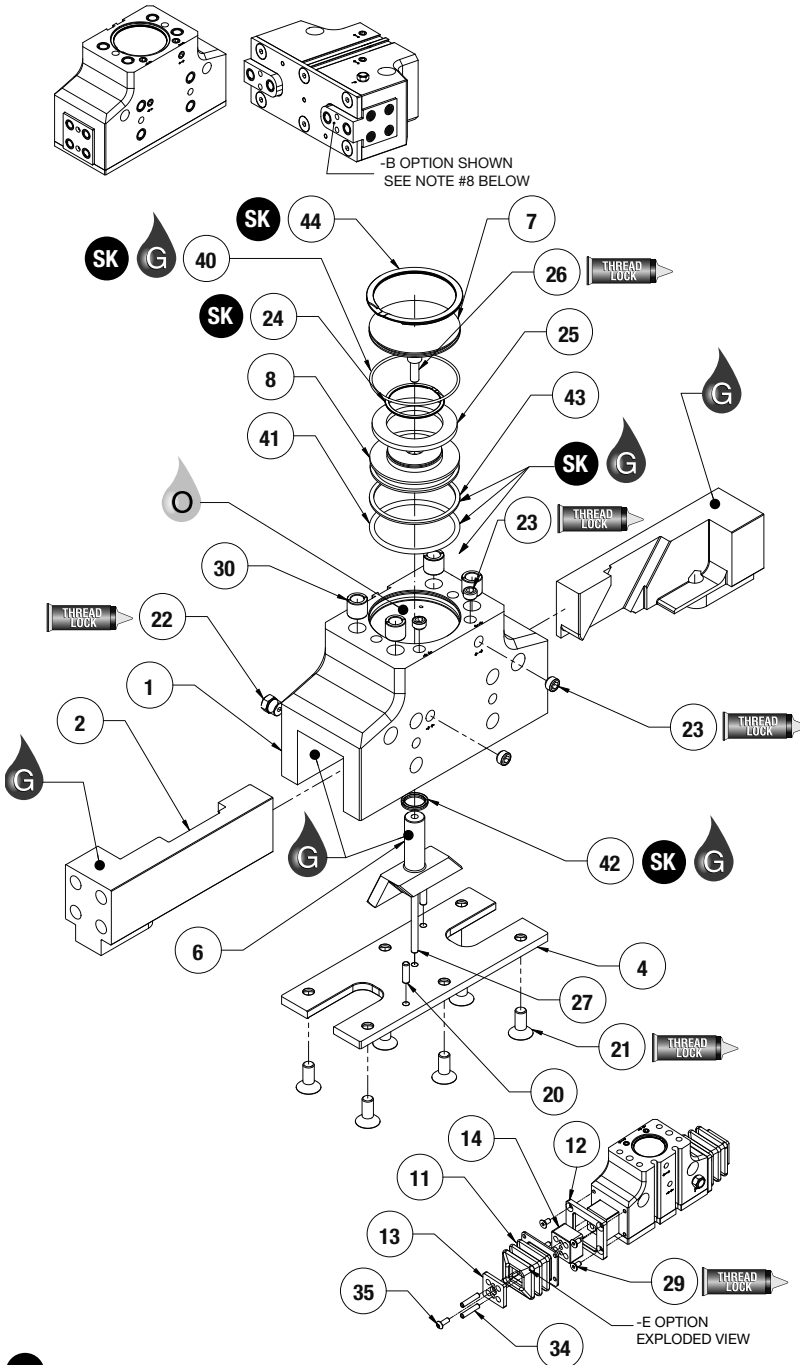
### Sealed Jaw Boot Option

- Can be used to seal jaws in harsh environments
- Boot replacement available as an accessory
- Boot material is Buna-N (Nitrile) only

Please see back cover for DE-STA-CO Global Locations. [www.destaco.com](http://www.destaco.com)

[www.comoso.com](http://www.comoso.com)

# DPDL SERIES EXPLODED VIEW



Item	Qty	Name
01	1	Body
02	2	Jaw
04	1	Bottom Plate
06*	1	Shaft Wedge
07	1	Cap
08	1	Piston
11	2	Boot
12	2	Boot Flange
13	2	Boot Spacer Cap
14	2	Boot Spacer
20	2	Bottom Plate Locating Dowels
21	6	Bottom Plate Screws
22*	1	Breather Vent Plug (Purge)
23	4	Manifold Port Plugs
24	1	Piston Mag. Ret. Ring
25	1	Piston Magnet
26	1	Piston Mounting Screw
27	1	Shaft guide dowel pin
29	8	Boot Flange Mounting Screws
34	4	Boot Spacer Dowel Pins
35*	2	Boot Spacer Mtg Screws
40	1	Cap O-ring
41	1	Piston O-ring
42	1	U-cup
44	1	Cap Ret. Ring

**NOTES:\***

- 1) Contact the Destaco-Robohand Sales Department for a complete spare parts list with order numbers and prices.
- 4) Item #22 Breather vent plug is a set screw plug for sizes -047 & -056.
- 7) Item #35 is for sizes -088 thru -125 only.
- 8) End-of-jaw mounting holes on -B option are supplied plugged to prevent debris from entering the gripper. These set screws can be removed for customer finger mounting. It is recommend that all unused holes be plugged for the same reason.

**SK Seal Repair Kit Order #'s  
See Product Data Sheets**

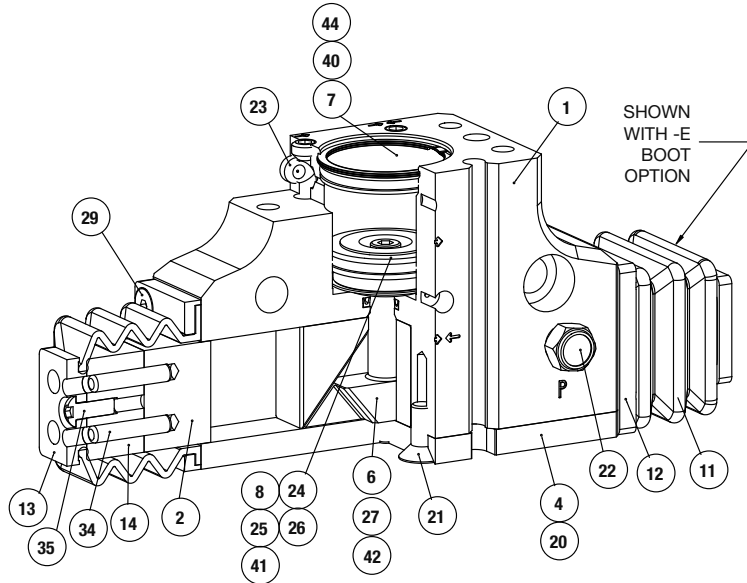
**Assembly Procedure:**

- 1) Install #23 airport plugs with thread-locker.
- 2) Press pins #20 & #27 into plate #4.
- 3) Install #22 vent or plug with thread-locker.
- 4) Mount magnet #25 to piston #8 with retaining ring #24.
- 5) Lubricate body #1 (jaw cavity & bores).
- 6) Lubricate & install all seals into body, piston, & cap.
- 7) Sub-assemble the #2 jaws on either side of the #6 shaft wedge with lubrication.
- 8) Insert the jaws and shaft wedge sub-assembly into body.

- 9) Insert piston #8 into the body bore and fasten it to the shaft wedge with Mounting screw # 26 using thread locker.
- 10) Install cap #7 into body with retaining ring #44.
- 11) Insert #4 bottom plate with pressed-in pins onto the body and fasten with #21 screws with thread-locker.

**-E Option Assembly Procedure:**

- 1) Insert pins #34 into the jaw dowel pin holes.
- 2) Place #14 boot spacer over pins
- 3) Fasten boot #11 and flange #12 to body #1 with #29 screws.
- 4) Fasten the spacer cap #13 to the spacer #14 with #35 screw.

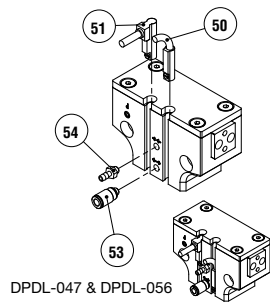


Item	Qty	Name
01	1	Body
02	2	Jaw
04	1	Bottom Plate
06*	1	Shaft Wedge
07	1	Cap
08	1	Piston
11	2	Boot
12	2	Boot Flange
13	2	Boot Spacer Cap
14	2	Boot Spacer
20	2	Bottom Plate Locating Dowels
21	6	Bottom Plate Screws
22*	1	Breather Vent Plug (Purge)
23	4	Manifold Port Plugs
24	1	Piston Mag. Ret. Ring
25	1	Piston Magnet
26	1	Piston Mounting Screw
27	1	Shaft guide dowel pin
29	8	Boot Flange Mounting Screws
34	4	Boot Spacer Dowel Pins
35*	2	Boot Spacer Mtg Screws
40	1	Cap O-ring
41	1	Piston O-ring
42	1	U-cup
44	1	Cap Ret. Ring

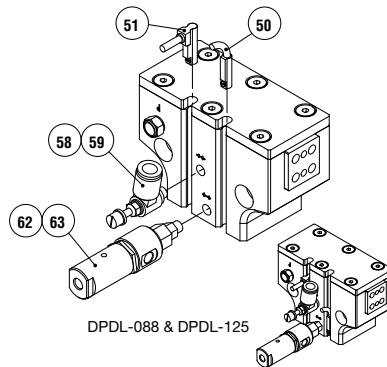
**NOTES:\***

- 1) Contact the Destaco-Robohand Sales Department for a complete spare parts list with order numbers and prices.
- 2) Item #22 breather vent plug is a set screw plug for sizes -047 & -056.

## Accessory Installation & Adjustment Instructions



DPDL-047 & DPDL-056



DPDL-088 & DPDL-125

**Magneto-Resistive Sensors:**

- 1) Insert sensors #50 or #51 from either end of the profile slots and set the sensor with the integrated screw.

**Plumbing Fittings:**

- 1) M3 plumbing fittings #53 & #54 can be used in any airport or purge/scavenge port.
- 2) Flow controls can be inserted and used in any open or closed airport to help control the stroke actuation.
- 3) Fail-safe valve can be used in either the open or closed airport to help limit the possibility of dropping the part if air pressure is lost.

Item	Qty	Name
50	1 or 2	Magneto Resistive Sensor (short barrel) w/Qk. Disconnect
51	1 or 2	Magneto Resistive Sensor (90° barrel) w/Qk. Disconnect
53	1,2, or 3	Plumbing Fitting - M3 male to 3mm OD Push-in Style
54	1,2, or 3	Plumbing Fitting - M3 male to 2mm ID Barb Style
59	1 or 2	Adj. Flow Control (Metric) M5 elbow - 6mm OD Push-in Style
63	1	Fail Safe Valve (Metric) M5

**NOTE:** Other Plumbing Fittings are available for each size - Consult Factory

# Parallel Grippers - Long Stroke Series

- **Compact and robust design**

This gripper is designed for use in confined spaces, combining long strokes with the high gripping force provided by two simultaneously acting pistons.

- **For long finger applications:**

Jaws are supported throughout the length of the body, enabling long fingers.

- **Multipurpose gripper:**

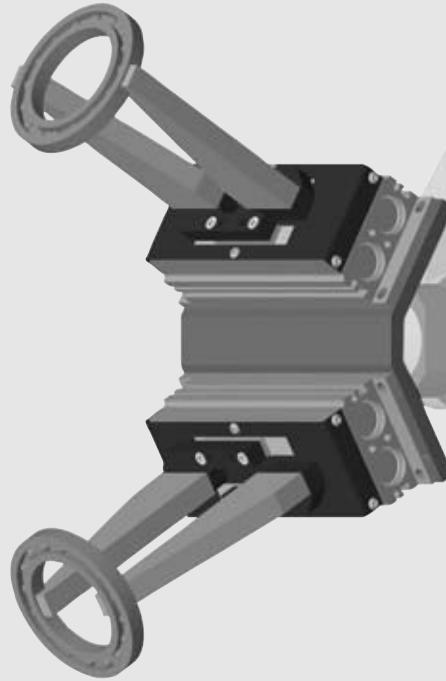
A wide range of options and accessories (safety springs, in-line jaws, magneto resistive or inductive sensors) allow these grippers to be used in a number of applications.

- **Harsh environments:**

Enclosed, shielded design repels chips and other particulate from internal drive mechanism.

- **Spring assist, spring return:**

Can be used as failsafe, single acting spring return, or double acting spring assist.

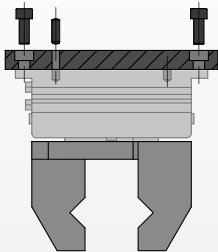


**NO  
ADAPTER  
PLATES!**

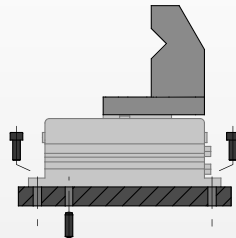
## Mounting Information:

### Grippers can be mounted & operated in any orientation

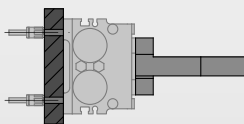
The gripper is protected from falling debris when it is mounted and operated upside down.



Gripper locates from the top with 2 dowel pins and can be assembled with 4 screws from the top or bottom.



Fingers are located on jaws with 2 dowel pins and assembled with 2 screws.



Gripper can be operated with rear inlets (manifold).

## Technical Specifications:

### Pneumatic Specifications

Pressure Operating Range:

Standard  
with **-R** Spring Option

Cylinder Type

Dynamic Seals

Valve Required to Operate

### Imperial

30-100 psi

60-100 psi

Double Acting

Internally Lubricated Buna-N

4-way, 2-position for Double Acting  
or 3-way, 2-position for Single Acting

### Metric

2-7 bar

4-7 bar

### Air Quality Requirements

Air Filtration

Air Lubrication

Air Humidity

40 Micron or Better

Not Necessary\*

Low Moisture Content (dry)

### Temperature Operating Range

Buna-N Seals (Standard)

-4°~180° F

-20°~80° C

### Maintenance Specifications<sup>†</sup>

Expected Life

Normal Application  
w/ Preventative Maintenance

Field Repairable

Seal Repair Kits Available

5 million cycles

10+ million cycles\*

Yes

Yes

\*Addition of lubrication will greatly increase service life

<sup>†</sup>See Maintenance Section



## Product Features

### Quality Components

Made of aluminum alloy with Teflon™ impregnated hard coat anodize. The device's main components are made of heat treated steel.

### Shielded Design

Gripper body is shielded to repel chips and other particulate from internal drive mechanism.

### In-Line Jaws

Optional In-Line Jaws for simplified finger design: 2 interfaces can be fixed on to the jaws.

### DIRECTCONNECT™ Mounting Patterns

DIRECTCONNECT™ mounting surface on back of body

### Air Ports

Either lateral on 2 sides (couplings) or at the rear (manifold sealing).

### Spring Assist

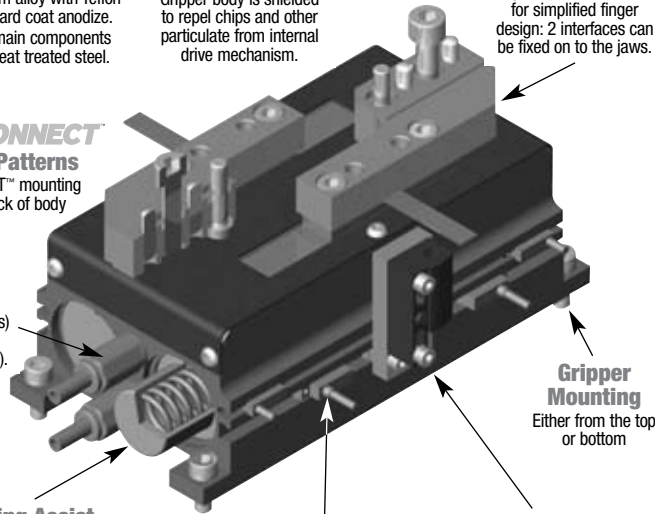
Option (-R) to restrain the component, should the air supply fail or to use the gripper in single acting mode by clamping on the shaft or the bore.

### Magnetic Sensor

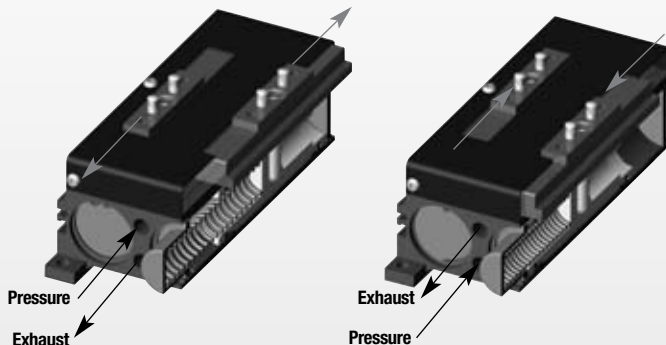
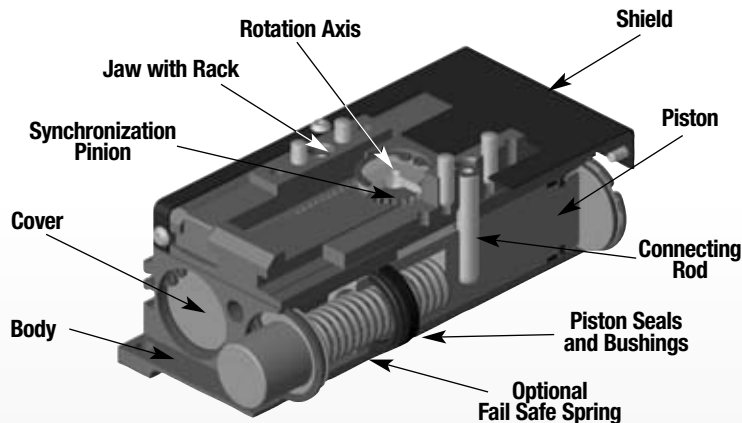
Piston is equipped with the magnet and the body has mounting slots.

### Inductive Sensor Mounting Kit

Mounting kit has 2 flags and 3 adjustable sensor holders.



## Operating Principle

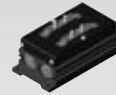


- Dual double acting pistons connected to both jaws and synchronized by the pinion actuate in opposite directions.
- Each jaw is guided by a T-slot in the body.
- Jaw Synchronization is achieved by a rack and pinion system.
- For Non-Synchronous operation, the pinion can be removed.
- Suitable for internal or external gripping.

## Style-DPL Parallel Gripper

Size -2520

Style:	DPL-2520	
Stroke:	1.57 in.	40 mm
Grip Force:	182 lbs.	811 N
Weight:	3.04 lbs.	1.38 Kg



See Page **1.160**

## Style-DPL Parallel Gripper

Size -2535

Style:	DPL-2535	
Stroke:	2.76 in.	70 mm
Grip Force:	173 lbs.	768 N
Weight:	3.97 lbs.	1.80 Kg

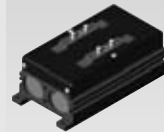


See Page **1.161**

## Style-DPL Parallel Gripper

Size -3230

Style:	DPL-3230	
Stroke:	2.36 in.	60 mm
Grip Force:	306 lbs.	1359 N
Weight:	4.98 lbs.	2.26 Kg

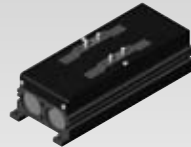


See Page **1.162**

## Style-DPL Parallel Gripper

Size -3250

Style:	DPL-3250	
Stroke:	3.94 in.	100 mm
Grip Force:	294 lbs.	1306 N
Weight:	6.66 lbs.	3.02 Kg

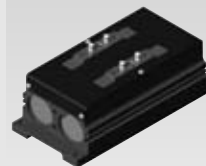


See Page **1.163**

## Style-DPL Parallel Gripper

Size -4040

Style:	DPL-4040	
Stroke:	3.15 in.	80 mm
Grip Force:	457 lbs.	2035 N
Weight:	9.48 lbs.	4.30 Kg

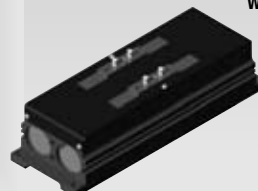


See Page **1.164**

## Style-DPL Parallel Gripper

Size -4070

Style:	DPL-4070	
Stroke:	5.51 in.	140 mm
Grip Force:	456 lbs.	2029 N
Weight:	13.23 lbs.	6.00 Kg



See Page **1.165**



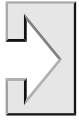




# PARALLEL GRIPPER DPL-2520 TWO JAW LONG STROKE

DPL SERIES

1.160

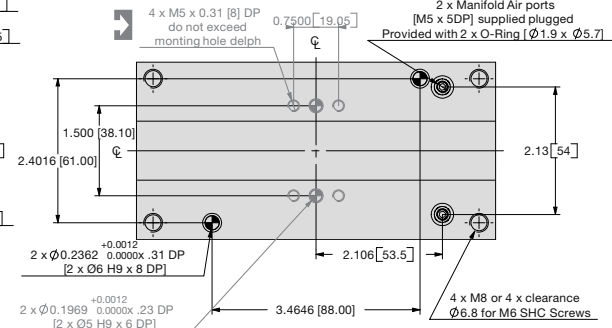
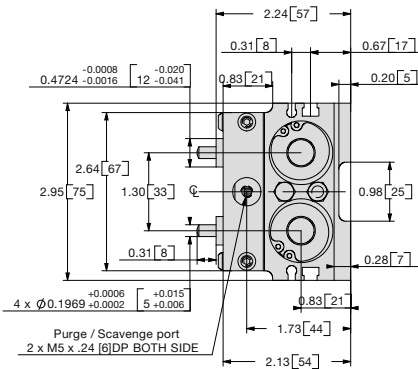
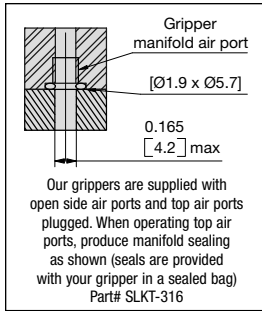
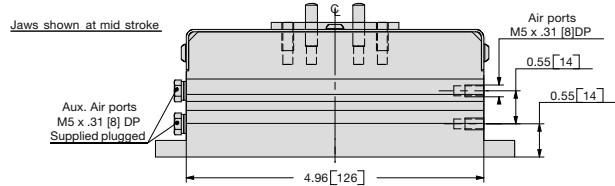
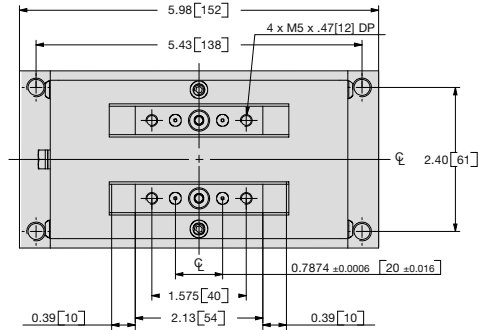


## Specifications

## DPL-2520

Total Rated Grip Force <b>F</b> @ 100 psi, 7 bar*	182 lbs.	811 N
Stroke	1.57 in	40 mm
Weight	3.04 lbs.	1.38 kg
Pressure Range (without springs)	30-100 psi	2-7 bar
Pressure Range (with springs)	60-100 psi	4-7 bar
Cylinder Bore $\emptyset$	0.98 in.	25 mm
Displacement	2.38 in <sup>3</sup>	39 cm <sup>3</sup>
Temperature Range	-4°~180° F	-20°~80° C
Actuation (open/close)	0.3/0.3 sec.	
Accuracy	±0.003 in.	±0.08 mm
Repeatability	±0.0010 in.	±0.025 mm.
Valve required to actuate single acting....	3-way 2-position	
Valve required to actuate double acting....	4-way, 2-position	

\* With springs.

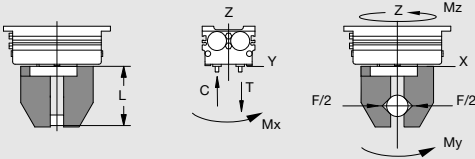
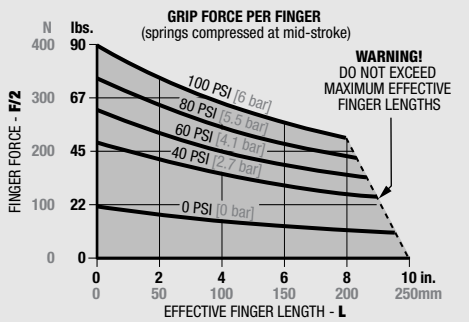


## UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

- Dimensions are symmetrical about centerline
- Third Angle Projection
- All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or [±.013mm]
- Metric Threads Course Pitch

NOTE: DIRECTCONNECT™ DIMENSIONS ARE SHOWN IN BLUE

## Loading Information



## Loading Capacity†

	Static		Dynamic	
	Imperial	Metric	Imperial	Metric
Maximum Tensile <b>T</b>	225 lbs.	1000 N	34 lbs.	150 N
Maximum Compressive <b>C</b>	283 lbs.	1260 N	34 lbs.	150 N
Maximum Moment <b>M<sub>x</sub></b>	372 in.-lbs.	42 Nm	35 in.-lbs.	4 Nm
Maximum Moment <b>M<sub>y</sub></b>	885 in.-lbs.	100 Nm	81 in.-lbs.	9 Nm
Maximum Moment <b>M<sub>z</sub></b>	531 in.-lbs.	60 Nm	81 in.-lbs.	9 Nm

†Capacities are per set of jaws and are not simultaneous

## How to Order: (Order Separately)

BASIC MODEL NON-SYNCHRONOUS  
**DPL-2520 - R - NS**  
SPRING

### SENSOR ACCESSORIES\*

PNP Magneto Resistive Sensor Long Barrel w/Qk Disc*	<b>OHSP-017</b>	<b>1 to 3</b>
NPN Magneto Resistive Sensor Long Barrel w/Qk Disc*	<b>OHSN-017</b>	<b>1 to 3</b>
PNP Magneto Resistive Sensor 90° Barrel w/Qk Disc*	<b>OHSP-011</b>	<b>1 to 3</b>
NPN Magneto Resistive Sensor 90° Barrel w/Qk Disc*	<b>OHSN-011</b>	<b>1 to 3</b>
Inductive Sensor Mounting Kit (3 Holders + 2 Flags)	<b>OSMK-099</b>	<b>1</b>
M8 PNP Inductive Sensor with Quick Disconnect*	<b>OISP-011</b>	<b>1 to 3</b>
M8 NPN Inductive Sensor with Quick Disconnect*	<b>OISN-011</b>	<b>1 to 3</b>
Quick Disconnect 2 Meter Cable Length*	<b>CABL-010</b>	<b>1 to 3</b>
Quick Disconnect 5 Meter Cable Length*	<b>CABL-013</b>	<b>1 to 3</b>

### PNEUMATIC ACCESSORIES

Standard Seal Repair Kit	<b>SLKT-233</b>	<b>1</b>
Rear Inlet Seal Repair Kit	<b>SLKT-316</b>	<b>1</b>
Fitting Push-in Straight M5 - 6mm O.D. Tube	<b>PLFT-037</b>	<b>1 to 2</b>
Fitting Push-in 90° Elbow M5 - 6mm O.D. Tube	<b>PLFT-041</b>	<b>1 to 2</b>

### MOUNTING ACCESSORIES

In-Line Jaw Mounting Kit	<b>ODPL-001</b>	<b>1</b>
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\*Sensor and cable sold separately.

See detailed option and accessory information at the end of this section.

DIRECTCONNECT™



# PARALLEL GRIPPER DPL-2535 TWO JAW LONG STROKE

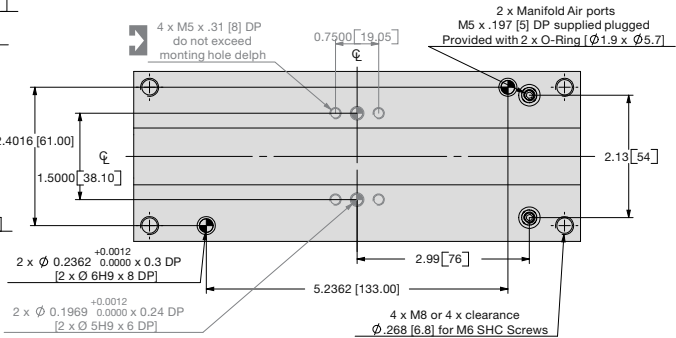
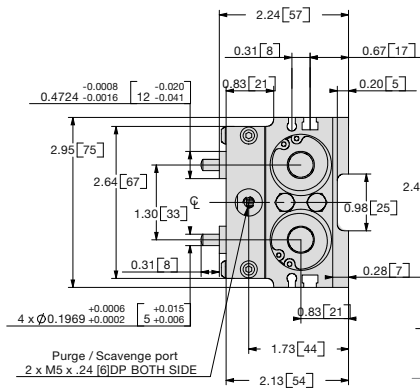
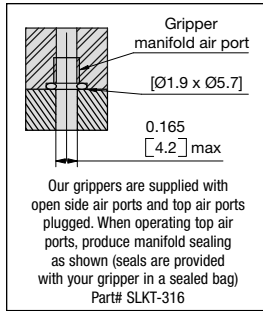
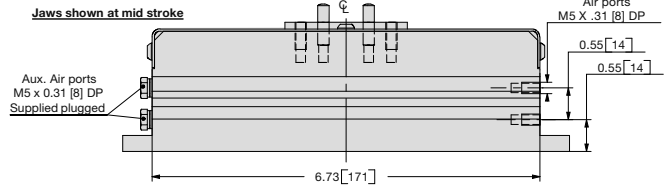
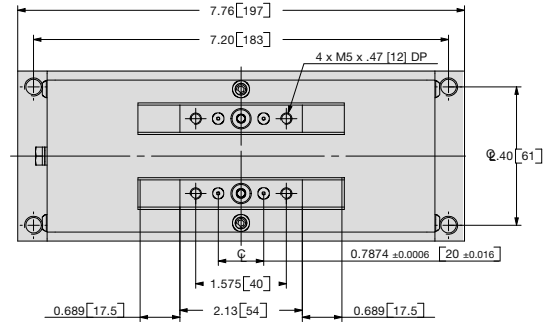
DPL SERIES  
1.161

## Specifications

### DPL-2535

Total Rated Grip Force <b>F</b> @ 100 psi, 7 bar*	173 lbs.	768 N
Stroke	2.76 in	70 mm
Weight	3.97 lbs.	1.80 kg
Pressure Range (without springs)	30-100 psi	2-7 bar
Pressure Range (with springs)	60-100 psi	4-7 bar
Cylinder Bore $\varnothing$	0.98 in.	25 mm
Displacement	4.15 in <sup>3</sup>	68 cm <sup>3</sup>
Temperature Range	-4°~180° F	-20°~80° C
Actuation (open/close)	0.4/0.4 sec.	
Accuracy	±0.003 in.	±0.08 mm
Repeatability	±0.0010 in.	±0.025 mm.
Valve required to actuate single acting....	3-way 2-position	
Valve required to actuate double acting....	4-way, 2-position	

\* With springs.

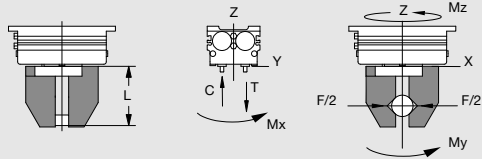
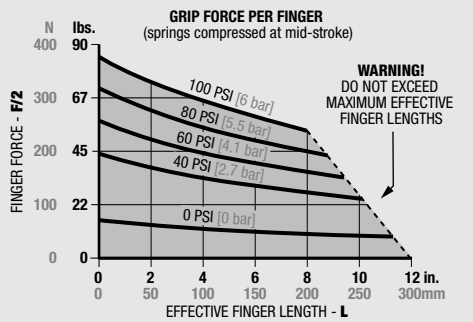


## UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

- Dimensions are symmetrical about centerline
- Third Angle Projection
- All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or [±.013mm]
- Metric Threads Course Pitch

NOTE: DIRECTCONNECT™ DIMENSIONS ARE SHOWN IN BLUE

## Loading Information



### Loading Capacity†

	Static		Dynamic	
	Imperial	Metric	Imperial	Metric
Maximum Tensile <b>T</b>	324 lbs.	1440 N	34 lbs.	150 N
Maximum Compressive <b>C</b>	411 lbs.	1380 N	34 lbs.	150 N
Maximum Moment <b>M<sub>x</sub></b>	513 in.-lbs.	58 Nm	35 in.-lbs.	4 Nm
Maximum Moment <b>M<sub>y</sub></b>	1947 in.-lbs.	220 Nm	142 in.-lbs.	16 Nm
Maximum Moment <b>M<sub>z</sub></b>	1151 in.-lbs.	130 Nm	142 in.-lbs.	16 Nm

†Capacities are per set of jaws and are not simultaneous

## How to Order: (Order Separately)

BASIC MODEL    NON-SYNCHRONOUS  
**DPL-2535 - R - NS**  
SPRING

### SENSOR ACCESSORIES\*

PNP Magneto Resistive Sensor Long Barrel w/Qk Disc*	<b>OHSP-017</b>	<b>1 to 3</b>
NPN Magneto Resistive Sensor Long Barrel w/Qk Disc*	<b>OHSN-017</b>	<b>1 to 3</b>
PNP Magneto Resistive Sensor 90° Barrel w/Qk Disc*	<b>OHSP-011</b>	<b>1 to 3</b>
NPN Magneto Resistive Sensor 90° Barrel w/Qk Disc*	<b>OHSN-011</b>	<b>1 to 3</b>
Inductive Sensor Mounting Kit (3 Holders + 2 Flags)	<b>OSMK-099</b>	<b>1</b>
M8 PNP Inductive Sensor with Quick Disconnect*	<b>OISP-011</b>	<b>1 to 3</b>
M8 NPN Inductive Sensor with Quick Disconnect*	<b>OISN-011</b>	<b>1 to 3</b>
Quick Disconnect 2 Meter Cable Length*	<b>CABL-010</b>	<b>1 to 3</b>
Quick Disconnect 5 Meter Cable Length*	<b>CABL-013</b>	<b>1 to 3</b>

### PNEUMATIC ACCESSORIES

Standard Seal Repair Kit	<b>SLKT-233</b>	<b>1</b>
Rear Inlet Seal Repair Kit	<b>SLKT-316</b>	<b>1</b>
Fitting Push-in Straight M5 - 6mm O.D. Tube	<b>PLFT-037</b>	<b>1 to 2</b>
Fitting Push-in 90° Elbow M5 - 6mm O.D. Tube	<b>PLFT-041</b>	<b>1 to 2</b>

### MOUNTING ACCESSORIES

In-Line Jaw Mounting Kit	<b>ODPL-002</b>	<b>1</b>
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\*Sensor and cable sold separately.

See detailed option and accessory information at the end of this section.

DIRECTCONNECT™



# PARALLEL GRIPPER DPL-3230 TWO JAW LONG STROKE

DPL SERIES

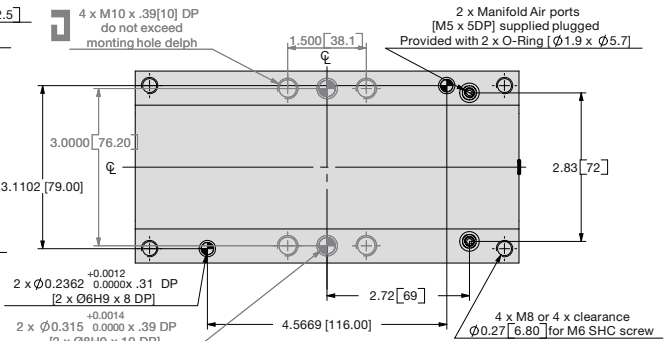
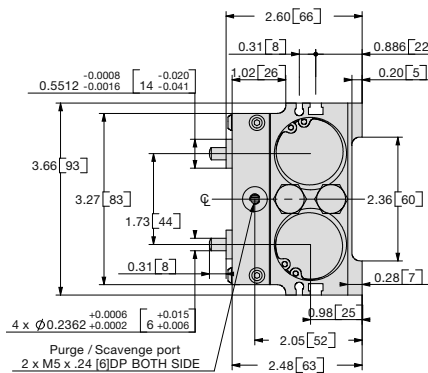
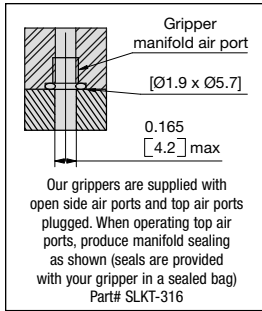
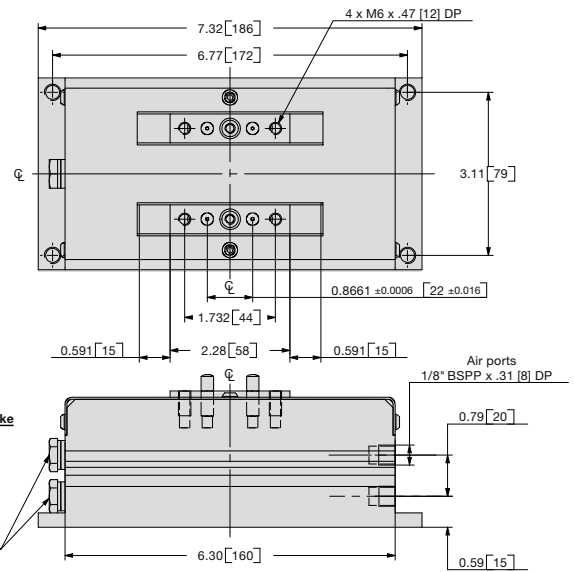
1.162



## Specifications

		DPL-3230	
Total Rated Grip Force <b>F</b> @ 100 psi, 7 bar*	306 lbs.	1359 N	
Stroke	2.36 in	60 mm	
Weight	4.98 lbs.	2.26 kg	
Pressure Range (without springs)	30-100 psi	2-7 bar	
Pressure Range (with springs)	60-100 psi	4-7 bar	
Cylinder Bore $\varnothing$	1.26 in.	32 mm	
Displacement	5.86 in <sup>3</sup>	96 cm <sup>3</sup>	
Temperature Range	-4°~180° F	-20°~80° C	
Actuation (open/close)	0.4/0.4 sec.		
Accuracy	±0.003 in.	±0.08 mm	
Repeatability	±0.0010 in.	±0.025 mm.	
Valve required to actuate single acting	3-way 2-position		
Valve required to actuate double acting	4-way, 2-position		

\* With springs.

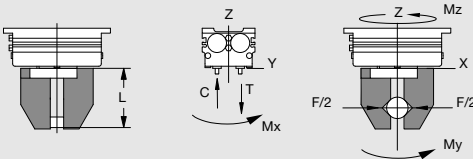
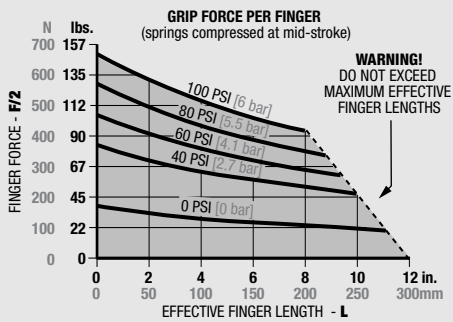


**UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW**

Dimensions are symmetrical about centerline    Third Angle Projection    All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or [±.013mm]    Metric Threads Course Pitch

NOTE: DIRECTCONNECT™ DIMENSIONS ARE SHOWN IN BLUE

## Loading Information



Loading Capacity†	Static		Dynamic	
	Imperial	Metric	Imperial	Metric
Maximum Tensile <b>T</b>	343 lbs.	1525 N	61 lbs.	270 N
Maximum Compressive <b>C</b>	427 lbs.	1900 N	61 lbs.	270 N
Maximum Moment <b>M<sub>x</sub></b>	673 in.-lbs.	76 Nm	71 in.-lbs.	8 Nm
Maximum Moment <b>M<sub>y</sub></b>	2009 in.-lbs.	227 Nm	195 in.-lbs.	22 Nm
Maximum Moment <b>M<sub>z</sub></b>	1062 in.-lbs.	120 Nm	195 in.-lbs.	22 Nm

†Capacities are per set of jaws and are not simultaneous

## How to Order: (Order Separately)

BASIC MODEL    NON-SYNCHRONOUS

**DPL-3230 - R - NS**

SPRING

### SENSOR ACCESSORIES\*

PNP Magneto Resistive Sensor Long Barrel w/Qk Disc*	<b>OHSP-017</b>	<b>1 to 3</b>
NPN Magneto Resistive Sensor Long Barrel w/Qk Disc*	<b>OHSN-017</b>	<b>1 to 3</b>
PNP Magneto Resistive Sensor 90° Barrel w/Qk Disc*	<b>OHSP-011</b>	<b>1 to 3</b>
NPN Magneto Resistive Sensor 90° Barrel w/Qk Disc*	<b>OHSN-011</b>	<b>1 to 3</b>
Inductive Sensor Mounting Kit (3 Holders + 2 Flags)	<b>OSMK-100</b>	<b>1</b>
M8 PNP Inductive Sensor with Quick Disconnect*	<b>OISP-011</b>	<b>1 to 3</b>
M8 NPN Inductive Sensor with Quick Disconnect*	<b>OISN-011</b>	<b>1 to 3</b>
Quick Disconnect 2 Meter Cable Length*	<b>CABL-010</b>	<b>1 to 3</b>
Quick Disconnect 5 Meter Cable Length*	<b>CABL-013</b>	<b>1 to 3</b>

### PNEUMATIC ACCESSORIES

Standard Seal Repair Kit	<b>SLKT-234</b>	<b>1</b>
Rear Inlet Seal Repair Kit	<b>SLKT-316</b>	<b>1</b>
Fitting Push-in Straight G1/8 - 6mm O.D. Tube	<b>PLFT-038</b>	<b>1 to 2</b>
Fitting Push-in 90° Elbow G1/8 - 6mm O.D. Tube	<b>PLFT-042</b>	<b>1 to 2</b>

### MOUNTING ACCESSORIES

In-Line Jaw Mounting Kit	<b>ODPL-003</b>	<b>1</b>
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\*Sensor and cable sold separately.

See detailed option and accessory information at the end of this section.

DIRECTCONNECT™



# PARALLEL GRIPPER DPL-3250 TWO JAW LONG STROKE

DPL SERIES

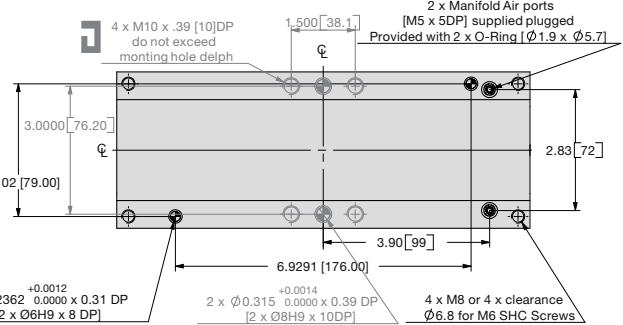
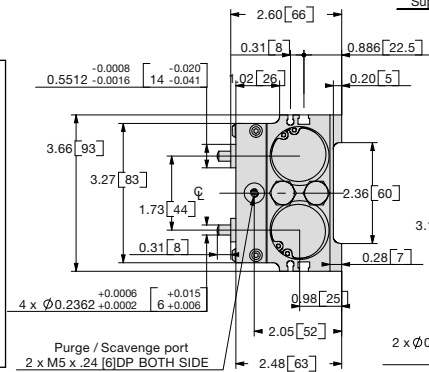
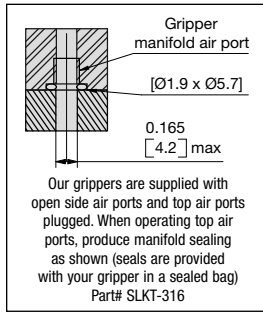
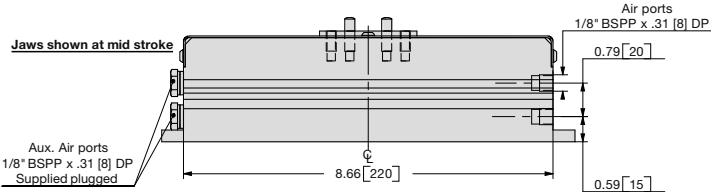
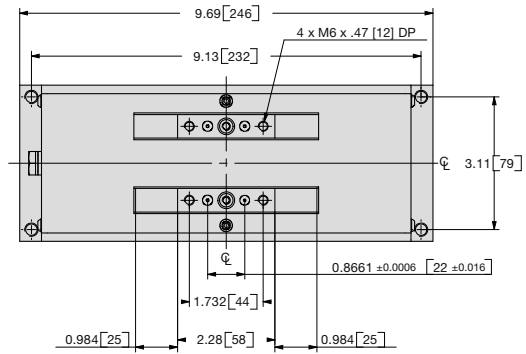
1.163

## Specifications

### DPL-3250

Total Rated Grip Force <b>F</b> @ 100 psi, 7 bar*	294 lbs.	1306 N
Stroke	3.94 in	100 mm
Weight	6.66 lbs.	3.02 kg
Pressure Range (without springs)	30-100 psi	2-7 bar
Pressure Range (with springs)	60-100 psi	4-7 bar
Cylinder Bore $\varnothing$	1.26 in.	32 mm
Displacement	9.96 in <sup>3</sup>	160 cm <sup>3</sup>
Temperature Range	-4°~180° F	-20°~80° C
Actuation (open/close)	0.5/0.5 sec.	
Accuracy	±0.003 in.	±0.08 mm
Repeatability	±0.0010 in.	±0.025 mm.
Valve required to actuate single acting....	3-way 2-position	
Valve required to actuate double acting....	4-way, 2-position	

\* With springs.



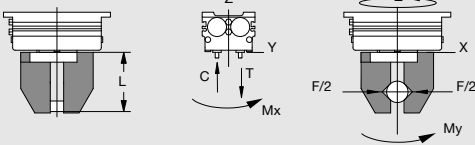
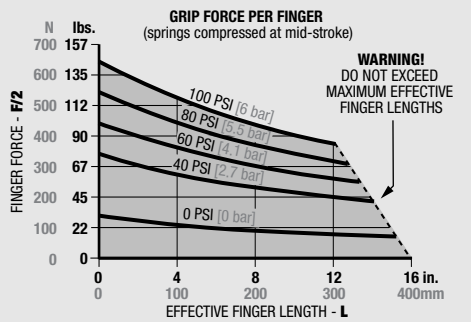
## UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

- Dimensions are symmetrical about centerline
- Third Angle Projection
- All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or [±.013mm]
- Metric Threads Course Pitch

NOTE: DIRECTCONNECT™ DIMENSIONS ARE SHOWN IN BLUE

## Loading Information

## How to Order: (Order Separately)



### Loading Capacity†

	Static		Dynamic	
	Imperial	Metric	Imperial	Metric
Maximum Tensile <b>T</b>	416 lbs.	1850 N	58 lbs.	260 N
Maximum Compressive <b>C</b>	520 lbs.	2315 N	58 lbs.	260 N
Maximum Moment <b>M<sub>x</sub></b>	770 in.-lbs.	87 Nm	71 in.-lbs.	8 Nm
Maximum Moment <b>M<sub>y</sub></b>	3098 in.-lbs.	350 Nm	283 in.-lbs.	32 Nm
Maximum Moment <b>M<sub>z</sub></b>	1682 in.-lbs.	190 Nm	283 in.-lbs.	32 Nm

†Capacities are per set of jaws and are not simultaneous

BASIC MODEL NON-SYNCHRONOUS

**DPL-3250 - R - NS**

SPRING

### SENSOR ACCESSORIES\*

PNP Magneto Resistive Sensor Long Barrel w/Qk Disc*	<b>OHSP-017</b>	<b>1 to 3</b>
NPN Magneto Resistive Sensor Long Barrel w/Qk Disc*	<b>OHSN-017</b>	<b>1 to 3</b>
PNP Magneto Resistive Sensor 90° Barrel w/Qk Disc*	<b>OHSP-011</b>	<b>1 to 3</b>
NPN Magneto Resistive Sensor 90° Barrel w/Qk Disc*	<b>OHSN-011</b>	<b>1 to 3</b>
Inductive Sensor Mounting Kit (3 Holders + 2 Flags)	<b>OSMK-100</b>	<b>1</b>
M8 PNP Inductive Sensor with Quick Disconnect*	<b>OISP-011</b>	<b>1 to 3</b>
M8 NPN Inductive Sensor with Quick Disconnect*	<b>OISN-011</b>	<b>1 to 3</b>
Quick Disconnect 2 Meter Cable Length*	<b>CABL-010</b>	<b>1 to 3</b>
Quick Disconnect 5 Meter Cable Length*	<b>CABL-013</b>	<b>1 to 3</b>

### PNEUMATIC ACCESSORIES

Standard Seal Repair Kit	<b>SLKT-234</b>	<b>1</b>
Rear Inlet Seal Repair Kit	<b>SLKT-316</b>	<b>1</b>
Fitting Push-in Straight G1/8 - 6mm O.D. Tube	<b>PLFT-038</b>	<b>1 to 2</b>
Fitting Push-in 90° Elbow G1/8 - 6mm O.D. Tube	<b>PLFT-042</b>	<b>1 to 2</b>

### MOUNTING ACCESSORIES

In-Line Jaw Mounting Kit	<b>ODPL-004</b>	<b>1</b>
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\*Sensor and cable sold separately.

See detailed option and accessory information at the end of this section.

DIRECTCONNECT™



# PARALLEL GRIPPER DPL-4040 TWO JAW LONG STROKE

DPL SERIES

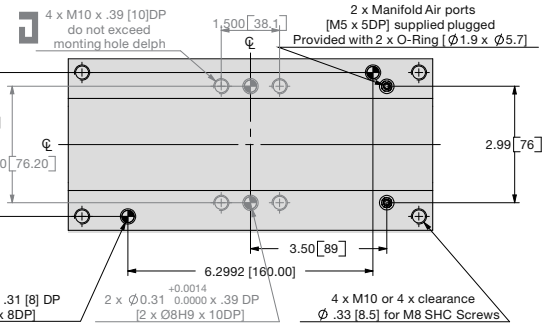
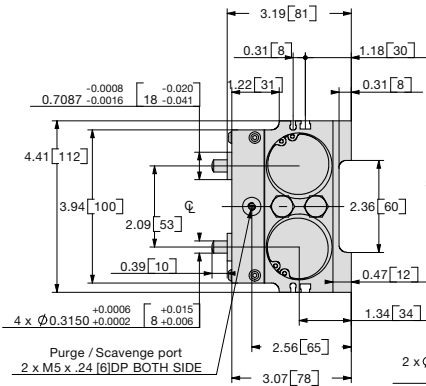
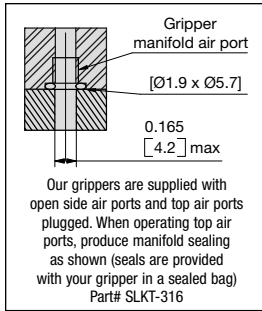
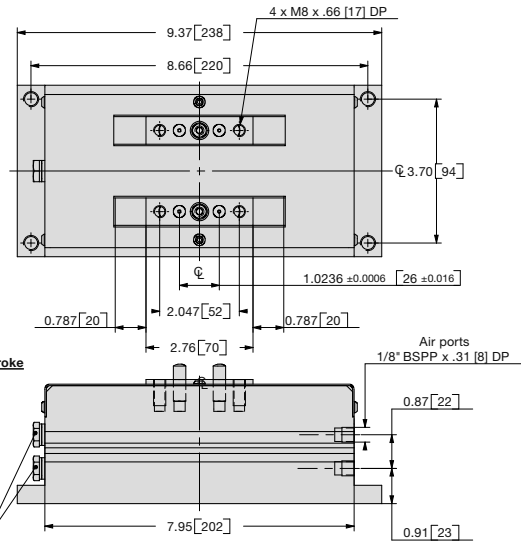
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## Specifications

### DPL-4040

Total Rated Grip Force <b>F</b> @ 100 psi, 7 bar*	457 lbs.	2035 N
Stroke	3.15 in	80 mm
Weight	9.48 lbs.	4.30 kg
Pressure Range (without springs)	30-100 psi	2-7 bar
Pressure Range (with springs)	60-100 psi	4-7 bar
Cylinder Bore $\emptyset$	1.57 in.	40 mm
Displacement	12.20 in <sup>3</sup>	200 cm <sup>3</sup>
Temperature Range	-4°~180° F	-20°~80° C
Actuation (open/close)	0.5/0.5 sec.	
Accuracy	±0.003 in.	±0.08 mm
Repeatability	±0.0010 in.	±0.025 mm.
Valve required to actuate single acting....	3-way 2-position	
Valve required to actuate double acting....	4-way, 2-position	

\* With springs.

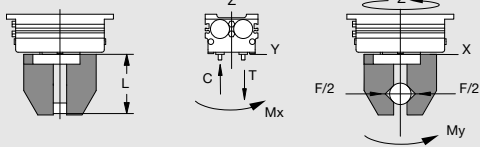
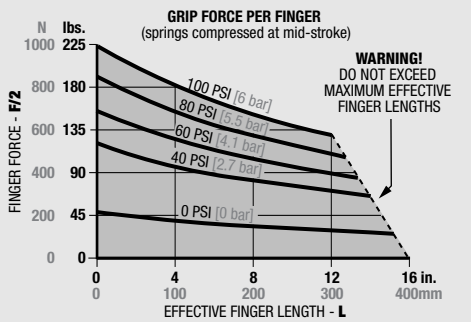


### UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

- Dimensions are symmetrical about centerline
- Third Angle Projection
- All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or [±.013mm]
- Metric Threads Course Pitch

NOTE: DIRECTCONNECT™ DIMENSIONS ARE SHOWN IN BLUE

## Loading Information



Loading Capacity†	Static		Dynamic	
	Imperial	Metric	Imperial	Metric
Maximum Tensile <b>T</b>	456 lbs.	2030 N	90 lbs.	400 N
Maximum Compressive <b>C</b>	549 lbs.	2440 N	90 lbs.	400 N
Maximum Moment <b>M<sub>x</sub></b>	1195 in.-lbs.	135 Nm	124 in.-lbs.	14 Nm
Maximum Moment <b>M<sub>y</sub></b>	3717 in.-lbs.	420 Nm	381 in.-lbs.	43 Nm
Maximum Moment <b>M<sub>z</sub></b>	1947 in.-lbs.	220 Nm	381 in.-lbs.	43 Nm

†Capacities are per set of jaws and are not simultaneous

## How to Order: (Order Separately)

BASIC MODEL NON-SYNCHRONOUS  
**DPL-4040 - R - NS**  
SPRING

### SENSOR ACCESSORIES\*

M8 PNP Magneto Resistive Sensor Long Barrel w/Qk Disc*	<b>OHSP-017</b>	<b>1 to 3</b>
M8 NPN Magneto Resistive Sensor Long Barrel w/Qk Disc*	<b>OHSN-017</b>	<b>1 to 3</b>
M8 PNP Magneto Resistive Sensor 90° Barrel w/Qk Disc*	<b>OHSP-011</b>	<b>1 to 3</b>
M8 NPN Magneto Resistive Sensor 90° Barrel w/Qk Disc*	<b>OHSN-011</b>	<b>1 to 3</b>
Inductive Sensor Mounting Kit (3 Holders + 2 Flags)	<b>OSMK-101</b>	<b>1</b>
M12 PNP Inductive Sensor with Quick Disconnect*	<b>OISP-017</b>	<b>1 to 3</b>
M12 NPN Inductive Sensor with Quick Disconnect*	<b>OISN-017</b>	<b>1 to 3</b>
M8 Quick Disconnect 2 Meter Cable Length*	<b>CABL-010</b>	<b>1 to 3</b>
M8 Quick Disconnect 5 Meter Cable Length*	<b>CABL-013</b>	<b>1 to 3</b>
M12 Quick Disconnect 2 Meter Cable Length*	<b>CABL-014</b>	<b>1 to 3</b>
M12 Quick Disconnect 5 Meter Cable Length*	<b>CABL-018</b>	<b>1 to 3</b>

### PNEUMATIC ACCESSORIES

Standard Seal Repair Kit	<b>SLKT-235</b>	<b>1</b>
Rear Inlet Seal Repair Kit	<b>SLKT-316</b>	<b>1</b>
Fitting Push-in Straight G1/8 - 6mm O.D. Tube	<b>PLFT-038</b>	<b>1 to 2</b>
Fitting Push-in 90° Elbow G1/8 - 6mm O.D. Tube	<b>PLFT-042</b>	<b>1 to 2</b>

### MOUNTING ACCESSORIES

In-Line Jaw Mounting Kit	<b>ODPL-005</b>	<b>1</b>
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\*Sensor and cable sold separately.

See detailed option and accessory information at the end of this section.

DIRECTCONNECT™





# PARALLEL GRIPPER DPL-4070 TWO JAW LONG STROKE

DPL SERIES

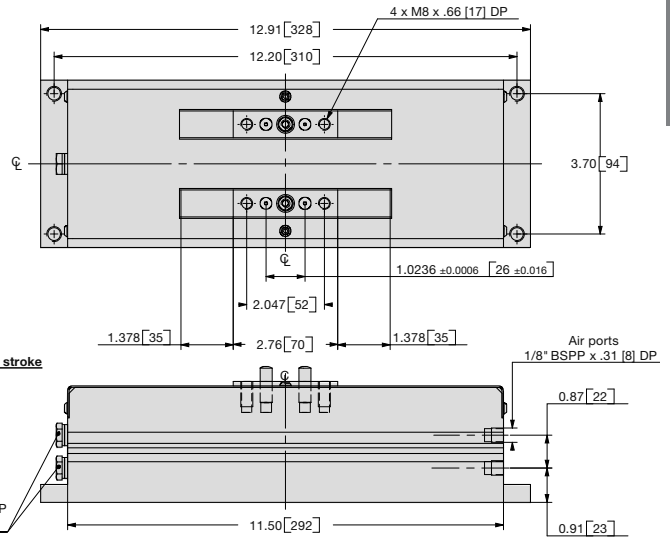
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## Specifications

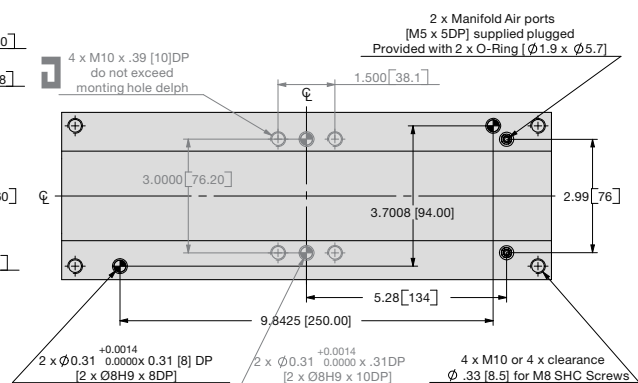
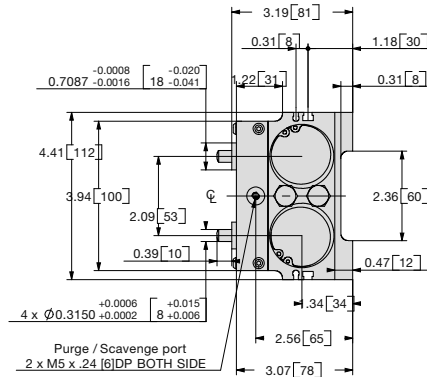
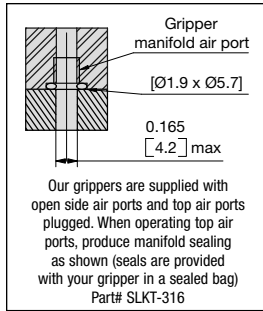
### DPL-4070

Total Rated Grip Force <b>F</b> @ 100 psi, 7 bar*	456 lbs.	2029 N
Stroke	5.51 in	140 mm
Weight	13.23 lbs.	6.00 kg
Pressure Range (without springs)	30-100 psi	2-7 bar
Pressure Range (with springs)	60-100 psi	4-7 bar
Cylinder Bore $\varnothing$	1.57 in.	40 mm
Displacement	21.36 in <sup>3</sup>	350 cm <sup>3</sup>
Temperature Range	-4°~180° F	-20°~80° C
Actuation (open/close)	0.7/0.7 sec.	
Accuracy	±0.003 in.	±0.08 mm
Repeatability	±0.0010 in.	±0.025 mm.
Valve required to actuate single acting....	3-way 2-position	
Valve required to actuate double acting....	4-way, 2-position	

\* With springs.



Jaws shown at mid stroke



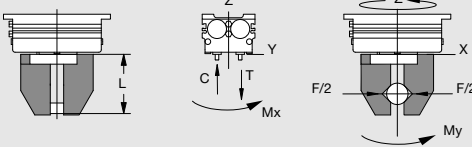
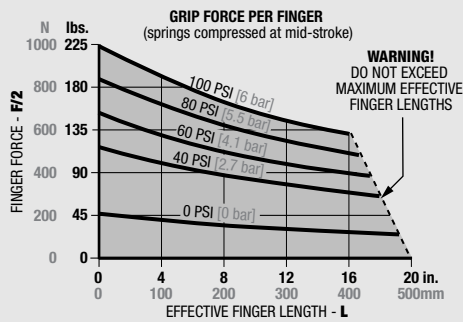
## UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

- Dimensions are symmetrical about centerline
- Third Angle Projection
- All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or [±.013mm]
- Metric Threads Course Pitch

NOTE: DIRECTCONNECT™ DIMENSIONS ARE SHOWN IN BLUE

## Loading Information

## How to Order: (Order Separately)



### Loading Capacity†

	Static		Dynamic	
	Imperial	Metric	Imperial	Metric
Maximum Tensile <b>T</b>	564 lbs.	2510 N	90 lbs.	400 N
Maximum Compressive <b>C</b>	677 lbs.	3010 N	90 lbs.	400 N
Maximum Moment <b>M<sub>x</sub></b>	1416 in.-lbs.	160 Nm	133 in.-lbs.	15 Nm
Maximum Moment <b>M<sub>y</sub></b>	5885 in.-lbs.	665 Nm	566 in.-lbs.	64 Nm
Maximum Moment <b>M<sub>z</sub></b>	3098 in.-lbs.	350 Nm	566 in.-lbs.	64 Nm

†Capacities are per set of jaws and are not simultaneous

BASIC MODEL NON-SYNCHRONOUS

**DPL-4070 - R - NS**

SPRING

### SENSOR ACCESSORIES\*

M8 PNP Magneto Resistive Sensor Long Barrel w/Qk Disc*	<b>OHSP-017</b>	<b>1 to 3</b>
M8 NPN Magneto Resistive Sensor Long Barrel w/Qk Disc*	<b>OHSN-017</b>	<b>1 to 3</b>
M8 PNP Magneto Resistive Sensor 90° Barrel w/Qk Disc*	<b>OHSP-011</b>	<b>1 to 3</b>
M8 NPN Magneto Resistive Sensor 90° Barrel w/Qk Disc*	<b>OHSN-011</b>	<b>1 to 3</b>
Inductive Sensor Mounting Kit (3 Holders + 2 Flags)	<b>OSMK-101</b>	<b>1</b>
M12 PNP Inductive Sensor with Quick Disconnect*	<b>OISP-017</b>	<b>1 to 3</b>
M12 NPN Inductive Sensor with Quick Disconnect*	<b>OISN-017</b>	<b>1 to 3</b>
M8 Quick Disconnect 2 Meter Cable Length*	<b>CABL-010</b>	<b>1 to 3</b>
M8 Quick Disconnect 5 Meter Cable Length*	<b>CABL-013</b>	<b>1 to 3</b>
M12 Quick Disconnect 2 Meter Cable Length*	<b>CABL-014</b>	<b>1 to 3</b>
M12 Quick Disconnect 5 Meter Cable Length*	<b>CABL-018</b>	<b>1 to 3</b>

### PNEUMATIC ACCESSORIES

Standard Seal Repair Kit	<b>SLKT-235</b>	<b>1</b>
Rear Inlet Seal Repair Kit	<b>SLKT-316</b>	<b>1</b>
Fitting Push-in Straight G1/8 - 6mm O.D. Tube	<b>PLFT-038</b>	<b>1 to 2</b>
Fitting Push-in 90° Elbow G1/8 - 6mm O.D. Tube	<b>PLFT-042</b>	<b>1 to 2</b>

### MOUNTING ACCESSORIES

In-Line Jaw Mounting Kit	<b>ODPL-006</b>	<b>1</b>
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\*Sensor and cable sold separately.

See detailed option and accessory information at the end of this section.

Please see back cover for DE-STA-CO Global Locations. [www.destaco.com](http://www.destaco.com)

[www.comoso.com](http://www.comoso.com)

DIRECTCONNECT™

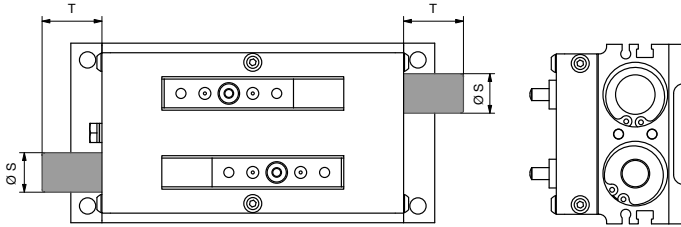




# DPL Series Options & Accessories

## Optional Spring Assist (-R):

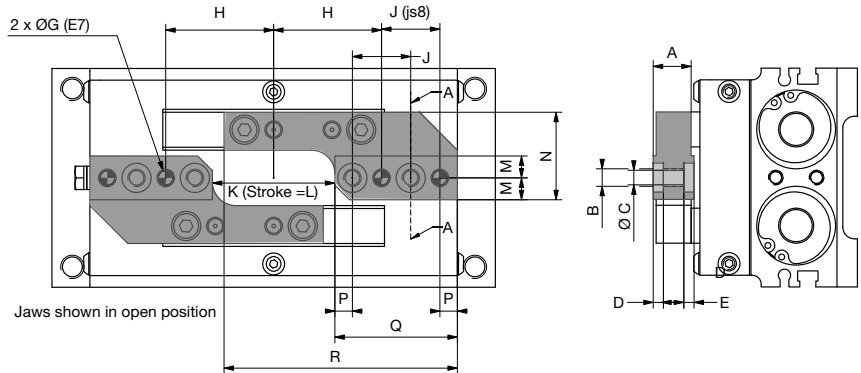
The safety spring allows the gripper to retain the part should the air supply fail or allows the gripper to be used in single acting mode. The **-R** option is ideal for internal (ID) or external gripping (OD). The ID or OD will depend on the finger design. The fingers will face towards center of gripper for OD gripping or will face outward for ID gripping.



Use With	S	T
<b>DPL-2520-R</b>	0.65 [16.5]	0.98 [25]
<b>DPL-2535-R</b>	0.65 [16.5]	1.18 [30]
<b>DPL-3230-R</b>	0.98 [25]	0.76 [19.3]
<b>DPL-3250-R</b>	0.98 [25]	0.96 [24.3]
<b>DPL-4040-R</b>	1.10 [28]	1.69 [42.8]
<b>DPL-4070-R</b>	1.16 [29.5]	0.98 [24.8]

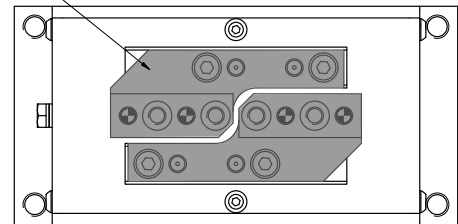
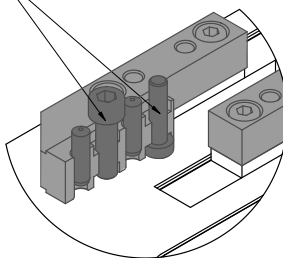
## In-Line Jaw Adapter:

The In-Line Jaw Adapter allows for the simplification of the finger design. It provides for "in-line" alignment of the finger mounting holes. The kit includes 2 interfaces, screws, and dowel kit.



Fingers can be mounted on the accessory from the top (using SHC screws) or from the bottom (using low head SHC screws)

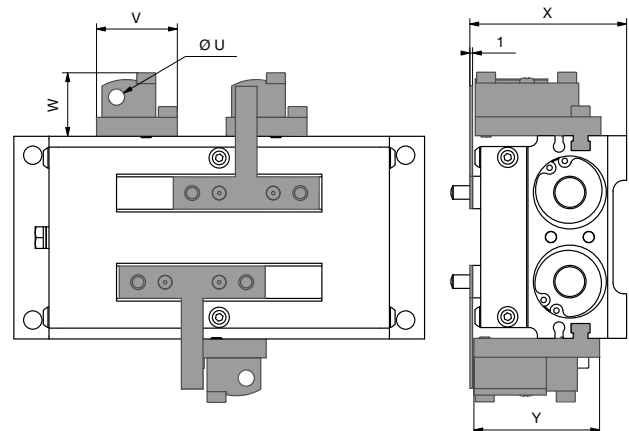
Second direction for mounting the accessory When used with the -R option, it allows to secure for internal or external clamping



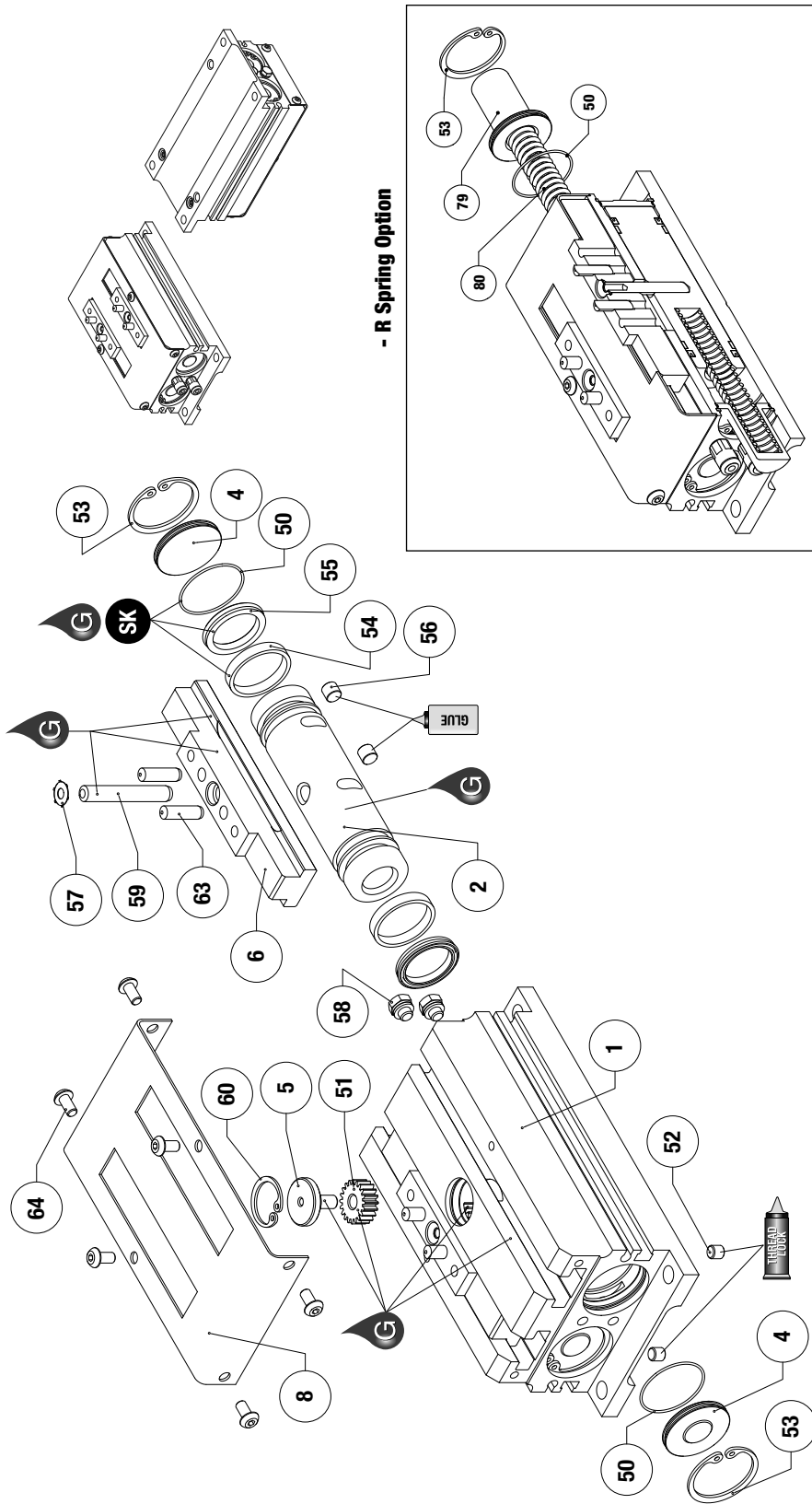
Order #	Use With	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R
<b>ODPL-001</b>	<b>DPL-2520</b>	0.51 [13]	M6	0.20 [5]	0.14 [3.5]	0.28 [7]	M5	0.20 [5]	1.46 [37]	0.79 [20]	1.65 [42]	1.57 [40]	0.30 [7.5]	1.18 [30]	0.24 [6]	1.65 [42]	3.15 [80]
<b>ODPL-002</b>	<b>DPL-2535</b>	0.51 [13]	M6	0.20 [5]	0.14 [3.5]	0.28 [7]	M5	0.20 [5]	2.05 [52]	0.79 [20]	2.83 [72]	2.76 [70]	0.30 [7.5]	1.18 [30]	0.24 [6]	1.65 [42]	3.44 [87.5]
<b>ODPL-003</b>	<b>DPL-3230</b>	0.59 [15]	M8	0.27 [6.8]	0.12 [3]	0.39 [10]	M6	0.24 [6]	1.97 [50]	0.87 [22]	2.44 [62]	2.36 [60]	0.39 [10]	1.54 [39]	0.31 [8]	1.93 [49]	3.70 [94]
<b>ODPL-004</b>	<b>DPL-3250</b>	0.59 [15]	M8	0.27 [6.8]	0.12 [3]	0.39 [10]	M6	0.24 [6]	2.76 [70]	0.87 [22]	4.02 [102]	3.94 [100]	0.39 [10]	1.54 [39]	0.31 [8]	1.93 [49]	4.09 [104]
<b>ODPL-005</b>	<b>DPL-4040</b>	0.83 [21]	M10	0.33 [8.5]	0.20 [5]	0.47 [12]	M8	0.31 [8]	2.48 [63]	1.02 [26]	3.23 [82]	3.15 [80]	0.47 [12]	1.87 [47.5]	0.35 [9]	2.24 [57]	4.45 [113]
<b>ODPL-006</b>	<b>DPL-4070</b>	0.83 [21]	M10	0.33 [8.5]	0.20 [5]	0.47 [12]	M8	0.31 [8]	3.66 [93]	1.02 [26]	5.59 [142]	5.51 [140]	0.47 [12]	1.87 [47.5]	0.35 [9]	2.24 [57]	5.04 [128]

## Inductive Sensors Holder:

Sense up to 3 jaw positions; open jaws, closed jaws, and part present. The kit includes 3 sensor holders and 2 flags. Sensors are not included.



Order #	Use With	U	V	W	X	Y
<b>OSMK-099</b>	<b>DPL-2520</b>	0.31 [8]	1.18 [30]	0.95 [24]	2.28 [58]	1.83 [46.5]
	<b>DPL-2535</b>	0.31 [8]	1.18 [30]	0.95 [24]	2.28 [58]	1.83 [46.5]
<b>OSMK-100</b>	<b>DPL-3230</b>	0.31 [8]	0.87 [22]	0.95 [24]	2.64 [67]	1.97 [50]
	<b>DPL-3250</b>	0.31 [8]	0.87 [22]	0.95 [24]	2.64 [67]	1.97 [50]
<b>OSMK-101</b>	<b>DPL-4040</b>	0.47 [12]	0.87 [22]	1.06 [27]	3.23 [82]	2.26 [57.5]
	<b>DPL-4070</b>	0.47 [12]	0.87 [22]	1.06 [27]	3.23 [82]	2.26 [57.5]



Item	Qty	Name
01	1	Body
02	2	Piston
04	4	Cap
05	1	Gear Cover
06	2	Jaw
08	1	Shielded Case
50	4	Seal, Cap
51	1	Synchronization Pinion
52	2	Set Screw-Manifold Port Plugs
53	4	Retainer Ring, Cap
54	4	Piston Ring Guidance
55	4	Piston U-Cup
56	4	Magnet
57	2	Drive Pin Retainer Ring
58	2	Manifold Port Plugs
59	2	Drive Pin
60	2	Center Retaining Ring
63	4	Jaw Dowel Pin
64	6	Shielded Case Screws
79	2	Spring Cap
80	2	Spring

**NOTE:** Contact the Robohand Sales Department for a complete spare parts list with order numbers and prices.

### Assembly Procedure

- 1) Glue magnets #56 into the piston slots #2.
- 2) If top air ports are not used, plug the body #1 with screws #52 using glue.
- 3) Lubricate and install the U-Cup seals #55 and the guidance ring #54 onto the piston #2.
- 4) Lubricate and assemble the piston #2 into the body #1 using the adequate tooling
- 5) Press dowel pins #63 into the jaws #6.
- 6) Lubricate and install the jaws #6 into the slots #1.
- 7) Press the drive pin #59 and the retaining ring #57 through the jaws #6 and the piston #2.
- 8) Lubricate and install the axis #5, the pinion #51, the retaining ring #60 into the body. Beware of the correctly place the jaws to get a synchronous motion.
- 9) Lubricate and install the seal #50 onto the cap #4.
- 10) Install the cap #4 and the retaining ring #53 into the cap #1.
- 11) Install the shielded case #8.
- 12) Screw the plugs #58 into the body #1.

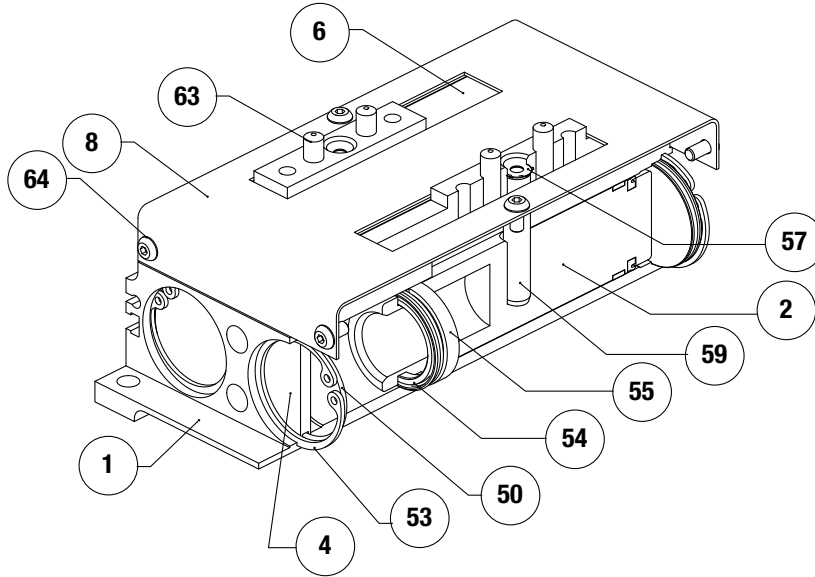
### Assembly - Spring option

- 1) Lubricate and install the seal (#50) onto the cap.
- 2) Install the spring into the piston bore and into the cap bore.
- 3) Compress the spring till the cap reach its correct position on the body.
- 4) Install the retaining ring.

**SK Seal Repair Kit Order #'s See Product Data Sheets**

Seal Kit Items	Thread Locker	Krytox™ Lubricant	Lightweight Machine Oil	Teflon® Based Grease	Super Bonder	Third Angle Projection

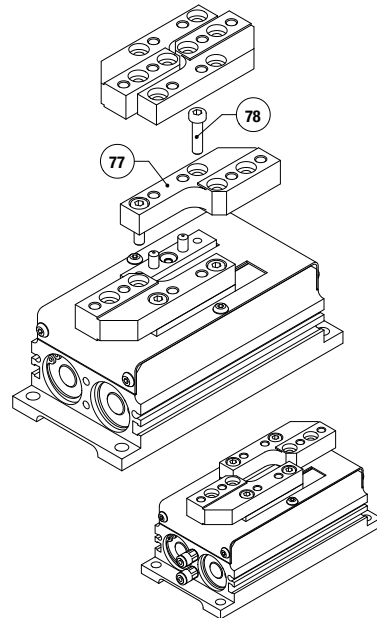
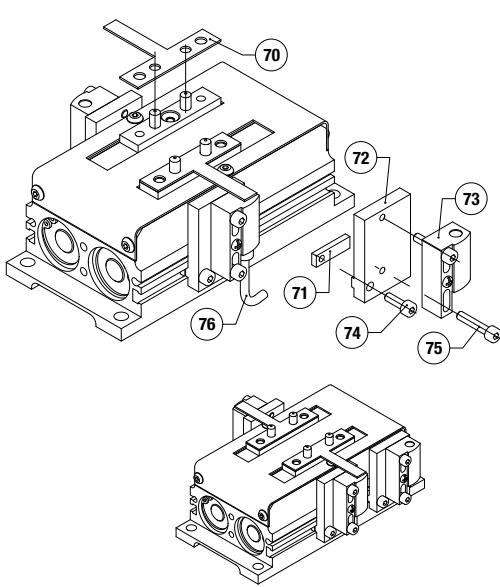
# DPL Series Assembled View



Item	Qty	Name
01	1	Body
02	2	Piston
04	4	Cap
05	1	Axis
06	2	Jaw
08	1	Shielded Case
50	4	Seal, Cap
51	1	Synchronization Pinion
52	2	Set Screw-Manifold Port Plugs
53	4	Retainer Ring, Cap
54	4	Piston Ring Guidance
55	4	Piston U-Cup
56	4	Magnet
57	2	Drive Pin Retainer Ring
58	2	Stopper-Manifold Port Plugs
59	2	Drive Pin
60	2	Center Retaining Ring
63	4	Jaw Dowel Pin
64	6	Shielded Case Screws

**NOTE:** Contact the Robohand Sales Department for a complete spare parts list with order numbers and prices.

## Accessory Installation & Adjustment Instructions



### Installation - Inductive Sensors Holder Kit

- 1) Place the flags (#2) on the jaws as shown.
- 2) Install the sensor holder (#72) on the adapter (#73) using the screws (#75)
- 3) Tighten the sensor (not shown) into the sensor holder(#73).
- 4) Install the nut (#71) into the slot of the body and the adapter (#72) on the slot. Install the screw (#74) to fix the adapter on the nut.
- 5) Loosen the screw (#74) and slide the assembly until the light indicates.
- 6) Tighten the screw (#74).

### Installation - In-Line Jaws

- 1) Install the interface (#77) onto the jaws. When combined with the -R option and according to the mounting direction, the interface can be used for internal or external clamping.
- 2) Tighten the screw (#78) between the interface (#77) and the jaw.



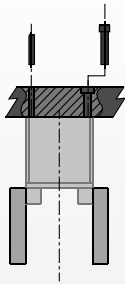
# Parallel Grippers - Miniature Series Double Wedge

- General purpose:**  
 This style gripper is the most widely used in the industry. It is a rugged design and supplies very high grip force.
- Small parts handling:**  
 Compact size, high gripping force, and extended jaw design facilitates finger attachment for smaller parts.
- Robotic applications:**  
 High grip force to weight ratio make these grippers very popular on small robots.
- Miniature Size:**  
 Allows banks of grippers to be mounted in close proximity for multiple part picking and placing.



## Mounting Information:

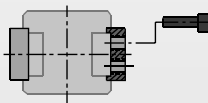
Grippers can be mounted & operated in any orientation



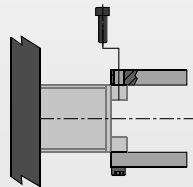
Body mounts with screws and locates with slip fit dowel pins for accuracy



**Warning!** Protect jaw mechanism from falling debris when mounted upside down



Fingers attach to jaws with screws and locate by keying



## Technical Specifications:

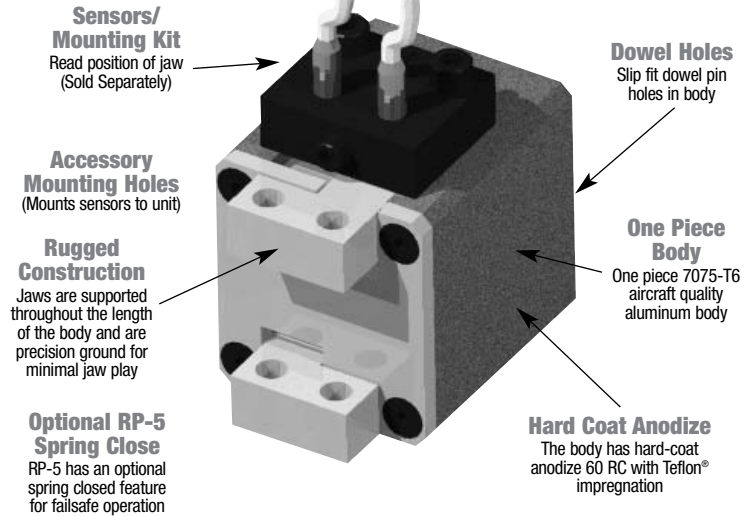
<b>Pneumatic Specifications</b>	<b>Imperial</b>	<b>Metric</b>
Pressure Operating Range	40-100 psi	3-7 bar
Cylinder Type	Double Acting	
Dynamic Seals	Internally Lubricated Buna-N	
Valve Required to Operate	4-way, 2-position	
<b>Air Quality Requirements</b>		
Air Filtration	40 Micron or Better	
Air Lubrication	Not Necessary*	
Air Humidity	Low Moisture Content (dry)	
<b>Temperature Operating Range</b>		
Buna-N Seals (standard)	-30°~180° F	-35°~80° C
Viton® Seals (optional)	-20°~300° F	-30°~150° C
<b>Maintenance Specifications†</b>		
Expected Life		
Normal Application	5 million cycles	
w/ Preventative Maintenance	10+ million cycles*	
Field Repairable	Yes	
Seal Repair Kits Available	Yes	
<b>Application Restrictions</b>		
<ul style="list-style-type: none"> <li>• Dirty or gritty environments</li> <li>• Machining operations generating chips</li> <li>• Environments with loose particulate</li> <li>• Applications where mechanism lubricant could cause contamination</li> </ul>		

\*Addition of lubrication will greatly increase service life  
 †See Maintenance Section

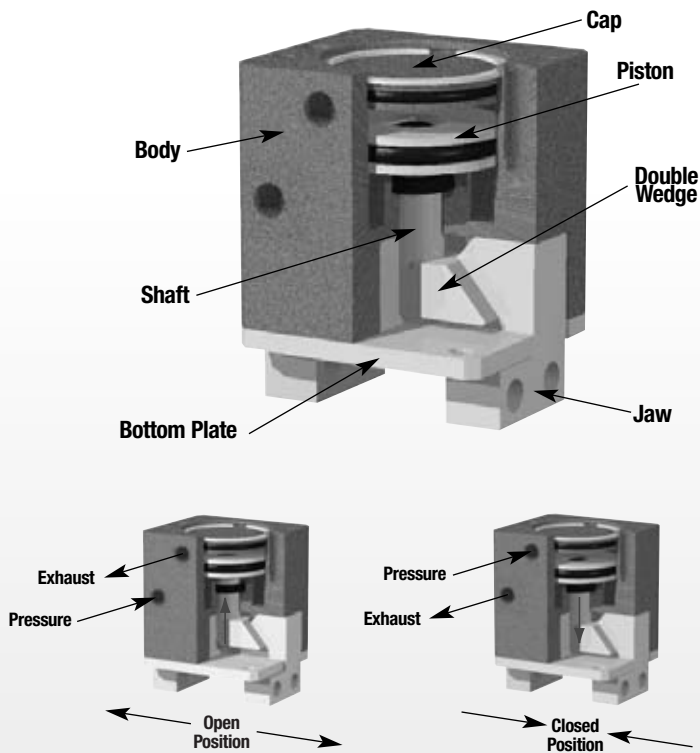
## Product Features

**Self Lubricating Seals**  
Self lubricating dynamic seals  
(Buna-N only)

**Quality Components**  
Dynamic components are  
hardened for wear resistance  
and long life



## Operating Principle



- A double acting piston is connected by a shaft to a double sided wedge.
- The wedge slides in a slot located in each of the jaws converting vertical motion of the wedge into horizontal synchronous motion of the jaws.
- The large surface area of the wedge minimizes frictional wear.
- This gripper is suitable for internal or external gripping.

**U.S. Patent # 5,125,708**  
**Designed and manufactured in the USA**

## Style-RP Parallel Gripper

### Size -5M

Style:	RP-5	RP-5M
Stroke:	.16 in.	4.1 mm
Grip Force:	35 lb	156 N
Weight:	.18 lb	.08 Kg



See Page **1.172**

## Style-RP Parallel Gripper

### Size -5M-FS

Style:	RP-5	RP-5M
Stroke:	.16 in.	4.1 mm
Grip Force:*	40 lb	178 N
Weight:	.18 lb	.08 Kg

\*Grip force with spring assist



See Page **1.172**

## Style-RP Parallel Gripper

### Size -10M

Style:	RP-10	RP-10M
Stroke:	1/4 in.	6.4 mm
Grip Force:	40 lb	175 N
Weight:	.28 lb	.13 Kg



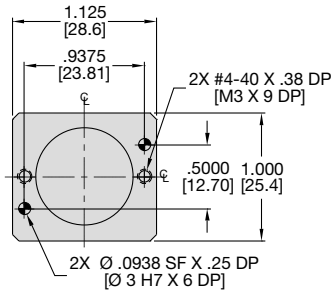
See Page **1.173**

**Note:** Please refer to our new DPDS/DPDL Series grippers found on pages 1.134-1.157. The RP Series is still available for sale and the related information remains available on our website but we encourage you to consider the new DPDS/DPDL Series grippers found on pages 1.134-1.157 for new projects.



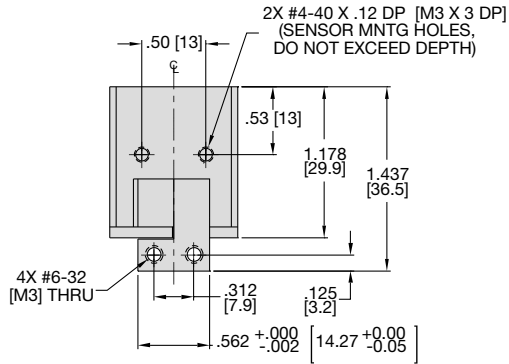
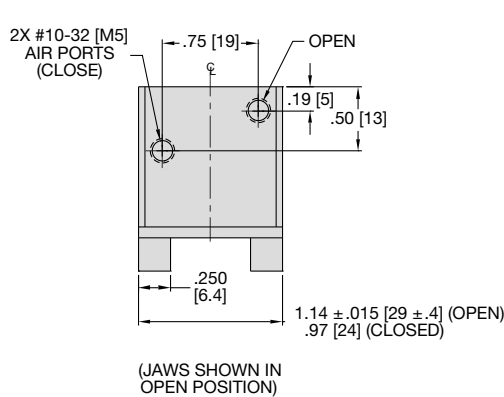


# PARALLEL GRIPPER RP-5M-FS MINIATURE DOUBLE WEDGE SERIES



### Specifications

	RP-5	RP-5M
Total Rated Grip Force <b>F</b> @ 100 psi, 7 bar	35 lb	156 N
Stroke	.16 in.	4.1 mm
Weight	0.18 lb	0.08 Kg
Pressure Range	40-100 psi	3-7 bar
Cylinder Bore Ø	0.750 in.	19.1 mm
Displacement	0.042 in <sup>3</sup>	0.7 cm <sup>3</sup>
Temperature Range		
Standard Seals	-30°~180° F	-35°~80° C
Viton® Seals	-20°~300° F	-30°~150° C
Actuation	0.14 sec.	0.14 sec.
Accuracy	±0.001 in.	±0.03 mm
Repeatability	±0.0005 in.	±0.01 mm
Valve required to actuate	4-way, 2-position	

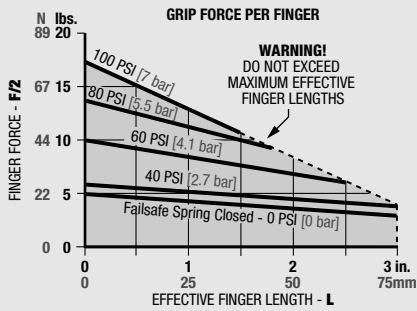


UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

Imperial in.	Metric [mm]
0.00 = ±.01	[0.] = [±.25]
0.000 = ±.005	[0.0] = [±.13]
0.0000 = ±.0005	[0.00] = [±.013]

## Loading Information

## How to Order: (Order Accessories separately from Basic Model)



BASIC MODEL FAIL SAFE CLOSED (Refer to Spring Assist Gripper section for more information)

**RP-5 M-FS-V**

METRIC VITON® SEALS

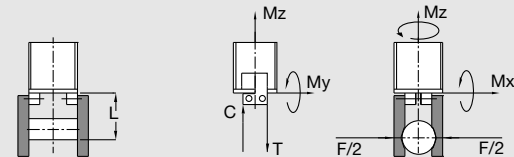
### SENSOR ACCESSORIES

	ORDER #	QTY/UNIT
Sensor Mounting Kit for Imperial & Metric Units (mounts 2 sensors)	<b>OSMK-001</b>	<b>1</b>
NPN Inductive Sensor with Quick Disconnect*	<b>OISN-019</b>	<b>1 or 2</b>
PNP Inductive Sensor with Quick Disconnect*	<b>OISP-019</b>	<b>1 or 2</b>
Quick Disconnect 2 Meter Cable Length*	<b>CABL-010</b>	<b>1 or 2</b>
Quick Disconnect 5 Meter Cable Length*	<b>CABL-013</b>	<b>1 or 2</b>

### PNEUMATIC ACCESSORIES

Fail Safe Valve (Imperial)	<b>OFSV-001</b>	<b>1</b>
Fail Safe Valve (Metric)	<b>OFSV-004</b>	<b>1</b>
Standard Seal Repair Kit	<b>SLKT-052</b>	<b>1</b>
Viton® Seal Repair Kit	<b>SLKT-052V</b>	<b>1</b>

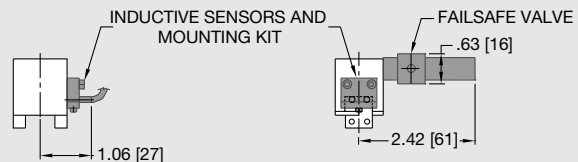
\*Sensor and cable sold separately.



### Loading Capacity<sup>†</sup>

	Static		Dynamic	
	Imperial	Metric	Imperial	Metric
Maximum Tensile <b>T</b>	50 lbs.	222 N	7 lbs.	31 N
Maximum Compressive <b>C</b>	75 lbs.	334 N	12 lbs.	53 N
Maximum Moment <b>M<sub>x</sub></b>	30 in.-lbs.	3.4 Nm	5 in.-lbs.	0.6 Nm
Maximum Moment <b>M<sub>y</sub></b>	30 in.-lbs.	3.4 Nm	5 in.-lbs.	0.6 Nm
Maximum Moment <b>M<sub>z</sub></b>	30 in.-lbs.	3.4 Nm	5 in.-lbs.	0.6 Nm

<sup>†</sup>Capacities are per set of jaws and are not simultaneous

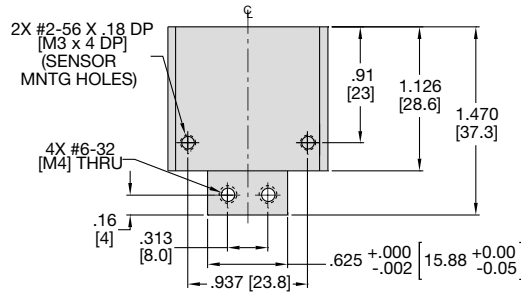
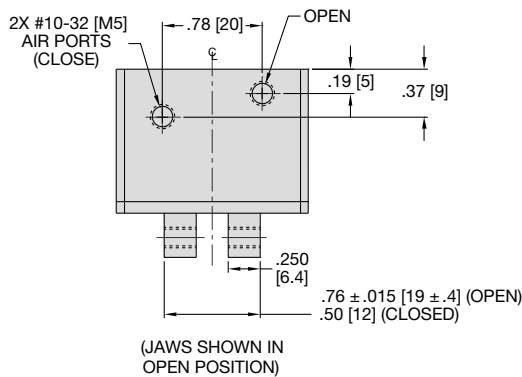
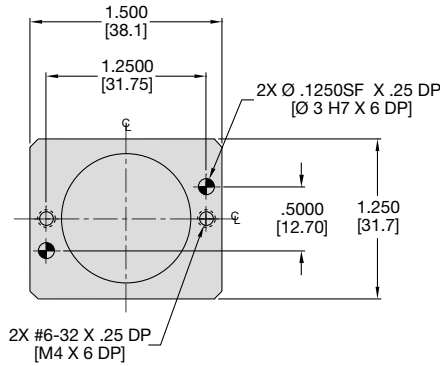




# PARALLEL GRIPPER RP-10M MINIATURE DOUBLE WEDGE SERIES

RP SERIES

1.173



### Specifications

	RP-10	RP-10M
Total Rated Grip Force <b>F</b> @ 100 psi, 7 bar	40 lb	178 N
Stroke	0.25 in.	6.4 mm
Weight	0.28 lb	0.13 Kg
Pressure Range	40-100 psi	3-7 bar
Cylinder Bore Ø	1.00 in.	25.4 mm
Displacement	0.098 in <sup>3</sup>	1.6 cm <sup>3</sup>
Temperature Range		
Standard Seals	-30°~180° F	-35°~80° C
Viton® Seals	-20°~300° F	-30°~150° C
Actuation	0.13 sec.	0.13 sec.
Accuracy	±0.001 in.	±0.03 mm
Repeatability	±0.0005 in.	±0.01 mm
Valve required to actuate	4-way, 2-position	

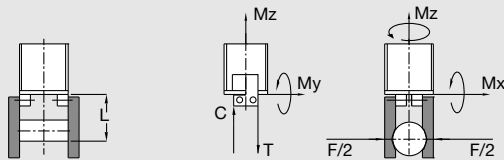
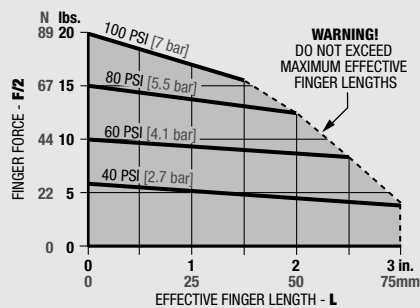
### UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

Dimensions are symmetrical about centerline	Third Angle Projection	All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or ±.013mm	Metric Threads Course Pitch	Imperial in. 0.00 = ±.01 0.000 = ±.005 0.0000 = ±.0005	Metric [mm] [0.] = [±.25] [0.0] = [±.13] [0.00] = [±.013]
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## Loading Information

## How to Order: (Order Accessories separately from Basic Model)

### GRIP FORCE PER FINGER



### Loading Capacity†

	Static		Dynamic	
	Imperial	Metric	Imperial	Metric
Maximum Tensile <b>T</b>	100 lbs.	445 N	15 lbs.	67 N
Maximum Compressive <b>C</b>	150 lbs.	667 N	25 lbs.	111 N
Maximum Moment <b>M<sub>x</sub></b>	90 in.-lbs.	10.2 Nm	15 in.-lbs.	1.5 Nm
Maximum Moment <b>M<sub>y</sub></b>	90 in.-lbs.	10.2 Nm	15 in.-lbs.	1.5 Nm
Maximum Moment <b>M<sub>z</sub></b>	90 in.-lbs.	10.2 Nm	15 in.-lbs.	1.5 Nm

†Capacities are per set of jaws and are not simultaneous

### BASIC MODEL METRIC

**RP-10 M-V**

### VITON® SEALS

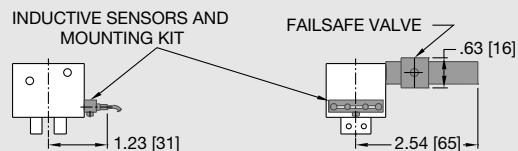
#### SENSOR ACCESSORIES

	ORDER #	QTY/UNIT
Sensor Mounting Kit for Imperial & Metric Units (mounts 2 sensors)	<b>OSMK-002</b>	<b>1</b>
NPN Inductive Sensor with Quick Disconnect*	<b>OISN-019</b>	<b>1 or 2</b>
PNP Inductive Sensor with Quick Disconnect*	<b>OISP-019</b>	<b>1 or 2</b>
Quick Disconnect 2 Meter Cable Length*	<b>CABL-010</b>	<b>1 or 2</b>
Quick Disconnect 5 Meter Cable Length*	<b>CABL-013</b>	<b>1 or 2</b>

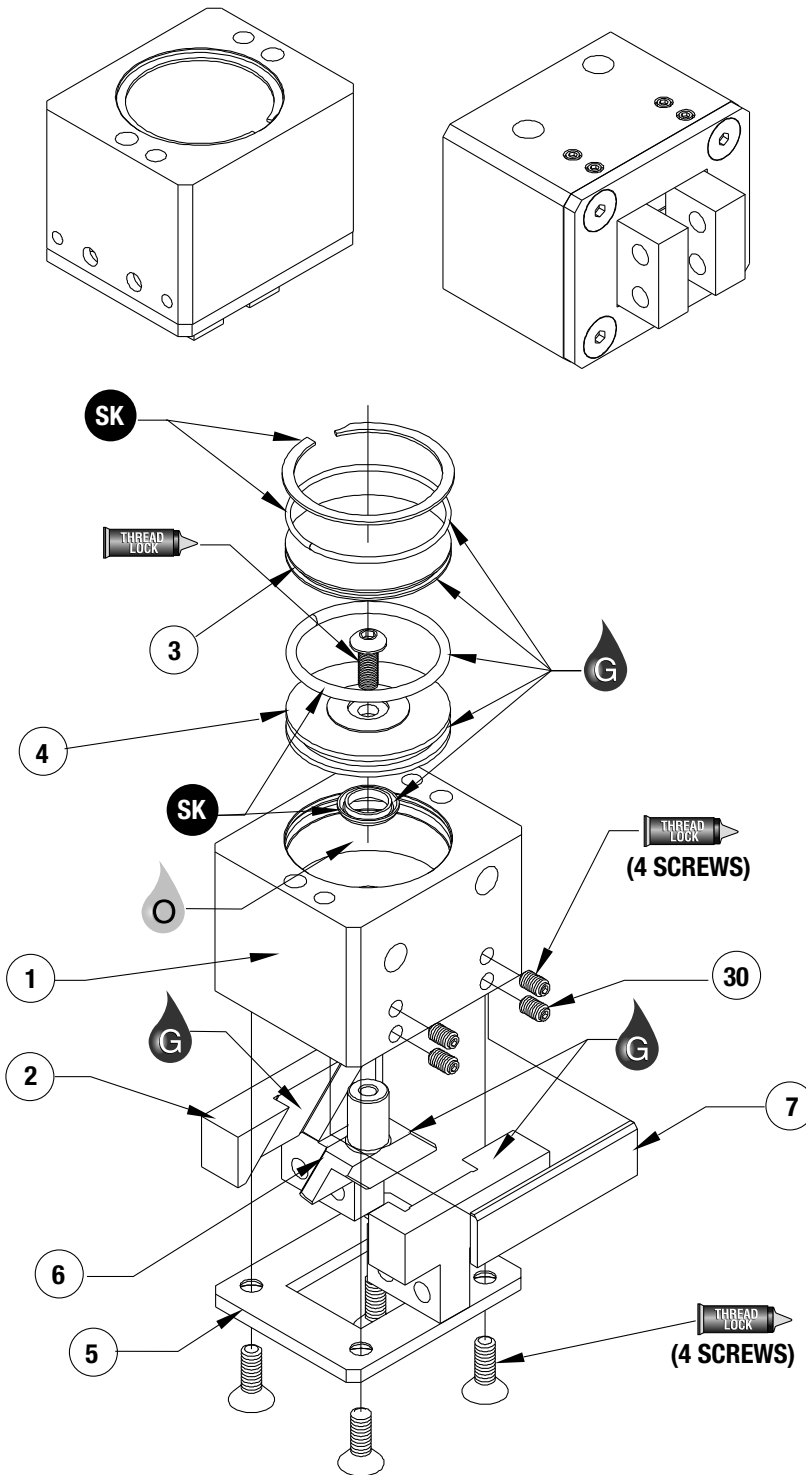
#### PNEUMATIC ACCESSORIES

	ORDER #	QTY/UNIT
Fail Safe Valve (Imperial)	<b>OFSV-001</b>	<b>1</b>
Fail Safe Valve (Metric)	<b>OFSV-004</b>	<b>1</b>
Standard Seal Repair Kit	<b>SLKT-036</b>	<b>1</b>
Viton® Seal Repair Kit	<b>SLKT-036V</b>	<b>1</b>

\*Sensor and cable sold separately.



# RP-5 &10 Series Exploded View



Item	Qty	Name
01	1	Body
02	2	Jaw
03	1	Cap
04	1	Piston
05	1	Plate,Bottom
06	1	Shaft/Wedge
07*	1	Gib
30*	4	SSS,Cup Point

\* RP-10 Only

**NOTE:** Contact the Robohand Sales Department for a complete spare parts list with order numbers and prices.

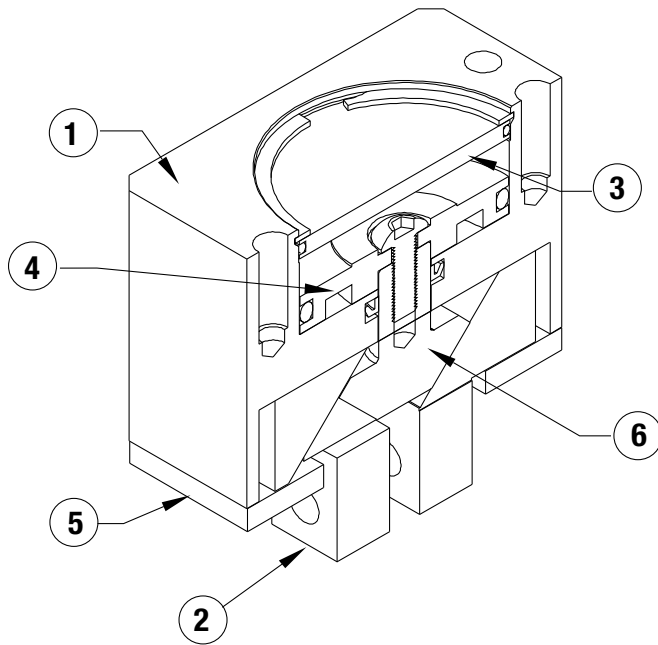
### Assembly Procedures

- 1) Lubricate and install seals.
- 2) Install piston into body.
- 3) Place wedge, jaws, and gib plate into body.
- 4) Attach bottom plate to body.
- 5) Install cap and retaining ring.

### Gib Adjustment Procedure

- 1) Tighten set screws (#30) so that they just touch the gib plate.
- 2) Cycle the gripper.
- 3) Adjust screws so that there is no play in jaws.

**SK Seal Repair Kit Order #'s  
See Product Data Sheets**

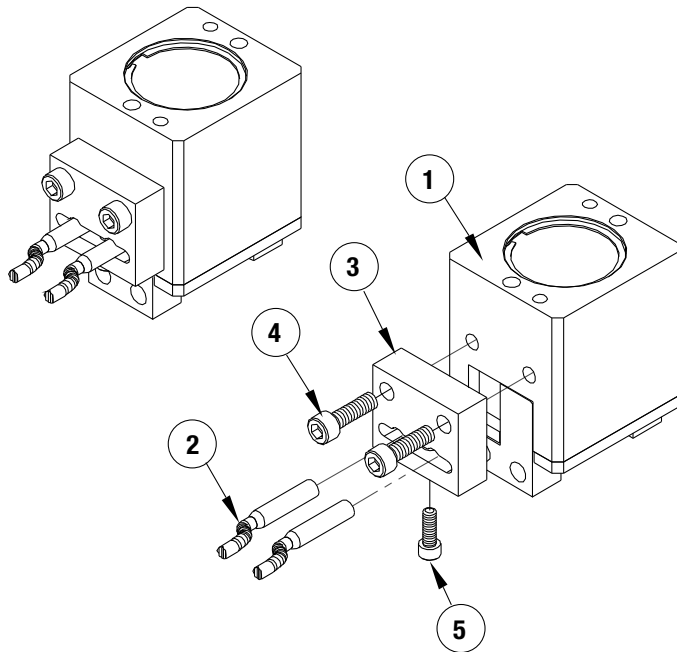


Item	Qty	Name
01	1	Body
02	2	Jaw
03	1	Cap
04	1	Piston
05	1	Plate, Bottom
06	1	Shaft/Wedge
07*	1	Gib
30*	4	SSS,Cup Point

\* RP-10 Only

**NOTE:** Contact the Robohand Sales Department for a complete spare parts list with order numbers and prices.

## Accessory Installation & Adjustment Instructions



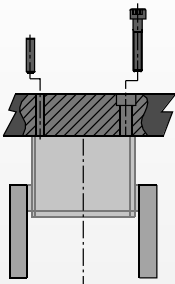
# Parallel Grippers - Double Wedge Series



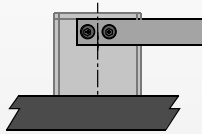
- Machining applications:**  
 Sealed design repels chips and other particulate from internal drive mechanism.
- General purpose:**  
 This style gripper is the most widely used in the industry. It is a rugged design and supplies very high grip forces for its size.
- Part pressing:**  
 Hardened steel bottom plate provides a solid surface for part pressing.

## Mounting Information:

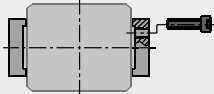
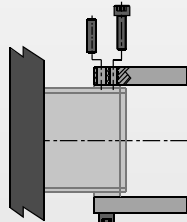
Grippers can be mounted & operated in any orientation



Body mounts with screws and locates with slip fit dowel pins for accuracy



Unit can be mounted and operated upside down



Fingers attach to jaws with screws and locate by keying or dowel pins

## Technical Specifications:

<b>Pneumatic Specifications</b>	<b>Imperial</b>	<b>Metric</b>
Pressure Operating Range	40-100 psi	3-7 bar
Cylinder Type	Double Acting	
Dynamic Seals	Internally Lubricated Buna-N	
Valve Required to Operate	4-way, 2-position	
<b>Air Quality Requirements</b>		
Air Filtration	40 Micron or Better	
Air Lubrication	Not Necessary*	
Air Humidity	Low Moisture Content (dry)	
<b>Temperature Operating Range</b>		
Buna-N Seals (standard)	-30°~180° F	-35°~80° C
Viton® Seals (optional)	-20°~300° F	-30°~150° C
<b>Maintenance Specifications †</b>		
Expected Life		
Normal Application		5 million cycles
w/ Preventative Maintenance		10+ million cycles*
Field Repairable		Yes
Seal Repair Kits Available		Yes

\*Addition of lubrication will greatly increase service life  
 † See Maintenance Section

## Product Features

**Self Lubricating Seals**  
Self lubricating dynamic seals (Buna-N only)

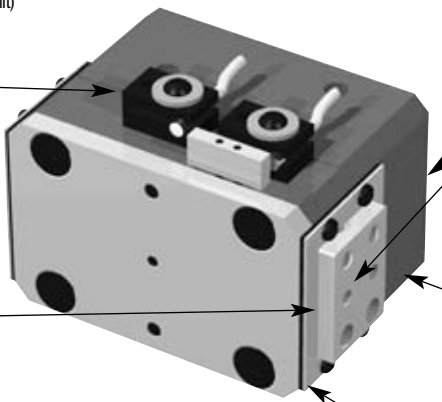
**Quality Components**  
Dynamic components are hardened for wear resistance and long life

**Accessory Mounting Holes**  
(Mounts sensors to unit)

**Sensors/ Mounting Kit**  
Read position of jaw (Sold Separately-See "How to Order" Section for more info)

**Rugged Construction**  
Jaws are supported throughout the length of the body and are precision ground for minimal jaw play

**Compact Design**  
Extremely compact and robust package



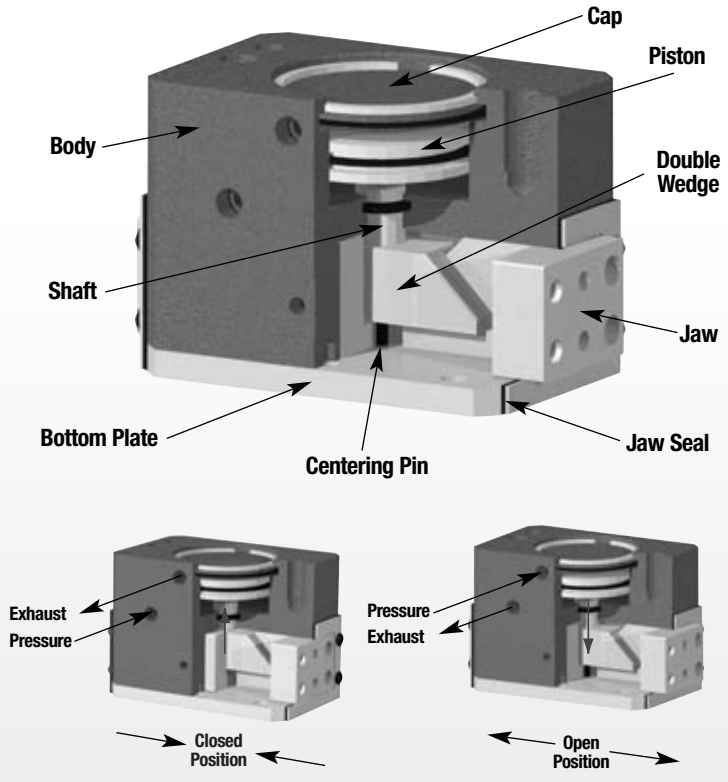
**Dowel Holes**  
Slip fit dowel pin holes in body and jaws

**One Piece Body**  
One piece 7075 -T6 aircraft quality aluminum body

**Sealed Design**  
Unit repels contaminants (not available on RP-11&12)

**Hard Coat Anodize**  
The body has hard-coat anodize 60 RC with Teflon® impregnation

## Operating Principle



- A double acting piston is connected by a shaft to a double sided wedge.
- The wedge slides in a slot located in each of the jaws converting vertical motion of the wedge into horizontal synchronous motion of the jaws.
- The large surface area of the wedge minimizes frictional wear.
- This gripper is suitable for internal or external gripping.

**U.S. Patent # 5,125,708**  
**Designed and manufactured in the USA**

### Style-RP Parallel Gripper

#### Size-11M



Style:	RP-11	RP-11M
Stroke:	0.25 in.	6.4 mm
Grip Force:	40 lbs.	178 N
Weight:	.25 lbs.	.11 Kg

See Page **1.178**

### Style-RP Parallel Gripper

#### Size-12M



Style:	RP-12	RP-12M
Stroke:	0.38 in.	9.5 mm
Grip Force:	40 lbs.	178 N
Weight:	.56 lbs.	.25 Kg

See Page **1.179**

### Style-RP Parallel Gripper

#### Size-15M



Style:	RP-15	RP-15M
Stroke:	0.50 in.	12.7 mm
Grip Force:	70 lbs.	310 N
Weight:	1.25 lbs.	.57 Kg

See Page **1.180**

### Style-RP Parallel Gripper

#### Size-17M



Style:	RP-17	RP-17M
Stroke:	0.75 in.	19.1 mm
Grip Force:	220 lbs.	979 N
Weight:	2.2 lbs.	1.0 Kg

See Page **1.181**

### Style-RP Parallel Gripper

#### Size-18M



Style:	RP-18	RP-18M
Stroke:	1.25 in.	31.8 mm
Grip Force:	400 lbs.	1779 N
Weight:	7.7 lbs.	3.5 Kg

See Page **1.182**

### Style-RP Parallel Gripper

#### Size-19M



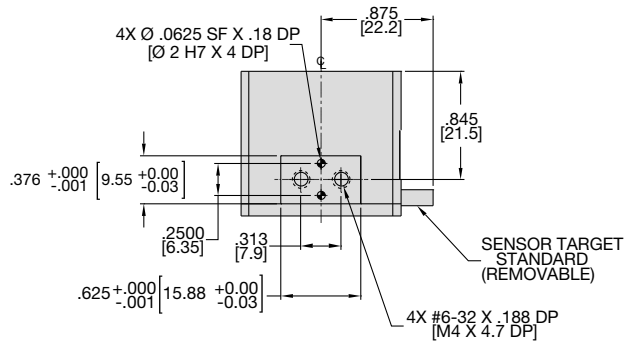
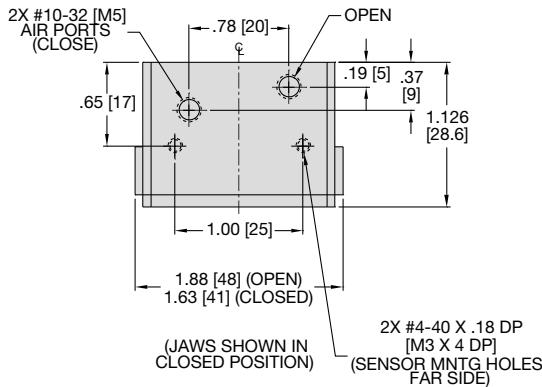
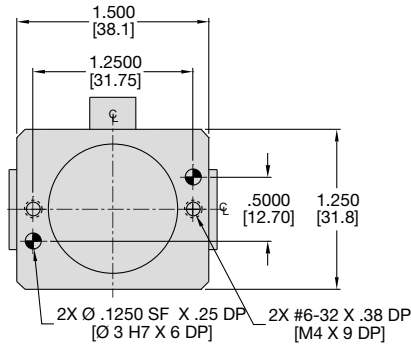
Style:	RP-19	RP-19M
Stroke:	2.00 in.	50.8 mm
Grip Force:	600 lbs.	2669 N
Weight:	21 lbs.	9.5 Kg

See Page **1.183**

**Note:** Please refer to our new DPDS/DPDL Series grippers found on pages 1.134-1.157. The RP Series is still available for sale and the related information remains available on our website but we encourage you to consider the new DPDS/DPDL Series grippers found on pages 1.134-1.157 for new projects.



# PARALLEL GRIPPER RP-11M DOUBLE WEDGE SERIES



### Specifications

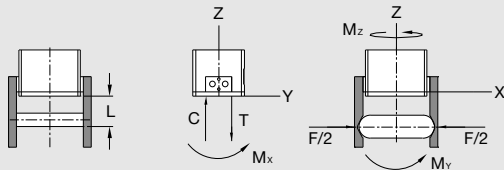
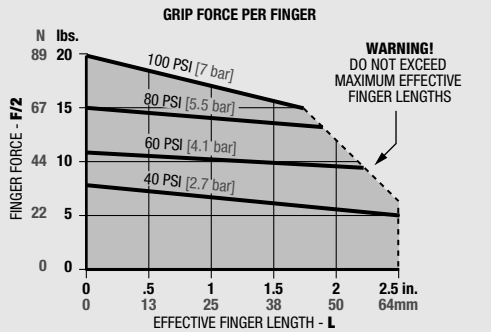
	RP-11	RP-11M
Total Rated Grip Force <b>F</b> @ 100 psi, 7 bar	40 lbs.	178 N
Stroke	.25 in.	6.4 mm
Weight	0.26 lbs.	0.12 Kg
Pressure Range	40-100 psi	3-7 bar
Cylinder Bore $\varnothing$	1.000 in.	25.4 mm
Displacement	0.098 in <sup>3</sup>	1.6 cm <sup>3</sup>
Temperature Range		
Standard Seals	-30°~180° F	-35°~80° C
Viton® Seals	-20°~300° F	-30°~150° C
Actuation	0.13 sec.	0.13 sec.
Accuracy	±0.002 in.	±0.05 mm
Repeatability	±0.001 in.	±0.03 mm
Valve required to actuate double acting...	4-way, 2-position	

### UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

Imperial in.	Metric [mm]
0.00 = ±.01	[0] = [±.25]
0.000 = ±.005	[0.0] = [±.13]
0.0000 = ±.0005	[0.00] = [±.013]

## Loading Information

## How to Order: (Order Accessories separately from Basic Model)



Loading Capacity†	Static		Dynamic	
	Imperial	Metric	Imperial	Metric
Maximum Tensile <b>T</b>	100 lbs.	445 N	25 lbs.	111 N
Maximum Compressive <b>C</b>	200 lbs.	890 N	25 lbs.	111 N
Maximum Moment <b>M<sub>x</sub></b>	100 in.-lbs.	11 Nm	17 in.-lbs.	2 Nm
Maximum Moment <b>M<sub>y</sub></b>	100 in.-lbs.	11 Nm	17 in.-lbs.	2 Nm
Maximum Moment <b>M<sub>z</sub></b>	100 in.-lbs.	11 Nm	17 in.-lbs.	2 Nm

†Capacities are per set of jaws and are not simultaneous

### BASIC MODEL VITON® SEALS

**RP-11 M - V**

METRIC

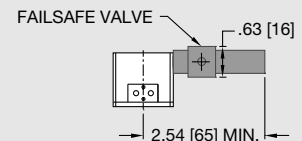
### SENSOR ACCESSORIES

	ORDER #	QTY/UNIT
Sensor Mounting Kit for Imperial & Metric Units (mounts 2 sensors)	<b>OSMK-003</b>	<b>1</b>
NPN Inductive Sensor with Quick Disconnect*	<b>OISN-019</b>	<b>1 or 2</b>
PNP Inductive Sensor with Quick Disconnect*	<b>OISP-019</b>	<b>1 or 2</b>
Quick Disconnect 2 Meter Cable Length*	<b>CABL-010</b>	<b>1 or 2</b>
Quick Disconnect 5 Meter Cable Length*	<b>CABL-013</b>	<b>1 or 2</b>

### PNEUMATIC ACCESSORIES

Fail Safe Valve (Imperial)	<b>OFSV-001</b>	<b>1</b>
Fail Safe Valve (Metric)	<b>OFSV-004</b>	<b>1</b>
Standard Seal Repair Kit	<b>SLKT-036</b>	<b>1</b>
Viton® Seal Repair Kit	<b>SLKT-036V</b>	<b>1</b>

\*Sensor and cable sold separately.

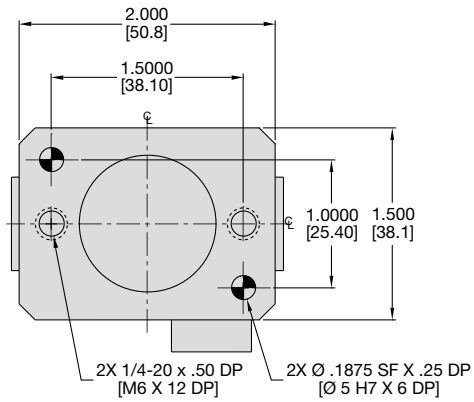




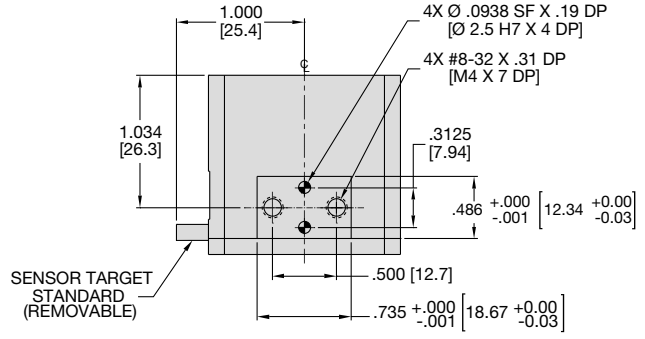
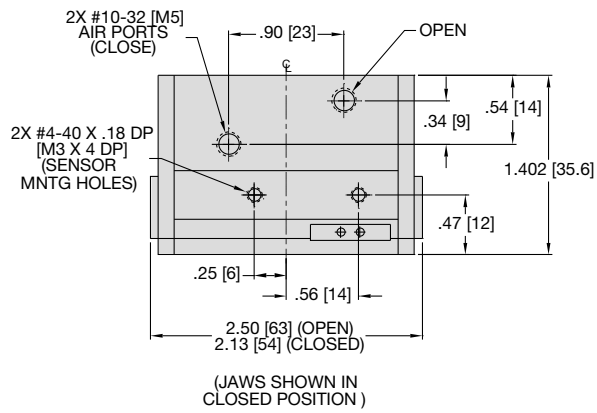
# PARALLEL GRIPPER RP-12M DOUBLE WEDGE SERIES

RP SERIES

1.179



Specifications	RP-12	RP-12M
Total Rated Grip Force <b>F</b> @ 100 psi, 7 bar	40 lbs.	178 N
Stroke	.38 in.	9.5 mm
Weight	0.56 lbs.	0.25 Kg
Pressure Range	40-100 psi	3-7 bar
Cylinder Bore Ø	1.000 in.	25.4 mm
Displacement	0.150 in <sup>3</sup>	2.5 cm <sup>3</sup>
Temperature Range		
Standard Seals	-30°~180° F	-35°~80° C
Viton® Seals	-20°~300° F	-30°~150° C
Actuation	0.13 sec.	0.13 sec.
Accuracy	±0.002 in.	±0.05 mm
Repeatability	±0.001 in.	±0.03 mm
Valve required to actuate double acting...	4-way, 2-position	



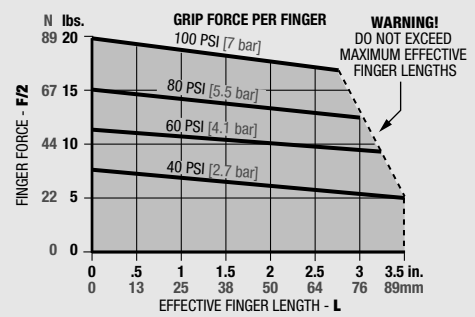
**UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW**

Symbol	Imperial in.	Metric [mm]
	0.00 = ±.01	[0.] = [±.25]
	0.000 = ±.005	[0.0] = [±.13]
	0.0000 = ±.0005	[0.00] = [±.013]

Dimensions are symmetrical about centerline  
Third Angle Projection  
All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or [±.013mm]  
Metric Threads Course Pitch

## Loading Information

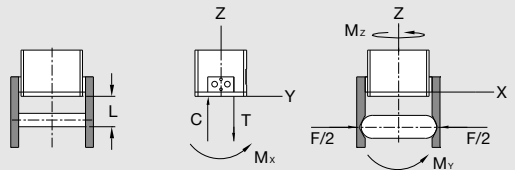
## How to Order: (Order Accessories separately from Basic Model)



**BASIC MODEL**      **VITON® SEALS**

**RP-12 M - V**

**METRIC**

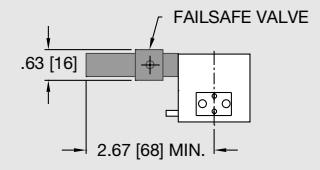
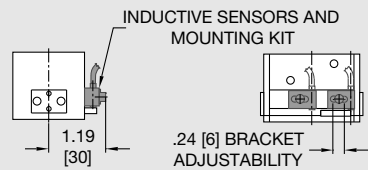


Loading Capacity†	Static		Dynamic	
	Imperial	Metric	Imperial	Metric
Maximum Tensile <b>T</b>	200 lbs.	890 N	25 lbs.	111 N
Maximum Compressive <b>C</b>	400 lbs.	1779 N	25 lbs.	111 N
Maximum Moment <b>M<sub>x</sub></b>	150 in.-lbs.	17 Nm	25 in.-lbs.	3 Nm
Maximum Moment <b>M<sub>y</sub></b>	150 in.-lbs.	17 Nm	25 in.-lbs.	3 Nm
Maximum Moment <b>M<sub>z</sub></b>	150 in.-lbs.	17 Nm	25 in.-lbs.	3 Nm

†Capacities are per set of jaws and are not simultaneous

SENSOR ACCESSORIES	ORDER #	QTY/UNIT
Sensor Mounting Kit for Imperial & Metric Units (mounts 2 sensors)	<b>OSMK-003</b>	<b>1</b>
NPN Inductive Sensor with Quick Disconnect*	<b>OISN-019</b>	<b>1 or 2</b>
PNP Inductive Sensor with Quick Disconnect*	<b>OISP-019</b>	<b>1 or 2</b>
Quick Disconnect 2 Meter Cable Length*	<b>CABL-010</b>	<b>1 or 2</b>
Quick Disconnect 5 Meter Cable Length*	<b>CABL-013</b>	<b>1 or 2</b>
<b>PNEUMATIC ACCESSORIES</b>		
Fail Safe Valve (Imperial)	<b>OFSV-001</b>	<b>1</b>
Fail Safe Valve (Metric)	<b>OFSV-004</b>	<b>1</b>
Standard Seal Repair Kit	<b>SLKT-040</b>	<b>1</b>
Viton® Seal Repair Kit	<b>SLKT-040V</b>	<b>1</b>

\*Sensor and cable sold separately.

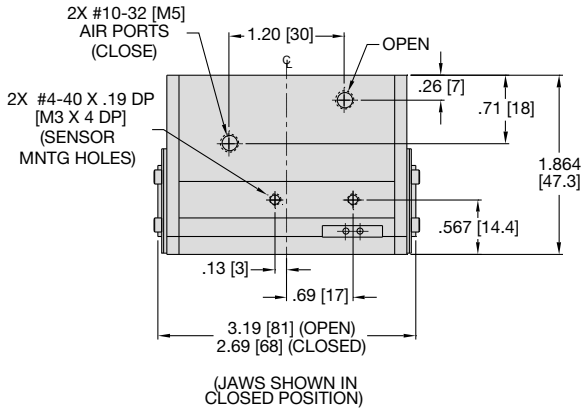
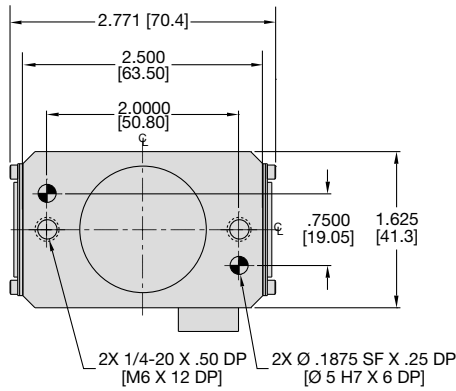


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[www.comoso.com](http://www.comoso.com)

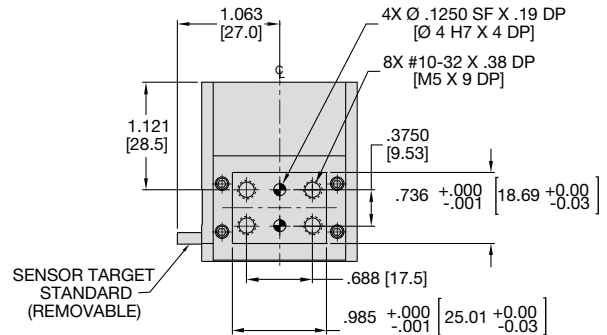


# PARALLEL GRIPPER RP-15M DOUBLE WEDGE SERIES



### Specifications

	RP-15	RP-15M
Total Rated Grip Force <b>F</b> @ 100 psi, 7 bar	70 lbs.	311 N
Stroke	.50 in.	12.7 mm
Weight	1.25 lbs.	0.57 Kg
Pressure Range	40-100 psi	3-7 bar
Cylinder Bore $\varnothing$	1.25 in.	31.8 mm
Displacement	0.300 in <sup>3</sup>	4.9 cm <sup>3</sup>
Temperature Range		
Standard Seals	-30°~180° F	-35°~80° C
Viton® Seals	-20°~300° F	-30°~150° C
Actuation	0.20 sec.	0.20 sec.
Accuracy	±0.002 in.	±0.05 mm
Repeatability	±0.001 in.	±0.03 mm
Valve required to actuate double acting...	4-way, 2-position	

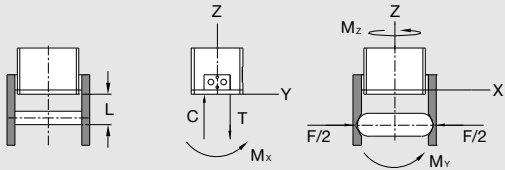
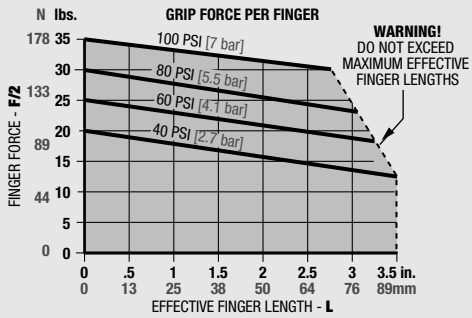


### UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

		Imperial in.	Metric [mm]
	Dimensions are symmetrical about centerline	0.00 ± .01	[0.] ± [.25]
	Third Angle Projection	0.000 ± .005	[0.0] ± [.13]
	All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or [±.013mm]	0.0000 ± .0005	[0.00] ± [.013]
	Metric Threads Course Pitch		

## Loading Information

## How to Order: (Order Accessories separately from Basic Model)



Loading Capacity†	Static		Dynamic	
	Imperial	Metric	Imperial	Metric
Maximum Tensile <b>T</b>	400 lbs.	1779 N	50 lbs.	222 N
Maximum Compressive <b>C</b>	750 lbs.	3336 N	50 lbs.	222 N
Maximum Moment <b>M<sub>x</sub></b>	300 in.-lbs.	34 Nm	50 in.-lbs.	6 Nm
Maximum Moment <b>M<sub>y</sub></b>	300 in.-lbs.	34 Nm	50 in.-lbs.	6 Nm
Maximum Moment <b>M<sub>z</sub></b>	300 in.-lbs.	34 Nm	50 in.-lbs.	6 Nm

†Capacities are per set of jaws and are not simultaneous

### BASIC MODEL VITON® SEALS

**RP-15 M - V**

METRIC

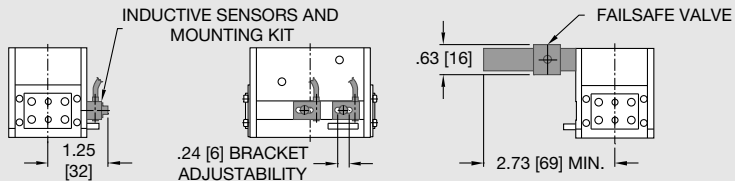
### SENSOR ACCESSORIES

	ORDER #	QTY/UNIT
Sensor Mounting Kit for Imperial & Metric Units (mounts 2 sensors)	<b>OSMK-003</b>	<b>1</b>
NPN Inductive Sensor with Quick Disconnect*	<b>OISN-019</b>	<b>1 or 2</b>
PNP Inductive Sensor with Quick Disconnect*	<b>OISP-019</b>	<b>1 or 2</b>
Quick Disconnect 2 Meter Cable Length*	<b>CABL-010</b>	<b>1 or 2</b>
Quick Disconnect 5 Meter Cable Length*	<b>CABL-013</b>	<b>1 or 2</b>

### PNEUMATIC ACCESSORIES

Fail Safe Valve (Imperial)	<b>OFSV-001</b>	<b>1</b>
Fail Safe Valve (Metric)	<b>OFSV-004</b>	<b>1</b>
Standard Seal Repair Kit	<b>SLKT-041</b>	<b>1</b>
Viton® Seal Repair Kit	<b>SLKT-041V</b>	<b>1</b>

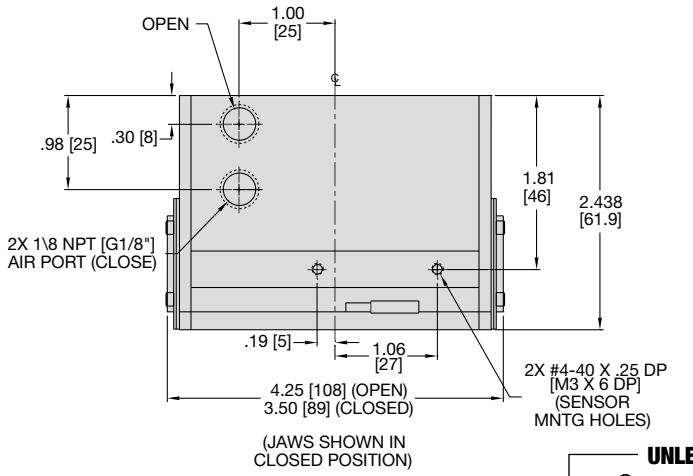
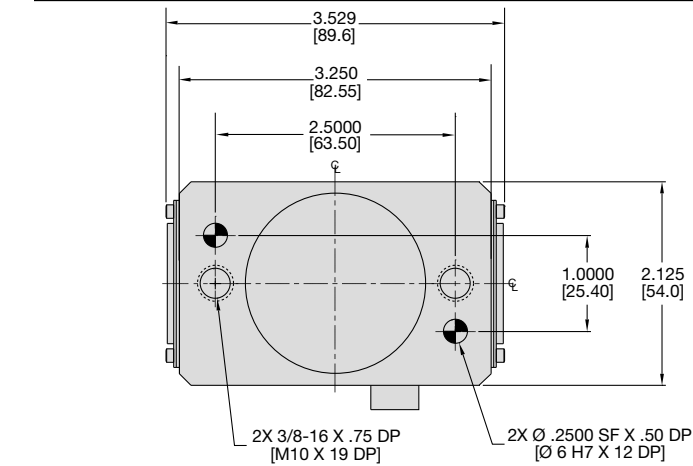
\*Sensor and cable sold separately.



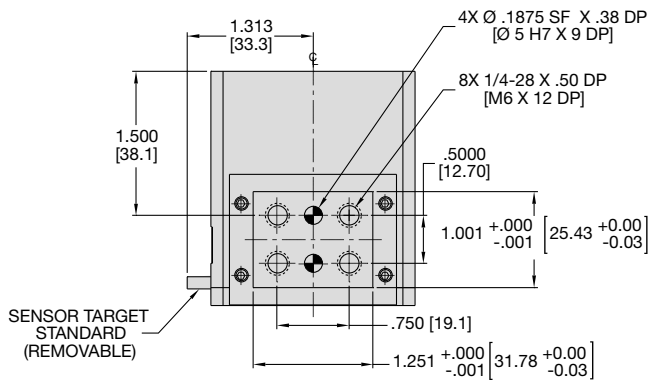


# PARALLEL GRIPPER RP-17M DOUBLE WEDGE SERIES

RP SERIES  
**1.181**



Specifications	RP-17	RP-17M
Total Rated Grip Force <b>F</b> @ 100 psi, 7 bar	220 lbs.	979 N
Stroke	.75 in.	19.1 mm
Weight	2.2 lbs.	1.0 Kg
Pressure Range	40-100 psi	3-7 bar
Cylinder Bore Ø	1.813 in.	46.1 mm
Displacement	1.400 in <sup>3</sup>	22.9 cm <sup>3</sup>
Temperature Range		
Standard Seals	-30°~180° F	-35°~80° C
Viton® Seals	-20°~300° F	-30°~150° C
Actuation	0.18 sec.	0.18 sec.
Accuracy	±0.003 in.	±0.08 mm
Repeatability	±0.001 in.	±0.03 mm
Valve required to actuate double acting...	4-way, 2-position	

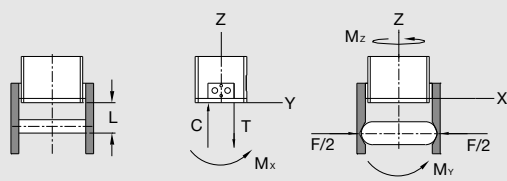
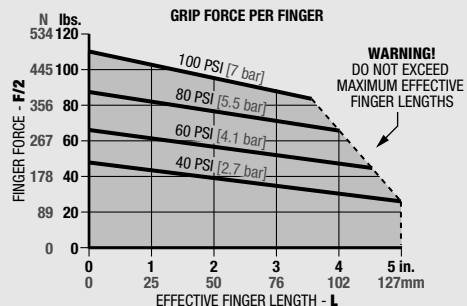


**UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW**

	Imperial in.	Metric [mm]
Dimensions are symmetrical about centerline	0.00 = ±.01	[0] = [±.25]
Third Angle Projection	0.000 = ±.005	[0.0] = [±.13]
All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or [±.013mm]	0.0000 = ±.0005	[0.00] = [±.013]
Metric Threads		
Course Pitch		

## Loading Information

## How to Order: (Order Accessories separately from Basic Model)



Loading Capacity†	Static		Dynamic	
	Imperial	Metric	Imperial	Metric
Maximum Tensile <b>T</b>	750 lbs.	3336 N	100 lbs.	445 N
Maximum Compressive <b>C</b>	1500 lbs.	6672 N	100 lbs.	445 N
Maximum Moment <b>M<sub>x</sub></b>	750 in.-lbs.	85 Nm	125 in.-lbs.	14 Nm
Maximum Moment <b>M<sub>y</sub></b>	750 in.-lbs.	85 Nm	125 in.-lbs.	14 Nm
Maximum Moment <b>M<sub>z</sub></b>	750 in.-lbs.	85 Nm	125 in.-lbs.	14 Nm

†Capacities are per set of jaws and are not simultaneous

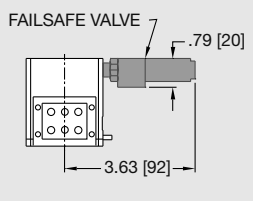
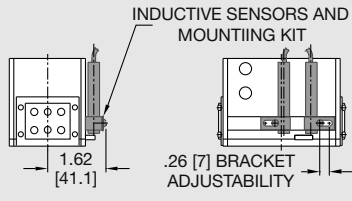
**BASIC MODEL**      **VITON® SEALS**

**RP-17 M - V**

**METRIC**

	ORDER #	QTY/UNIT
<b>SENSOR ACCESSORIES</b>		
Sensor Mounting Kit for Imperial & Metric Units (mounts 2 sensors)	<b>OSMK-072</b>	<b>1</b>
NPN Inductive Sensor with Quick Disconnect*	<b>OISN-011</b>	<b>1 or 2</b>
PNP Inductive Sensor with Quick Disconnect*	<b>OISP-011</b>	<b>1 or 2</b>
Quick Disconnect 2 Meter Cable Length*	<b>CABL-010</b>	<b>1 or 2</b>
Quick Disconnect 5 Meter Cable Length*	<b>CABL-013</b>	<b>1 or 2</b>
<b>PNEUMATIC ACCESSORIES</b>		
Fail Safe Valve (Imperial)	<b>OFSV-002</b>	<b>1</b>
Fail Safe Valve (Metric)	<b>OFSV-005</b>	<b>1</b>
Standard Seal Repair Kit	<b>SLKT-042</b>	<b>1</b>
Viton® Seal Repair Kit	<b>SLKT-042V</b>	<b>1</b>

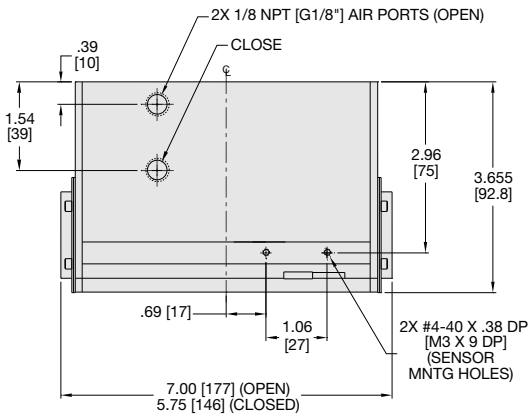
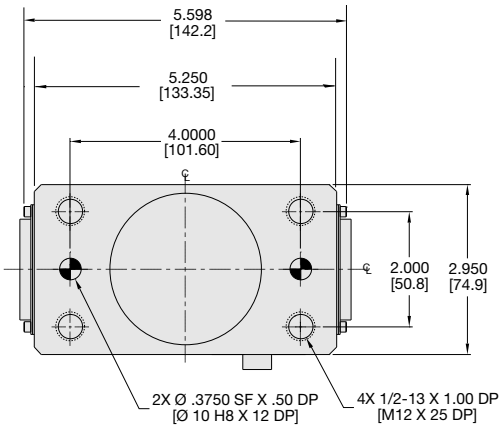
\*Sensor and cable sold separately.



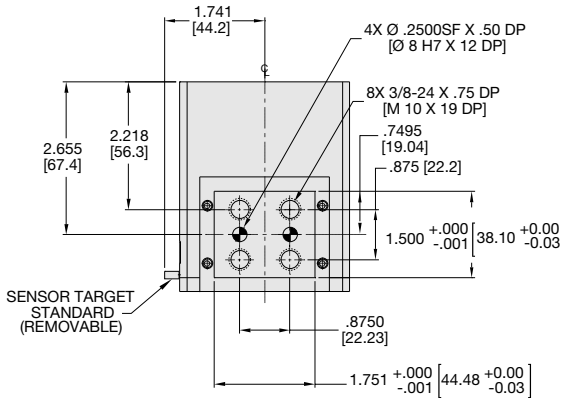
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[www.comoso.com](http://www.comoso.com)

# PARALLEL GRIPPER RP-18M DOUBLE WEDGE SERIES



(JAWS SHOWN IN CLOSED POSITION)



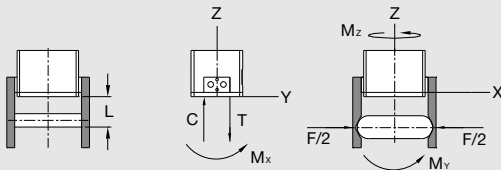
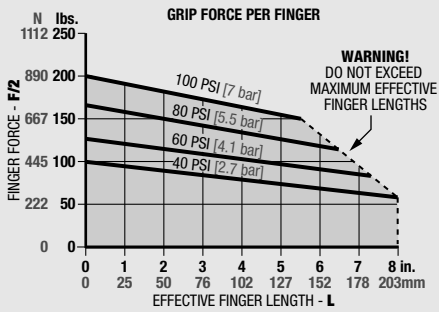
### Specifications

	RP-18	RP-18M
Total Rated Grip Force <b>F</b> @ 100 psi, 7 bar	400 lbs.	1779 N
Stroke	1.25 in.	31.8 mm
Weight	7.7 lbs.	3.5 Kg
Pressure Range	40-100 psi	3-7 bar
Cylinder Bore Ø	2.500 in.	63.5 mm
Displacement	4.400 in <sup>3</sup>	72.1 cm <sup>3</sup>
Temperature Range		
Standard Seals	-30°~180° F	-35°~80° C
Viton® Seals	-20°~300° F	-30°~150° C
Actuation	0.22 sec.	0.22 sec.
Accuracy	±0.003 in.	±0.08 mm
Repeatability	±0.001 in.	±0.03 mm
Valve required to actuate double acting...	4-way, 2-position	

### UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

Imperial in.	Metric [mm]
0.00 = ±.01	[0.] = [±.25]
0.000 = ±.005	[0.0] = [±.13]
0.0000 = ±.0005	[0.00] = [±.013]

## Loading Information



Loading Capacity†	Static		Dynamic	
	Imperial	Metric	Imperial	Metric
Maximum Tensile <b>T</b>	1500 lbs.	6672 N	250 lbs.	1112 N
Maximum Compressive <b>C</b>	3000 lbs.	13345 N	250 lbs.	1112 N
Maximum Moment <b>M<sub>x</sub></b>	1500 in.-lbs.	170 Nm	250 in.-lbs.	28 Nm
Maximum Moment <b>M<sub>y</sub></b>	1500 in.-lbs.	170 Nm	250 in.-lbs.	28 Nm
Maximum Moment <b>M<sub>z</sub></b>	1500 in.-lbs.	170 Nm	250 in.-lbs.	28 Nm

†Capacities are per set of jaws and are not simultaneous

## How to Order: (Order Accessories separately from Basic Model)

BASIC MODEL      VITON® SEALS

**RP-18** **M** - **V**

METRIC

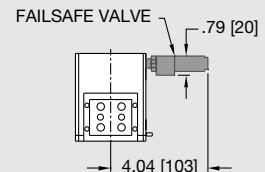
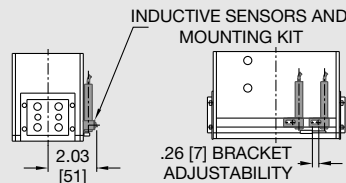
### SENSOR ACCESSORIES

	ORDER #	QTY/UNIT
Sensor Mounting Kit for Imperial & Metric Units (mounts 2 sensors)	<b>OSMK-072</b>	<b>1</b>
NPN Inductive Sensor with Quick Disconnect*	<b>OISN-011</b>	<b>1 or 2</b>
PNP Inductive Sensor with Quick Disconnect*	<b>OISP-011</b>	<b>1 or 2</b>
Quick Disconnect 2 Meter Cable Length*	<b>CABL-010</b>	<b>1 or 2</b>
Quick Disconnect 5 Meter Cable Length*	<b>CABL-013</b>	<b>1 or 2</b>

### PNEUMATIC ACCESSORIES

Fail Safe Valve (Imperial)	<b>OFSV-002</b>	<b>1</b>
Fail Safe Valve (Metric)	<b>OFSV-005</b>	<b>1</b>
Standard Seal Repair Kit	<b>SLKT-043</b>	<b>1</b>
Viton® Seal Repair Kit	<b>SLKT-043V</b>	<b>1</b>

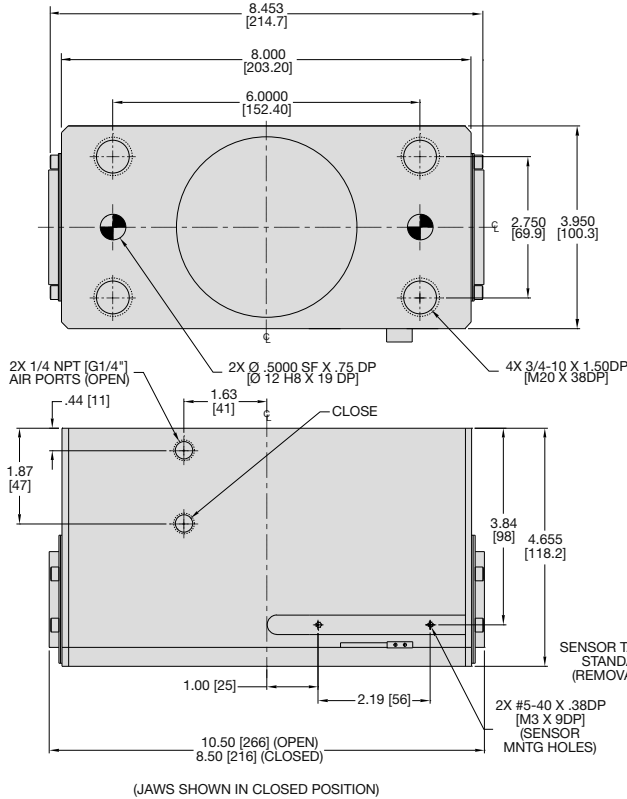
\*Sensor and cable sold separately.





# PARALLEL GRIPPER RP-19M DOUBLE WEDGE SERIES

RP SERIES  
**1.183**



### Specifications

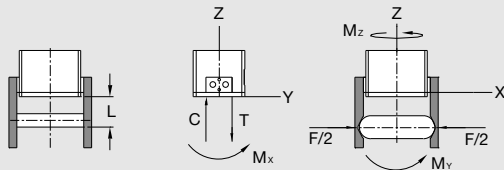
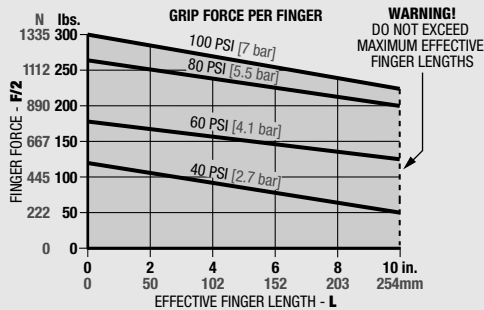
	RP-19	RP-19M
Total Rated Grip Force <b>F</b> @ 100 psi, 7 bar	600 lbs.	2669 N
Stroke	2.00 in.	50.8 mm
Weight	21 lbs.	9.5 Kg
Pressure Range	40-100 psi	3-7 bar
Cylinder Bore $\varnothing$	3.500 in.	88.9 mm
Displacement	9.600 in <sup>3</sup>	157.3 cm <sup>3</sup>
Temperature Range		
Standard Seals	-30°~180° F	-35°~80° C
Viton® Seals	-20°~300° F	-30°~150° C
Actuation	0.50 sec.	0.50 sec.
Accuracy	±0.003 in.	±0.08 mm
Repeatability	±0.001 in.	±0.03 mm
Valve required to actuate double acting...	4-way, 2-position	

**UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW**

	Imperial in.	Metric [mm]
Dimensions are symmetrical about centerline	0.00 ± 0.01	[0.] = ±.25
Third Angle Projection	0.000 ± 0.005	[0.0] = ±.13
All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or (±.013mm)	0.0000 ± 0.0005	[0.00] = ±.013
Metric Threads Course Pitch		

## Loading Information

## How to Order: (Order Accessories separately from Basic Model)



### Loading Capacity†

	Static		Dynamic	
	Imperial	Metric	Imperial	Metric
Maximum Tensile <b>T</b>	3000 lbs.	13345 N	300 lbs.	1334 N
Maximum Compressive <b>C</b>	6000 lbs.	26689 N	300 lbs.	1334 N
Maximum Moment <b>M<sub>x</sub></b>	5000 in.-lbs.	565 Nm	500 in.-lbs.	56 Nm
Maximum Moment <b>M<sub>y</sub></b>	5000 in.-lbs.	565 Nm	500 in.-lbs.	56 Nm
Maximum Moment <b>M<sub>z</sub></b>	5000 in.-lbs.	565 Nm	500 in.-lbs.	56 Nm

†Capacities are per set of jaws and are not simultaneous

### BASIC MODEL VITON® SEALS

**RP-19 M - V**

METRIC

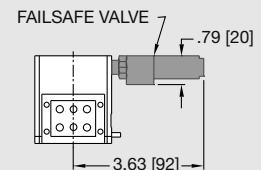
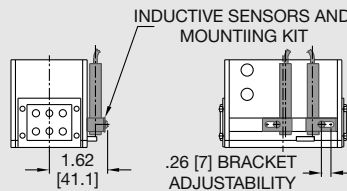
#### SENSOR ACCESSORIES

	ORDER #	QTY/UNIT
Sensor Mounting Kit for Imperial & Metric Units (mounts 2 sensors)	<b>OSMK-073</b>	<b>1</b>
NPN Inductive Sensor with Quick Disconnect*	<b>OISN-011</b>	<b>1 or 2</b>
PNP Inductive Sensor with Quick Disconnect*	<b>OISP-011</b>	<b>1 or 2</b>
Quick Disconnect 2 Meter Cable Length*	<b>CABL-010</b>	<b>1 or 2</b>
Quick Disconnect 5 Meter Cable Length*	<b>CABL-013</b>	<b>1 or 2</b>

#### PNEUMATIC ACCESSORIES

Fail Safe Valve (Imperial)	<b>OFSV-003</b>	<b>1</b>
Fail Safe Valve (Metric)	<b>OFSV-006</b>	<b>1</b>
Standard Seal Repair Kit	<b>SLKT-044</b>	<b>1</b>
Viton® Seal Repair Kit	<b>SLKT-044V</b>	<b>1</b>

\*Sensor and cable sold separately.





# RP Double Wedge Series Exploded View



Item	Qty	Name
------	-----	------

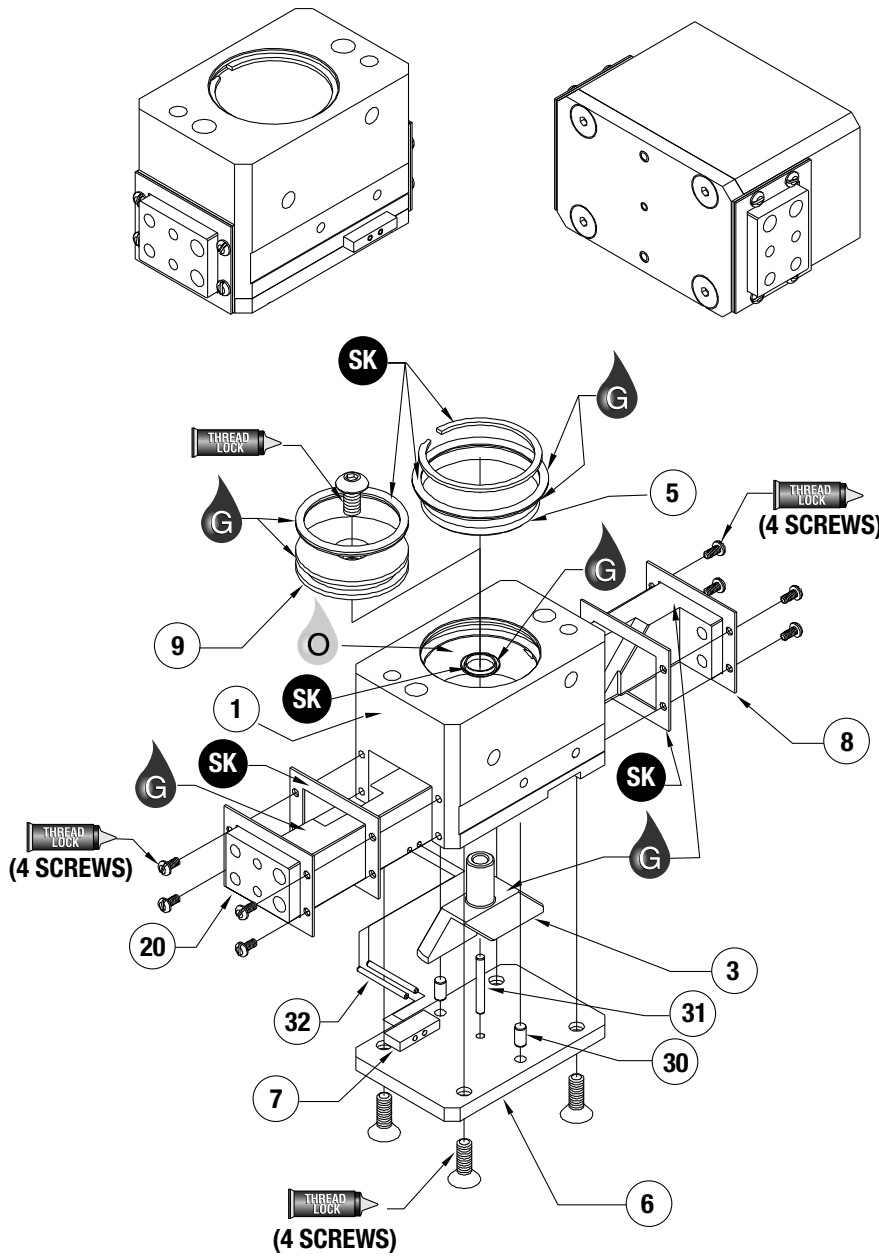
01	1	Body
03	1	Shaft/Wedge
05	1	Cap
06	1	Plate, Bottom
07	1	Target
08	2	Plate, Seal
09	1	Piston
20	2	Jaw, Target Ready
30	2	Dowel Pin
31	1	Dowel Pin
32	2	Roll Pin

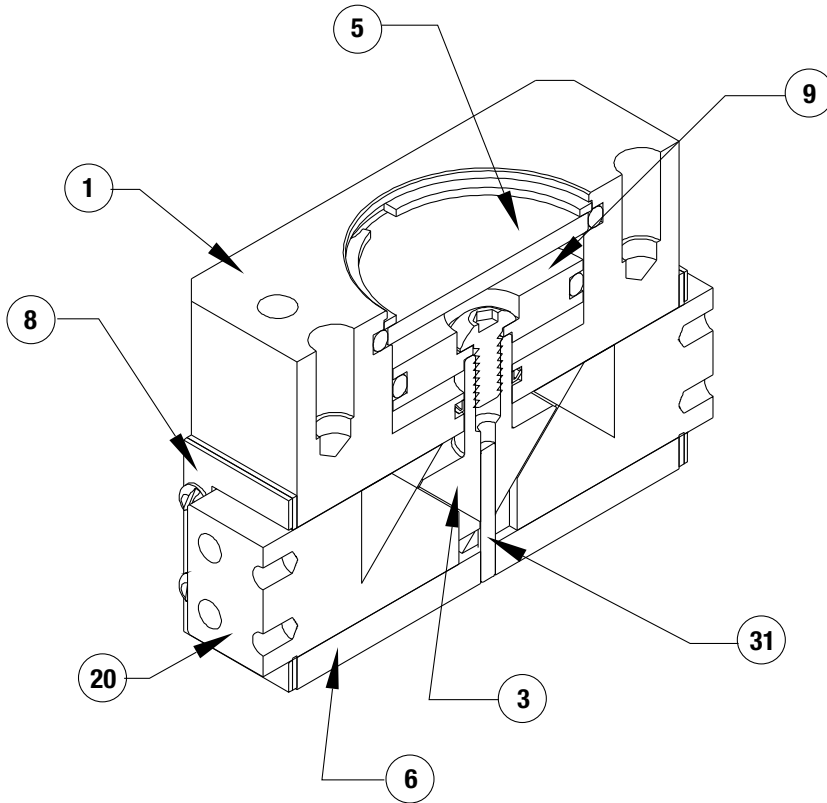
**NOTE:** Contact the Robohand Sales Department for a complete spare parts list with order numbers and prices.

### Assembly Procedure

- 1) Lubricate and install seals.
- 2) Install target on one jaw.
- 3) Place wedge, shaft and jaws into body.
- 4) Install piston into body.
- 5) Install cap and retaining ring.
- 6) Attach bottom plate to body.

**SK Seal Repair Kit Order #'s  
See Product Data Sheets**

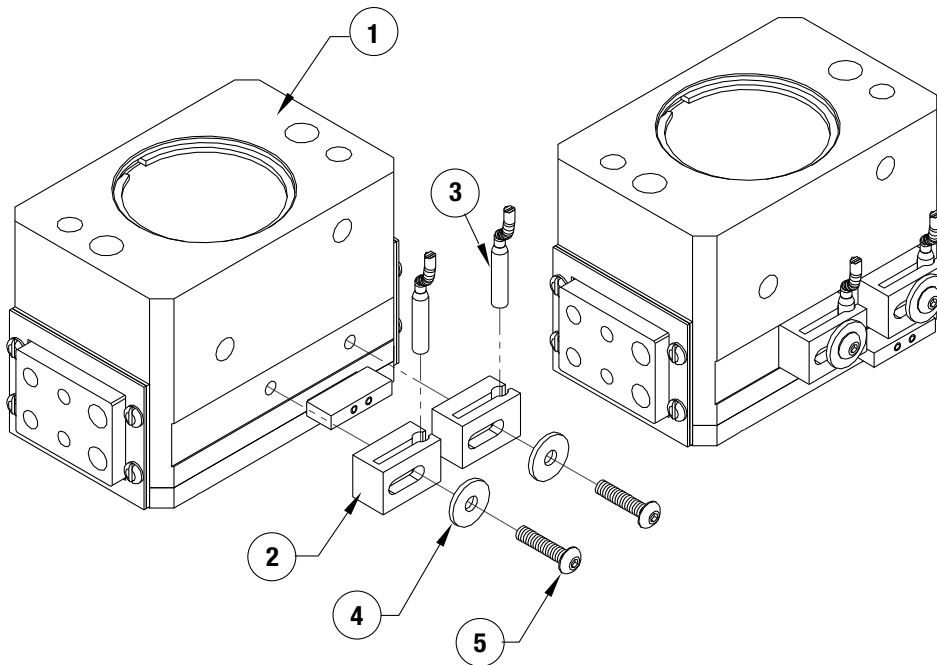




Item	Qty	Name
01	1	Body
03	1	Shaft/Wedge
05	1	Cap
06	1	Plate, Bottom
07	1	Target
08	2	Plate, Seal
09	1	Piston
20	2	Jaw, Target Ready
30	2	Dowel Pin
31	1	Dowel Pin
32	2	Roll Pin

**NOTE:** Contact the Robohand Sales Department for a complete spare parts list with order numbers and prices.

## Accessory Installation & Adjustment Instructions

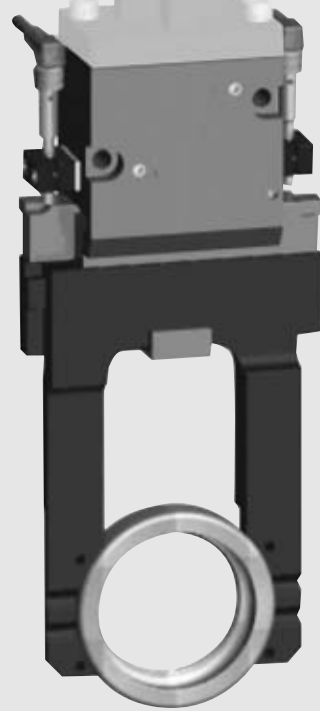


### Installation

- 1) Install sensors as shown.
- 2) Adjust for desired end of stroke detection.



# Parallel Grippers - Two Jaw Precision Spring Series

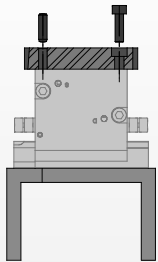


- Compact and shielded gripper:**  
 This gripper is designed for use in confined spaces, combining long strokes with a high grip force. Standard safety springs retain the components should the air supply fail, or during gripping, the spring provides additional grip force.
- Multipurpose gripper:**  
 The safety springs allow this gripper to be used to clamp on arbor or in bore without the need for any modifications. All the user has to do is to change the jaw position in the jaw holders.
- Harsh environments:**  
 Shielded design repels chips and other particulate from internal drive mechanism.

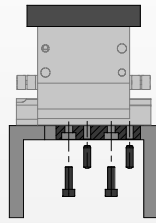
## Mounting Information:

### Grippers can be mounted & operated in any orientation

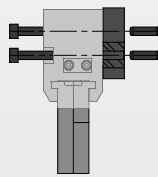
The gripper is protected from falling debris when it is mounted and operated upside down.



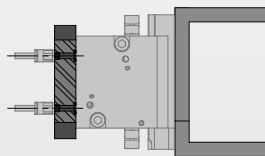
Gripper is located from the top with 2 dowel pins and assembled with 2 screws (by pulling).



Fingers are located on jaws with 2 dowel pins and assembled with 2 screws.



Gripper is located on the side with 2 dowel pins and assembled with 2 through body screws.



Gripper can be operated utilizing top manifold air ports.

## Technical Specifications:

Pneumatic Specifications	Imperial	Metric
Pressure Operating Range	45-100 psi	3-7 bar
Cylinder Type	Double Acting Spring Assist or Single Acting Spring Return	
Dynamic Seals	Internally Lubricated Buna-N	
Valve Required to Operate	4-way, 2-position for Double Acting or 3-way, 2-position for Single Acting	

### Air Quality Requirements

Air Filtration	40 Micron or Better
Air Lubrication	Not Necessary*
Air Humidity	Low Moisture Content (dry)

### Temperature Operating Range

Buna-N Seals (Standard)	-30°~180° F	-35°~80° C
Viton® Seals (Optional)	-20°~300° F	-30°~150° C

### Maintenance Specifications†

Expected Life	5 million cycles
Normal Application w/ Preventative Maintenance	10+ million cycles*
Field Repairable	Yes
Seal Repair Kits Available	Yes

\*Addition of lubrication will greatly increase service life  
 †See Maintenance Section

## Product Features

### Quality Components

Made from Aluminum alloy with hard coat anodized with Teflon™ Impregnation. The gripper's main components are made of heat treated steel.

### Viton® Seals

Viton® seals for high temperatures (-20°F to +300°F) are optional.

### Multiple Air Ports

Side or top manifold air ports.

### Spring Assist

Standard springs allow the gripper to retain the component, should the air supply fail or to use the gripper in single acting mode by clamping on the shaft or the bore.

**DIRECTCONNECT™ Mounting Patterns**  
DIRECTCONNECT™ tapped & dowel mounting surface available on **DDH** version [except **-85 & 105**]

### Jaws

Jaws are made from heat treated steel

### Gripper Attachment

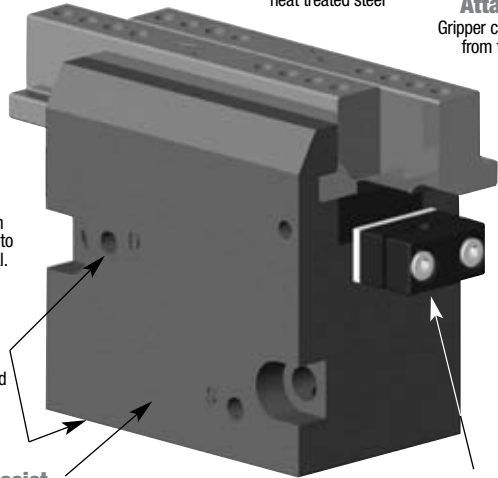
Gripper can be mounted from top or sides

### Jaw Attachment

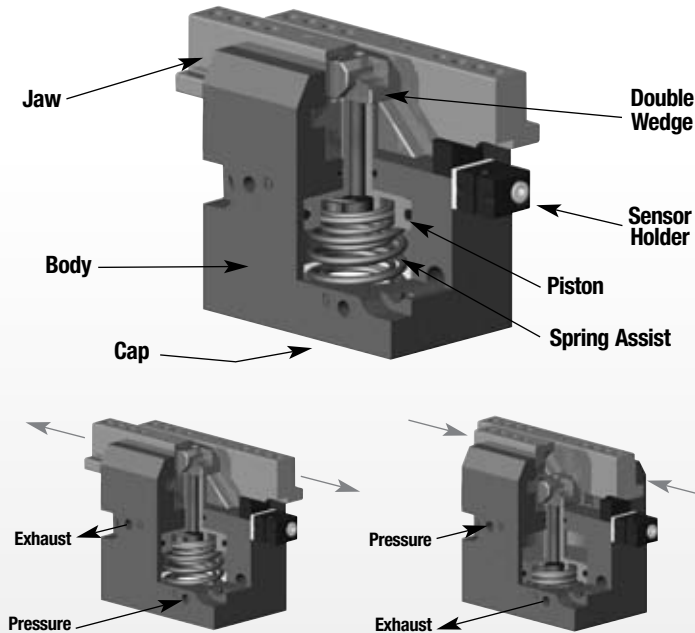
Each jaw allows jaw attachment for gripping on OD or ID

### Cover

Gripper body is shielded to repel chips and other particulate from internal drive mechanism.



## Operating Principle



- Two safety springs apply pressure to a piston. One end of the piston is connected to a double wedge that has two opposing racks that slide in the jaw holder slot.
- It converts vertical motion of the piston into horizontal opposite synchronous motion of the 2 jaws.
- In order to benefit from spring power and from pneumatic control power, the pneumatic inlet must be applied to "S" for gripping and with "D" for release. An arrow etched onto each jaw holder indicates the gripping direction.
- Springs can be used to increase the grip force or to hold part in the event of air loss. It also allows the gripper to be used in single acting mode.

## Style-DGC Parallel Gripper

### Size -25

Style:	GC-25	
Stroke:	0.79 in.	20 mm
Grip Force:	106 lbs.	474 N
Weight:	0.77 lbs.	0.35 Kg



See Page **1.188**

## Style-DGC Parallel Gripper

### Size -45

Style:	GC-45	
Stroke:	1.18 in.	30 mm
Grip Force:	108 lbs.	481 N
Weight:	1.32 lbs.	0.60 Kg



See Page **1.189**

## Style-DGC Parallel Gripper

### Size -65

Style:	GC-65	
Stroke:	1.57 in.	40 mm
Grip Force:	179 lbs.	796 N
Weight:	2.87 lbs.	1.30 Kg



See Page **1.190**

## Style-GC Parallel Gripper

### Size -85

Style:	GC-85	
Stroke:	1.97 in.	50 mm
Grip Force:	333 lbs.	1480 N
Weight:	4.85 lbs.	2.20 Kg



See Page **1.191**

## Style-GC Parallel Gripper

### Size -105

Style:	GC105	
Stroke:	2.36 in.	60 mm
Grip Force:	521 lbs.	2318 N
Weight:	9.50 lbs.	4.31 Kg



See Page **1.192**



# PARALLEL GRIPPER DGC-25 TWO JAW PRECISION SPRING ASSIST

GC SERIES

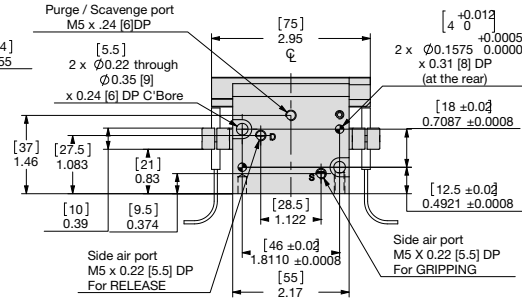
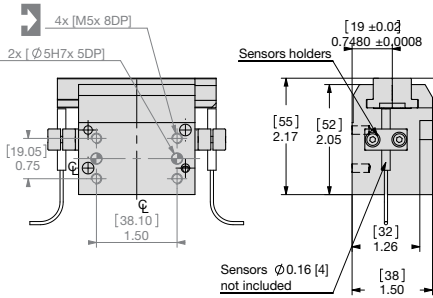
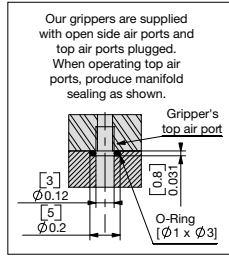
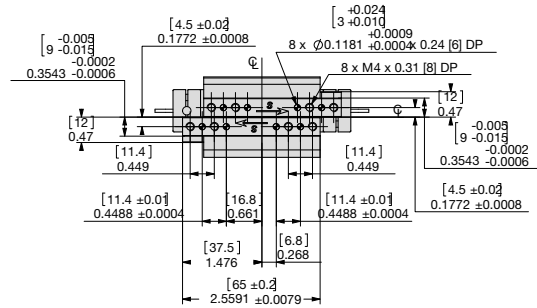
1.188

## Specifications

### DGC-25

Total Rated Grip Force <b>F</b> @ 100 psi, 7 bar*	106 lbs.	474 N
Stroke	0.787 in	20 mm
Weight	0.77 lbs.	0.35 kg
Pressure Range	45-100 psi	3-7 bar
Cylinder Bore $\varnothing$	1.34 in.	34 mm
Displacement	0.98 in <sup>3</sup>	16 cm <sup>3</sup>
Temperature Range		
Standard Seals	-30°~180° F	-35°~80° C
Viton® Seals	-20°~300° F	-30°~150° C
Actuation	0.2 sec.	0.2 sec.
Accuracy	±0.0009 in.	±0.02 mm
Repeatability	±0.0004 in.	±0.01 mm.
Valve required to actuate single acting....	3-way 2-position	
Valve required to actuate double acting....	4-way, 2-position	

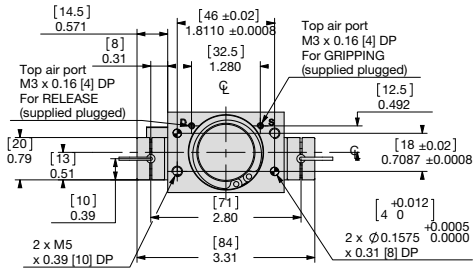
\* With springs.



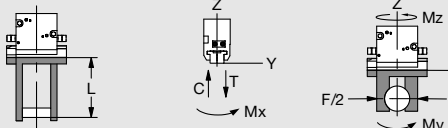
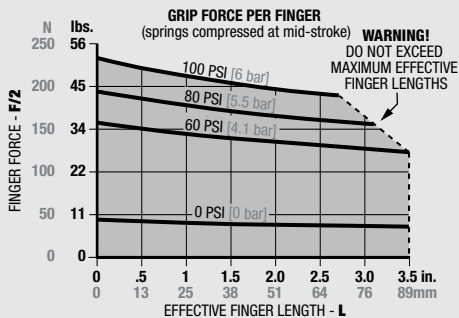
## UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

Dimensions are symmetrical about centerline	Third Angle Projection	All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or [±.013mm]
	<b>Imperial in.</b>	<b>Metric [mm]</b>
Metric Threads Course Pitch	0.00 = ±.01 0.000 = ±.005 0.0000 = ±.0005	[0.] = [±.25] [0.0] = [±.13] [0.00] = [±.013]

**NOTE:**  
To benefit from safety springs power, on open or on close, gripper must always be operated with "S" for GRIPPING and with "D" for RELEASE.  
Drawing hereafter shows gripper gripping at the end of stroke (inlet through "S")



## Loading Information



Loading Capacity†	Static		Dynamic	
	Imperial	Metric	Imperial	Metric
Maximum Tensile <b>T</b>	28 lbs.	125 N	6 lbs.	25 N
Maximum Compressive <b>C</b>	33 lbs.	145 N	7 lbs.	29 N
Maximum Moment <b>M<sub>x</sub></b>	18 in.-lbs.	2 Nm	4 in.-lbs.	0.5 Nm
Maximum Moment <b>M<sub>y</sub></b>	35 in.-lbs.	4 Nm	9 in.-lbs.	1 Nm
Maximum Moment <b>M<sub>z</sub></b>	53 in.-lbs.	6 Nm	13 in.-lbs.	1.5 Nm

†Capacities are per set of jaws and are not simultaneous

## How to Order: (Order Separately)

**BASIC MODEL**  
**DGC-25-V**  
**SIZE VITON® SEALS**

### SENSOR ACCESSORIES

- 4mm PNP Inductive Sensor with Qk Disconnect\*
- 4mm NPN Inductive Sensor with Qk Disconnect\*
- Quick Disconnect 2 Meter Cable\*
- Quick Disconnect 5 Meter Cable\*

ORDER #	QTY/UNIT
<b>OISP-014</b>	<b>1 or 2</b>
<b>OISN-014</b>	<b>1 or 2</b>
<b>CABL-010</b>	<b>1 or 2</b>
<b>CABL-013</b>	<b>1 or 2</b>

### PNEUMATIC ACCESSORIES

- Standard Seal Repair Kit
  - Viton® Seal Repair Kit
- \*Sensor and cable sold separately.

<b>SLKT-319</b>	<b>1</b>
<b>SLKT-319V</b>	<b>1</b>



# PARALLEL GRIPPER DGC-45 TWO JAW PRECISION SPRING ASSIST

GC SERIES

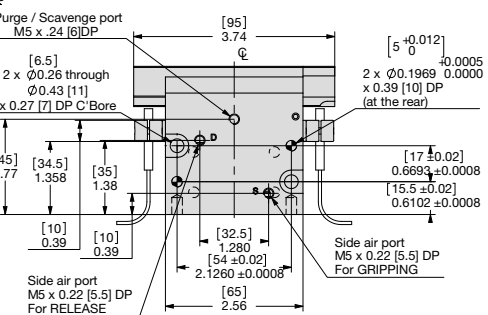
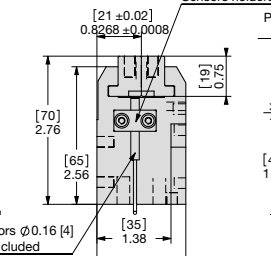
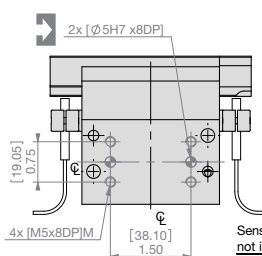
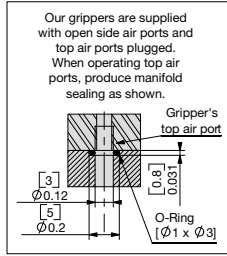
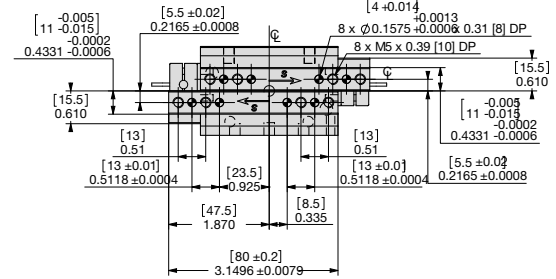
1.189

## Specifications

### DGC-45

Total Rated Grip Force <b>F</b> @ 100 psi, 7 bar*	108 lbs.	481 N
Stroke	1.181 in	30 mm
Weight	1.32 lbs.	0.60 kg
Pressure Range	45-100 psi	3-7 bar
Cylinder Bore $\varnothing$	1.46 in	37 mm
Displacement	1.77 in <sup>3</sup>	29 cm <sup>3</sup>
Temperature Range		
Standard Seals	-30°~180° F	-35°~80° C
Viton® Seals	-20°~300° F	-30°~150° C
Actuation	0.25 sec.	0.25 sec.
Accuracy	±0.0009 in.	±0.02 mm
Repeatability	±0.0004 in.	±0.01 mm.
Valve required to actuate single acting....	3-way 2-position	
Valve required to actuate double acting....	4-way, 2-position	

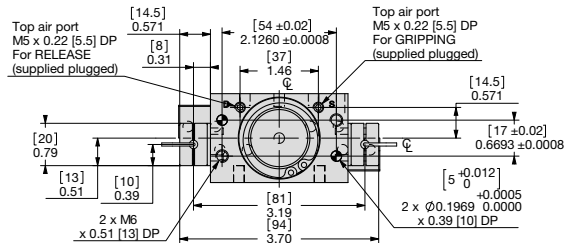
\* With springs.



### UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

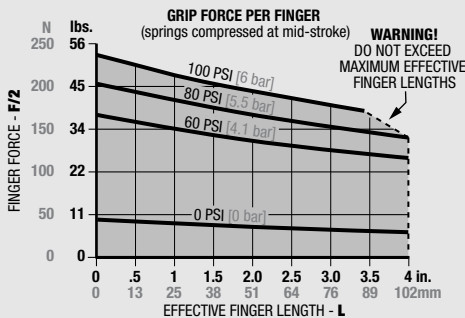
Dimensions are symmetrical about centerline	Third Angle Projection	All Dowel Holes are SF (Slip Fit). Locational Tolerance ±0.0005" or [±.013mm]
Metric Threads Course Pitch	<b>Imperial in.</b> 0.00 = ±.01 0.000 = ±.005 0.0000 = ±.0005	<b>Metric [mm]</b> [0.] = [±.25] [0.0] = [±.13] [0.00] = [±.013]

**NOTE:**  
To benefit from safety springs power, on open or on close, gripper must always be operated with "S" for GRIPPING and with "D" for RELEASE.  
Drawing hereafter shows gripper gripping at the end of stroke (inlet through "S")

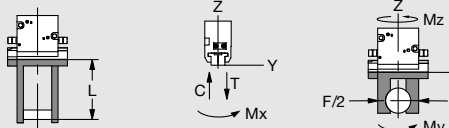


## Loading Information

## How to Order: (Order Separately)



**WARNING!**  
DO NOT EXCEED MAXIMUM EFFECTIVE FINGER LENGTHS



Loading Capacity†	Static		Dynamic	
	Imperial	Metric	Imperial	Metric
Maximum Tensile <b>T</b>	46 lbs.	205 N	9 lbs.	41 N
Maximum Compressive <b>C</b>	51 lbs.	225 N	10 lbs.	45 N
Maximum Moment <b>M<sub>x</sub></b>	27 in.-lbs.	3 Nm	7 in.-lbs.	0.75 Nm
Maximum Moment <b>M<sub>y</sub></b>	53 in.-lbs.	6 Nm	13 in.-lbs.	1.5 Nm
Maximum Moment <b>M<sub>z</sub></b>	80 in.-lbs.	9 Nm	20 in.-lbs.	2.25 Nm

†Capacities are per set of jaws and are not simultaneous

**BASIC MODEL**  
**DGC-45-V**  
**SIZE VITON® SEALS**

### SENSOR ACCESSORIES

- 4mm PNP Inductive Sensor with Qk Disconnect\*
- 4mm NPN Inductive Sensor with Qk Disconnect\*
- Quick Disconnect 2 Meter Cable\*
- Quick Disconnect 5 Meter Cable\*

ORDER #	QTY/UNIT
<b>OISP-014</b>	<b>1 or 2</b>
<b>OISN-014</b>	<b>1 or 2</b>
<b>CABL-010</b>	<b>1 or 2</b>
<b>CABL-013</b>	<b>1 or 2</b>

### PNEUMATIC ACCESSORIES

- Standard Seal Repair Kit
- Viton® Seal Repair Kit

<b>SLKT-321</b>	<b>1</b>
<b>SLKT-321V</b>	<b>1</b>

\*Sensor and cable sold separately.



# PARALLEL GRIPPER DGC-65 TWO JAW PRECISION SPRING ASSIST

GC SERIES

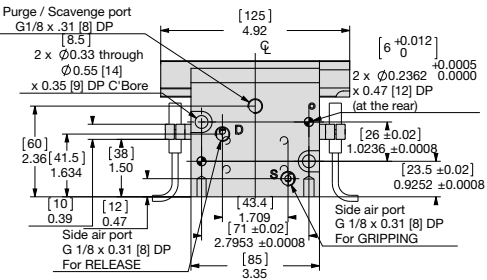
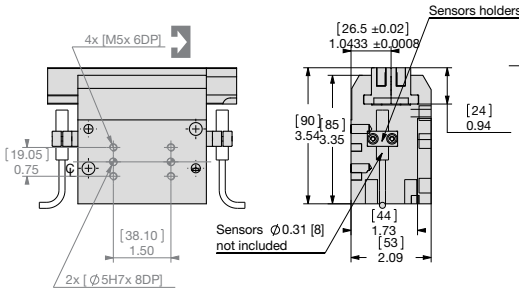
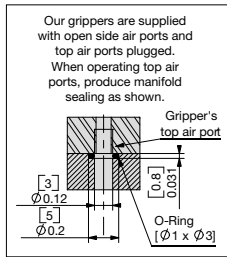
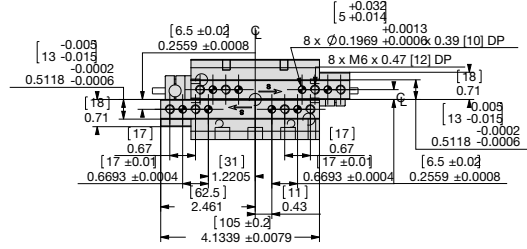
1.190

## Specifications

### DGC-65

Total Rated Grip Force <b>F</b> @ 100 psi, 7 bar*	179 lbs.	796 N
Stroke	1.575 in.	40 mm
Weight	2.87 lbs.	1.30 kg
Pressure Range	45-100 psi	3-7 bar
Cylinder Bore $\varnothing$	1.85 in.	47 mm
Displacement	3.78 in <sup>3</sup>	62 cm <sup>3</sup>
Temperature Range		
Standard Seals	-30°~180° F	-35°~80° C
Viton® Seals	-20°~300° F	-30°~150° C
Actuation	0.35 sec.	0.35 sec.
Accuracy	±0.0009 in.	±0.02 mm
Repeatability	±0.0004 in.	±0.01 mm.
Valve required to actuate single acting....	3-way 2-position	
Valve required to actuate double acting....	4-way, 2-position	

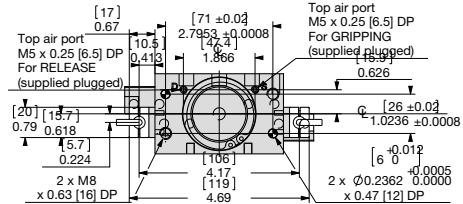
\* With springs.



## UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

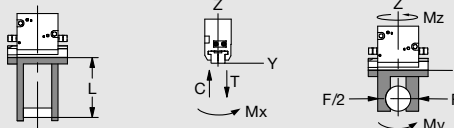
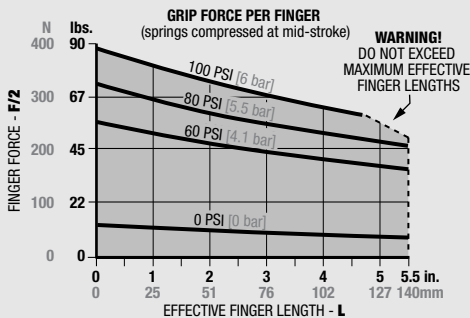
Dimensions are symmetrical about centerline	Third Angle Projection	All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or [±.013mm]
Metric Threads Course Pitch	<b>Imperial in.</b> 0.00 = ±.01 0.000 = ±.005 0.0000 = ±.0005	<b>Metric [mm]</b> [0.] = [±.25] [0.0] = [±.13] [0.00] = [±.013]

**NOTE:**  
To benefit from safety springs power, on open or on close, gripper must always be operated with "S" for GRIPPING and with "D" for RELEASE.  
Drawing hereafter shows gripper gripping at the end of stroke (inlet through "S")



## Loading Information

## How to Order: (Order Separately)



Loading Capacity†	Static		Dynamic	
	Imperial	Metric	Imperial	Metric
Maximum Tensile <b>T</b>	61 lbs.	270 N	12 lbs.	54 N
Maximum Compressive <b>C</b>	69 lbs.	305 N	14 lbs.	61 N
Maximum Moment <b>M<sub>x</sub></b>	35 in.-lbs.	4 Nm	9 in.-lbs.	1 Nm
Maximum Moment <b>M<sub>y</sub></b>	89 in.-lbs.	10 Nm	22 in.-lbs.	2.5 Nm
Maximum Moment <b>M<sub>z</sub></b>	150 in.-lbs.	17 Nm	38 in.-lbs.	4.25 Nm

†Capacities are per set of jaws and are not simultaneous

### BASIC MODEL

**DGC-65-V**

SIZE VITON® SEALS

### SENSOR ACCESSORIES

- 8mm PNP Inductive Sensor with Qk Disconnect\*
- 8mm NPN Inductive Sensor with Qk Disconnect\*
- Quick Disconnect 2 Meter Cable\*
- Quick Disconnect 5 Meter Cable\*

ORDER #	QTY/UNIT
<b>OISP-011</b>	<b>1 or 2</b>
<b>OISN-011</b>	<b>1 or 2</b>
<b>CABL-010</b>	<b>1 or 2</b>
<b>CABL-013</b>	<b>1 or 2</b>

### PNEUMATIC ACCESSORIES

- Standard Seal Repair Kit
- Viton® Seal Repair Kit

ORDER #	QTY/UNIT
<b>SLKT-323</b>	<b>1</b>
<b>SLKT-323V</b>	<b>1</b>

\*Sensor and cable sold separately.



# PARALLEL GRIPPER GC-85 TWO JAW PRECISION SPRING ASSIST

GC SERIES

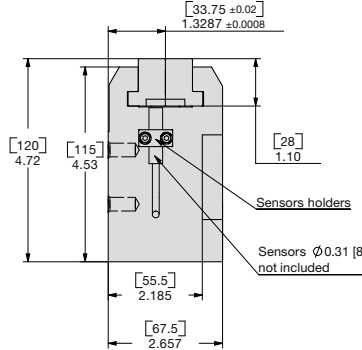
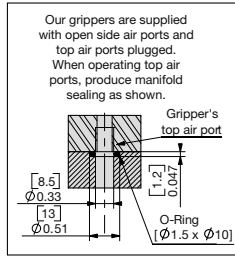
1.191

## Specifications

## GC-85

Total Rated Grip Force <b>F</b> @ 100 psi, 7 bar*	333 lbs.	1480 N
Stroke	1.968 in	50 mm
Weight	4.85 lbs.	2.20 kg
Pressure Range	45-100 psi	3-7 bar
Cylinder Bore $\varnothing$	2.36 in.	60 mm
Displacement	8.30 in <sup>3</sup>	136 cm <sup>3</sup>
Temperature Range		
Standard Seals	-30°~180° F	-35°~80° C
Viton® Seals	-20°~300° F	-30°~150° C
Actuation	0.5 sec.	0.5 sec.
Accuracy	±0.0009 in.	±0.02 mm
Repeatability	±0.0004 in.	±0.01 mm.
Valve required to actuate single acting....	3-way 2-position	
Valve required to actuate double acting....	4-way, 2-position	

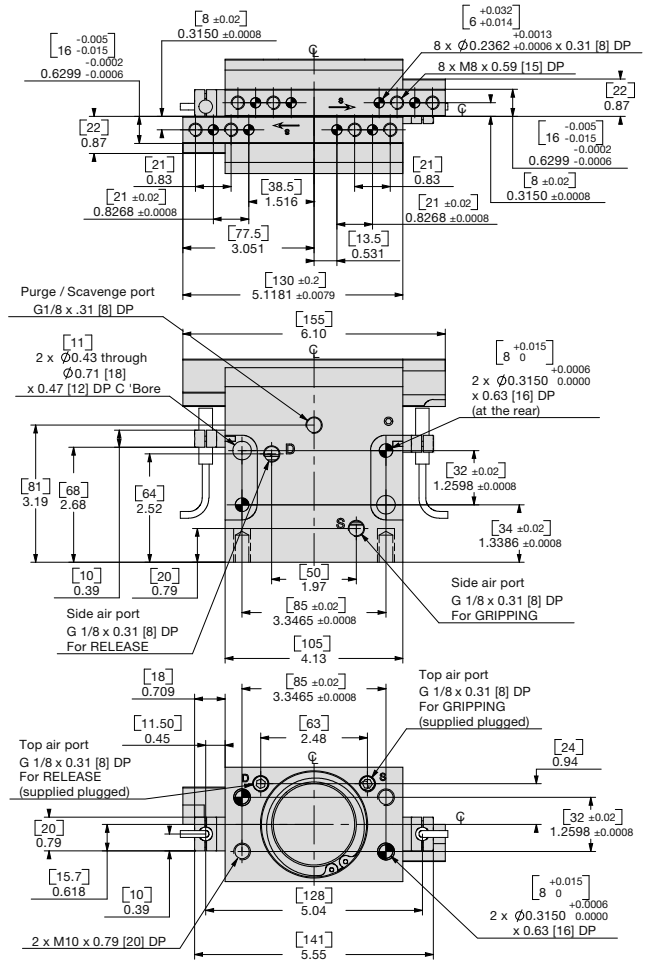
\* With springs.



### UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

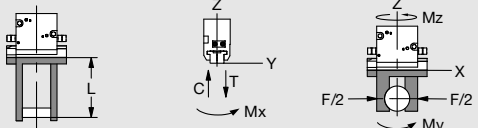
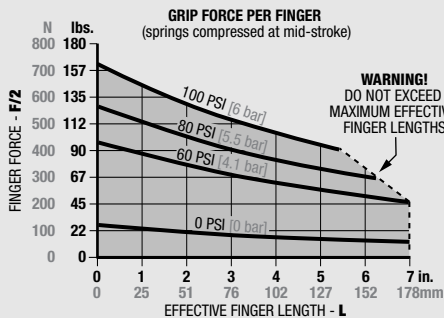
Dimensions are symmetrical about centerline	Third Angle Projection	All Dowel Holes are SF (Slip Fit). Locational Tolerance ±0.0005" or (±0.13mm)
Metric Threads Course Pitch	<b>Imperial in.</b> 0.00 = ±.01 0.000 = ±.005 0.0000 = ±.0005	<b>Metric [mm]</b> [0.] = (±.25) [0.0] = (±.13) [0.00] = (±.013)

**NOTE:**  
To benefit from safety springs power, on open or on close, gripper must always be operated with "S" for GRIPPING and with "D" for RELEASE.  
Drawing hereafter shows gripper gripping at the end of stroke (inlet through "S")



## Loading Information

## How to Order: (Order Separately)



### Loading Capacity†

	Static		Dynamic	
	Imperial	Metric	Imperial	Metric
Maximum Tensile <b>T</b>	83 lbs.	370 N	17 lbs.	74 N
Maximum Compressive <b>C</b>	91 lbs.	405 N	18 lbs.	81 N
Maximum Moment <b>M<sub>x</sub></b>	53 in.-lbs.	6 Nm	13 in.-lbs.	1.5 Nm
Maximum Moment <b>M<sub>y</sub></b>	133 in.-lbs.	15 Nm	33 in.-lbs.	3.75 Nm
Maximum Moment <b>M<sub>z</sub></b>	239 in.-lbs.	27 Nm	60 in.-lbs.	6.75 Nm

†Capacities are per set of jaws and are not simultaneous

### BASIC MODEL

**GC-85-V**

SIZE VITON® SEALS

### SENSOR ACCESSORIES

- 8mm PNP Inductive Sensor with Qk Disconnect\*
- 8mm NPN Inductive Sensor with Qk Disconnect\*
- Quick Disconnect 2 Meter Cable\*
- Quick Disconnect 5 Meter Cable\*

ORDER #	QTY/UNIT
<b>OISP-011</b>	<b>1 or 2</b>
<b>OISN-011</b>	<b>1 or 2</b>
<b>CABL-010</b>	<b>1 or 2</b>
<b>CABL-013</b>	<b>1 or 2</b>

### PNEUMATIC ACCESSORIES

- Standard Seal Repair Kit
  - Viton® Seal Repair Kit
- \*Sensor and cable sold separately.

SLKT-325	1
<b>SLKT-325V</b>	<b>1</b>

Please see back cover for DE-STA-CO Global Locations. [www.destaco.com](http://www.destaco.com)

[www.comoso.com](http://www.comoso.com)



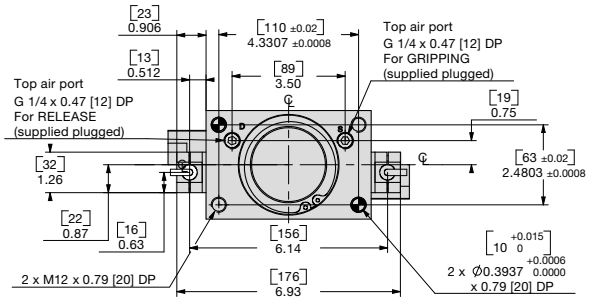
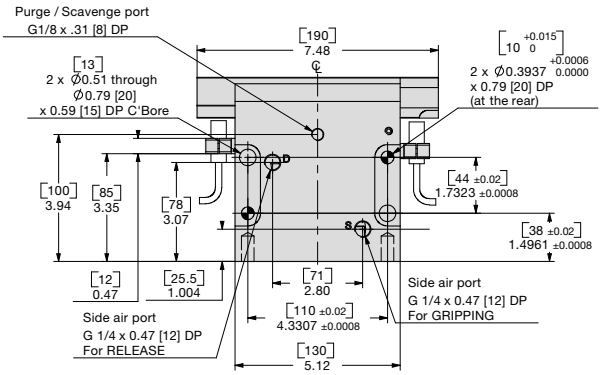
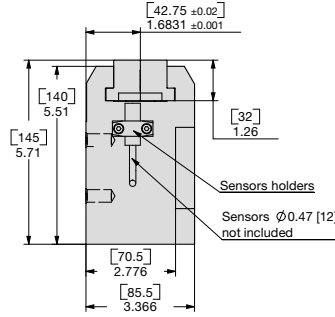
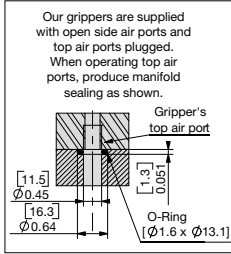
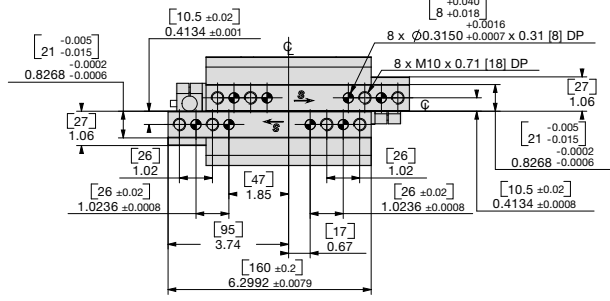
# PARALLEL GRIPPER GC-105 TWO JAW PRECISION SPRING ASSIST

## Specifications

### GC-105

Total Rated Grip Force <b>F</b> @ 100 psi, 7 bar*	521 lbs.	2318 N
Stroke.....	2.362 in	60 mm
Weight.....	9.50 lbs.	4.31 kg
Pressure Range.....	45-100 psi	3-7 bar
Cylinder Bore $\varnothing$ .....	2.99 in.	76 mm
Displacement.....	15.93 in <sup>3</sup>	261 cm <sup>3</sup>
Temperature Range		
Standard Seals.....	-30°~180° F	-35°~80° C
Viton® Seals.....	-20°~300° F	-30°~150° C
Actuation.....	0.7 sec.	0.7 sec.
Accuracy.....	±0.0009 in.	±0.02 mm
Repeatability.....	±0.0004 in.	±0.01 mm.
Valve required to actuate single acting....	3-way 2-position	
Valve required to actuate double acting....	4-way, 2-position	

\* With springs.

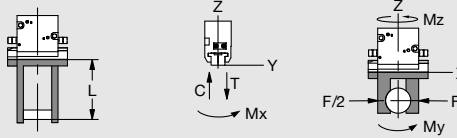
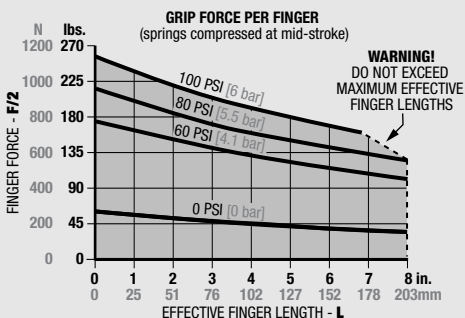


### UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

	Dimensions are symmetrical about centerline		Third Angle Projection		All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or [±.013mm]
	Metric Threads Course Pitch	Imperial in.	0.00 = ±.01 0.000 = ±.005 0.0000 = ±.0005	Metric [mm]	[0.] = [±.25] [0.0] = [±.13] [0.00] = [±.013]

**NOTE:**  
To benefit from safety springs power, on open or on close, gripper must always be operated with "S" for GRIPPING and with "D" for RELEASE.  
Drawing hereafter shows gripper gripping at the end of stroke (inlet through "S")

## Loading Information



Loading Capacity†	Static		Dynamic	
	Imperial	Metric	Imperial	Metric
Maximum Tensile <b>T</b>	93 lbs.	415 N	19 lbs.	83 N
Maximum Compressive <b>C</b>	102 lbs.	455 N	20 lbs.	91 N
Maximum Moment <b>M<sub>x</sub></b>	71 in.-lbs.	8 Nm	18 in.-lbs.	2 Nm
Maximum Moment <b>M<sub>y</sub></b>	168 in.-lbs.	19 Nm	42 in.-lbs.	4.75 Nm
Maximum Moment <b>M<sub>z</sub></b>	354 in.-lbs.	40 Nm	89 in.-lbs.	10 Nm

†Capacities are per set of jaws and are not simultaneous

## How to Order: (Order Separately)

**BASIC MODEL**  
**GC-105-V**  
SIZE VITON® SEALS

### SENSOR ACCESSORIES

- 12mm PNP Inductive Sensor with Qk Disconnect\*
- 12mm NPN Inductive Sensor with Qk Disconnect\*
- Quick Disconnect 2 Meter Cable\*
- Quick Disconnect 5 Meter Cable\*

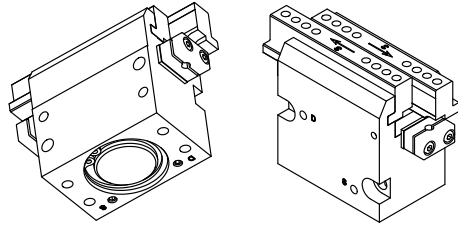
ORDER #	QTY/UNIT
<b>OISP-017</b>	<b>1 or 2</b>
<b>OISN-017</b>	<b>1 or 2</b>
<b>CABL-014</b>	<b>1 or 2</b>
<b>CABL-018</b>	<b>1 or 2</b>

### PNEUMATIC ACCESSORIES

- Standard Seal Repair Kit
- Viton® Seal Repair Kit

<b>SLKT-327</b>	<b>1</b>
<b>SLKT-327V</b>	<b>1</b>

\*Sensor and cable sold separately.

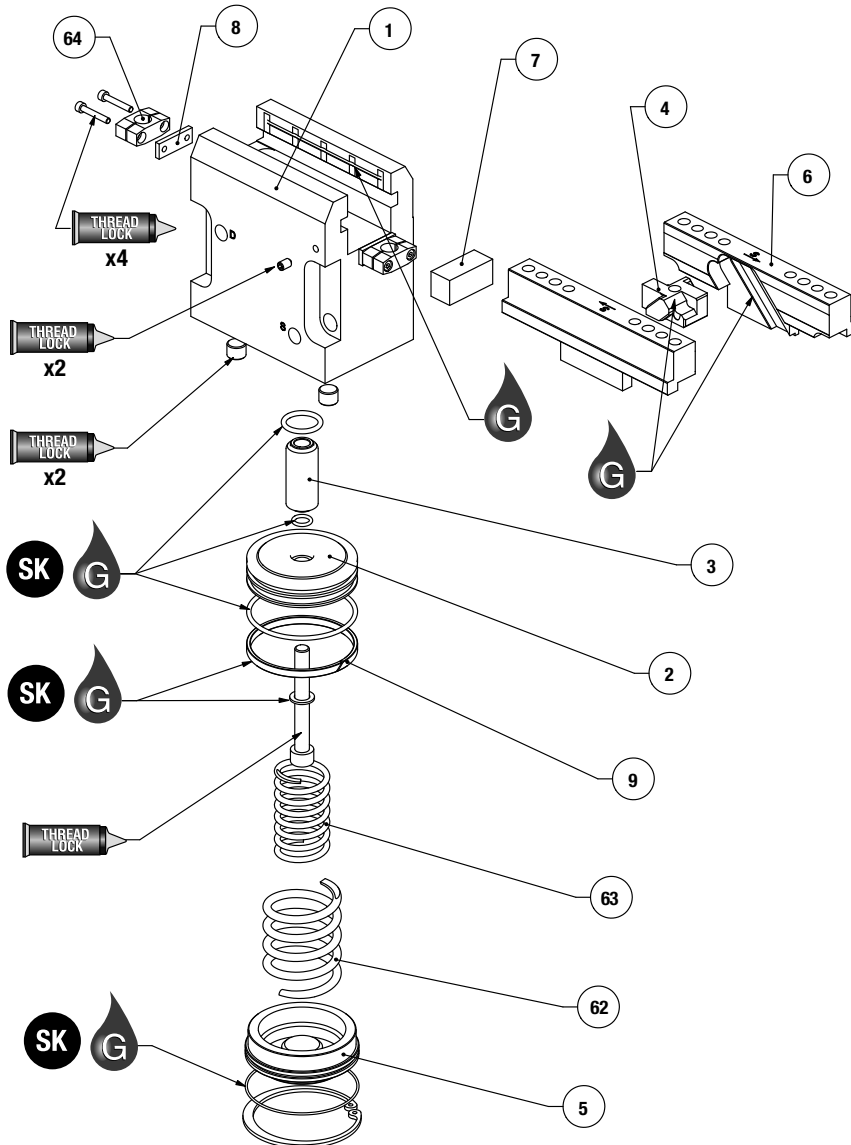


Item	Qty	Name
01	1	Body
02	1	Piston
03	1	Piston Shaft
04	1	Double Wedge
05	1	Cap
06	2	Jaw Holder
07	1	Cover
08	2	Spacer
09	1	Piston Guidance Tape
62	1	Outer Spring
63	1	Inner Spring

**NOTE:** Contact the Robohand Sales Department for a complete spare parts list with order numbers and prices.

### Assembly Procedure

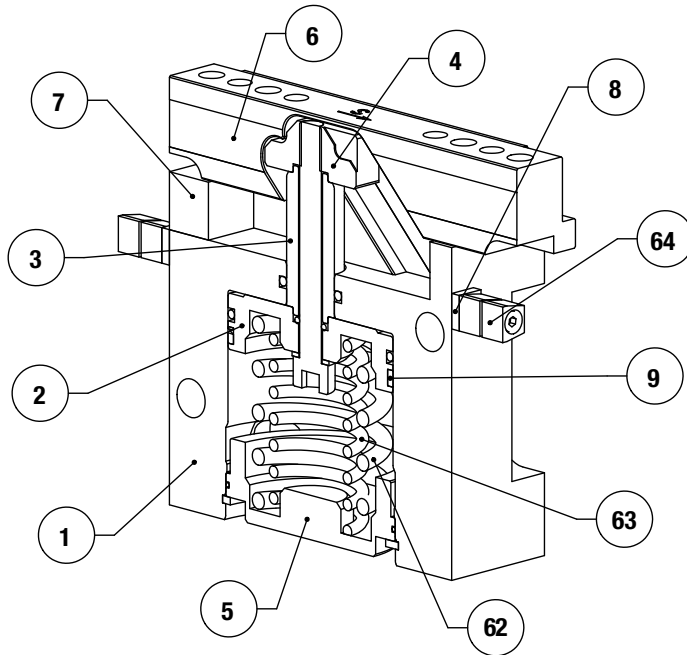
- Lubricate and install the seals into cap (x1) and body (x1)
- If rear inlets are used, clear them and plug the side inlets on the body (#1)
- Lubricate the slot of jaws (#6), the double wedge (#4), and the slot of the body (#1).
- Place the double wedge between the two jaws and then introduce the jaws in the slots of the body.
- Assemble the piston:  
**DGC-25 & DGC-65 (not shown):** lubricate and install the seal onto the one piece piston (#3) Insert the piston into the body, locate it on the double wedge, place the seal ring under the screw cap and screw all the pieces together.  
**GC-85 (not shown):** Insert the shaft (#3) into the body and center it in the double wedge. Lubricate and insert the seals on the piston (#2). Insert the piston into the body while centering on the shaft. Place the seal ring under the screw cap and screw all the pieces together.  
**GC-105:** Insert the shaft (#3) into the body and center it in the double wedge. Lubricate and insert the seals and the guidance ring (#9) on the piston (#2). Insert the piston into the body while centering on the shaft. Place the seal ring under the screw cap and screw all the pieces together.
- Make by hand the piston move into the body
- Insert the two springs (#62 & 63) into the counterbore of the piston
- Install the cap (#5) and fix it with the retaining ring.
- Place and fix the wiper (#7) in the body.
- Mount the sensor holder (#64) and the spacer (#8) on the body sides



**SK Seal Repair Kit Order #'s  
See Product Data Sheets**

Seal Kit Items	Thread Locker	Krytox™ Lubricant	Lightweight Machine Oil	Teflon® Based Grease	Super Bonder	Third Angle Projection

# DGC/GC Series Assembled View



Item	Qty	Name
------	-----	------

01	1	Body
02	1	Piston
03	1	Piston Shaft
04	1	Double Wedge
05	1	Cap
06	2	Jaw Holder
07	1	Cover
08	2	Spacer
09	1	Piston Guidance Tape
62	1	Outer Spring
63	1	Inner Spring

**NOTE:** Contact the Robohand Sales Department for a complete spare parts list with order numbers and prices.



Seal Kit  
Items



Thread  
Locker



Krytox™  
Lubricant



Lightweight  
Machine Oil



Teflon® Based  
Grease



Super  
Bonder



Third Angle  
Projection

Please see back cover for DE-STA-CO Global Locations. [www.destaco.com](http://www.destaco.com)

[www.comoso.com](http://www.comoso.com)





# Parallel Grippers - DPW DIRECTCONNECT™ Wide Body Series

**NO  
ADAPTER  
PLATES!**

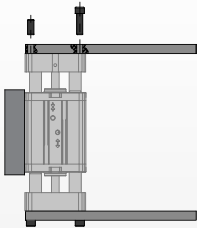


**DIRECTCONNECT™**

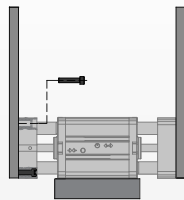
- **DIRECTCONNECT™ Connectivity:** DIRECTCONNECT™ Tapped and Dowel mounting on body.
- **Large or Wide Parts:** Wide body design provides secure gripping of large & wide parts.
- **Multiple air port positions:** Tapped air ports on top and front are standard.
- **Manifold Air Porting:** Top air ports can be manifold o-ring sealed.
- **Inductive Sensor Flexibility:** Mount either 3mm or 4mm Inductive sensors with the same bracket (3mm only on DPW-250).
- **Magneto-resistive Sensing:** Full range adjustable Magneto-resistive Sensors. Magnet supplied standard.
- **Long Finger Applications:** Jaw support thru the length of the body allows for long fingers to be attached to jaws.
- **Thru Jaw Mounting:** Offers a wider variety of mounting applications for jaws.
- **Shaft Wiper Option:** Rugged urethane shaft wipers seal the unit against harsh environments. Designed to be used in machine coolant and metal chip environment applications.
- **Multiple Strokes:** All gripper sizes are available in 2 different strokes.
- **Non-synchronous motion:** The unit can be made non-synchronous providing independent jaw motion allowing the gripper to pick or place at a point other than its center.

## Mounting Information:

Grippers can be mounted & operated in any direction

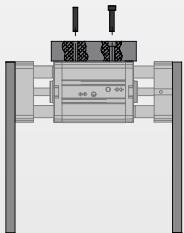


Fingers attach with screws and locate on jaws with dowel pins

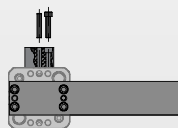


Thru mounting on inside of jaws to allow for alternate finger mounting

Jaw design allows for simplified mounting of fingers



Body mounts on top with screws and locates with slip fit dowel pin holes for accuracy



Symmetrical mounting pattern on jaws allows for multiple finger orientation

## Technical Specifications:

### Pneumatic Specifications

Pressure Operating Range  
Cylinder Type  
Dynamic Seals  
Valve Required to Operate

### Air Quality Requirements

Air Filtration  
Air Lubrication  
Air Humidity

### Temperature Operating Range

Buna-N Seals (standard)  
Viton® Seals (optional)

### Maintenance Specifications

Expected Life  
Normal Application  
w/ Preventative Maintenance  
Field Repairable  
Seal Repair Kits Available

### -W Option Shaft Wiper Specifications

Wiper Material  
Temperature Rating (Wiper Only)  
Compatible Chemicals

Non-Compatible Chemicals

Example Applications

### Application Restrictions

Applications where mechanism lubricant could cause contamination (use -W Shaft Wiper Option in this case)

\*Addition of lubrication will greatly increase service life

**Imperial**  
40-100 psi  
**Metric**  
3-7 bar  
**Double Acting**  
**Internally Lubricated Buna-N**  
**4-way, 2-position**

**40 Micron or Better**  
**Not Necessary\***  
**Low Moisture Content (dry)**

**-30°~180° F**  
**-20°~300° F**  
**-35°~80° C**  
**-30°~150° C**

**5 million cycles**  
**10+ million cycles\***  
**Yes**  
**Yes**

**90 Durometer Urethane**  
**-65°~275° F -54°~135° C**  
**water, coolant, petroleum oils,**  
**silicone, lubricants, dilute acids &**  
**alkalis, hydraulic fluid, transmission fluid**  
**Ozone, ketones, strong acids,**  
**brake fluid**  
**Grinding dust, machine chips &**  
**coolant, paper dust, washdown**

# Product Features

**Thru-Jaw Mounting**  
C-bores on inside of jaws for thru mounting to increase range of applications

**DIRECTCONNECT Mounting Patterns**  
DIRECTCONNECT™ Tapped & Dowel mounting surface on top of body

**Sealed Design (-W option)**  
Urethane shaft wipers prevent against dirty environments (machining chips & coolant, grinding dust, paper mill environments, etc.)

**Sensor Mounting Slots**  
Standard mounting slots for magneto resistive and inductive sensors (sensors sold separately)

**Multiple Air Port Locations**  
2 standard air port location (front & top)

**Manifold Air Ports**  
Top air ports can be O-Ring manifold sealed to eliminate air lines

**Simplified Finger Mounting**  
Large jaw configuration allows for simplified finger mounting

**End of Stroke Cushions**  
Reduce shock of fully open and close strokes

**Dowel Holes**  
Slip fit dowel pin holes in body and jaws

**Square-Faced Jaws**  
Allow for a symmetrical, multi-positional mounting pattern for simplified finger design and increased range of applications

**Magneto Resistive Sensors**  
An alternative option to inductive sensors (magnets supplied standard)

**Combined 3mm and 4mm Inductive Sensor Mounting**  
Allows for either 3 or 4mm Inductive sensors (3mm only on DPW-250)

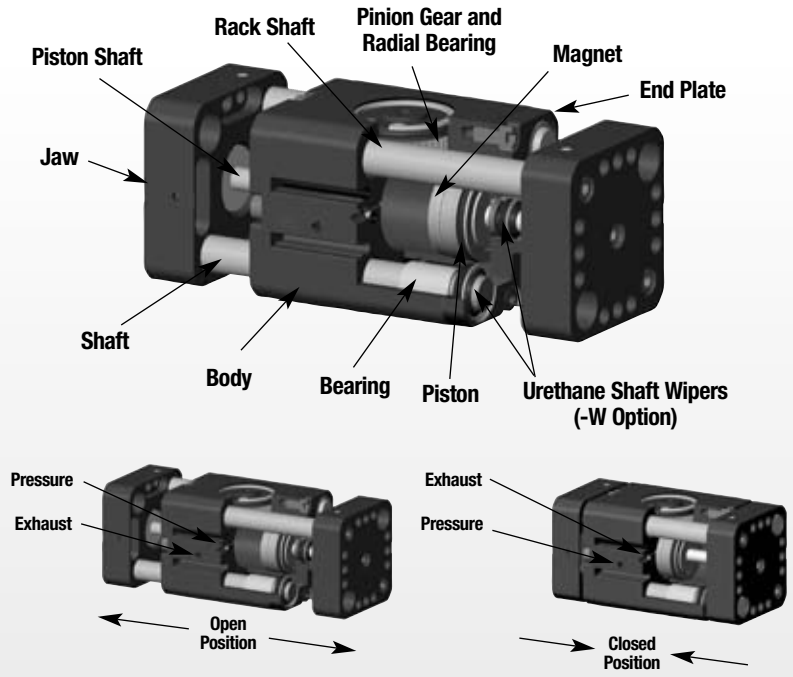
**Superior Jaw Support**  
Each jaw is supported by 2 shafts that extend the entire length of the body and are guided by 2 oil impregnated bronze bushings per shaft

**Quality Components**  
Hardened precision stainless steel shafting for wear resistance and long life

**High Temperature**  
Optional Viton® seals are available for high temperature applications

**Optional Non-Synchronous Operation**

# Operating Principle



- Two shafts, one with a rack cut into it, are securely fastened to each of the jaws and the body supported through the length of the body.
- Two double acting opposed pistons provide power to the jaws.
- The rack shafts of each jaw slide in opposite directions of one another and are synchronized by a piston gear.
- This gripper is suitable for internal or external gripping and can be mounted in any orientation.

**U.S Patent #5,163,729 Designed, manufactured and assembled in the USA**

## Style -DPW Parallel Gripper

### Size -250M-1

	250M-1	250M-1
Stroke:	0.75 in.	19.1 mm
Grip Force:	50 lbs.	222 N
Weight:	0.662 lbs.	0.30 Kg



Shown with -W Shaft Wiper Option

See Page **1.198**

## Style -DPW Parallel Gripper

### Size -250M-2

	250M-2	250M-2
Stroke:	1.25 in.	31.8 mm
Grip Force:	50 lbs.	222 N
Weight:	0.856 lbs.	0.39 Kg



Shown with -W Shaft Wiper Option

See Page **1.200**

## Style -DPW Parallel Gripper

### Size -375M-1

	375M-1	375M-1
Stroke:	1.00 in.	25.4 mm
Grip Force:	100 lbs.	445 N
Weight:	1.80 lbs.	0.81 Kg



Shown with -W Shaft Wiper Option

See Page **1.202**

## Style -DPW Parallel Gripper

### Size -375M-2

	375M-2	375M-2
Stroke:	2.00 in.	50.8 mm
Grip Force:	100 lbs.	445 N
Weight:	2.66 lbs.	1.20 Kg



Shown with -W Shaft Wiper Option

See Page **1.204**

## Style -DPW Parallel Gripper

### Size -500M-1

	500M-1	500M-1
Stroke:	1.50 in.	38.1 mm
Grip Force:	180 lbs.	800 N
Weight:	3.27 lbs.	1.48 Kg



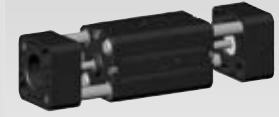
Shown with -W Shaft Wiper Option

See Page **1.206**

## Style -DPW Parallel Gripper

### Size -500M-2

	500M-2	500M-2
Stroke:	2.50 in.	63.5 mm
Grip Force:	180 lbs.	800 N
Weight:	4.39 lbs.	2.0 Kg



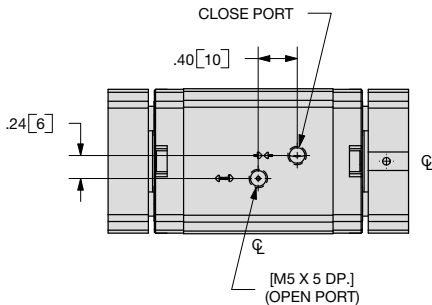
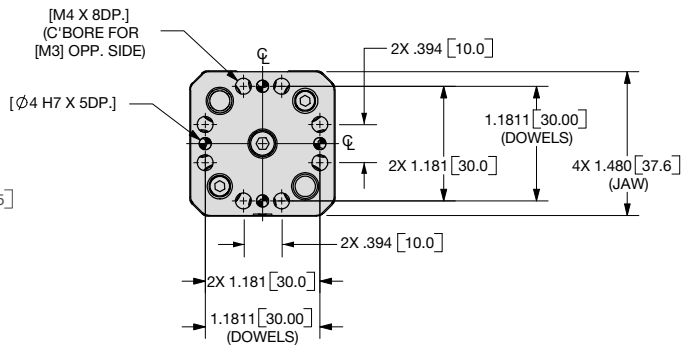
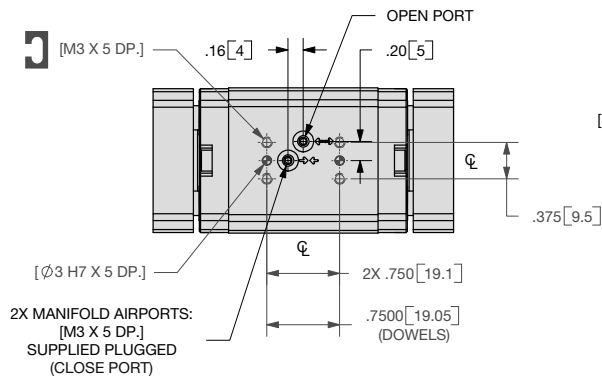
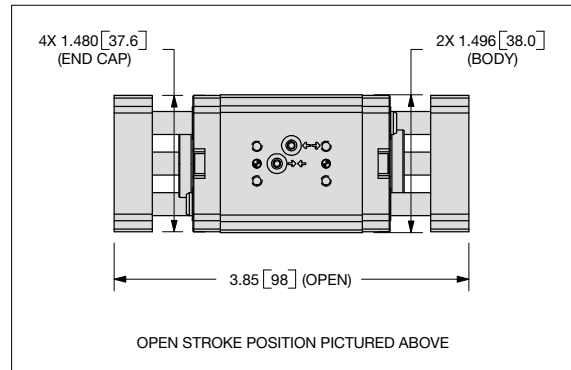
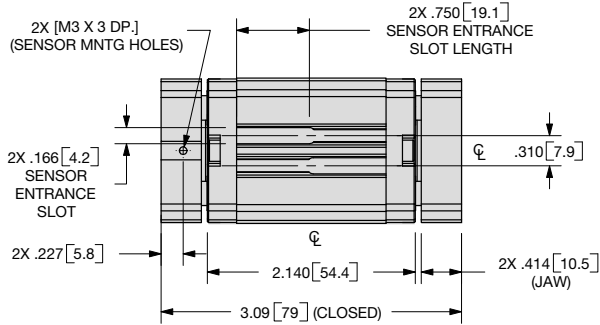
Shown with -W Shaft Wiper Option

See Page **1.208**

# PARALLEL GRIPPERS DPW-250M-1 DIRECTCONNECT WIDE BODY SERIES

DPW SERIES

1.198



NOTE: DIRECTCONNECT™ DIMENSIONS ARE SHOWN IN BLUE

**UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW**

	Dimensions are symmetrical about centerline		Third Angle Projection		All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or (±.013mm)
	Metric Threads Course Pitch	<b>Imperial in.</b>		<b>Metric [mm]</b>	
		0.00 = ±.01		[0] = [±.25]	
		0.000 = ±.005		[0.0] = [±.13]	
		0.0000 = ±.0005		[0.00] = [±.013]	

## How to Order: (Order Accessories separately from Basic Model)

**BASIC MODEL**   **STROKE**   **WIPERS**   **VITON SEALS**

**DPW-250M - 1 - NS - W - V**

**NON-SYNCHRONOUS**

**JAW SYNCHRONIZATION**   **NS** Non-Synchronous Operation  
Leave Blank for Synchronous (standard)

**WIPERS**   **W** Shaft Wipers  
**VITON® SEALS**   **V**

### SENSOR ACCESSORIES

	ORDER #	QTY/UNIT
PNP Magneto Resistive Sensor Short Barrel (with Qk. Disc.)*	<b>OHSP-017</b>	<b>1 or 2</b>
NPN Magneto Resistive Sensor Short Barrel (with Qk. Disc.)*	<b>OHSN-017</b>	<b>1 or 2</b>
PNP Magneto Resistive Sensor 90° Barrel (with Qk. Disc.)*	<b>OHSP-011</b>	<b>1 or 2</b>
NPN Magneto Resistive Sensor 90° Barrel (with Qk. Disc.)*	<b>OHSN-011</b>	<b>1 or 2</b>
Quick Disconnect Cable (2 meters long)*	<b>CABL-010</b>	<b>1 or 2</b>
Quick Disconnect Cable (5 meters long)*	<b>CABL-013</b>	<b>1 or 2</b>
PNP Inductive Sensor 3mm (with Qk. Disc.)*	<b>OISP-019</b>	<b>1 or 2</b>
NPN Inductive Sensor 3mm (with Qk. Disc.)*	<b>OISN-019</b>	<b>1 or 2</b>
Sensor Mounting Kit for 3mm Inductive Sensor	<b>OSMK-116</b>	<b>1</b>

### PNEUMATIC ACCESSORIES

	ORDER #	QTY/UNIT
Seal Repair Kit (Standard Buna-N)	<b>SLKT-337</b>	<b>1</b>
Seal Repair Kit (Viton®)	<b>SLKT-337V</b>	<b>1</b>
Manifold Seal Kit (Viton®)	<b>SLKT-197V</b>	<b>1</b>
Shaft Wiper Seal Kit	<b>SLKT-338</b>	<b>1</b>
Fail Safe Valve M5	<b>OFSV-004</b>	<b>1</b>
Adjustable Flow Control	<b>VLVF-008</b>	<b>1 or 2</b>

\*Sensor and cable sold separately

### SAMPLE ORDER: DPW-250M-1-W-V

Ex: DPW-250M Gripper, 19.1mm Stroke, Shaft Wipers, Viton Seals

DIRECTCONNECT™



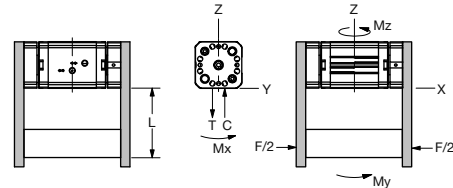
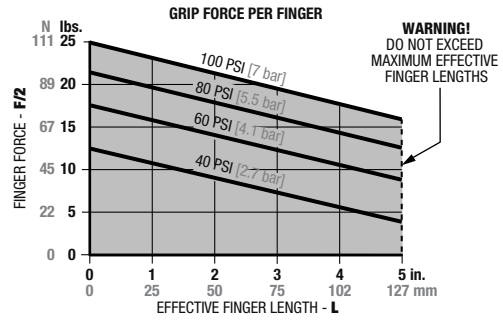
# PARALLEL GRIPPERS DPW-250M-1 DIRECT CONNECT WIDE BODY SERIES

DPW SERIES

1.199



Specifications	DPW-250M-1	
Total Rated Grip Force <b>F</b> @ 100 psi, 7 bar .....	50 lbs.	222 N
Stroke.....	0.75 in.	19.1 mm
Pressure Range.....	40-100 psi	3-7 bar
Cylinder Bore $\emptyset$ .....	0.625 in.	15.9 mm
Displacement.....	0.023 in <sup>3</sup>	3.8 cm <sup>3</sup>
Weight.....	0.662 lbs.	0.30 Kg
Temperature Range: Standard Seals .....	-30°~180° F	-35°~80° C
Viton® Seals .....	-20°~300° F	-30°~150° C
Actuation .....	0.12 sec.	0.12 sec.
Accuracy .....	±0.003 in.	±0.08 mm
Repeatability.....	±0.001 in.	±0.03 mm
Valve required to actuate.....	4-way, 2-position	

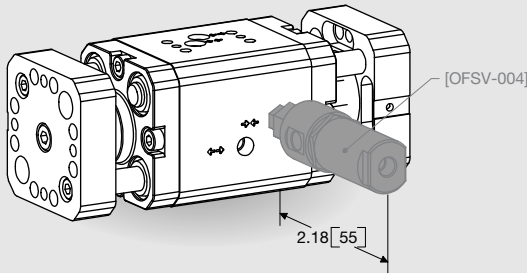


### Loading Capacity†

	Static	Dynamic
Maximum Tensile <b>T</b>	60 lbs. [267 N]	12 lbs. [53 N]
Maximum Compressive <b>C</b>	60 lbs. [267 N]	12 lbs. [53 N]
Maximum Moment <b>M<sub>x</sub></b>	120 in.-lbs. [14 Nm]	24 in.-lbs. [3 Nm]
Maximum Moment <b>M<sub>y</sub></b>	180 in.-lbs. [20 Nm]	36 in.-lbs. [4 Nm]
Maximum Moment <b>M<sub>z</sub></b>	120 in.-lbs. [14 Nm]	24 in.-lbs. [3 Nm]

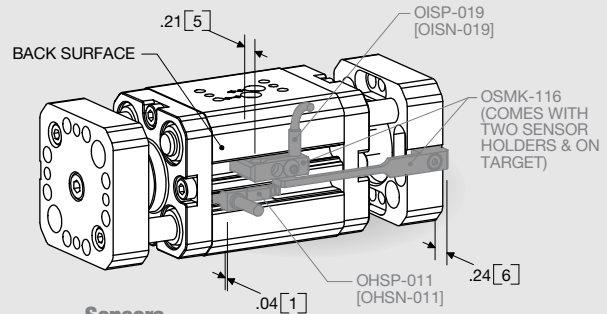
†Capacities are per set of jaws and are not simultaneous

## Accessory Mounting Technical Data



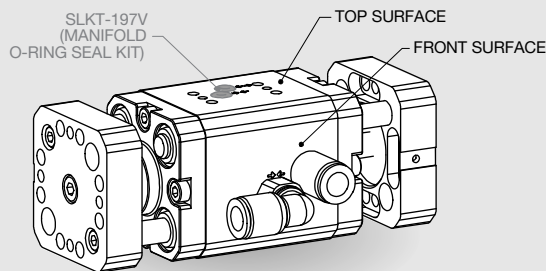
### Failsafe Valves

- Used in applications where it is critical that the part being gripped not be dropped if air pressure is lost
- Mounts directly to gripper
- M5 air port



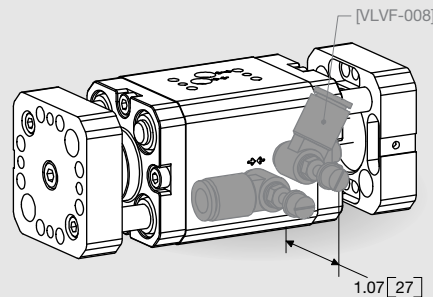
### Sensors

- PNP and NPN Magneto Resistive available
- Sensors are slot mounted, no mounting Kits required
- Low profile underflush sensor version or 90° wire exit sensor version
- Simple adjustment with slotted screw driver
- PNP and NPN inductive available
- Inductive sensor bracket mounts 3mm sensor
- Available with 2M or 5M Quick Disconnect mating cable (order separately)



### Multiple Air Port Locations

- 2 standard air port locations (top and front surface)
- Top manifold air ports are supplied plugged
- Seals in manifold kit are Viton®
- Front air ports are tapped for M5 fittings



### Flow Controls

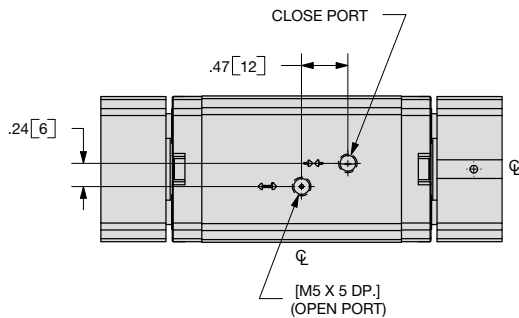
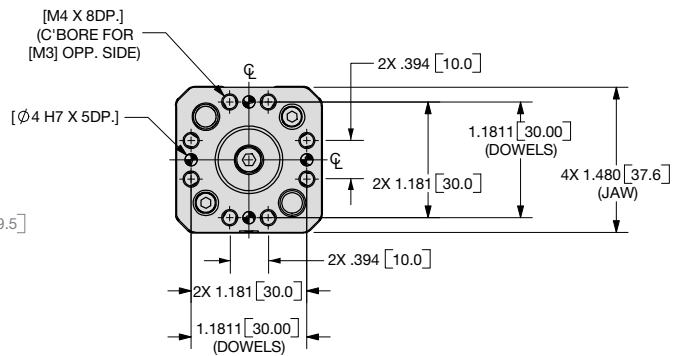
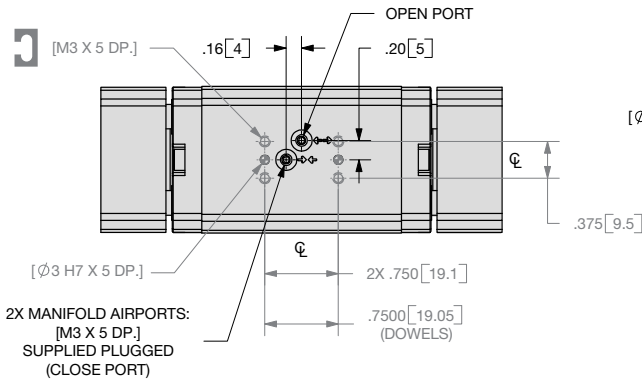
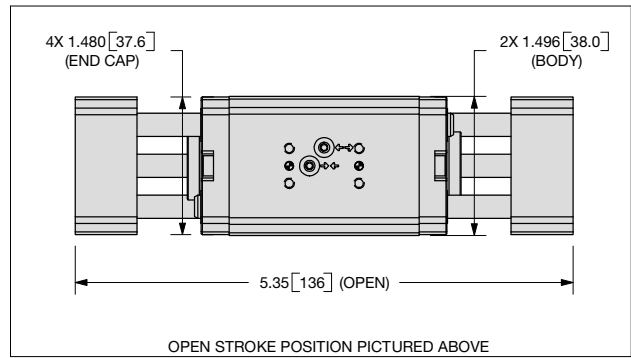
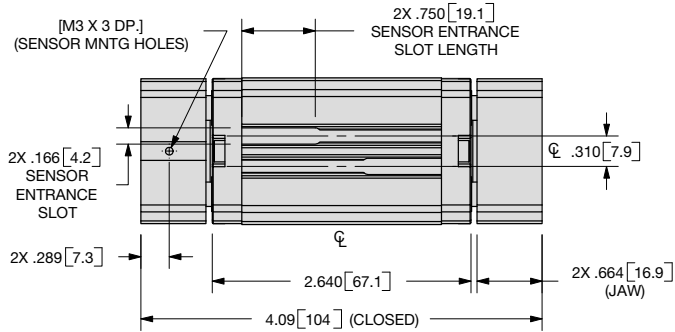
- Thumb screw adjust with locking nut for adjusting actuation time
- Available for 6mm OD tubing

DIRECTCONNECT™

# PARALLEL GRIPPERS DPW-250M-2 DIRECTCONNECT WIDE BODY SERIES

DPW SERIES

1.200



UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

Dimensions are symmetrical about centerline	Third Angle Projection	All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or (±.013mm)
Metric Threads Course Pitch	<b>Imperial in.</b> 0.00 = ±.01 0.000 = ±.005 0.0000 = ±.0005	<b>Metric [mm]</b> [0] = (±.25) [0.0] = (±.13) [0.00] = (±.013)

NOTE: DIRECTCONNECT™ DIMENSIONS ARE SHOWN IN BLUE

## How to Order: (Order Accessories separately from Basic Model)

**BASIC MODEL**   **STROKE**   **WIPERS**   **VITON SEALS**

**DPW-250M - 2 - NS - W - V**

**NON-SYNCHRONOUS**

**JAW SYNCHRONIZATION**   **NS** Non-Synchronous Operation  
Leave Blank for Synchronous (standard)

**WIPERS**   **W** Shaft Wipers  
**VITON® SEALS**   **V**

### SENSOR ACCESSORIES

	ORDER #	QTY/UNIT
PNP Magneto Resistive Sensor Short Barrel (with Qk. Disc.)*	<b>OHSP-017</b>	<b>1 or 2</b>
NPN Magneto Resistive Sensor Short Barrel (with Qk. Disc.)*	<b>OHSN-017</b>	<b>1 or 2</b>
PNP Magneto Resistive Sensor 90° Barrel (with Qk. Disc.)*	<b>OHSP-011</b>	<b>1 or 2</b>
NPN Magneto Resistive Sensor 90° Barrel (with Qk. Disc.)*	<b>OHSN-011</b>	<b>1 or 2</b>
Quick Disconnect Cable (2 meters long)*	<b>CABL-010</b>	<b>1 or 2</b>
Quick Disconnect Cable (5 meters long)*	<b>CABL-013</b>	<b>1 or 2</b>
PNP Inductive Sensor 3mm (with Qk. Disc.)*	<b>OISP-019</b>	<b>1 or 2</b>
NPN Inductive Sensor 3mm (with Qk. Disc.)*	<b>OISN-019</b>	<b>1 or 2</b>
Sensor Mounting Kit for 3mm Inductive Sensor	<b>OSMK-116</b>	<b>1</b>

### PNEUMATIC ACCESSORIES

	ORDER #	QTY/UNIT
Seal Repair Kit (Standard Buna-N)	<b>SLKT-337</b>	<b>1</b>
Seal Repair Kit (Viton®)	<b>SLKT-337V</b>	<b>1</b>
Manifold Seal Kit (Viton®)	<b>SLKT-197V</b>	<b>1</b>
Shaft Wiper Seal Kit	<b>SLKT-338</b>	<b>1</b>
Fail Safe Valve M5	<b>OFSV-004</b>	<b>1</b>
Adjustable Flow Control	<b>VLVF-008</b>	<b>1 or 2</b>

\*Sensor and cable sold separately

### SAMPLE ORDER: DPW-250M-2-W-V

Ex: DPW-250M Gripper, 31.8mm Stroke, Shaft Wipers, Viton Seals

DIRECTCONNECT™





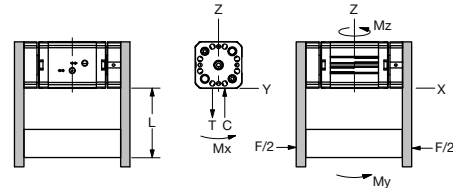
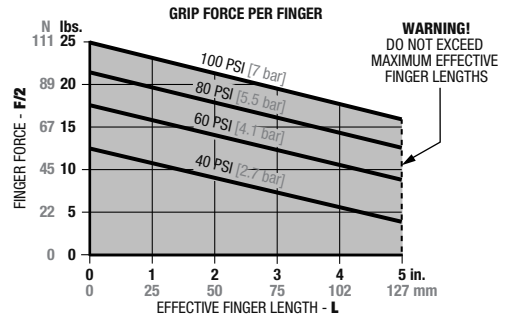
# PARALLEL GRIPPERS DPW-250M-2 DIRECT CONNECT WIDE BODY SERIES

DPW SERIES

1.201



Specifications	DPW-250M-2	
Total Rated Grip Force <b>F</b> @ 100 psi, 7 bar .....	50 lbs.	222 N
Stroke.....	1.25 in.	31.8 mm
Pressure Range.....	40-100 psi	3-7 bar
Cylinder Bore $\varnothing$ .....	0.625 in.	15.9 mm
Displacement.....	0.383 in <sup>3</sup>	6.3 cm <sup>3</sup>
Weight.....	0.856 lbs.	0.39 Kg
Temperature Range: Standard Seals .....	-30°~180° F	-35°~80° C
Viton® Seals .....	-20°~300° F	-30°~150° C
Actuation .....	0.14 sec.	0.14 sec.
Accuracy .....	±0.003 in.	±0.08 mm
Repeatability.....	±0.001 in.	±0.03 mm
Valve required to actuate.....	4-way, 2-position	

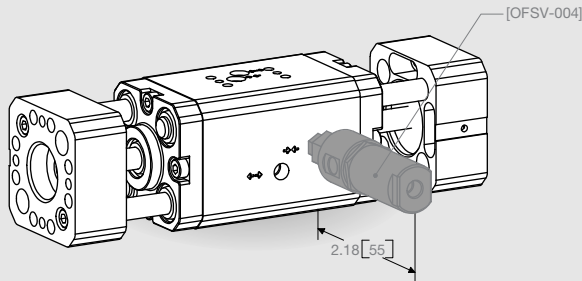


### Loading Capacity†

	Static	Dynamic
Maximum Tensile <b>T</b>	60 lbs. [267 N]	12 lbs. [53 N]
Maximum Compressive <b>C</b>	60 lbs. [267 N]	12 lbs. [53 N]
Maximum Moment <b>M<sub>x</sub></b>	120 in.-lbs. [14 Nm]	24 in.-lbs. [3 Nm]
Maximum Moment <b>M<sub>y</sub></b>	180 in.-lbs. [20 Nm]	36 in.-lbs. [4 Nm]
Maximum Moment <b>M<sub>z</sub></b>	120 in.-lbs. [14 Nm]	24 in.-lbs. [3 Nm]

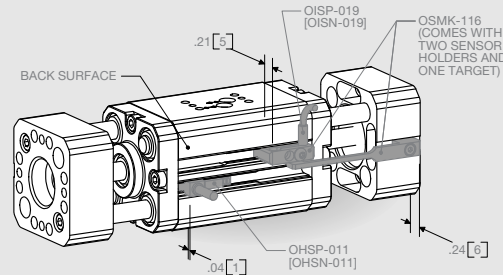
†Capacities are per set of jaws and are not simultaneous

## Accessory Mounting Technical Data



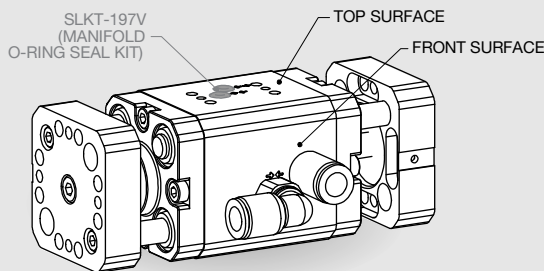
### Failsafe Valves

- Used in applications where it is critical that the part being gripped not be dropped if air pressure is lost
- Mounts directly to gripper
- M5 air port



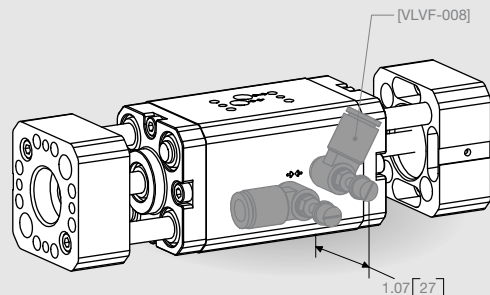
### Sensors

- PNP and NPN Magneto Resistive available
- Sensors are slot mounted, no mounting Kits required
- Low profile underflush sensor version or 90° wire exit sensor version
- Simple adjustment with slotted screw driver
- PNP and NPN inductive available
- Inductive sensor bracket mounts 3mm sensor
- Available with 2M or 5M Quick Disconnect mating cable (order separately)



### Multiple Air Port Locations

- 2 standard air port locations (top and front surface)
- Top manifold air ports are supplied plugged
- Seals in manifold kit are Viton®
- Front air ports are tapped for M5 fittings



### Flow Controls

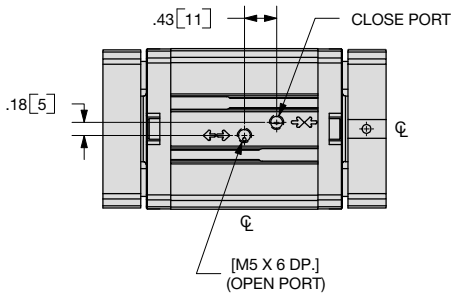
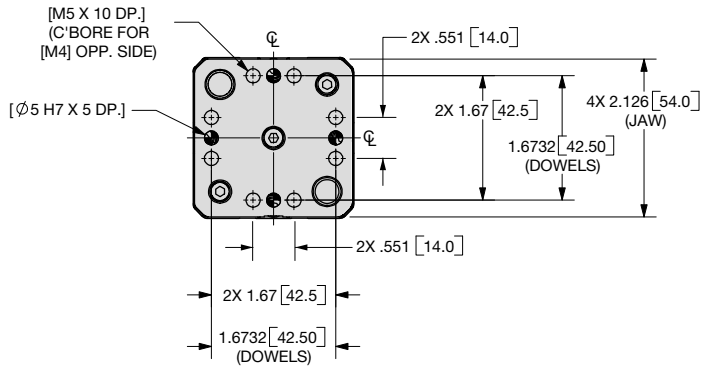
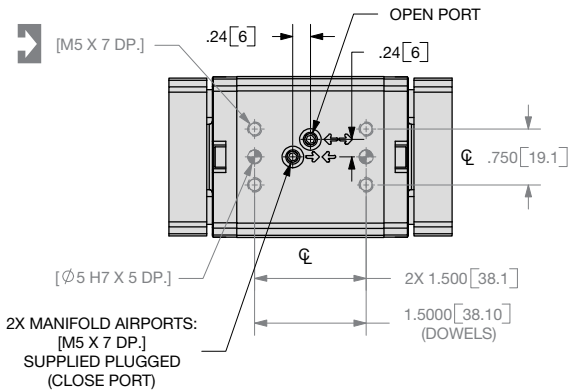
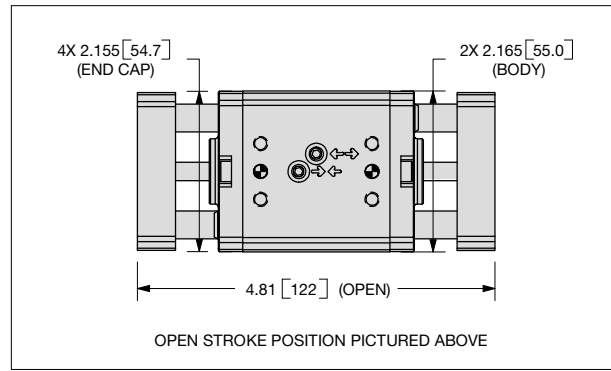
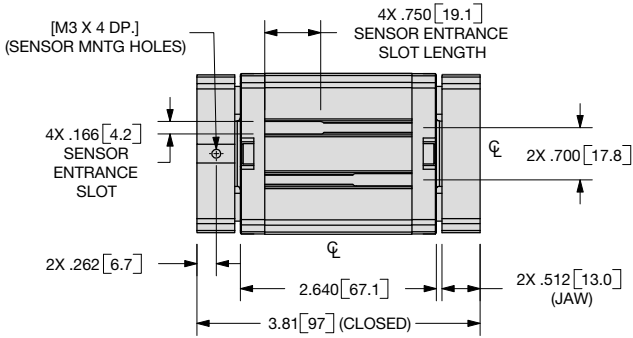
- Thumb screw adjust with locking nut for adjusting actuation time
- Available for 6mm OD tubing

DIRECTCONNECT™



# PARALLEL GRIPPERS DPW-375M-1 DIRECTCONNECT WIDE BODY SERIES

DPW SERIES  
1.202



NOTE: DIRECTCONNECT™ DIMENSIONS ARE SHOWN IN BLUE

**UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW**

Dimensions are symmetrical about centerline	Third Angle Projection	All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or (±.013mm)
Metric Threads Course Pitch	<b>Imperial in.</b> 0.00 = ±.01 0.000 = ±.005 0.0000 = ±.0005	<b>Metric [mm]</b> [0] = [±.25] [0.0] = [±.13] [0.00] = [±.013]

## How to Order: (Order Accessories separately from Basic Model)

**BASIC MODEL**   **STROKE**   **WIPERS**   **VITON SEALS**

**DPW-375M - 1 - NS - W - V**

**NON-SYNCHRONOUS**

**JAW SYNCHRONIZATION**   **NS** Non-Synchronous Operation  
 Leave Blank for Synchronous (standard)  
**WIPERS**   **W** Shaft Wipers  
**VITON® SEALS**   **V**

### SENSOR ACCESSORIES

	ORDER #	QTY/UNIT
PNP Magneto Resistive Sensor Short Barrel (with Qk. Disc.)*	<b>OHSP-017</b>	<b>1,2,3 or 4</b>
NPN Magneto Resistive Sensor Short Barrel (with Qk. Disc.)*	<b>OHSN-017</b>	<b>1,2,3 or 4</b>
PNP Magneto Resistive Sensor 90° Barrel (with Qk. Disc.)*	<b>OHSP-011</b>	<b>1,2,3 or 4</b>
NPN Magneto Resistive Sensor 90° Barrel (with Qk. Disc.)*	<b>OHSN-011</b>	<b>1,2,3 or 4</b>
Quick Disconnect Cable (2 meters long)*	<b>CABL-010</b>	<b>1,2,3 or 4</b>
Quick Disconnect Cable (5 meters long)*	<b>CABL-013</b>	<b>1,2,3 or 4</b>
PNP Inductive Sensor 3mm (with Qk. Disc.)*	<b>OISP-019</b>	<b>1 or 2</b>
NPN Inductive Sensor 3mm (with Qk. Disc.)*	<b>OISN-019</b>	<b>1 or 2</b>
PNP Inductive Sensor 4mm (with Qk. Disc.)*	<b>OISP-014</b>	<b>1 or 2</b>
NPN Inductive Sensor 4mm (with Qk. Disc.)*	<b>OISN-014</b>	<b>1 or 2</b>
Sensor Mounting Kit for 3mm or 4mm Inductive Sensor	<b>OSMK-117</b>	<b>1</b>

### PNEUMATIC ACCESSORIES

	ORDER #	QTY/UNIT
Seal Repair Kit (Standard Buna-N)	<b>SLKT-339</b>	<b>1</b>
Seal Repair Kit (Viton®)	<b>SLKT-339V</b>	<b>1</b>
Manifold Seal Kit (Viton®)	<b>SLKT-199V</b>	<b>1</b>
Shaft Wiper Seal Kit	<b>SLKT-340</b>	<b>1</b>
Fail Safe Valve M5	<b>OFSV-004</b>	<b>1</b>
Adjustable Flow Control	<b>VLVF-008</b>	<b>1 or 2</b>

\*Sensor and cable sold separately

### SAMPLE ORDER: DPW-375M-1-W-V

Ex: DPW-375M Gripper, 25.4mm Stroke, Shaft Wipers, Viton Seals

DIRECTCONNECT™



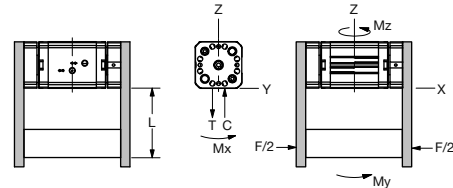
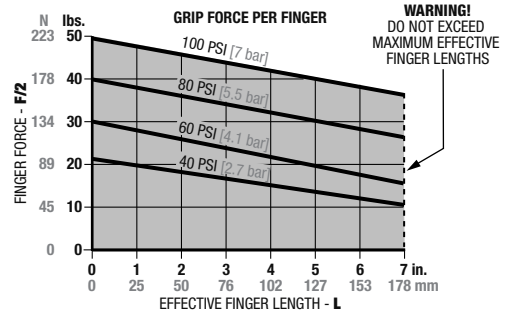
# PARALLEL GRIPPERS DPW-375M-1 DIRECT CONNECT WIDE BODY SERIES

DPW SERIES

1.203



Specifications	DPW-375M-1	
Total Rated Grip Force <b>F</b> @ 100 psi, 7 bar .....	100 lbs.	445 N
Stroke .....	1.00 in.	25.4 mm
Pressure Range .....	40-100 psi	3-7 bar
Cylinder Bore $\varnothing$ .....	0.938 in.	23.8 mm
Displacement .....	0.690 in <sup>3</sup>	11.3 cm <sup>3</sup>
Weight .....	1.80 lbs.	0.81 Kg
Temperature Range: Standard Seals .....	-30°~180° F	-35°~80° C
Viton® Seals .....	-20°~300° F	-30°~150° C
Actuation .....	0.16 sec.	0.16 sec.
Accuracy .....	±0.003 in.	±0.08 mm
Repeatability .....	±0.001 in.	±0.03 mm
Valve required to actuate .....	4-way, 2-position	

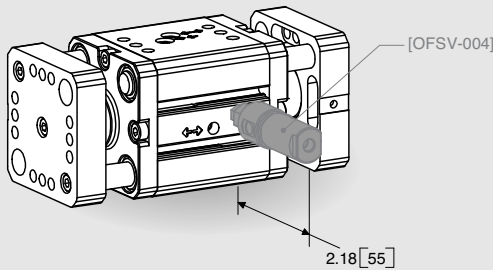


### Loading Capacity<sup>†</sup>

	Static	Dynamic
Maximum Tensile <b>T</b>	120 lbs. [534 N]	24 lbs. [107 N]
Maximum Compressive <b>C</b>	120 lbs. [534 N]	24 lbs. [107 N]
Maximum Moment <b>M<sub>x</sub></b>	210 in.-lbs. [24 Nm]	42 in.-lbs. [5 Nm]
Maximum Moment <b>M<sub>y</sub></b>	300 in.-lbs. [34 Nm]	60 in.-lbs. [7 Nm]
Maximum Moment <b>M<sub>z</sub></b>	210 in.-lbs. [24 Nm]	42 in.-lbs. [5 Nm]

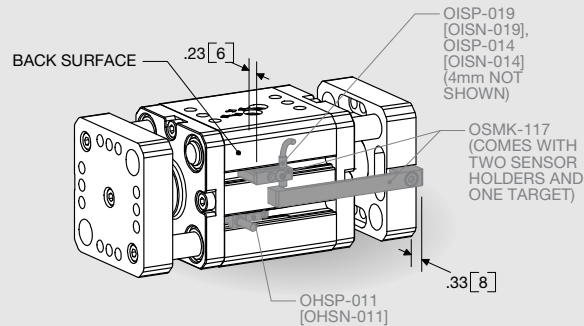
<sup>†</sup>Capacities are per set of jaws and are not simultaneous

## Accessory Mounting Technical Data



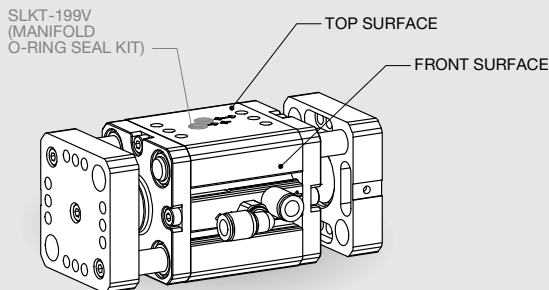
### Failsafe Valves

- Used in applications where it is critical that the part being gripped not be dropped if air pressure is lost
- Mounts directly to gripper
- M5 air port



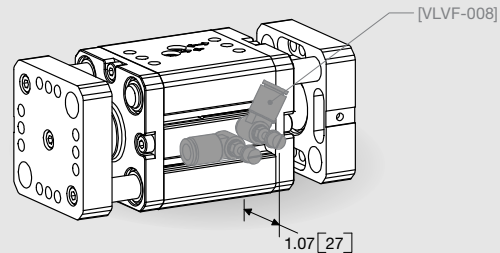
### Sensors

- PNP and NPN Magneto Resistive available
- Sensors are slot mounted, no mounting Kits required
- Low profile underflush sensor version or 90° wire exit sensor version
- Simple adjustment with slotted screw driver
- PNP and NPN inductive available
- Inductive sensor bracket mounts 3mm sensor
- Available with 2M or 5M Quick Disconnect mating cable (order separately)



### Multiple Air Port Locations

- 2 standard air port locations (top and front surface)
- Top manifold air ports are supplied plugged
- Seals in manifold kit are Viton®
- Front air ports are tapped for M5 fittings



### Flow Controls

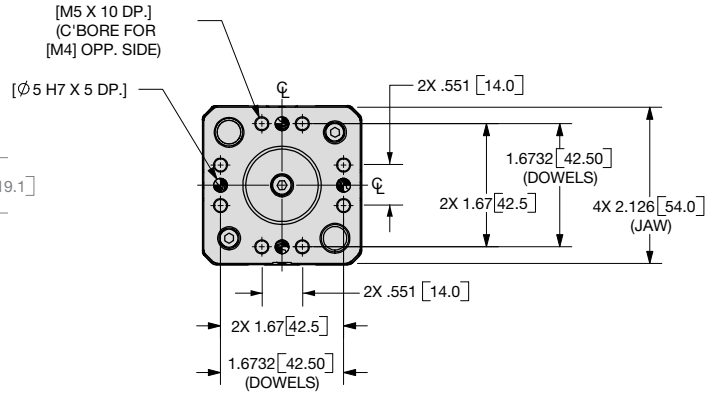
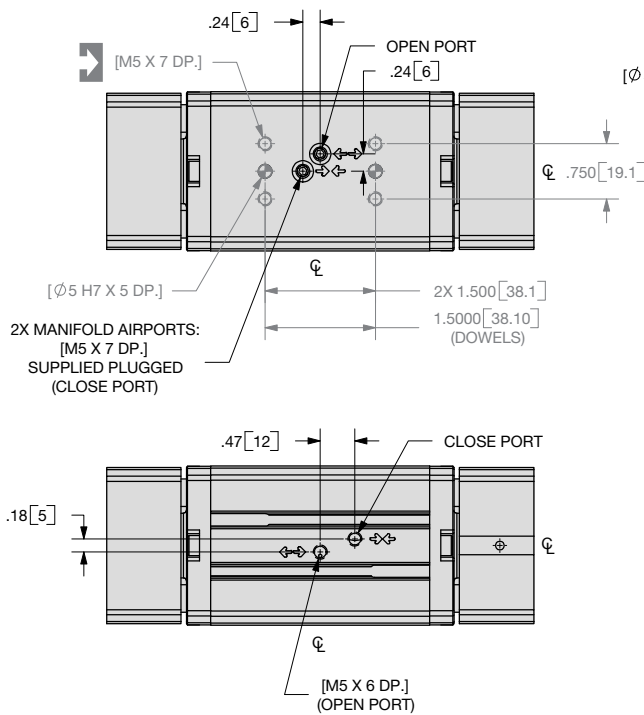
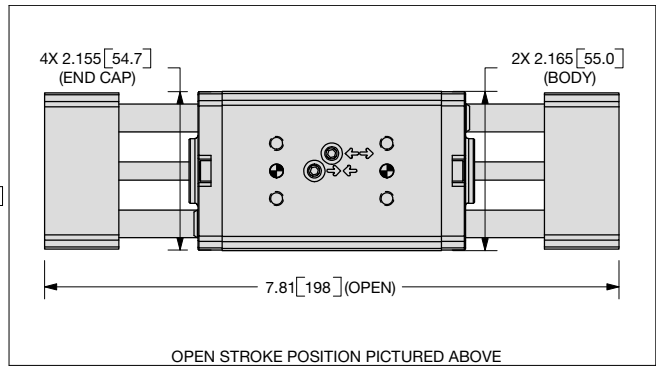
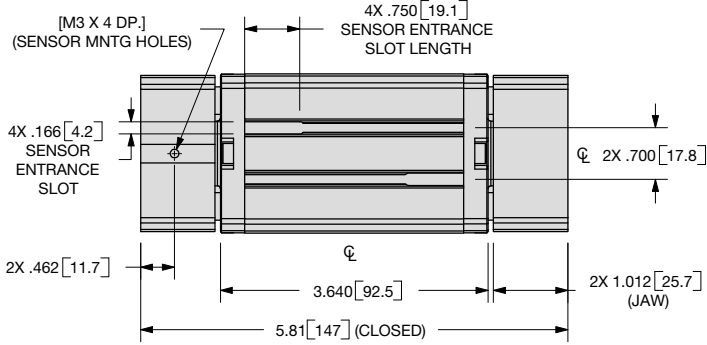
- Thumb screw adjust with locking nut for adjusting actuation time
- Available for 6mm OD tubing

DIRECTCONNECT™

# PARALLEL GRIPPERS DPW-375M-2 DIRECTCONNECT WIDE BODY SERIES

DPW SERIES

1.204



NOTE: DIRECTCONNECT™ DIMENSIONS ARE SHOWN IN BLUE

**UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW**

Dimensions are symmetrical about centerline	Third Angle Projection	All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or (±.013mm)
Metric Threads Course Pitch	<b>Imperial in.</b> 0.00 = ±.01 0.000 = ±.005 0.0000 = ±.0005	<b>Metric [mm]</b> [0] = (±.25) [0.0] = (±.13) [0.00] = (±.013)

## How to Order: (Order Accessories separately from Basic Model)

**BASIC MODEL**   **STROKE**   **WIPERS**   **VITON SEALS**

**DPW-375M - 2 - NS - W - V**

**NON-SYNCHRONOUS**

**JAW SYNCHRONIZATION**   **NS** Non-Synchronous Operation  
 \_\_\_\_\_ Leave Blank for Synchronous (standard)

**WIPERS**   **W** Shaft Wipers

**VITON® SEALS**   **V**

### SENSOR ACCESSORIES

	ORDER #	QTY/UNIT
PNP Magneto Resistive Sensor Short Barrel (with Qk. Disc.)*	<b>OHSP-017</b>	<b>1,2,3 or 4</b>
NPN Magneto Resistive Sensor Short Barrel (with Qk. Disc.)*	<b>OHSN-017</b>	<b>1,2,3 or 4</b>
PNP Magneto Resistive Sensor 90° Barrel (with Qk. Disc.)*	<b>OHSP-011</b>	<b>1,2,3 or 4</b>
NPN Magneto Resistive Sensor 90° Barrel (with Qk. Disc.)*	<b>OHSN-011</b>	<b>1,2,3 or 4</b>
Quick Disconnect Cable (2 meters long)*	<b>CABL-010</b>	<b>1,2,3 or 4</b>
Quick Disconnect Cable (5 meters long)*	<b>CABL-013</b>	<b>1,2,3 or 4</b>
PNP Inductive Sensor 3mm (with Qk. Disc.)*	<b>OISP-019</b>	<b>1 or 2</b>
NPN Inductive Sensor 3mm (with Qk. Disc.)*	<b>OISN-019</b>	<b>1 or 2</b>
PNP Inductive Sensor 4mm (with Qk. Disc.)*	<b>OISP-014</b>	<b>1 or 2</b>
NPN Inductive Sensor 4mm (with Qk. Disc.)*	<b>OISN-014</b>	<b>1 or 2</b>
Sensor Mounting Kit for 3mm or 4mm Inductive Sensor	<b>OSMK-117</b>	<b>1</b>

### PNEUMATIC ACCESSORIES

	ORDER #	QTY/UNIT
Seal Repair Kit (Standard Buna-N)	<b>SLKT-339</b>	<b>1</b>
Seal Repair Kit (Viton®)	<b>SLKT-339V</b>	<b>1</b>
Manifold Seal Kit (Viton®)	<b>SLKT-199V</b>	<b>1</b>
Shaft Wiper Seal Kit	<b>SLKT-340</b>	<b>1</b>
Fail Safe Valve M5	<b>OFSV-004</b>	<b>1</b>
Adjustable Flow Control	<b>VLVF-008</b>	<b>1 or 2</b>

### SAMPLE ORDER: DPW-375M-2-W-V

Ex: DPW-375 M Gripper, 50.8mm Stroke, Shaft Wipers, Viton Seals

\*Sensor and cable sold separately



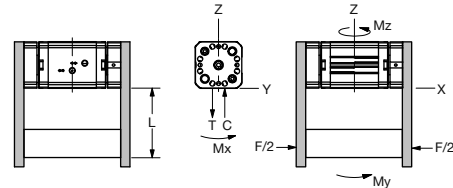
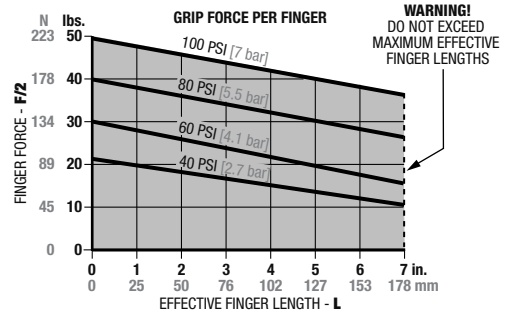
# PARALLEL GRIPPERS DPW-375M-2 DIRECT CONNECT WIDE BODY SERIES

DPW SERIES

1.205



Specifications	DPW-375M-2	
Total Rated Grip Force <b>F</b> @ 100 psi, 7 bar .....	100 lbs.	445 N
Stroke .....	2.00 in.	50.8mm
Pressure Range .....	40-100 psi	3-7 bar
Cylinder Bore $\varnothing$ .....	0.938 in.	23.8 mm
Displacement .....	1.382 in <sup>3</sup>	22.6 cm <sup>3</sup>
Weight .....	2.66 lbs.	1.20 Kg
Temperature Range: Standard Seals .....	-30°~180° F	-35°~80° C
Viton® Seals .....	-20°~300° F	-30°~150° C
Actuation .....	0.20 sec.	0.20 sec.
Accuracy .....	±0.003 in.	±0.08 mm
Repeatability .....	±0.001 in.	±0.03 mm
Valve required to actuate .....	4-way, 2-position	

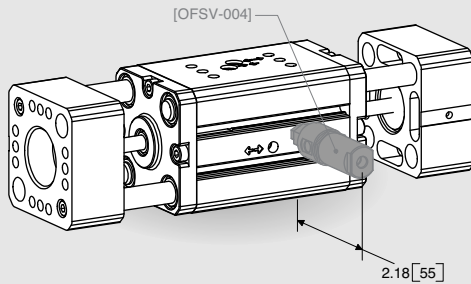


### Loading Capacity<sup>†</sup>

	Static	Dynamic
Maximum Tensile <b>T</b>	120 lbs. [534 N]	24 lbs. [107 N]
Maximum Compressive <b>C</b>	120 lbs. [534 N]	24 lbs. [107 N]
Maximum Moment <b>M<sub>x</sub></b>	210 in.-lbs. [24 Nm]	42 in.-lbs. [5 Nm]
Maximum Moment <b>M<sub>y</sub></b>	300 in.-lbs. [34 Nm]	60 in.-lbs. [7 Nm]
Maximum Moment <b>M<sub>z</sub></b>	210 in.-lbs. [24 Nm]	42 in.-lbs. [5 Nm]

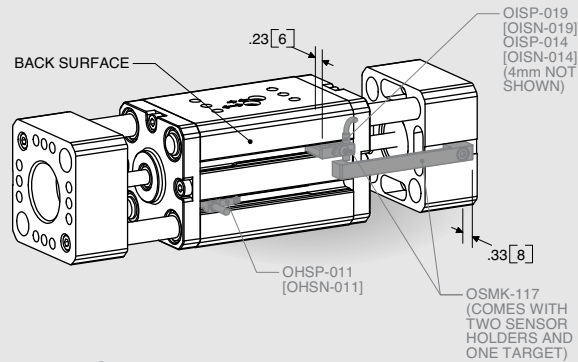
<sup>†</sup>Capacities are per set of jaws and are not simultaneous

## Accessory Mounting Technical Data



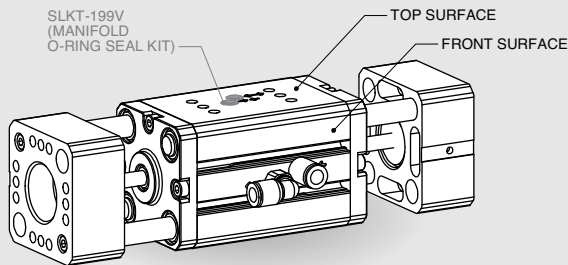
### Failsafe Valves

- Used in applications where it is critical that the part being gripped not be dropped if air pressure is lost
- Mounts directly to gripper
- M5 air port



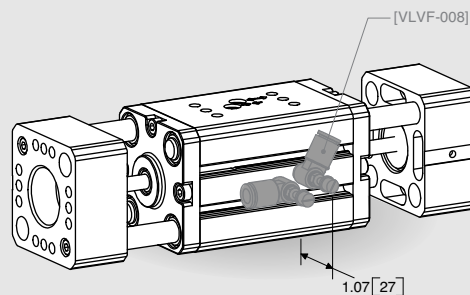
### Sensors

- PNP and NPN Magneto Resistive available
- Sensors are slot mounted, no mounting Kits required
- Low profile underflush sensor version or 90° wire exit sensor version
- Simple adjustment with slotted screw driver
- PNP and NPN inductive available
- Inductive sensor bracket mounts 3mm sensor
- Available with 2M or 5M Quick Disconnect mating cable (order separately)



### Multiple Air Port Locations

- 2 standard air port locations (top and front surface)
- Top manifold air ports are supplied plugged
- Seals in manifold kit are Viton®
- Front air ports are tapped for M5 fittings



### Flow Controls

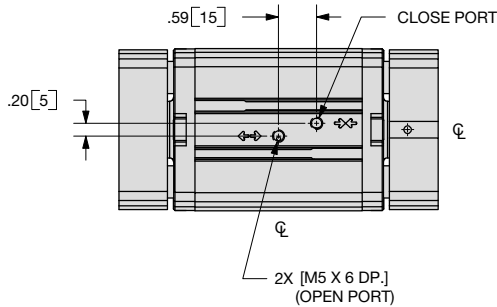
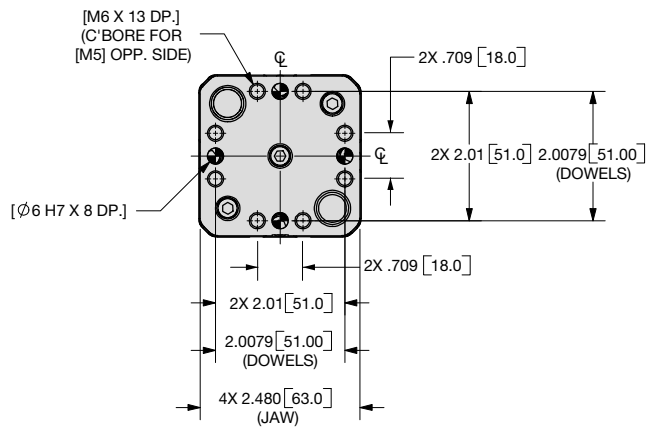
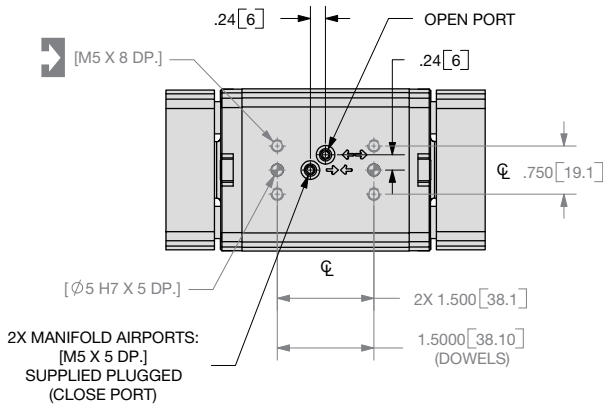
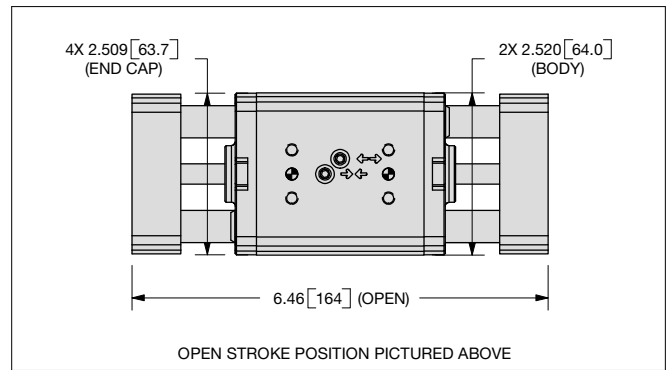
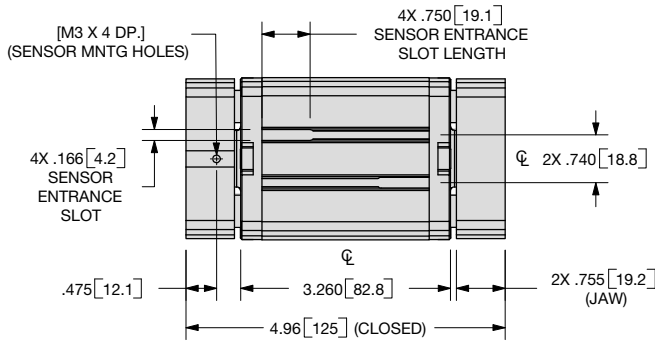
- Thumb screw adjust with locking nut for adjusting actuation time
- Available for 6mm OD tubing

DIRECTCONNECT™

# PARALLEL GRIPPERS DPW-500M-1 DIRECTCONNECT WIDE BODY SERIES

DPW SERIES

1.206



NOTE: DIRECTCONNECT™ DIMENSIONS ARE SHOWN IN BLUE

**UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW**

Dimensions are symmetrical about centerline	Third Angle Projection	All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or (±.013mm)
Metric Threads Course Pitch	<b>Imperial in.</b> 0.00 = ±.01 0.000 = ±.005 0.0000 = ±.0005	<b>Metric [mm]</b> [0] = (±.25) [0.0] = (±.13) [0.00] = (±.013)

## How to Order: (Order Accessories separately from Basic Model)

**BASIC MODEL**   **STROKE**   **WIPERS**   **VITON SEALS**

**DPW-500M - 1 - NS - W - V**

**NON-SYNCHRONOUS**

**JAW SYNCHRONIZATION**   **NS** Non-Synchronous Operation  
 \_\_\_\_\_ Leave Blank for Synchronous (standard)

**WIPERS**   **W** Shaft Wipers

**VITON® SEALS**   **V**

### SENSOR ACCESSORIES

	ORDER #	QTY/UNIT
PNP Magneto Resistive Sensor Short Barrel (with Qk. Disc.)*	<b>OHSP-017</b>	<b>1,2,3 or 4</b>
NPN Magneto Resistive Sensor Short Barrel (with Qk. Disc.)*	<b>OHSN-017</b>	<b>1,2,3 or 4</b>
PNP Magneto Resistive Sensor 90° Barrel (with Qk. Disc.)*	<b>OHSP-011</b>	<b>1,2,3 or 4</b>
NPN Magneto Resistive Sensor 90° Barrel (with Qk. Disc.)*	<b>OHSN-011</b>	<b>1,2,3 or 4</b>
Quick Disconnect Cable (2 meters long)*	<b>CABL-010</b>	<b>1,2,3 or 4</b>
Quick Disconnect Cable (5 meters long)*	<b>CABL-013</b>	<b>1,2,3 or 4</b>
PNP Inductive Sensor 3mm (with Qk. Disc.)*	<b>OISP-019</b>	<b>1 or 2</b>
NPN Inductive Sensor 3mm (with Qk. Disc.)*	<b>OISN-019</b>	<b>1 or 2</b>
PNP Inductive Sensor 4mm (with Qk. Disc.)*	<b>OISP-014</b>	<b>1 or 2</b>
NPN Inductive Sensor 4mm (with Qk. Disc.)*	<b>OISN-014</b>	<b>1 or 2</b>
Sensor Mounting Kit for 3mm or 4mm Inductive Sensor	<b>OSMK-118</b>	<b>1</b>

### PNEUMATIC ACCESSORIES

	ORDER #	QTY/UNIT
Seal Repair Kit (Standard Buna-N)	<b>SLKT-341</b>	<b>1</b>
Seal Repair Kit (Viton®)	<b>SLKT-341V</b>	<b>1</b>
Manifold Seal Kit (Viton®)	<b>SLKT-199V</b>	<b>1</b>
Shaft Wiper Seal Kit	<b>SLKT-342</b>	<b>1</b>
Fail Safe Valve M5	<b>OFSV-004</b>	<b>1</b>
Adjustable Flow Control	<b>VLVF-008</b>	<b>1 or 2</b>

### SAMPLE ORDER: DPW-500M-1-W-V

Ex: DPW-500M Gripper, 38.1mm Stroke, Shaft Wipers, Viton Seals

\*Sensor and cable sold separately



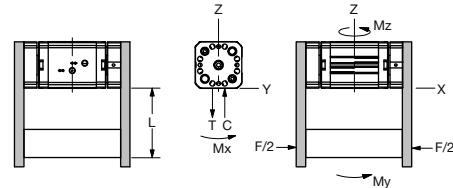
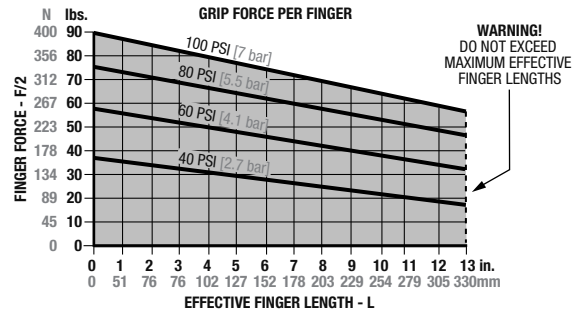
# PARALLEL GRIPPERS DPW-500M-1 DIRECT CONNECT WIDE BODY SERIES

DPW SERIES

1.207



Specifications	DPW-500M-1	
Total Rated Grip Force <b>F</b> @ 100 psi, 7 bar .....	180 lbs.	800 N
Stroke .....	1.50 in.	38.1 mm
Pressure Range .....	40-100 psi	3-7 bar
Cylinder Bore $\varnothing$ .....	1.250 in.	31.8 mm
Displacement .....	1.841 in <sup>3</sup>	30.2 cm <sup>3</sup>
Weight .....	3.27 lbs.	1.48 Kg
Temperature Range: Standard Seals .....	-30°~180° F	-35°~80° C
Viton® Seals .....	-20°~300° F	-30°~150° C
Actuation .....	0.20 sec.	0.20 sec.
Accuracy .....	±0.003 in.	±0.08 mm
Repeatability .....	±0.001 in.	±0.03 mm
Valve required to actuate .....	4-way, 2-position	

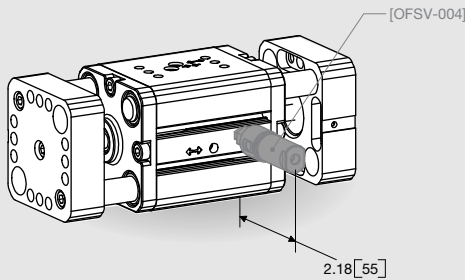


### Loading Capacity<sup>†</sup>

	Static	Dynamic
Maximum Tensile <b>T</b>	600 lbs. [2668 N]	60 lbs. [267 N]
Maximum Compressive <b>C</b>	600 lbs. [2668 N]	60 lbs. [267 N]
Maximum Moment <b>M<sub>x</sub></b>	600 in.-lbs. [68 Nm]	60 in.-lbs. [7 Nm]
Maximum Moment <b>M<sub>y</sub></b>	900 in.-lbs. [102 Nm]	90 in.-lbs. [10 Nm]
Maximum Moment <b>M<sub>z</sub></b>	600 in.-lbs. [68 Nm]	60 in.-lbs. [7 Nm]

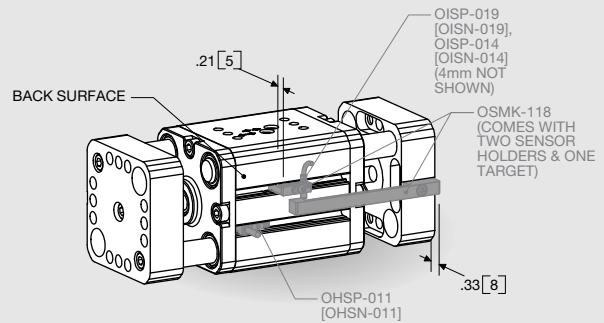
<sup>†</sup>Capacities are per set of jaws and are not simultaneous

## Accessory Mounting Technical Data



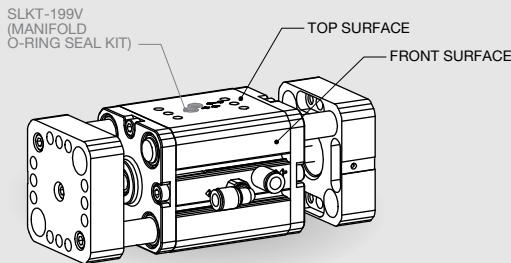
### Failsafe Valves

- Used in applications where it is critical that the part being gripped not be dropped if air pressure is lost
- Mounts directly to gripper
- M5 air port



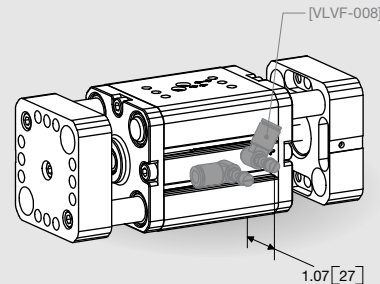
### Sensors

- PNP and NPN Magneto Resistive available
- Sensors are slot mounted, no mounting Kits required
- Low profile underflush sensor version or 90° wire exit sensor version
- Simple adjustment with slotted screw driver
- PNP and NPN inductive available
- Inductive sensor bracket mounts 3mm sensor
- Available with 2M or 5M Quick Disconnect mating cable (order separately)



### Multiple Air Port Locations

- 2 standard air port locations (top and front surface)
- Top manifold air ports are supplied plugged
- Seals in manifold kit are Viton®
- Front air ports are tapped for M5 fittings



### Flow Controls

- Thumb screw adjust with locking nut for adjusting actuation time
- Available for 6mm OD tubing

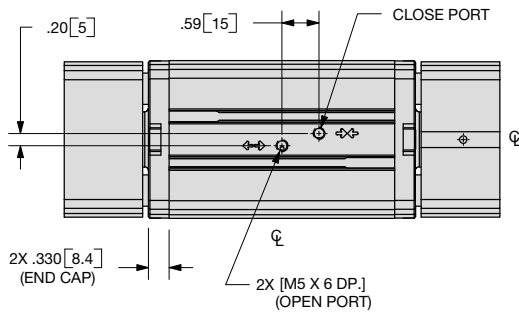
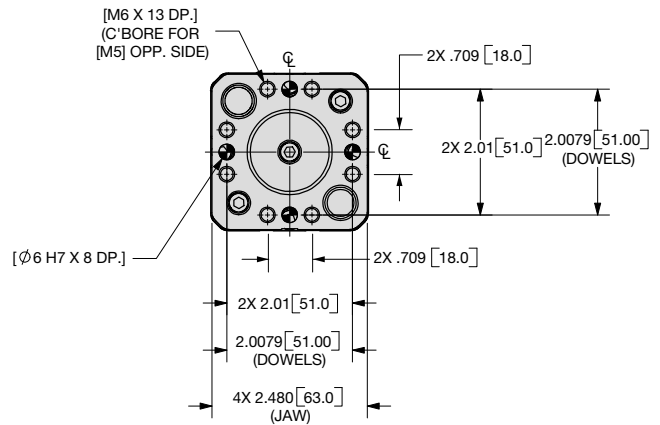
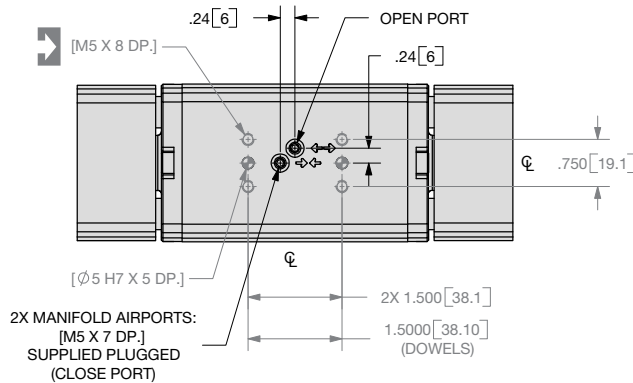
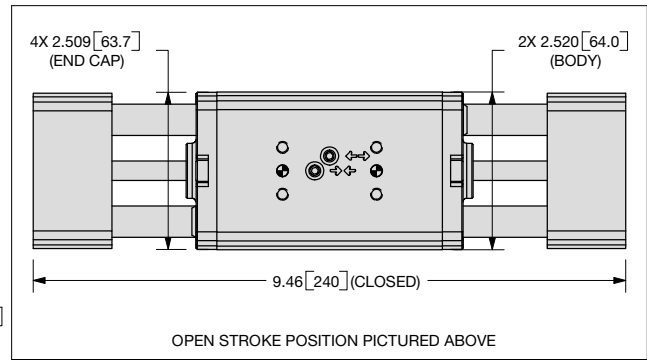
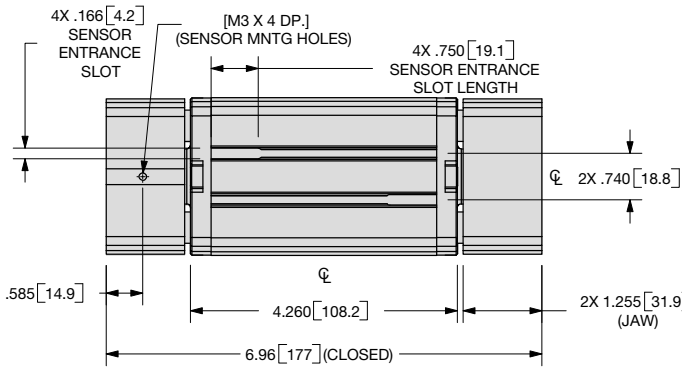
DIRECTCONNECT™



# PARALLEL GRIPPERS DPW-500M-2 DIRECTCONNECT WIDE BODY SERIES

DPW SERIES

1.208



NOTE: DIRECTCONNECT™ DIMENSIONS ARE SHOWN IN BLUE

**UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW**

Dimensions are symmetrical about centerline	Third Angle Projection	All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or (±.013mm)
Metric Threads Course Pitch	<b>Imperial in.</b> 0.00 = ±.01 0.000 = ±.005 0.0000 = ±.0005	<b>Metric [mm]</b> [0] = (±.25) [0.0] = (±.13) [0.00] = (±.013)

## How to Order: (Order Accessories separately from Basic Model)

**BASIC MODEL**   **STROKE**   **WIPERS**   **VITON SEALS**

**DPW-500M - 2 - NS - W - V**

**NON-SYNCHRONOUS**

**JAW SYNCHRONIZATION** **NS** Non-Synchronous Operation  
 Leave Blank for Synchronous (standard)

**WIPERS** **W** Shaft Wipers

**VITON® SEALS** **V**

### SENSOR ACCESSORIES

	ORDER #	QTY/UNIT
PNP Magneto Resistive Sensor Short Barrel (with Qk. Disc.)*	<b>OHSP-017</b>	<b>1,2,3 or 4</b>
NPN Magneto Resistive Sensor Short Barrel (with Qk. Disc.)*	<b>OHSN-017</b>	<b>1,2,3 or 4</b>
PNP Magneto Resistive Sensor 90° Barrel (with Qk. Disc.)*	<b>OHSP-011</b>	<b>1,2,3 or 4</b>
NPN Magneto Resistive Sensor 90° Barrel (with Qk. Disc.)*	<b>OHSN-011</b>	<b>1,2,3 or 4</b>
Quick Disconnect Cable (2 meters long)*	<b>CABL-010</b>	<b>1,2,3 or 4</b>
Quick Disconnect Cable (5 meters long)*	<b>CABL-013</b>	<b>1,2,3 or 4</b>
PNP Inductive Sensor 3mm (with Qk. Disc.)*	<b>OISP-019</b>	<b>1 or 2</b>
NPN Inductive Sensor 3mm (with Qk. Disc.)*	<b>OISN-019</b>	<b>1 or 2</b>
PNP Inductive Sensor 4mm (with Qk. Disc.)*	<b>OISP-014</b>	<b>1 or 2</b>
NPN Inductive Sensor 4mm (with Qk. Disc.)*	<b>OISN-014</b>	<b>1 or 2</b>
Sensor Mounting Kit for 3mm or 4mm Inductive Sensor	<b>OSMK-118</b>	<b>1</b>

### PNEUMATIC ACCESSORIES

	ORDER #	QTY/UNIT
Seal Repair Kit (Standard Buna-N)	<b>SLKT-341</b>	<b>1</b>
Seal Repair Kit (Viton®)	<b>SLKT-341V</b>	<b>1</b>
Manifold Seal Kit (Viton®)	<b>SLKT-199V</b>	<b>1</b>
Shaft Wiper Seal Kit	<b>SLKT-342</b>	<b>1</b>
Fail Safe Valve M5	<b>OFSV-004</b>	<b>1</b>
Adjustable Flow Control	<b>VLVF-008</b>	<b>1 or 2</b>

### SAMPLE ORDER: DPW-500M-2-W-V

Ex: DPW-500M Gripper, 63.5mm Stroke, Shaft Wipers, Viton Seals

\*Sensor and cable sold separately

DIRECTCONNECT™



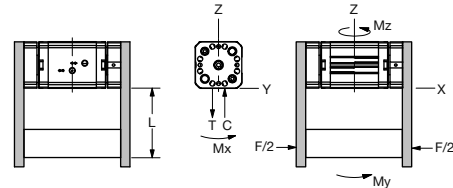
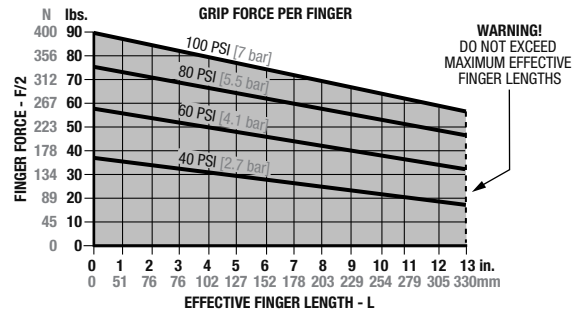
# PARALLEL GRIPPERS DPW-500M-2 DIRECT CONNECT WIDE BODY SERIES

DPW SERIES

1.209



Specifications	DPW-500M-2	
Total Rated Grip Force <b>F</b> @ 100 psi, 7 bar .....	180 lbs.	800 N
Stroke.....	2.50 in.	63.5 mm
Pressure Range.....	40-100 psi	3-7 bar
Cylinder Bore Ø.....	1.250 in.	31.8 mm
Displacement.....	3.068 in <sup>3</sup>	50.3 cm <sup>3</sup>
Weight.....	4.39 lbs.	2.0 Kg
Temperature Range: Standard Seals .....	-30°~180° F	-35°~80° C
Viton® Seals .....	-20°~300° F	-30°~150° C
Actuation .....	0.28 sec.	0.28 sec.
Accuracy.....	±0.003 in.	±0.08 mm
Repeatability.....	±0.001 in.	±0.03 mm
Valve required to actuate .....	4-way, 2-position	

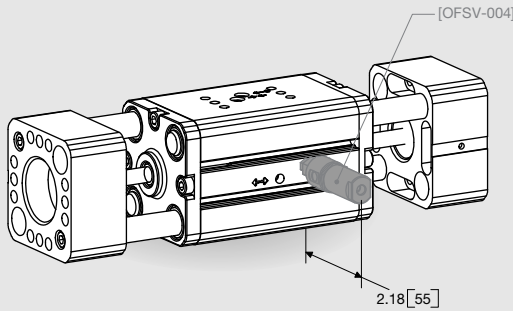


### Loading Capacity†

	Static	Dynamic
Maximum Tensile <b>T</b>	600 lbs. [2668 N]	60 lbs. [267 N]
Maximum Compressive <b>C</b>	600 lbs. [2668 N]	60 lbs. [267 N]
Maximum Moment <b>M<sub>x</sub></b>	600 in.-lbs. [68 Nm]	60 in.-lbs. [7 Nm]
Maximum Moment <b>M<sub>y</sub></b>	900 in.-lbs. [102 Nm]	90 in.-lbs. [10 Nm]
Maximum Moment <b>M<sub>z</sub></b>	600 in.-lbs. [68 Nm]	60 in.-lbs. [7 Nm]

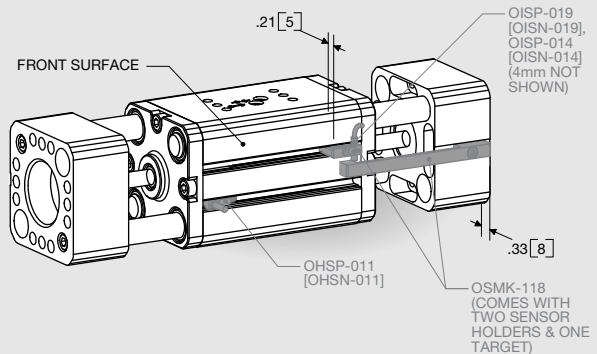
†Capacities are per set of jaws and are not simultaneous

## Accessory Mounting Technical Data



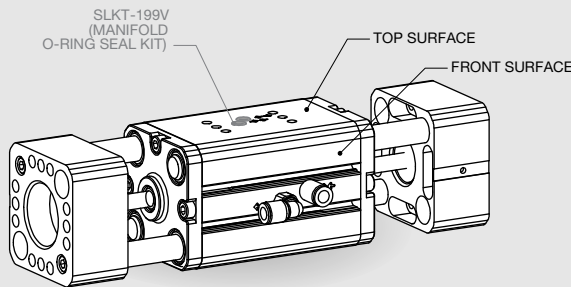
### Failsafe Valves

- Used in applications where it is critical that the part being gripped not be dropped if air pressure is lost
- Mounts directly to gripper
- M5 air port



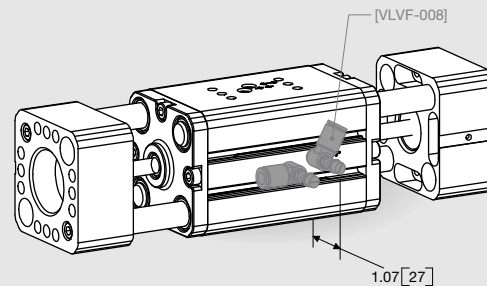
### Sensors

- PNP and NPN Magneto Resistive available
- Sensors are slot mounted, no mounting Kits required
- Low profile underflush sensor version or 90° wire exit sensor version
- Simple adjustment with slotted screw driver
- PNP and NPN inductive available
- Inductive sensor bracket mounts 3mm sensor
- Available with 2M or 5M Quick Disconnect mating cable (order separately)



### Multiple Air Port Locations

- 2 standard air port locations (top and front surface)
- Top manifold air ports are supplied plugged
- Seals in manifold kit are Viton®
- Front air ports are tapped for M5 fittings



### Flow Controls

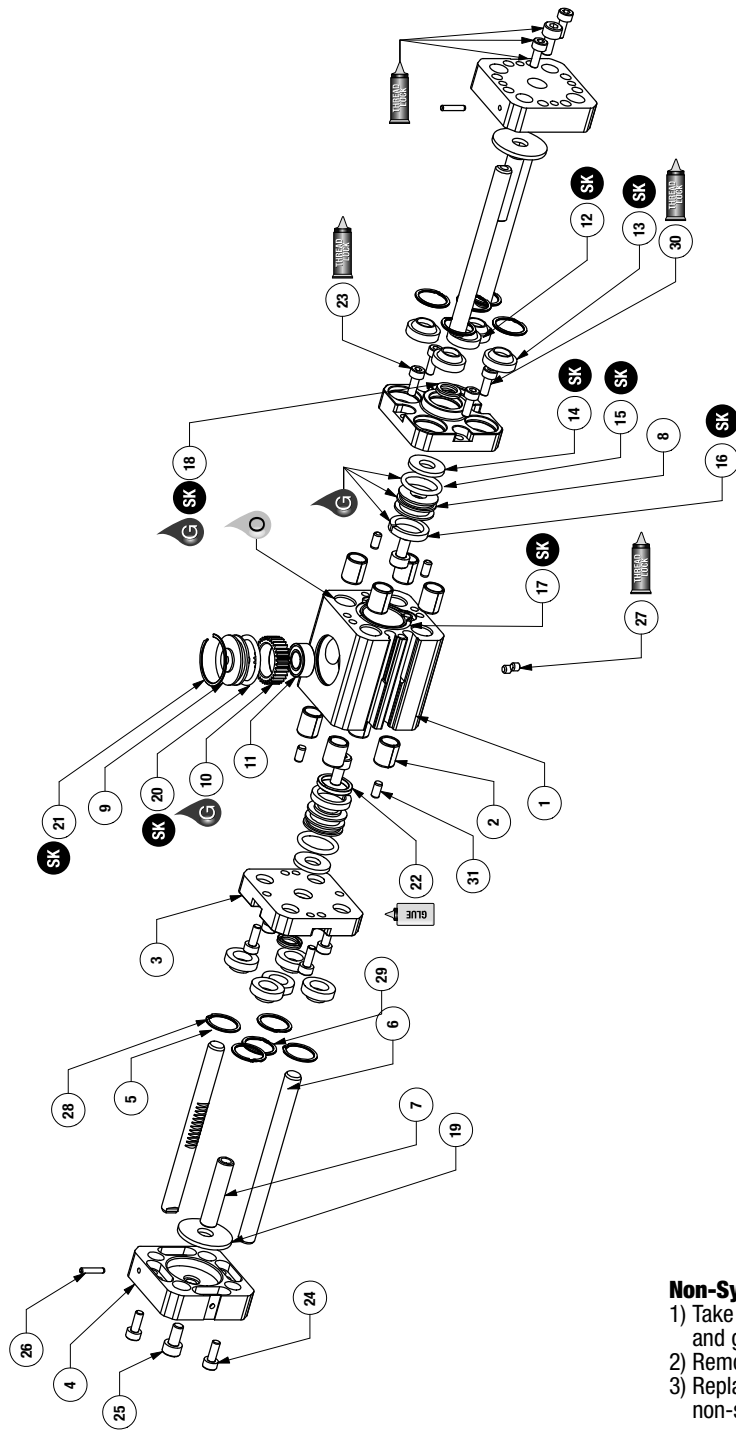
- Thumb screw adjust with locking nut for adjusting actuation time
- Available for 6mm OD tubing

Please see back cover for DE-STA-CO Global Locations. [www.destaco.com](http://www.destaco.com)

[www.comoso.com](http://www.comoso.com)

DIRECTCONNECT™

# DPW SERIES EXPLODED VIEW



Item	Qty	Name
01	1	Body
02	8	Bushing, Oil Impregnated Bronze
03	2	End Cap
04	2	Jaw
05*	2	Guide Shaft, Rack
06*	2	Guide Shaft (Qty 4 for -NS)
07	2	Piston Rod
08	2	Piston
09	1	Cap, Gear
10*	1	Gear
11*	1	Bearing, Radial
12*	2	Piston Rod Wiper (Shaft Wiper "-W" option only)
13*	8	Shaft Wiper (Shaft Wiper "-W" option only)
14	2	Piston Bumper
15	2	Piston O-ring
16	2	Teflon Ring
17*	2	Body O-ring
18	2	U-cup
19	2	Jaw Bumper
20	1	Gear Cap O-ring
21	1	Retaining Ring
22	1	Magnet
23	8	End Cap Mntg Screw
24	4	Guide Shaft Mntg Screw
25	4	Piston Shaft Mntg Screw
26*	2	Guide Shaft Alignment Dowel
27	2	Manifold Port Plug
28	8	Retainer Ring (Shaft Wiper "-W" Option only)
29	2	Retainer Ring (Shaft Wiper "-W" Option only)
30*	4	End Cap Mntg Screw
31	4	End Cap Dowel Pins

**\*Notes:**

- 1) Contact the Robohand Sales Department for a complete spare parts list with order numbers and prices.
- 2) Quantity of #6 is 4 when ordering a Non-synchronous gripper.
- 3) Items #5, #10, #11, and #26 are for synchronous grippers only.
- 4) Items #12 and #13 are for -W option only.
- 5) Item #17 (Body O-ring) shown in body groove.
- 6) Item #23 Quantity is 6 for 375-1 and 375-2 only.
- 7) Item #30 is only used in 375-1 and 375-2.

**Assembly Procedure:**

- 1) Lubricate and install seals on piston.
- 2) Install pistons and shafts.
- 3) Mount end caps to enclose piston assembly.
- 4) Install tooling plates and shafts.
- 5) Place bearing, shaft, and gear into body and install cap and retaining ring for sync version.
  - a) For disassembly, use magnet to pull gear out of body.
  - b) Install 2 gear shafts with teeth facing syncing gear. Use dowel to align gear shafts in correct position.

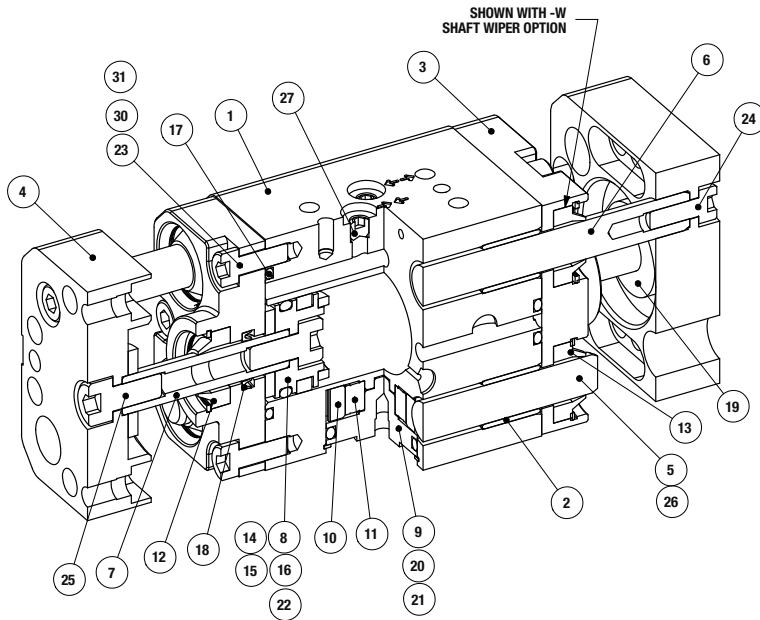
**Non-Synchronous Procedure:**

- 1) Take DPW synchronous gripper and remove the retaining ring and gear cap.
- 2) Remove jaws from gripper.
- 3) Replace gear cap and retaining ring. The gripper is now non-synchronous

**-W Option Assembly Procedure:**

- 1) Take out guide shaft and piston rod mounting screws.
- 2) Remove jaws from guide shafts and piston rods.
- 3) Take out end cap mounting screws and pull off end caps. Take out piston.
- 4) Slide out shafts and press wipers in pockets thru front side. Install retaining rings.
- 5) Replace shafts, pistons, and end caps.
- 6) Be sure to apply thread locker to mounting screws. The gripper now has shaft wipers.

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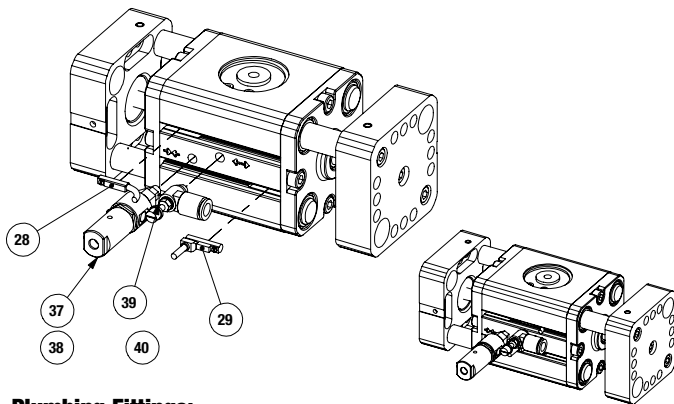


Item	Qty	Name
01	1	Body
02	8	Bushing, Oil Impregnated Bronze
03	2	End Cap
04	2	Jaw
05*	2	Guide Shaft, Rack
06*	2	Guide Shaft (Qty 4 for NS)
07	2	Piston Rod
08	2	Piston
09	1	Cap, Gear
10*	1	Gear
11*	1	Bearing, Radial
12*	2	Piston Rod Wiper (Shaft Wiper "-W" option only)
13*	8	Shaft Wiper (Shaft Wiper "-W" option only)
14	2	Piston Bumper
15	2	Piston O-Ring
16	2	Teflon Ring
17*	2	Body O-Ring
18	2	U-cup
19	2	Jaw Bumper
20	1	Gear Cap O-ring
21	1	Retaining ring
22	1	Magnet
23	8	End Cap Mntg Screw
24	4	Guide Shaft Mntg Screw
25	4	Piston Shaft Mntg Screw
26*	2	Guide Shaft Alignment Dowel
27	2	Manifold Port Plug
28	8	Retainer Ring (Shaft Wiper "-W" Option only)
29	2	Retainer Ring (Shaft Wiper "-W" Option only)
30*	4	End Cap Mntg Screw
31	4	End Cap Dowel Pins

**\*Notes:**

- 1) Contact the Robohand Sales Department for a complete spare parts list with order numbers and prices.
- 2) Quantity of #6 is 4 when ordering a Non-synchronous gripper.
- 3) Items #5, #10, #11, and #26 are for synchronous grippers only.
- 4) Items #12 and #13 are for -W option only.
- 5) Item #17 (Body O-ring) shown in body groove.
- 6) Item #23 Quantity is 6 for 375-1 and 375-2 only.
- 7) Item #30 is only used in 375-1 and 375-2.

## Accessory Installation & Adjustment Instructions



**Plumbing Fittings:**

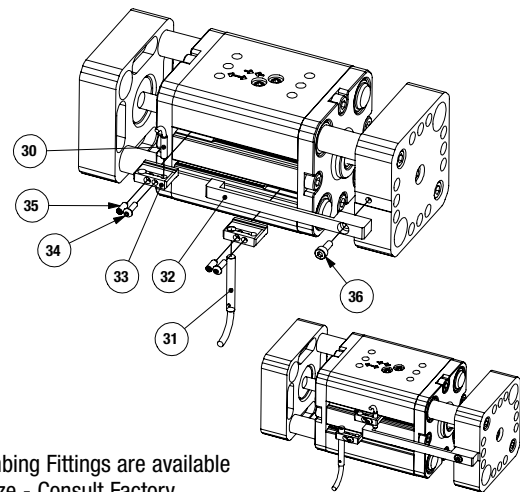
- 1) Flow Controls #39 or #40 can be inserted and used in any open or closed airport to help control the stroke actuation.
- 2) Fail-Safe Valve #37 or #38 can be used in either the open or closed airport to help limit the possibility of dropping the part if air pressure is lost.

**Magneto-Resistive Sensors:**

- 1) Insert sensors #28 or #29 into the opening at the end of the profile and lock the sensor into position with the integrated screw.

**Inductive Sensors:**

- 1) Mount inductive sensor target (#32) to jaw using mounting screw (#36).
- 2) Insert sensor bracket (#33) into slot of body.
- 3) Insert sensor (#30 or #31) into appropriate 3mm or 4mm opening in bracket and adjust sensor depth so that sensor light indicates target (#32).
- 4) Tighten sensor locking screw (#34).
- 5) Position sensor bracket for desired stroke detection.
- 6) Tighten sensor bracket with set screw (#35) to lock stroke detection position.



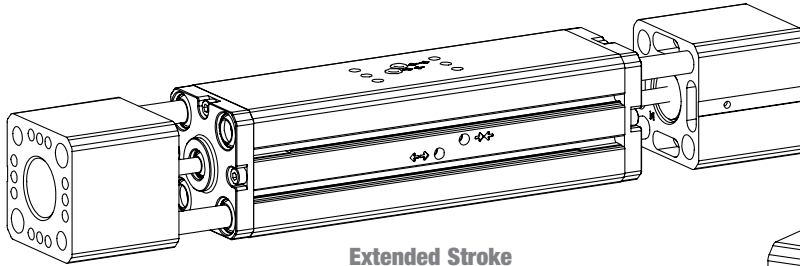
Other Plumbing Fittings are available for each size - Consult Factory

Item	Qty	Name
28	1,2	Magneto Resistive Sensor (short barrel) w/Qk. Disconnect
29	1,2	Magneto Resistive Sensor (90° barrel) w/Qk. Disconnect
30	1,2	Inductive Sensor (3mm) w/Qk. Disconnect
31	1,2	Inductive Sensor (4mm) w/Qk. Disconnect (DPW-375 & 500 only)
39	1,2	Adjustable Flow Control (Imperial) #10-32 elbow - 1/4" OD Push-in Style
40	1,2	Adjustable Flow Control (Metric) M5 elbow - 6mm OD Push-in Style
37	1	Fail Safe Valve (Imperial) #10-32
38	1	Fail Safe Valve (Metric) M5

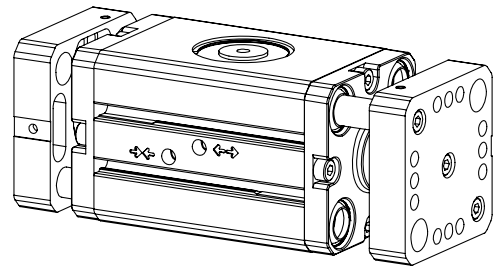
# DPW SERIES SPECIALS

**Smaller or Larger Bores**  
**Metallic Rod Scrapers**  
**Extended Strokes**  
**Alternate Materials**  
**and more...**

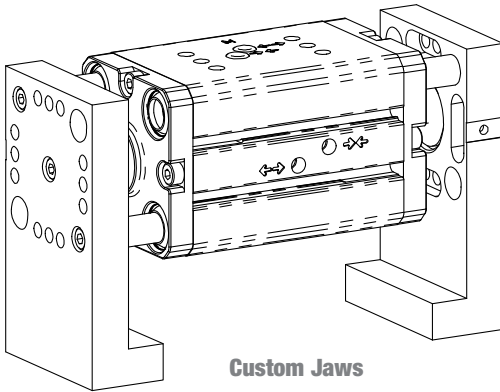
Drawings are for concept only.  
 Contact Robohand Tech Support  
 with project requirements.



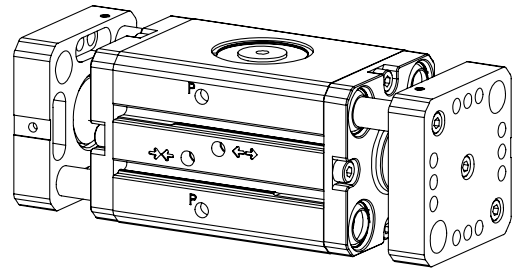
**Extended Stroke**



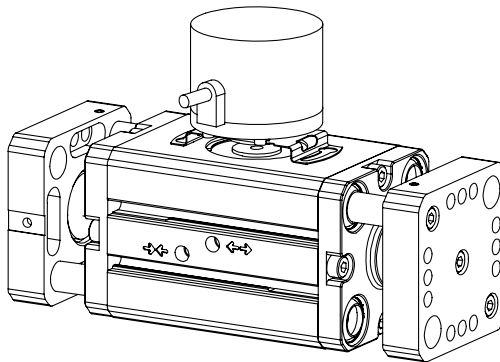
**Fixed Jaw**



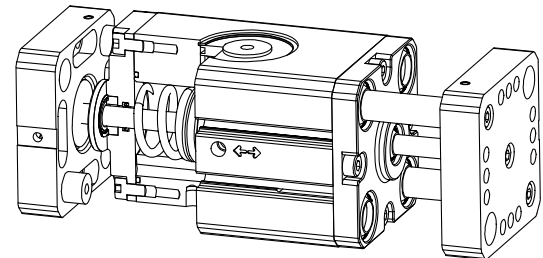
**Custom Jaws**



**Purge Port**



**Multi-Positioning Sensing**



**Spring Assist**

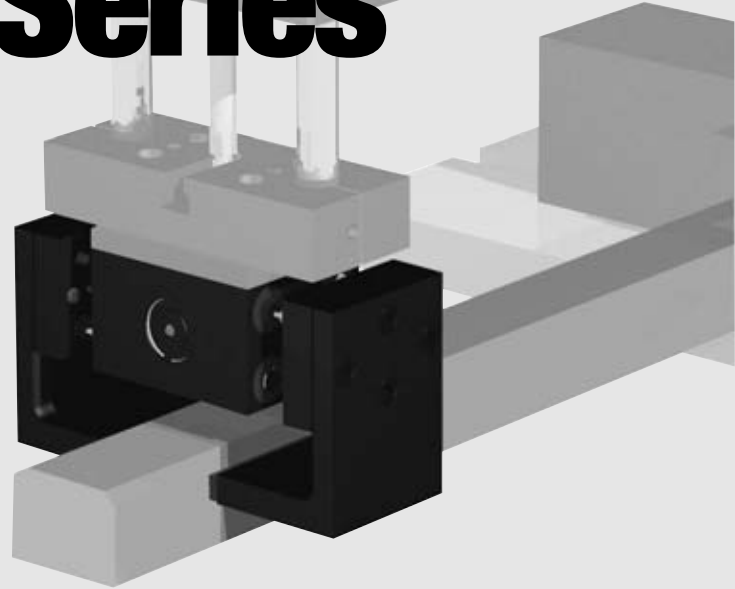
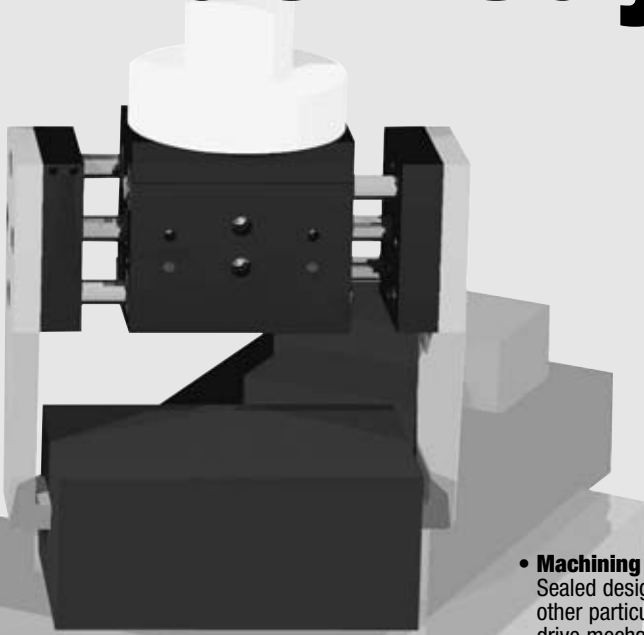


Please describe your application. Include a sketch or attach additional sheets if necessary.

A large grid area for sketching or describing an application. The grid is composed of small squares. In the top right corner of the grid, there is a 3D coordinate system diagram with three axes labeled X, Y, and Z. The Z-axis points upwards, the X-axis points to the left, and the Y-axis points to the right.



# Parallel Grippers - Wide Body Series



**• Machining applications:**

Sealed design repels chips and other particulate from the internal drive mechanism.

**• Long gripper fingers:**

Jaw support thru the length of the body allows for long fingers to be attached to the jaws.

**• Large or wide parts:**

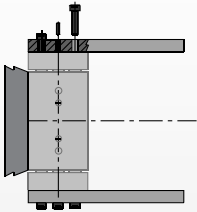
Wide body design provides secure gripping of large & wide parts.

**• Non synchronous motion:**

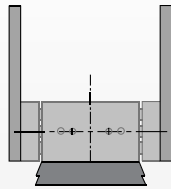
The unit can be made non-synchronous providing independent jaw motion allowing the gripper to pick or place at a point other than it's center.

## Mounting Information:

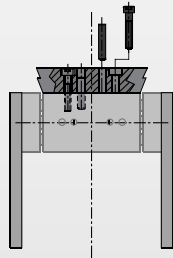
Grippers can be mounted & operated in any orientation



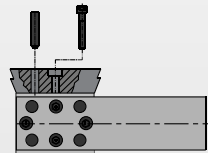
Fingers attach with screws and locate on jaws with dowel pins



Jaw design allows for simplified mounting of fingers



Body mounts on top or on side with screws and locates with slip fit dowel pin holes for accuracy



## Technical Specifications:

**Pneumatic Specifications**

Pressure Operating Range  
Cylinder Type  
Dynamic Seals  
Valve Required

<b>Imperial</b>	<b>Metric</b>
40-100 psi	3-7 bar
<b>Dual Double Acting</b>	
<b>Internally Lubricated Buna-N</b>	
4-way, 2-position	

**Air Quality Requirements**

Air Filtration  
Air Lubrication  
Air Humidity

40 Micron or Better  
Not Necessary\*  
Low Moisture Content (dry)

**Temperature Operating Range**

Buna-N Seals (standard)	-30°~180° F	-35°~80° C
Viton® Seals (optional)	-20°~300° F	-30°~150° C

**Maintenance Specifications†**

Expected Life  
Normal Application  
w/ Preventative Maintenance  
Field Repairable  
Seal Repair Kits Available

5 million cycles  
10+ million cycles\*  
Yes  
Yes

\*Addition of lubrication will greatly increase service life  
† See Maintenance Section

# Product Features

**Sensors/  
Mounting Kit**  
Read position of jaw  
(Sold Separately-See  
"How to Order" Section  
for more info)

**Accessory  
Mounting Holes**  
(Mounts sensors to unit)

**Dowel Holes**  
Slip fit dowel pin  
holes in body

**Sealed Design**  
Unit repels contaminants

**One  
Piece  
Body**  
One piece  
anodized  
aluminum body  
and jaws

**Simplified  
Finger  
Mounting**  
Large jaw  
configuration  
allows for  
simplified  
finger  
mounting

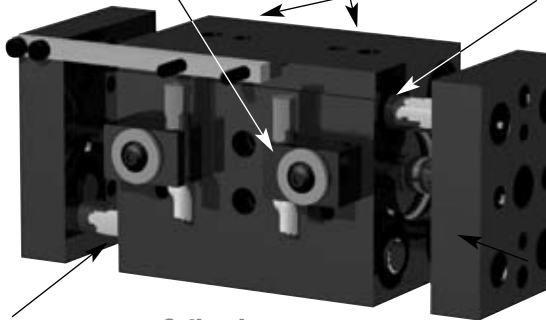
**Superior Jaw  
Support**  
Each jaw is supported  
by 2 shafts that extend  
the entire length of the  
body and are guided by  
2 bronze bushings  
per shaft

**Optional  
Non-Synchronous  
Operation**

**Double Rod Seals**  
Double rod seals for  
longer life

**Self Lubricating**  
Self lubricating oil impregnated  
bronze bushing for low friction  
and wear resistance  
Self lubricating dynamic seals  
(Buna-N only)

**Quality Components**  
Hardened precision stainless steel shafting  
for wear resistance and long life



## Style-RPW Parallel Gripper

**Size -625M-1**

<b>625-1</b>	<b>625M-1</b>
Stroke: 2.00 in.	50.8 mm
Grip Force: 240 lb	1068 N
Weight: 6.5 lb	2.95 Kg



See Page **1.216**

## Style-RPW Parallel Gripper

**Size -625M-2**

<b>625-2</b>	<b>625M-2</b>
Stroke: 3.50 in.	88.9 mm
Grip Force: 240 lb	1068 N
Weight: 7.8 lb	3.55 Kg



See Page **1.217**

## Style-RPW Parallel Gripper

**Size -750M**

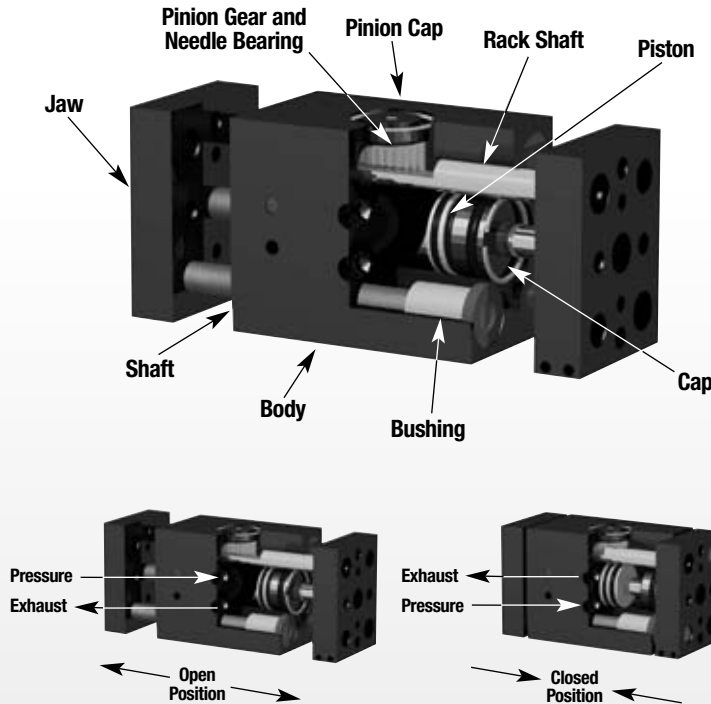
<b>750</b>	<b>750M</b>
Stroke: 4.50 in.	114.3 mm
Grip Force: 470 lb	2091 N
Weight: 14 lb	6.36 Kg



See Page **1.218**

**Note:** Please refer to the New DPW series for sizes of RPW-250 through RPW-500-2 on pages 1.196 to 1.209. The RPW series information on these sizes is still available on our website and are available for sale. We encourage you to consider the new DPW design for new projects.

# Operating Principle

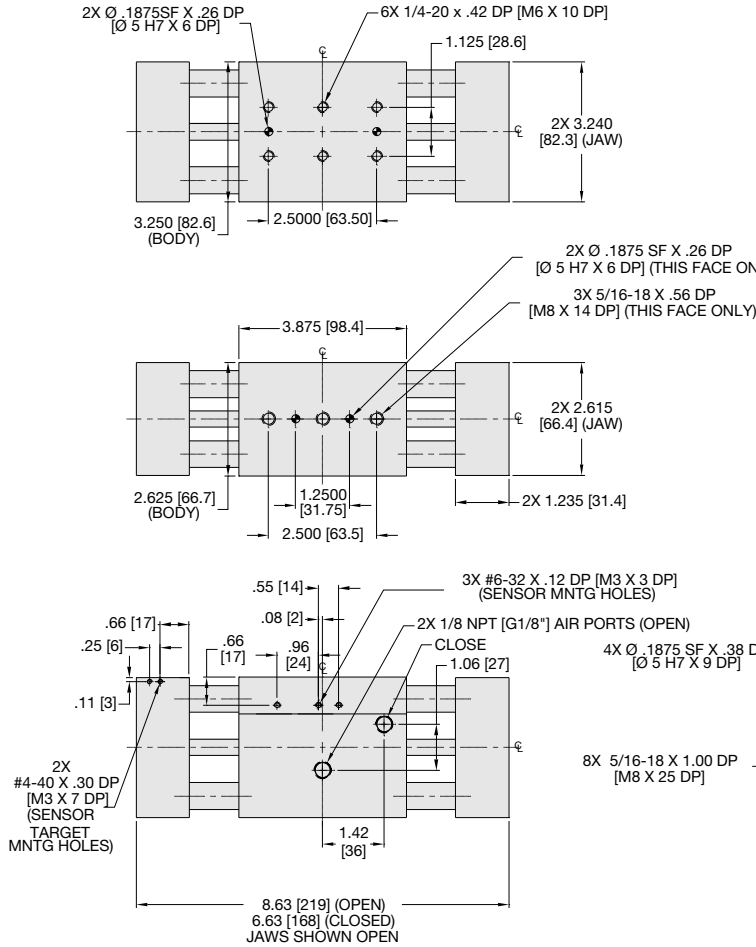


- Two shafts, one with a rack cut into it, are securely fastened to each of the jaws and are supported through the length of the body.
- Two double acting opposed pistons provide power to the jaws.
- The rack shafts of each jaw slide in opposite directions of one another and are synchronized by a pinion gear.
- This gripper is suitable for internal or external gripping.

**U.S. Patent # 5,163,729**  
**Designed and manufactured in the USA**

# PARALLEL GRIPPER RPW-625M-1 WIDE BODY SERIES

1.216

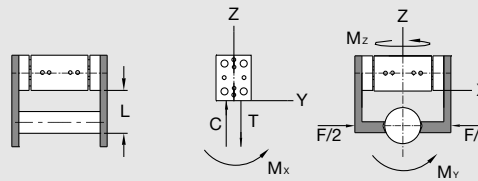
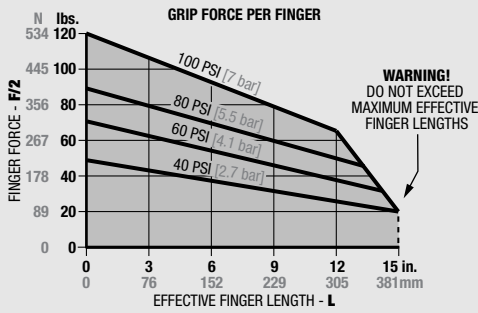


Specifications	RPW-625-1	RPW-625M-1
Total Rated Grip Force <b>F</b> @ 100 psi, 7 bar	240 lb	1068 N
Stroke	2.00 in.	50.8 mm
Weight	6.5 lb	3.0 Kg
Pressure Range	40-100 psi	3-7 bar
Cylinder Bore Ø	1.625 in.	41.3 mm
Displacement	1.320 in <sup>3</sup>	21.6 cm <sup>3</sup>
Temperature Range		
Standard Seals	-30°~180° F	-35°~80° C
Viton® Seals	-20°~300° F	-30°~150° C
Actuation	0.52 sec.	0.52 sec.
Accuracy	±0.003 in.	±0.08 mm
Repeatability	±0.001 in.	±0.03 mm
Valve required to actuate double acting...	4-way, 2-position	

**UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW**

	Dimensions are symmetrical about centerline		Third Angle Projection		All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or [±.013mm]
	Metric Threads Course Pitch	<b>Imperial in.</b>	0.00 = ±.01 0.000 = ±.005 0.0000 = ±.0005	<b>Metric [mm]</b>	[0.] = [±.25] [0.0] = [±.13] [0.00] = [±.013]

## Loading Information



Loading Capacity†	Static		Dynamic	
	Imperial	Metric	Imperial	Metric
Maximum Tensile <b>T</b>	1200 lbs.	5338 N	125 lbs.	556 N
Maximum Compressive <b>C</b>	1200 lbs.	5338 N	125 lbs.	556 N
Maximum Moment <b>M<sub>x</sub></b>	1000 in.-lbs.	113 Nm	100 in.-lbs.	11 Nm
Maximum Moment <b>M<sub>y</sub></b>	1500 in.-lbs.	170 Nm	125 in.-lbs.	14 Nm
Maximum Moment <b>M<sub>z</sub></b>	1000 in.-lbs.	113 Nm	100 in.-lbs.	11 Nm

†Capacities are per set of jaws and are not simultaneous

## How to Order: (Order Accessories separately from Basic Model)

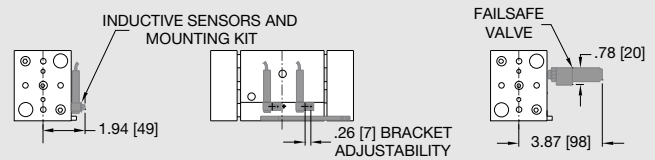
**BASIC MODEL**      **NON-SYNCHRONOUS**

**RPW-625 M-1-NS-V**

**METRIC**      **VITON® SEALS**

SENSOR ACCESSORIES	ORDER #	QTY/UNIT
Sensor Mounting Kit for Imperial & Metric Units (mounts 2 sensors)	<b>OSMK-074</b>	<b>1</b>
NPN Inductive Sensor with Quick Disconnect*	<b>OISN-011</b>	<b>1 or 2</b>
PNP Inductive Sensor with Quick Disconnect*	<b>OISP-011</b>	<b>1 or 2</b>
Quick Disconnect 2 Meter Cable Length*	<b>CABL-010</b>	<b>1 or 2</b>
Quick Disconnect 5 Meter Cable Length*	<b>CABL-013</b>	<b>1 or 2</b>
PNEUMATIC ACCESSORIES		
Fail Safe Valve (Imperial)	<b>OFSV-002</b>	<b>1</b>
Fail Safe Valve (Metric)	<b>OFSV-005</b>	<b>1</b>
Standard Seal Repair Kit	<b>SLKT-071</b>	<b>1</b>
Viton® Seal Repair Kit	<b>SLKT-071V</b>	<b>1</b>

\*Sensor and cable sold separately.

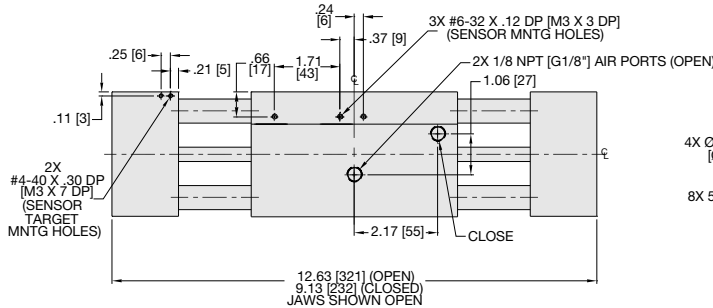
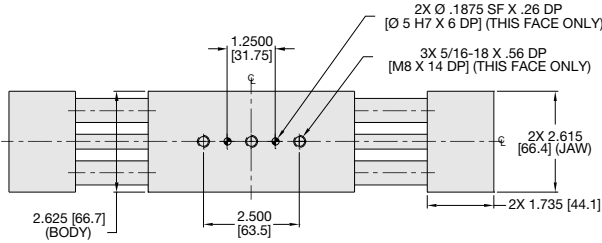
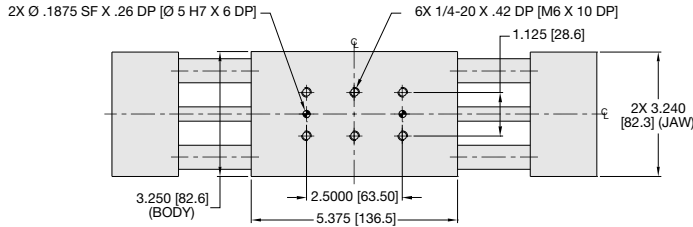




# PARALLEL GRIPPER RPW-625M-2 WIDE BODY SERIES

RPW SERIES

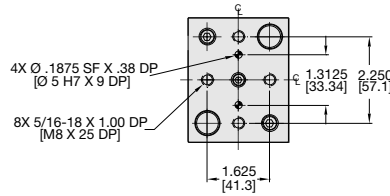
1.217



**UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW**

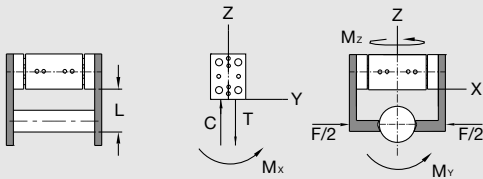
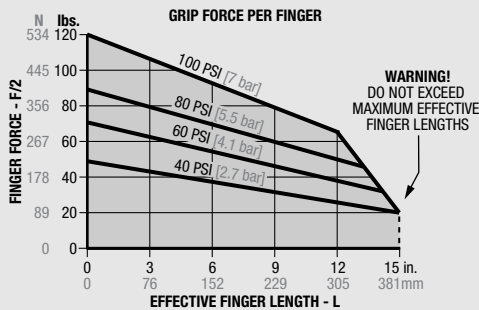
Dimensions are symmetrical about centerline  
 Third Angle Projection  
 All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or [±.013mm]

	Imperial in.	Metric [mm]
Metric Threads	0.00 = ±.01	[0.] = [±.25]
Course Pitch	0.000 = ±.005	[0.0] = [±.13]
	0.0000 = ±.0005	[0.00] = [±.013]



## Loading Information

## How to Order: (Order Accessories separately from Basic Model)



Loading Capacity <sup>†</sup>	Static		Dynamic	
	Imperial	Metric	Imperial	Metric
Maximum Tensile <b>T</b>	1200 lb	5338 N	125 lb	556 N
Maximum Compressive <b>C</b>	1200 lb	5338 N	125 lb	556 N
Maximum Moment <b>M<sub>x</sub></b>	1000 in.-lb	113 Nm	100 in.-lb	11 Nm
Maximum Moment <b>M<sub>y</sub></b>	1500 in.-lb	170 Nm	125 in.-lb	14 Nm
Maximum Moment <b>M<sub>z</sub></b>	1000 in.-lb	113 Nm	100 in.-lb	11 Nm

<sup>†</sup>Capacities are per set of jaws and are not simultaneous

### BASIC MODEL

### NON-SYNCHRONOUS

**RPW-625 M-2-NS-V**

### METRIC

### VITON® SEALS

#### SENSOR ACCESSORIES

- Sensor Mounting Kit for Imperial & Metric Units (mounts 2 sensors)
- NPN Inductive Sensor with Quick Disconnect\*
- PNP Inductive Sensor with Quick Disconnect\*
- Quick Disconnect 2 Meter Cable Length\*
- Quick Disconnect 5 Meter Cable Length\*

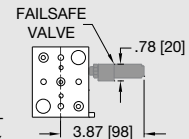
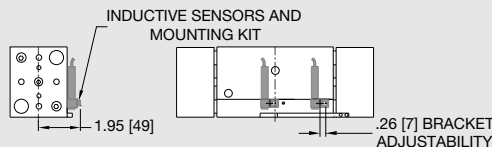
#### PNEUMATIC ACCESSORIES

- Fail Safe Valve (Imperial)
- Fail Safe Valve (Metric)
- Standard Seal Repair Kit
- Viton® Seal Repair Kit

\*Sensor and cable sold separately.

#### ORDER # QTY/UNIT

<b>OSMK-074</b>	<b>1</b>
<b>OISN-011</b>	<b>1 or 2</b>
<b>OISP-011</b>	<b>1 or 2</b>
<b>CABL-010</b>	<b>1 or 2</b>
<b>CABL-013</b>	<b>1 or 2</b>
<b>OFSV-002</b>	<b>1</b>
<b>OFSV-005</b>	<b>1</b>
<b>SLKT-071</b>	<b>1</b>
<b>SLKT-071V</b>	<b>1</b>





Item	Qty	Name
01	1	Body
03	2	Piston
04	2	Cap
05	2	Shaft
06	1	Gear Cover
07	1	Gear
09	2	Shaft, Piston
10	2	Shaft, Gear
20	2	Block, End W/ Target Holes
21	1	Bearing, Needle
22	1	Dowel Pin
23	1	Ball

NOTE: Contact the Robohand Sales Department for a complete spare parts list with order numbers and prices.

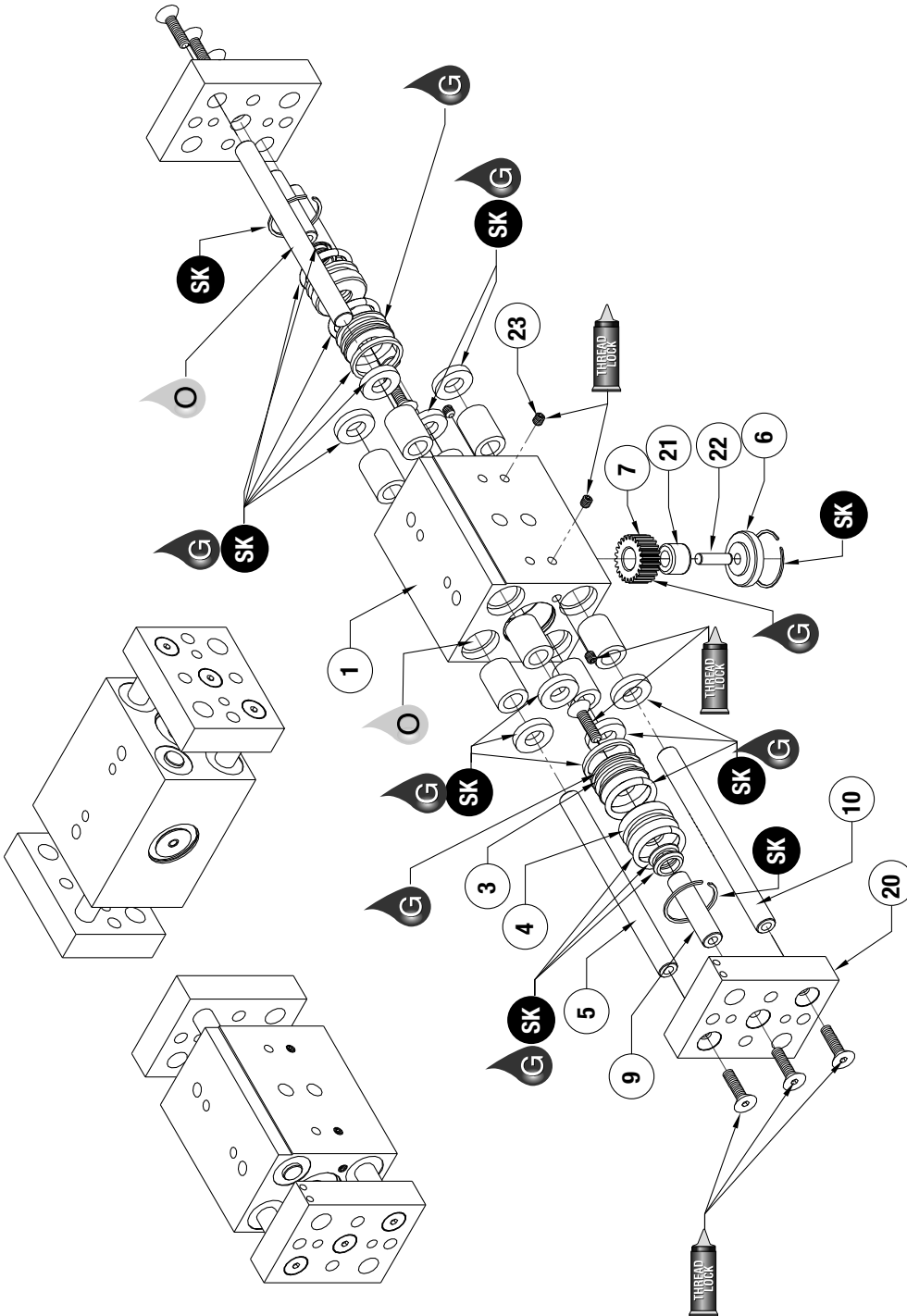
### Assembly Procedure

- 1) Lubricate and install seals.
- 2) Install pistons and shafts.\*
- 3) Place piston caps and retaining rings into body
- 4) Install tooling plates and shafts
- 5) Place bearing, shaft, and gear\*\* into body and install cap and retaining ring for sync. version:
  - a) For disassembly, use magnet to pull gear out of body.
  - b) Install 2 rack shafts with teeth facing syncing gear.

### Non-Synchronous Procedure

- 1) Take RPW synchronous gripper and remove the retainer ring and gear cover.
- 2) Slide out dowel pin and bearing.
- 3) Remove gear from gripper. (a magnet is often very helpful in removing the gear.)
- 4) Replace the dowel pin, gear cover, and retainer ring. The gripper is now non-synchronous.

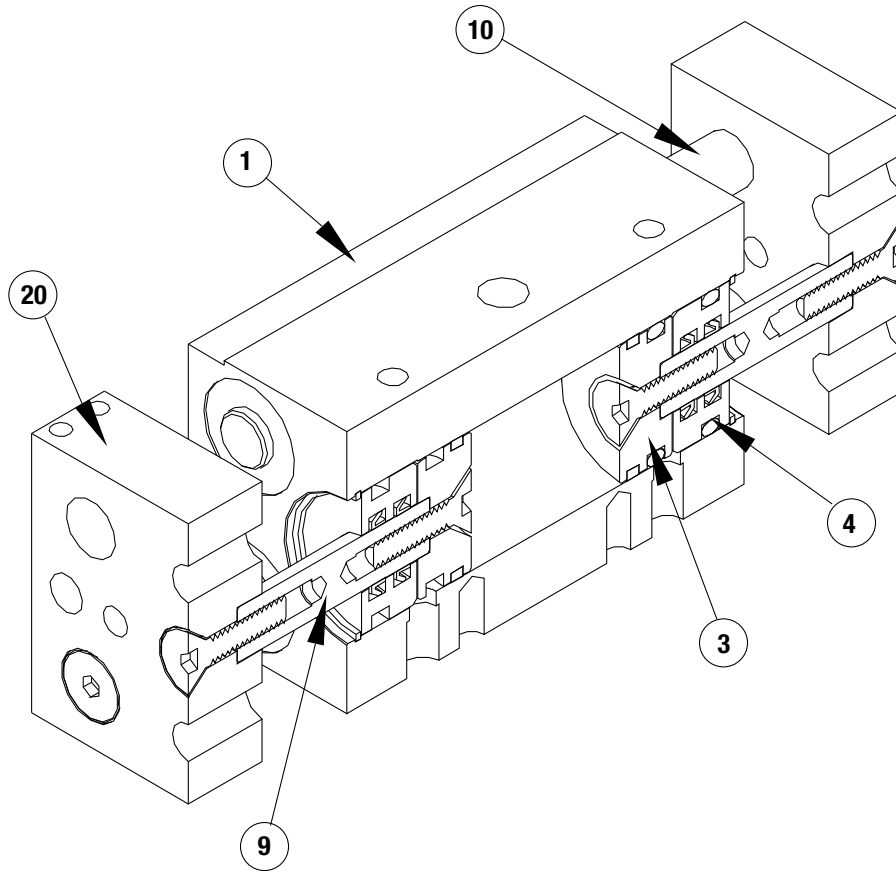
**SK Seal Repair Kit Order #'s See Product Data Sheets**



Seal Kit Items	Thread Locker	Krytox™ Lubricant	Lightweight Machine Oil	Teflon® Based Grease	Super Bonder	Third Angle Projection



# RPW Series Assembled View

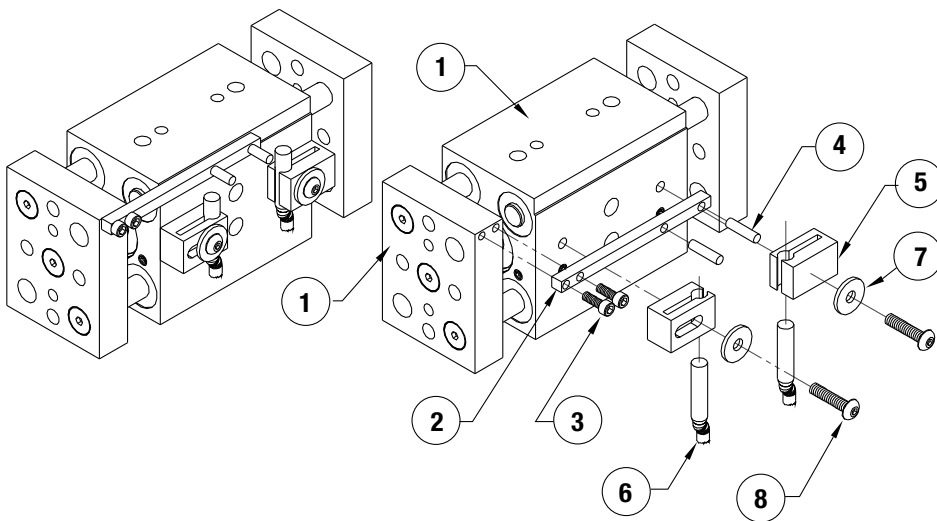


Item	Qty	Name
01	1	Body
03	2	Piston
04	2	Cap
05	2	Shaft
06	1	Gear Cover
07	1	Gear
09	2	Shaft, Piston
10	2	Shaft, Gear
20	2	Block, End W/ Target Holes
21	1	Bearing, Needle
22	1	Dowel Pin
23	1	Ball

NOTE: Contact the Robohand Sales Department for a complete spare parts list with order numbers and prices.

## Accessory Installation & Adjustment Instructions

Install target as shown, install sensors as shown, adjust for proper end of stroke sensing.



Seal Kit Items



Thread Locker



Krytox™ Lubricant



Lightweight Machine Oil



Teflon® Based Grease



Super Bonder



Third Angle Projection

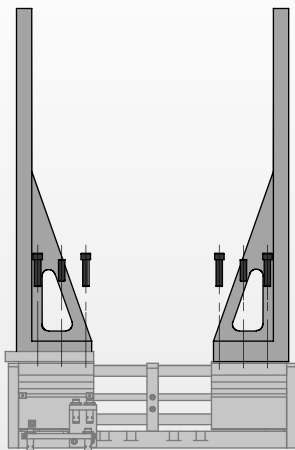


# Parallel Grippers - RPR Gladiator Series

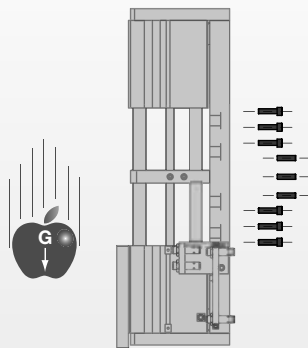
- Large, heavy or wide parts:**  
Wide body & long stroke design provide secure gripping of large heavy parts.
- Machining & foundry applications:**  
Rod wipers repel chips and other particulate.
- Gripper Interchangeability:**  
Bolt in replacement for PHD's GRR series gripper
- Multiple Sensing Options:**  
Choose between inductive proximity sensors or a linear encoder.
- Maximum rigidity:**  
Jaws are supported by 3 shafts, shafts are supported at 3 points.
- Long Finger Applications:**  
Rigid design and full body support of jaws allows for longer finger lengths.
- Non-synchronous motion:**  
The unit can be made non-synchronous providing independent jaw motion allowing the gripper to pick and place at a point other than it's center.

## Mounting Information:

Grippers can be mounted & operated in any orientation



Fingers mount on the bottom of the jaws with screws and dowel pins.



Body mounts with screws from behind and slip fit dowel pin holes for accuracy.

## Technical Specifications:

Pneumatic Specifications	Imperial	Metric
Pressure Operating Range	40-100 psi	3-7 bar
Cylinder Type	Double Acting	
Dynamic Seals	Internally Lubricated Buna-N	
Valve Required to Operate	4-way, 2-position	
<b>Air Quality Requirements</b>		
Air Filtration	40 Micron or Better	
Air Lubrication	Not Necessary*	
Air Humidity	Low Moisture Content (dry)	
<b>Temperature Operating Range</b>		
Buna-N Seals (standard)	-30°~180° F	-35°~80° C
Viton® Seals (optional)	-20°~300° F	-30°~150° C

## Maintenance Specifications

Expected Life	5 million cycles
Normal Application w/ Preventative Maintenance	10+ million cycles*
Field Repairable	Yes
Seal Repair Kits Available	Yes

\*Addition of lubrication will greatly increase service life

## Product Features

### Rack & Pinion Synchronizer

Rack and Pinion Synchronizer built inside the back plate for protection against contaminants and harsh environment. Optional non-synchronized gripper available.

### Rigid, Jaw bearing support

Four, Fluoropolymer composite bushings provide enhanced support to the jaws, protect against contaminants and corrosive environment

### Gripper Actuation Ports

Easy access to gripper open and close ports



### Low Friction Seals and Wipers

Pressure energized seals inside jaws offer minimum breakaway friction and enhanced cycle time. Other optional seals available for higher temperature and specific chemical compatibility

### Bearing and Shaft Protection

Four shaft wipers provide continuous protection to the bearings inside the jaws

### Optional - Gripper Open and Gripper Close Inductive Sensors

Optional Inductive sensors available to detect gripper open and close positions

### Stroke

Available with 200mm stroke. Consult factory for different strokes

### Optional - Rod Lock

Optional Rod Lock valves available to lock jaws in position in case of air loss

### Pented

Rod lock design integral inside the jaw provide protection against contaminants.

### Enhanced Piston Tube

Ground, stainless steel piston tube for superior wear and corrosion resistance

### Superior Jaw Support

Three, One piece, Case hardened, Precision ground linear guides provide higher stiffness and precision guide to the Jaws

### Optional - Jaw Position Analog sensors

Optional Analog sensors available to continuously detect jaw positions along the stroke

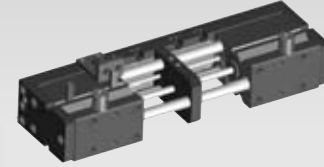
### Simplified Finger Mounting

Large jaw configuration to accept heavy loads and equipped with dowel holes for precision assembly with fingers. The jaws are supplied with coated steel inserts for superior clamping force and corrosion resistance.

## Style -RPR-63M Parallel Gripper

### Size -63M-200

	RPR-63M-200
Stroke:	7.87 in. 200 mm
Grip Force:	800 lbs. 3520 N
Weight:	35 lbs. 15.8 Kg



See Page **1.224**

**Note:** Additional strokes available upon request. Contact DE-STA-CO for more information.

## Operating Principle

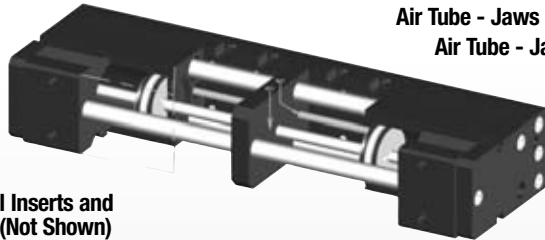
Back Plate with Rack & Pinion  
(Jaw Synchronizer)

Gripper Open Port

Gripper Close Port

Air Tube - Jaws Closed

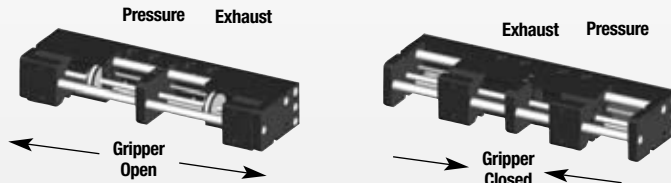
Air Tube - Jaws Open



Coated Steel Inserts and Dowel Pins (Not Shown) For Pay Finger Mount (4 Per Jaw)

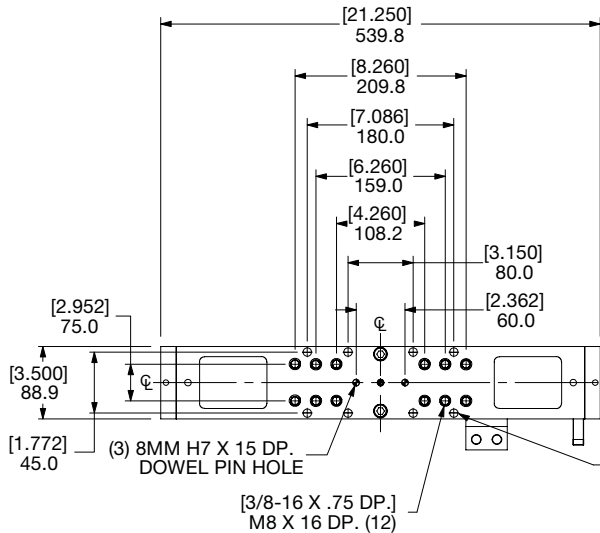
Air Piston - Fixed (2) with Pressure Energized Seals and O-Rings

Shaft Wipers (4 per Jaw)



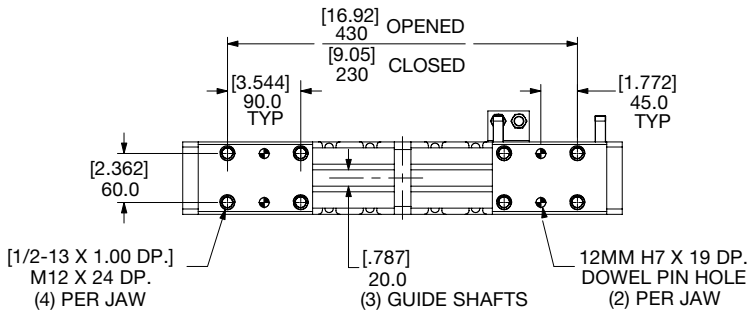
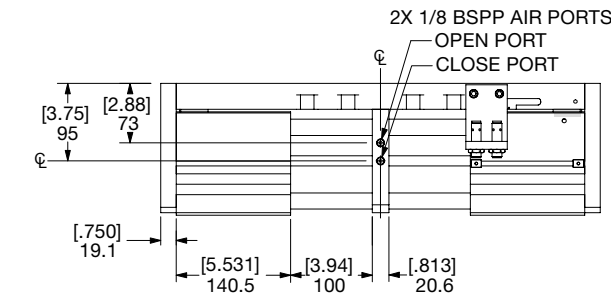
- Two jaws are equipped with linear bearings and supported on three precision ground shafts.
- Each of the jaws are also engaged with stationary piston assembly inside them.
- Each of the piston assemblies receive pressurized air via any one of the two air tubes. Depending upon the gripper port used, the corresponding air tube will direct the pressurized air to open or close the jaws.
- The jaws are mechanically synchronized with two racks and a pinion located in the back plate.
- The gripper is also available without rack and pinion in non-synchronous configuration.
- This gripper is available with inductive sensors to detect jaw open and jaw closed positions.
- This gripper is also available with analog sensor to detect jaw positions any where along the gripper stroke.
- This gripper is suitable for internal or external gripping and can be mounted in any orientation.

# PARALLEL GRIPPER RPR GLADIATOR SERIES



### Specifications

	RPR-63	RPR-63M
Total Rated Grip Force <b>F</b> @ 100 psi, 7 bar	800 lbs.	3520 N
Stroke	7.87 in.	200 mm
Weight	35 lbs.	15.8 Kg
Pressure Range	40-100 psi	3-7 bar
Cylinder Bore Ø	2.48 in.	63 mm
Displacement	38.2 in <sup>3</sup>	623 cm <sup>3</sup>
Temperature Range		
Standard Seals	-30°~180° F	-35°~80° C
Viton® Seals	-20°~300° F	-30°~150° C
Actuation Time	1.3 sec.	1.3 sec.
Accuracy	±0.005 in.	±0.13 mm
Repeatability	±0.002 in.	±0.05 mm
Valve required to actuate double acting...	4-way, 2-position	



**UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW**

Dimensions are symmetrical about centerline	Third Angle Projection	All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or (±.013mm)
Metric Threads Course Pitch	<b>Imperial in.</b> 0.00 = ±.01 0.000 = ±.005 0.0000 = ±.0005	<b>Metric [mm]</b> [0] = (±.25) [0.0] = (±.13) [0.00] = (±.013)

## How to Order: (Order Accessories separately from Basic Model)

**BASIC MODEL**   **STROKE**   **VITON SEALS**   **ROD LOCK**

**RPR-63** **M** - **200** - **NS** - **V** - **S** - **R2**

**METRIC**   **SYNCHRONIZATION**   **HARDWARE**

<b>BASIC MODEL</b>	<b>RPR-63</b>
<b>METRIC</b>	<b>M</b>
<b>STROKE</b>	<b>200</b> (consult factory for additional strokes)
<b>SYNCHRONIZATION</b>	— Leave Blank for Synchronous (standard)
<b>VITON® SEALS</b>	<b>NS</b> Non-Synchronized
	— Leave Blank for Buna (standard)
	<b>V</b> High Temperature Viton® Seals
<b>HARDWARE</b>	— Leave Blank for Steel (standard)
	<b>S</b> Stainless Steel
<b>ROD LOCK</b>	— Leave Blank for No Rod Lock (standard)
	<b>R1-RS</b> One Rod Lock (Right Side)
	<b>R1-LS</b> One Rod Lock (Left Side)
	<b>R2</b> Two Rod Locks

### SENSOR ACCESSORIES

	ORDER #	QTY/UNIT
12 mm Sensor Mounting Kit (Mounts 2 Inductive sensors)	<b>OSMK-131</b>	<b>1</b>
12 mm Inductive NPN Sensor with Quick Disconnect	<b>OISN-017</b>	<b>1 or 2</b>
12 mm Inductive PNP Sensor with Quick Disconnect	<b>OISP-017</b>	<b>1 or 2</b>
Straight Quick Disconnect Cable (2M cable length)**	<b>CABL-014</b>	<b>1 or 2</b>
Straight Quick Disconnect Cable (5M cable length)**	<b>CABL-018</b>	<b>1 or 2</b>
Analog Sensor	<b>OISA-001</b>	<b>1</b>
Analog Sensor cable with Quick Disconnect (5M cable length)	<b>CABL-045</b>	<b>1</b>
Analog sensor Mounting Kit	<b>OSMK-132</b>	<b>1</b>

### PNEUMATIC ACCESSORIES

	ORDER #	QTY/UNIT
Fail Safe Valve 1/4 NPT (Imperial)	<b>OFSV-003</b>	<b>1</b>
Fail Safe Valve 1/4 BSPP (Metric)	<b>OFSV-006</b>	<b>1</b>
Plumbing Adapter 1/4 BSPP Male to 1/4 NPT Female	<b>PLFT-024</b>	<b>1 or 2</b>
Buna-N Seal Repair Kit	<b>SLKT-452</b>	<b>1</b>
Viton Seal Repair Kit	<b>SLKT-453</b>	<b>1</b>

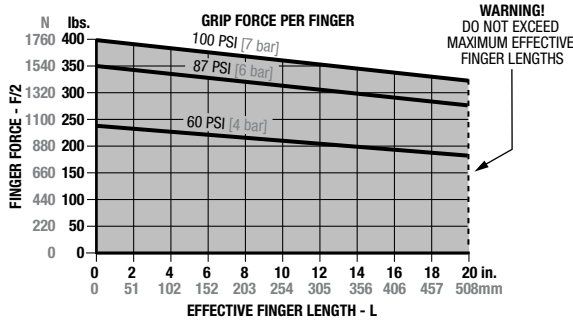
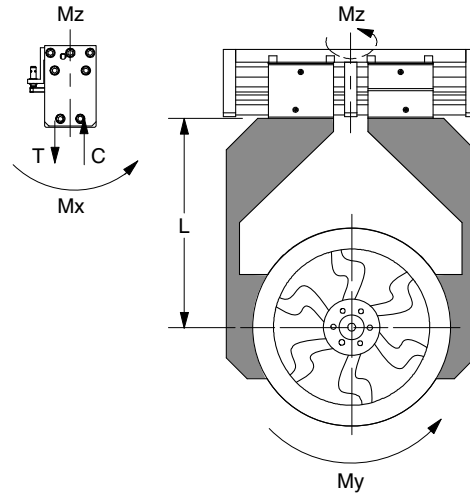
\*\*Sensor and cable sold separately

### SAMPLE ORDER: RPR-63M-150-NS-V-S-R2

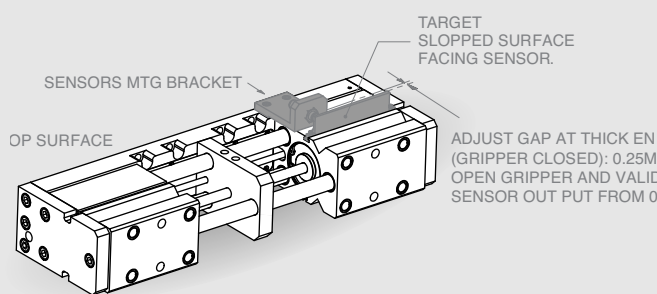
Ex: RPR-63M, Metric Gripper, 150 Stroke, Non Synchronized, Viton® Seals, Stainless Steel, 2 Rod Locks

### Loading Capacity:

Maximum Tensile <b>T</b>	3500 lbs. [15570 N]
Maximum Compressive <b>C</b>	3500 lbs. [15570 N]
Maximum Moment <b>M<sub>x</sub></b>	7500 in.-lbs. [825 Nm]
Maximum Moment <b>M<sub>y</sub></b>	9000 lbs. [990 N]
Maximum Moment <b>M<sub>z</sub></b>	7500 in.-lbs. [825 Nm]
Maximum Effective Finger Length <b>L</b>	20 in. [500mm]

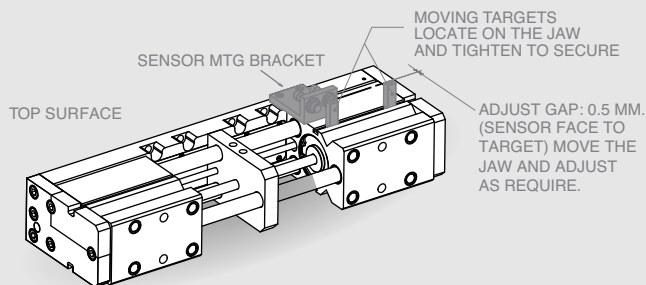


## Accessory Mounting Technical Data



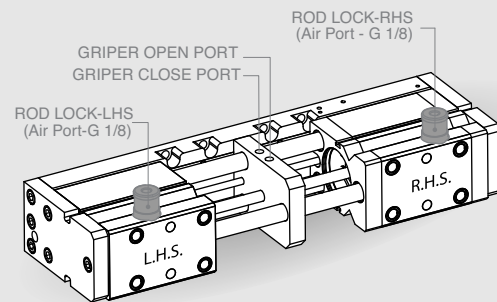
### Analog Sensor

- Used in applications where jaw position information is required along the stroke
- Sensor is mounted on a stationary bracket and the target is mounted on the moving jaw. The target has 'slopped' surface facing the sensor. Thus when the target moves with the Jaw, it creates varying air gap between the slopped surface and the sensor
- The sensor is supplied with 24 vdc and generates 0~10 vdc signal as a function of the air gap, as described earlier. Thus the sensor outputs 0~10 vdc signal as a function of jaw position



### Inductive Sensor: Gripper Open/Close

- Used in applications where jaw open and closed positions must be detected as process requirements
- PNP and NPN inductive sensors are available
- The two inductive sensors are stationary and mounted with a bracket directly to the back plate
- The target is mounted on the moving jaw
- The sensor cable has quick disconnect connector at the sensor end and open pig tail wires at the otherend. Cable available in two lengths - 2M & 5M
- Adjustments required after assembly:
- Air gap between sensor face and moving target to 0.5 mm and fine adjust as required. Tighten the lock nuts on the sensors to avoid loosening under application.
- Location of the moving target on the jaw to suit stroke

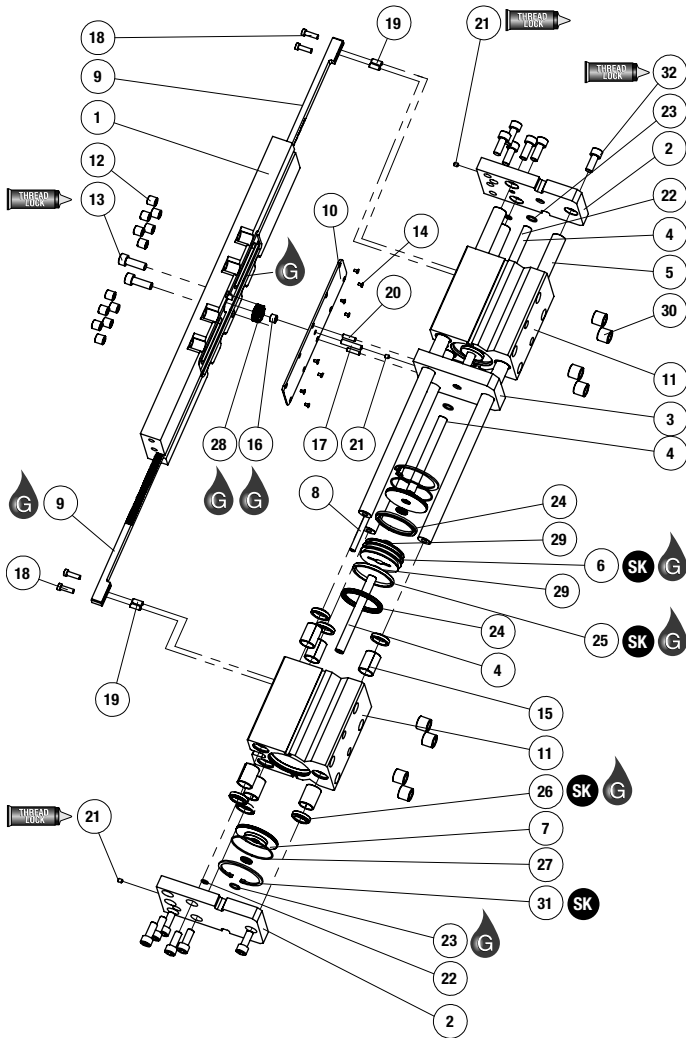


### Rod Lock (Fail Safe Valve)

- Used in applications where the part being gripped not be dropped if the air pressure is lost
- Mounts directly to the jaw. (Must use Jaw with Rod lock option)
- Available options:
  - LHS Rod Lock
  - RHS Rod Lock
  - Two Rod locks. (As shown)
- Holding force: 1400 N (318 Lbf) max per rod lok.
  - Note:** If holding forces are exceeded, slippage may occur.
- Rod lock 'clamp time' when air loss:
  - 250 ms..... ref
  - Will greatly depend upon flow coefficient of air exhaust line. (Line I.D., Length, Qty & Type of bends, other air circuit elements like valve, mufflers ... , and as apply)
- Air port: G 1/8
  - Note:** Must be connected to fully exhausted line when air pressure is lost
- Air specifications:
  - Air Supply pressure: 10 bar (147 psig) max.
  - Minimum release pressure: 3 bars (44.1 psig)
- Air quality:
  - Filteration: 40 micron, min.
  - Non Lubricated, dry air.



# RPR SERIES EXPLODED VIEW



Item	Qty	Name
01	1	Base Plate
21	2	End Block
03	1	Mid Block
04	4	Piston Tube
05	3	Guide Shaft
06	2	Piston
07	4	Cap
08	2	Cross Tube
09*	2	Rack
10	1	Cover
11*	2	Jaw
12	12	EZ-Lock Insert- Back Plate
13	2	Base Plate MTG Screws
14	8	Cover MTG Screws
15	12	Composite Bushings
16*	1	Needle Bearing
17*	1	Needle Bearing MTG Dowel
18	4	Rack MTG Screw
19*	4	Rack MTG Dowel
20	2	Cover MTG Dowel
21	3	Air Passage Plug - Set Screw
22	4	Cross Tube O-Ring
23	4	Piston Tube O-Ring
24	4	U-Cup Piston
25	2	Wear Band
26	12	Shaft Wiper
27	4	Cap O-Ring
28*	1	Pinion
29	4	Piston Tube O-Ring- Inner
30	8	EZ-Lock Insert- Jaws
31*	4	Cap Retaining Ring
32	12	End Block MTG Screw

**\*Notes:**

- 1) Contact De-Sta-Co Sales Department for complete spare parts list with order number and process.
- 2) Item # 31 will be different between Imperial and Metric grippers. All other features will remain same.
- 3) Item numbers #9, #16, #17, #19, and #28, are for Synchronous gripper only.
- 4) Item # 11 will be different for gripper with Rod lock options.
- 5) For High Temperature option, all O-rings will be of viton material.
- 6) For Corrosion resistant option, all fasteners will be stainless steel.

**Note:** Customer to plumb the rod lock valves to his safety circuit.

- 8) Assembly validation and torque the fastener
  - A) Torque all the fasteners to their specification.
  - B) Connect 40 psig air to the gripper ports. Cycle the gripper open/close and verify that the jaw motions are smooth, free of binding, noise and without air leak.
  - C) Increase air pressure to 100 psig. Cycle the gripper open/close and verify that the jaw motions are smooth, free of binding, noise and without air leak.

**B. Standard - Non Synchronous Gripper**

For Non-Synchronous gripper, DO NOT install items #9, #16, #17, #19 and #28.

**C. Gripper with ROD LOCK option**

**Note:** Gripper with Rod Lock option will use different item #11 and will use Rod lock valve.

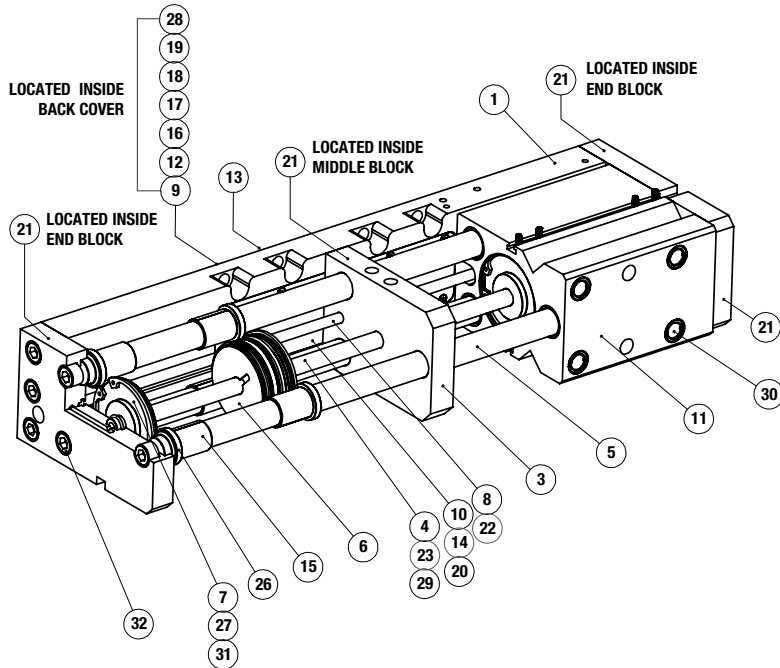
- A) Assemble the jaws to the guide shafts with Rod Lock.
- B) All other steps, as above.

**Assembly Procedure:**

**A. Standard - Synchronous Gripper**

- 1) Lubricate and install O-rings in the two end blocks and in the middle block. Install set screws (air plug, Item 21) into the two end blocks and the middle block.
- 2) Assemble RHS and LHS Jaws E-Z locks, bushings, o-rings and piston assembly
- 3) Assemble RHS jaw assembly to the three guide shafts. Assemble RHS end block to the guide shafts.
- 4) Assemble the mid block and assemble RHS piston tubes and RHS cross tubes.
- 5) Assemble the LHS jaw to the three guide shafts. Install the piston tubes and the Cross tubes as described earlier. Install LHS end block and install it's fasteners, 'snug tight' to the three guide rods. Verify that the two jaws can traverse along the guide bars without any binding.
- 6) Install the cover to the middle block by locating it with the dowel pins above. Install the racks to the jaws by first locating with the dowel pins and then with fasteners. Lubricate the needle bearing, install it into the pinion and install this assembly to the middle dowel pin.
- 7) Lubricate the racks, the pinion and inside of the grooves of the back plate. Locate the back plate between the two end blocks and carefully engage it to the three dowel pin, protruding out of the middle block. Install the fasteners and snug tight to secure the back plate to the middle plate and to the end blocks. Install fasteners for the cover and tighten them.

Seal Kit Items	Thread Locker	Krytox™ Lubricant	Lightweight Machine Oil	Teflon™ Based Grease	Super Bonder	Third Angle Projection



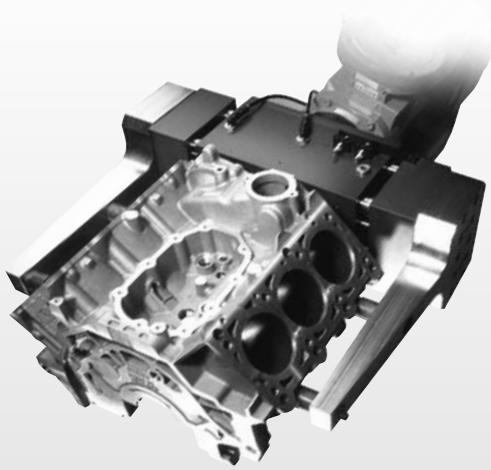
Item	Qty	Name
01	1	Base Plate
21	2	End Block
03	1	Mid Block
04	4	Piston Tube
05	3	Guide Shaft
06	2	Piston
07	4	Cap
08	2	Cross Tube
09*	2	Rack
10	1	Cover
11*	2	Jaw
12	12	EZ-Lock Insert- Back Plate
13	2	Base Plate MTG Screws
14	8	Cover MTG Screws
15	12	Composite Bushings
16*	1	Needle Bearing
17*	1	Needle Bearing MTG Dowel
18	4	Rack MTG Screw
19*	4	Rack MTG Dowel
20	2	Cover MTG Dowel
21	3	Air Passage Plug - Set Screw
22	4	Cross Tube O-Ring
23	4	Piston Tube O-Ring
24	4	U-Cup Piston
25	2	Wear Band
26	12	Shaft Wiper
27	4	Cap O-Ring
28*	1	Pinion
29	4	Piston Tube O-Ring- Inner
30*	8	EZ-Lock Insert- Jaws
31	4	Cap Retaining Ring
32	12	End Block MTG Screw

**\*Notes:**

- 1) Contact De-Sta-Co Sales Department for complete spare parts list with order number and prices.
- 2) For Synchronous gripper Items #9, #16, #17, #19 & #28 are installed in back plate.
- 3) For Metric gripper, item# 30 will be with metric threads. Other features remain same as in Imperial version.
- 4) For High Temperature option all O-rings will be of Viton material.
- 5) For Corrosion environment, all fasteners will be of stainless steel material.
- 6) For Rod-lock option item # 11 will be intrgrated with Rod-lock unit.

**Note:** Customer to provide and plumb their pneumatic safety circuitry to vent Rod-lock unit in case of air loss.

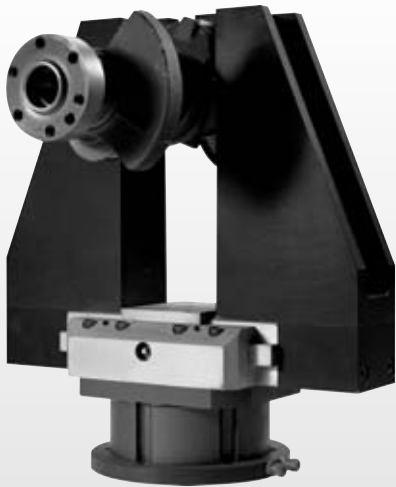
# “B-Series” Industrial Parallel



## BPW - WIDE BODY SERIES

The BPW Parallel Gripper feature a wide body design ideal for handling large and wide parts using long fingers. The jaws are supported through the full length of the body for high moment carrying capacity and are sealed against chips or particles, which makes it ideal for use in machining or foundry applications.

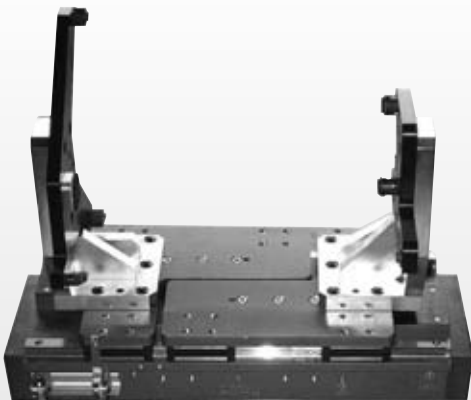
- **For Large and Wide Parts**
- **High Grip Forces and Moment Loads**
- **Support for Long Fingers**
- **Non-synchronous Option**
- **Optional Spring Close** (BPW-1600 only)



## BRP - HEAVY DUTY SERIES

The BRP Parallel Gripper are heavy duty and rugged for reliable operation in real life industrial operations. Sealed jaws protect the internal mechanism from chips and coolant in machining applications. Hardened tool steel jaws and supports allow for long tooling fingers and high moments and forces.

- **Rugged Design**
- **High Grip Forces and Moment Loads**
- **Support for Long Fingers**
- **Optional Spring Open or Close**

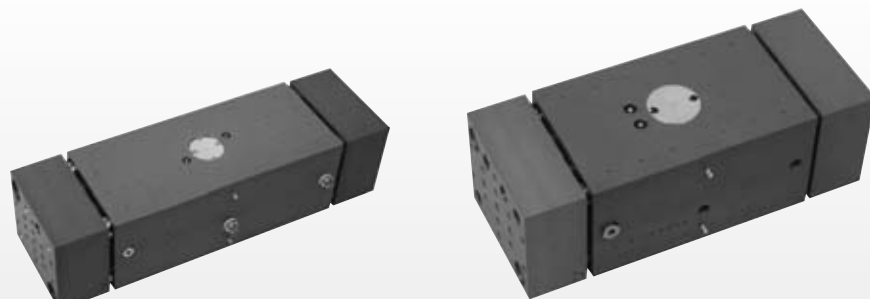


## BPG - LONG STROKE SERIES

The BPG Parallel Gripper feature a long stroke and low profile and they are often used to handle different size parts with the same fingers. The jaws and supports are made of hardened tool steel and the body is made of lightweight, hard anodized aluminum.

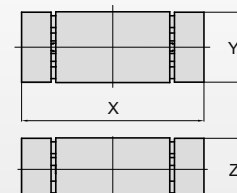
- **Accommodate Multiple Part Sizes with same Fingers**
- **Long Strokes**
- **Optional Spring Open or Close**
- **Low Profile Design**

# Grippers



**BPW-1600**

**BPW-2000**

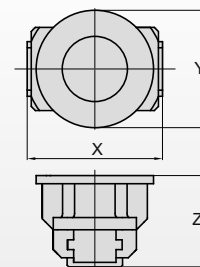


Model #	Stroke	Grip Force	Weight	X	Y	Z
<b>BPW-1600</b>	6.3 in [160 mm]	970 lbs [3868 N]	88 lbs [40 kg]	17.9 in [454 mm]	7.1 in [180 mm]	5.9 in [150 mm]
<b>BPW-2000</b>	7.8 in [200 mm]	1920 lbs [8536 N]	154 lbs [70 kg]	27 in [694 mm]	8.0 in [203 mm]	6.9 in [174 mm]

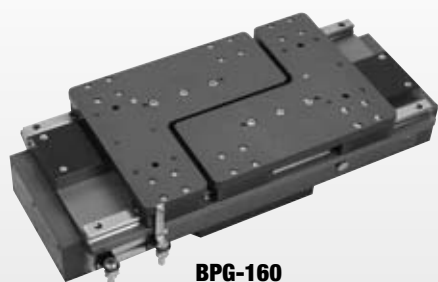


**BRP-20**

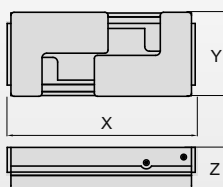
**BRP-21**



Model #	Stroke	Grip Force	Weight	X	Y	Z
<b>BRP-20</b>	1.5 in [38 mm]	1618 lbs [7200 N]	40.3 lbs [18.3 kg]	8.19 in [208 mm]	7.87 in [200 mm]	6.16 in [157 mm]
<b>BRP-21</b>	1.5 in [38 mm]	3462 lbs [15400 N]	81.6 lbs [37 kg]	12.13 in [308 mm]	10.63 in [270 mm]	6.69 in [170 mm]
<b>BRP-21-D</b>	2.5 in [64 mm]	2001 lbs [8900 N]	81.6 lbs [37 kg]	12.13 in [308 mm]	10.63 in [270 mm]	6.69 in [170 mm]



**BPG-160**



Model #	Stroke	Grip Force	Weight	X	Y	Z
<b>BPG-160</b>	4.06 in [160 mm]	1787lbs [7950 N]	126 lbs [57 kg]	23.78 in [604 mm]	10.63 in [270 mm]	5.51 in [140 mm]

**For Applications  
Support or More Info**

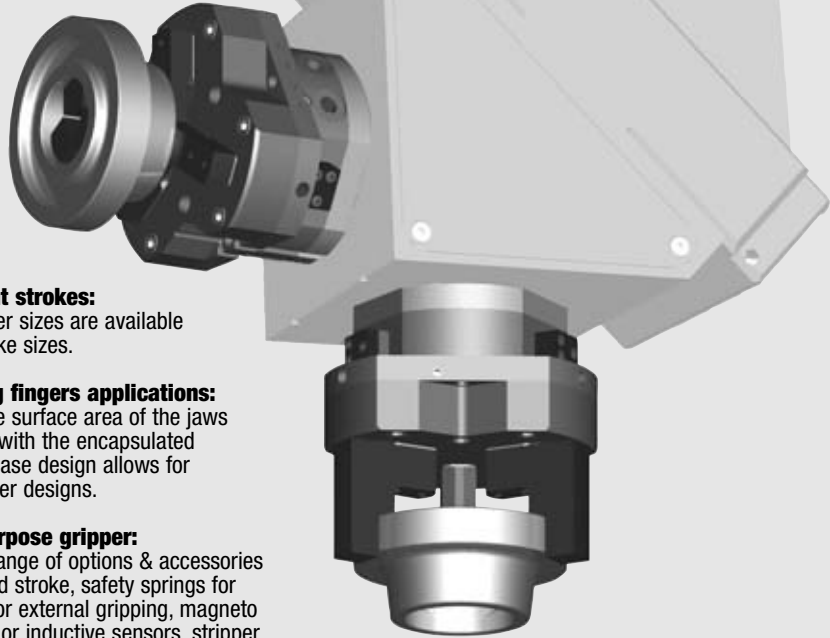
**Contact Us at:**

***cs-automation@destaco.com***

**or Call Us at:**

**1.888.DESTACO**

# Parallel Grippers - 3-Jaw Centering Series



- Machining applications:**

The 3 concentric jaws and excellent repeatability make it easier to accurately load and unload round parts.

- Harsh environments:**

Shielded design repels chips and other particulate from internal drive mechanism. Viton® seals are standard.

- Compact, robust and powerful gripper**

This gripper is designed for use in confined spaces, combining long strokes with a high grip force. Optional safety springs retain the components, should the air supply fail or to increase grip force.

- Different strokes:**

All gripper sizes are available in 2 stroke sizes.

- For long fingers applications:**

The large surface area of the jaws coupled with the encapsulated bottom case design allows for long finger designs.

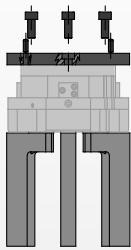
- Multipurpose gripper:**

A wide range of options & accessories (extended stroke, safety springs for internal or external gripping, magneto resistive or inductive sensors, stripper plate) allow these grippers to be used in a wide number of applications.

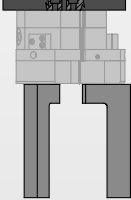
## Mounting Information:

### Grippers can be mounted & operated in any orientation

Gripper is located using two dowel pins and assembled from the top with 3 screws.

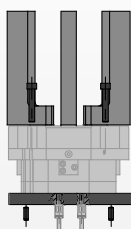


-DTH DIRECTCONNECT MOUNTING



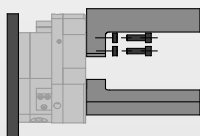
Body mounts with 4 screws and locates with 2 slip fit dowel pins for accuracy

The gripper can also be assembled from the bottom with 3 through body screws.



Gripper is protected from debris when operated upside down.

Gripper can be operated utilizing top manifold air ports.



Fingers are located on jaws with 2 dowel sleeves (provided) and assembled with 2 screws.

## Technical Specifications:

### Pneumatic Specifications

Pressure Operating Range without Springs  
Cylinder Type

### Imperial

30-100 psi

### Metric

2-7 bar

Double Acting  
or Double Acting Spring Assist  
or Single Acting Spring Return  
Internally Lubricated Viton®

### Dynamic Seals

Valve Required to Operate:

Double Acting  
Single Acting (-C or -O Option)

4-way, 2-position  
3-way, 2-position

### Air Quality Requirements

Air Filtration  
Air Lubrication  
Air Humidity

40 Micron or Better  
Not Necessary\*  
Low Moisture Content (dry)

### Temperature Operating Range

Buna-N Seals (Standard)  
Viton® Seals (Optional)

-30°~180° F    -35°~80° C  
-20°~300° F    -30°~150° C

### Maintenance Specifications†

Expected Life  
Normal Application  
w/ Preventative Maintenance  
Field Repairable  
Seal Repair Kits Available

5 million cycles  
10+ million cycles\*  
Yes  
Yes

\*Addition of lubrication will greatly increase service life  
† See Maintenance Section



# Product Features

## Viton® Seals (-V) Option

Optional Viton® seals for high temperatures (-20°F to +300°F / -30°~150° C)

## Finger Locating Sleeves

For precise finger mounting (standard)

## Jaw Components

Hardened and precision ground steel for minimum jaw play with hard plating for wear resistance and long life

## Multiple Air Ports

Side or top air ports (top ports require O-ring)

## Optional Spring Assist

Optional spring assist retains the component should the air supply fail, to assist the gripper for internal (-D) or external (-C) gripping, or in single acting or spring assist mode

## Standard and Extended Stroke (-L)

Each model of gripper is available in two stroke lengths

## Multiple Mounting Locations

Gripper can be mounted from the top or bottom

## Shielded Design

Gripper body is shielded to repel chips and other particulate from internal drive mechanism

## Multiple Sensing Capabilities

Up to 3 magneto resistive sensors (magnets built-in) or inductive sensors available [except -1M, -2M, -3M]

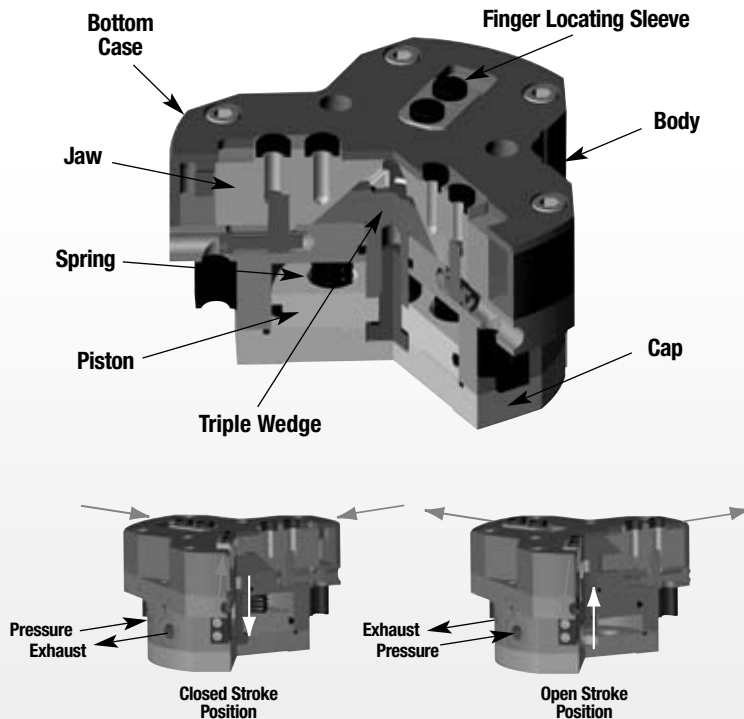
## DIRECTCONNECT™ Mounting Patterns

DIRECTCONNECT™ tapped & dowel mounting surface available on DTH version [except -6M, 7M, 8M]

## Standard Purge/Scavenge Port

Used with a vacuum for clean room environments or positive pressure for harsh environments

# Operating Principle



- A double acting piston is connected to a triple sided wedge.
- The triple wedge slides in a slot in each of the jaws converting the vertical motion of the wedge into a horizontal motion of the jaws.
- Each jaw moves within the slots. The design of the bottom case increases the rigidity and permits longer fingers. The large surface area of the guiding system permits higher moment loads.
- This gripper is suitable for internal or external gripping using single or double acting mode.

## Style -RTH/DTH Parallel Gripper

### Size -1M

	RTH/DTH-1M	RTH/DTH-1M-L
Total Stroke:	0.16 in. 4 mm	0.32 in. 8 mm
Grip Force:	200 lbs 889 N	130 lbs 579 N
Weight:	0.6 lbs 0.25 Kg	0.6 lbs 0.25 Kg



See Page **1.232**

## Style -RTH/DTH Parallel Gripper

### Size -2M

	RTH/DTH-2M	RTH/DTH-2M-L
Total Stroke:	0.24 in. 6 mm	0.47 in. 12 mm
Grip Force:	335 lbs 1490 N	220 lbs 979 N
Weight:	1.2 lbs 0.53 Kg	1.2 lbs 0.53 Kg



See Page **1.234**

## Style -RTH/DTH Parallel Gripper

### Size -3M

	RTH/DTH-3M	RTH/DTH-3M-L
Total Stroke:	0.31 in. 8 mm	0.63 in. 16 mm
Grip Force:	591 lbs 2627 N	384 lbs 1708 N
Weight:	2.4 lbs 1.08 Kg	2.4 lbs 1.08 Kg



See Page **1.236**

## Style -RTH/DTH Parallel Gripper

### Size -4M

	RTH/DTH-4M	RTH/DTH-4M-L
Total Stroke:	0.39 in. 10 mm	0.79 in. 20 mm
Grip Force:	1026 lbs 4562 N	667 lbs 667 N
Weight:	4.3 lbs 1.95 Kg	4.3 lbs 1.95 Kg



See Page **1.238**

## Style -RTH/DTH Parallel Gripper

### Size -5M

	RTH/DTH-5M	RTH/DTH-5M-L
Total Stroke:	0.51 in. 13 mm	1.02 in. 26 mm
Grip Force:	1771 lbs 7877 N	1152 lbs 5124 N
Weight:	8.6 lbs 3.9 Kg	8.6 lbs 3.9 Kg



See Page **1.240**

## Style -RTH Parallel Gripper

### Size -6M

	RTH-6M	RTH-6M-L
Total Stroke:	0.63 in. 16 mm	1.26 in. 32 mm
Grip Force:	3099 lbs 13786 N	2017 lbs 8971 N
Weight:	17.4 lbs 7.9 Kg	17.4 lbs 7.9 Kg



See Page **1.242**

## Style -RTH Parallel Gripper

### Size -7M

	RTH-7M	RTH-M-L
Total Stroke:	0.98 in. 25 mm	1.97 in. 50 mm
Grip Force:	4967 lbs 22093 N	3222 lbs 14322 N
Weight:	34.6 lbs 15.7 Kg	34.6 lbs 15.7 Kg



See Page **1.244**

## Style -RTH Parallel Gripper

### Size -8M

	RTH-8M	RTH-8M-L
Total Stroke:	1.38 in. 35 mm	2.76 in. 70 mm
Grip Force:	9971 lbs 44354 N	6450 lbs 28690 N
Weight:	96.8 lbs 43.9 Kg	96.8 lbs 43.9 Kg



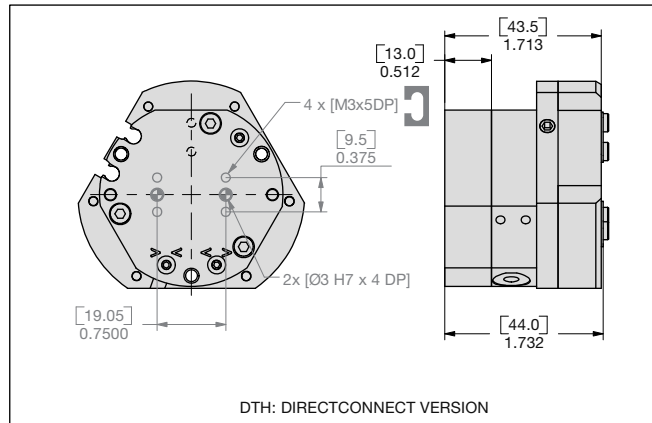
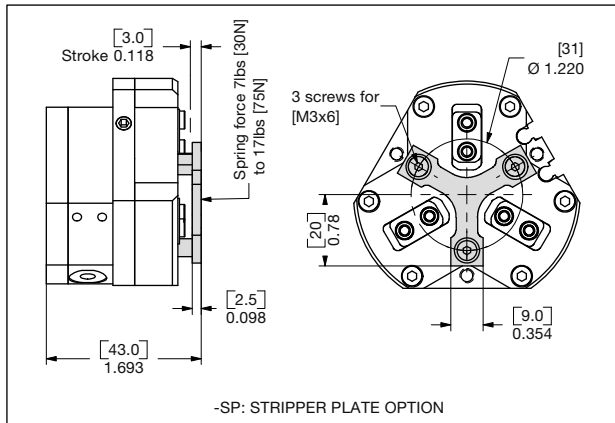
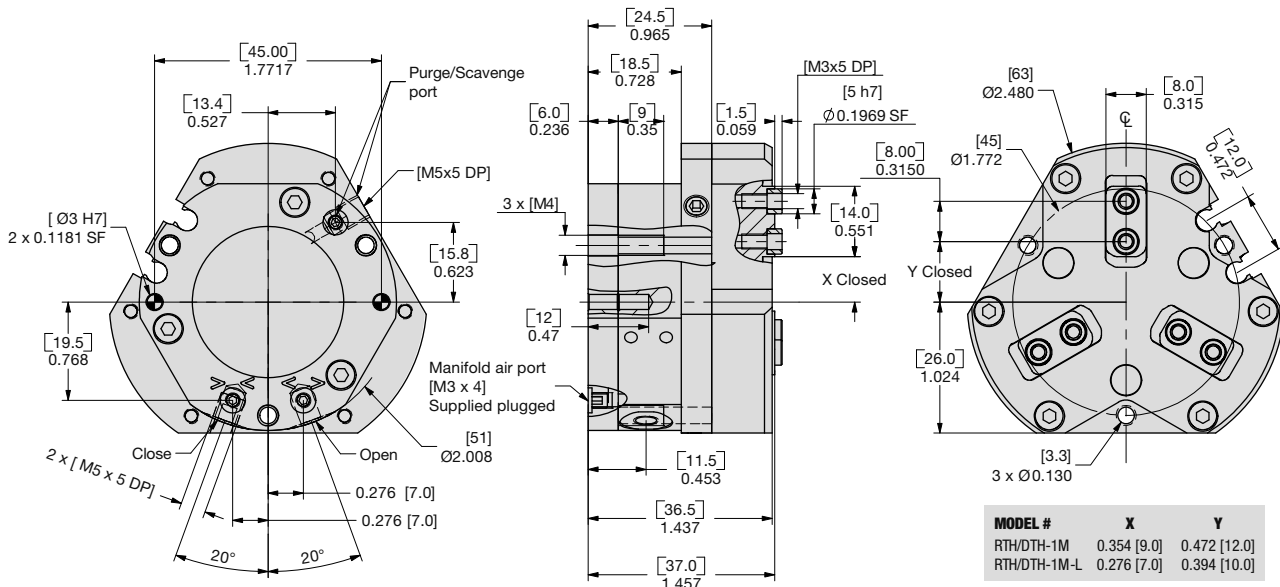
See Page **1.246**





# PARALLEL GRIPPER RTH/DTH-1M 3-JAW CENTERING SERIES

1.232



UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

Symbol	Imperial in.	Metric [mm]
⌀	0.00 = ±.01	[0.] = [±.25]
⊕	0.000 = ±.005	[0.0] = [±.13]
⊖	0.0000 = ±.0005	[0.00] = [±.013]

Dimensions are symmetrical about centerline. Third Angle Projection. All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or [±.013mm]. Metric Threads Course Pitch.

NOTE: DIRECTCONNECT™ DIMENSIONS ARE SHOWN IN BLUE

## How to Order: (Order Accessories separately from Basic Model)

BASIC MODEL SIZE METRIC SPRING ASSIST



EXTENDED STROKE STRIPPER PLATE

**BASIC MODEL** RTH Without DIRECTCONNECT Mounting Pattern  
DTH With DIRECTCONNECT Mounting Pattern

**SIZE** 1

**METRIC** M

**EXTENDED STROKE** L 0.16" [4mm] Leave Blank (standard)  
0.32" [8mm]

**SPRING** C Spring Closed  
O Spring Open  
— Leave Blank. No Spring Option (standard)

**STRIPPER PLATE** SP

**VITON® SEALS** V High Temperature Viton® Seals

### SAMPLE ORDER: DTH-1M-L-C-SP-V

Ex: DTH-1M DIRECTCONNECT Gripper, Metric, 8mm Extended Stroke, Spring Closed, Stripper Plate, Viton® Seals

### SENSOR ACCESSORIES\*

PNP Magneto Resistive Sensor Short Barrel w/Qk Disc*	<b>OHSP-017</b>	<b>1 or 2</b>
NPN Magneto Resistive Sensor Short Barrel w/Qk Disc*	<b>OHSN-017</b>	<b>1 or 2</b>
PNP Magneto Resistive Sensor (90° barrel) w/Qk. Disc*	<b>OHSP-011</b>	<b>1 or 2</b>
NPN Magneto Resistive Sensor (90° barrel) w/Qk. Disc*	<b>OHSN-011</b>	<b>1 or 2</b>
Quick Disconnect 2 Meter Cable Length*	<b>CABL-010</b>	<b>1 or 2</b>
Quick Disconnect 5 Meter Cable Length*	<b>CABL-013</b>	<b>1 or 2</b>

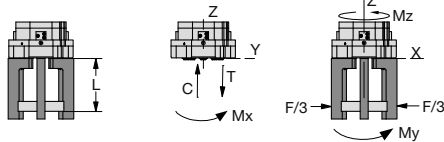
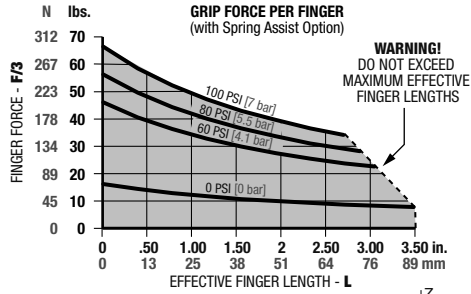
### PNEUMATIC ACCESSORIES

Buna-N Seal Repair Kit	<b>SLKT-347</b>	<b>1</b>
Buna-N Rear Inlet Seal Repair Kit	<b>SLKT-363</b>	<b>1</b>
Viton® Seal Repair Kit	<b>SLKT-347V</b>	<b>1</b>
Viton® Rear Inlet Seal Repair Kit	<b>SLKT-363V</b>	<b>1</b>
M5 Adjustable Flow Control	<b>VLVF-008</b>	<b>1 or 2</b>

\*Sensor and cable sold separately.



## RTH/DTH-1M Loading Information

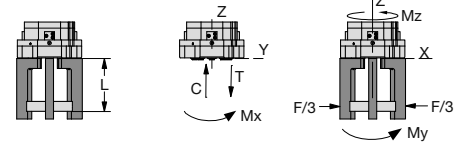
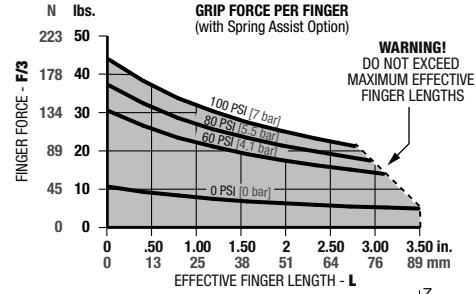


### Loading Capacity†

	Static	Dynamic
Maximum Tensile <b>T</b>	182 lbs. [810 N]	20 lbs. [89 N]
Maximum Compressive <b>C</b>	238 lbs. [1060 N]	20 lbs. [89 N]
Maximum Moment <b>M<sub>x</sub></b>	195 in.-lbs. [22 Nm]	18 in.-lbs. [2 Nm]
Maximum Moment <b>M<sub>y</sub></b>	248 in.-lbs. [28 Nm]	27 in.-lbs. [3 Nm]
Maximum Moment <b>M<sub>z</sub></b>	159 in.-lbs. [18 Nm]	27 in.-lbs. [3 Nm]

†Capacities are per set of jaws and are not simultaneous

## RTH/DTH-1M-L Loading Information



### Loading Capacity†

	Static	Dynamic
Maximum Tensile <b>T</b>	164 lbs. [730 N]	13 lbs. [57 N]
Maximum Compressive <b>C</b>	216 lbs. [960 N]	13 lbs. [57 N]
Maximum Moment <b>M<sub>x</sub></b>	177 in.-lbs. [20 Nm]	9 in.-lbs. [1 Nm]
Maximum Moment <b>M<sub>y</sub></b>	204 in.-lbs. [23 Nm]	9 in.-lbs. [1 Nm]
Maximum Moment <b>M<sub>z</sub></b>	133 in.-lbs. [15 Nm]	9 in.-lbs. [1 Nm]

†Capacities are per set of jaws and are not simultaneous

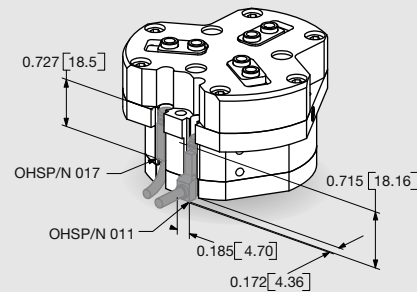
### Specifications

Total Rated Grip Force, <b>F</b> @ 100 psi [7 bar]:		
Without Spring Assist	153 lbs.	682 N
Without Spring Assist <b>-L</b>	100 lbs.	443 N
With Spring Assist	200 lbs.	889 N
With Spring Assist <b>-L</b>	130 lbs.	579 N
Total Stroke:		
Standard	0.16 in.	4 mm
Extended <b>-L</b>	0.32 in.	8 mm
Weight	0.6 lbs.	0.25 kg
Pressure Range without Spring	30-100 psi	2-7 Bar
Pressure Range with Spring	60-100 psi	4-7 Bar

### Specifications (cont.)

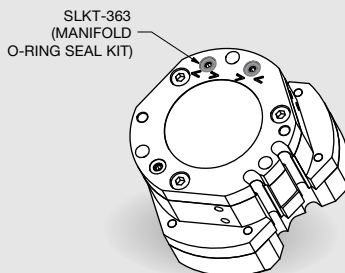
Max. Vacuum for Scavenge Port	8 in. Hg	20 mm Hg
Max. Pressure for Purge Port	30 psi	2.1 Bar
Cylinder Bore $\emptyset$	1.62 in.	32 mm
Displacement	0.40 in <sup>3</sup>	6.5 cm <sup>3</sup>
Temperature Range	-20°~300° F	-30°~150° C
Actuation (open/close)	0.06 sec./0.06 sec.	
Accuracy	±0.002 in.	±0.04 mm
Repeatability	±0.001 in.	±0.02 mm
Valve required to actuate single acting		3-way, 2-position
Valve required to actuate double acting		4-way, 2-position

## Accessory Mounting Technical Data



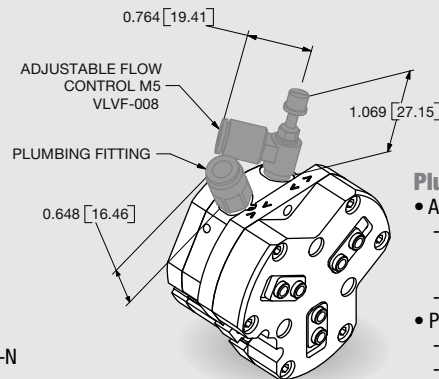
### Magneto Resistive Sensors

- PNP and NPN Magneto Resistive available
- Sensors are slot mounted, no mounting kits required
- Simple adjustment with slotted screw driver
- Built in LED for ease of positioning and troubleshooting
- Available with 2M or 5M Quick Disconnect mating cable (order separately)



### Manifold O-Ring seals

- Used to seal top air ports and purge/scavenge port
- No C'bore holes in customer's mounting plate required (C'bore are machined in the gripper's body)
- Seals in manifold kit are Buna-N (Viton® seal kit SLKT-363V)

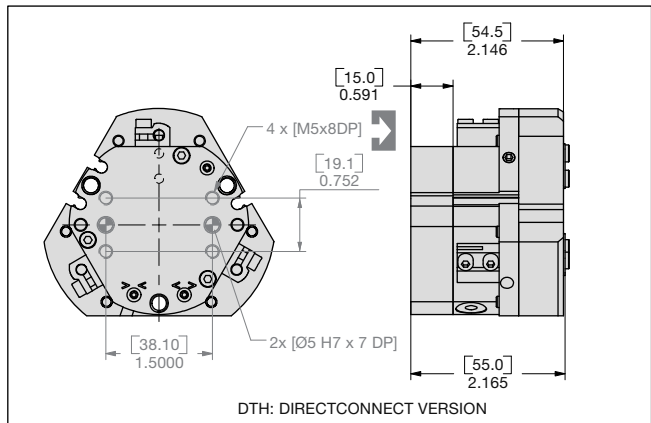
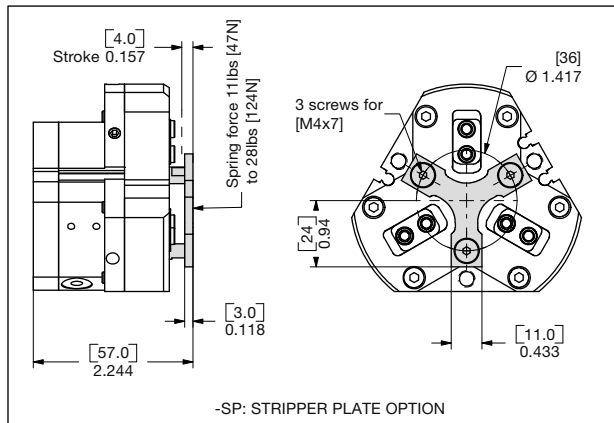
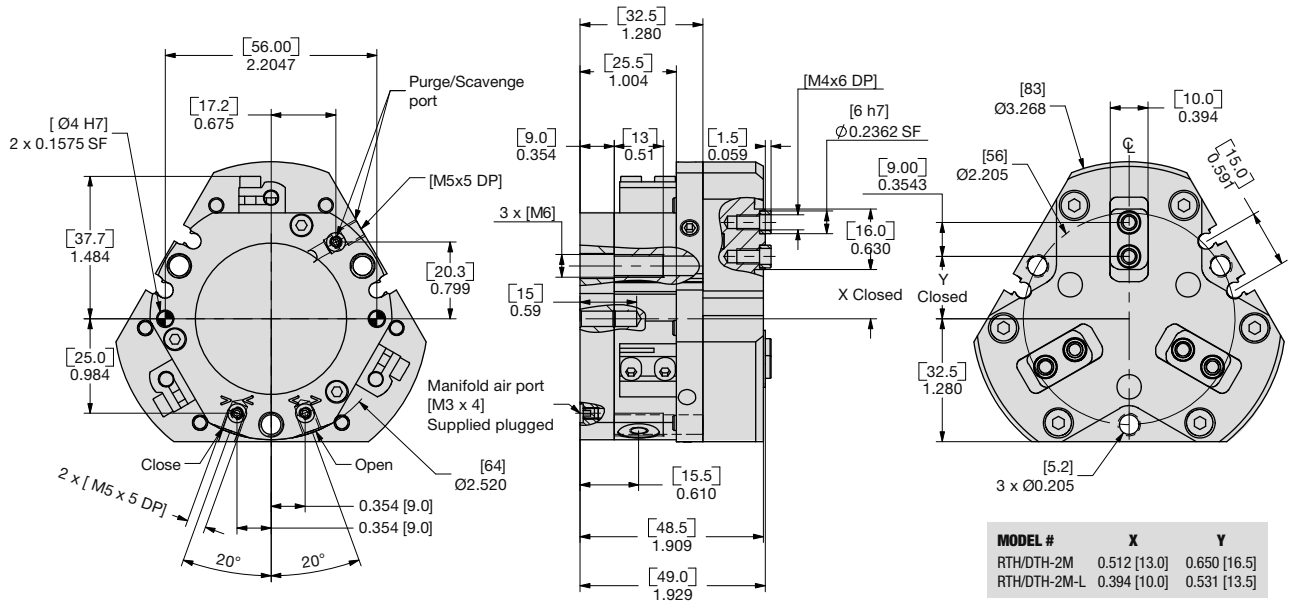


### Plumbing Fittings

- Adjustable flow controls:
  - Have thumb screw adjust with locking nut for adjusting actuation time
  - Available for 6mm OD tubing
- Plumbing fittings:
  - For side air port location
  - Top air port are plugged as standard

# PARALLEL GRIPPER RTH/DTH-2M 3-JAW CENTERING SERIES

1.234



UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

Symbol	Imperial in.	Metric [mm]
⌀	0.00 ± .01	0.1 ± .25
±	0.000 ± .005	0.0 ± .13
±	0.0000 ± .0005	0.00 ± .013

Dimensions are symmetrical about centerline  
 Third Angle Projection  
 All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or ±.013mm  
 Metric Threads Course Pitch

NOTE: DIRECTCONNECT™ DIMENSIONS ARE SHOWN IN BLUE

## How to Order: (Order Accessories separately from Basic Model)

BASIC MODEL SIZE METRIC SPRING ASSIST

**2 M L SP V**

EXTENDED STROKE STRIPPER PLATE

**BASIC MODEL** RTH Without DIRECTCONNECT Mounting Pattern  
DTH With DIRECTCONNECT Mounting Pattern

**SIZE** 2

**METRIC** M

**EXTENDED STROKE** L 0.24" [6mm] Leave Blank (standard)  
0.47" [12mm]

**SPRING** C Spring Closed  
O Spring Open  
Leave Blank. No Spring Option (standard)

**STRIPPER PLATE** SP

**VITON® SEALS** V High Temperature Viton® Seals

### SAMPLE ORDER: DTH-2M-L-C-SP-V

Ex: DTH-2M DIRECTCONNECT Gripper, Metric, 12mm Extended Stroke, Spring Closed, Stripper Plate, Viton® Seals

### SENSOR ACCESSORIES\*

PNP Magneto Resistive Sensor Short Barrel w/Qk Disc*	<b>OHSP-017</b>	<b>1, 2 or 3</b>
NPN Magneto Resistive Sensor Short Barrel w/Qk Disc*	<b>OHSN-017</b>	<b>1, 2 or 3</b>
PNP Magneto Resistive Sensor (90° barrel) w/Qk. Disc*	<b>OHSP-011</b>	<b>1, 2 or 3</b>
NPN Magneto Resistive Sensor (90° barrel) w/Qk. Disc*	<b>OHSN-011</b>	<b>1, 2 or 3</b>
Quick Disconnect 2 Meter Cable Length*	<b>CABL-010</b>	<b>1, 2 or 3</b>
Quick Disconnect 5 Meter Cable Length*	<b>CABL-013</b>	<b>1, 2 or 3</b>

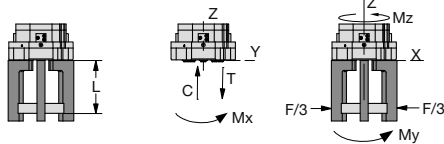
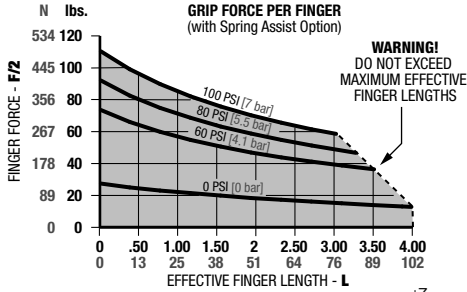
### PNEUMATIC ACCESSORIES

Buna-N Seal Repair Kit	<b>SLKT-348</b>	<b>1</b>
Buna-N Rear Inlet Seal Repair Kit	<b>SLKT-363</b>	<b>1</b>
Viton® Seal Repair Kit	<b>SLKT-348V</b>	<b>1</b>
Viton® Rear Inlet Seal Repair Kit	<b>SLKT-363V</b>	<b>1</b>
M5 Adjustable Flow Control	<b>VLVF-008</b>	<b>1 or 2</b>

\*Sensor and cable sold separately.



## RTH/DTH-2M Loading Information

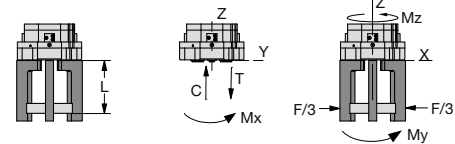
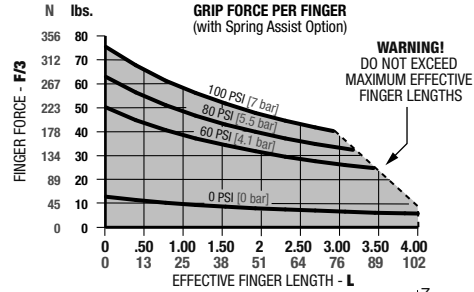


### Loading Capacity†

	Static	Dynamic
Maximum Tensile <b>T</b>	270 lbs. [1200 N]	29 lbs. [129 N]
Maximum Compressive <b>C</b>	351 lbs. [1560 N]	29 lbs. [129 N]
Maximum Moment <b>M<sub>x</sub></b>	398 in.-lbs. [45 Nm]	35 in.-lbs. [4 Nm]
Maximum Moment <b>M<sub>y</sub></b>	566 in.-lbs. [64 Nm]	53 in.-lbs. [6 Nm]
Maximum Moment <b>M<sub>z</sub></b>	363 in.-lbs. [41 Nm]	53 in.-lbs. [6 Nm]

†Capacities are per set of jaws and are not simultaneous

## RTH/DTH-2M-L Loading Information



### Loading Capacity†

	Static	Dynamic
Maximum Tensile <b>T</b>	243 lbs. [1080 N]	19 lbs. [84 N]
Maximum Compressive <b>C</b>	315 lbs. [1400 N]	19 lbs. [84 N]
Maximum Moment <b>M<sub>x</sub></b>	354 in.-lbs. [40 Nm]	27 in.-lbs. [3 Nm]
Maximum Moment <b>M<sub>y</sub></b>	460 in.-lbs. [52 Nm]	35 in.-lbs. [4 Nm]
Maximum Moment <b>M<sub>z</sub></b>	292 in.-lbs. [33 Nm]	35 in.-lbs. [4 Nm]

†Capacities are per set of jaws and are not simultaneous

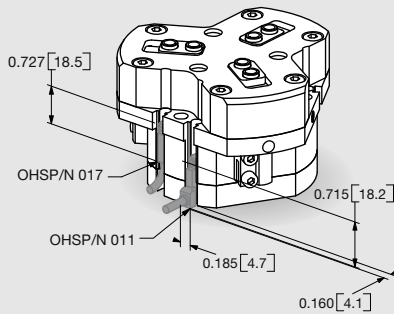
### Specifications

Total Rated Grip Force, <b>F</b> @ 100 psi [7 bar]:		
Without Spring Assist	278 lbs.	1238 N
Without Spring Assist <b>-L</b>	183 lbs.	812 N
With Spring Assist	335 lbs.	1490 N
With Spring Assist <b>-L</b>	220 lbs.	979 N
Total Stroke:		
Standard	0.24 in.	6 mm
Extended <b>-L</b>	0.47 in.	12 mm
Weight	1.2 lbs.	0.53 Kg
Pressure Range without Spring	30-100 psi	2-7 Bar
Pressure Range with Spring	60-100 psi	4-7 Bar

### Specifications (cont.)

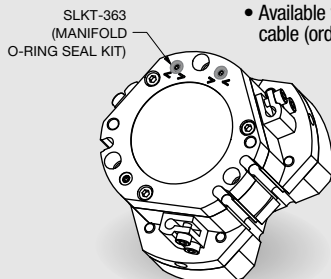
Max. Vacuum for Scavenge Port	8 in. Hg	20 mm Hg
Max. Pressure for Purge Port	30 psi	2.1 Bar
Cylinder Bore $\emptyset$	1.70 in.	43 mm
Displacement	1.05 in <sup>3</sup>	17 cm <sup>3</sup>
Temperature Range	-20°~300° F	-30°~150° C
Actuation (open/close)	0.07 sec./0.07 sec.	
Accuracy	±0.002 in.	±0.04 mm
Repeatability	±0.001 in.	±0.02 mm
Valve required to actuate single acting	3-way, 2-position	
Valve required to actuate double acting	4-way, 2-position	

## Accessory Mounting Technical Data



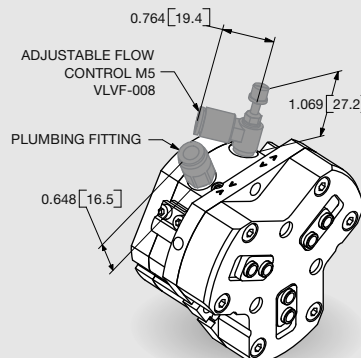
### Magneto Resistive Sensors

- PNP and NPN Magneto Resistive available
- Sensors are slot mounted, no mounting kits required
- Simple adjustment with slotted screw driver
- Built in LED for ease of positioning and troubleshooting
- Available with 2M or 5M Quick Disconnect mating cable (order separately)



### Manifold O-Ring seals

- Used to seal top air ports and purge/scavenge port
- No C' bore holes in customer's mounting plate required (C' bore are machined in the gripper's body)
- Seals in manifold kit are Buna-N (Viton® seal kit SLKT-363V)

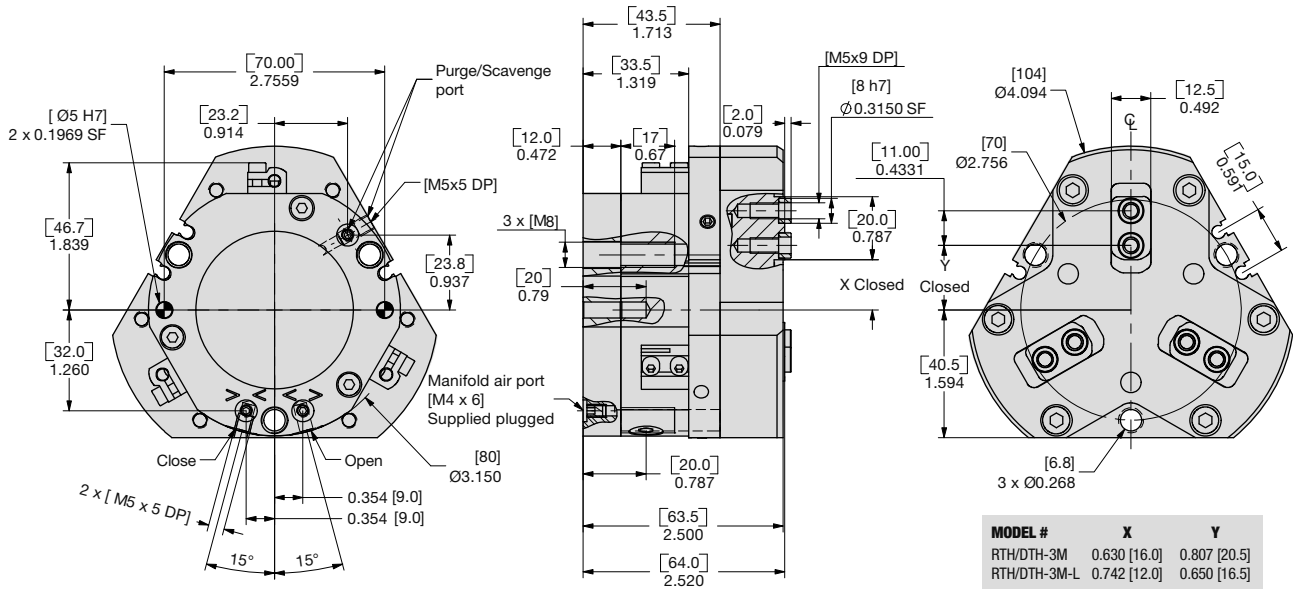
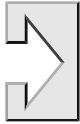


### Plumbing Fittings

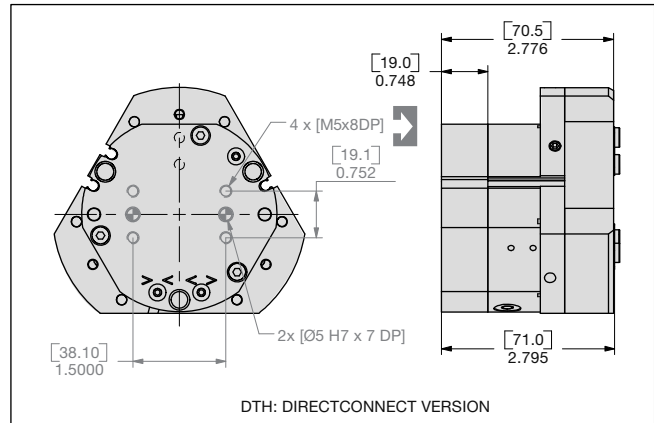
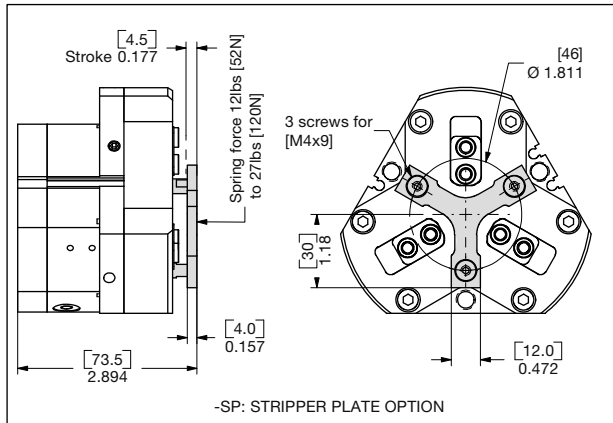
- Adjustable flow controls:
  - Have thumb screw adjust with locking nut for adjusting actuation time
  - Available for 6mm OD tubing
- Plumbing fittings:
  - For side air port location
  - Top air port are plugged as standard

# PARALLEL GRIPPER RTH/DTH-3M 3-JAW CENTERING SERIES

1.236



MODEL #	X	Y
RTH/DTH-3M	0.630 [16.0]	0.807 [20.5]
RTH/DTH-3M-L	0.742 [12.0]	0.650 [16.5]



UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

Symbol	Imperial in.	Metric [mm]
	0.00 = ±.01	[0.] = [±.25]
	0.000 = ±.005	[0.0] = [±.13]
	0.0000 = ±.0005	[0.00] = [±.013]

Dimensions are symmetrical about centerline. Third Angle Projection. All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or [±.013mm]. Metric Threads Course Pitch.

NOTE: DIRECTCONNECT™ DIMENSIONS ARE SHOWN IN BLUE

## How to Order: (Order Accessories separately from Basic Model)

BASIC MODEL SIZE METRIC SPRING ASSIST



EXTENDED STROKE STRIPPER PLATE

**BASIC MODEL** RTH Without DIRECTCONNECT Mounting Pattern  
DTH With DIRECTCONNECT Mounting Pattern

**SIZE** 3

**METRIC** M

**EXTENDED STROKE** L 0.31" [8mm] Leave Blank (standard)  
0.63" [16mm]

**SPRING** C Spring Closed  
O Spring Open  
— Leave Blank. No Spring Option (standard)

**STRIPPER PLATE** SP

**VITON® SEALS** V High Temperature Viton® Seals

### SAMPLE ORDER: DTH-3M-L-C-SP-V

Ex: DTH-3M DIRECTCONNECT Gripper, Metric, 16mm Extended Stroke, Spring Closed, Stripper Plate, Viton® Seals

### SENSOR ACCESSORIES\*

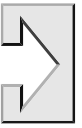
PNP Magneto Resistive Sensor Short Barrel w/Qk Disc*	<b>OHSP-017</b>	<b>1, 2 or 3</b>
NPN Magneto Resistive Sensor Short Barrel w/Qk Disc*	<b>OHSN-017</b>	<b>1, 2 or 3</b>
PNP Magneto Resistive Sensor (90° barrel) w/Qk. Disc*	<b>OHSP-011</b>	<b>1, 2 or 3</b>
NPN Magneto Resistive Sensor (90° barrel) w/Qk. Disc*	<b>OHSN-011</b>	<b>1, 2 or 3</b>
Quick Disconnect 2 Meter Cable Length*	<b>CABL-010</b>	<b>1, 2 or 3</b>
Quick Disconnect 5 Meter Cable Length*	<b>CABL-013</b>	<b>1, 2 or 3</b>

### PNEUMATIC ACCESSORIES

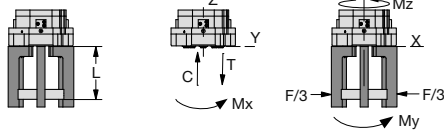
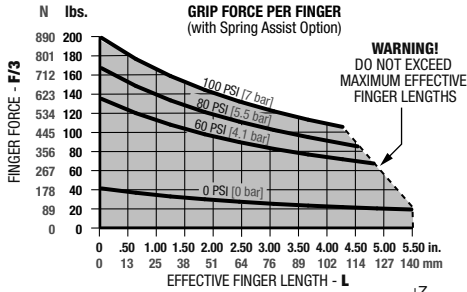
Buna-N Seal Repair Kit	<b>SLKT-349</b>	<b>1</b>
Buna-N Rear Inlet Seal Repair Kit	<b>SLKT-364</b>	<b>1</b>
Viton® Seal Repair Kit	<b>SLKT-349V</b>	<b>1</b>
Viton® Rear Inlet Seal Repair Kit	<b>SLKT-364V</b>	<b>1</b>
M5 Adjustable Flow Control	<b>VLVF-008</b>	<b>1 or 2</b>

\*Sensor and cable sold separately.





## RTH/DTH-3M Loading Information

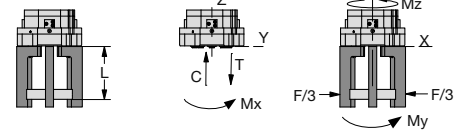
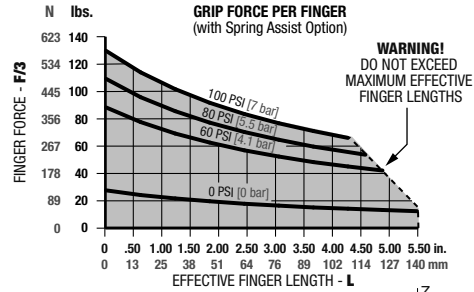


### Loading Capacity†

	Static	Dynamic
Maximum Tensile <b>T</b>	378 lbs. [1680 N]	68 lbs. [302 N]
Maximum Compressive <b>C</b>	490 lbs. [2180 N]	68 lbs. [302 N]
Maximum Moment <b>M<sub>x</sub></b>	637 in.-lbs. [72 Nm]	97 in.-lbs. [11 Nm]
Maximum Moment <b>M<sub>y</sub></b>	903 in.-lbs. [102 Nm]	142 in.-lbs. [16 Nm]
Maximum Moment <b>M<sub>z</sub></b>	584 in.-lbs. [66 Nm]	142 in.-lbs. [16 Nm]

†Capacities are per set of jaws and are not simultaneous

## RTH/DTH-3M-L Loading Information



### Loading Capacity†

	Static	Dynamic
Maximum Tensile <b>T</b>	337 lbs. [1500 N]	44 lbs. [197 N]
Maximum Compressive <b>C</b>	436 lbs. [1940 N]	44 lbs. [197 N]
Maximum Moment <b>M<sub>x</sub></b>	566 in.-lbs. [64 Nm]	62 in.-lbs. [7 Nm]
Maximum Moment <b>M<sub>y</sub></b>	717 in.-lbs. [81 Nm]	80 in.-lbs. [9 Nm]
Maximum Moment <b>M<sub>z</sub></b>	469 in.-lbs. [53 Nm]	80 in.-lbs. [9 Nm]

†Capacities are per set of jaws and are not simultaneous

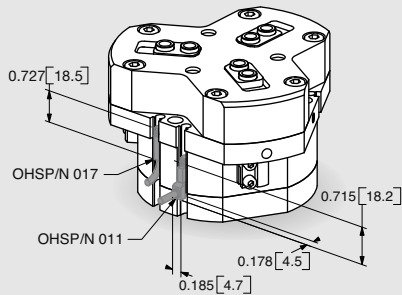
## Specifications

Total Rated Grip Force, <b>F</b> @ 100 psi [7 bar]:		
Without Spring Assist	467 lbs.	2078 N
Without Spring Assist <b>-L</b>	303 lbs.	1349 N
With Spring Assist	591 lbs.	2627 N
With Spring Assist <b>-L</b>	384 lbs.	1708 N
Total Stroke:		
Standard	0.31 in.	8 mm
Extended <b>-L</b>	0.63 in.	16 mm
Weight	2.4 lbs.	1.08 Kg
Pressure Range without Spring	30-100 psi	2-7 Bar
Pressure Range with Spring	50-100 psi	3.5-7 Bar

## Specifications (cont.)

Max. Vacuum for Scavenge Port	8 in. Hg	20 mm Hg
Max. Pressure for Purge Port	30 psi	2.1 Bar
Cylinder Bore $\emptyset$	2.17 in.	55 mm
Displacement	2.30 in <sup>3</sup>	37 cm <sup>3</sup>
Temperature Range	-20°~300° F	-30°~150° C
Actuation (open/close)	0.08 sec./0.08 sec.	
Accuracy	±0.002 in.	±0.04 mm
Repeatability	±0.001 in.	±0.02 mm
Valve required to actuate single acting		3-way, 2-position
Valve required to actuate double acting		4-way, 2-position

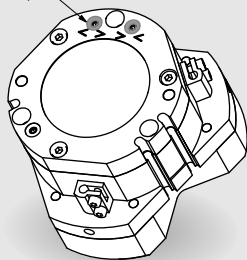
## Accessory Mounting Technical Data



### Magneto Resistive Sensors

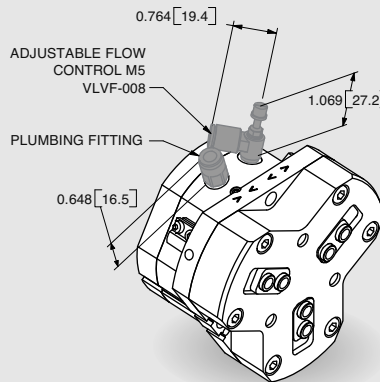
- PNP and NPN Magneto Resistive available
- Sensors are slot mounted, no mounting kits required
- Simple adjustment with slotted screw driver
- Built in LED for ease of positioning and troubleshooting
- Available with 2M or 5M Quick Disconnect mating cable (order separately)

SLKT-364  
(MANIFOLD  
O-RING SEAL KIT)



### Manifold O-Ring seals

- Used to seal top air ports and purge/scavenge port
- No C bore holes in customer's mounting plate required (C bore are machined in the gripper's body)
- Seals in manifold kit are Buna-N (Viton® seal kit SLKT-364V)



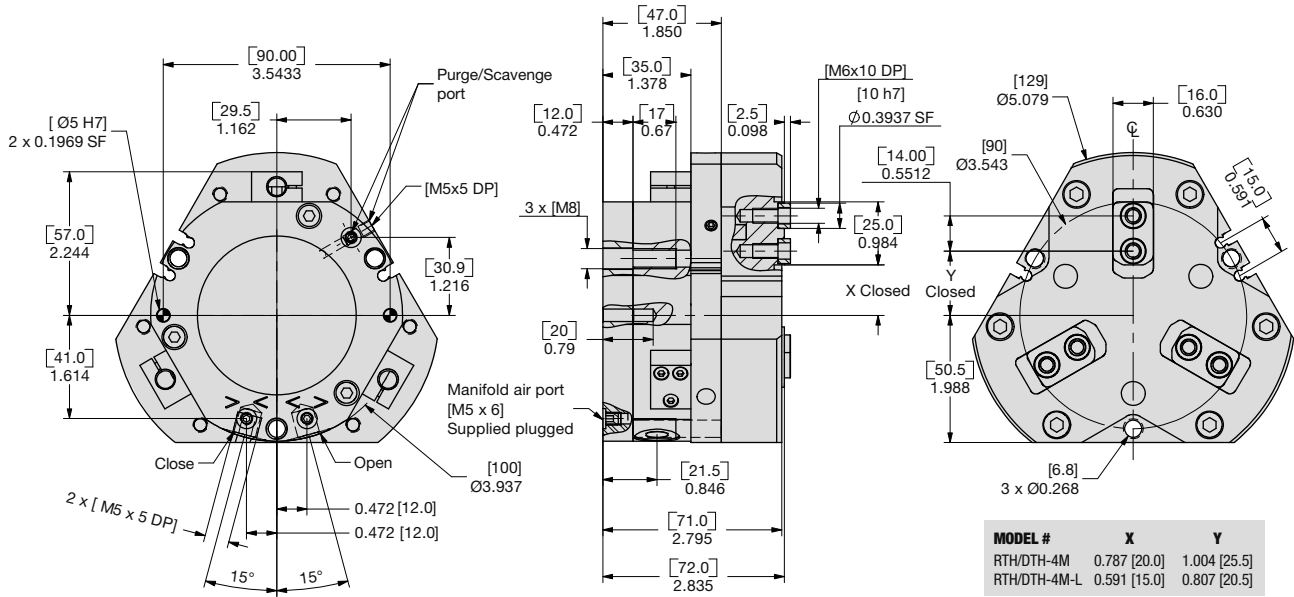
### Plumbing Fittings

- Adjustable flow controls:
  - Have thumb screw adjust with locking nut for adjusting actuation time
  - Available for 6mm OD tubing
- Plumbing fittings:
  - For side air port location
  - Top air port are plugged as standard

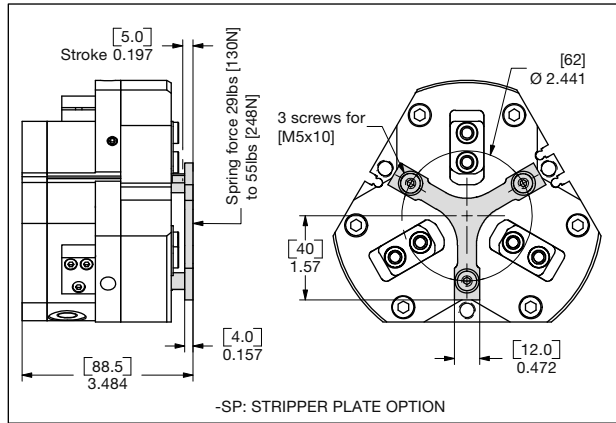


# PARALLEL GRIPPER RTH/DTH-4M 3-JAW CENTERING SERIES

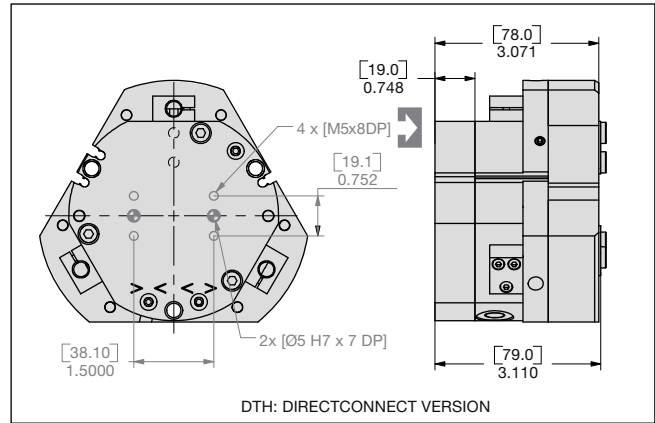
1.238



MODEL #	X	Y
RTH/DTH-4M	0.787 [20.0]	1.004 [25.5]
RTH/DTH-4M-L	0.591 [15.0]	0.807 [20.5]



-SP: STRIPPER PLATE OPTION



DTH: DIRECTCONNECT VERSION

**UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW**

Dimensions are symmetrical about centerline	Third Angle Projection	All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or ±.013mm	Metric Threads Course Pitch	<b>Imperial in.</b> 0.00 = ±.01 0.000 = ±.005 0.0000 = ±.0005	<b>Metric [mm]</b> [0.] = [±.25] [0.0] = [±.13] [0.00] = [±.013]
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NOTE: DIRECTCONNECT™ DIMENSIONS ARE SHOWN IN BLUE

**How to Order:** (Order Accessories separately from Basic Model)

**BASIC MODEL**   **SIZE**   **METRIC**   **SPRING ASSIST**



**EXTENDED STROKE**   **STRIPPER PLATE**

**BASIC MODEL**   **RTH** Without DIRECTCONNECT Mounting Pattern  
**DTH** With DIRECTCONNECT Mounting Pattern

**SIZE**   **4**

**METRIC**   **M**

**EXTENDED STROKE**   **L** 0.39" [10mm] Leave Blank (standard)  
**L** 0.79" [20mm]

**SPRING**   **C** Spring Closed  
**O** Spring Open  
— Leave Blank. No Spring Option (standard)

**STRIPPER PLATE**   **SP**

**VITON® SEALS**   **V** High Temperature Viton® Seals

**SAMPLE ORDER: DTH-4M-L-C-SP-V**

Ex: DTH-4M DIRECTCONNECT Gripper, Metric, 20mm Extended Stroke, Spring Closed, Stripper Plate, Viton® Seals

**SENSOR ACCESSORIES\***

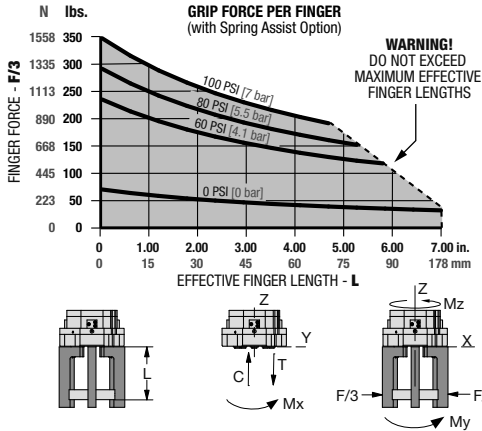
8mm NPN Inductive Sensor w/Quick Disconnect*	<b>OISN-011</b>	<b>1, 2 or 3</b>
8mm PNP Inductive Sensor w/Quick Disconnect*	<b>OISP-011</b>	<b>1, 2 or 3</b>
PNP Magneto Resistive Sensor Short Barrel w/Qk Disc*	<b>OHSP-017</b>	<b>1, 2 or 3</b>
NPN Magneto Resistive Sensor Short Barrel w/Qk Disc*	<b>OHSN-017</b>	<b>1, 2 or 3</b>
PNP Magneto Resistive Sensor (90° barrel) w/Qk. Disc*	<b>OHSP-011</b>	<b>1, 2 or 3</b>
NPN Magneto Resistive Sensor (90° barrel) w/Qk. Disc*	<b>OHSN-011</b>	<b>1, 2 or 3</b>
Quick Disconnect 2 Meter Cable Length*	<b>CABL-010</b>	<b>1, 2 or 3</b>
Quick Disconnect 5 Meter Cable Length*	<b>CABL-013</b>	<b>1, 2 or 3</b>

**PNEUMATIC ACCESSORIES**

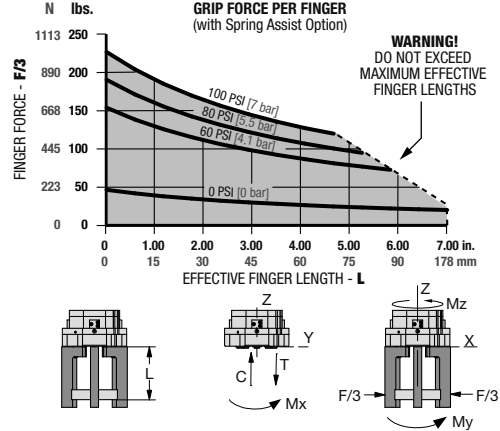
Buna-N Seal Repair Kit	<b>SLKT-350</b>	<b>1</b>
Buna-N Rear Inlet Seal Repair Kit	<b>SLKT-365</b>	<b>1</b>
Viton® Seal Repair Kit	<b>SLKT-350V</b>	<b>1</b>
Viton® Rear Inlet Seal Repair Kit	<b>SLKT-365V</b>	<b>1</b>
G 1/8" Adjustable Flow Control	<b>VLVF-005</b>	<b>1 or 2</b>
Adapter G 1/8 Male to 1/8 NPT Female	<b>PLFT-025</b>	<b>1 or 2</b>

\*Sensor and cable sold separately.

## RTH/DTH-4M Loading Information



## RTH/DTH-4M-L Loading Information



### Loading Capacity†

	Static	Dynamic
Maximum Tensile <b>T</b>	474 lbs. [2110 N]	96 lbs. [425 N]
Maximum Compressive <b>C</b>	627 lbs. [2790 N]	96 lbs. [425 N]
Maximum Moment <b>M<sub>x</sub></b>	814 in.-lbs. [92 Nm]	142 in.-lbs. [16 Nm]
Maximum Moment <b>M<sub>y</sub></b>	1133 in.-lbs. [182 Nm]	195 in.-lbs. [22 Nm]
Maximum Moment <b>M<sub>z</sub></b>	734 in.-lbs. [84 Nm]	195 in.-lbs. [22 Nm]

†Capacities are per set of jaws and are not simultaneous

### Loading Capacity†

	Static	Dynamic
Maximum Tensile <b>T</b>	423 lbs. [1880 N]	62 lbs. [275 N]
Maximum Compressive <b>C</b>	560 lbs. [2490 N]	62 lbs. [275 N]
Maximum Moment <b>M<sub>x</sub></b>	726 in.-lbs. [82 Nm]	89 in.-lbs. [10 Nm]
Maximum Moment <b>M<sub>y</sub></b>	903 in.-lbs. [102 Nm]	115 in.-lbs. [13 Nm]
Maximum Moment <b>M<sub>z</sub></b>	593 in.-lbs. [67 Nm]	115 in.-lbs. [13 Nm]

†Capacities are per set of jaws and are not simultaneous

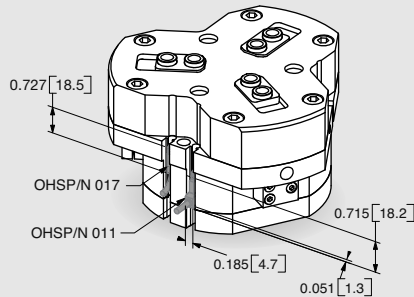
### Specifications

Total Rated Grip Force, <b>F</b> @ 100 psi [7 bar]:		
Without Spring Assist	819 lbs.	3644 N
Without Spring Assist <b>-L</b>	532 lbs.	2366 N
With Spring Assist	1026 lbs.	4562 N
With Spring Assist <b>-L</b>	667 lbs.	2967 N
Total Stroke:		
Standard	0.39 in.	10 mm
Extended <b>-L</b>	0.79 in.	20 mm
Weight	4.3 lbs.	1.95 Kg
Pressure Range without Spring	30-100 psi	2-7 Bar
Pressure Range with Spring	45-100 psi	3-7 Bar

### Specifications (cont.)

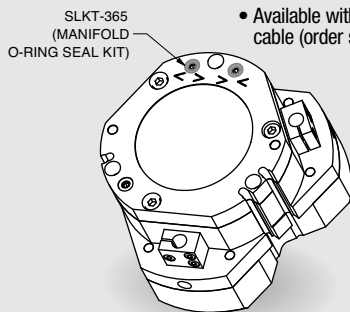
Max. Vacuum for Scavenge Port	8 in. Hg	20 mm Hg
Max. Pressure for Purge Port	30 psi	2.1 Bar
Cylinder Bore $\emptyset$	2.85 in.	72 mm
Displacement	4.90 in <sup>3</sup>	80 cm <sup>3</sup>
Temperature Range	-20°~300° F	-30°~150° C
Actuation (open/close)		0.1 sec./0.1 sec.
Accuracy		±0.0024 in. ±0.06 mm
Repeatability		±0.0012 in. ±0.03 mm
Valve required to actuate single acting		3-way, 2-position
Valve required to actuate double acting		4-way, 2-position

## Accessory Mounting Technical Data



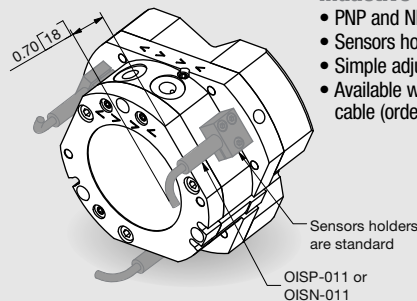
### Magneto Resistive Sensors

- PNP and NPN Magneto Resistive available
- Sensors are slot mounted, no mounting kits required
- Simple adjustment with slotted screw driver
- Built in LED for ease of positioning and troubleshooting
- Available with 2M or 5M Quick Disconnect mating cable (order separately)



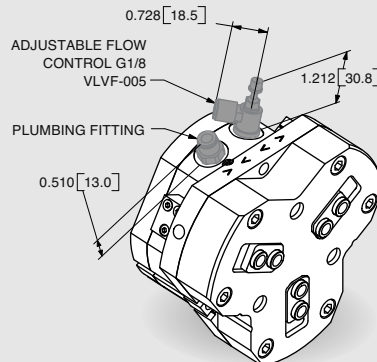
### Manifold O-Ring seals

- Used to seal top air ports and purge/scavenge port
- No C'bore holes in customer's mounting plate required (C'bore are machined in the gripper's body)
- Seals in manifold kit are Buna-N (Viton® seal kit SLKT-365V)



### Inductive Sensors

- PNP and NPN Magneto Resistive available
- Sensors holders and targets are standard mounted
- Simple adjustment of the target with screw driver
- Available with 2M or 5M Quick Disconnect mating cable (order separately)

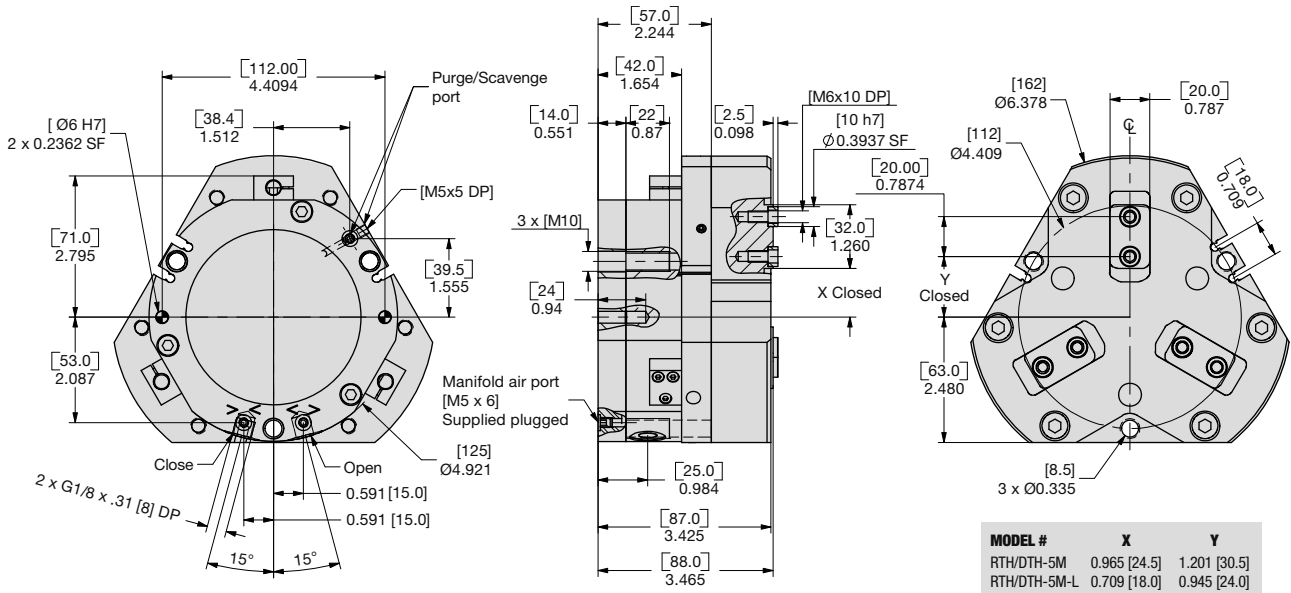


### Plumbing Fittings

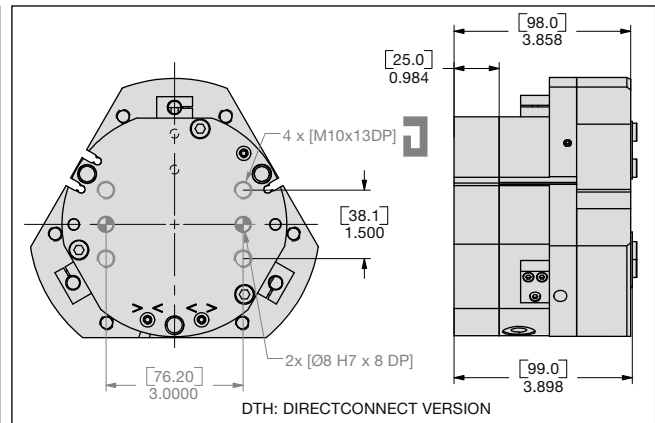
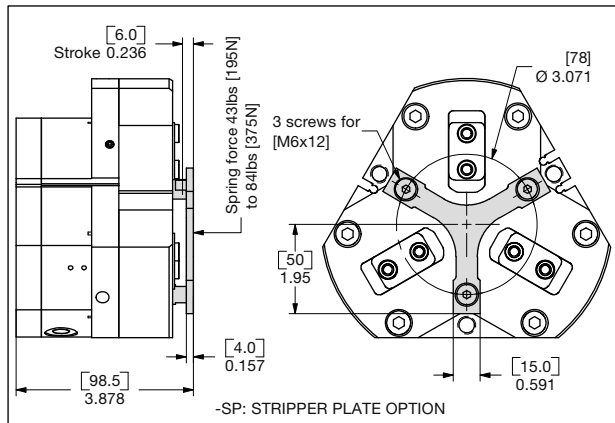
- Adjustable flow controls:
  - Have thumb screw adjust with locking nut for adjusting actuation time
  - Available for 6mm OD tubing
- Plumbing fittings:
  - For side air port location
  - Top air port are plugged as standard

# PARALLEL GRIPPER RTH/DTH-5M 3-JAW CENTERING SERIES

1.240



MODEL #	X	Y
RTH/DTH-5M	0.965 [24.5]	1.201 [30.5]
RTH/DTH-5M-L	0.709 [18.0]	0.945 [24.0]



**UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW**

Symbol	Imperial in.	Metric [mm]
	0.00 = ±.01	[0.] = [±.25]
	0.000 = ±.005	[0.0] = [±.13]
	0.0000 = ±.0005	[0.00] = [±.013]

Dimensions are symmetrical about centerline. Third Angle Projection. All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or [±.013mm]. Metric Threads Course Pitch.

NOTE: DIRECTCONNECT™ DIMENSIONS ARE SHOWN IN BLUE

## How to Order: (Order Accessories separately from Basic Model)

**BASIC MODEL** SIZE **METRIC** **SPRING ASSIST**

**5 M L SP V**

**EXTENDED STROKE** **STRIPPER PLATE**

<b>BASIC MODEL</b>	<b>RTH</b>	Without DIRECTCONNECT Mounting Pattern
	<b>DTH</b>	With DIRECTCONNECT Mounting Pattern
<b>SIZE</b>	<b>5</b>	
<b>METRIC</b>	<b>M</b>	
<b>EXTENDED STROKE</b>	<b>L</b>	0.51" [13mm] Leave Blank (standard) 1.02" [26mm]
<b>SPRING</b>	<b>C</b>	Spring Closed
	<b>O</b>	Spring Open
		Leave Blank. No Spring Option (standard)
<b>STRIPPER PLATE</b>	<b>SP</b>	
<b>VITON® SEALS</b>	<b>V</b>	High Temperature Viton® Seals

**SAMPLE ORDER: DTH-5M-L-C-SP-V**

Ex: DTH-5M DIRECTCONNECT Gripper, Metric, 26mm Extended Stroke, Spring Closed, Stripper Plate, Viton® Seals

**SENSOR ACCESSORIES\***

8mm NPN Inductive Sensor w/Quick Disconnect*	<b>OISN-011</b>	<b>1, 2 or 3</b>
8mm PNP Inductive Sensor w/Quick Disconnect*	<b>OISP-011</b>	<b>1, 2 or 3</b>
PNP Magneto Resistive Sensor Short Barrel w/Qk Disc*	<b>OHSP-017</b>	<b>1, 2 or 3</b>
NPN Magneto Resistive Sensor Short Barrel w/Qk Disc*	<b>OHSN-017</b>	<b>1, 2 or 3</b>
PNP Magneto Resistive Sensor (90° barrel) w/Qk. Disc*	<b>OHSP-011</b>	<b>1, 2 or 3</b>
NPN Magneto Resistive Sensor (90° barrel) w/Qk. Disc*	<b>OHSN-011</b>	<b>1, 2 or 3</b>
Quick Disconnect 2 Meter Cable Length*	<b>CABL-010</b>	<b>1, 2 or 3</b>
Quick Disconnect 5 Meter Cable Length*	<b>CABL-013</b>	<b>1, 2 or 3</b>

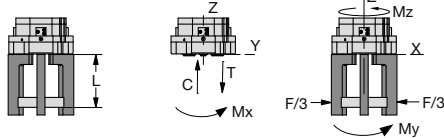
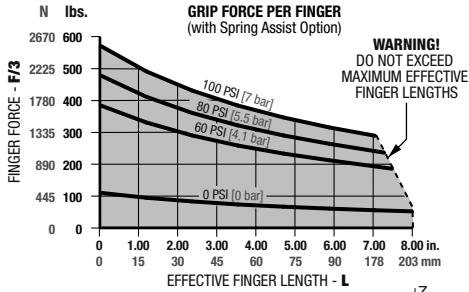
**PNEUMATIC ACCESSORIES**

Buna-N Seal Repair Kit	<b>SLKT-351</b>	<b>1</b>
Buna-N Rear Inlet Seal Repair Kit	<b>SLKT-365</b>	<b>1</b>
Viton® Seal Repair Kit	<b>SLKT-351V</b>	<b>1</b>
Viton® Rear Inlet Seal Repair Kit	<b>SLKT-365V</b>	<b>1</b>
G 1/8" Adjustable Flow Control	<b>VLVF-005</b>	<b>1 or 2</b>
Adapter G 1/8 Male to 1/8 NPT Female	<b>PLFT-025</b>	<b>1 or 2</b>

\*Sensor and cable sold separately.



## RTH/DTH-5M Loading Information

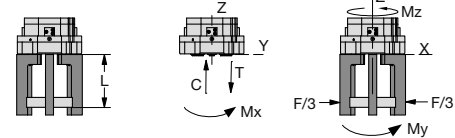
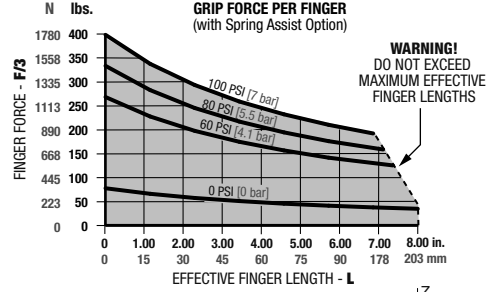


### Loading Capacity†

	Static	Dynamic
Maximum Tensile <b>T</b>	672 lbs. [2990 N]	152 lbs. [674 N]
Maximum Compressive <b>C</b>	895 lbs. [3980 N]	152 lbs. [674 N]
Maximum Moment <b>M<sub>x</sub></b>	1124 in.-lbs. [127 Nm]	221 in.-lbs. [25 Nm]
Maximum Moment <b>M<sub>y</sub></b>	1584 in.-lbs. [179 Nm]	310 in.-lbs. [35 Nm]
Maximum Moment <b>M<sub>z</sub></b>	1036 in.-lbs. [117 Nm]	310 in.-lbs. [35 Nm]

†Capacities are per set of jaws and are not simultaneous

## RTH/DTH-5M-L Loading Information



### Loading Capacity†

	Static	Dynamic
Maximum Tensile <b>T</b>	602 lbs. [2680 N]	97 lbs. [432 N]
Maximum Compressive <b>C</b>	803 lbs. [3570 N]	97 lbs. [432 N]
Maximum Moment <b>M<sub>x</sub></b>	1009 in.-lbs. [114 Nm]	142 in.-lbs. [16 Nm]
Maximum Moment <b>M<sub>y</sub></b>	1275 in.-lbs. [144 Nm]	177 in.-lbs. [20 Nm]
Maximum Moment <b>M<sub>z</sub></b>	832 in.-lbs. [94 Nm]	177 in.-lbs. [20 Nm]

†Capacities are per set of jaws and are not simultaneous

## Specifications

Total Rated Grip Force, **F @ 100 psi [7 bar]**:

Without Spring Assist	1428 lbs.	6353 N
Without Spring Assist <b>-L</b>	927 lbs.	4125 N
With Spring Assist	1771 lbs.	7877 N
With Spring Assist <b>-L</b>	1152 lbs.	5124 N

Total Stroke:

Standard	0.51 in.	13 mm
Extended <b>-L</b>	1.02 in.	26 mm

Weight

	8.6 lbs.	3.9 Kg
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Pressure Range without Spring

	30-100 psi	2-7 Bar
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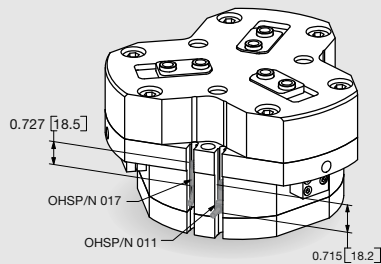
Pressure Range with Spring

	45-100 psi	3-7 Bar
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## Specifications (cont.)

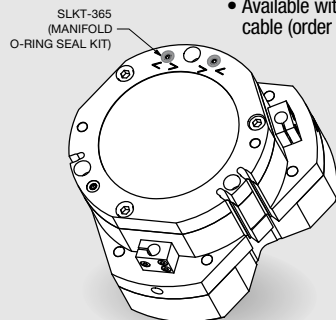
Max. Vacuum for Scavenge Port	8 in. Hg	20 mm Hg
Max. Pressure for Purge Port	30 psi	2.1 Bar
Cylinder Bore $\emptyset$	3.75 in.	95 mm
Displacement	11.0 in <sup>3</sup>	180 cm <sup>3</sup>
Temperature Range	-20°~300° F	-30°~150° C
Actuation (open/close)	0.19 sec./0.19 sec.	
Accuracy	±0.0024 in.	±0.06 mm
Repeatability	±0.0012 in.	±0.03 mm
Valve required to actuate single acting		3-way, 2-position
Valve required to actuate double acting		4-way, 2-position

## Accessory Mounting Technical Data



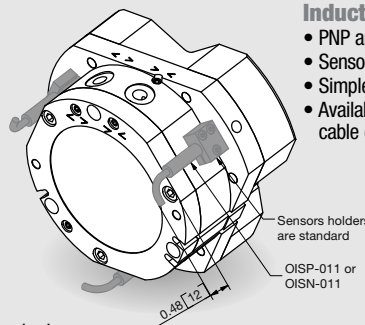
### Magneto Resistive Sensors

- PNP and NPN Magneto Resistive available
- Sensors are slot mounted, no mounting kits required
- Simple adjustment with slotted screw driver
- Built in LED for ease of positioning and troubleshooting
- Available with 2M or 5M Quick Disconnect mating cable (order separately)



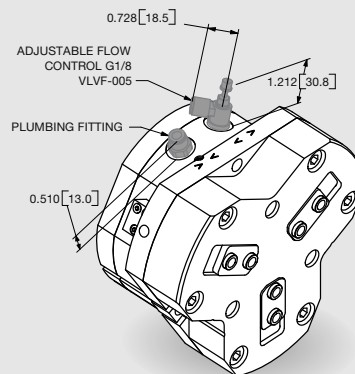
### Manifold O-Ring seals

- Used to seal top air ports and purge/scavenge port
- No C' bore holes in customer's mounting plate required (C' bore are machined in the gripper's body)
- Seals in manifold kit are Buna-N (Viton® seal kit SLKT-365V)



### Inductive Sensors

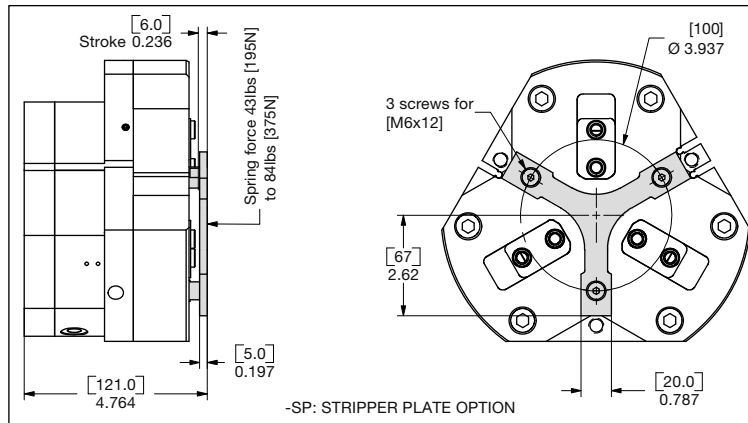
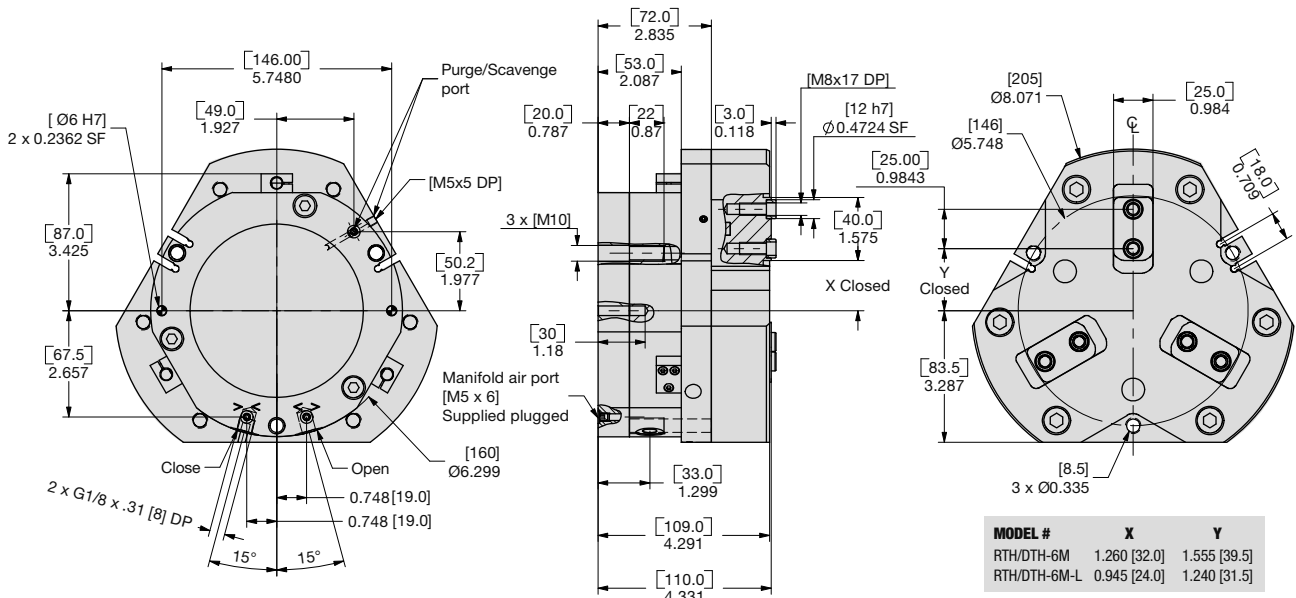
- PNP and NPN Magneto Resistive available
- Sensors holders and targets are standard mounted
- Simple adjustment of the target with screw driver
- Available with 2M or 5M Quick Disconnect mating cable (order separately)



### Plumbing Fittings

- Adjustable flow controls:
  - Have thumb screw adjust with locking nut for adjusting actuation time
  - Available for 6mm OD tubing
- Plumbing fittings:
  - For side air port location
  - Top air port are plugged as standard

# PARALLEL GRIPPER RTH-6M 3-JAW CENTERING SERIES



UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

Symbol	Imperial in.	Metric [mm]
	0.00 = ±.01	[0.] = [±.25]
	0.000 = ±.005	[0.0] = [±.13]
	0.0000 = ±.0005	[0.00] = [±.013]

Dimensions are symmetrical about centerline  
Third Angle Projection  
All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or [±.013mm]  
Metric Threads Course Pitch

NOTE: DIRECTCONNECT™ DIMENSIONS ARE SHOWN IN BLUE

## How to Order: (Order Accessories separately from Basic Model)

BASIC MODEL SIZE METRIC SPRING ASSIST

**RTH - 6 M - L - SP - V**

EXTENDED STROKE STRIPPER PLATE

**BASIC MODEL** RTH Without DIRECTCONNECT Mounting Pattern

**SIZE** 6

**METRIC** M

**EXTENDED STROKE** L 0.63" [16mm] Leave Blank (standard)  
L 1.26" [32mm]

**SPRING** C Spring Closed  
O Spring Open  
Leave Blank. No Spring Option (standard)

**STRIPPER PLATE** SP

**VITON® SEALS** V High Temperature Viton® Seals

### SENSOR ACCESSORIES\*

8mm NPN Inductive Sensor w/Quick Disconnect*	<b>OISN-011</b>	<b>1, 2 or 3</b>
8mm PNP Inductive Sensor w/Quick Disconnect*	<b>OISP-011</b>	<b>1, 2 or 3</b>
PNP Magneto Resistive Sensor Short Barrel w/Qk Disc*	<b>OHSP-017</b>	<b>1, 2 or 3</b>
NPN Magneto Resistive Sensor Short Barrel w/Qk Disc*	<b>OHSN-017</b>	<b>1, 2 or 3</b>
PNP Magneto Resistive Sensor (90° barrel) w/Qk. Disc*	<b>OHSP-011</b>	<b>1, 2 or 3</b>
NPN Magneto Resistive Sensor (90° barrel) w/Qk. Disc*	<b>OHSN-011</b>	<b>1, 2 or 3</b>
Quick Disconnect 2 Meter Cable Length*	<b>CABL-010</b>	<b>1, 2 or 3</b>
Quick Disconnect 5 Meter Cable Length*	<b>CABL-013</b>	<b>1, 2 or 3</b>

### PNEUMATIC ACCESSORIES

Buna-N Seal Repair Kit	<b>SLKT-352</b>	<b>1</b>
Buna-N Rear Inlet Seal Repair Kit	<b>SLKT-365</b>	<b>1</b>
Viton® Seal Repair Kit	<b>SLKT-352V</b>	<b>1</b>
Viton® Rear Inlet Seal Repair Kit	<b>SLKT-365V</b>	<b>1</b>
G 1/8" Adjustable Flow Control	<b>VLVF-005</b>	<b>1 or 2</b>
Adapter G 1/8 Male to 1/8 NPT Female	<b>PLFT-025</b>	<b>1 or 2</b>

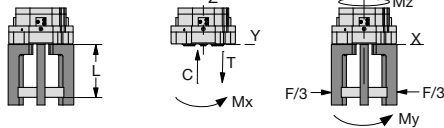
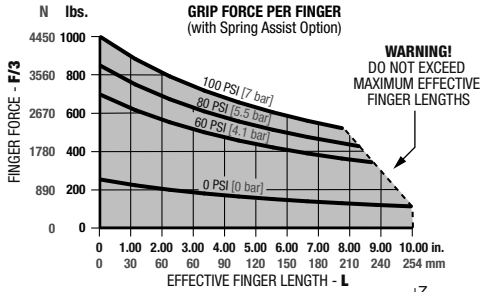
\*Sensor and cable sold separately.

### SAMPLE ORDER: RTH-6M-L-C-SP-V

Ex: RTH-6M Parallel Gripper, Metric, 32mm Extended Stroke, Spring Closed, Stripper Plate, Viton® Seals



## RTH/DTH-6M Loading Information

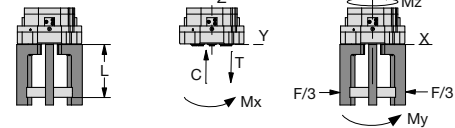
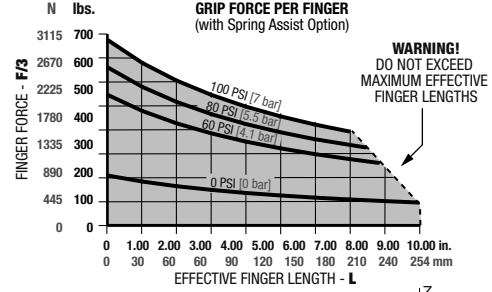


### Loading Capacity†

	Static	Dynamic
Maximum Tensile <b>T</b>	971 lbs. [4320 N]	296 lbs. [1315 N]
Maximum Compressive <b>C</b>	1306 lbs. [5810 N]	296 lbs. [1315 N]
Maximum Moment <b>M<sub>x</sub></b>	1522 in.-lbs. [172 Nm]	398 in.-lbs. [45 Nm]
Maximum Moment <b>M<sub>y</sub></b>	2213 in.-lbs. [250 Nm]	575 in.-lbs. [65 Nm]
Maximum Moment <b>M<sub>z</sub></b>	1452 in.-lbs. [164 Nm]	575 in.-lbs. [65 Nm]

†Capacities are per set of jaws and are not simultaneous

## RTH/DTH-6M-L Loading Information



### Loading Capacity†

	Static	Dynamic
Maximum Tensile <b>T</b>	868 lbs. [3860 N]	192 lbs. [852 N]
Maximum Compressive <b>C</b>	1165 lbs. [5180 N]	192 lbs. [852 N]
Maximum Moment <b>M<sub>x</sub></b>	1363 in.-lbs. [154 Nm]	257 in.-lbs. [29 Nm]
Maximum Moment <b>M<sub>y</sub></b>	1761 in.-lbs. [199 Nm]	327 in.-lbs. [37 Nm]
Maximum Moment <b>M<sub>z</sub></b>	1159 in.-lbs. [131 Nm]	327 in.-lbs. [37 Nm]

†Capacities are per set of jaws and are not simultaneous

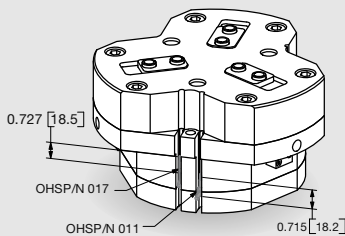
## Specifications

Total Rated Grip Force, <b>F</b> @ 100 psi [7 bar]:		
Without Spring Assist	2294 lbs.	10202 N
Without Spring Assist <b>-L</b>	1490 lbs.	6629 N
With Spring Assist	3099 lbs.	13786 N
With Spring Assist <b>-L</b>	2017 lbs.	8971 N
Total Stroke:		
Standard	0.63 in.	16 mm
Extended <b>-L</b>	1.26 in.	32 mm
Weight	17.4 lbs.	7.89 Kg
Pressure Range without Spring	30-100 psi	2-7 Bar
Pressure Range with Spring	55-100 psi	4-7 Bar

## Specifications (cont.)

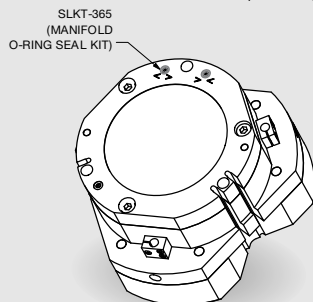
Max. Vacuum for Scavenge Port	8 in. Hg	20 mm Hg
Max. Pressure for Purge Port	30 psi	2.1 Bar
Cylinder Bore $\emptyset$	4.72 in.	120 mm
Displacement	22 in <sup>3</sup>	355 cm <sup>3</sup>
Temperature Range	-20°~300° F	-30°~150° C
Actuation (open/close)	0.36 sec./0.36 sec.	
Accuracy	±0.0032 in.	±0.08 mm
Repeatability	±0.002 in.	±0.04 mm
Valve required to actuate single acting		3-way, 2-position
Valve required to actuate double acting		4-way, 2-position

## Accessory Mounting Technical Data



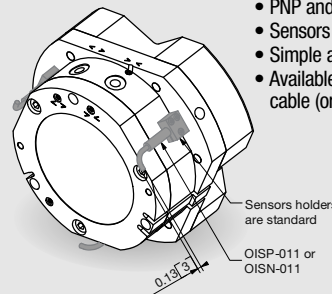
### Magneto Resistive Sensors

- PNP and NPN Magneto Resistive available
- Sensors are slot mounted, no mounting kits required
- Simple adjustment with slotted screw driver
- Built in LED for ease of positioning and troubleshooting
- Available with 2M or 5M Quick Disconnect mating cable (order separately)



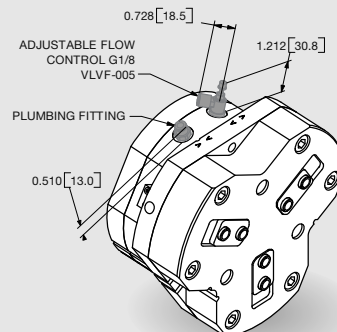
### Manifold O-Ring seals

- Used to seal top air ports and purge/scavenge port
- No C'bore holes in customer's mounting plate required (C'bore are machined in the gripper's body)
- Seals in manifold kit are Buna-N (Viton® seal kit SLKT-365V)



### Inductive Sensors

- PNP and NPN Magneto Resistive available
- Sensors holders and targets are standard mounted
- Simple adjustment of the target with screw driver
- Available with 2M or 5M Quick Disconnect mating cable (order separately)

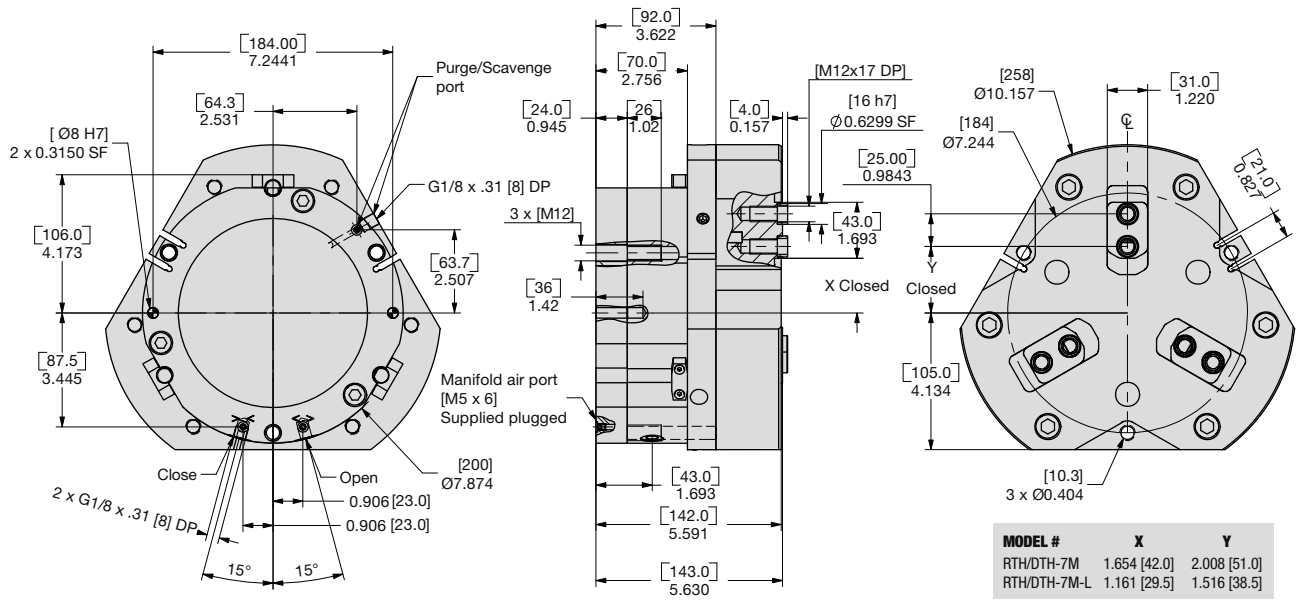


### Plumbing Fittings

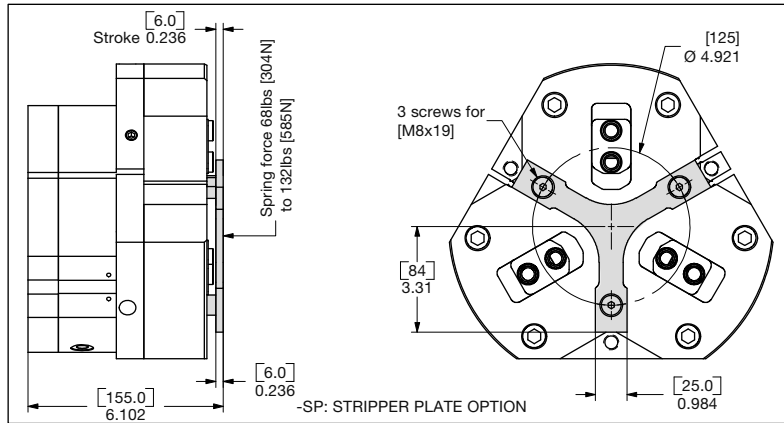
- Adjustable flow controls:
  - Have thumb screw adjust with locking nut for adjusting actuation time
  - Available for 6mm OD tubing
- Plumbing fittings:
  - For side air port location
  - Top air port are plugged as standard



# PARALLEL GRIPPER RTH-7M 3-JAW CENTERING SERIES



MODEL #	X	Y
RTH/DTH-7M	1.654 [42.0]	2.008 [51.0]
RTH/DTH-7M-L	1.161 [29.5]	1.516 [38.5]



UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

Dimensions are symmetrical about centerline	Third Angle Projection	All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or ±.013mm	Metric Threads Course Pitch	<b>Imperial in.</b> 0.00 = ±.01 0.000 = ±.005 0.0000 = ±.0005	<b>Metric [mm]</b> [0.] = [±.25] [0.0] = [±.13] [0.00] = [±.013]
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NOTE: DIRECTCONNECT™ DIMENSIONS ARE SHOWN IN BLUE

## How to Order: (Order Accessories separately from Basic Model)

BASIC MODEL SIZE METRIC SPRING ASSIST

**RTH - 7 M - L - SP - V**

EXTENDED STROKE STRIPPER PLATE

<b>BASIC MODEL</b>	<b>RTH</b>	Without DIRECTCONNECT Mounting Pattern
<b>SIZE</b>	<b>7</b>	
<b>METRIC</b>	<b>M</b>	
<b>EXTENDED STROKE</b>	<b>L</b>	0.98" [25mm] Leave Blank (standard) 1.97" [50mm]
<b>SPRING</b>	<b>C</b>	Spring Closed
	<b>O</b>	Spring Open
		Leave Blank. No Spring Option (standard)
<b>STRIPPER PLATE</b>	<b>SP</b>	
<b>VITON® SEALS</b>	<b>V</b>	High Temperature Viton® Seals

### SENSOR ACCESSORIES\*

12mm NPN Inductive Sensor M12 w/Quick Disconnect*	<b>OISN-017</b>	<b>1, 2 or 3</b>
12mm PNP Inductive Sensor M12 w/Quick Disconnect*	<b>OISP-017</b>	<b>1, 2 or 3</b>
PNP Magneto Resistive Sensor M8 w/Qk Disc*	<b>OHSP-017</b>	<b>1, 2 or 3</b>
NPN Magneto Resistive Sensor M8 w/Qk Disc*	<b>OHSN-017</b>	<b>1, 2 or 3</b>
PNP Magneto Resistive Sensor (90° barrel) M8 w/Qk. Disc*	<b>OHSP-011</b>	<b>1, 2 or 3</b>
NPN Magneto Resistive Sensor (90° barrel) M8 w/Qk. Disc*	<b>OHSN-011</b>	<b>1, 2 or 3</b>
M8 Quick Disconnect 2 Meter Cable Length*	<b>CABL-010</b>	<b>1, 2 or 3</b>
M8 Quick Disconnect 5 Meter Cable Length*	<b>CABL-013</b>	<b>1, 2 or 3</b>
M12 Quick Disconnect 2 Meter Cable Length*	<b>CABL-014</b>	<b>1, 2 or 3</b>
M12 Quick Disconnect 5 Meter Cable Length*	<b>CABL-018</b>	<b>1, 2 or 3</b>

### PNEUMATIC ACCESSORIES

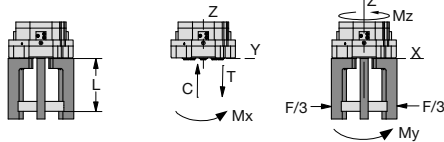
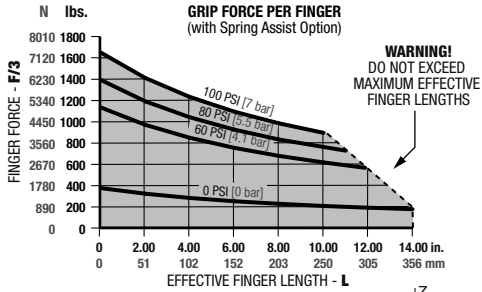
Buna-N Seal Repair Kit	<b>SLKT-353</b>	<b>1</b>
Buna-N Rear Inlet Seal Repair Kit	<b>SLKT-365</b>	<b>1</b>
Viton® Seal Repair Kit	<b>SLKT-353V</b>	<b>1</b>
Viton® Rear Inlet Seal Repair Kit	<b>SLKT-365V</b>	<b>1</b>
G 1/8" Adjustable Flow Control	<b>VLVF-005</b>	<b>1 or 2</b>

\*Sensor and cable sold separately.

### SAMPLE ORDER: RTH-7M-L-C-SP-V

Ex: RTH-7M Parallel Gripper, Metric, 50mm Extended Stroke, Spring Closed, Stripper Plate, Viton® Seals

## RTH/DTH-7M Loading Information

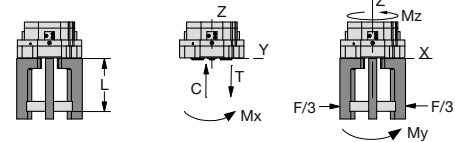
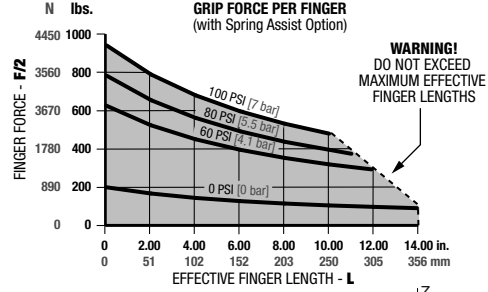


### Loading Capacity†

	Static	Dynamic
Maximum Tensile <b>T</b>	1214 lbs. [5400 N]	396 lbs. [1763 N]
Maximum Compressive <b>C</b>	1601 lbs. [7120 N]	396 lbs. [1763 N]
Maximum Moment <b>M<sub>x</sub></b>	1903 in.-lbs. [215 Nm]	531 in.-lbs. [60 Nm]
Maximum Moment <b>M<sub>y</sub></b>	2699 in.-lbs. [305 Nm]	761 in.-lbs. [86 Nm]
Maximum Moment <b>M<sub>z</sub></b>	1841 in.-lbs. [208 Nm]	761 in.-lbs. [86 Nm]

†Capacities are per set of jaws and are not simultaneous

## RTH/DTH-7M-L Loading Information



### Loading Capacity†

	Static	Dynamic
Maximum Tensile <b>T</b>	1054 lbs. [4690 N]	257 lbs. [1141 N]
Maximum Compressive <b>C</b>	1389 lbs. [6180 N]	257 lbs. [1141 N]
Maximum Moment <b>M<sub>x</sub></b>	1646 in.-lbs. [186 Nm]	345 in.-lbs. [39 Nm]
Maximum Moment <b>M<sub>y</sub></b>	2036 in.-lbs. [230 Nm]	425 in.-lbs. [48 Nm]
Maximum Moment <b>M<sub>z</sub></b>	1381 in.-lbs. [156 Nm]	425 in.-lbs. [48 Nm]

†Capacities are per set of jaws and are not simultaneous

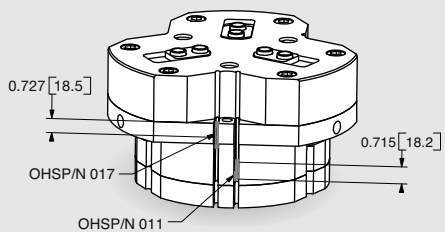
### Specifications

Total Rated Grip Force, <b>F</b> @ 100 psi [7 bar]:		
Without Spring Assist	3859 lbs.	17165 N
Without Spring Assist <b>-L</b>	2496 lbs.	11102 N
With Spring Assist	4967 lbs.	22093 N
With Spring Assist <b>-L</b>	3222 lbs.	14322 N
Total Stroke:		
Standard	0.98 in.	25 mm
Extended <b>-L</b>	1.97 in.	50 mm
Weight	34.6 lbs.	15.7 Kg
Pressure Range without Spring	30-100 psi	2-7 Bar
Pressure Range with Spring	55-100 psi	4-7 Bar

### Specifications (cont.)

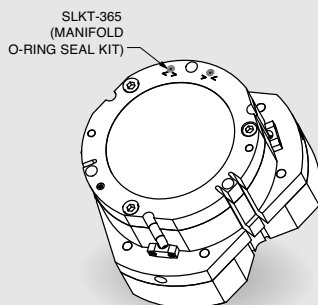
Max. Vacuum for Scavenge Port	8 in. Hg	20 mm Hg
Max. Pressure for Purge Port	30 psi	2.1 Bar
Cylinder Bore $\emptyset$	6.15 in.	156 mm
Displacement	37 in <sup>3</sup>	940 cm <sup>3</sup>
Temperature Range	-20°~300° F	-30°~150° C
Actuation (open/close)	0.85 sec./0.85 sec.	
Accuracy	±0.004 in.	±0.1 mm
Repeatability	±0.002 in.	±0.05 mm
Valve required to actuate single acting		3-way, 2-position
Valve required to actuate double acting		4-way, 2-position

## Accessory Mounting Technical Data



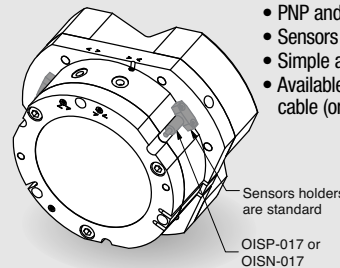
### Magneto Resistive Sensors

- PNP and NPN Magneto Resistive available
- Sensors are slot mounted, no mounting kits required
- Simple adjustment with slotted screw driver
- Built in LED for ease of positioning and troubleshooting
- Available with 2M or 5M Quick Disconnect mating cable (order separately)



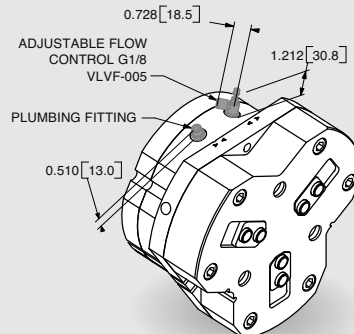
### Manifold O-Ring seals

- Used to seal top air ports and purge/scavenge port
- No C'bore holes in customer's mounting plate required (C'bore are machined in the gripper's body)
- Seals in manifold kit are Buna-N (Viton® seal kit SLKT-365V)



### Inductive Sensors

- PNP and NPN Magneto Resistive available
- Sensors holders and targets are standard mounted
- Simple adjustment of the target with screw driver
- Available with 2M or 5M Quick Disconnect mating cable (order separately)

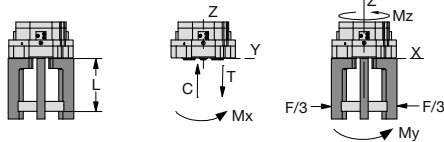
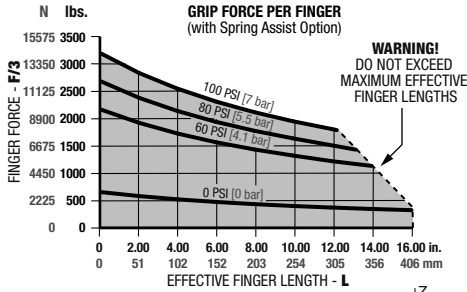


### Plumbing Fittings

- Adjustable flow controls:
  - Have thumb screw adjust with locking nut for adjusting actuation time
  - Available for 6mm OD tubing
- Plumbing fittings:
  - For side air port location
  - Top air port are plugged as standard



## RTH/DTH-8M Loading Information

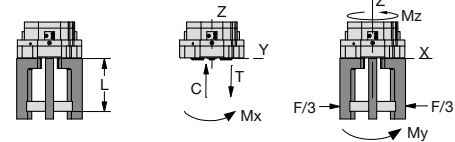
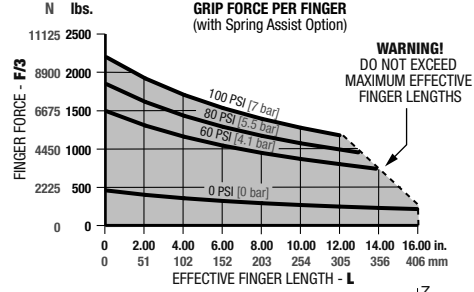


### Loading Capacity†

	Static	Dynamic
Maximum Tensile <b>T</b>	1850 lbs. [8230 N]	614 lbs. [2733 N]
Maximum Compressive <b>C</b>	2405 lbs. [10700 N]	614 lbs. [2733 N]
Maximum Moment <b>M<sub>x</sub></b>	4027 in.-lbs. [455 Nm]	1159 in.-lbs. [131 Nm]
Maximum Moment <b>M<sub>y</sub></b>	5116 in.-lbs. [578 Nm]	1478 in.-lbs. [167 Nm]
Maximum Moment <b>M<sub>z</sub></b>	3204 in.-lbs. [362 Nm]	1478 in.-lbs. [167 Nm]

†Capacities are per set of jaws and are not simultaneous

## RTH/DTH-8M-L Loading Information



### Loading Capacity†

	Static	Dynamic
Maximum Tensile <b>T</b>	1592 lbs. [7080 N]	398 lbs. [1772 N]
Maximum Compressive <b>C</b>	2070 lbs. [9210 N]	398 lbs. [1772 N]
Maximum Moment <b>M<sub>x</sub></b>	3461 in.-lbs. [391 Nm]	752 in.-lbs. [85 Nm]
Maximum Moment <b>M<sub>y</sub></b>	3788 in.-lbs. [428 Nm]	823 in.-lbs. [93 Nm]
Maximum Moment <b>M<sub>z</sub></b>	2372 in.-lbs. [268 Nm]	823 in.-lbs. [93 Nm]

†Capacities are per set of jaws and are not simultaneous

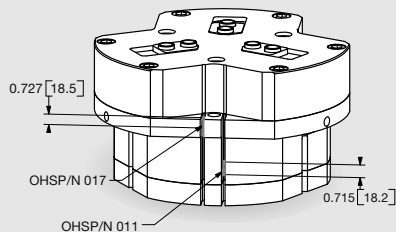
## Specifications

Total Rated Grip Force, <b>F</b> @ 100 psi [7 bar]:		
Without Spring Assist	7933 lbs.	35288 N
Without Spring Assist <b>-L</b>	5122 lbs.	22784 N
With Spring Assist	9971 lbs.	44354 N
With Spring Assist <b>-L</b>	6450 lbs.	28690 N
Total Stroke:		
Standard	1.38 in.	35 mm
Extended <b>-L</b>	2.76 in.	70 mm
Weight	96.8 lbs.	43.9 Kg
Pressure Range without Spring	30-100 psi	2-7 Bar
Pressure Range with Spring	50-100 psi	3.5-7 Bar

## Specifications (cont.)

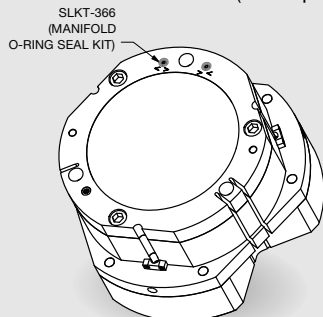
Max. Vacuum for Scavenge Port	8 in. Hg	20 mm Hg
Max. Pressure for Purge Port	30 psi	2.1 Bar
Cylinder Bore Ø	8.86 in.	225 mm
Displacement	166 in. <sup>3</sup>	2720 cm <sup>3</sup>
Temperature Range	-20°~300° F	-30°~150° C
Actuation (open/close)	1.7 sec./1.7 sec.	
Accuracy	±0.004 in.	±0.01 mm
Repeatability	±0.002 in.	±0.05 mm
Valve required to actuate single acting	3-way, 2-position	
Valve required to actuate double acting	4-way, 2-position	

## Accessory Mounting Technical Data



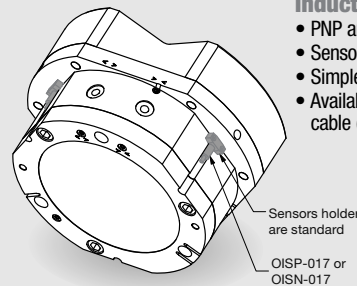
### Magneto Resistive Sensors

- PNP and NPN Magneto Resistive available
- Sensors are slot mounted, no mounting kits required
- Simple adjustment with slotted screw driver
- Built in LED for ease of positioning and troubleshooting
- Available with 2M or 5M Quick Disconnect mating cable (order separately)



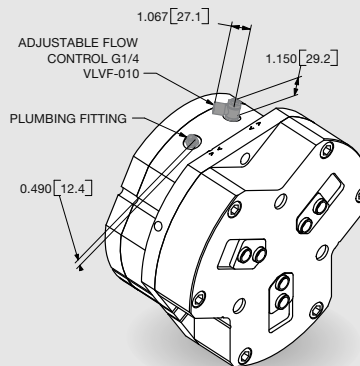
### Manifold O-Ring seals

- Used to seal top air ports and purge/scavenge port
- No C' bore holes in customer's mounting plate required (C' bore are machined in the gripper's body)
- Seals in manifold kit are Buna-N (Viton® seal kit SLKT-366V)



### Inductive Sensors

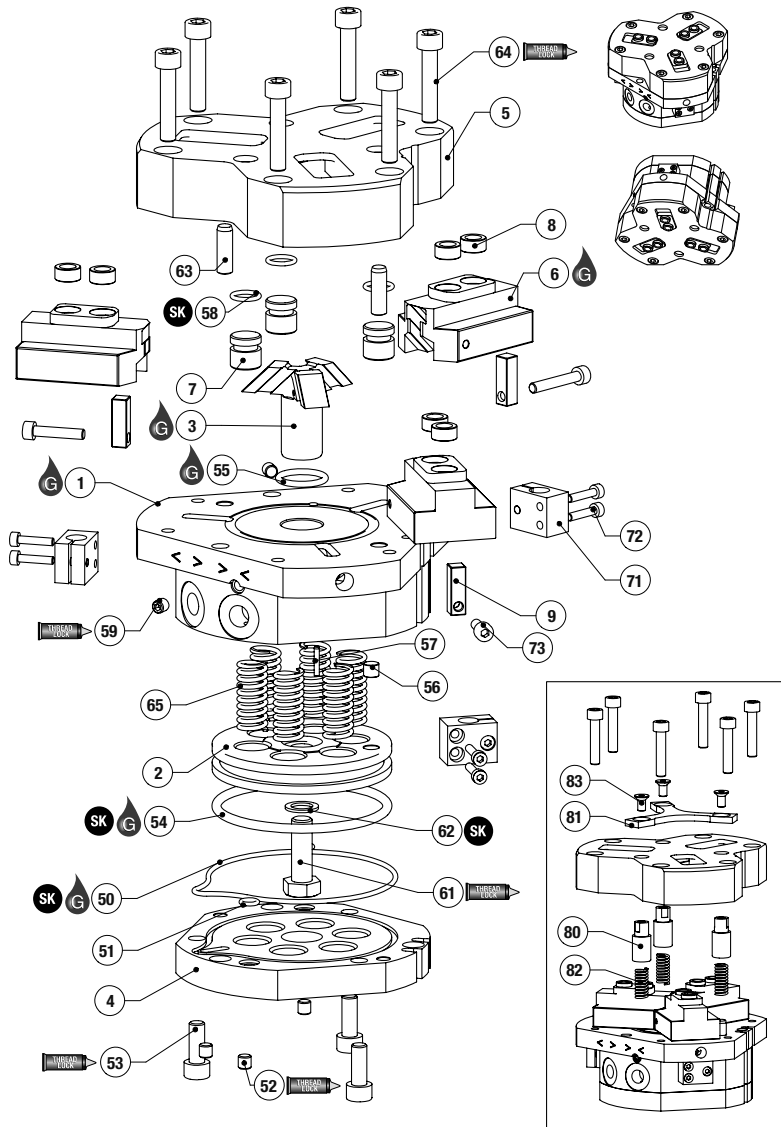
- PNP and NPN Magneto Resistive available
- Sensors holders and targets are standard mounted
- Simple adjustment of the target with screw driver
- Available with 2M or 5M Quick Disconnect mating cable (order separately)



### Plumbing Fittings

- Adjustable flow controls:
  - Have thumb screw adjust with locking nut for adjusting actuation time
  - Available for 6mm OD tubing
- Plumbing fittings:
  - For side air port location
  - Top air port are plugged as standard

# RTH/DTH Series Exploded View



**Item Qty Name**

01	1	Body
02	1	Piston
03	1	Triple wedge
04	1	Cap
05	1	Bottom Case
06	3	Jaws
07	3	Plug
08	6	Locating sleeve
09	3	Sensing nut
50	1	Cap, O-ring
51	2	Cap, O-ring
52	3	Cap, SS screw
53	3	Cap, SHC screw
54	1	Piston, O-ring
55	1	Body, O-ring
56	1	Piston, Magnet
57	1	Piston, Pin
58	3	Plug, O-Ring
59	2	Body, SS screw
61	1	Triple wedge, HH screw
62	1	Triple wedge, Seal
63	2	Slide, Pin
64	6	Slide, SHC Screw
65	6	Spring
71	3	Sensor holder
72	6	Sensor holder, SHC screw
73	3	Sensing nut, SHC screw
80	3	Stud
81	1	Pressure plate
82	3	Springs
83	3	Stud, screw

**NOTE:** Contact the Robohand Sales Department for a complete spare parts list with order numbers and prices.

**SK Seal Repair Kit Order #'s See Product Data Sheets**

**Assembly Procedure**

- 1) Lubricate and install seals #55 into the body #1
- 2) Install #59 SS screws with thread locker into the body #1
- 3) Sub assemble the sensing nuts #9 into the jaws #6
- 4) Sub assemble the jaws #6 on either side of the triple wedge #3 with lubrication
- 5) Insert the jaws and triple wedge sub assembly into the body. To ensure a good positioning of the magnet, the dowel hole of the triple wedge (on tapped hole side) has to be positioned on the opposite side of the air ports (except size 1). For size 1, it has to be positioned between the sensor slots of the body.
- 6) Install seals #58 into the plugs #7
- 7) Insert the plugs #7 into the bottom case #5
- 8) Install bottom case #5 with pressed-in pins

- #63 onto the body and fasten with #64 screws with thread locker
- 9) Lubricate and install seals #54 into the piston #2
- 10) Mount magnet #56 to piston #2 with thread locker
- 11) For **-C** option, insert the spring #65 into the body counterbore holes
- 12) Insert the piston #2 with pressed-in pin #57 onto the triple wedge #3 and fasten with screw #61 and washer #62. Face mount the piston counterbore holes to the body counterbore holes for **-C** option. Opposite mount for **-O** option. For **-O** option, insert the spring #65 into the piston counterbore holes
- 14) Install #52 air ports plugs with thread locker onto the cap #4
- 15) Install seals #50 and #51 into the cap #4
- 16) Insert the cap into the body and locate it using cap dowel pin holes.

- 17) Fasten the cap with #53 screws with thread locker
- 18) Install the sensor holder #71 onto the body and fasten with screw #72
- 19) Insert screw #73 into the sensing nuts #9 from the body holes
- 20) Insert locating sleeves #8 into the jaws

**-SP Assembly Procedure**

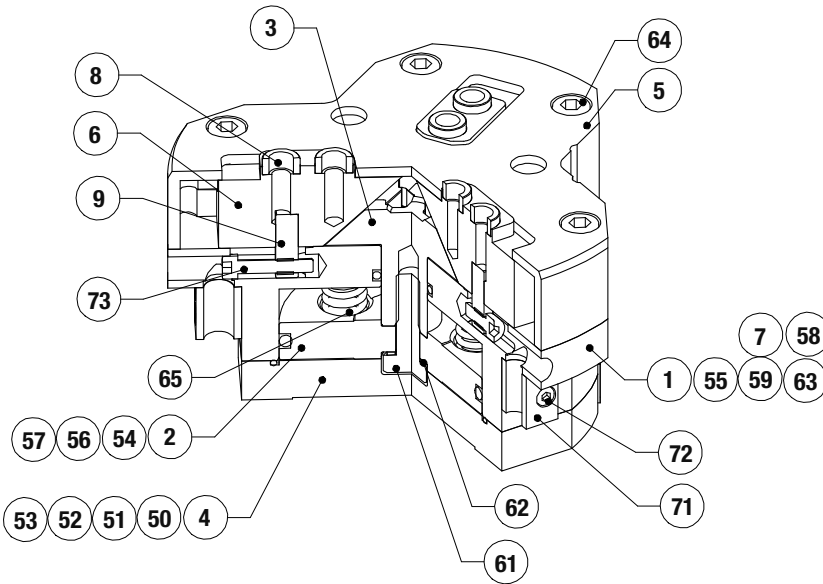
- 1) Disassemble bottom case #5 unfastening #64 screws
- 2) Sub assemble springs #82 into the stud #70
- 3) Insert the spring and stud sub assembly into the bottom case
- 4) Install bottom case #5 onto the body and fasten with #64 screws with thread locker
- 5) Install pressure plate #8 onto the studs and fasten with #83 screws

Seal Kit Items	Thread Locker	Krytox™ Lubricant	Lightweight Machine Oil	Teflon® Based Grease	Super Bonder	Third Angle Projection

Please see back cover for DE-STA-CO Global Locations. [www.destaco.com](http://www.destaco.com)

[www.comoso.com](http://www.comoso.com)

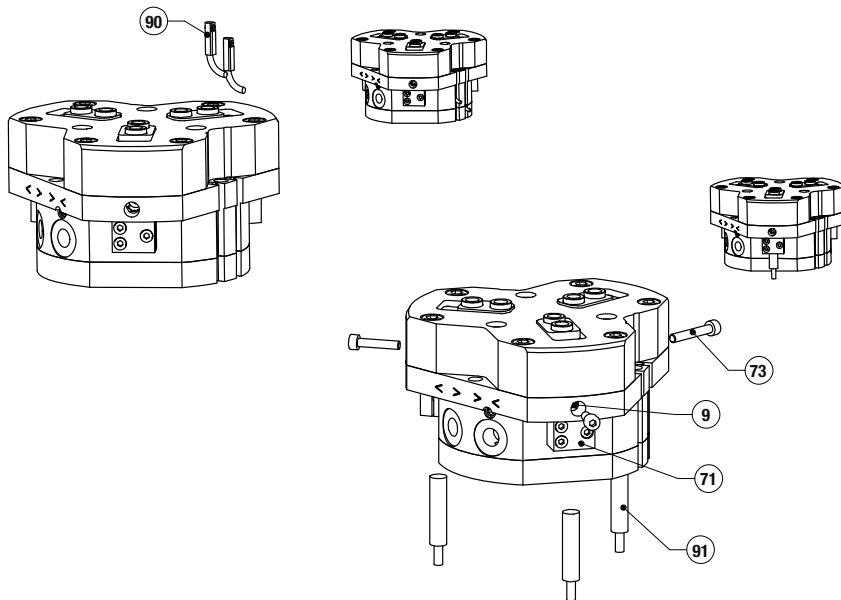




Item	Qty	Name
01	1	Body
02	1	Piston
03	1	Triple wedge
04	1	Cap
05	1	Bottom Case
06	3	Jaws
07	3	Plug
08	6	Locating sleeve
09	3	Sensing nut
50	1	Cap, O-ring
51	2	Cap, O-ring
52	3	Cap, SS screw
53	3	Cap, SHC screw
54	1	Piston, O-ring
55	1	Body, O-ring
56	1	Piston, Magnet
57	1	Piston, Pin
58	3	Plug, O-Ring
59	2	Body, SS screw
61	1	Triple wedge, HH screw
62	1	Triple wedge, Seal
63	2	Slide, Pin
64	6	Slide, SHC Screw
65	6	Spring
71	3	Sensor holder
72	6	Sensor holder, SHC screw
73	3	Sensing nut, SHC screw

**NOTE:** Contact the Robohand Sales Department for a complete spare parts list with order numbers and prices.

## Accessory Installation & Adjustment Instructions



### Magneto Resistive Sensor

- 1) Insert sensors #90 from either end of the profile slots
- 2) Set the sensor with the integrated screw

### Inductive Sensor

- 1) Insert sensors #91 into the sensor holder #72
- 2) Tighten the sensor using the SHC screw onto the sensor holder #72
- 3) Insert the SHC screw #73 into the sensing nuts #9. The SHC screws are the targets to be adjusted in front of the sensor. Depending on the position to sense, use different length for the SHC screw #73 (shortest screw for open position, longest screw for close position). The sensing nut #9 has a thread insert that prevents the target from loosening. This may make the target harder to tighten into the nut.



Seal Kit Items



Thread Locker



Krytox™ Lubricant



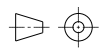
Lightweight Machine Oil



Teflon® Based Grease



Super Bonder



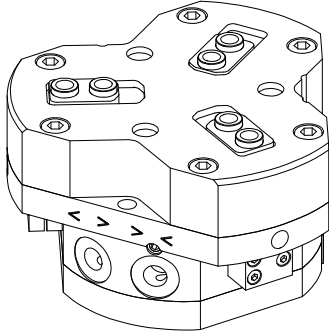
Third Angle Projection



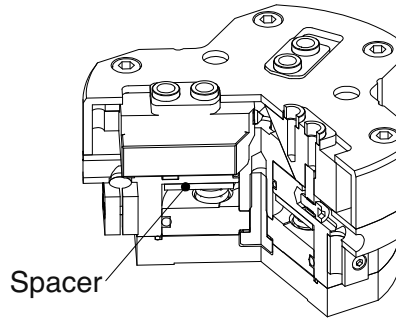
# RTH/DTH SERIES SPECIALS

**Fixed Jaws, Food-Grade Grease, Stroke Limiters, Custom Fingers and Jaws, Stainless Steel Components and more...**

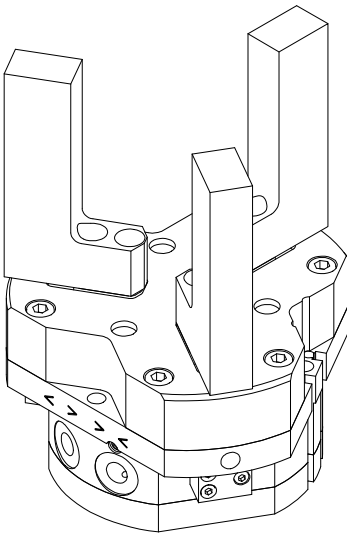
Drawings are for concept only. Contact Robohand Tech Support with project requirements.



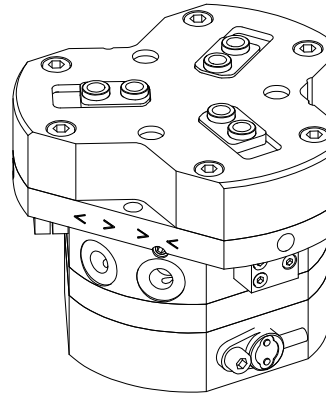
**Fixed Jaws**



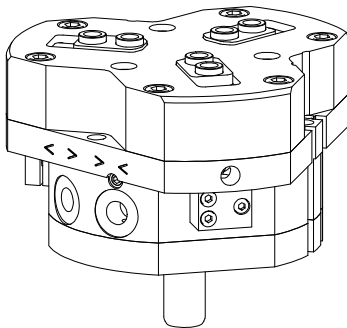
**Stroke Limiter**



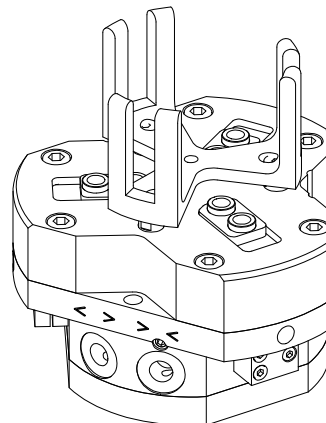
**Custom Fingers and Jaws**



**Built-in Sensor with 2 Sensing Faces  
2 or 3 Wire Technology**



**Shaft Output**



**Custom Stripper Plate**



Please describe your application. Include a sketch or attach additional sheets if necessary.

# 3P Parallel Gripper- 3-Jaw Precision Series

## Precision Gripper

The 3 concentric jaws and very good repeatability [0.02mm] allows loading and unloading accurate cylindrical parts.

## Harsh Environments

Shielded design (-E) repels chips and other particulate from internal drive mechanism depending on the chosen material of the shield.

## Compact and Powerful

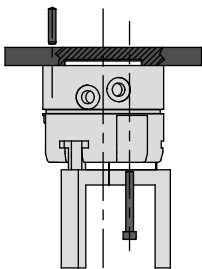
This gripper is designed for use in confined spaces, combining long strokes with a high grip force. Optional safety springs retain the components, should the air supply fail or to increase grip force.

## Multipurpose Gripper

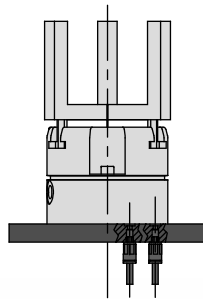
A wide range of options and accessories (extended stroke, hydraulic power, safety springs for internal or external gripping, inductive sensors, tandem cylinder, Viton® seals, and protective boot) allow these grippers to be used in a number of applications.

## Mounting Information:

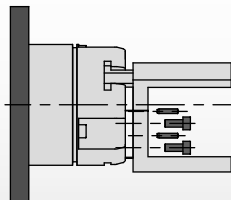
### Gripper can be mounted and operated in any orientation.



Gripper is located using pilot boss and a dowel pin and assembled with 4 or 6 through body screws.



Gripper can be operated utilizing top manifold air ports.



Fingers are located on jaw with 2 dowel pins and assembled with 1 or 2 screws.

## Technical Specifications:

### Pneumatic Specifications

Pressure Operating Range

**Imperial**  
30-100 psi

**Metric**  
2-7 bar

Cylinder Type

**Double or double acting  
spring-assisted or single  
acting with spring**

Dynamic Seals

**Buna-N**

Valve Required to Operate:

Double Acting  
Single acting (Option RE or RI)

**4-way, 2-position  
3-way, 2-position**

### Air Quality Requirements

Filtration

**40 Micron or Better  
Not Necessary\***

Lubrication

### Temperature Operating Range

Buna-N Seals (standard)

**-30°~180° F -35°~80° C**

Viton® Seals (optional)

**-20°~300° F -30°~150° C**

### Application Restrictions

Expected Life

Normal Application  
w/ Preventative Maintenance

**5 million cycles  
10+ million cycles\***

Field Repairable

**Yes**

Seal Repair Kits Available

**Yes**

\*Addition of lubrication will greatly increase service life

## Product Specifications

### Quality Components

Body made from aluminum alloy with Teflon™ impregnated hardcoat anodize. Other essential parts of the gripper are made of hardened and precision ground steel

### Standard and Extended Stroke (-C)

Each model of gripper is available in two stroke lengths

### Versatile Finger Mounting

2 finger mounting surfaces on each jaw

### Viton® Seals

Optional Viton® seals for high temperatures



### Protective Gripper Boot

Optional Gripper Boot (-E) to protect the mechanism of the clamp are liquid and large external impurities.

### Spring Assist

Spring assist retains the component should the air supply fail, to assist the gripper for internal (-RE) or external (-RI) gripping, or in single acting mode

### Tandem Cylinder

Option (-M) doubles the grip force

### Sensor Target

Option (-T) to control the jaw position at the rear of the clamp

### Sensor Unit

Option (-K) to benefit from integrated detection

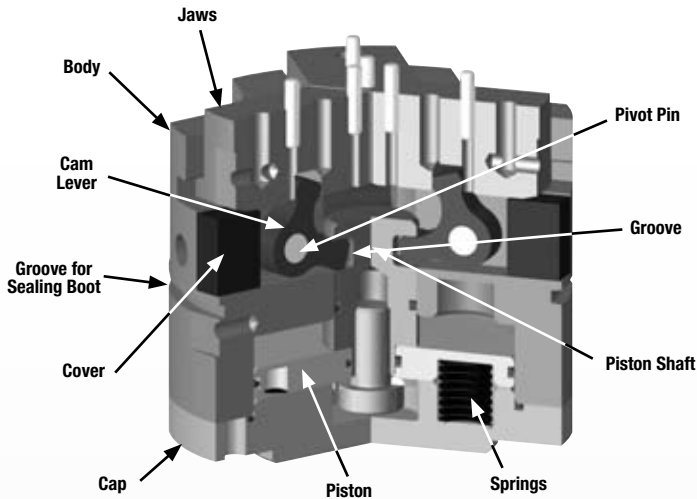
### Pneumatic Power

Side or top ports (sealing face / face)

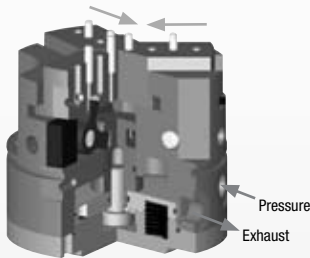
### Hydraulic Power

Option (-H) up to 20 bar max, (-H80) up to 80 bar max.

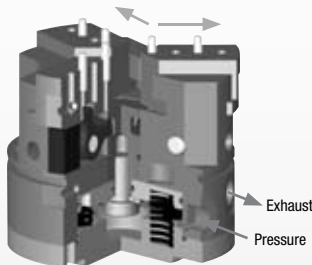
## Operating Principle



Closed Stroke Position



Open Stroke Position



- A large double-acting piston is connected to the piston shaft at its end with a driving groove.
- Levers pivot in the body about an axis of articulation. Their two heads agree precisely on one side in the groove of the small piston, the other in a groove cut in each jaw holder.
- The rotation of the levers converts the vertical movement of the piston in a horizontal motion and synchronized two-bit gates, which are guided in grooves in «T» fitting body.
- This gripper is suitable for internal or external gripping and can be mounted in any orientation
- Optional failsafe spring can be used to maintain gripping force if gripper loses air pressure or as a single acting return gripper.

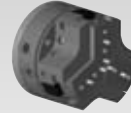
### Style: 3P Precision Parallel Gripper



	6003P	6003P-C
Total Stroke:	10 mm	16 mm
Force at 6bar: <sup>1</sup>	678 N	422 N
Force w/o air: <sup>2</sup>	172 N	107 N
Weight:	0.60 kg	0.60 kg

See Page **1.254 & 1.255**

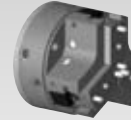
### Style: 3P Precision Parallel Gripper



	8003P	8003P-C
Total Stroke:	13 mm	20 mm
Force at 6bar: <sup>1</sup>	1888 N	1219 N
Force w/o air: <sup>2</sup>	617 N	398 N
Weight:	0.97 kg	0.97 kg

See Page **1.256 & 1.257**

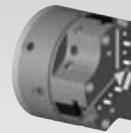
### Style: 3P Precision Parallel Gripper



	11003P	11003P-C
Total Stroke:	20 mm	30 mm
Force at 6bar: <sup>1</sup>	2967 N	1979 N
Force w/o air: <sup>2</sup>	941 N	628 N
Weight:	2.35 kg	2.35 kg

See Page **1.258 & 1.259**

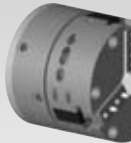
### Style: 3P Precision Parallel Gripper



	14003P	14003P-C
Total Stroke:	26 mm	40 mm
Force at 6bar: <sup>1</sup>	6077 N	3930 N
Force w/o air: <sup>2</sup>	2248 N	1453 N
Weight:	4.70 kg	4.70 kg

See Page **1.260 & 1.261**

### Style: 3P Precision Parallel Gripper



	16503P	16503P-C
Total Stroke:	30 mm	50 mm
Force at 6bar: <sup>1</sup>	11190 N	6707 N
Force w/o air: <sup>2</sup>	3730 N	2235 N
Weight:	9.04 kg	9.04 kg

See Page **1.262 & 1.263**

## OPTIONS & ACCESSORIES

See Page **1.264 & 1.267**

1. Force with spring and air at 6bar
2. Force with spring without air

# PARALLEL GRIPPER 6003P PRECISION 3P GRIPPER SERIES

1.254

### Specifications

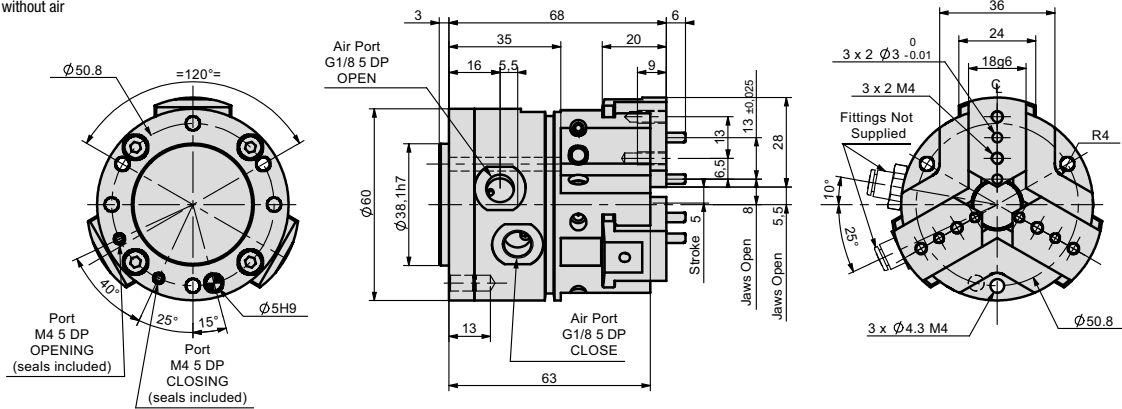
Grip Force (F <sub>6+R</sub> ) <sup>1</sup> , 6 bars, Springs Mid-Way, L=0	<b>6003P</b> 678 N
Grip Force (F <sub>0+R</sub> ) <sup>2</sup> , 0 bars, Springs Mid-Way, L=0	172 N
Total Stroke	10 mm
Weight	0.60 kg
Pressure Range	2 - 7 bar
Pressure Range with Springs	3 - 7 bar
Ø Cylinder Bore	40 mm
Displacement	12 cm <sup>3</sup>
Actuation (open / close)	0.07 s / 0.07 s
Repeatability	± 0.02 mm

- Force with spring and air at 6bar
- Force with spring without air

### UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

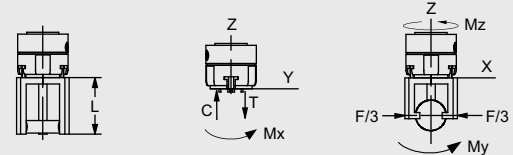
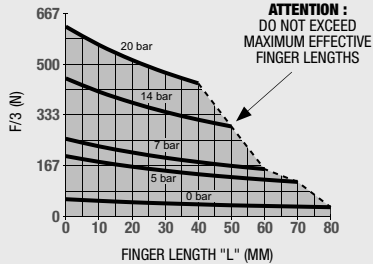
Dimensions are symmetrical about centerline	Third Angle Projection	All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or [±.013mm]	Metric Threads Course Pitch	<b>Imperial in.</b> 0.00 = ±.01 0.000 = ±.005 0.0000 = ±.0005	<b>Metric [mm]</b> [0.] = [±.25] [0.0] = [±.13] [0.00] = [±.013]
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Grippers are supplied with open side air ports and top manifold air ports plugged. Top manifold sealing dimensions shown.



## Loading Information:

Sum of forces transmitted by the jaws on the workpiece  
(Springs compressed at 50% stroke)

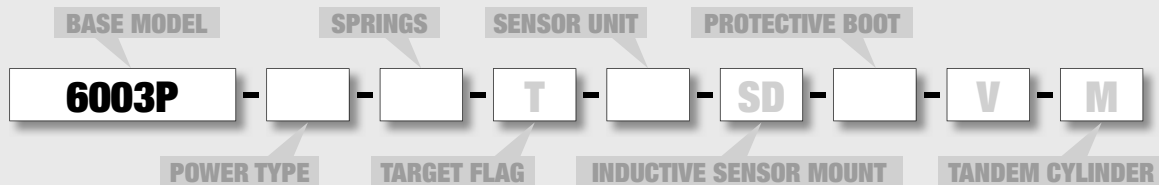


### Loading Capacity\*

	Statique	Dynamique
Maximum Tensile <b>T</b>	819 N	175 N
Maximum Compressive <b>C</b>	1556 N	175 N
Maximum Moment <b>Mx</b>	42 Nm	5 Nm
Maximum Moment <b>My</b>	49 Nm	6 Nm
Maximum Moment <b>Mz</b>	54 Nm	6 Nm

\* The Capacities are per set of jaws and are not simultaneous.

## How To Order:



POWER TYPE	
P	Pneumatic
H	Hydraulic (page 1.264)
(One of two options is mandatory P or H)	
SPRINGS	
RE	External Gripping
RI	Internal Gripping
SENSOR UNIT	
• KT1	• KT2
• KX1	• KX2
PROTECTIVE BOOT	
• E	• E3

### PROTECTIVE BOOT ACCESSORIES

	Model Code	Order #	Qty/Unit
PVC Protective Boot, Brown or Black	<b>E</b>	<b>ER63P</b>	1
Fireproof KEVLAR Protective Boot, Red	<b>E3</b>	<b>E3R63P</b>	1

### SENSOR ACCESSORIES

	Model Code	Order #	Qty/Unit
Inductive Sensor Kit (1 holder, 1 flag)	<b>SD</b>	<b>SD60-80P</b>	1 or 2
M8 Inductive Sensor PNP with M8 connector		<b>OISP-011-C</b>	1 to 4
M8 Inductive Sensor NPN with M8 connector		<b>OISN-011-C</b>	1 to 4
Cable (2 meters) with M8 screw right gold		<b>CABL-010</b>	1 to 4

### PNEUMATIC ACCESSORIES

	Model Code	Order #	Qty/Unit
Standard Seal Repair Kit		<b>SLKT-156</b>	1
Viton® Seal Repair Kit		<b>SLKT-156V</b>	1
Hydraulic Seal Repair Kit		<b>SLKT-330</b>	1

Options and Accessories:  
See Page 1.264





# PARALLEL GRIPPER 8003P PRECISION 3P GRIPPER SERIES

### Specifications

	<b>8003P</b>
Grip Force (F <sub>6+R</sub> ) <sup>1</sup> , 6 bars, Springs Mid-Way, L=0	1888 N
Grip Force (F <sub>0+R</sub> ) <sup>2</sup> , 0 bars, Springs Mid-Way, L=0	617 N
Total Stroke	13 mm
Weight	0.97 kg
Pressure Range	2 - 7 bar
Pressure Range with Springs	4 - 7 bar
Ø Cylinder Bore	60 mm
Displacement	35 cm <sup>3</sup>
Actuation (open / close)	0.08 s / 0.08 s
Repeatability	± 0.02 mm

- Force with spring and air at 6bar
- Force with spring without air

### UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

Imperial in.	Metric [mm]
0.00 = ± .01	[0.] = [± .25]
0.000 = ± .005	[0.0] = [± .13]
0.0000 = ± .0005	[0.00] = [± .013]

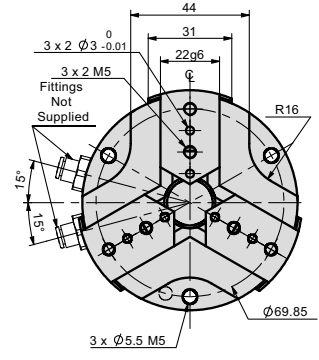
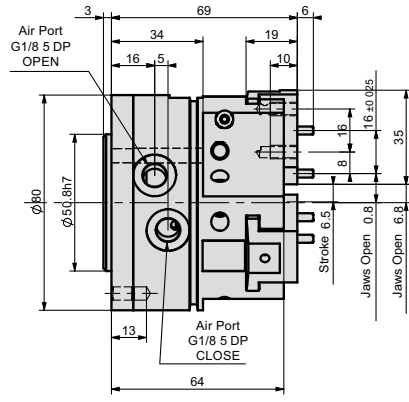
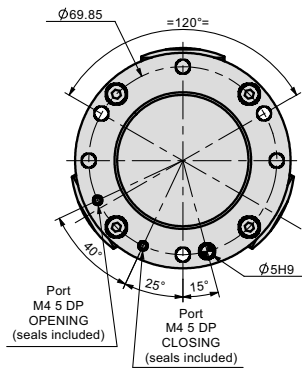
Dimensions are symmetrical about centerline

Third Angle Projection

All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or [±.013mm]

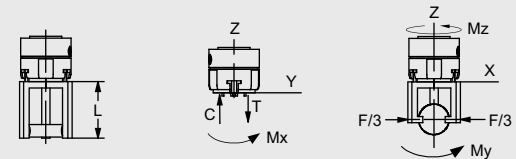
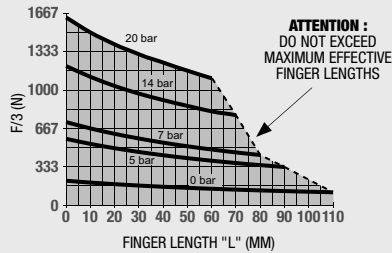
Metric Threads Course Pitch

Grippers are supplied with open side air ports and top manifold air ports plugged. Top manifold sealing dimensions shown.



## Loading Information:

Sum of forces transmitted by the jaws on the workpiece  
(Springs compressed at 50% stroke)

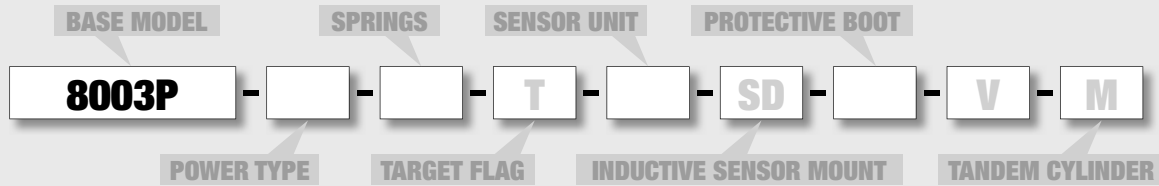


### Loading Capacity\*

	Statique	Dynamique
Maximum Tensile <b>T</b>	1229 N	436 N
Maximum Compressive <b>C</b>	2075 N	436 N
Maximum Moment <b>Mx</b>	60 Nm	16 Nm
Maximum Moment <b>My</b>	68 Nm	19 Nm
Maximum Moment <b>Mz</b>	37 Nm	19 Nm

\* The Capacities are per set of jaws and are not simultaneous.

## How To Order:



POWER TYPE	
P Pneumatic	
H Hydraulic (page 1.264)	
(One of two options is mandatory P or H)	
SPRINGS	
RE External Gripping	
RI Internal Gripping	
SENSOR UNIT	
• KT1 • KT2 • KX1 • KX2	
PROTECTIVE BOOT	
• E • E3	

### PROTECTIVE BOOT ACCESSORIES

Model Code	Order #	Qty/Unit	
PVC Protective Boot, Brown or Black	<b>E</b>	<b>ER83P</b>	1
Fireproof KEVLAR Protective Boot, Red	<b>E3</b>	<b>E3R83P</b>	1

### SENSOR ACCESSORIES

Inductive Sensor Kit (1 holder, 1 flag)	<b>SD</b>	<b>SD60-80P</b>	1 or 2
M8 Inductive Sensor PNP with M8 connector		<b>OISP-011-C</b>	1 to 4
M8 Inductive Sensor NPN with M8 connector		<b>OISN-011-C</b>	1 to 4
Cable (2 meters) with M8 screw right gold		<b>CABL-010</b>	1 to 4

### PNEUMATIC ACCESSORIES

Standard Seal Repair Kit	<b>S80</b>	1
Viton® Seal Repair Kit	<b>S80V</b>	1
Hydraulic Seal Repair Kit	<b>S80H</b>	1

Options and Accessories:  
See Page 1.264



# PARALLEL GRIPPER 8003P-C PRECISION 3P GRIPPER SERIES

PRECISION 3P  
**1.257**

## Specifications

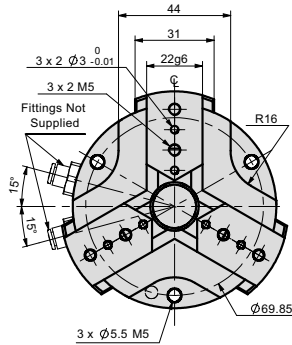
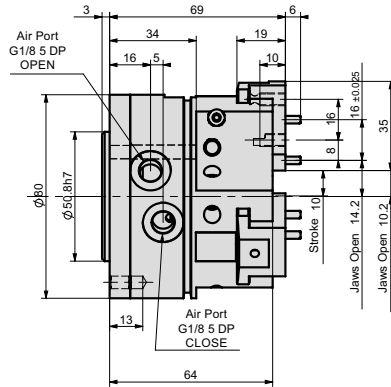
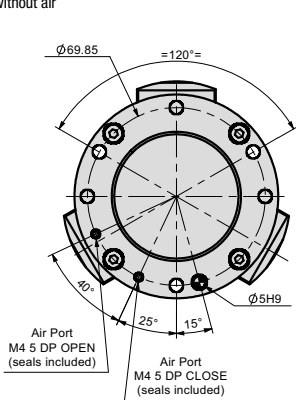
Grip Force (F <sub>G+R</sub> ) <sup>1</sup> , 6 bars, Springs Mid-Way, L=0	1219 N
Grip Force (F <sub>0+R</sub> ) <sup>2</sup> , 0 bars, Springs Mid-Way, L=0	398 N
Total Stroke	20 mm
Weight	0.97 kg
Pressure Range	2 - 7 bar
Pressure Range with Springs	4 - 7 bar
Ø Cylinder Bore	60 mm
Displacement	35 cm <sup>3</sup>
Actuation (open / close)	0.08 s / 0.08 s
Repeatability	± 0.02 mm

1. Force with spring and air at 6bar  
2. Force with spring without air

## UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

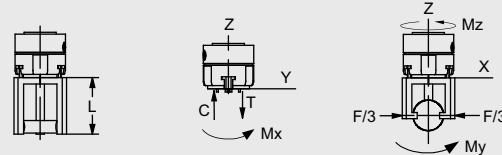
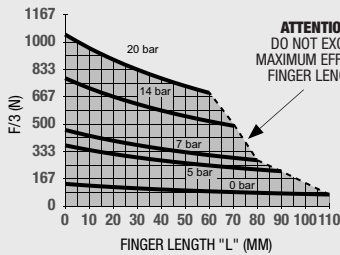
Dimensions are symmetrical about centerline	Third Angle Projection	All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or [±.013mm]	Metric Threads Course Pitch	<b>Imperial in.</b> 0.00 = ±.01 0.000 = ±.005 0.0000 = ±.0005	<b>Metric [mm]</b> [0.] = [±.25] [0.0] = [±.13] [0.00] = [±.013]
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Grippers are supplied with open side air ports and top manifold air ports plugged. Top manifold sealing dimensions shown.



## Loading Information:

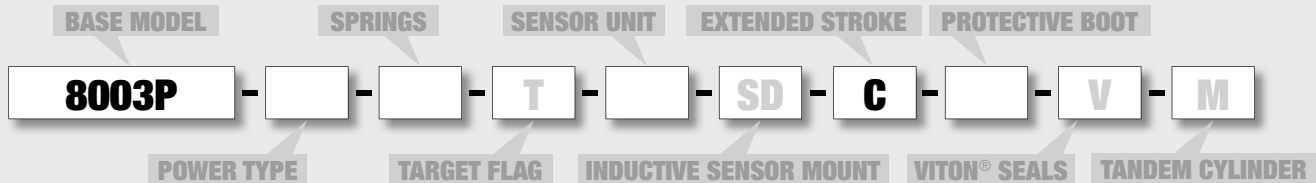
Sum of forces transmitted by the jaws on the workpiece  
(Springs compressed at 50% stroke)



Loading Capacity*	Statique	Dynamique
Maximum Tensile <b>T</b>	1097 N	281 N
Maximum Compressive <b>C</b>	1853 N	281 N
Maximum Moment <b>Mx</b>	39 Nm	12 Nm
Maximum Moment <b>My</b>	44 Nm	13 Nm
Maximum Moment <b>Mz</b>	34 Nm	13 Nm

\* The Capacities are per set of jaws and are not simultaneous.

## How To Order:



POWER TYPE	
P	Pneumatic
H	Hydraulic (page 1.264)
(One of two options is mandatory P or H)	
SPRINGS	
RE	External Gripping
RI	Internal Gripping
SENSOR UNIT	
• KT1	• KT2
• KX1	• KX2
PROTECTIVE BOOT	
• E	• E3

### PROTECTIVE BOOT ACCESSORIES

PVC Protective Boot, Brown or Black	<b>E</b>	<b>ER83P</b>	1
Fireproof KEVLAR Protective Boot, Red	<b>E3</b>	<b>E3R83P</b>	1

### SENSOR ACCESSORIES

Inductive Sensor Kit (1 holder, 1 flag)	<b>SD</b>	<b>SD60-80P</b>	1 or 2
M8 Inductive Sensor PNP with M8 connector		<b>OISP-011-C</b>	1 to 4
M8 Inductive Sensor NPN with M8 connector		<b>OISN-011-C</b>	1 to 4
Cable (2 meters) with M8 screw right gold		<b>CABL-010</b>	1 to 4

### PNEUMATIC ACCESSORIES

Standard Seal Repair Kit	<b>S80</b>	1
Viton® Seal Repair Kit	<b>S80V</b>	1
Hydraulic Seal Repair Kit	<b>S80H</b>	1

Options and Accessories:  
See Page 1.264

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[www.comoso.com](http://www.comoso.com)

# PARALLEL GRIPPER 11003P PRECISION 3P GRIPPER SERIES

1.258

### Specifications

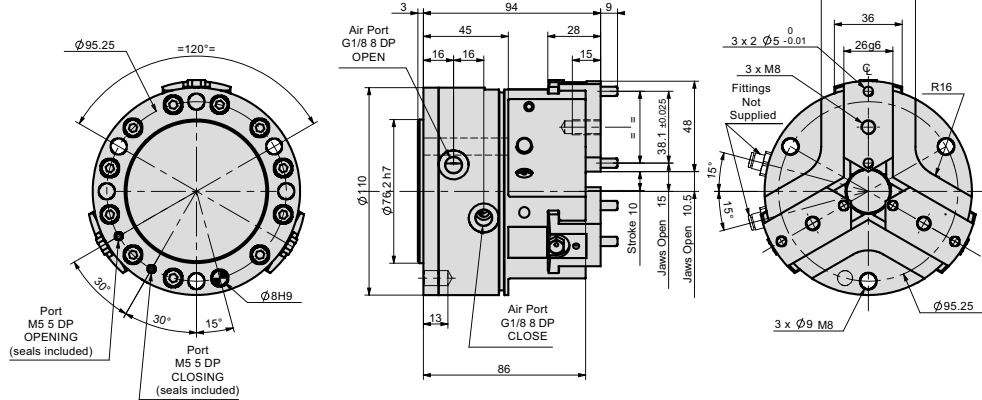
Grip Force (F <sub>6+R</sub> ) <sup>1</sup> , 6 bars, Springs Mid-Way, L=0	<b>11003P</b> 2967 N
Grip Force (F <sub>0+R</sub> ) <sup>2</sup> , 0 bars, Springs Mid-Way, L=0	941 N
Total Stroke	20 mm
Weight	2.35 kg
Pressure Range	2 - 7 bar
Pressure Range with Springs	4 - 7 bar
Ø Cylinder Bore	76 mm
Displacement	87 cm <sup>3</sup>
Actuation (open / close)	0.10 s / 0.10 s
Repeatability	± 0.02 mm

1. Force with spring and air at 6bar  
2. Force with spring without air

### UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

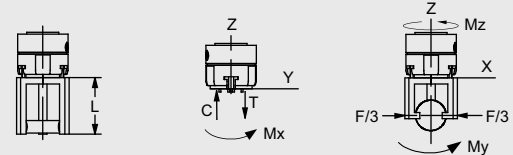
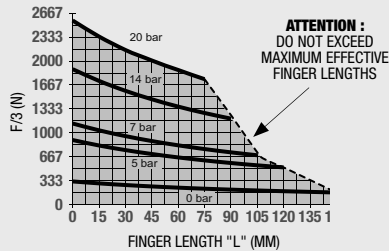
Dimensions are symmetrical about centerline	Third Angle Projection	All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or [±.013mm]	Metric Threads Course Pitch	<b>Imperial in.</b> 0.00 = ±.01 0.000 = ±.005 0.0000 = ±.0005	<b>Metric [mm]</b> [0.] = [±.25] [0.0] = [±.13] [0.00] = [±.013]
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Grippers are supplied with open side air ports and top manifold air ports plugged. Top manifold sealing dimensions shown.



## Loading Information:

Sum of forces transmitted by the jaws on the workpiece  
(Springs compressed at 50% stroke)

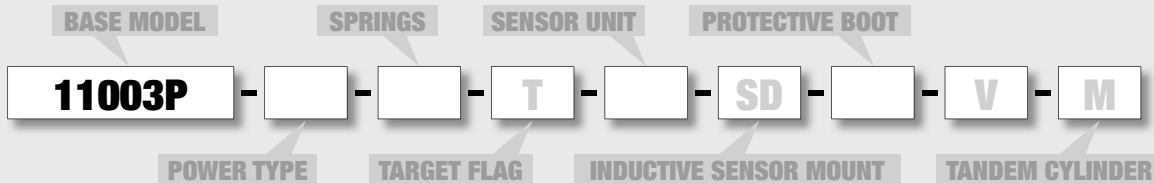


### Capacités de chargement\*

	Statique	Dynamique
Traction maximale <b>T</b>	1560 N	695 N
Compression maximale <b>C</b>	2652 N	695 N
Moment maximum <b>Mx</b>	60 Nm	31 Nm
Moment maximum <b>My</b>	80 Nm	41 Nm
Moment maximum <b>Mz</b>	90 Nm	41 Nm

\* The Capacities are per set of jaws and are not simultaneous.

## How To Order:



<b>POWER TYPE</b>
P Pneumatic
H Hydraulic (page 1.264)
(One of two options is mandatory P or H)
<b>SPRINGS</b>
RE External Gripping
RI Internal Gripping
<b>SENSOR UNIT</b>
• KT1 • KT2 • KX1 • KX2
<b>PROTECTIVE BOOT</b>
• E • E3

### PROTECTIVE BOOT ACCESSORIES

Model Code	Order #	Qty/Unit	
PVC Protective Boot, Brown or Black	<b>E</b>	<b>ER113P</b>	1
Fireproof KEVLAR Protective Boot, Red	<b>E3</b>	<b>E3R113P</b>	1

### SENSOR ACCESSORIES

Inductive Sensor Kit (1 holder, 1 flag)	<b>SD</b>	<b>SD110P</b>	1 or 2
M8 Inductive Sensor PNP with M8 connector		<b>OISP-011-C</b>	1 to 4
M8 Inductive Sensor NPN with M8 connector		<b>OISN-011-C</b>	1 to 4
Cable (2 meters) with M8 screw right gold		<b>CABL-010</b>	1 to 4

### PNEUMATIC ACCESSORIES

Standard Seal Repair Kit		<b>S110</b>	1
Viton® Seal Repair Kit		<b>S110V</b>	1
Hydraulic Seal Repair Kit		<b>S110H</b>	1

Options and Accessories:  
See Page 1.264



# PARALLEL GRIPPER 11003P-C PRECISION 3P GRIPPER SERIES

PRECISION 3P  
1.259

## Specifications

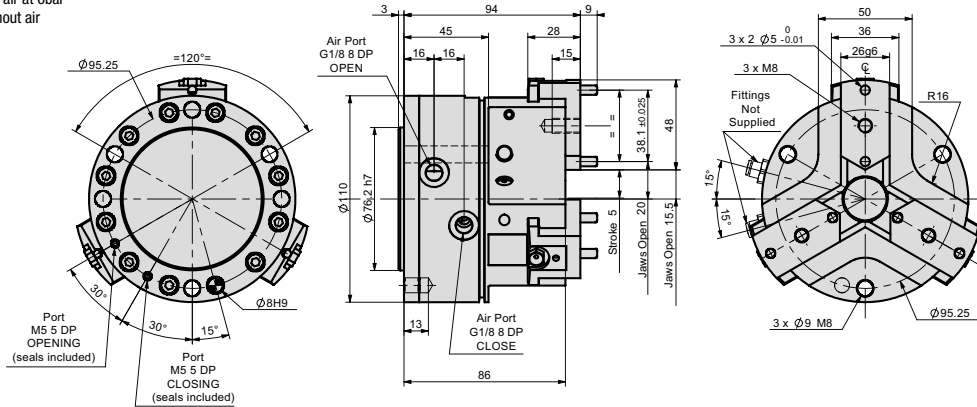
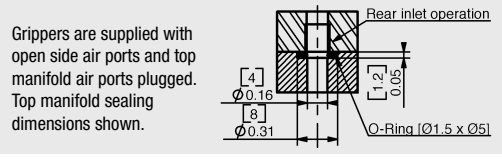
Grip Force (F <sub>6+R</sub> ) <sup>1</sup> , 6 bars, Springs Mid-Way, L=0	1979 N
Grip Force (F <sub>0+R</sub> ) <sup>2</sup> , 0 bars, Springs Mid-Way, L=0	628 N
Total Stroke	30 mm
Weight	2,35 kg
Pressure Range	2 - 7 bar
Pressure Range with Springs	4 - 7 bar
Ø Cylinder Bore	76 mm
Displacement	87 cm <sup>3</sup>
Actuation (open / close)	0,10 s / 0,10 s
Repeatability	± 0,02 mm

1. Force with spring and air at 6bar  
2. Force with spring without air

## 11003P-C

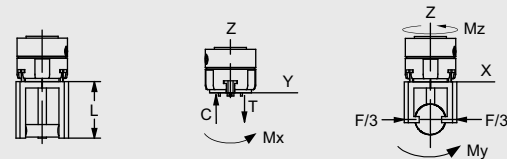
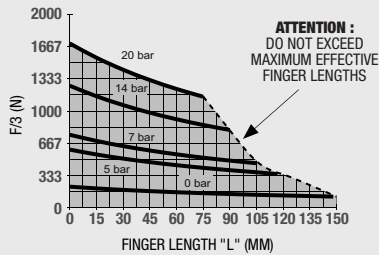
UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

Dimensions are symmetrical about centerline	Third Angle Projection	All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or [±.013mm]	Metric Threads Course Pitch	<b>Imperial in.</b> 0.00 = ±.01 0.000 = ±.005 0.0000 = ±.0005	<b>Metric [mm]</b> [0.] = [±.25] [0.0] = [±.13] [0.00] = [±.013]
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## Loading Information:

Sum of forces transmitted by the jaws on the workpiece  
(Springs compressed at 50% stroke)

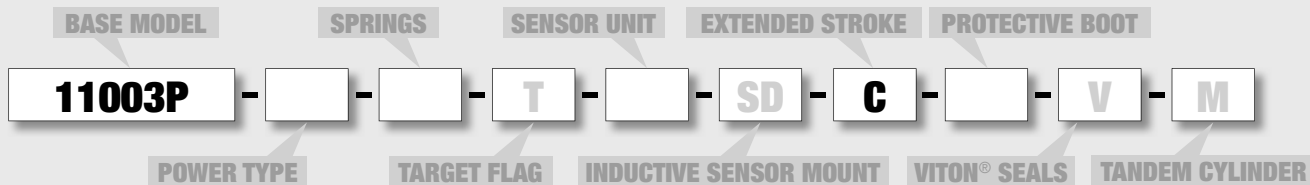


### Capacités de chargement\*

	Statique	Dynamique
Traction maximale <b>T</b>	1418 N	463 N
Compression maximale <b>C</b>	2411 N	463 N
Moment maximum <b>Mx</b>	50 Nm	22 Nm
Moment maximum <b>My</b>	66 Nm	30 Nm
Moment maximum <b>Mz</b>	84 Nm	30 Nm

\* The Capacities are per set of jaws and are not simultaneous.

## How To Order:



<b>POWER TYPE</b>
P Pneumatic
H Hydraulic (page 1.264)
(One of two options is mandatory P or H)
<b>SPRINGS</b>
RE External Gripping
RI Internal Gripping
<b>SENSOR UNIT</b>
• KT1 • KT2 • KX1 • KX2
<b>PROTECTIVE BOOT</b>
• E • E3

### PROTECTIVE BOOT ACCESSORIES

PVC Protective Boot, Brown or Black	<b>E</b>	<b>ER113P</b>	1
Fireproof KEVLAR Protective Boot, Red	<b>E3</b>	<b>E3R113P</b>	1

### SENSOR ACCESSORIES

Inductive Sensor Kit (1 holder, 1 flag)	<b>SD</b>	<b>SD110P</b>	1 or 2
M8 Inductive Sensor PNP with M8 connector		<b>OISP-011-C</b>	1 to 4
M8 Inductive Sensor NPN with M8 connector		<b>OISN-011-C</b>	1 to 4
Cable (2 meters) with M8 screw right gold		<b>CABL-010</b>	1 to 4

### PNEUMATIC ACCESSORIES

Standard Seal Repair Kit	<b>S110</b>	1
Viton® Seal Repair Kit	<b>S110V</b>	1
Hydraulic Seal Repair Kit	<b>S110H</b>	1

Options and Accessories:  
See Page 1.264

# PARALLEL GRIPPER 14003P PRECISION 3P GRIPPER SERIES

1.260

### Specifications

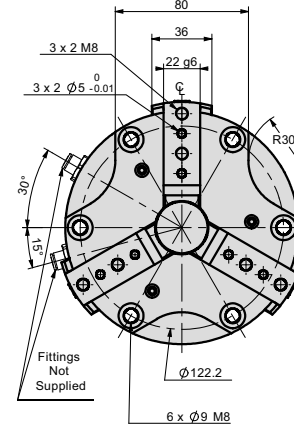
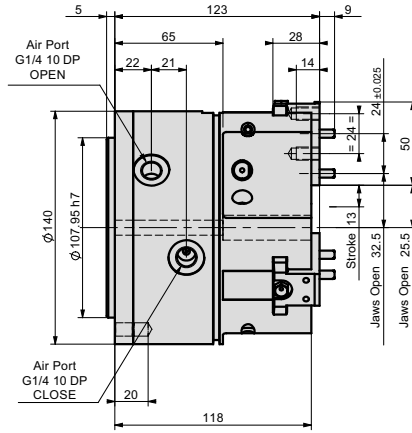
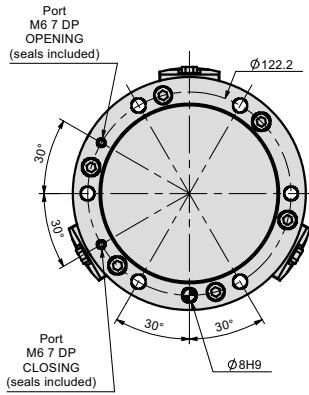
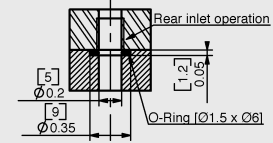
Grip Force (F <sub>6+R</sub> ) <sup>1</sup> , 6 bars, Springs Mid-Way, L=0	<b>14003P</b> 6077 N
Grip Force (F <sub>0+R</sub> ) <sup>2</sup> , 0 bars, Springs Mid-Way, L=0	2248 N
Total Stroke	26 mm
Weight	4.70 kg
Pressure Range	2 -7 bar
Pressure Range with Springs	4.5 -7 bar
Ø Cylinder Bore	105 mm
Displacement	220 cm <sup>3</sup>
Actuation (open / close)	0.16 s / 0.16 s
Repeatability	± 0.02 mm

1. Force with spring and air at 6bar  
2. Force with spring without air

### UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

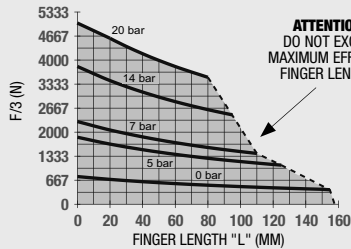
Dimensions are symmetrical about centerline	Third Angle Projection	All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or [±.013mm]	Metric Threads Course Pitch	<b>Imperial in.</b> 0.00 = ±.01 0.000 = ±.005 0.0000 = ±.0005	<b>Metric [mm]</b> [0.] = [±.25] [0.0] = [±.13] [0.00] = [±.013]
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Grippers are supplied with open side air ports and top manifold air ports plugged. Top manifold sealing dimensions shown.

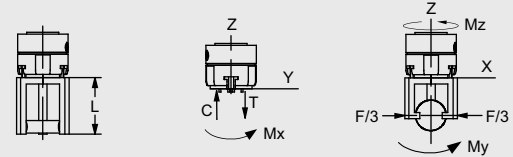


## Loading Information:

Sum of forces transmitted by the jaws on the workpiece  
(Springs compressed at 50% stroke)



**ATTENTION:**  
DO NOT EXCEED  
MAXIMUM EFFECTIVE  
FINGER LENGTHS

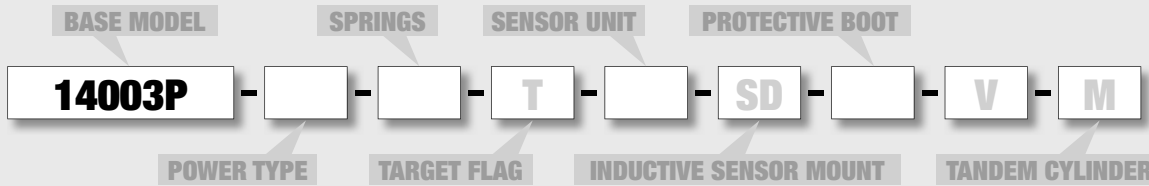


### Loading Capacity\*

	Statique	Dynamique
Maximum Tensile <b>T</b>	2390 N	850 N
Maximum Compressive <b>C</b>	2700 N	850 N
Maximum Moment <b>Mx</b>	85 Nm	25 Nm
Maximum Moment <b>My</b>	130 Nm	40 Nm
Maximum Moment <b>Mz</b>	100 Nm	40 Nm

\* The Capacities are per set of jaws and are not simultaneous.

## How To Order:



POWER TYPE	
P	Pneumatic
H	Hydraulic (page 1.264)
(One of two options is mandatory P or H)	
SPRINGS	
RE	External Gripping
RI	Internal Gripping
SENSOR UNIT	
• KT1	• KT2
• KX1	• KX2
PROTECTIVE BOOT	
• E	• E3

### PROTECTIVE BOOT ACCESSORIES

Model Code	Order #	Qty/Unit	
PVC Protective Boot, Brown or Black	<b>E</b>	<b>KP-317</b>	1
Fireproof KEVLAR Protective Boot, Red	<b>E3</b>	<b>KP-319</b>	1

### SENSOR ACCESSORIES

Model Code	Order #	Qty/Unit	
Inductive Sensor Kit (1 holder, 1 flag)	<b>SD</b>	<b>OSMK-114</b>	1 or 2
M8 Inductive Sensor PNP with M8 connector		<b>OISP-017-C</b>	1 to 4
M8 Inductive Sensor NPN with M8 connector		<b>OISN-017-C</b>	1 to 4
Cable (2 meters) with M8 screw right gold		<b>CABL-014</b>	1 to 4

### PNEUMATIC ACCESSORIES

Model Code	Order #	Qty/Unit	
Standard Seal Repair Kit		<b>SLKT-333</b>	1
Viton® Seal Repair Kit		<b>SLKT-333V</b>	1
Hydraulic Seal Repair Kit		<b>SLKT-334</b>	1

Options and Accessories:  
See Page 1.264



# PARALLEL GRIPPER 14003P-C PRECISION 3P GRIPPER SERIES

PRECISION 3P  
**1.264**

## Specifications

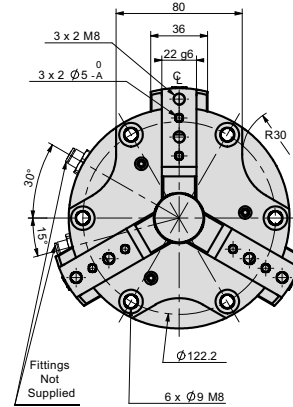
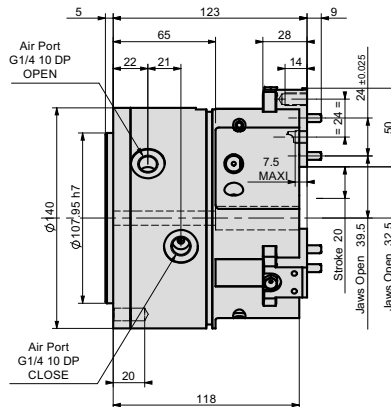
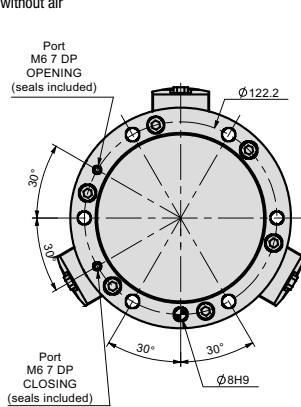
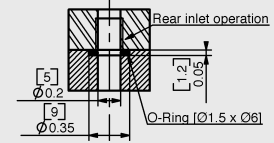
Grip Force (F <sub>6+R</sub> ) <sup>1</sup> , 6 bars, Springs Mid-Way, L=0	3930 N
Grip Force (F <sub>0+R</sub> ) <sup>2</sup> , 0 bars, Springs Mid-Way, L=0	1453 N
Total Stroke	40 mm
Weight	4.70 kg
Pressure Range	2 - 7 bar
Pressure Range with Springs	4.5 - 7 bar
Ø Cylinder Bore	105 mm
Displacement	220 cm <sup>3</sup>
Actuation (open / close)	0.16 s / 0.16 s
Repeatability	± 0.02 mm
1. Force with spring and air at 6bar	
2. Force with spring without air	

## 14003P-C

**UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW**

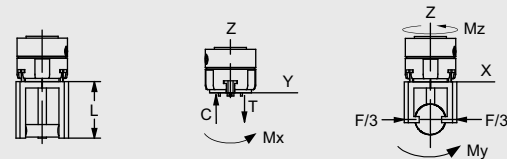
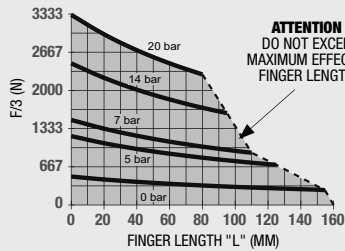
Dimensions are symmetrical about centerline	Third Angle Projection	All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or [±.013mm]	Metric Threads Course Pitch	<b>Imperial in.</b> 0.00 = ±.01 0.000 = ±.005 0.0000 = ±.0005	<b>Metric [mm]</b> [0.] = [±.25] [0.0] = [±.13] [0.00] = [±.013]
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Grippers are supplied with open side air ports and top manifold air ports plugged. Top manifold sealing dimensions shown.



## Loading Information:

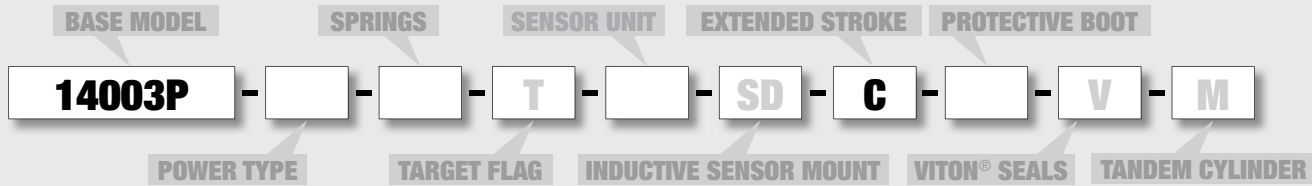
Sum of forces transmitted by the jaws on the workpiece  
(Springs compressed at 50% stroke)



Loading Capacity*	Statique	Dynamique
Maximum Tensile <b>T</b>	2180 N	590 N
Maximum Compressive <b>C</b>	2500 N	590 N
Maximum Moment <b>Mx</b>	75 Nm	20 Nm
Maximum Moment <b>My</b>	110 Nm	32 Nm
Maximum Moment <b>Mz</b>	90 Nm	32 Nm

\* The Capacities are per set of jaws and are not simultaneous.

## How To Order:



POWER TYPE	
P	Pneumatic
H	Hydraulic (page 1.264)
(One of two options is mandatory P or H)	
SPRINGS	
RE	External Gripping
RI	Internal Gripping
SENSOR UNIT	
• KT1	• KT2
• KX1	• KX2
PROTECTIVE BOOT	
• E	• E3

### PROTECTIVE BOOT ACCESSORIES

PVC Protective Boot, Brown or Black	<b>E</b>	<b>KP-317</b>	1
Fireproof KEVLAR Protective Boot, Red	<b>E3</b>	<b>KP-319</b>	1

### SENSOR ACCESSORIES

Inductive Sensor Kit (1 holder, 1 flag)	<b>SD</b>	<b>OSMK-114</b>	1 or 2
M8 Inductive Sensor PNP with M8 connector		<b>OISP-017-C</b>	1 to 4
M8 Inductive Sensor NPN with M8 connector		<b>OISN-017-C</b>	1 to 4
Cable (2 meters) with M8 screw right gold		<b>CABL-014</b>	1 to 4

### PNEUMATIC ACCESSORIES

Standard Seal Repair Kit		<b>SLKT-333</b>	1
Viton® Seal Repair Kit		<b>SLKT-333V</b>	1
Hydraulic Seal Repair Kit		<b>SLKT-334</b>	1

Options and Accessories:  
See Page 1.264

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[www.comoso.com](http://www.comoso.com)



# PARALLEL GRIPPER 16503P PRECISION 3P GRIPPER SERIES

## Specifications

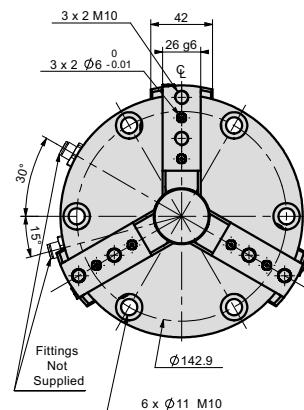
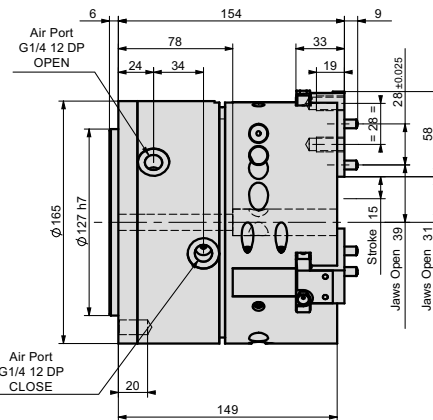
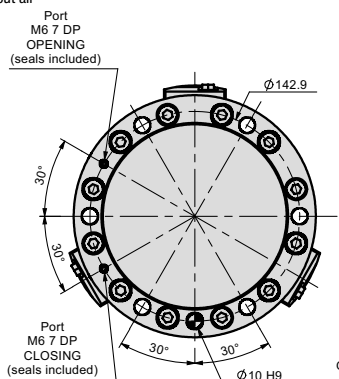
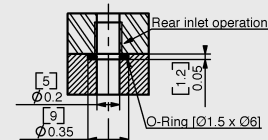
	16503P
Grip Force (F6+R) <sup>1</sup> , 6 bars, Springs Mid-Way, L=0	11190 N
Grip Force (F0+R) <sup>2</sup> , 0 bars, Springs Mid-Way, L=0	3730 N
Total Stroke	30 mm
Weight	9.04 kg
Pressure Range	2 - 7 bar
Pressure Range with Springs	4.5 - 7 bar
Ø Cylinder Bore	120 mm
Displacement	494 cm <sup>3</sup>
Actuation (open / close)	0.29 s / 0.29 s
Repeatability	± 0.02 mm

- Force with spring and air at 6bar
- Force with spring without air

UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

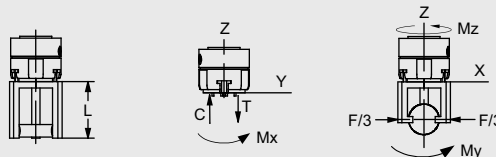
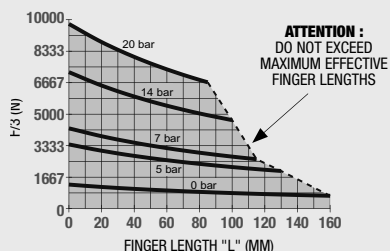
Imperial in.	Metric [mm]
0.00 = ± .01	[0.] = [±.25]
0.000 = ± .005	[0.0] = [±.13]
0.0000 = ± .0005	[0.00] = [±.013]

Grippers are supplied with open side air ports and top manifold air ports plugged. Top manifold sealing dimensions shown.



## Loading Information:

Sum of forces transmitted by the jaws on the workpiece  
(Springs compressed at 50% stroke)

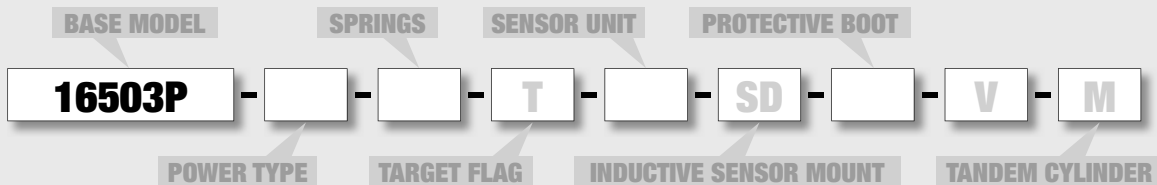


### Loading Capacity\*

	Statique	Dynamic
Maximum Tensile <b>T</b>	2580 N	980 N
Maximum Compressive <b>C</b>	3200 N	980 N
Maximum Moment <b>Mx</b>	100 Nm	32 Nm
Maximum Moment <b>My</b>	150 Nm	50 Nm
Maximum Moment <b>Mz</b>	140 Nm	50 Nm

\* The Capacities are per set of jaws and are not simultaneous.

## How To Order:



POWER TYPE
P Pneumatic
H Hydraulic (page 1.264)
(One of two options is mandatory P or H)
SPRINGS
RE External Gripping
RI Internal Gripping
SENSOR UNIT
• KT1 • KT2 • KX1 • KX2
PROTECTIVE BOOT
• E • E3

### PROTECTIVE BOOT ACCESSORIES

Model Code	Order #	Qty/Unit	
PVC Protective Boot, Brown or Black	<b>E</b>	<b>KP-320</b>	1
Fireproof KEVLAR Protective Boot, Red	<b>E3</b>	<b>KP-322</b>	1

### SENSOR ACCESSORIES

Model Code	Order #	Qty/Unit	
Inductive Sensor Kit (1 holder, 1 flag)	<b>SD</b>	<b>OSMK-115</b>	1 or 2
M8 Inductive Sensor PNP with M8 connector		<b>OISP-017-C</b>	1 to 4
M8 Inductive Sensor NPN with M8 connector		<b>OISN-017-C</b>	1 to 4
Cable (2 meters) with M8 screw right gold		<b>CABL-014</b>	1 to 4

### PNEUMATIC ACCESSORIES

Standard Seal Repair Kit	<b>SLKT-335</b>	1
Viton® Seal Repair Kit	<b>SLKT-335V</b>	1
Hydraulic Seal Repair Kit	<b>SLKT-336</b>	1

Options and Accessories:  
See Page 1.264



# PARALLEL GRIPPER 16503P-C PRECISION 3P GRIPPER SERIES

PRECISION 3P  
1.263

### Specifications

Grip Force (F6+R)<sup>1</sup>, 6 bars, Springs Mid-Way, L=0  
 Grip Force (F0+R)<sup>2</sup>, 0 bars, Springs Mid-Way, L=0  
 Total Stoke  
 Weight  
 Pressure Range  
 Pressure Range with Springs  
 Ø Cylinder Bore  
 Displacement  
 Actuation (open / close)  
 Repeatability

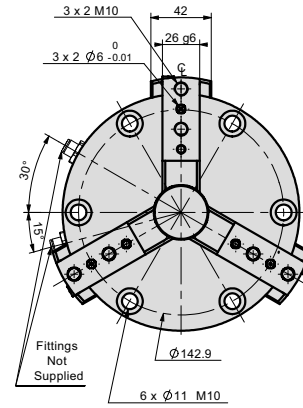
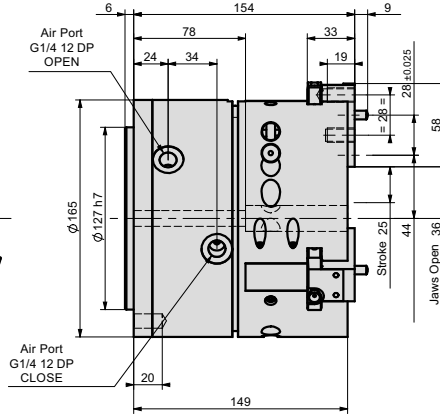
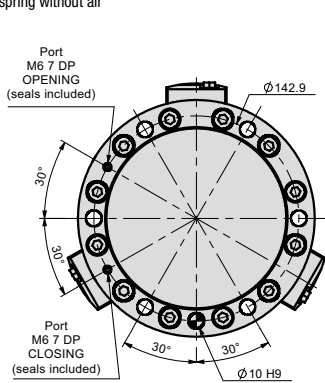
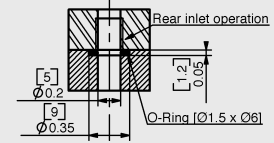
### 16503P-C

6707 N  
 2235 N  
 50 mm  
 9.04 kg  
 2 -7 bar  
 4.5 -7 bar  
 120 mm  
 494 cm<sup>3</sup>  
 0.29 s / 0.29 s  
 ± 0.02 mm

**UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW**

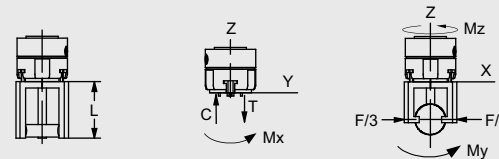
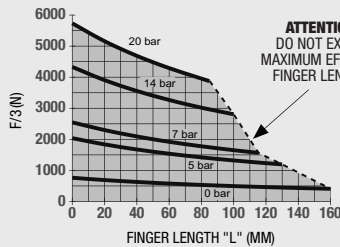
Dimensions are symmetrical about centerline	Third Angle Projection	All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or [±.013mm]	Metric Threads Course Pitch	<b>Imperial in.</b> 0.00 = ±.01 0.000 = ±.005 0.0000 = ±.0005	<b>Metric [mm]</b> [0.] = [±.25] [0.0] = [±.13] [0.00] = [±.013]
---	------------------------	--	-----------------------------	--	---

Grippers are supplied with open side air ports and top manifold air ports plugged. Top manifold sealing dimensions shown.



## Loading Information:

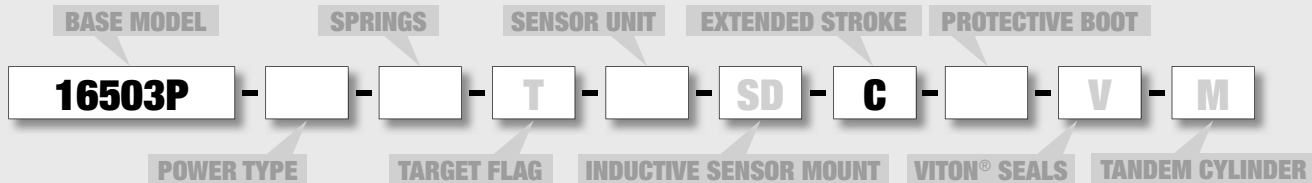
Sum of forces transmitted by the jaws on the workpiece  
 (Springs compressed at 50% stroke)



Loading Capacity*	Statique	Dynamique
Maximum Tensile <b>T</b>	2250 N	810 N
Maximum Compressive <b>C</b>	2800 N	810 N
Maximum Moment <b>Mx</b>	90 Nm	28 Nm
Maximum Moment <b>My</b>	140 Nm	40 Nm
Maximum Moment <b>Mz</b>	130 Nm	40 Nm

\* The Capacities are per set of jaws and are not simultaneous.

## How To Order:



POWER TYPE	
P	Pneumatic
H	Hydraulic (page 1.264)
(One of two options is mandatory P or H)	
SPRINGS	
RE	External Gripping
RI	Internal Gripping
SENSOR UNIT	
• KT1	• KT2
• KX1	• KX2
PROTECTIVE BOOT	
• E	• E3

### PROTECTIVE BOOT ACCESSORIES

PVC Protective Boot, Brown or Black  
 Fireproof KEVLAR Protective Boot, Red

### SENSOR ACCESSORIES

Inductive Sensor Kit (1 holder, 1 flag)  
 M8 Inductive Sensor PNP with M8 connector  
 M8 Inductive Sensor NPN with M8 connector  
 Cable (2 meters) with M8 screw right gold

### PNEUMATIC ACCESSORIES

Standard Seal Repair Kit  
 Viton® Seal Repair Kit  
 Hydraulic Seal Repair Kit

Model Code    Order #    Qty/Unit

<b>E</b>	<b>KP-320</b>	1
<b>E3</b>	<b>KP-322</b>	1
<b>SD</b>	<b>OSMK-115</b>	1 or 2
	<b>OISP-017-C</b>	1 to 4
	<b>OISN-017-C</b>	1 to 4
	<b>CABL-014</b>	1 to 4
	<b>SLKT-335</b>	1
	<b>SLKT-335V</b>	1
	<b>SLKT-336</b>	1

Options and Accessories:  
 See Page 1.264

Please see back cover for DE-STA-CO Global Locations. [www.destaco.com](http://www.destaco.com)

[www.comoso.com](http://www.comoso.com)

### SUPPLY: (P) Pneumatic (H) (H80) Hydraulic

As standard, the clamp is supplied with air to a pressure of 7 bar. The clamp is fitted with Viton O-ring seals for high temperatures.

On request (contact us) the gripper can be supplied with hydraulic fluid. The clamp is fitted with seals Viton Quad-Ring.

- Choice **(H)** allows a hydraulic power to a pressure of 20 bar max. In this case the overall dimensions do not change. For better security the gripper must be fixed on their support before being fired. **CAUTION: Hydraulic cycle times are longer.**
- Choice **(H80)** allows a hydraulic power to a pressure of 80 bar max. In this case the total height of the gripper is increased (contact us).

**The hydraulic power is incompatible with the option tandem (M).**

### Option (RE) or (RI): Spring Assist

The internal springs of the gripper ensures failsafe operation by retaining the component during pressure loss, to increase the gripforce, or allows the usage of the gripper in single acting operation.

Option **(RE)** for external gripping. Option **(RI)** for internal gripping.

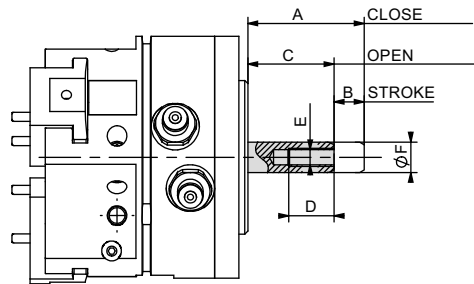
**The (RE) is incompatible with the option (RI).**

### Option (T): Sensor Rod

Option **(T)** is a steel rod which comes out on the rear side of the gripper. The rod is fixed with the piston and has the same stroke movement. The open end of the rod allows for mounting a cam which allows to control the position of the jaws by using inductive sensors, micro switches, etc

**WARNING:** when screwing on cam rod, make sure the sensor rod does not rotate to prevent twisting of the springs of options **(RE)** or **(RI)**.

**Option (T) is incompatible with option (K).**



Model	A	B	C	D	E	F
6003P & 6003P-C	35	5	30	15	M6	10
8003P & 8003P-C	35	6.5	28.5	15	M6	10
11003P & 11003P-C	35	10	25	15	M6	15
14003P & 14003P-C	55	13	42	20	M8	15
16503P & 16503P-C	53	23	30	20	M8	15

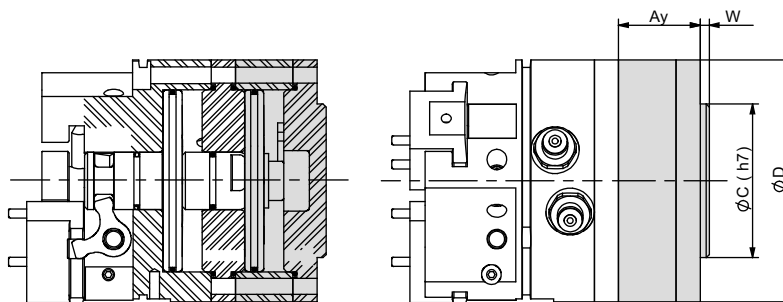
### Option (M): Tandem Cylinder

The **(M)** is a cylinder light-alloy that fits behind the bottom plate. This actuator's integral action allows to double the gripforce by using the same pressure.

The combination of tandem option tandem **(M)** and Option **(RE)** or **(RI)** can double the clamping forces of the spring assist option. For cycle times of the tandem option, apply a factor of 3 to the actuation time.

**The (M) is incompatible with the option (H).**

Model	Ay	ØC	ØD	W	Weight (kg)
6003P & 6003P-C	28.5	38.1	60	3	0.200
8003P & 8003P-C	27	50.8	80	3	0.300
11003P & 11003P-C	34	76.2	110	3	0.750
14003P & 14003P-C	49	107.95	140	5	2.100
16503P & 16503P-C	65	127	165	6	3.600

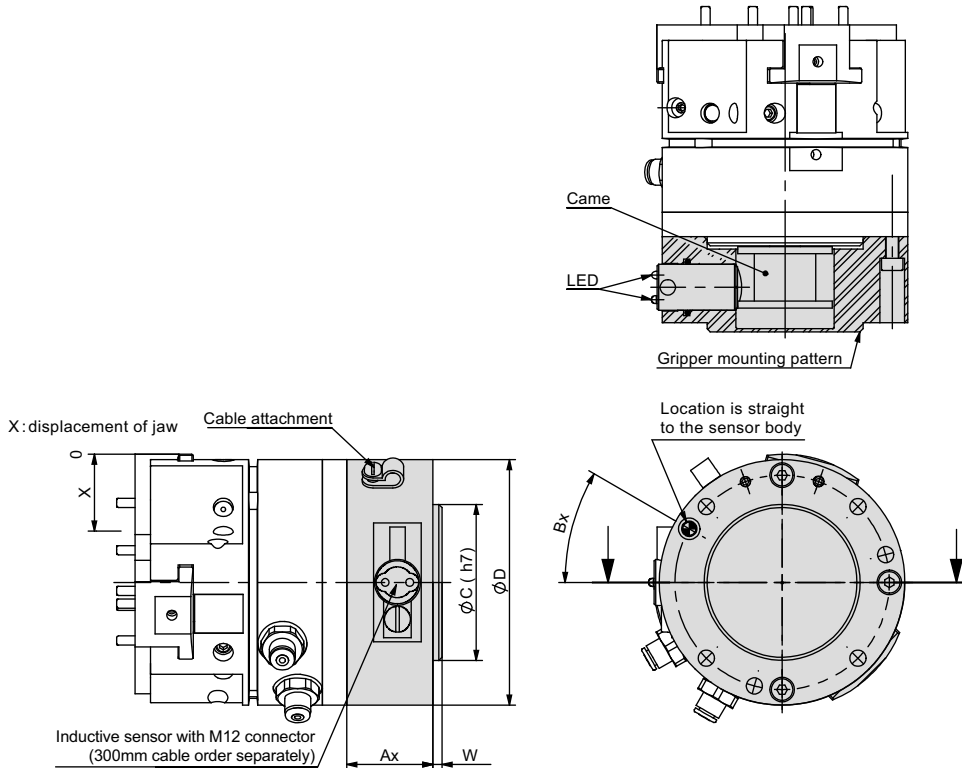


Please see back cover for DE-STA-CO Global Locations. [www.destaco.com](http://www.destaco.com)

[www.comoso.com](http://www.comoso.com)

## Option (KT1), (KX1), (KT2), (KX2): Sensor Unit

The **(K)** is a lightweight alloy housing that fits on the back of the gripper. An integrated shaft follows the movement of the piston to provide information to the sensor attached to the side of the unit. It can control two positions of the grippers jaws. 2 types of inductive sensors (**KT, KX**) and 2 detection zones (**1, 2**) are possible to allow for the combination of 2 to 4 possible positions (**KT1, KX1, KT2, KX2**). For **KT, KX** sensor specifications.



Model #	Ax	Bx	ØC	ØD	W	Weight (kg)	No. of Sensing Positions (please specify when ordering)	Information area from the open grip position (green LED)	Area information relative to the closed grip position (yellow LED)
								X (mm)	X (mm)
<b>6003P</b>	23	30°	38.1	60	3	0.180	1	0 - 1 <sup>+0,5</sup> / <sub>-0</sub>	4 <sup>+0</sup> / <sub>-0,5</sub> to 5
							2	0 - 2 <sup>+0,5</sup> / <sub>-0</sub>	3 <sup>+0</sup> / <sub>-0,5</sub> to 5
<b>6003P-C</b>	23	30°	38.1	60	3	0.180	1	0 - 1.6 <sup>+0,8</sup> / <sub>-0</sub>	7 <sup>+0</sup> / <sub>-0,8</sub> to 8
							2	0 - 3.2 <sup>+0,8</sup> / <sub>-0</sub>	4.8 <sup>+0</sup> / <sub>-0,8</sub> to 8
<b>8003P</b>	28	30°	50.8	80	3	0.400	1	0 - 1 <sup>+0,5</sup> / <sub>-0</sub>	5.5 <sup>+0</sup> / <sub>-0,5</sub> to 6,5
							2	0 - 2 <sup>+0,5</sup> / <sub>-0</sub>	4.5 <sup>+0</sup> / <sub>-0,5</sub> to 6,5
<b>8003P-C</b>	28	30°	50.8	80	3	0.400	1	0 - 1.5 <sup>+0,8</sup> / <sub>-0</sub>	8.5 <sup>+0</sup> / <sub>-0,8</sub> to 10
							2	0 - 3.1 <sup>+0,8</sup> / <sub>-0</sub>	6.9 <sup>+0</sup> / <sub>-0,8</sub> to 10
<b>11003P</b>	36	30°	76.2	110	3	0.900	1	0 - 1 <sup>+0,5</sup> / <sub>-0</sub>	9 <sup>+0</sup> / <sub>-0,5</sub> to 10
							2	0 - 3 <sup>+0,5</sup> / <sub>-0</sub>	7 <sup>+0</sup> / <sub>-0,5</sub> to 10
<b>10003P-C</b>	36	30°	76.2	110	3	0.900	1	0 - 1.5 <sup>+0,8</sup> / <sub>-0</sub>	13.5 <sup>+0</sup> / <sub>-0,8</sub> to 15
							2	0 - 4.5 <sup>+0,8</sup> / <sub>-0</sub>	10.5 <sup>+0</sup> / <sub>-0,8</sub> to 15
<b>14003P</b>	45.5	165°	107.95	140	5	1.670	1	0 - 2 <sup>+0,5</sup> / <sub>-0</sub>	11 <sup>+0</sup> / <sub>-0,5</sub> to 13
							2	0 - 4 <sup>+0,5</sup> / <sub>-0</sub>	9 <sup>+0</sup> / <sub>-0,5</sub> to 13
<b>14003P-C</b>	45.5	165°	107.95	140	5	1.670	1	0 - 3 <sup>+0,8</sup> / <sub>-0</sub>	17 <sup>+0</sup> / <sub>-0,8</sub> to 20
							2	0 - 6.2 <sup>+0,8</sup> / <sub>-0</sub>	13.8 <sup>+0</sup> / <sub>-0,8</sub> to 20
<b>16503P</b>	65.5	165°	127	165	6	2.670	1	0 - 2 <sup>+0,5</sup> / <sub>-0</sub>	13 <sup>+0</sup> / <sub>-0,5</sub> to 15
							2	0 - 4 <sup>+0,5</sup> / <sub>-0</sub>	11 <sup>+0</sup> / <sub>-0,5</sub> to 15
<b>16503P-C</b>	65.5	165°	127	165	6	2.670	1	0 - 3.3 <sup>+0,8</sup> / <sub>-0</sub>	21.7 <sup>+0</sup> / <sub>-0,8</sub> to 25
							2	0 - 7 <sup>+0,8</sup> / <sub>-0</sub>	18 <sup>+0</sup> / <sub>-0,8</sub> to 25

### Option (V): Viton® Seals

1.266

Gripper with Viton® seals allows for use in high temperature environments [-30 ° C or 150 ° C].

### Accessory (E): Protective Boot

The accessory (E) is a protective boot that fits over the gripper. It protects the mechanism and thus improves the life of the gripper in hostile environments. The accessory (E) causes a different location of the fingers on the jaws as compared to the standard installation. Before attaching the boot, perform the following steps:

1. Mount gripper to machine.
2. Slip boot over gripper and secure in place.
3. Attached fingers to jaws using finger adapter.

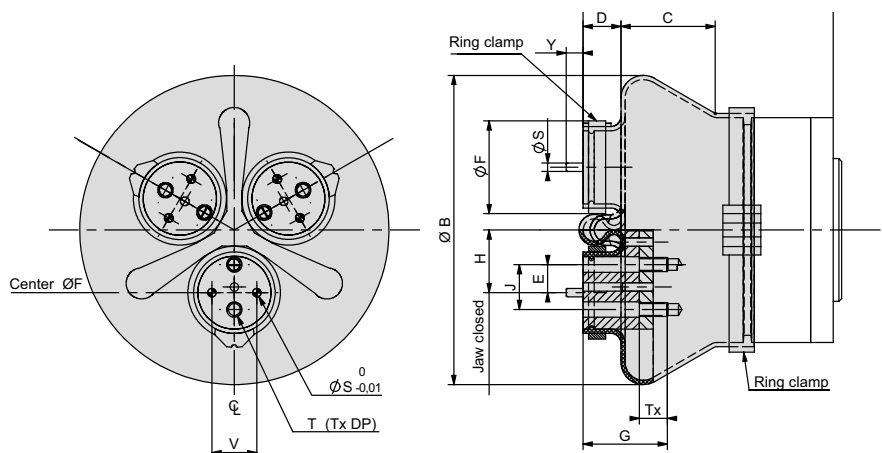
Depending on the environment 2 types of envelopes are available:

- (E) Envelope of black or brown PVC for environmental grinding with emery presence.
- (E3) red envelope containing KEVLAR fireproof silicone environment for hot chips and weld spatter.

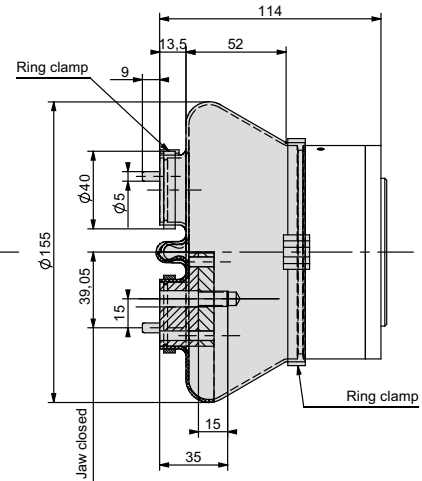
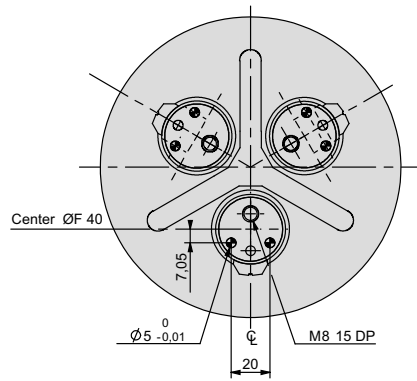
The accessory (E) is incompatible with the accessory (SD)

Model Code	Order #	Model	A	B	C	D	E	F	G	H	J	K	S	T	TX	V	Y
E	ER62P	6003P &	88	98	35	13.5	8	29	29	17.5	13	-	3	M4	9	13	6
E3	E3R62P	6003P-C															
E	ER82P	8003P &	89	110	34	13.5	10	33	30	22.3	16	-	3	M5	10	16	6
E3	E3R82P	8003P-C															
E	ER112P	11003P &	See drawing														
E3	E3R112P	11003P-C															
E	KP-311	14003P &	143	185	50	18	12	55	34	19.5	24	18	5	M8	14	-	8
E3	KP-313	14003P-C															
E	KP-314	16503P &	172	220	70	16	14	67	37	24 19	28	23	6	M10	19	-	8
E3	KP-316	16503P-C															

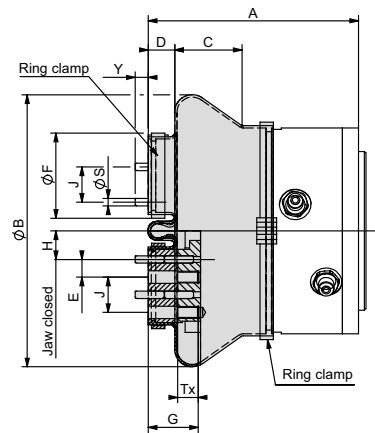
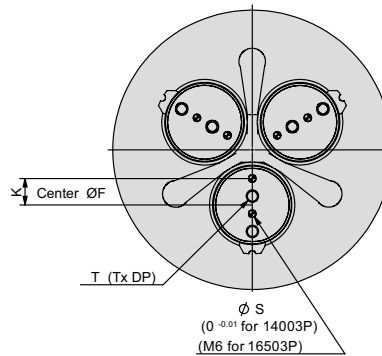
6003P  
8003P



11003P



14003P  
16503P



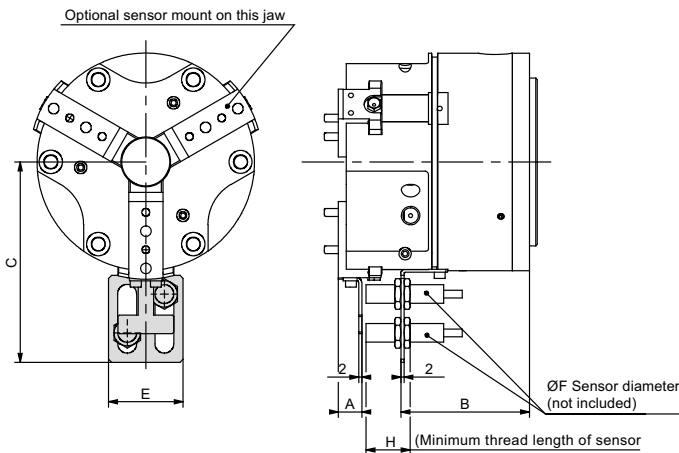
**Accessory (SD): Inductive Sensor Mounting Kit**

Allows for sensing of two positions: open and closed jaw. The accessory kit (SD) includes: 1 sensor bracket, 1 flag and screws.  
**Sensors are not provided.**

**NOTES:**

To be usable, the cylindrical inductive sensors selected by the customer must have tapped their bodies to a minimum depth H (see table below).

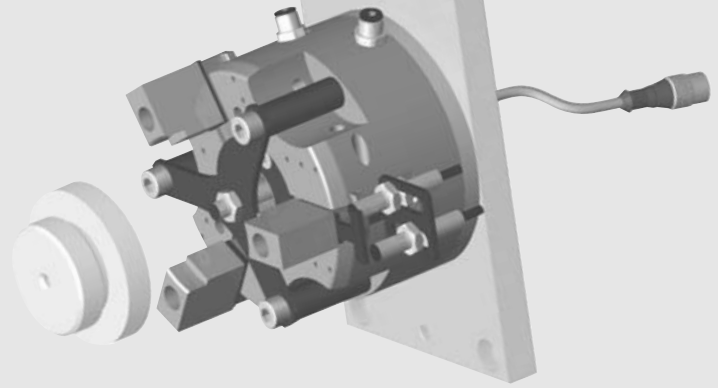
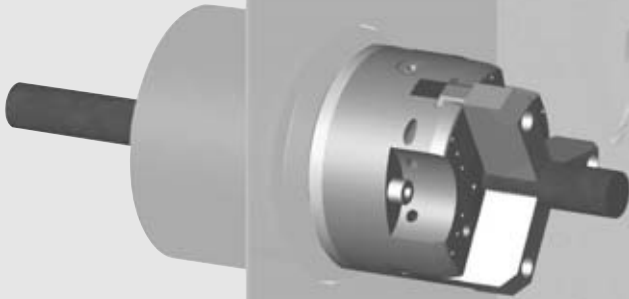
Depending on their length, the cylindrical inductive sensors can extend below the clamp, requiring provision of suitable housing in the surrounding parts. It is possible to control more than 2 positions using a second attachment (SD).



Order #	Model	A	B	C	E	F	H
<b>SD60-80P</b>	6003P & 6003P-C	20	35	67	32	8	35
<b>SD60-80P</b>	8003P & 8003P-C	19	34	77	32	8	35
<b>SD110P</b>	11003P & 11003P-C	19.5	45	97	32	8	35
<b>OSMK-114</b>	14003P & 14003P-C	15	83	129	48	12	28.5
<b>OSMK-115</b>	16503P & 16503P-C	29	96	147	48	12	33



# Through Hole Parallel Gripper PPC Series



**Through Hole Gripper:**

Designed for unique applications where a component ejector is needed after un-gripping the part or to blow air for cleaning the part center. The through hole design allows for the mounting of sensors to detect part presence, and for feeding parts to machining centers.

**Machining applications:**

The 3 concentric jaws and the excellent repeatability make it easier to accurately load and unload round parts.

**Compact, robust and powerful gripper:**

This gripper is designed for use in confined spaces, combining long strokes with a high grip force. Optional safety springs retain the components, should the air supply fail or to increase grip force.

**Harsh environments:**

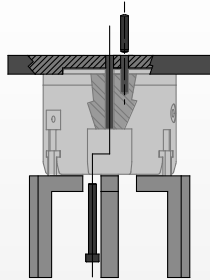
Shielded design repels chips and other particulate from internal drive mechanism.

**Multipurpose gripper:**

A wide range of options and accessories (extended stroke, safety springs for internal or external gripping, inductive sensors, Viton® seals) allow these grippers to be used in a number of applications.

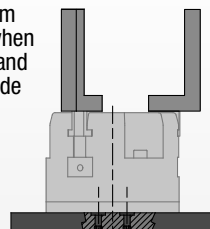
**Mounting Information:**

**Grippers can be mounted and operated in any direction**

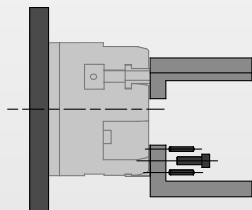


Gripper is located using pilot boss and a dowel pin and assembled with 3 through body screws

The gripper is protected from falling debris when it is mounted and operated upside down



Gripper can be operated utilizing top manifold air ports



Fingers are located on jaws with 2 dowel pins and assembled with 1 screw

**Technical Specifications:**

**Pneumatic Specifications**

Pressure Operating Range without springs  
Pressure Operating Range with springs  
Cylinder Type

**Imperial**

30-100 psi

45-100 psi

**Metric**

2-7 bar

3-7 bar

**Double Acting or Double Acting Spring Assist or Single Acting Spring Return Internally Lubricated Buna-N**

Dynamic Seals  
Valve Required to Operate  
Double Acting  
Single Acting

4-way, 2-position  
3-way, 2-position

**Air Quality Requirements**

Air Filtration  
Air Lubrication  
Air Humidity

40 Micron or Better  
Not Necessary\*  
Low Moisture Content (dry)

**Temperature Operating Range**

Buna-N Seals (standard)  
Viton® Seals (optional)

-30°~180° F    -35°~80° C  
-20°~300° F    -30°~150° C

**Maintenance Specifications†**

Expected Life  
Normal Application  
w/ Preventative Maintenance  
Field Repairable  
Seal Repair Kits Available

5 million cycles  
10+ million cycles\*  
Yes  
Yes

\*Addition of lubrication will greatly increase service life  
† See Maintenance Section

## Product Features

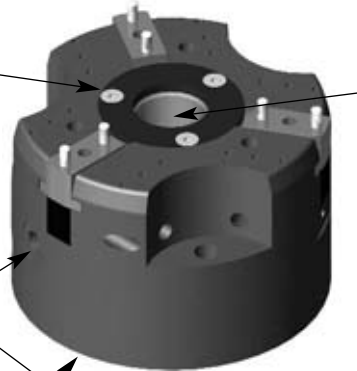
**Viton® Seals**  
Optional for high temperature applications

**Quality Components**  
Made from Aluminum alloy, hard coat anodized with Teflon® Impregnation. The gripper's main components are made of heat treated steel

**Standard Stroke and Extended Stroke**  
Each model of gripper is available in 2 stroke lengths

**Shield and Covers**  
Gripper body is shielded to repel chips and other particulate from internal drive mechanism

**Multiple Ports**  
Side or top manifold ports

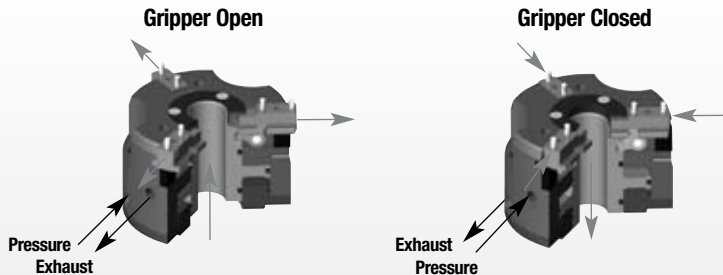
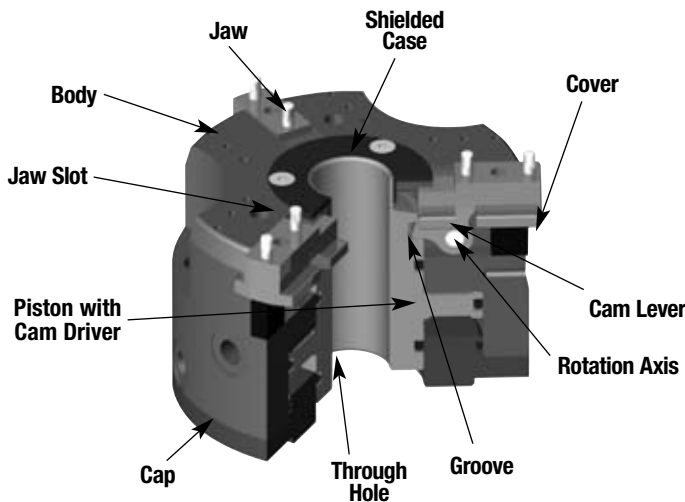


**Through Hole Design**  
The standard hole diameter can be customized with optional sleeves

**Inductive Sensing**  
Inductive sensor kits available. Capable of sensing 4 positions

**Safety Springs**  
Optional Springs for internal gripping (-RI) or external gripping (-RE) in single acting mode or spring assist

## Operating Principle



- A double acting piston with a through hole drives the three cams.
- The piston's motion makes the cam lever rotate and moves the jaws.
- The three cams synchronize the jaw motion.
- Optional springs can be used to increase the grip force or to hold part in the event of loss of air.
- This gripper is suitable for internal or external gripping.

## Style-PPC-12 & PPC-12-C

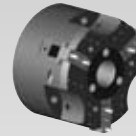


**Style:** PPC-12  
**Total Stroke:** 0.394 in. 10 mm  
**Grip Force:** 331 lb 1474 N  
**Weight:** 2.2 lb 1.00 Kg

**Style:** PPC-12-C  
**Total Stroke:** 0.630 in. 16 mm  
**Grip Force:** 201 lb 896 N  
**Weight:** 2.4 lb 1.10 Kg

See Page **1.270-1.271**

## Style-PPC-25 & PPC-25-C

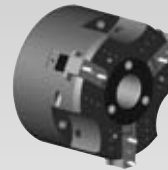


**Style:** PPC-25  
**Total Stroke:** 0.512 in. 13 mm  
**Grip Force:** 589 lb 2620 N  
**Weight:** 4.9 lb 2.20 Kg

**Style:** PPC-25-C  
**Total Stroke:** 0.787 in. 20 mm  
**Grip Force:** 369 lb 1642 N  
**Weight:** 5.1 lb 2.30 Kg

See Page **1.272-1.273**

## Style-PPC-34 & PPC-34-C



**Style:** PPC-34  
**Total Stroke:** 0.787 in. 20 mm  
**Grip Force:** 974 lb 4332 N  
**Weight:** 11.2 lb 5.10 Kg

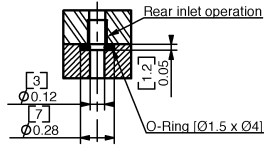
**Style:** PPC-34-C  
**Total Stroke:** 1.181 in. 30 mm  
**Grip Force:** 638 lb 2838 N  
**Weight:** 11.7 lb 5.3 Kg

See Page **1.274-1.275**

# PARALLEL GRIPPERS PPC-12 THROUGH HOLE SERIES

1.270

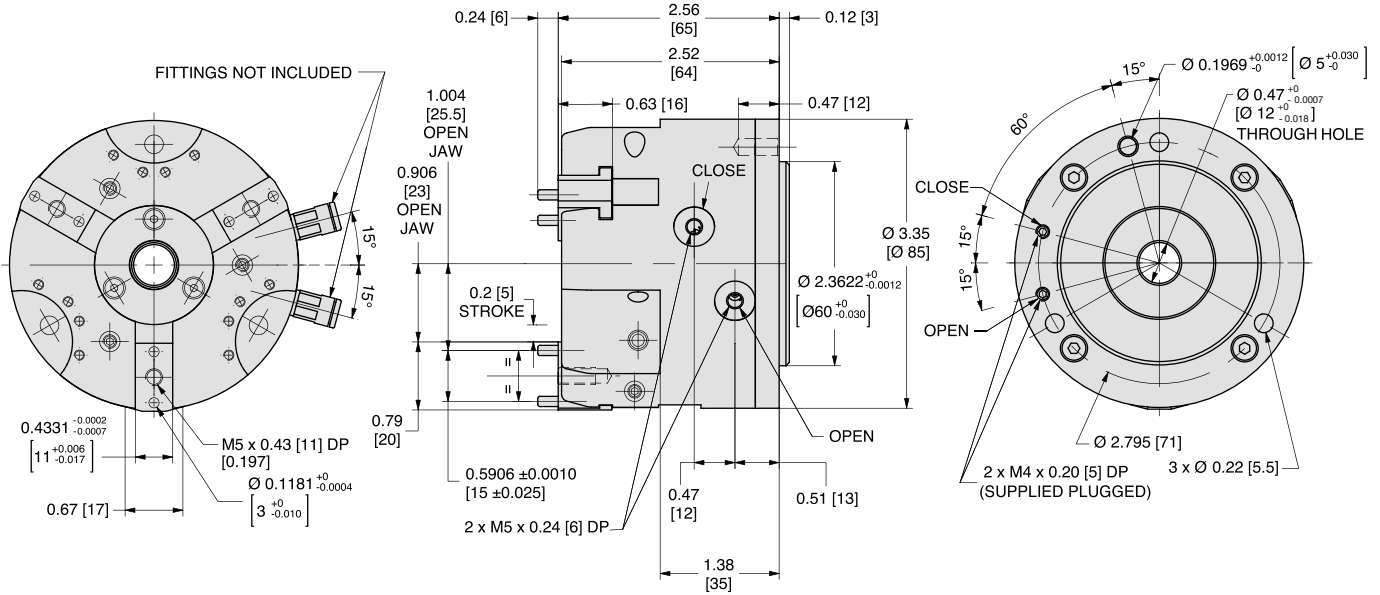
Grippers are supplied with open side air ports and top manifold air ports plugged. Top manifold sealing dimensions shown.



### Specifications

	PPC-12	
Total Rated Grip Force @ 100 psi, 7 bar	331 lbs.*	1474 N*
Total Stroke	0.394 in.	10 mm
Weight	2.2 lbs.	1.0 Kg
Pressure Range without Springs	30-100 psi	2-7 bar
Pressure Range with Springs	45-100 psi	3-7 bar
Cylinder Bore Ø	2.48 in.	63 mm
Displacement	1.40 in <sup>3</sup>	23 cm <sup>3</sup>
Temperature Range		
Standard Seals	-30°~180° F	-35°~80° C
Viton® Seals	-20°~300° F	-30°~150° C
Actuation	0.03 sec.	0.03 sec.
Repeatability	±0.0008 in.	±0.02 mm

\*With Option RE or RI

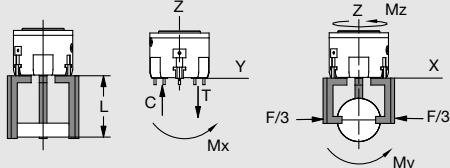
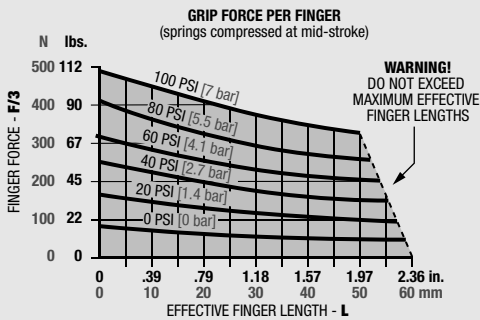


UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

Imperial in.	Metric [mm]
0.00 ± 0.01	[0.0] ± [±.25]
0.000 ± 0.005	[0.0] ± [±.13]
0.0000 ± 0.0005	[0.00] ± [±.013]

Dimensions are symmetrical about centerline  
 Third Angle Projection  
 All Dowel Holes are SF (Slip Fit).  
 Local Tolerance ±.0005" or [±.013mm]  
 Metric Threads Course Pitch

## Loading Information



Loading Capacity*	Static	Dynamic
Maximum Tensile <b>T</b>	191 lbs. [850 N]	49 lbs. [220 N]
Maximum Compressive <b>C</b>	259 lbs. [1150 N]	49 lbs. [220 N]
Maximum Moment <b>Mx</b>	177 in.-lbs. [20 Nm]	53 in.-lbs. [6 Nm]
Maximum Moment <b>My</b>	177 in.-lbs. [20 Nm]	53 in.-lbs. [6 Nm]
Maximum Moment <b>Mz</b>	443 in.-lbs. [50 Nm]	89 in.-lbs. [10 Nm]

\*Capacities are per set of jaws and are not simultaneous

## How to Order: (Order Accessories separately from Basic Model)

BASIC MODEL

VITON® SEALS

PPC-12 - [ ] - V

SAFETY SPRINGS (See below)

SAFETY SPRINGS **RE** External Clamping  
**RI** Internal Clamping  
 \_ Leave Blank. No Spring Option (standard)

### SENSOR ACCESSORIES

	Order #	QTY/UNIT
Inductive Sensor Holder Kit (1 Holder, 1 Flag, 2 Spacers)	<b>OSMK-105</b>	<b>1 to 2</b>
Inductive NPN Sensor M8 with Quick Disconnect	<b>OISN-011</b>	<b>1 to 4</b>
Inductive PNP Sensor M8 with Quick Disconnect	<b>OISP-011</b>	<b>1 to 4</b>
Quick Disconnect 2 Meter Cable Length	<b>CABL-010</b>	<b>1 to 6</b>
Quick Disconnect 5 Meter Cable Length	<b>CABL-013</b>	<b>1 to 6</b>

### PNEUMATIC ACCESSORIES

	Order #	QTY/UNIT
Standard Seal Repair Kit	<b>SLKT-207</b>	<b>1</b>
Viton® Seal Repair Kit	<b>SLKT-207V</b>	<b>1</b>

Detailed sensor information at the end of this section.

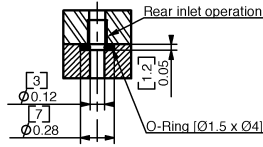


# PARALLEL GRIPPERS PPC-12-C THROUGH HOLE SERIES

PPC SERIES

1.271

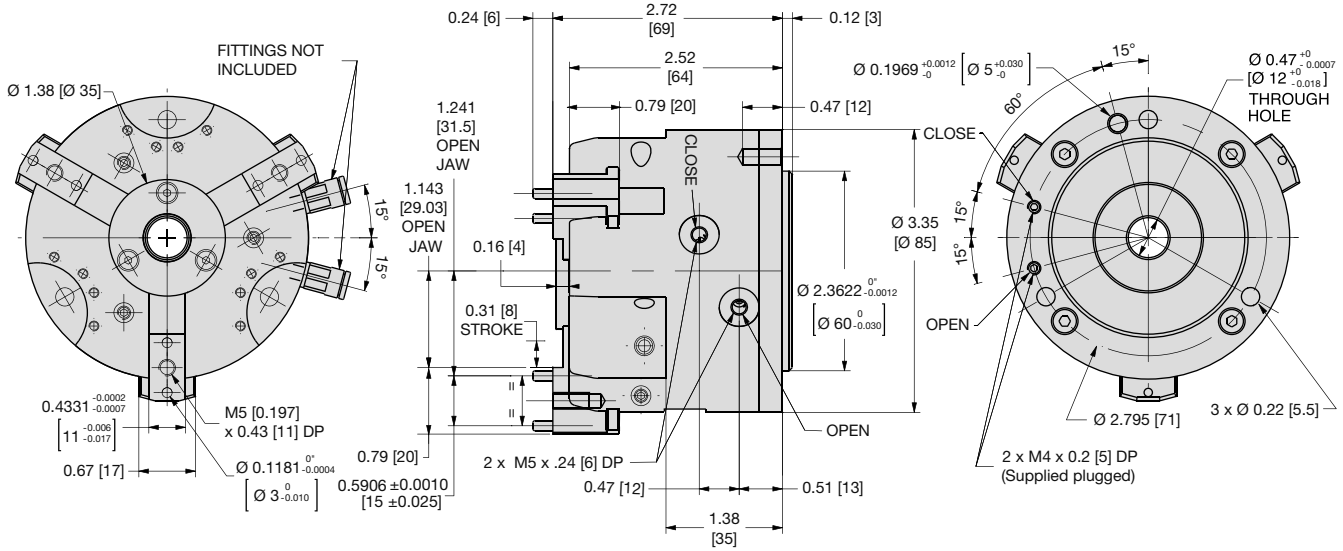
Grippers are supplied with open side air ports and top manifold air ports plugged. Top manifold sealing dimensions shown.



### Specifications

	PPC-12-C	
Total Rated Grip Force @ 100 psi, 7 bar	201 lbs.*	896 N*
Total Stroke	0.630 in.	16 mm
Weight	2.4 lbs.	1.1 Kg
Pressure Range without Springs	30-100 psi	2-7 bar
Pressure Range with Springs	45-100 psi	3-7 bar
Cylinder Bore Ø	2.48 in.	63 mm
Displacement	1.40 in <sup>3</sup>	23 cm <sup>3</sup>
Temperature Range		
Standard Seals	-30°~180° F	-35°~80° C
Viton® Seals	-20°~300° F	-30°~150° C
Actuation	0.03 sec.	0.03 sec.
Repeatability	±0.0008 in.	±0.02 mm

\*with Option RE or RI

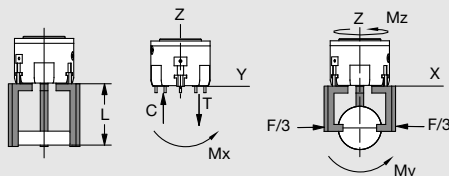
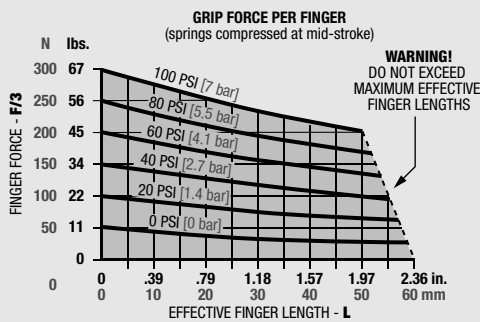


UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

Dimensions are symmetrical about centerline	Third Angle Projection	All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or [±.013mm]	Metric Threads Course Pitch	<b>Imperial in.</b> 0.00 = ±.01 0.000 = ±.005 0.0000 = ±.0005	<b>Metric [mm]</b> [0.] = [±.25] [0.0] = [±.13] [0.00] = [±.013]
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## Loading Information

## How to Order: (Order Accessories separately from Basic Model)



Loading Capacity†	Static	Dynamic
Maximum Tensile <b>T</b>	214 lbs. [950 N]	49 lbs. [220 N]
Maximum Compressive <b>C</b>	281 in.-lbs. [1250 N]	49 lbs. [220 N]
Maximum Moment <b>Mx</b>	177 in.-lbs. [20 Nm]	53 in.-lbs. [6 Nm]
Maximum Moment <b>My</b>	177 in.-lbs. [20 Nm]	53 in.-lbs. [6 Nm]
Maximum Moment <b>Mz</b>	531 in.-lbs. [60 Nm]	89 in.-lbs. [10 Nm]

†Capacities are per set of jaws and are not simultaneous

### BASIC MODEL

### EXTENDED STROKE

**PPC-12 - [ ] - C - V**

### SAFETY SPRINGS (See below)

### VITON® SEALS

**SAFETY SPRINGS** **RE** External Clamping  
**RI** Internal Clamping  
\_ Leave Blank. No Spring Option (standard)

### SENSOR ACCESSORIES

	Order #	QTY/UNIT
Inductive Sensor Holder Kit (1 Holder, 1 Flag, 2 Spacers)	<b>OSMK-105</b>	<b>1 to 2</b>
Inductive NPN Sensor M8 with Quick Disconnect	<b>OISN-011</b>	<b>1 to 4</b>
Inductive PNP Sensor M8 with Quick Disconnect	<b>OISP-011</b>	<b>1 to 4</b>
Quick Disconnect 2 Meter Cable Length	<b>CABL-010</b>	<b>1 to 6</b>
Quick Disconnect 5 Meter Cable Length	<b>CABL-013</b>	<b>1 to 6</b>

### PNEUMATIC ACCESSORIES

Standard Seal Repair Kit	<b>SLKT-207</b>	<b>1</b>
Viton® Seal Repair Kit	<b>SLKT-207V</b>	<b>1</b>

Detailed sensor information at the end of this section.

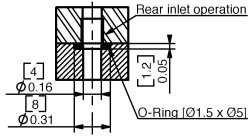
Please see back cover for DE-STA-CO Global Locations. [www.destaco.com](http://www.destaco.com)

[www.comoso.com](http://www.comoso.com)

# PARALLEL GRIPPERS PPC-25 THROUGH HOLE SERIES

1.272

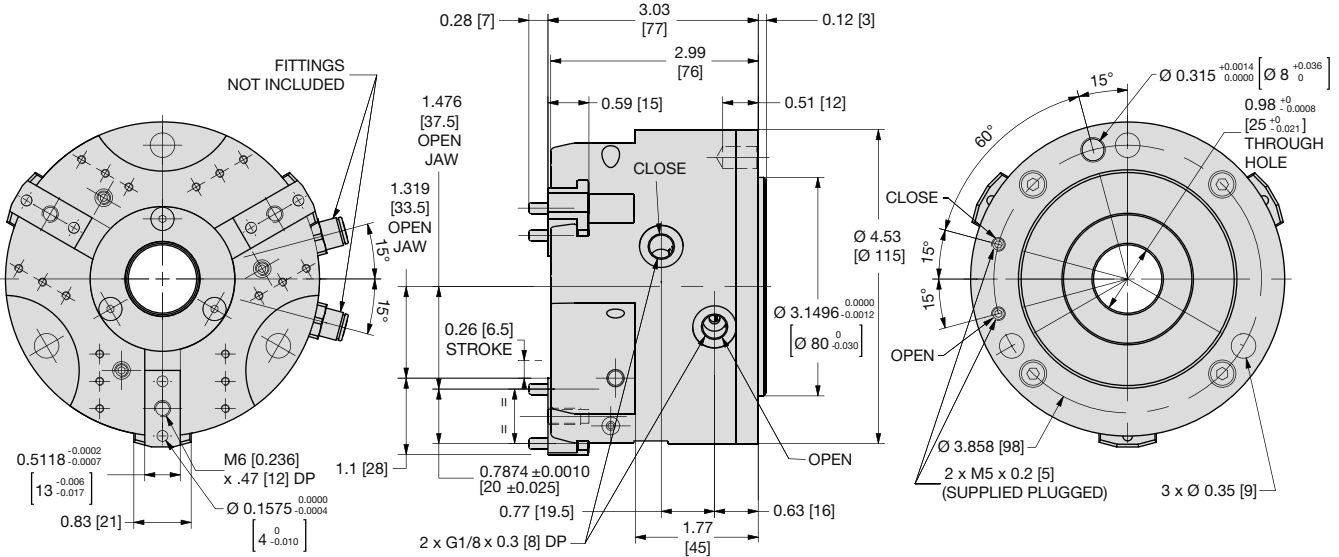
Grippers are supplied with open side air ports and top manifold air ports plugged. Top manifold sealing dimensions shown.



### Specifications

	PPC-25	
Total Rated Grip Force @ 100 psi, 7 bar	589 lbs.*	2620 N*
Total Stroke	0.512 in.	13 mm
Weight	4.9 lbs.	2.2 Kg
Pressure Range without Springs	30-100 psi	2-7 bar
Pressure Range with Springs	45-100 psi	3-7 bar
Cylinder Bore Ø	3.35 in.	85 mm
Displacement	3.11 in <sup>3</sup>	51 cm <sup>3</sup>
Temperature Range		
Standard Seals	-30°~180° F	-35°~80° C
Viton® Seals	-20°~300° F	-30°~150° C
Actuation	0.04 sec.	0.04 sec.
Repeatability	±0.0008 in.	±0.02 mm

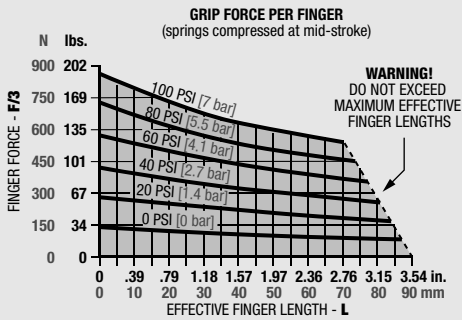
\*With Option RE or RI



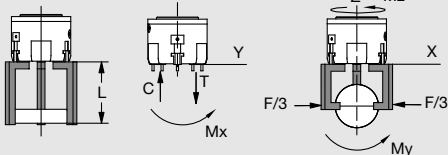
### UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

Imperial in.	Metric [mm]
0.00 = ±.01	[0.] = [±.25]
0.000 = ±.005	[0.0] = [±.13]
0.0000 = ±.0005	[0.00] = [±.013]

## Loading Information



**WARNING!**  
DO NOT EXCEED  
MAXIMUM EFFECTIVE  
FINGER LENGTHS



Loading Capacity*	Static	Dynamic
Maximum Tensile <b>T</b>	292 lbs. [1300 N]	88 lbs. [390 N]
Maximum Compressive <b>C</b>	337 lbs. [1500 N]	88 lbs. [390 N]
Maximum Moment <b>Mx</b>	266 in.-lbs. [30 Nm]	115 in.-lbs. [13 Nm]
Maximum Moment <b>My</b>	266 in.-lbs. [30 Nm]	115 in.-lbs. [13 Nm]
Maximum Moment <b>Mz</b>	575 in.-lbs. [65 Nm]	221 in.-lbs. [25 Nm]

\*Capacities are per set of jaws and are not simultaneous

## How to Order: (Order Accessories separately from Basic Model)

**BASIC MODEL**

**VITON® SEALS**

**PPC-25 - [ ] - V**

**SAFETY SPRINGS** (See below)

**SAFETY SPRINGS** **RE** External Clamping  
**RI** Internal Clamping  
\_ Leave Blank. No Spring Option (standard)

### SENSOR ACCESSORIES

	Order #	QTY/UNIT
Inductive Sensor Holder Kit (1 Holder, 1 Flag, 2 Spacers)	<b>OSMK-106</b>	<b>1 to 2</b>
Inductive NPN Sensor M8 with Quick Disconnect	<b>OISN-011</b>	<b>1 to 4</b>
Inductive PNP Sensor M8 with Quick Disconnect	<b>OISP-011</b>	<b>1 to 4</b>
Quick Disconnect 2 Meter Cable Length	<b>CABL-010</b>	<b>1 to 6</b>
Quick Disconnect 5 Meter Cable Length	<b>CABL-013</b>	<b>1 to 6</b>

### PNEUMATIC ACCESSORIES

Standard Seal Repair Kit	<b>SLKT-208</b>	<b>1</b>
Viton® Seal Repair Kit	<b>SLKT-208V</b>	<b>1</b>

**Detailed sensor information at the end of this section.**



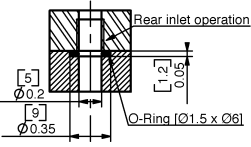




# PARALLEL GRIPPERS PPC-34 THROUGH HOLE SERIES



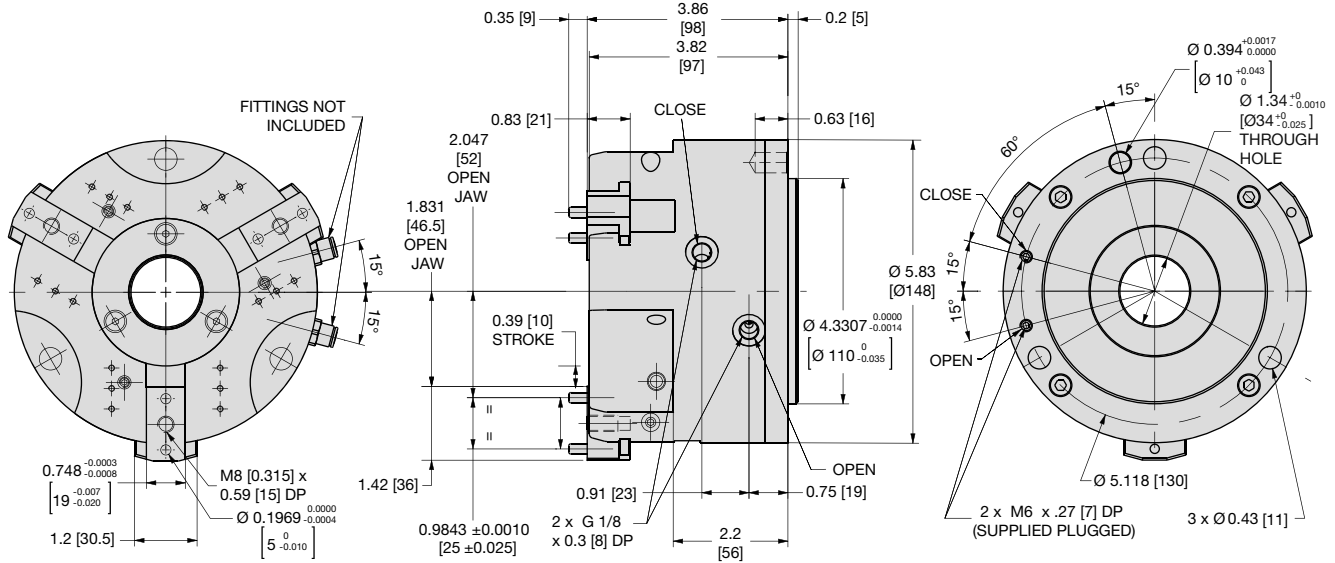
Grippers are supplied with open side air ports and top manifold air ports plugged. Top manifold sealing dimensions shown.



### Specifications

	PPC-34	
Total Rated Grip Force @ 100 psi, 7 bar	974 lbs.*	4332 N*
Total Stroke	0.787 in.	20 mm
Weight	11.2 lbs.	5.1 Kg
Pressure Range without Springs	30-100 psi	2-7 bar
Pressure Range with Springs	45-100 psi	3-7 bar
Cylinder Bore Ø	4.33 in.	110 mm
Displacement	7.81 in <sup>3</sup>	128 cm <sup>3</sup>
Temperature Range		
Standard Seals	-30°~180° F	-35°~80° C
Viton® Seals	-20°~300° F	-30°~150° C
Actuation	0.06 sec.	0.06 sec.
Repeatability	±0.0008 in.	±0.02 mm

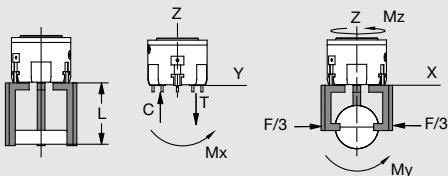
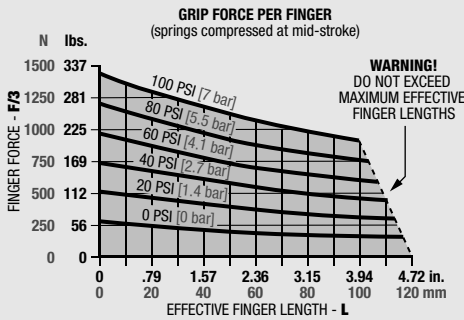
\*With Option RE or RI



UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

	Imperial in.	Metric [mm]
Dimensions are symmetrical about centerline	0.00 = ±.01	[0.] = [±.25]
Third Angle Projection	0.000 = ±.005	[0.0] = [±.13]
All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or [±.013mm]	0.0000 = ±.0005	[0.00] = [±.013]
Metric Threads Course Pitch		

## Loading Information



Loading Capacity*	Static	Dynamic
Maximum Tensile <b>T</b>	438 lbs. [1950 N]	146 lbs. [650 N]
Maximum Compressive <b>C</b>	483 lbs. [2150 N]	146 lbs. [650 N]
Maximum Moment <b>Mx</b>	575 in.-lbs. [65 Nm]	283 in.-lbs. [32 Nm]
Maximum Moment <b>My</b>	575 in.-lbs. [65 Nm]	283 in.-lbs. [32 Nm]
Maximum Moment <b>Mz</b>	885 in.-lbs. [100 Nm]	487 in.-lbs. [55 Nm]

\*Capacities are per set of jaws and are not simultaneous

## How to Order: (Order Accessories separately from Basic Model)

BASIC MODEL

VITON® SEALS

**PPC-34** - [ ] - **V**

SAFETY SPRINGS (See below)

**SAFETY SPRINGS** **RE** External Clamping  
**RI** Internal Clamping  
 \_ Leave Blank. No Spring Option (standard)

### SENSOR ACCESSORIES

	Order #	QTY/UNIT
Inductive Sensor Holder Kit (1 Holder, 1 Flag, 2 Spacers)	<b>OSMK-107</b>	<b>1 to 2</b>
Inductive NPN Sensor M8 with Quick Disconnect	<b>OISN-011</b>	<b>1 to 4</b>
Inductive PNP Sensor M8 with Quick Disconnect	<b>OISP-011</b>	<b>1 to 4</b>
Quick Disconnect 2 Meter Cable Length	<b>CABL-010</b>	<b>1 to 6</b>
Quick Disconnect 5 Meter Cable Length	<b>CABL-013</b>	<b>1 to 6</b>

### PNEUMATIC ACCESSORIES

Standard Seal Repair Kit	<b>SLKT-209</b>	<b>1</b>
Viton® Seal Repair Kit	<b>SLKT-209V</b>	<b>1</b>

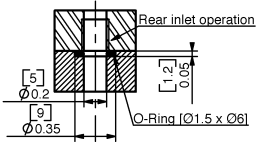
Detailed sensor information at the end of this section.



# PARALLEL GRIPPERS PPC-34-C THROUGH HOLE SERIES

PPC SERIES  
1.275

Grippers are supplied with open side air ports and top manifold air ports plugged. Top manifold sealing dimensions shown.

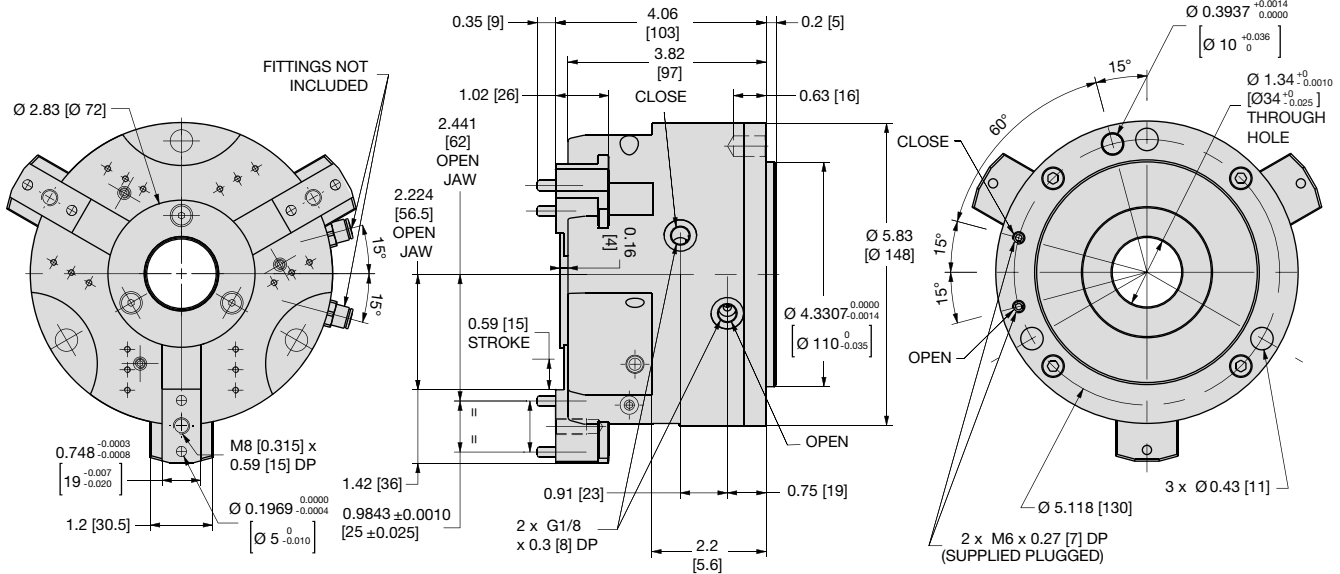


## Specifications

## PPC-34-C

Total Rated Grip Force @ 100 psi, 7 bar	638 lbs.*	2838 N*
Total Stroke	1.181 in.	30 mm
Weight	11.7 lbs.	5.3 Kg
Pressure Range without Springs	30-100 psi	2-7 bar
Pressure Range with Springs	45-100 psi	3-7 bar
Cylinder Bore Ø	4.33 in.	110 mm
Displacement	7.81 in <sup>3</sup>	128 cm <sup>3</sup>
Temperature Range		
Standard Seals	-30°~180° F	-35°~80° C
Viton® Seals	-20°~300° F	-30°~150° C
Actuation	0.06 sec.	0.06 sec.
Repeatability	±0.0008 in.	±0.02 mm

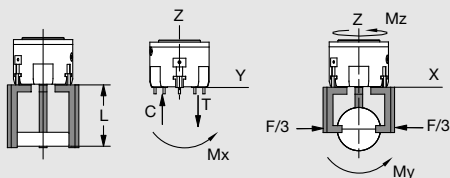
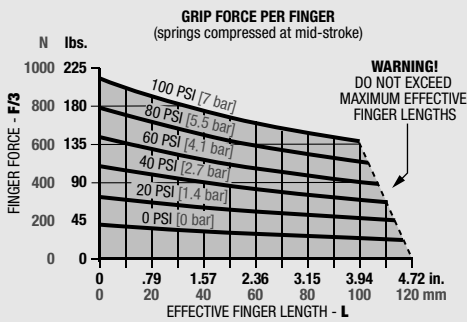
\*With Option RE or RI



UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

Dimensions are symmetrical about centerline	Third Angle Projection	All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or [±.013mm]	Metric Threads Course Pitch	<b>Imperial in.</b> 0.00 = ±.01 0.000 = ±.005 0.0000 = ±.0005	<b>Metric [mm]</b> [0.] = [±.25] [0.0] = [±.13] [0.00] = [±.013]
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## Loading Information



Loading Capacity*	Static	Dynamic
Maximum Tensile <b>T</b>	438 lbs. [2150 N]	146 lbs. [650 N]
Maximum Compressive <b>C</b>	528 lbs. [2350 N]	146 lbs. [650 N]
Maximum Moment <b>Mx</b>	575 in.-lbs. [65 Nm]	283 in.-lbs. [32 Nm]
Maximum Moment <b>My</b>	575 in.-lbs. [65 Nm]	283 in.-lbs. [32 Nm]
Maximum Moment <b>Mz</b>	1062 in.-lbs. [120 Nm]	487 in.-lbs. [55 Nm]

\*Capacities are per set of jaws and are not simultaneous

## How to Order: (Order Accessories separately from Basic Model)

BASIC MODEL

EXTENDED STROKE

PPC-34 - [ ] - C - V

SAFETY SPRINGS (See below)

VITON® SEALS

**SAFETY SPRINGS** RE External Clamping  
RI Internal Clamping  
\_ Leave Blank. No Spring Option (standard)

### SENSOR ACCESSORIES

Order #	QTY/UNIT
Inductive Sensor Holder Kit (1 Holder, 1 Flag, 2 Spacers)	<b>OSMK-107</b> 1 to 2
Inductive NPN Sensor M8 with Quick Disconnect	<b>OISN-011</b> 1 to 4
Inductive PNP Sensor M8 with Quick Disconnect	<b>OISP-011</b> 1 to 4
Quick Disconnect 2 Meter Cable Length	<b>CABL-010</b> 1 to 6
Quick Disconnect 5 Meter Cable Length	<b>CABL-013</b> 1 to 6

### PNEUMATIC ACCESSORIES

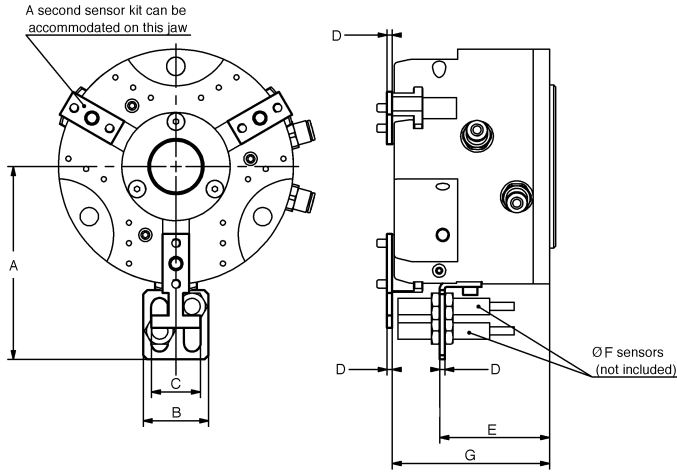
Standard Seal Repair Kit	<b>SLKT-209</b> 1
Viton® Seal Repair Kit	<b>SLKT-209V</b> 1

Detailed sensor information at the end of this section.

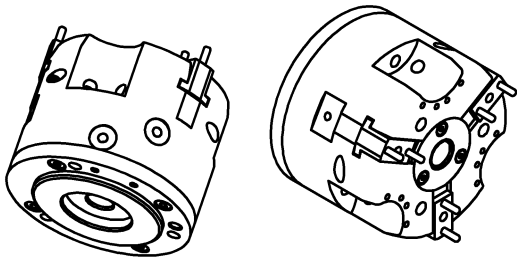
# SENSOR ACCESSORIES

## Accessory (OSMK): Inductive Sensor Holders

Each kit allows sensing up to 2 jaw positions: open jaws, closed jaws, or part present. Two kits can be used on each gripper allowing sensing up to 4 positions. The accessory (OSMK) comes with 1 sensor holder, 1 flag, 2 spacers and screws for mounting. The sensors are not included.



	A	B	C	D	E	F	G
<b>PPC-12</b>	3.13 [79.5]	1.26 [32]	0.95 [24]	0.1 [2.5]	1.72 [43.75]	M8	2.56 [65]
<b>PPC-12-C</b>	3.13 [79.5]	1.26 [32]	0.95 [24]	0.1 [2.5]	1.72 [43.75]	M8	2.72 [69]
<b>PPC-25</b>	3.72 [94.5]	1.26 [32]	0.95 [24]	0.1 [2.5]	2.12 [53.75]	M8	3.03 [77]
<b>PPC-25-C</b>	3.72 [94.5]	1.26 [32]	0.95 [24]	0.1 [2.5]	2.12 [53.75]	M8	3.23 [82]
<b>PPC-34</b>	4.69 [119]	1.26 [32]	0.95 [24]	0.1 [2.5]	2.84 [72.05]	M8	3.86 [98]
<b>PPC-34-C</b>	4.69 [119]	1.26 [32]	0.95 [24]	0.1 [2.5]	2.84 [72.05]	M8	4.06 [103]

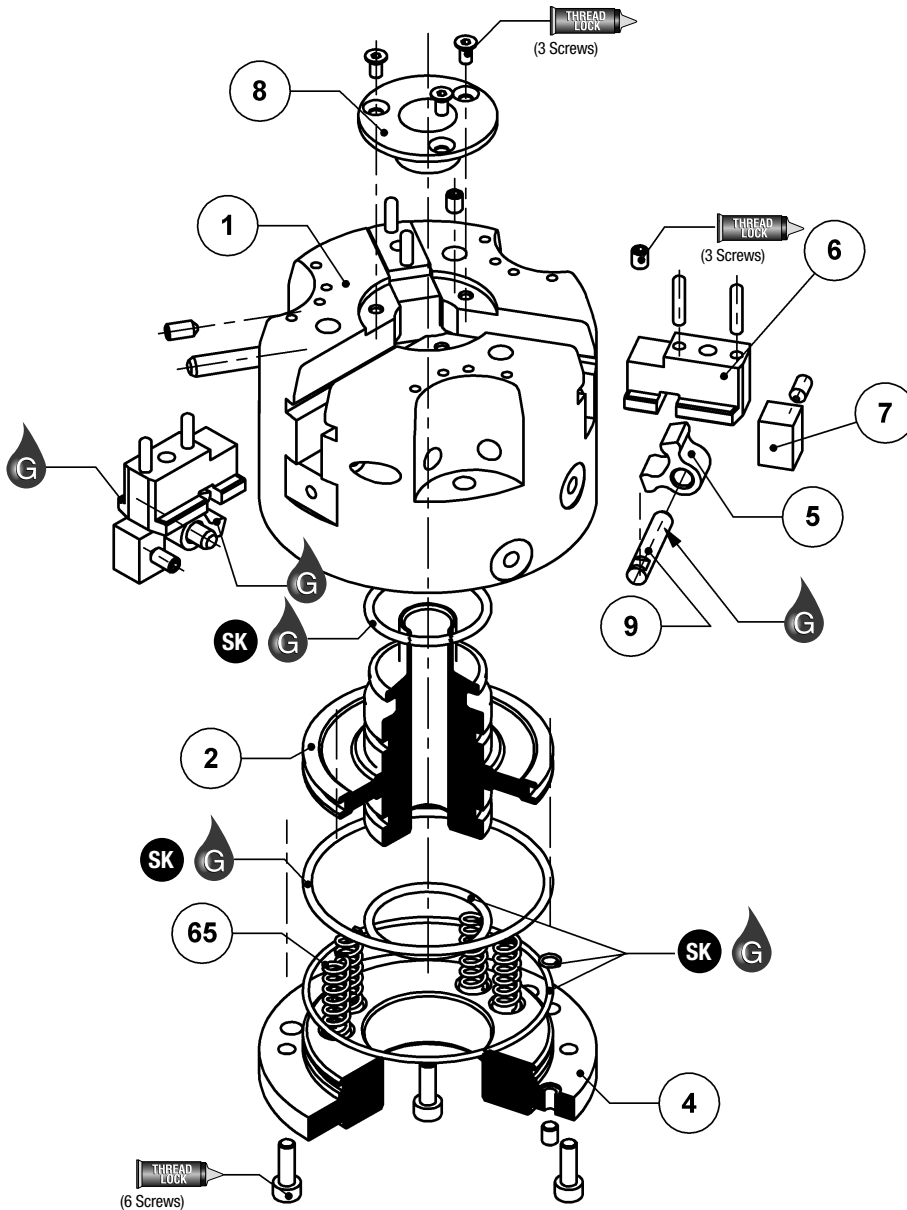


Item	Qty	Name
01	1	Body
02	1	Cam Driver Piston
04	1	Cap
05	3	Cam Lever
06	3	Jaw
07	3	Cover
08	1	Shielded Case
09	3	Pivot Pin
65	6	Springs

**NOTE:** Contact the Robohand Sales Department for a complete spare parts list with order numbers and prices.

### Assembly Procedure

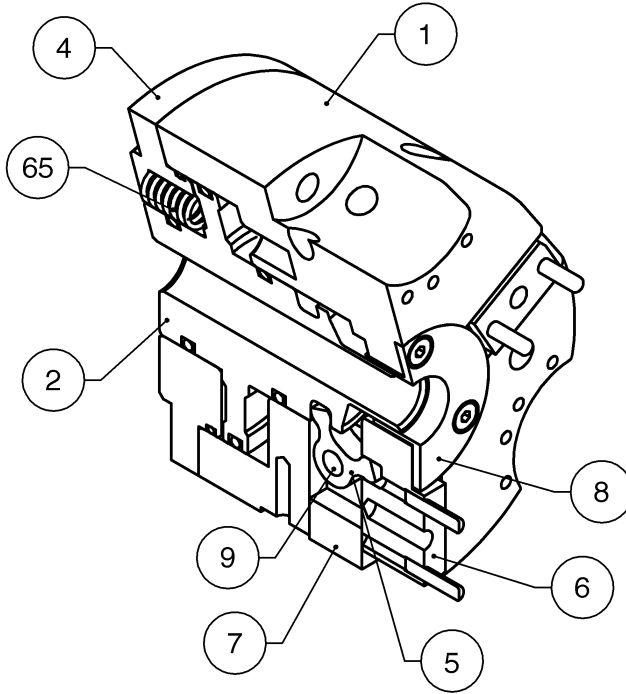
- 1) Lubricate and install the seals onto the cam driver piston
- 2) Lubricate and install the seals into the cap
- 3) Plug rear ports in the cap if rear inlets are not used. If rear inlets are used, plug body ports.
- 4) Insert the piston into body. Place springs into counterbore holes between the body and the piston for **-RE** option or between the piston and the cap for **-RI** option
- 5) Assemble the cap
- 6) Insert together the jaw and the cam lever into the body
- 7) Insert the pivot pin aligning cam lever hole. Screw SS Screw into the body for preventing pivot pin from moving
- 8) Assemble the cover
- 9) Assemble the shielded case



**SK Seal Repair Kit Order #'s See Product Data Sheets**

<b>SK</b> Seal Kit Items	<b>THREAD LOCK</b> Thread Locker	<b>KRYTOX</b> Krytox™ Lubricant	<b>O</b> Lightweight Machine Oil	<b>G</b> Teflon™ Based Grease	<b>GLUE</b> Super Bonder	 Third Angle Projection
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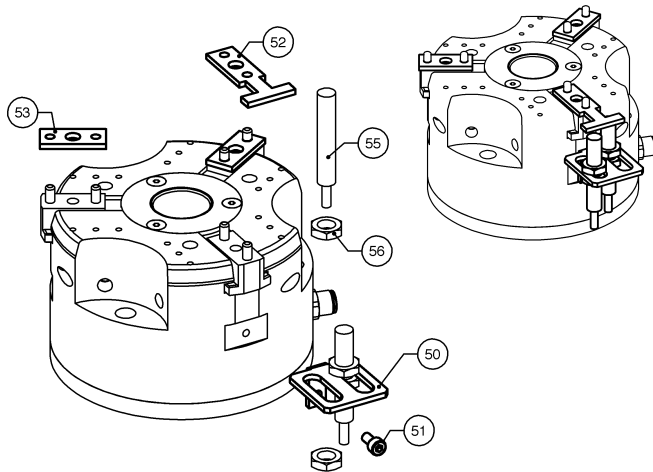
## PPC SERIES ASSEMBLED VIEW



Item	Qty	Name
01	1	Body
02	1	Cam Driver Piston
04	1	Cap
05	3	Cam Lever
06	3	Jaw
07	3	Cover
08	1	Shielded Case
09	3	Pivot Pin
65	6	Springs

**NOTE:** Contact the Robohand Sales Department for a complete spare parts list with order numbers and prices.

## Accessory Installation & Adjustment Instructions



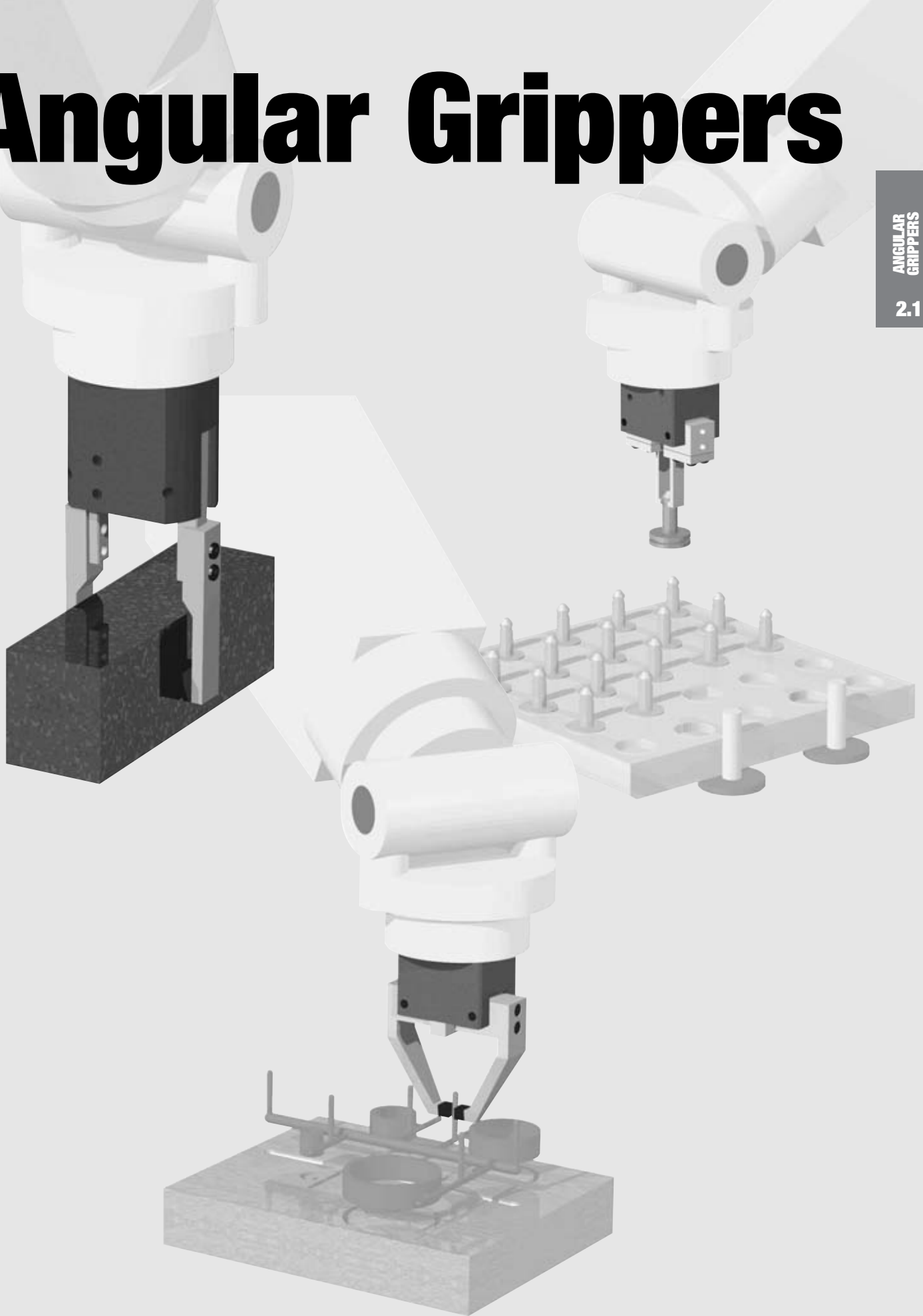
### Installation-Inductive Sensor

- 1) Assemble the sensor holder (#50) onto the gripper
- 2) Place the flag (#52) on one of the jaws above the sensor holder
- 3) Place the spacer (#53) on the other jaws
- 4) Position sensor for desired stroke position
- 5) Tighten sensor locking nuts (#56) to hold sensor depth
- 6) Repeat these operations in case of the use of two sensors holders

# Angular Grippers

ANGULAR GRIPPERS

2.1



Please see back cover for DE-STA-CO Global Locations. [www.destaco.com](http://www.destaco.com)

[www.comoso.com](http://www.comoso.com)



# Angular Motion Gripper Product Overview

## RUA Series Angular Gripper

- 2-Jaw Angular Gripper
- Spring Assist
- Pneumatic or Hydraulic Operation

Preferred Market: ● Global



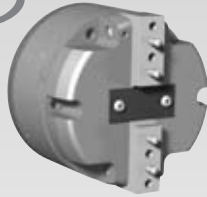
See Page **2.4**

NEW

## Vulcan Series Hi-Temp Angular Gripper

- Air Top or Lateral Blowing Port
- Optional Kelvar® Boot, metal seals, or stainless heat shield
- Optional stainless steel jaws and hardware

Preferred Market: ▲ NA ◆ SA



See Page **2.16**

## RA Series Cam Driven Gripper

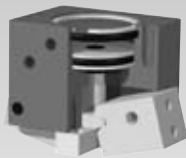
### RA-5 & 6 DESIGN ADVANTAGES

- Inexpensive
- Adjustable stroke
- Rugged design

### RA-10 DESIGN ADVANTAGES

- Extremely small (1in.) and lightweight (1 oz.)
- Inexpensive

Preferred Market: ● Global



See Page **2.22**

## DCT/CT Series *DIRECTCONNECT* 180° Angular Gripper

- 180° of travel (Optional Adjustable Stop)
- Features DIRECTCONNECT mounting (sizes 12-25)
- Sealed design protects internal components from chips and other particulate
- Optional Resistive or Inductive Sensors

Preferred Market: ● Global



See Page **2.32**

## DCT-RE/CT-RE Series *DIRECTCONNECT* 180° Failsafe Angular Gripper

- 180° of travel (Optional Adjustable Stop)
- Spring Assist
- Features DIRECTCONNECT mounting (sizes 12-25)
- Sealed design protects internal components from chips and other particulate
- Optional Magneto Resistive or Inductive Sensors

Preferred Market: ● Global



See Page **2.44**

## FUA Series Food Gripper

NEW

- Designed for direct product contact in the food zone, according to the food industry standard (EN 1672-2)
- All parts are corrosion resistant, non-toxic, non-contaminating, non-porous, non-absorbent and non-reactive
- Stainless steel design resists chemical cleaning procedures

Preferred Market: ● Global



See Page **2.56**

# Destaco-Robohand Angular Gripper Product Selector

Model #	Stroke Range	Total Grip Force Range	Maximum Finger Length @ 60 PSI [4 bar]	Actuation Time	Operating Pressure	Environment	Two Jaws	Three Jaws	12 Degrees	30 Degrees	70 Degrees	180 Degrees	1 - 10 lbs. [0.45 - 45Kg]	10 - 25 lbs. [45 - 111Kg]	25 - 50 lbs. [111 - 223Kg]	50 - 100 lbs. [223 - 445Kg]	100 - 500 lbs. [445 - 2225Kg]	500 - 3000 lbs. [2225 - 13300Kg]	0 - 2 in. [0 - 50.8mm]	2 - 4 in. [50.8 - 102mm]	4 - 6 in. [102 - 152mm]	6 - 8 in. [152 - 203mm]	8 - 10 in. [203 - 254mm]	10 - 12 in. [254 - 305mm]	12 - 14 in. [305 - 356mm]	14 - 16 in. [356 - 406mm]	16 - 18 in. [406 - 457mm]	18 - 20 in. [457 - 508mm]	20 in.+ [508mm+]	0.05 - 0.1 sec.	0.1 - 0.5 sec.	0.5 - 0.75 sec.	0.75 - 1 sec.	5 - 100 psi [0.3 - 7 bar]	20 - 100 psi [1.5 - 7 bar]	40 - 100 psi [3 - 7 bar]	50 - 100 psi [3.5 - 7 bar]	70 - 150 psi [5 - 7 bar]	Clean Room Environment	Normal Environment	Harsh/Dirty Environment	Failsafe Operation	Inductive Sensors	Magneto Resistive Sensors	Double Acting Cylinder	Single Acting/Spring Return	Double Acting/Spring Assist	Non-Synchronous Option					
<b>CYLINDRICAL DESIGN</b>																																																					
RUA-62																																																					
RUA-82																																																					
RUA-112																																																					
RUA-142																																																					
RUA-162																																																					
<b>HI-TEMP DESIGN</b>																																																					
VULCAN-112																																																					
VULCAN-142																																																					
VULCAN-162																																																					
<b>CAM DRIVEN DESIGN</b>																																																					
RA-5																																																					
RA-6																																																					
RA-10																																																					
<b>180° DESIGN</b>																																																					
DCT-12																																																					
DCT-16																																																					
DCT-20																																																					
DCT-25																																																					
CT-32																																																					
CT-40																																																					
CT-50																																																					
<b>180° FAILSAFE DESIGN</b>																																																					
DCT-12-RE																																																					
DCT-16-RE																																																					
DCT-20-RE																																																					
DCT-25-RE																																																					
CT-32-RE																																																					
CT-40-RE																																																					
CT-50-RE																																																					
<b>FOOD GRIPPER DESIGN</b>																																																					
FUA-63																																																					

# Angular Grippers - High Power Series

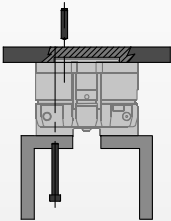


- Cost effective:**  
 The simplified drive mechanism makes these grippers an excellent value
- Compact, robust & powerful gripper:**  
 This gripper is designed for use in confined spaces, combining large opening angle with a high torque. Optional safety springs retain the components, should the air supply fail or to increase grip force.
- Multipurpose gripper:**  
 A wide range of options and accessories (hydraulic or pneumatic operation, safety springs for internal or external clamping, Viton® seals, and magneto resistive or inductive sensing) allow these grippers to be used in a number of applications.
- Harsh environment:**  
 Shielded design repels chips and other particulate from internal drive mechanism
- High Temperature Design (Vulcan Series):**  
 Designed for heavy-duty, extreme high temperature applications, the Vulcan Series Gripper can be ordered with optional metal seals and fireproof kevlar boot or stainless steel heat shield for added protection.

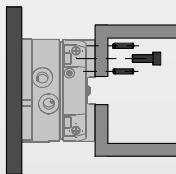
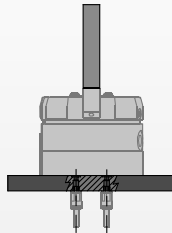
## Mounting Information:

### Grippers can be mounted & operated in any orientation

Gripper is located using pilot boss and a dowel pin and assembled with 4 through body screws.



Gripper can be operated utilizing top manifold air ports.



Fingers are located on jaws with 2 dowel pins and assembled with 1 screw.

## Technical Specifications:

Specifications	Imperial	Metric
Pneumatic Pressure Operating Range:		
Standard	30-100 psi	2-7 bar
with <b>-RE, -RI</b> Spring Option	45-100 psi	3-7 bar
Hydraulic Pressure Operating Range:**		
Hydraulic	30-290 psi	2-20 bar
with <b>-RE, -RI</b> Spring Option	45-290 psi	3-20 bar
Cylinder Type	Double Acting or Single Acting Spring Return or Double Acting Spring Assist Internally Lubricated Buna-N	
Dynamic Seals	4-way, 2-position for Double Acting or 3-way, 2-position for Single Acting	
Valve Required to Operate		
<b>Air Quality Requirements</b>		
Air Filtration	40 Micron or Better	
Air Lubrication	Not Necessary*	
Air Humidity	Low Moisture Content (dry)	
<b>Temperature Operating Range</b>		
Viton® Seals (RUA Series)	-20°~300° F	-30°~150° C
Vulcan Series	-20°~842° F	-30°~450° C
<b>Maintenance Specifications†</b>		
Expected Life		
Normal Application	5 million cycles	
w/ Preventative Maintenance	10+ million cycles*	
Field Repairable	Yes	
Seal Repair Kits Available	Yes	

\*Addition of lubrication will greatly increase service life

†See Maintenance Section

\*\* The gripper can be operated at 290psi (20 bars) MAXIMUM hydraulic pressure. Cycle times are longer and may depend on the hydraulic system. Grippers must be mounted before being operated under hydraulic pressure. Please contact factory for more information.

# Product Features

**Quality Components**  
Made of Aluminum alloy, hard coat anodized with Teflon Impregnation. The gripper's main components are made of heat treated steel.

**Viton® Seals**  
Standard Viton® seals for high temperatures (-20°F to +300°F / -30°~150° C)

**Hi-Temp Design**  
Designed for extreme high temperature applications up to 842°F [450°C] (Vulcan Series only)

**Safety Springs**  
Optional springs retain the component, should the air supply fail, to assist the gripper for internal (-RI) or external (-RE) gripping, or in single acting or spring assist mode

**Gripper Attachment**  
From the top or from the back using DirectConnect pattern (except sizes 142M & 162M).

**Shielded Case and Covers**  
Gripper is shielded to repel chips and other particulate from internal drive mechanism.

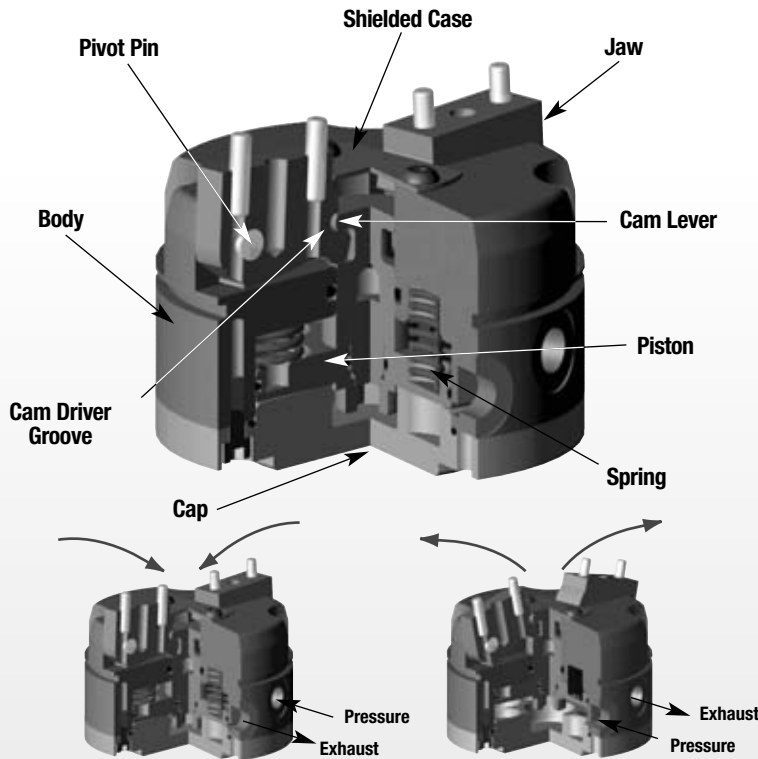
**Hydraulic Operation**  
Optional hydraulic seals for 290 psi [20 bar] Max. operation

**Multiple Ports**  
Side or top manifold ports

**Magneto Resistive Sensing**  
The gripper comes with adjustable slots for 2 magnetic sensors. (to control jaw position). Must be used with -RE or -RI option. (Except sizes 142M & 162M)

**Integrated Inductive Sensor**  
An integrated sensor (KT1 or KT2 option) allows to sense jaws in open or closed position

# Operating Principle



- A double acting piston, connected to a cam driver with a groove, drives the cams levers.
- The piston's translatory motion makes the cams levers rotate in a synchronous motion.
- Optional springs can be used to increase the grip force, to hold part in the event of loss of air, or to use the gripper in single acting mode.
- This gripper is suitable for internal or external gripping.

## Style -RUA Angular Gripper

**Size -62M**

**Style:** RUA-62M  
**Stroke:** 33.6°  
**Grip Force:\*** 86 lbs 384 N  
**Weight:** 0.86 lbs 0.39 Kg



See Page **2.6**

\*Grip force @ 100PSI [7 bar], L=1" [25.4], with spring, jaws at 0°

## Style -RUA Angular Gripper

**Size -82M**

**Style:** RUA-82M  
**Stroke:** 31.8°  
**Grip Force:\*** 276 lbs 1228 N  
**Weight:** 1.54 lbs 0.70 Kg



See Page **2.8**

\*Grip force @ 100PSI [7 bar], L=1" [25.4], with spring, jaws at 0°

## Style -RUA Angular Gripper

**Size -112M**

**Style:** RUA-112M  
**Stroke:** 38.2°  
**Grip Force:\*** 483 lbs 2150 N  
**Weight:** 3.75 lbs 1.70 Kg



See Page **2.10**

\*Grip force @ 100PSI [7 bar], L=1" [25.4], with spring, jaws at 0°

## Style -RUA Angular Gripper

**Size -142M**

**Style:** RUA-142M  
**Stroke:** 35.2°  
**Grip Force:\*** 1298 lbs 5775 N  
**Weight:** 9.05 lbs 4.1 Kg



See Page **2.12**

\*Grip force @ 100PSI [7 bar], L=1" [25.4], with spring, jaws at 0°

## Style -RUA Angular Gripper

**Size -162M**

**Style:** RUA-162M  
**Stroke:** 34.4°  
**Grip Force:\*** 1778 lbs 7911 N  
**Weight:** 14.80 lbs 6.7 Kg



See Page **2.14**

\*Grip force @ 100PSI [7 bar], L=1" [25.4], with spring, jaws at 0°

## Style -VULCAN Angular Gripper

**Size -112M**

**Style:** VULCAN-112M  
**Stroke:** 38.4°  
**Grip Force:\*** 895 lbs 3983 N  
**Weight:** 3.75 lbs 1.7 Kg



See Page **2.16**

\*Grip force @ 100PSI [7 bar], L=1" [25.4], with spring, jaws at 0°

## Style -VULCAN Angular Gripper

**Size -142M**

**Style:** VULCAN-142M  
**Stroke:** 35.2°  
**Grip Force:\*** 1343 lbs 5975 N  
**Weight:** 9.04 lbs 4.1 Kg



See Page **2.17**

\*Grip force @ 100PSI [7 bar], L=2" [50.8], with spring, jaws at 0°

## Style -VULCAN Angular Gripper

**Size -162M**

**Style:** VULCAN-162M  
**Stroke:** 34.6°  
**Grip Force:\*** 2015 lbs 8964 N  
**Weight:** 14.77 lbs 6.7 Kg



See Page **2.18**

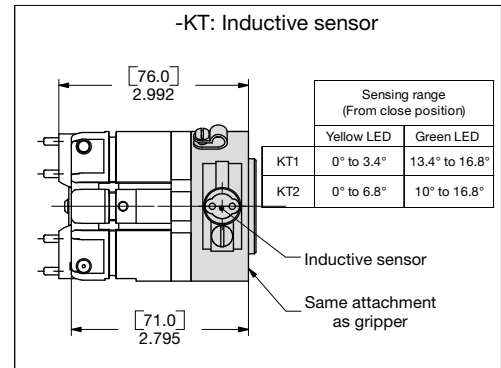
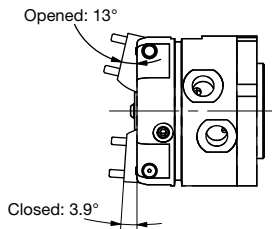
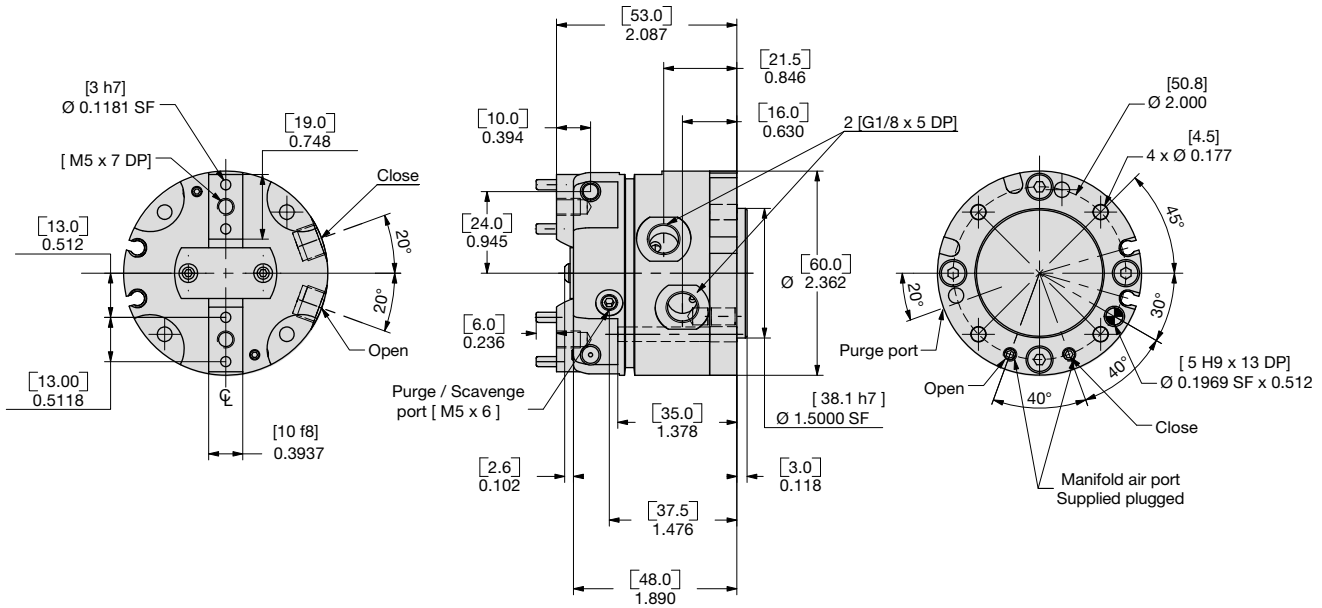
\*Grip force @ 100PSI [7 bar], L=2" [50.8], with spring, jaws at 0°

# ANGULAR GRIPPER RUA-62M SPRING ASSISTED SERIES



RUA SERIES

2.6



## UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

Imperial in.	Metric [mm]
0.00 ± 0.01	[0.] = [±.25]
0.000 ± 0.005	[0.0] = [±.13]
0.0000 ± 0.0005	[0.00] = [±.013]

## How to Order: (Order Separately)

### BASIC MODEL

### SPRING ASSIST (See Below)

**RUA-62M** - [ ] - [ ] - [ ]

### POWER

**P**-Pneumatic  
**H**-Hydraulic

### INTEGRATED SENSOR

**POWER P** Pneumatic  
**H** Hydraulic (20 bar max.)

**SPRING RE** Closed  
**RI** Open  
— Leave Blank. No Spring Option (standard)

**INDUCTIVE CASE\*** **KT1** Sensing Range KT1  
**KT2** Sensing Range KT2  
— Leave Blank. No Inductive Option

\* Inductive Case not available with DUA model

### SENSOR ACCESSORIES

	ORDER #	QTY/UNIT
PNP Magneto Resistive Sensor w/Qk Disconnect* ** ††	<b>OHSP-017</b>	<b>1 or 2</b>
NPN Magneto Resistive Sensor w/Qk Disconnect* ** ††	<b>OHSN-017</b>	<b>1 or 2</b>
PNP Magneto Resistive Sensor (90° Barrel) w/Qk Disc* ** ††	<b>OHSP-011</b>	<b>1 or 2</b>
NPN Magneto Resistive Sensor (90° Barrel) w/Qk Disc* ** ††	<b>OHSN-011</b>	<b>1 or 2</b>
Replacement PNP Double Inductive Sensor* ***	<b>KT15</b>	<b>1</b>
Quick Disconnect 2 Meter Cable*	<b>CABL-010</b>	<b>1 or 2</b>
Quick Disconnect 5 Meter Cable*	<b>CABL-013</b>	<b>1 or 2</b>
Quick Disconnect 2 Meter Cable (for KT15 Inductive Sensor)*	<b>CABL-014</b>	<b>1 or 2</b>

### SEALED BOOT KITS

PVC Sealed Jaw Boot Kit (includes 2 interfaces, 1 collar, 1 boot)	<b>SLKT-367</b>	<b>1</b>
Kevlar Sealed Jaw Boot Kit (includes 2 interfaces, 1 collar, 1 boot)	<b>SLKT-368</b>	<b>1</b>
FireProof Kevlar Sealed Jaw Boot Kit (includes 2 interfaces, 1 collar, 1 boot)	<b>SLKT-369</b>	<b>1</b>

### SEAL REPAIR KIT

	PNEUMATIC	HYDRAULIC
Viton® Seal Repair Kit	<b>SLKT-156V</b>	<b>SLKT-330V</b>

\*Sensor and cable sold separately †Requires Mounting Kit \*\*Piston magnet standard  
††Not compatible with Hydraulic (-H) option and requires -RE or -ORI option  
\*\*\*Requires KT1 or KT2 Inductive Case Option

## SAMPLE ORDER: RUA-62M-P-RI-KT1

Ex: RUA-62M Gripper, Pneumatic, Spring Open, Sensing Range KT1

Please see back cover for DE-STA-CO Global Locations. [www.destaco.com](http://www.destaco.com)

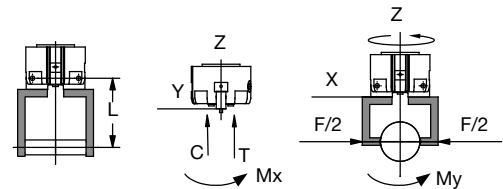
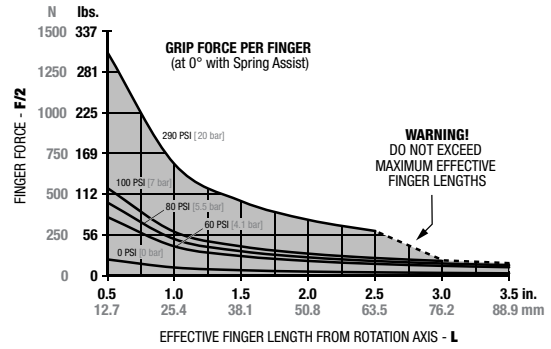
[www.comoso.com](http://www.comoso.com)



# ANGULAR GRIPPER RUA-62M SPRING ASSISTED SERIES

## Specifications RUA-62M

Total Rated Grip Force $L=1$ in [25.4mm] @ 0°	86 lbs.	384 N
100 psi, 7 bar, w/spring .....	70 lbs.	313 N
100 psi, 7 bar, w/o spring .....	0.86 lbs.	0.39 kg
Stroke .....	16.8° of stroke for each finger	
Weight .....	30-100 psi	2-7 bar
Pressure Range (without springs) .....	45-100 psi	3-7 bar
Pressure Range (with springs) .....	1.57 in.	40 mm
Cylinder Bore $\varnothing$ .....	0.73 in <sup>2</sup>	12 cm <sup>3</sup>
Displacement .....		
Temperature Range		
Viton® Seals Standard .....	-20°~300° F	-30~150° C
Actuation (open/close) .....	0.18 sec./0.18 sec.	
Accuracy .....	±0.002 in.	±0.05 mm
Repeatability .....	±0.0008 mm.	±0.02 mm
Valve required to actuate single acting .....	3-way, 2-position	
Valve required to actuate double acting .....	4-way, 2-position	

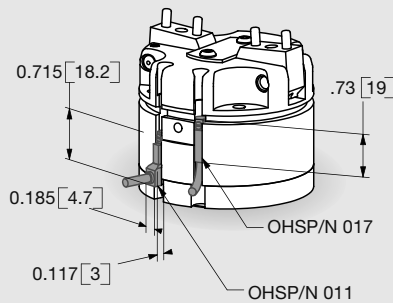


### Loading Capacity†

	Static	Dynamic
Maximum Tensile <b>T</b>	53 lbs. [236 N]	11 lbs. [47.2 N]
Maximum Compressive <b>C</b>	53 lbs. [236 N]	11 lbs. [47.2 N]
Maximum Moment <b>M<sub>x</sub></b>	111 in.-lbs. [12.5 Nm]	27 in.-lbs. [3.1 Nm]
Maximum Moment <b>M<sub>y</sub></b>	305 in.-lbs. [34.5 Nm]	31 in.-lbs. [3.5 Nm]
Maximum Moment <b>M<sub>z</sub></b>	111 in.-lbs. [12.5 Nm]	27 in.-lbs. [3.1 Nm]

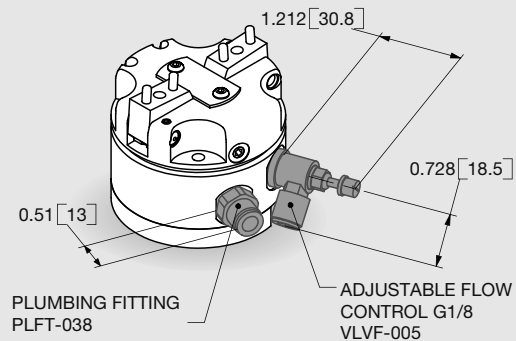
†Capacities are per set of jaws and are not simultaneous

## Accessory Mounting Technical Data



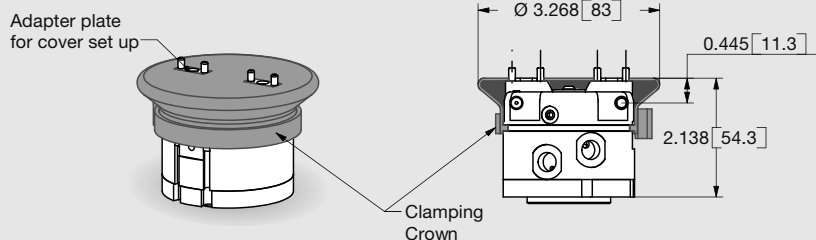
### MR Sensors

- PNP and NPN Magneto Resistive available
- Sensors are slot mounted, no mounting kits required
- Simple adjustment with slotted screw driver
- Built in LED for ease of positioning and troubleshooting
- Available with 2M or 5M Quick Disconnect mating cable (order separately)



### Plumbing Fittings

- Adjustable flow controls:
  - Have thumb screw adjust with locking nut for adjusting actuation time
  - Available for 6mm OD tubing
- Plumbing fittings:
  - For side air port location
  - Top airport are plugged as standard



### Boot

- Protects the gripper mechanism
- Provides better performance and longer life time in harsh environment
- Three materials available depending on the application:
  - PVC for grinding applications (up to 176°F / 80°C)
  - Kevlar for machine applications (up to 480°F / 250°C)
  - Fireproof Kevlar for welding applications (up to 525°F / 275°C)
- A provided spacer has to be added to the jaws

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[www.comoso.com](http://www.comoso.com)

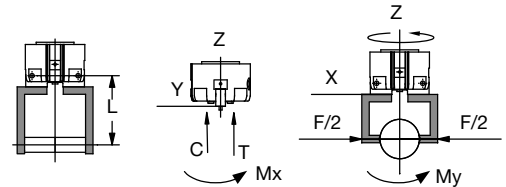
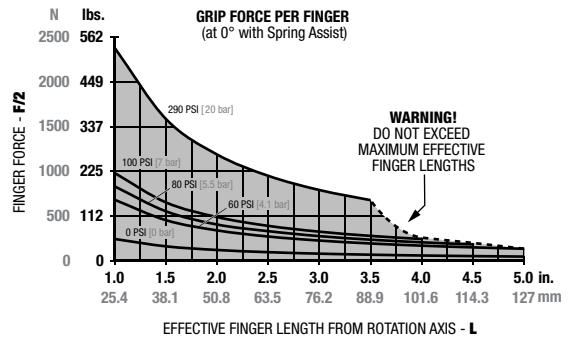






# ANGULAR GRIPPER RUA-82M SPRING ASSISTED SERIES

Specifications	RUA-82M	
Total Rated Grip Force $L=1$ in [25.4mm] @ 0°		
100 psi, 7 bar, w/spring .....	276 lbs	1228 N
100 psi, 7 bar, w/o spring .....	207 lbs.	922 N
Stroke .....	15.9° of stroke for each finger	
Weight .....	1.55 lbs.	0.70 kg
Pressure Range (without springs) .....	30-100 psi	2-7 bar
Pressure Range (with springs) .....	45-100 psi	3-7 bar
Cylinder Bore $\varnothing$ .....	2.36 in.	60 mm
Displacement .....	2.14 in <sup>3</sup>	35 cm <sup>3</sup>
Temperature Range		
Viton® Seals Standard .....	-20°~300° F	-30~150° C
Actuation (open/close) .....	0.10 sec./0.10 sec.	
Accuracy .....	±0.002 in.	±0.05 mm
Repeatability .....	±0.0008 mm.	±0.02 mm
Valve required to actuate single acting .....	3-way, 2-position	
Valve required to actuate double acting .....	4-way, 2-position	

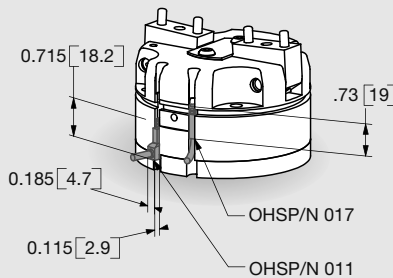


### Loading Capacity†

	Static	Dynamic
Maximum Tensile <b>T</b>	65 lbs. [290 N]	13 lbs. [58 N]
Maximum Compressive <b>C</b>	65 lbs. [290 N]	13 lbs. [58 N]
Maximum Moment <b>M<sub>x</sub></b>	168 in.-lbs. [19 Nm]	42 in.-lbs. [4.8 Nm]
Maximum Moment <b>M<sub>y</sub></b>	1071 in.-lbs. [121 Nm]	106 in.-lbs. [12 Nm]
Maximum Moment <b>M<sub>z</sub></b>	168 in.-lbs. [19 Nm]	42 in.-lbs. [4.8 Nm]

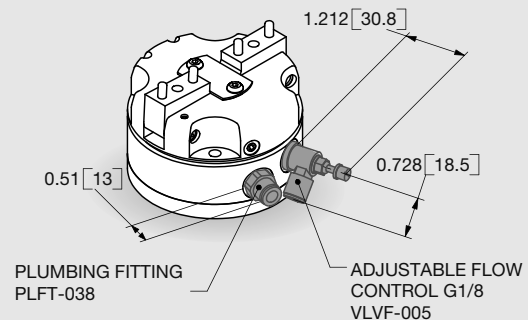
†Capacities are per set of jaws and are not simultaneous

## Accessory Mounting Technical Data



### MR Sensors

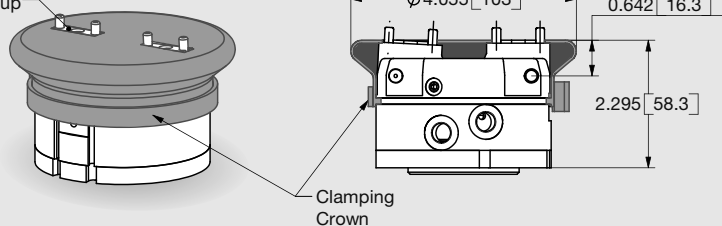
- PNP and NPN Magneto Resistive available
- Sensors are slot mounted, no mounting kits required
- Simple adjustment with slotted screw driver
- Built in LED for ease of positioning and troubleshooting
- Available with 2M or 5M Quick Disconnect mating cable (order separately)



### Plumbing Fittings

- Adjustable flow controls:
  - Have thumb screw adjust with locking nut for adjusting actuation time
  - Available for 6mm OD tubing
- Plumbing fittings:
  - For side air port location
  - Top airport are plugged as standard

Adapter plate for cover set up



### Boot

- Protects the gripper mechanism
- Provides better performance and longer life time in harsh environment
- Three materials available depending on the application:
  - PVC for grinding applications (up to 176°F / 80°C)
  - Kevlar for machine applications (up to 480°F / 250°C)
  - Fireproof Kevlar for welding applications (up to 525°F / 275°C)
- A provided spacer has to be added to the jaws

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[www.comoso.com](http://www.comoso.com)

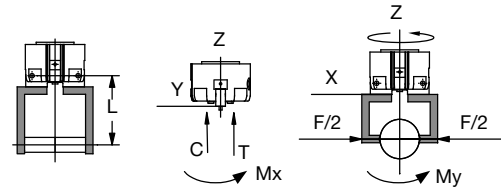
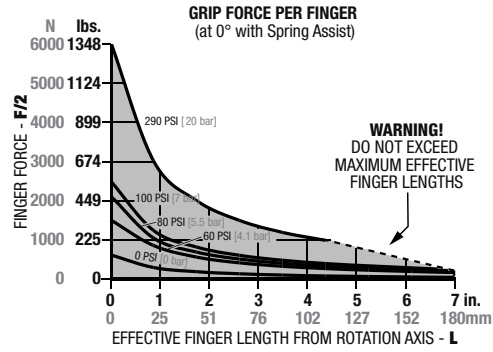




# ANGULAR GRIPPER RUA-112M SPRING ASSISTED SERIES

## Specifications RUA-112M

Total Rated Grip Force $L=1$ in [25.4mm] @ 0°		
100 psi, 7 bar, w/spring .....	483 lbs.	2150 N
100 psi, 7 bar, w/o spring .....	360 lbs.	1600 N
Stroke .....	19.1° of stroke for each finger	
Weight .....	3.75 lbs.	1.70 kg
Pressure Range (without springs) .....	30-100 psi	2-7 bar
Pressure Range (with springs) .....	45-100 psi	3-7 bar
Cylinder Bore $\varnothing$ .....	2.99 in.	76 mm
Displacement .....	5.19 in <sup>3</sup>	85 cm <sup>3</sup>
Temperature Range		
Viton® Seals Standard .....	-20°~300° F	-30~150° C
Actuation (open/close) .....	0.35 sec./0.35 sec.	
Accuracy .....	±0.003 in.	±0.08 mm
Repeatability .....	±0.0008 mm.	±0.03 mm
Valve required to actuate single acting .....	3-way, 2-position	
Valve required to actuate double acting .....	4-way, 2-position	

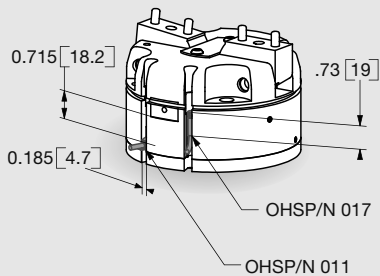


### Loading Capacity†

	Static	Dynamic
Maximum Tensile <b>T</b>	65 lbs. [290 N]	13 lbs. [58 N]
Maximum Compressive <b>C</b>	65 lbs. [290 N]	13 lbs. [58 N]
Maximum Moment <b>M<sub>x</sub></b>	168 in.-lbs. [19 Nm]	42 in.-lbs. [4.8 Nm]
Maximum Moment <b>M<sub>y</sub></b>	1071 in.-lbs. [121 Nm]	106 in.-lbs. [12 Nm]
Maximum Moment <b>M<sub>z</sub></b>	168 in.-lbs. [19 Nm]	42 in.-lbs. [4.8 Nm]

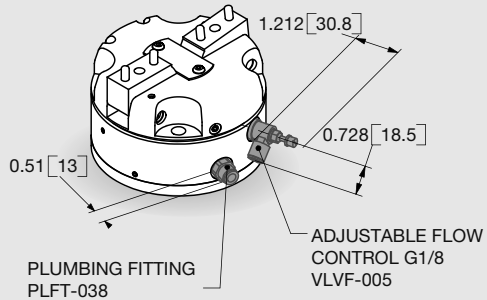
†Capacities are per set of jaws and are not simultaneous

## Accessory Mounting Technical Data



### MR Sensors

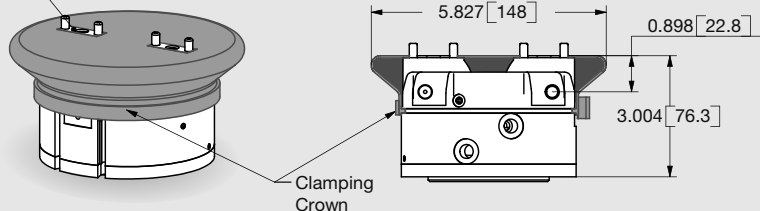
- PNP and NPN Magneto Resistive available
- Sensors are slot mounted, no mounting kits required
- Simple adjustment with slotted screw driver
- Built in LED for ease of positioning and troubleshooting
- Available with 2M or 5M Quick Disconnect mating cable (order separately)



### Plumbing Fittings

- Adjustable flow controls:
  - Have thumb screw adjust with locking nut for adjusting actuation time
  - Available for 6mm OD tubing
- Plumbing fittings:
  - For side air port location
  - Top airport are plugged as standard

Adapter plate for cover set up



### Boot

- Protects the gripper mechanism
- Provides better performance and longer life time in harsh environment
- Three materials available depending on the application:
  - PVC for grinding applications (up to 176°F / 80°C)
  - Kevlar for machine applications (up to 480°F / 250°C)
  - Fireproof Kevlar for welding applications (up to 525°F / 275°C)
- A provided spacer has to be added to the jaws

Please see back cover for DE-STA-CO Global Locations. [www.destaco.com](http://www.destaco.com)

[www.comoso.com](http://www.comoso.com)



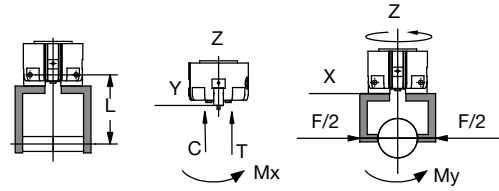
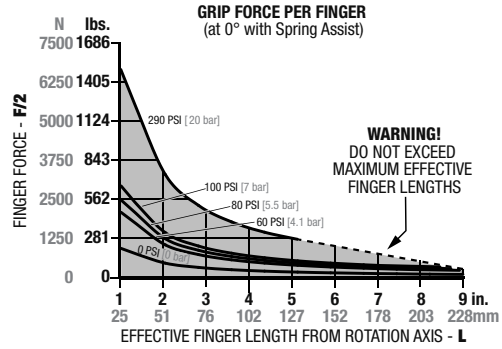


# ANGULAR GRIPPER RUA-142M SPRING ASSISTED SERIES

RUA SERIES  
2.13

## Specifications RUA-142M

Total Rated Grip Force $L=1$ in [25.4mm] @ 0°	1298 lbs.	5775 N
100 psi, 7 bar, w/spring .....	886 lbs.	3941 N
100 psi, 7 bar, w/o spring .....	17.6° of stroke for each finger	
Stroke .....	9.05 lbs.	4.1 kg
Weight .....	30-100 psi	2-7 bar
Pressure Range (without springs) .....	60-100 psi	4-7 bar
Pressure Range (with springs) .....	4.13 in.	105 mm
Cylinder Bore $\emptyset$ .....	13.2 in <sup>2</sup>	215 cm <sup>2</sup>
Displacement .....		
Temperature Range		
Viton® Seals Standard .....	-20°~300° F	-30~150° C
Actuation (open/close) .....	0.60 sec./0.60 sec.	
Accuracy .....	±0.003 in.	±0.8 mm
Repeatability .....	±0.0008 mm.	±0.03 mm
Valve required to actuate single acting .....	3-way, 2-position	
Valve required to actuate double acting .....	4-way, 2-position	

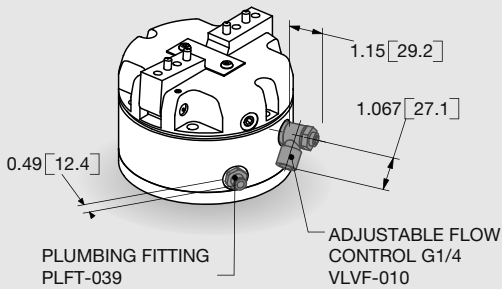


### Loading Capacity†

	Static	Dynamic
Maximum Tensile <b>T</b>	142 lbs. [630 N]	28 lbs. [126 N]
Maximum Compressive <b>C</b>	142 lbs. [630 N]	28 lbs. [126 N]
Maximum Moment <b>M<sub>x</sub></b>	460 in.-lbs. [52 Nm]	115 in.-lbs. [13 Nm]
Maximum Moment <b>M<sub>y</sub></b>	6160 in.-lbs. [696 Nm]	611 in.-lbs. [69 Nm]
Maximum Moment <b>M<sub>z</sub></b>	460 in.-lbs. [52 Nm]	115 in.-lbs. [13 Nm]

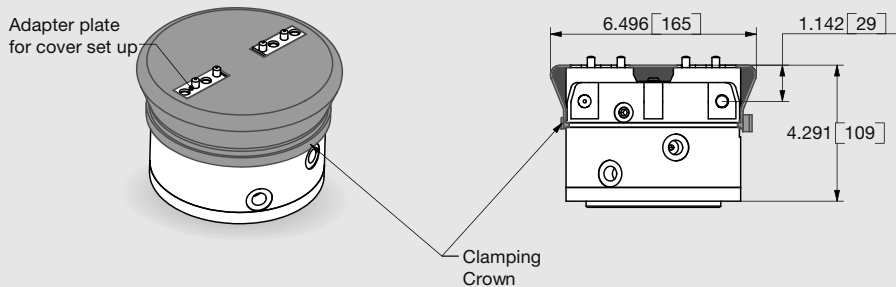
†Capacities are per set of jaws and are not simultaneous

## Accessory Mounting Technical Data



### Plumbing Fittings

- Adjustable flow controls:
  - Have thumb screw adjust with locking nut for adjusting actuation time
  - Available for 6mm OD tubing
- Plumbing fittings:
  - For side air port location
  - Top airport are plugged as standard



### Boot

- Protects the gripper mechanism
- Provides better performance and longer life time in harsh environment
- Three materials available depending on the application:
  - PVC for grinding applications (up to 176°F / 80°C)
  - Kevlar for machine applications (up to 480°F / 250°C)
  - Fireproof Kevlar for welding applications (up to 525°F / 275°C)
- A provided spacer has to be added to the jaws





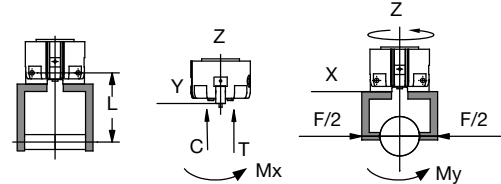
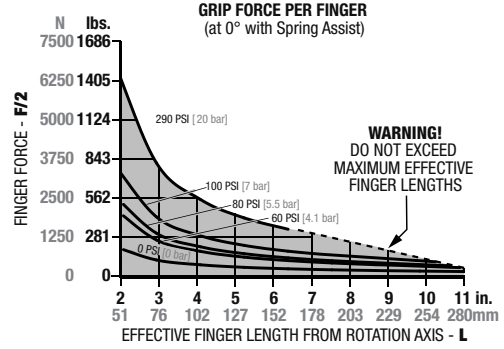


# ANGULAR GRIPPER RUA-162M SPRING ASSISTED SERIES

## Specifications

### RUA-162M

Total Rated Grip Force $L=2$ in [50.8mm] @ 0°	1234 lbs.	5490 N
100 psi, 7 bar, w/spring	853 lbs.	3790 N
100 psi, 7 bar, w/o spring	17.2° of stroke for each finger	
Stroke	14.8 lbs.	6.7 kg
Weight	30-100 psi	2-7 bar
Pressure Range (without springs)	60-100 psi	4-7 bar
Pressure Range (with springs)	4.72 in.	120 mm
Cylinder Bore $\varnothing$	19.7 in <sup>2</sup>	322 cm <sup>2</sup>
Displacement		
Temperature Range		
Viton® Seals Standard	-20°~300° F	-30~150° C
Actuation (open/close)	0.80 sec./0.80 sec.	
Accuracy	±0.003 in.	±0.8 mm
Repeatability	±0.0008 mm.	±0.03 mm
Valve required to actuate single acting	3-way, 2-position	
Valve required to actuate double acting	4-way, 2-position	



### Loading Capacity<sup>†1</sup>

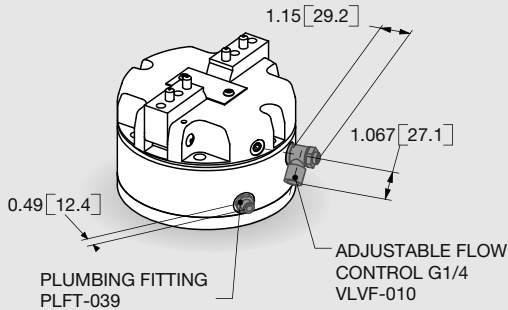
	Static	Dynamic
Maximum Tensile <b>T</b>	189 lbs. [840 N]	38 lbs. [168 N]
Maximum Compressive <b>C</b>	189 lbs. [840 N]	38 lbs. [168 N]
Maximum Moment <b>M<sub>x</sub></b>	664 in.-lbs. [75 Nm]	166 in.-lbs. [18.8 Nm]
Maximum Moment <b>M<sub>y</sub></b>	9293 in.-lbs. [1050 Nm]	885 in.-lbs. [100 Nm]
Maximum Moment <b>M<sub>z</sub></b>	664 in.-lbs. [75 Nm]	166 in.-lbs. [18.8 Nm]

<sup>†1</sup>Capacities are per set of jaws and are not simultaneous

RUA SERIES

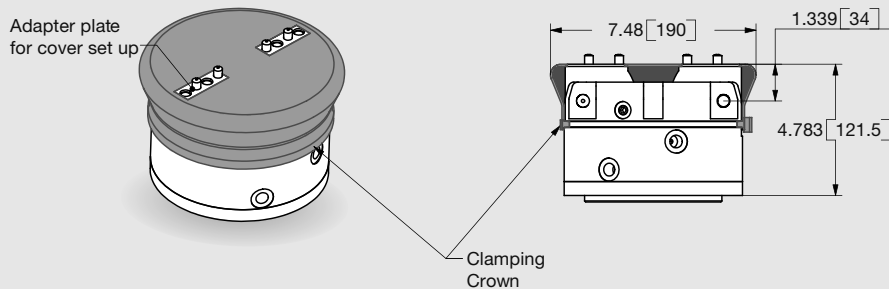
2.15

## Accessory Mounting Technical Data



### Plumbing Fittings

- Adjustable flow controls:
  - Have thumb screw adjust with locking nut for adjusting actuation time
  - Available for 6mm OD tubing
- Plumbing fittings:
  - For side air port location
  - Top airport are plugged as standard



### Boot

- Protects the gripper mechanism
- Provides better performance and longer life time in harsh environment
- Three materials available depending on the application:
  - PVC for grinding applications (up to 176°F / 80°C)
  - Kevlar for machine applications (up to 480°F / 250°C)
  - Fireproof Kevlar for welding applications (up to 525°F / 275°C)
- A provided spacer has to be added to the jaws

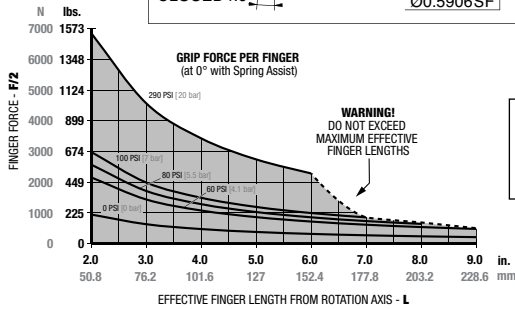
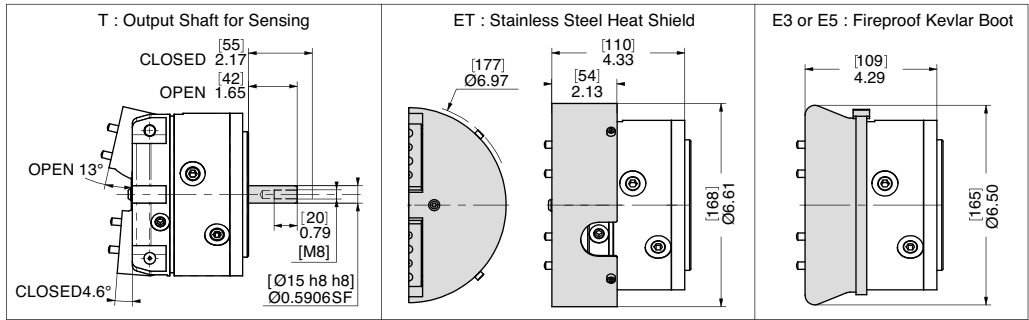
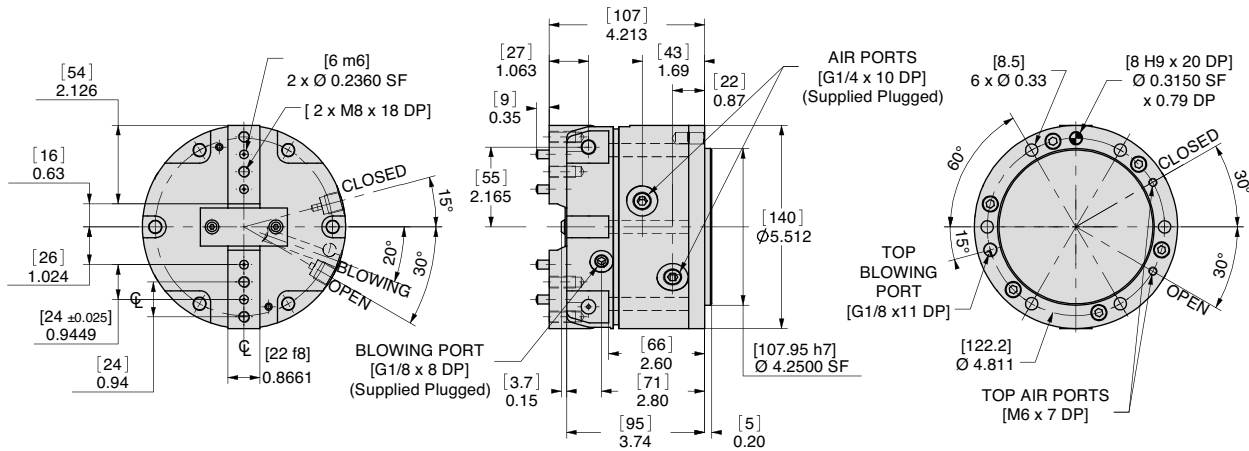




# ANGULAR GRIPPER VULCAN-142M HIGH TEMPERATURE SERIES

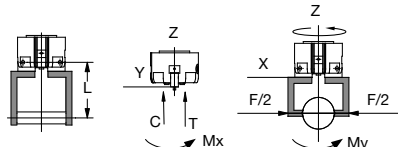
VULCAN SERIES

2.17



UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

Dimensions are symmetrical about centerline	Third Angle Projection	All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or [±.013mm]	Metric Threads Course Pitch	<b>Imperial in.</b> 0.00 = ±.01 0.000 = ±.005 0.0000 = ±.0005	<b>Metric [mm]</b> [.] = [±.25] [0.] = [±.13] [0.0] = [±.013]
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### Loading Capacity†

	Static	Dynamic
Maximum Tensile <b>T</b>	142 lbs. [630 N]	28 lbs. [126 N]
Maximum Compressive <b>C</b>	142 lbs. [630 N]	28 lbs. [126 N]
Maximum Moment <b>M<sub>x</sub></b>	460 in.-lbs. [52 Nm]	115 in.-lbs. [13 Nm]
Maximum Moment <b>M<sub>y</sub></b>	6160 in.-lbs. [696 Nm]	611 in.-lbs. [69 Nm]
Maximum Moment <b>M<sub>z</sub></b>	460 in.-lbs. [52 Nm]	115 in.-lbs. [13 Nm]

†Capacities are per set of jaws and are not simultaneous

### Specifications

### VULCAN-142M

Total Rated Grip Force <b>L=2 in [50.8mm] @ 0°</b>		
100 psi, 6.9 bar, w/spring.....	1343 lbs.	5975 N
100 psi, 6.9 bar, w/o spring.....	917 lbs.	4079 N
Stroke.....	17.6° of stroke for each finger	
Weight.....	9.04 lbs.	4.1 kg
Pressure Range (without springs).....	30-100 psi	2-7 bar
Pressure Range (with springs).....	60-100 psi	4-7 bar
Cylinder Bore Ø.....	4.13 in.	105 mm
Displacement.....	13.1 in³	215 cm³
Temperature Range		
Viton® Seals Standard.....	-20°~320° F	-30~160° C
-HT Dynamic Steel Ring.....	Up to 840°	Up to 450°
Actuation (open/close).....	0.16 sec./0.16 sec.	
Accuracy.....	±0.003 in.	±0.8 mm
Repeatability.....	±0.0008 mm.	±0.02 mm
Valve required to actuate single acting.....	3-way, 2-position	
Valve required to actuate double acting.....	4-way, 2-position	

## How to Order: (Order Accessories separately from Basic Model)

BASIC MODEL SEALS SENSING

VULCAN-142M - HT - RI - T - ET

SPRING PROTECTION

SEALS **HT\*** Dynamic Steel Ring (Up to 450°C)  
Leave Blank. Viton Seals up to 160° (Standard)

SPRING **RE** Closed  
**RI** Open  
Leave Blank. No Spring Option (Standard)

SENSING **T\*** Rear Output Shaft for Sensing  
Leave Blank. No Sensing Option (Standard)

PROTECTION **E3** Fire-proof Kevlar Sealed Jaw Boot (up to 275°C)  
**E5** Fire-proof Kevlar Sealed Jaw Boot (up to 450°C)  
**ET** Stainless Steel Heat Shield  
Leave Blank. No Protection Option (Standard)

### SEALED BOOT KITS

-E3 Fire Proof Kevlar Sealed jaw Boot Kit (includes 2 interfaces, 1 collar, 1 boot)

ORDER # QTY/UNIT

SLKT-378 1

-E5 Kevlar Sealed Jaw Boot Kit (includes 2 interfaces, 1 collar, 1 boot)

SLKT-456 1

### SEAL REPAIR KIT

Viton® Seal Repair Kit  
-HT Dynamic Steel Ring Repair Kit

SLKT-333V 1

SLKT-459 1

### SAMPLE ORDER: VULCAN-142M-T-ET

Ex: Vulcan-142M Gripper, Rear Output Shaft for Sensing, Stainless Steel Heat Shield

\*HT and T Options are not compatible.

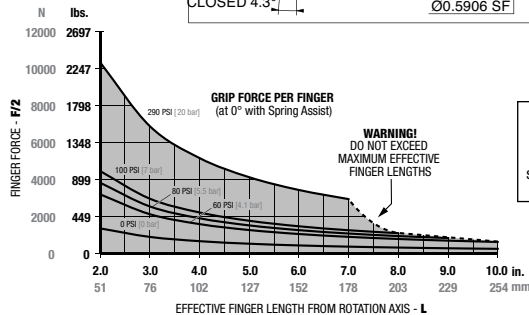
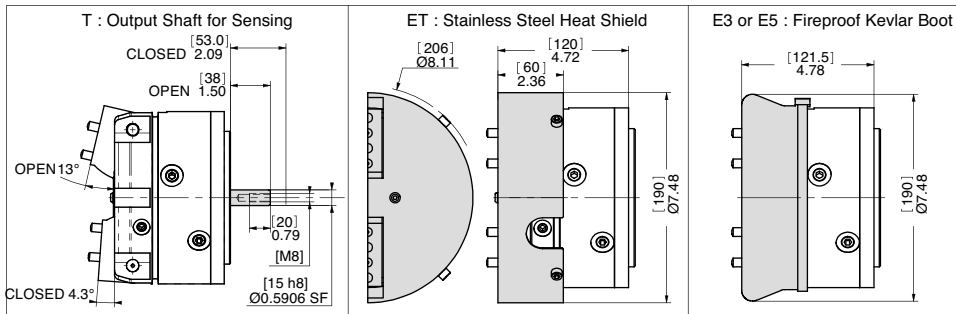
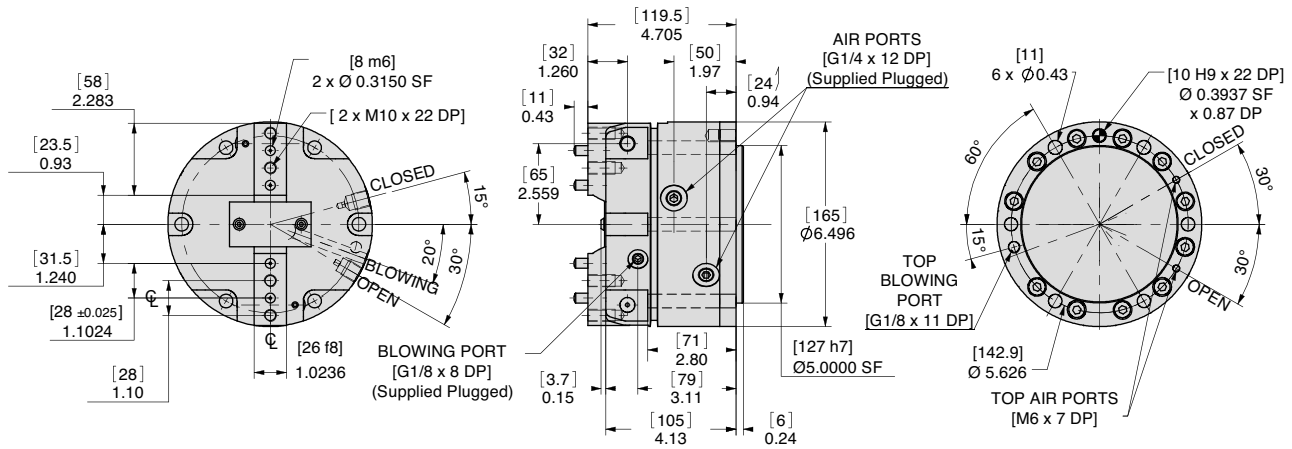
Please see back cover for DE-STA-CO Global Locations. [www.destaco.com](http://www.destaco.com)

[www.comoso.com](http://www.comoso.com)

# ANGULAR GRIPPER VULCAN-162M HIGH TEMPERATURE SERIES

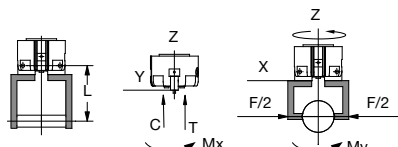
VULCAN SERIES

2.18



**UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW**

Dimensions are symmetrical about centerline	Third Angle Projection	All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or [±.013mm]	Metric Threads Course Pitch	<b>Imperial in.</b> 0.00 = ±.01 0.000 = ±.005 0.0000 = ±.0005	<b>Metric [mm]</b> [0.] = [±.25] [0.0] = [±.13] [0.00] = [±.013]
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### Loading Capacity<sup>†1</sup>

	Static	Dynamic
Maximum Tensile <b>T</b>	189 lbs. [840 N]	38 lbs. [168 N]
Maximum Compressive <b>C</b>	189 lbs. [840 N]	38 lbs. [168 N]
Maximum Moment <b>M<sub>x</sub></b>	664 in.-lbs. [75 Nm]	166 in.-lbs. [18.8 Nm]
Maximum Moment <b>M<sub>y</sub></b>	9293 in.-lbs. [1050 Nm]	885 in.-lbs. [100 Nm]
Maximum Moment <b>M<sub>z</sub></b>	664 in.-lbs. [75 Nm]	166 in.-lbs. [18.8 Nm]

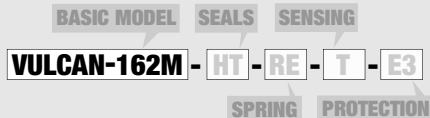
<sup>†1</sup>Capacities are per set of jaws and are not simultaneous

### Specifications

### VULCAN-162M

Total Rated Grip Force <b>L=2 in [50.8mm] @ 0°</b>		
100 psi, 6.9 bar, w/spring.....	2015 lbs.	8964 N
100 psi, 6.9 bar, w/o spring .....	1393 lbs.	6198 N
Stroke .....	17.3° of stroke for each finger	
Weight .....	14.77 lbs.	6.7 kg
Pressure Range (without springs).....	30-100 psi	2-7 bar
Pressure Range (with springs).....	60-100 psi	4-7 bar
Cylinder Bore Ø .....	4.72 in.	120 mm
Displacement.....	19.7 in <sup>3</sup>	322 cm <sup>3</sup>
Temperature Range		
Viton® Seals Standard .....	-20°~320° F	-30~160° C
-HT Dynamic Steel Ring .....	Up to 840°	Up to 450°
Actuation (open/close).....	0.21 sec./0.21 sec.	
Accuracy .....	±0.003 in.	±0.8 mm
Repeatability .....	±0.0008 mm.	±0.02 mm
Valve required to actuate single acting.....	3-way, 2-position	
Valve required to actuate double acting .....	4-way, 2-position	

## How to Order: (Order Accessories separately from Basic Model)



**SEALS HT\*** Dynamic Steel Ring (Up to 450°C)  
Leave Blank. Viton Seals up to 160° (Standard)

**SPRING RE** Closed  
**RI** Open  
Leave Blank. No Spring Option (Standard)

**SENSING T\*** Rear Output Shaft for Sensing  
Leave Blank. No Sensing Option (Standard)

**PROTECTION E3** Fire-proof Kevlar Sealed Jaw Boot (up to 275°C)  
**E5** Fire-proof Kevlar Sealed Jaw Boot (up to 450°C)  
**ET** Stainless Steel Heat Shield  
Leave Blank. No Protection Option (Standard)

### SEALED BOOT KITS

-E3 Fire Proof Kevlar Sealed jaw Boot Kit  
(includes 2 interfaces, 1 collar, 1 boot)

-E5 Kevlar Sealed Jaw Boot Kit  
(includes 2 interfaces, 1 collar, 1 boot)

ORDER # QTY/UNIT

**SLKT-381 1**

**SLKT-457 1**

### SEAL REPAIR KIT

Viton® Seal Repair Kit  
-HT Dynamic Steel Ring Repair Kit

**SLKT-335V 1**

**SLKT-460 1**

### SAMPLE ORDER: VULCAN-162M-RE-T-E3

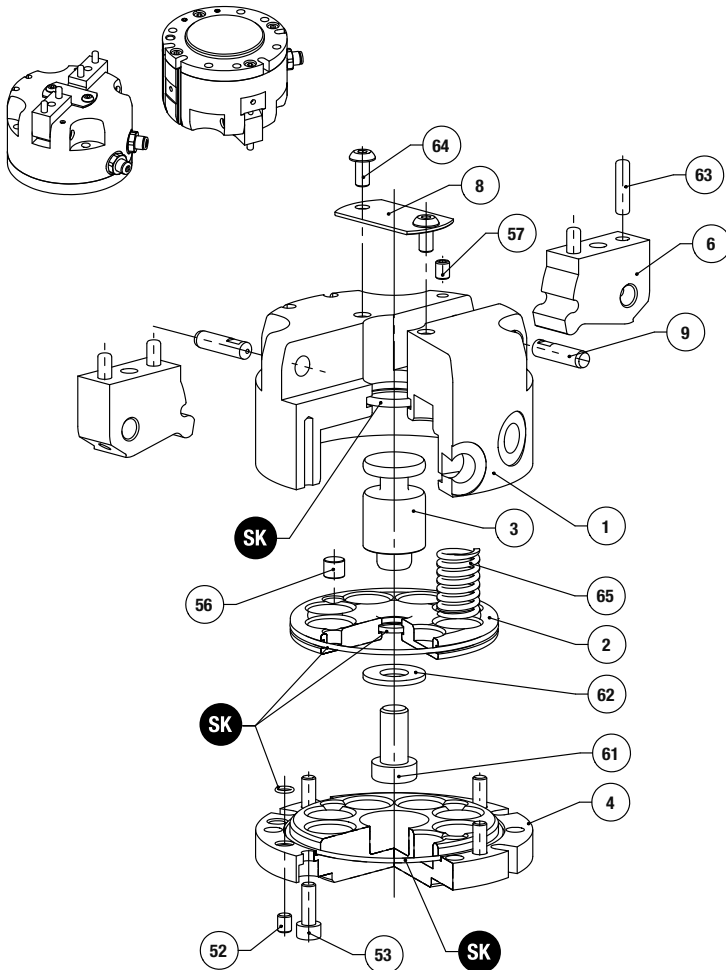
Ex: Vulcan-162M Gripper, Spring Closed, Rear Output Shaft for Sensing, Fireproof Kevlar Sealed Jaw Boot up to 275°

\*HT and T Options are not compatible.

Please see back cover for DE-STA-CO Global Locations. [www.destaco.com](http://www.destaco.com)

[www.comoso.com](http://www.comoso.com)



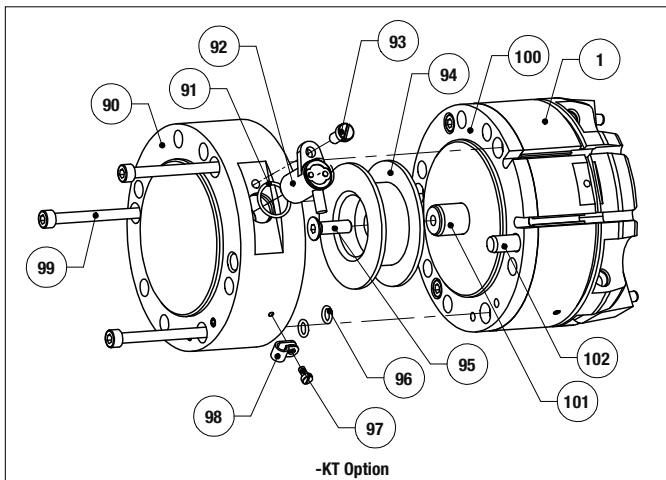


Item	Qty	Name
01	1	Body
02	1	Piston
03	1	Cam Driver
04	1	Cap
06	2	Jaw
08	1	Shielded case
09	2	Pivot Pin
52	2	SS Screw, Cap
53	4	SHC Screw, Cap
56	1	Magnet
57	2	SS Screw, Body
61	1	SHC Screw, Piston
62	1	Nut, Piston
63	4	Pin, Jaw
64	2	Screw, Shielded case
65	1	Springs
90	1	KT Body
91	1	KT Body, O-Ring
92	1	KT Sensor
93	1	KT Body, Screw
94	1	Target
95	1	Target, Screw
96	2	KT Body, O-Ring
97	1	KT Body, Screw
98	1	Wire Holder
99	3	KT Body, Screw
100	1	Cap for KT Shaft
101	1	Shaft
102	1	KT Body, Pin

**NOTE:** Contact the Robohand Sales Department for a complete spare parts list with order numbers and prices.

### Assembly Procedure

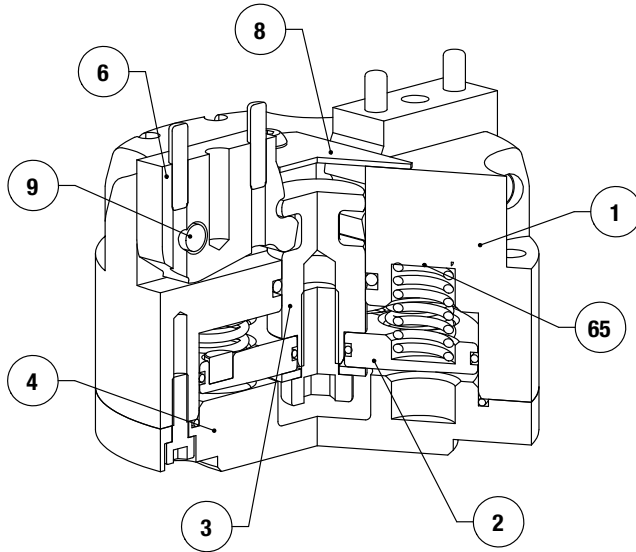
- Lubricate and install the seals onto the cap (x3), the piston (x2) and the body (x1).
- If top airports are used, remove the plug screws from the cap (#4) and insert into side airports of the body (#1).
- Assemble the piston (#2) and the cam driver (#3) with the washer and the screw.
  - RE option : Place the counterbore holes of the piston on the cam driver side.
  - RI option : Place the counterbore holes of the piston on the screw side.
- Insert the piston into the body. Orientate the piston so that the magnets are placed in front of the body slots.
  - RE option : insert the springs (#65) between the body and the piston in the counterbore holes.
- Place and screw the cap onto the body. The dowel holes of the cap and of the body have to be aligned.
  - RI option : insert the springs (#65) between the cap and the piston in the counterbore holes.
- Lubricate the slots and the jaws (#6) and the groove of the cam driver.
- Place the jaws into the body slot and insert the pivot pin aligning with the jaw hole. The flat of the pivot pin has put in front of the rear side of the body. Screw SS screw into the body to prevent the pivot pin from moving.
- Attach the shielded case.



**SK Seal Repair Kit Order #'s**  
See Product Data Sheets

<p>SK Seal Kit Items</p>	<p>THREAD LOCKER Thread Locker</p>	<p>KRYTOX Lubricant</p>	<p>Lightweight Machine Oil</p>	<p>Teflon® Based Grease</p>	<p>GLUE Super Bonder</p>	<p>Third Angle Projection</p>
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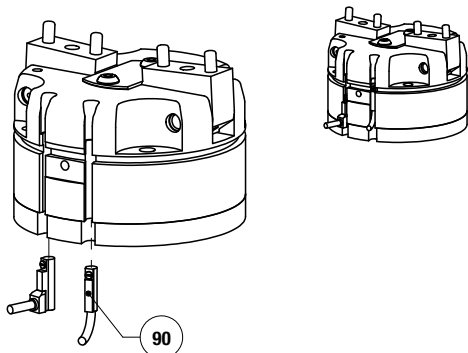




Item	Qty	Name
01	1	Body
02	1	Piston
03	1	Cam Driver
04	1	Cap
06	2	Jaw
08	1	Shielded case
09	2	Pivot Pin
52	2	SS Screw, Cap
53	4	SHC Screw, Cap
56	1	Magnet
57	2	SS Screw, Body
61	1	SHC Screw, Piston
62	1	Nut, Piston
63	4	Pin, Jaw
64	2	Screw, Shielded case
65	1	Springs

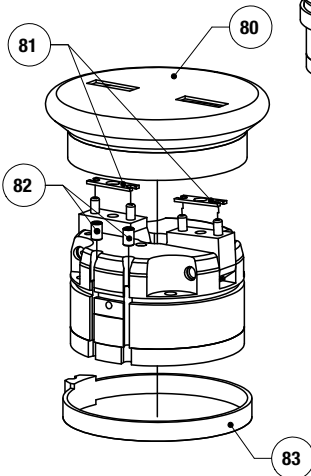
**NOTE:** Contact the Robohand Sales Department for a complete spare parts list with order numbers and prices.

## Accessory Installation & Adjustment Instructions



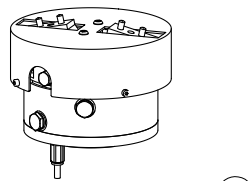
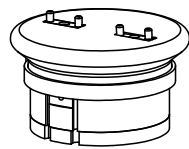
### Installation - MR Sensors

- 1) Insert sensors (#90) for either end of the profile slots
- 2) Set the sensors with the integrated screw



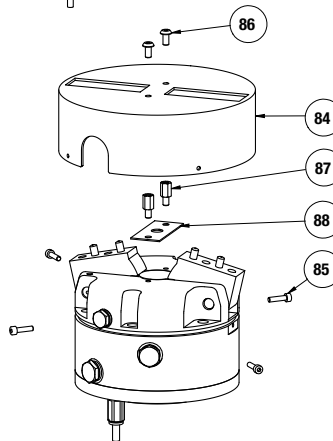
### Installation - Boot

- 1) Mount the gripper onto the customer mounting plate
- 2) Insert the spacer (#81) into the pins of the jaws
- 3) Insert sensor slot plugs (#82) into sensor mounting groove. Install the boot (#80) on the gripper. The jaw opening of the boot has to fit with the spacer. Insert lip of boot seal into the groove of the gripper
- 4) Use the clamping ring (#83) to fasten the boot on the gripper
- 5) Attach fingers to the jaws (ensure that boot is sealed between the jaws and the finger)



### Installation - Stainless Steel Shield

- 1) Mount the gripper onto the customer mounting plate
- 2) Insert the spacer plate (#88) using (2) fasteners (#87) to the center of the gripper
- 3) Install the stainless steel shield (#84) using the (2) fasteners (#86) on top of the stainless steel shield and the (4) fasteners (#85) on the side of the stainless steel shield
- 4) Install fingers to gripper as required



Seal Kit Items



Thread Locker



Krytox™ Lubricant



Lightweight Machine Oil



Teflon® Based Grease



Super Bonder



Third Angle Projection

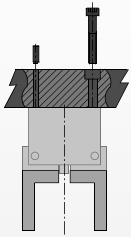


# Angular Grippers - Cam Driven Series

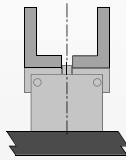
- General Purpose:**  
 This style gripper is widely used in the industry and is a rugged design that supplies very high grip force for its size.
- Cost Effective:**  
 The simplified drive mechanism makes these grippers an excellent value.

## Mounting Information:

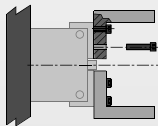
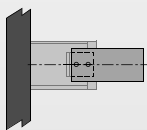
Grippers can be mounted & operated in any orientation



Body mounts with screws and locates with slip fit dowel pins for accuracy



**Warning!** Protect jaw mechanism from falling debris when mounted upside down



Fingers attach to jaws with screws and locate by keying

## Technical Specifications:

### Pneumatic Specifications

Pressure Operating Range  
Cylinder Type  
Dynamic Seals  
Valve Required to Operate

<b>Imperial</b>	<b>Metric</b>
40-100 psi	3-7 bar
<b>Double Acting</b>	
<b>Internally Lubricated Buna-N</b>	
<b>4-way, 2-position</b>	

### Air Quality Requirements

Air Filtration  
Air Lubrication  
Air Humidity

40 Micron or Better  
Not Necessary\*  
Low Moisture Content (dry)

### Temperature Operating Range

Buna-N Seals (standard)  
Viton® Seals (optional)

-30°~180° F	-35°~80° C
-20°~300° F	-30°~150° C

### Maintenance Specifications†

Expected Life  
Normal Application  
w/ Preventative Maintenance  
Field Repairable  
Seal Repair Kits Available

5 million cycles  
10+ million cycles\*  
Yes  
Yes

\*Addition of lubrication will greatly increase service life  
†See Maintenance Section

## Product Features

### Hard Coat Anodize

The body has hard-coat anodize 60 RC with Teflon® impregnation

### Quality Components

Dynamic components are hardened for wear resistance and long life

### Quality Manufacturing

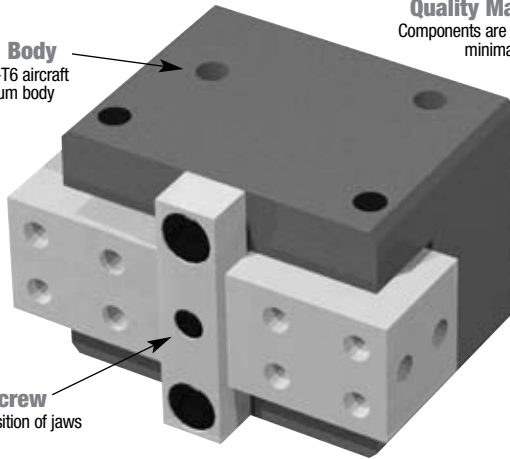
Components are precision ground for minimal jaw play

### One Piece Body

One piece 7075-T6 aircraft quality aluminum body

### Stop Screw

Limits open position of jaws

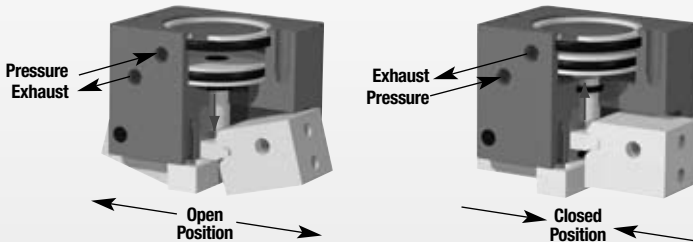
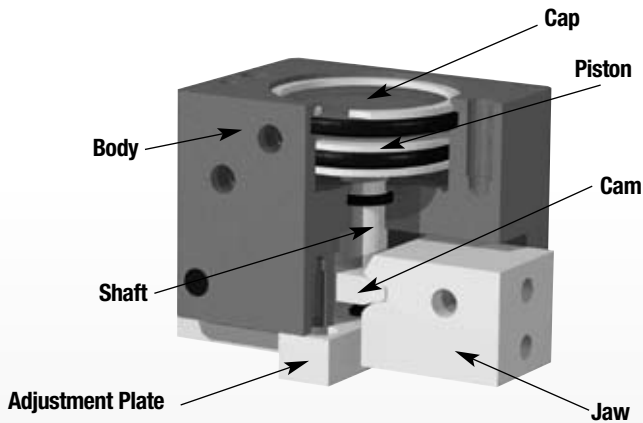


Sensor Magnets  
Standard

### Self-Lubricating Seals

Self lubricating dynamic seals (Buna-N only)

## Operating Principle



- A double acting piston is connected by a shaft to a cam.
- The cam rolls in a slot located in each of the jaws converting vertical motion of the wedge into angular synchronous motion of the jaws.
- This gripper is suitable for internal or external gripping.

**Designed and manufactured in the USA**

## Style-RA Angular Gripper

### Size -5M

Style:	RA-5	RA-5M
Stroke:	15° each finger	
Grip Force:	20 lbs.	89 N
Weight:	.25 lbs.	.11 Kg



See Page **2.24**

## Style-RA Angular Gripper

### Size -6M

Style:	RA-6	RA-6M
Stroke:	15° each finger	
Grip Force:	44 lbs.	196 N
Weight:	.68 lbs.	.31 Kg



See Page **2.25**

## Style-RA Angular Gripper

### Size -10M

Style:	RA-10	RA-10M
Stroke:	15° each finger	
Grip Force:	16 lbs.	71 N
Weight:	.06 lbs.	.03 Kg

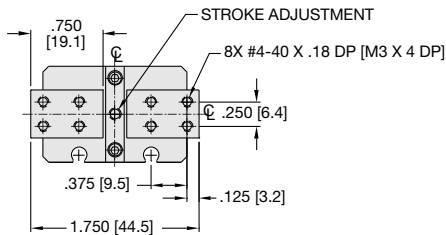
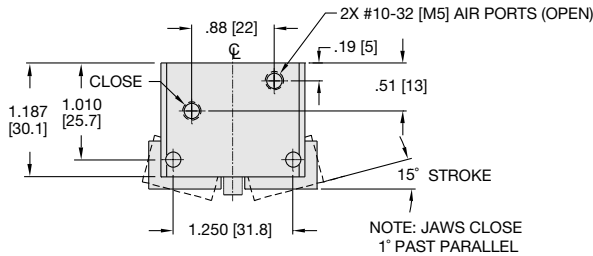
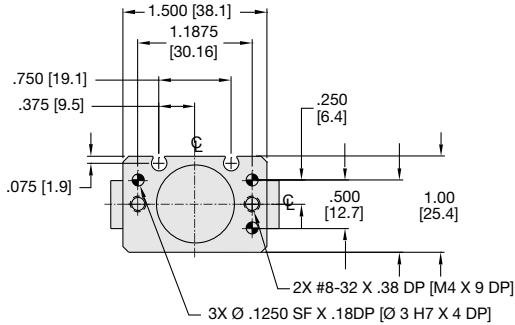


See Page **2.28**

# ANGULAR GRIPPER RA-5M CAM DRIVEN SERIES

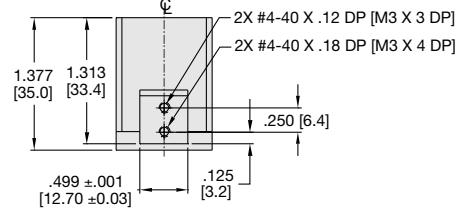
RA SERIES

2.24



## Specifications

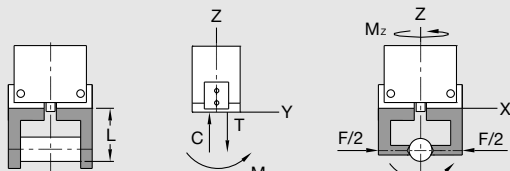
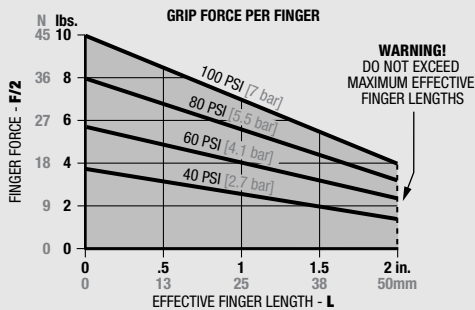
	RA-5	RA-5M
Total Rated Grip Force <b>F</b> @ 100 psi, 7 bar	20 lbs.	89 N
Stroke	15° of stroke for each finger	15° of stroke for each finger
Open Stroke Adjustment	15° of stroke for each finger	15° of stroke for each finger
Weight	0.25 lbs.	0.11 Kg
Pressure Range	40-100 psi	3-7 bar
Cylinder Bore Ø	.813 in.	20.6 mm
Displacement	0.130 in <sup>3</sup>	2.1 cm <sup>3</sup>
Temperature Range		
Standard Seals	-30°~180° F	-35°~80° C
Viton® Seals	-20°~300° F	-30°~150° C
Actuation	0.10 sec.	0.10 sec.
Accuracy	±0.005 in.	±0.13 mm
Repeatability	±0.003 in.	±0.08 mm
Valve required to actuate	4-way, 2-position	



## UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

Dimensions are symmetrical about centerline	Third Angle Projection	All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or [±.013mm]
Metric Threads Course Pitch	<b>Imperial in.</b> 0.00 = ±.01 0.000 = ±.005 0.0000 = ±.0005	<b>Metric [mm]</b> [0.] = [±.25] [0.0] = [±.13] [0.00] = [±.013]

## Loading Information



### Loading Capacity<sup>†</sup>

	Static		Dynamic	
	Imperial	Metric	Imperial	Metric
Maximum Tensile <b>T</b>	10 lbs.	44 N	10 lbs.	44 N
Maximum Compressive <b>C</b>	10 lbs.	44 N	10 lbs.	44 N
Maximum Moment <b>M<sub>x</sub></b>	10 in.-lbs.	1.1 Nm	10 in.-lbs.	1.1 Nm
Maximum Moment <b>M<sub>y</sub></b>	10 in.-lbs.	1.1 Nm	10 in.-lbs.	1.1 Nm
Maximum Moment <b>M<sub>z</sub></b>	10 in.-lbs.	1.1 Nm	10 in.-lbs.	1.1 Nm

<sup>†</sup>Capacities are per set of jaws and are not simultaneous

## How to Order: (Order Separately)

### BASIC MODEL METRIC

**RA-5 M-V**

### VITON® SEALS

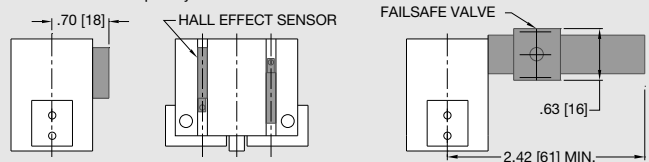
#### SENSOR ACCESSORIES

	ORDER #	QTY/UNIT
4mm NPN Magneto Resistive Sensor*	<b>OHSN-017</b>	<b>1 or 2</b>
4mm PNP Magneto Resistive Sensor*	<b>OHSP-017</b>	<b>1 or 2</b>
4mm NPN 90° Magneto Resistive Sensor*	<b>OHSN-011</b>	<b>1 or 2</b>
4mm PNP 90° Magneto Resistive Sensor*	<b>OHSP-011</b>	<b>1 or 2</b>
Quick Disconnect 2 Meter Cable Length*	<b>CABL-010</b>	<b>1 or 2</b>
Quick Disconnect 5 Meter Cable Length*	<b>CABL-013</b>	<b>1 or 2</b>

#### PNEUMATIC ACCESSORIES

Fail Safe Valve (Imperial)	<b>OFSV-001</b>	<b>1</b>
Fail Safe Valve (Metric)	<b>OFSV-004</b>	<b>1</b>
Standard Seal Repair Kit	<b>SLKT-022</b>	<b>1</b>
Viton® Seal Repair Kit	<b>SLKT-022V</b>	<b>1</b>

\*Sensor and cable sold separately.

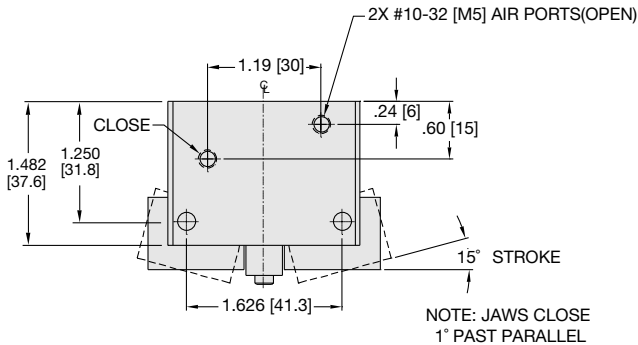
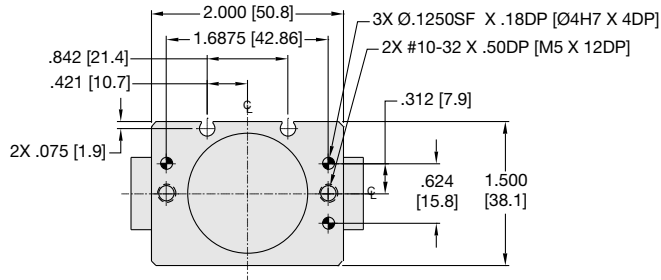




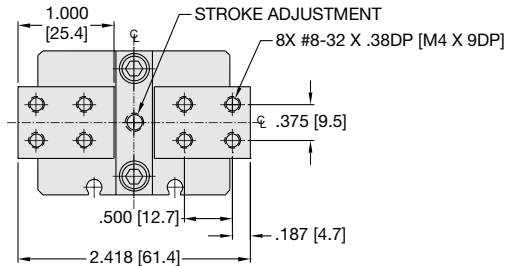
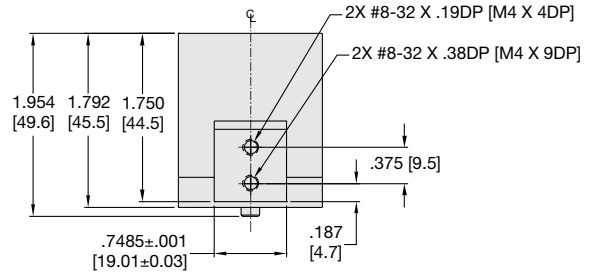
# ANGULAR GRIPPER RA-6M CAM DRIVEN SERIES

RA SERIES

2.25



Specifications	RA-6	RA-6M
Total Rated Grip Force <b>F</b> @ 100 psi, 7 bar	44 lbs.	196 N
Stroke	15° of stroke for each finger	15° of stroke for each finger
Open Stroke Adjustment	15° of stroke for each finger	15° of stroke for each finger
Weight	0.69 lbs.	0.31 Kg
Pressure Range	40-100 psi	3-7 bar
Cylinder Bore Ø	1.250 in.	31.8 mm
Displacement	0.300 in <sup>3</sup>	4.9 cm <sup>3</sup>
Temperature Range		
Standard Seals	-30°~180° F	-35°~80° C
Viton® Seals	-20°~300° F	-30°~150° C
Actuation	0.11 sec.	0.11 sec.
Accuracy	±0.005 in.	±0.13 mm
Repeatability	±0.003 in.	±0.08 mm
Valve required to actuate	4-way, 2-position	

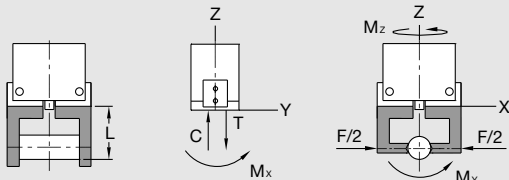
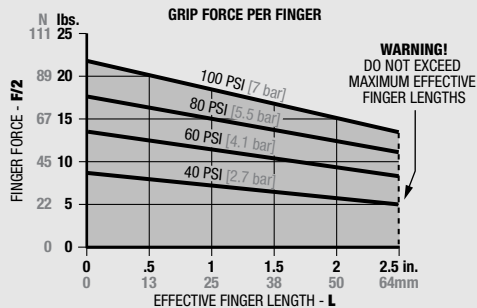


### UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

Dimensions are symmetrical about centerline	Third Angle Projection	All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or [±.013mm]
Metric Threads Course Pitch	<b>Imperial in.</b> 0.00 = ±.01 0.000 = ±.005 0.0000 = ±.0005	<b>Metric [mm]</b> [0.] = [±.25] [0.0] = [±.13] [0.00] = [±.013]

## Loading Information

## How to Order: (Order Separately)



Loading Capacity†	Static		Dynamic	
	Imperial	Metric	Imperial	Metric
Maximum Tensile <b>T</b>	20 lbs.	89 N	20 lbs.	89 N
Maximum Compressive <b>C</b>	20 lbs.	89 N	20 lbs.	89 N
Maximum Moment <b>M<sub>x</sub></b>	20 in.-lbs.	2.3 Nm	20 in.-lbs.	2.3 Nm
Maximum Moment <b>M<sub>y</sub></b>	20 in.-lbs.	2.3 Nm	20 in.-lbs.	2.3 Nm
Maximum Moment <b>M<sub>z</sub></b>	20 in.-lbs.	2.3 Nm	20 in.-lbs.	2.3 Nm

†Capacities are per set of jaws and are not simultaneous

## BASIC MODEL METRIC

**RA-6 M-V**

## VITON® SEALS

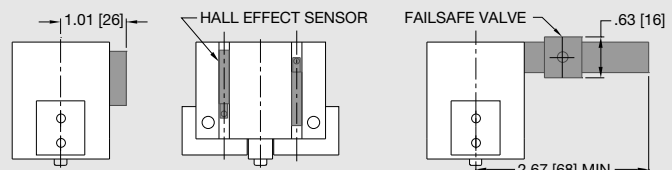
### SENSOR ACCESSORIES

	ORDER #	QTY/UNIT
4mm NPN Magneto Resistive Sensor*	<b>OHSN-017</b>	<b>1 or 2</b>
4mm PNP Magneto Resistive Sensor*	<b>OHSP-017</b>	<b>1 or 2</b>
4mm NPN 90° Magneto Resistive Sensor*	<b>OHSN-011</b>	<b>1 or 2</b>
4mm PNP 90° Magneto Resistive Sensor*	<b>OHSP-011</b>	<b>1 or 2</b>
Quick Disconnect 2 Meter Cable Length*	<b>CABL-010</b>	<b>1 or 2</b>
Quick Disconnect 5 Meter Cable Length*	<b>CABL-013</b>	<b>1 or 2</b>

### PNEUMATIC ACCESSORIES

Fail Safe Valve (Imperial)	<b>OFSV-001</b>	<b>1</b>
Fail Safe Valve (Metric)	<b>OFSV-004</b>	<b>1</b>
Standard Seal Repair Kit	<b>SLKT-023</b>	<b>1</b>
Viton® Seal Repair Kit	<b>SLKT-023V</b>	<b>1</b>

\*Sensor and cable sold separately.

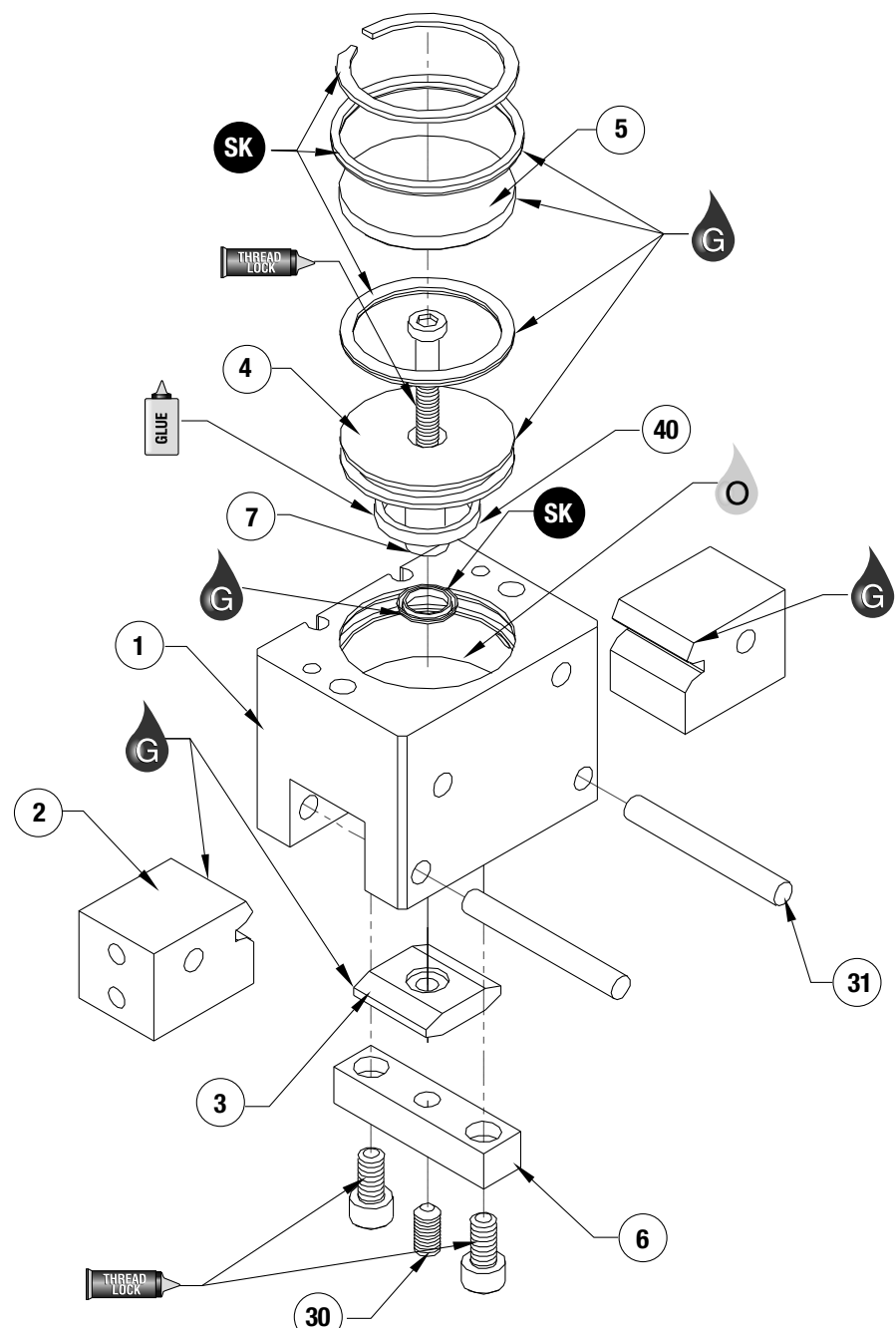
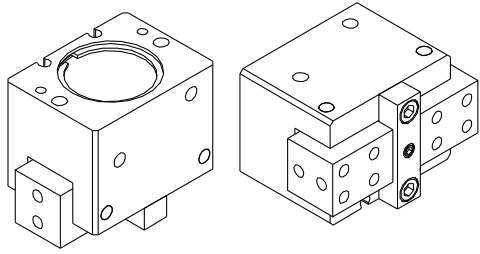


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[www.comoso.com](http://www.comoso.com)



# RA-5 & 6 Series Exploded View



Item	Qty	Name
01	1	Body
02	2	Jaw
03	1	Wedge
04	1	Piston
05	1	Cap
06	1	Plate, Adjustment
30	1	SSS, Nylon Patch, Cup Point
31	2	Dowel Pin
40	2	Magnet

**NOTE:** Contact the Robohand Sales Department for a complete spare parts list with order numbers and prices.

### Assembly Procedure

- 1) Lubricate and install seals.
- 2) Glue magnet into piston.
- 3) Install piston and wedge.
- 4) Install jaws (press dowel pins through fingers from air port side).
- 5) Install cap and retaining ring.
- 6) Install adjustment plate.
- 7) Set adjustment screw for desired stroke.

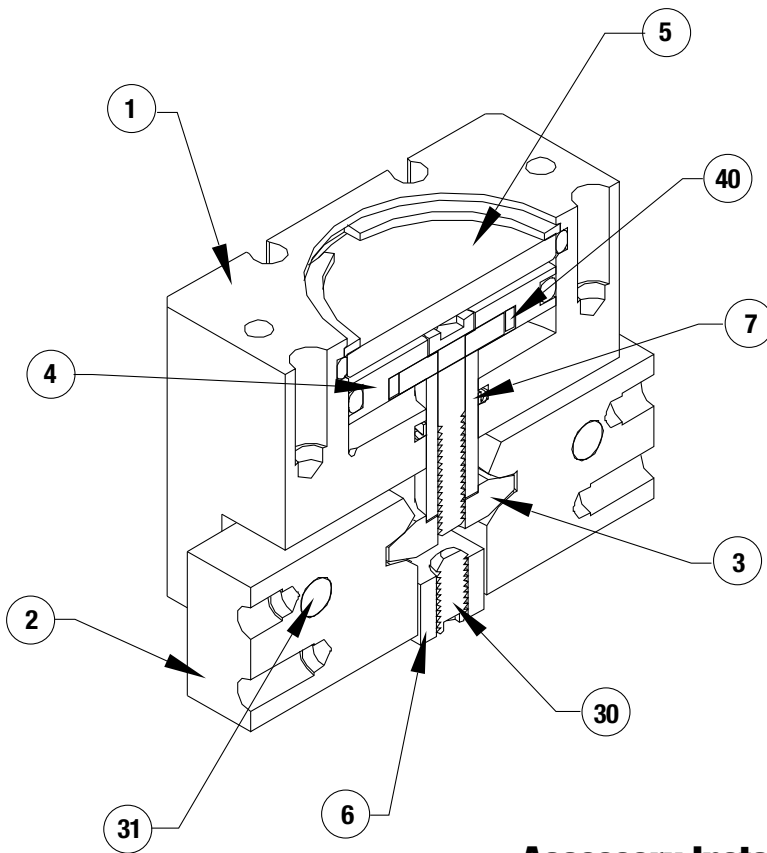
**SK Seal Repair Kit Order #'s See Product Data Sheets**

Seal Kit Items	Thread Locker	Krytox™ Lubricant	Lightweight Machine Oil	Teflon® Based Grease	Super Bonder	Third Angle Projection
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RA 5 & 6  
SERIES  
MAINTENANCE  
2.26

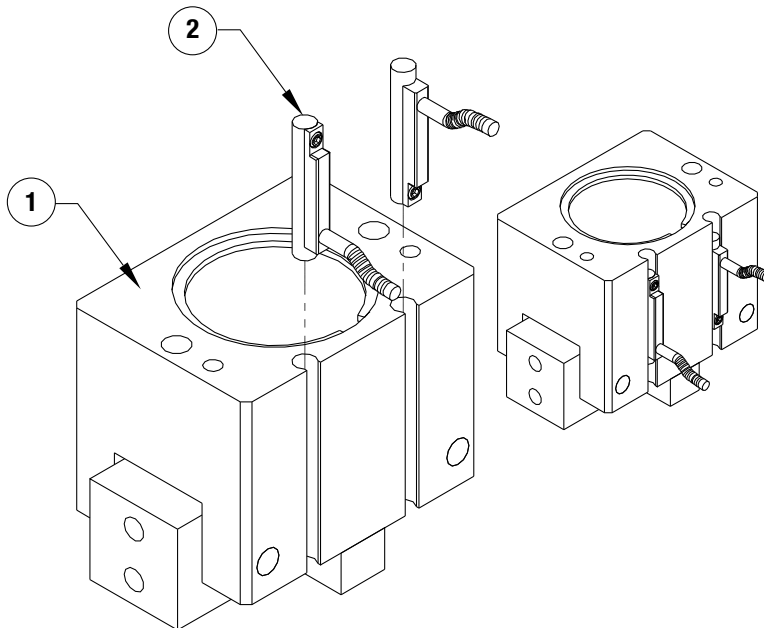


Item	Qty	Name
01	1	Body
02	2	Jaw
03	1	Wedge
04	1	Piston
05	1	Cap
06	1	Plate, Adjustment
30	1	SSS, Nylon Patch, Cup Point
31	2	Dowel Pin
40	2	Magnet

**NOTE:** Contact the Robohand Sales Department for a complete spare parts list with order numbers and prices.

RA 5 & 6  
 SERIES  
 MAINTENANCE  
 2.27

## Accessory Installation & Adjustment Instructions



### Installation

- 1) Install sensors in profile slots as shown.
- 2) Set with integrated set screw.



Seal Kit Items



Thread Locker



Krytox™ Lubricant



Lightweight Machine Oil



Teflon® Based Grease



Super Bonder



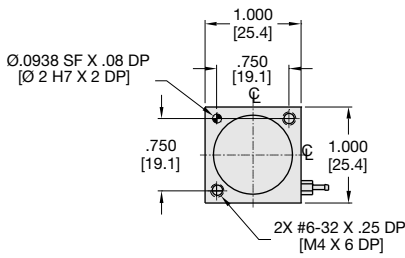
Third Angle Projection



# ANGULAR GRIPPER RA-10M CAM DRIVEN SERIES

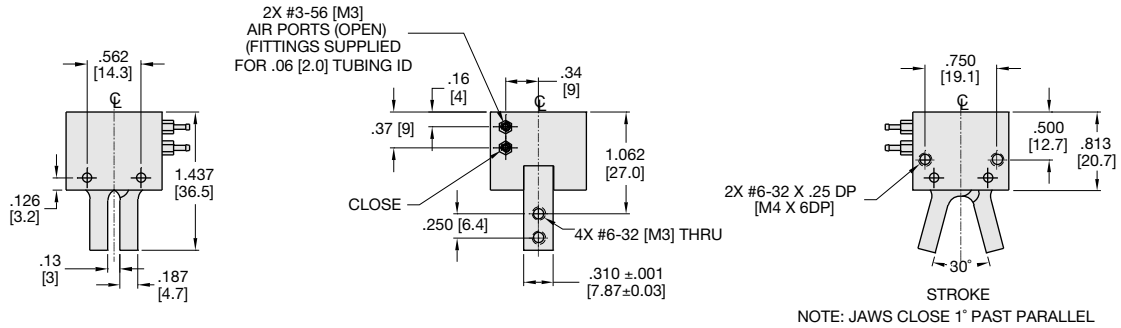
RA SERIES

2.28



### Specifications

	RA-10	RA-10M
Total Rated Grip Force <b>F</b> @ 100 psi, 7 bar	16 lbs.	71 N
Stroke	15° of stroke for each finger	
Weight	0.063 lbs.	0.03 Kg
Pressure Range	40-100 psi	3-7 bar
Cylinder Bore Ø	.813 in.	20.6 mm
Displacement	0.026 in <sup>3</sup>	.4 cm <sup>3</sup>
Temperature Range		
Standard Seals	-30°~180° F	-35°~80° C
Viton® Seals	-20°~300° F	-30°~150° C
Actuation Time	0.08 sec.	0.08 sec.
Accuracy	±0.003 in.	±0.08 mm
Repeatability	±0.001 in.	±0.03 mm
Valve required to actuate	4-way, 2-position	



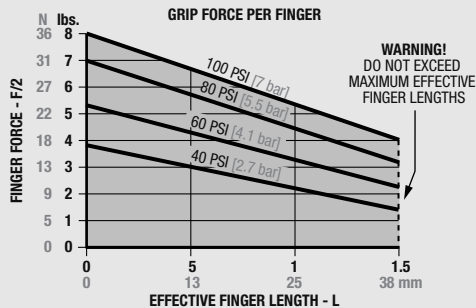
### UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

Symbol	Imperial in.	Metric [mm]
	0.00 = ±.01	[0.] = [±.25]
	0.000 = ±.005	[0.0] = [±.13]
	0.0000 = ±.0005	[0.00] = [±.013]

Dimensions are symmetrical about centerline  
All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or [±.013mm]  
Metric Threads Course Pitch

## Loading Information

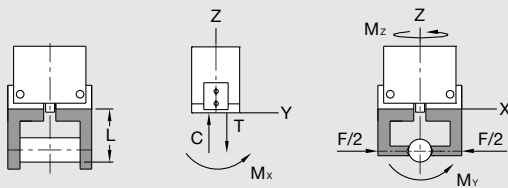
## How to Order: (Order Separately)



BASIC MODEL METRIC

**RA-10** M - V

VITON® SEALS



### PNEUMATIC ACCESSORIES

Standard Seal Repair Kit  
Viton® Seal Repair Kit

Order # QTY/UNIT

SLKT-018 1  
SLKT-018V 1

### Loading Capacity†

	Static		Dynamic	
	Imperial	Metric	Imperial	Metric
Maximum Tensile <b>T</b>	5 lbs.	22 N	5 lbs.	22 N
Maximum Compressive <b>C</b>	5 lbs.	22 N	5 lbs.	22 N
Maximum Moment <b>M<sub>x</sub></b>	5 in.-lbs.	0.6 Nm	5 in.-lbs.	0.6 Nm
Maximum Moment <b>M<sub>y</sub></b>	5 in.-lbs.	0.6 Nm	5 in.-lbs.	0.6 Nm
Maximum Moment <b>M<sub>z</sub></b>	5 in.-lbs.	0.6 Nm	5 in.-lbs.	0.6 Nm

†Capacities are per set of jaws and are not simultaneous

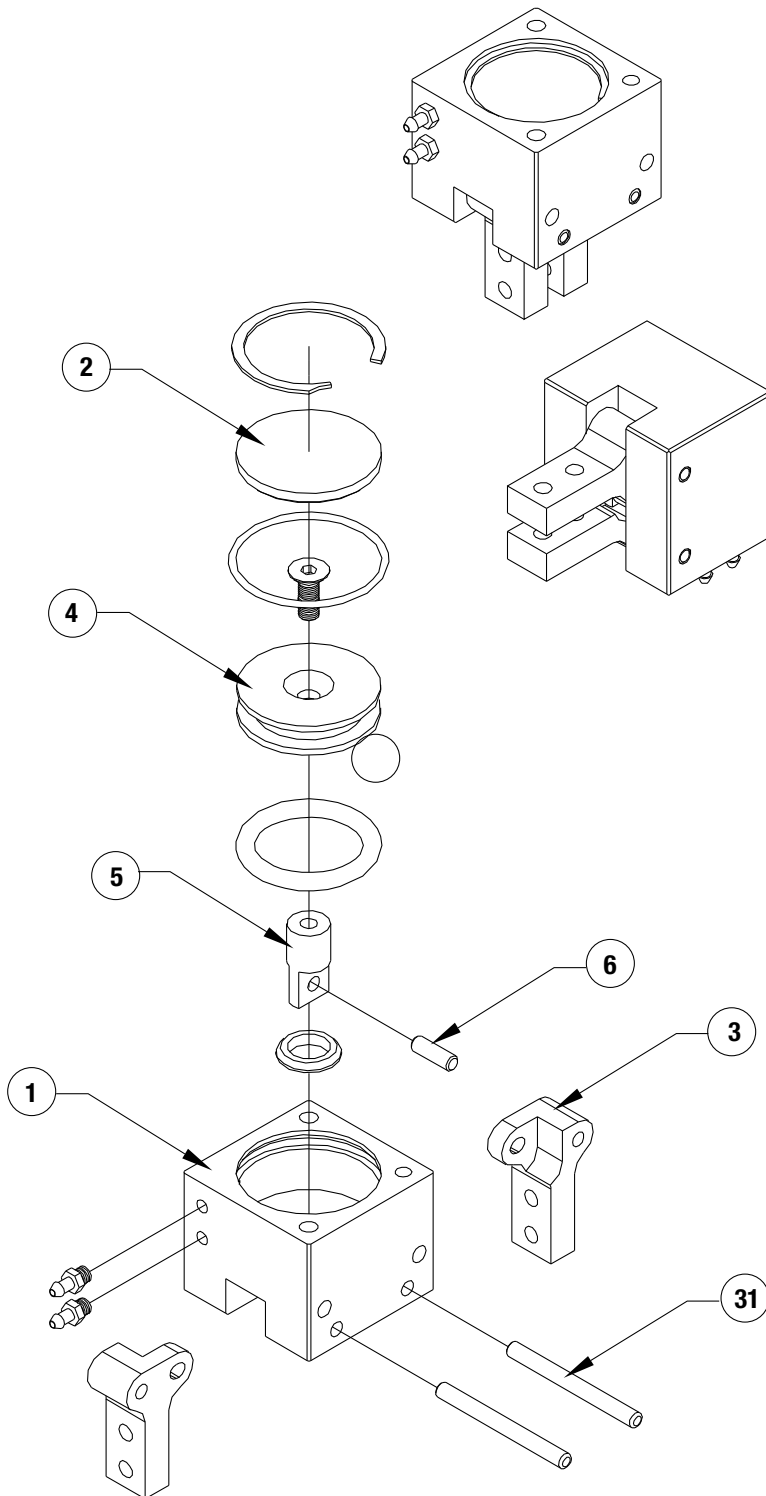
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[www.comoso.com](http://www.comoso.com)

Item	Qty	Name
01	1	Body
02	1	Cap
03	2	Jaw
04	1	Piston
05	1	Shaft
06	1	Pin
31	2	Dowel Pin

**NOTE:** Contact the Robohand Sales Department for a complete spare parts list with order numbers and prices.

**SK Seal Repair Kit Order #'s See Product Data Sheet**



<p>SK Seal Kit Items</p>	<p>THREAD LOCK Thread Locker</p>	<p>KRYTOX Lubricant</p>	<p>O Lightweight Machine Oil</p>	<p>G Teflon® Based Grease</p>	<p>GLUE Super Bonder</p>	<p>Third Angle Projection</p>
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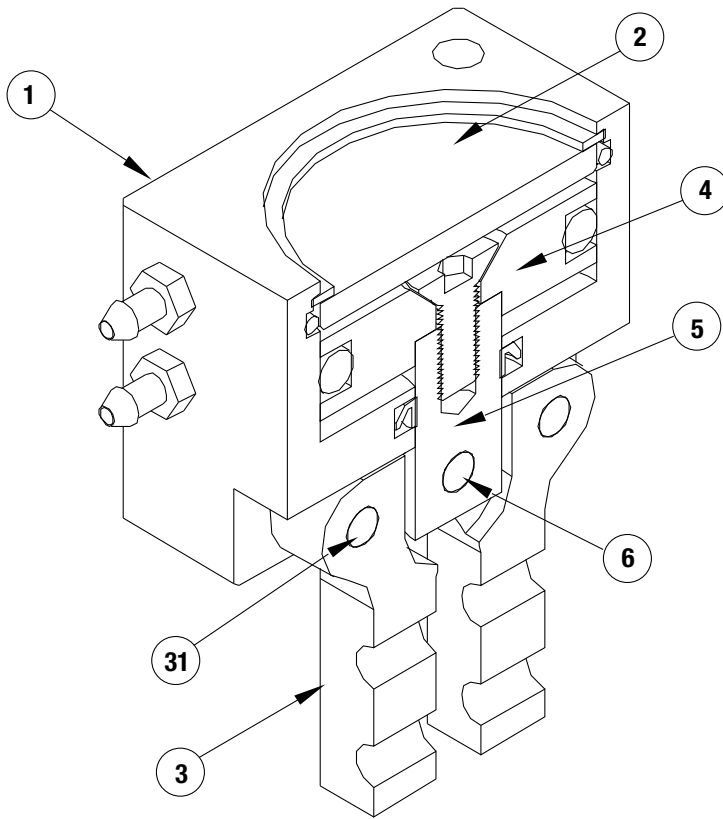
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[www.comoso.com](http://www.comoso.com)

# RA-10 Series Assembled View



RA-10 SERIES  
MAINTENANCE  
2.30



Item	Qty	Name
01	1	Body
02	1	Cap
03	2	Jaw
04	1	Piston
05	1	Shaft
06	1	Pin
31	2	Dowel Pin

**NOTE:** Contact the Robohand Sales Department for a complete spare parts list with order numbers and prices.



Seal Kit Items



Thread Locker



Krytox™ Lubricant



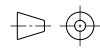
Lightweight Machine Oil



Teflon® Based Grease



Super Bonder



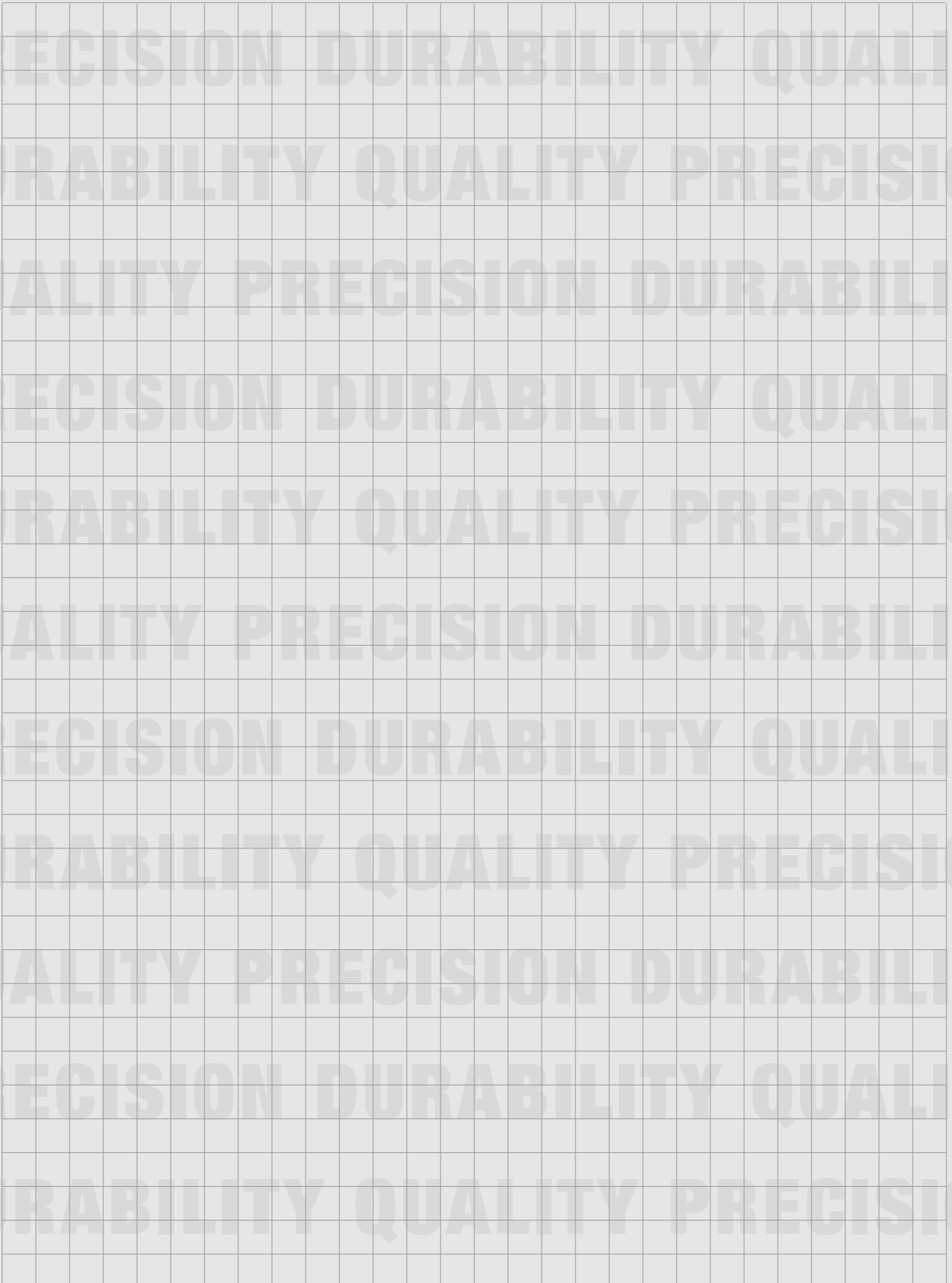
Third Angle Projection

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[www.comoso.com](http://www.comoso.com)



# DESIGN NOTES



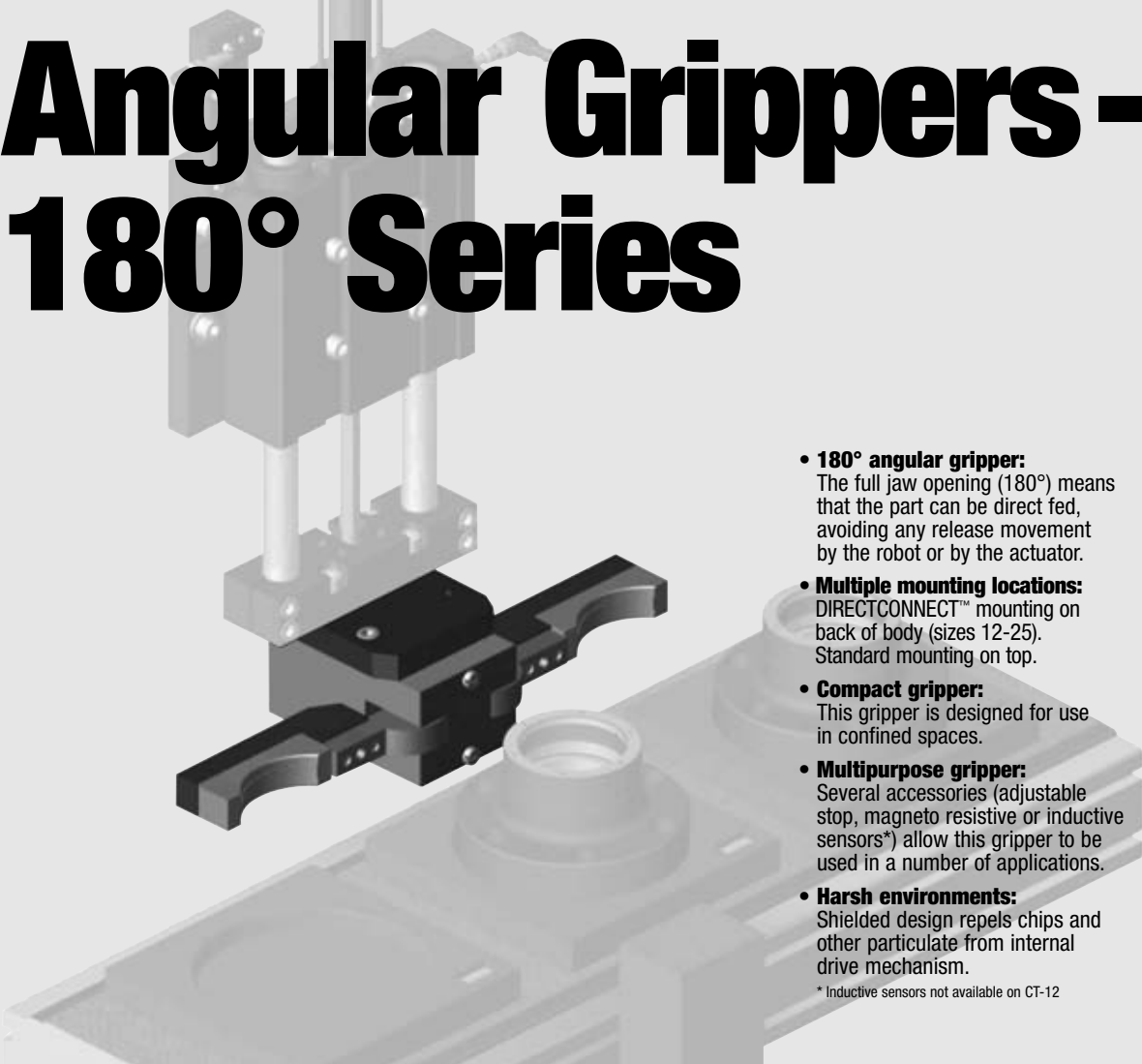
RA SERIES  
2.31



# Angular Grippers - 180° Series

DCT/CT SERIES

2.32



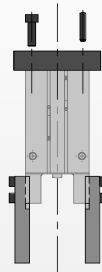
- 180° angular gripper:**  
 The full jaw opening (180°) means that the part can be direct fed, avoiding any release movement by the robot or by the actuator.
- Multiple mounting locations:**  
 DIRECTCONNECT™ mounting on back of body (sizes 12-25). Standard mounting on top.
- Compact gripper:**  
 This gripper is designed for use in confined spaces.
- Multipurpose gripper:**  
 Several accessories (adjustable stop, magneto resistive or inductive sensors\*) allow this gripper to be used in a number of applications.
- Harsh environments:**  
 Shielded design repels chips and other particulate from internal drive mechanism.

\* Inductive sensors not available on CT-12

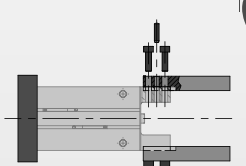
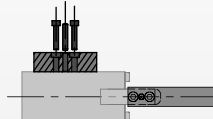
## Mounting Information:

### Grippers can be mounted & operated in any orientation

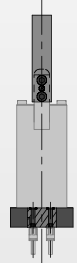
Gripper is located from the top with 2 dowel pins and assembled with 2 screws.



DIRECTCONNECT mounting pattern: Gripper is located with 2 dowel pins and assembled with 4 screws. Alternative pattern: Gripper is located with 2 dowel pins and assembled with 2 screws.



Fingers are centered over the jaws, located with 1 dowel pin and assembled with 2 screws.



The gripper is protected from falling debris when it is mounted and operated upside down.

Gripper can be operated utilizing top manifold air ports.

## Technical Specifications:

Pneumatic Specifications	Imperial	Metric
Pressure Operating Range	40-100 psi	3-7 bar
Cylinder Type	Double Acting	
Dynamic Seals	Internally Lubricated Buna-N	
Valve Required to Operate	4-way, 2-position	
<b>Air Quality Requirements</b>		
Air Filtration	40 Micron or Better	
Air Lubrication	Not Necessary*	
Air Humidity	Low Moisture Content (dry)	
<b>Temperature Operating Range</b>		
Buna-N Seals (Standard)	-30°~180° F	-35°~80° C
Viton® Seals (Optional)	-20°~300° F	-30°~150° C

Maintenance Specifications†	
Expected Life	
Normal Application	5 million cycles
w/ Preventative Maintenance	10+ million cycles*
Field Repairable	Yes
Seal Repair Kits Available	Yes

\*Addition of lubrication will greatly increase service life  
 †See Maintenance Section

DIRECTCONNECT™

## Product Features

### Gripper Attachment

Gripper mounting from side or bottom

### Viton Seals

Viton seals for high temperatures (-20°F to +300°F / -30°~150° C) are optional

### Quality Components

Made from aluminum alloy anodized with Teflon™ impregnation. The gripper's main components are made of heat treated steel.

### Inductive Sensor Mounting Kit

Accessory (SD) in order to sense jaw position. Comes with 2 holders for tubular sensors and 2 adjustable flags (except size -12).

### Magneto Resistive Sensor Mounting Kit

Standard mounting slots for magneto resistive sensors. (sensors sold separately)

### Adjustable Stop

Accessory (BR) in order to adjust the opening of jaws, between 0° to 180°

### Shielded Plate and Wiper Covers

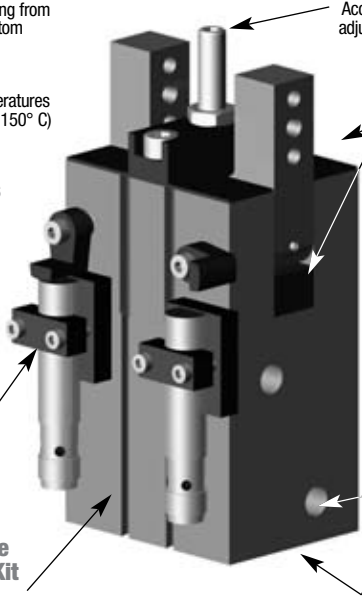
Gripper body is shielded to repel chips and other particulate from internal drive mechanism

### DIRECTCONNECT Mounting Patterns

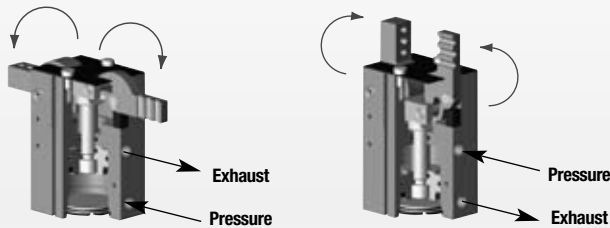
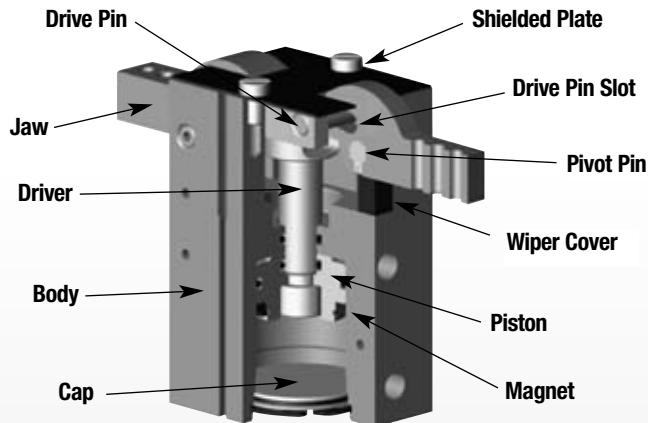
DIRECTCONNECT™ mounting surface on back of body (sizes 12-25)

### Multiple Air Ports

Side or top air ports (top ports require O-ring)



## Operating Principle



- A double acting piston, with a ring magnet for magneto resistive sensing, is connected to a fork driver on which 2 drive pins are fixed.
- Jaw rotation is synchronized with the drive pin-jaw assembly.
- Sliding in these slots, drive pins convert vertical motion of the piston into rotating opposite synchronous motion of both jaws.
- Each jaw has a useful rotation stroke of 90°, between the 90° open position and the 0° gripping position, plus a gripping over-stroke of approximately 1.5° before reaching the fully gripped position. Jaws have to be designed for a 0° gripping position (parallel jaws)

## Style-DCT Angular Gripper

### Size -12M

Style: DCT-12M  
Stroke: 90° each finger  
Grip Force: 7.2 lbs 32 N  
Weight: 0.20 lbs 0.09 Kg



See Page **2.34**

## Style-DCT Angular Gripper

### Size -16M

Style: DCT-16M  
Stroke: 90° each finger  
Grip Force: 16 lbs 70 N  
Weight: 0.35 lbs 0.16 Kg



See Page **2.35**

## Style-DCT Angular Gripper

### Size -20M

Style: DCT-20M  
Stroke: 90° each finger  
Grip Force: 25 lbs 112 N  
Weight: 0.62 lbs 0.28 Kg



See Page **2.36**

## Style-DCT Angular Gripper

### Size -25M

Style: DCT-25M  
Stroke: 90° each finger  
Grip Force: 35 lbs 157 N  
Weight: 1.08 lbs 0.49 Kg



See Page **2.37**

## Style-CT Angular Gripper

### Size -32M

Style: CT-32M  
Stroke: 90° each finger  
Grip Force: 61 lbs 272 N  
Weight: 1.59 lbs 0.72 Kg



See Page **2.38**

## Style-CT Angular Gripper

### Size -40M

Style: CT-40M  
Stroke: 90° each finger  
Grip Force: 100 lbs 446 N  
Weight: 2.60 lbs 1.18 Kg



See Page **2.39**

## Style-CT Angular Gripper

### Size -50M

Style: CT-50M  
Stroke: 90° each finger  
Grip Force: 146 lbs 651 m  
Weight: 4.00 lbs 1.82 Kg



See Page **2.40**

DCT/CT SERIES

2.33



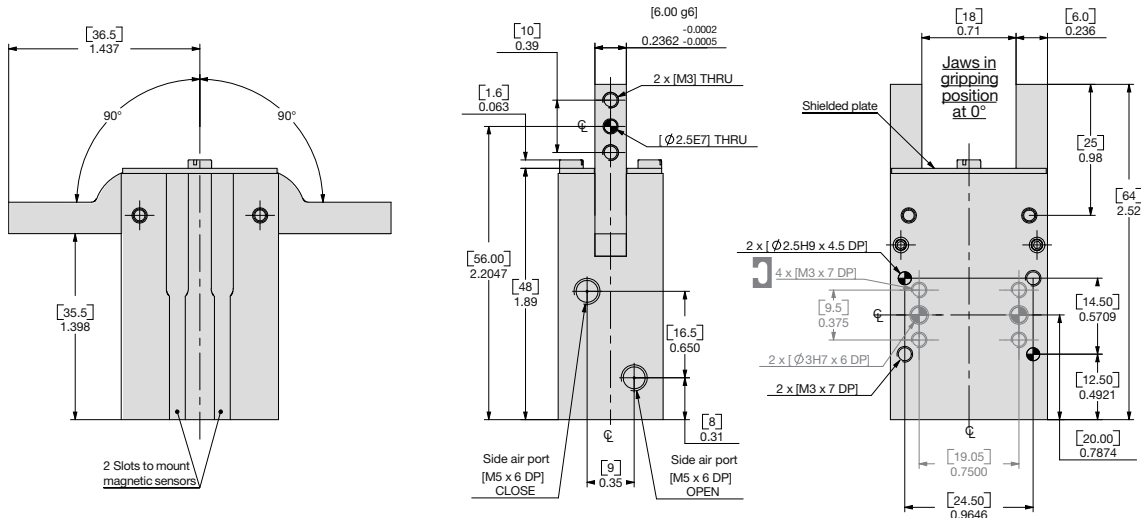
DIRECTCONNECT™

# ANGULAR GRIPPER DCT-12M

## 180° SERIES

DCT SERIES

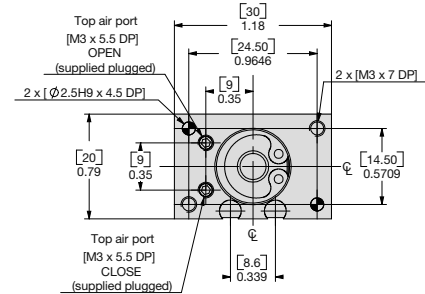
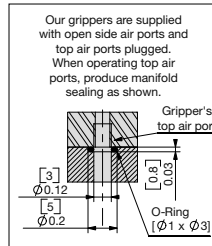
2.34



### Specifications

### DCT-12M

Total Rated Grip Force, <b>F</b> @ 100 psi [7 bar] <b>L</b> = 1 in. [25mm] @ 0° .....	7.2 lbs.	32 N
Stroke .....	90° of stroke for each finger	
Weight .....	0.20 lbs.	0.09 Kg
Pressure Range .....	40-100 psi	3-7 Bar
Cylinder Bore $\varnothing$ .....	0.472 in.	12 mm
Displacement .....	0.117 in. <sup>3</sup>	1.92 cm <sup>3</sup>
Temperature Range		
Standard Seals .....	-30°~180° F	-35°~80° C
Viton® Seals .....	-20°~300° F	-30°~150° C
Actuation .....	0.06 sec.	0.06 sec.
Accuracy .....	±0.0028 in.	±0.07 mm
Repeatability .....	±0.002 in.	±0.05 mm
Valve required to actuate .....	4-way, 2-position	



NOTE: DIRECTCONNECT™ DIMENSIONS ARE SHOWN IN BLUE

### UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

Dimensions are symmetrical about centerline

Third Angle Projection

Metric Threads  
Course Pitch

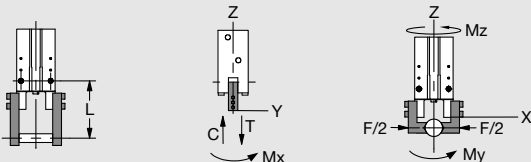
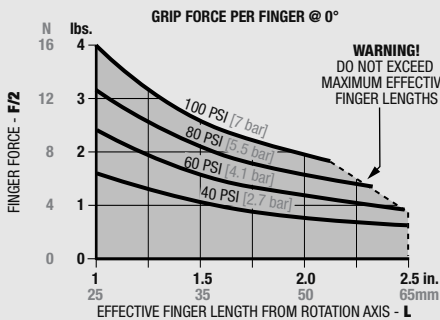
**Imperial in.**  
0.00 = ± .01  
0.000 = ± .005  
0.0000 = ± .0005

**Metric [mm]**  
[0.] = [± .25]  
[0.0] = [± .13]  
[0.00] = [± .013]

**NOTE:** Jaws have to be designed for a 0° gripping position (parallel jaws). Jaws will close 1.5° past parallel. To limit shocks at the end of an opening or closing stroke, it is highly recommended to design jaws with minimal inertia (as light and short as possible). Flow Controls make it possible to reduce the rotation speed and are highly recommended.

## Loading Information

## How to Order: (Order Accessories separately from Basic Model)



Loading Capacity†	Static		Dynamic	
	Imperial	Metric	Imperial	Metric
Maximum Tensile <b>T</b>	11 lbs.	47 N	2 lbs.	9.4 N
Maximum Compressive <b>C</b>	11 lbs.	47 N	2 lbs.	9.4 N
Maximum Moment <b>M<sub>x</sub></b>	10 in.-lbs.	1.1 Nm	3 in.-lbs.	0.3 Nm
Maximum Moment <b>M<sub>y</sub></b>	10 in.-lbs.	1.1 Nm	3 in.-lbs.	0.3 Nm
Maximum Moment <b>M<sub>z</sub></b>	10 in.-lbs.	1.1 Nm	3 in.-lbs.	0.3 Nm

†Capacities are per set of jaws and are not simultaneous

### BASIC MODEL

**DCT-12M-V**

SIZE VITON® SEALS

**NOTE:** DCT-12 can be used as an exact replacement for CT-12

### SENSOR ACCESSORIES\*

PNP Magneto Resistive Sensor Short Barrel w/Qk Disc*	<b>OHSP-017</b>	<b>1 or 2</b>
NPN Magneto Resistive Sensor Short Barrel w/Qk Disc*	<b>OHSN-017</b>	<b>1 or 2</b>
Quick Disconnect 2 Meter Cable Length*	<b>CABL-010</b>	<b>1 or 2</b>
Quick Disconnect 5 Meter Cable Length*	<b>CABL-013</b>	<b>1 or 2</b>

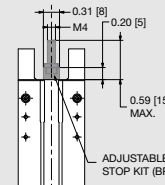
### PNEUMATIC ACCESSORIES

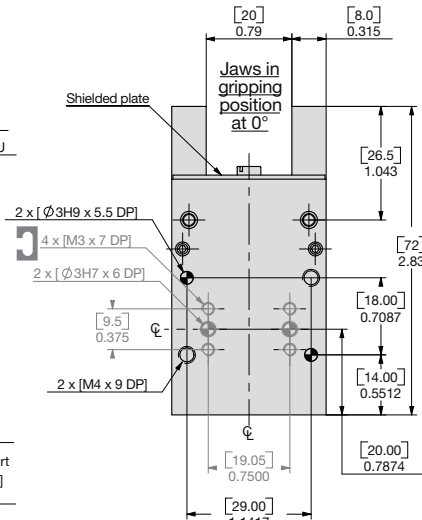
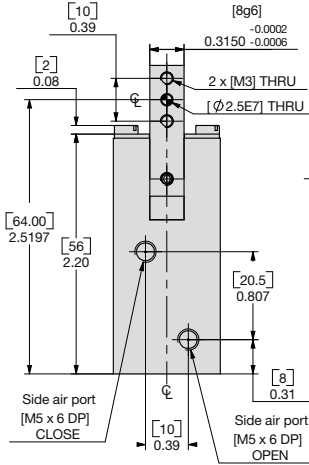
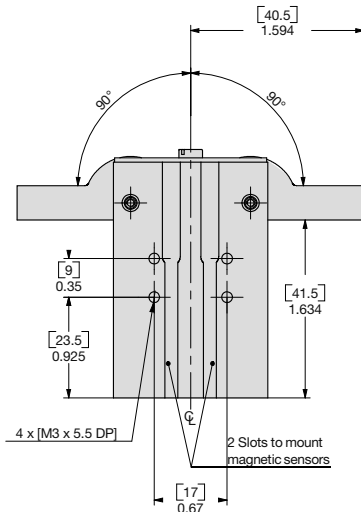
Adj. Flow Control M5 Elbow - 6mm OD Push-in (Metric)	<b>VLVF-008</b>	<b>1 or 2</b>
Buna-N Seal Repair Kit	<b>SLKT-159</b>	<b>1</b>
Viton® Seal Repair Kit	<b>SLKT-159V</b>	<b>1</b>

### MOUNTING ACCESSORIES

Adjustment Stop Kit (1 Shielded Plate + 1 Stop)	<b>KP-DCT12-BR</b>	<b>1</b>
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\*Sensor and cable sold separately.

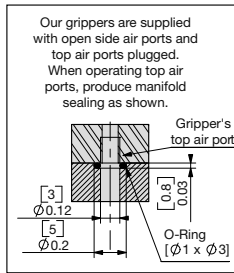




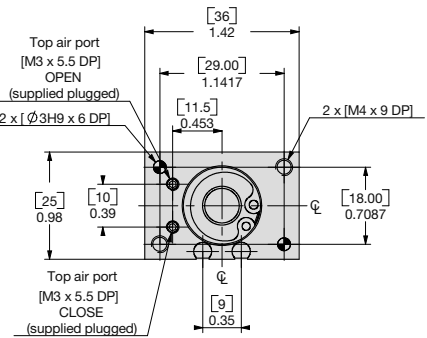
### Specifications

### DCT-16M

Total Rated Grip Force, <b>F</b> @ 100 psi [7 bar]	16 lbs.	70 N
<b>L</b> = 1 in. [25mm] @ 0°		
Stroke	90° of stroke for each finger	
Weight	0.35 lbs.	0.16 Kg
Pressure Range	40-100 psi	3-7 Bar
Cylinder Bore Ø	0.630 in.	16 mm
Displacement	0.251 in <sup>3</sup>	4.12 cm <sup>3</sup>
Temperature Range		
Standard Seals	-30°~180° F	-35°~80° C
Viton® Seals	-20°~300° F	-30°~150° C
Actuation	0.13 sec.	0.13 sec.
Accuracy	±0.0028 in.	±0.07 mm
Repeatability	±0.002 in.	±0.05 mm.
Valve required to actuate	4-way, 2-position	



Our grippers are supplied with open side air ports and top air ports plugged. When operating top air ports, produce manifold sealing as shown.



NOTE: DIRECTCONNECT™ DIMENSIONS ARE SHOWN IN BLUE

### UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

Dimensions are symmetrical about centerline

Third Angle Projection

Metric Threads Course Pitch

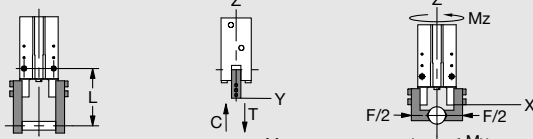
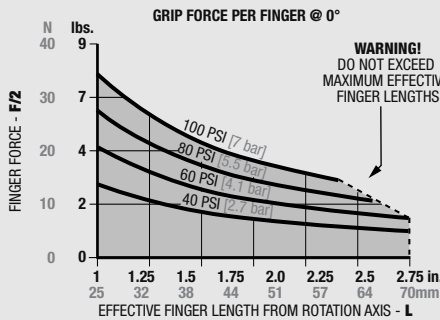
Imperial in.  
0.00 = ±.01  
0.000 = ±.005  
0.0000 = ±.0005

Metric [mm]  
[0.] = [±.25]  
[0.0] = [±.13]  
[0.00] = [±.013]

NOTE: Jaws have to be designed for a 0° gripping position (parallel jaws). Jaws will close 1.5° past parallel. To limit shocks at the end of an opening or closing stroke, it is highly recommended to design jaws with minimal inertia (as light and short as possible). Flow Controls make it possible to reduce the rotation speed and are highly recommended.

## Loading Information

## How to Order: (Order Accessories separately from Basic Model)



Loading Capacity <sup>†</sup>	Static		Dynamic	
	Imperial	Metric	Imperial	Metric
Maximum Tensile <b>T</b>	20 lbs.	90 N	4 lbs.	18 N
Maximum Compressive <b>C</b>	20 lbs.	90 N	4 lbs.	18 N
Maximum Moment <b>M<sub>x</sub></b>	26 in.-lbs.	2.9 Nm	6 in.-lbs.	0.7 Nm
Maximum Moment <b>M<sub>y</sub></b>	26 in.-lbs.	2.9 Nm	6 in.-lbs.	0.7 Nm
Maximum Moment <b>M<sub>z</sub></b>	26 in.-lbs.	2.9 Nm	6 in.-lbs.	0.7 Nm

<sup>†</sup>Capacities are per set of jaws and are not simultaneous

### BASIC MODEL

**DCT-16M-V**

SIZE VITON® SEALS

NOTE: DCT-16 can be used as an exact replacement for CT-16

### SENSOR ACCESSORIES\*

PNP Magneto Resistive Sensor Short Barrel w/Qk Disc*	<b>OHSP-017</b>	<b>1 or 2</b>
NPN Magneto Resistive Sensor Short Barrel w/Qk Disc*	<b>OHSN-017</b>	<b>1 or 2</b>
Inductive Sensor Mounting Kit (mounts 2 sensors)	<b>SDCT16-20</b>	<b>1</b>
4mm PNP Inductive Sensor with Quick Disconnect*	<b>OISP-014</b>	<b>1 or 2</b>
4mm NPN Inductive Sensor with Quick Disconnect*	<b>OISN-014</b>	<b>1 or 2</b>
Quick Disconnect 2 Meter Cable Length*	<b>CABL-010</b>	<b>1 or 2</b>
Quick Disconnect 5 Meter Cable Length*	<b>CABL-013</b>	<b>1 or 2</b>

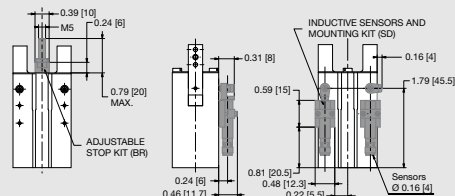
### PNEUMATIC ACCESSORIES

Adj. Flow Control M5 Elbow - 6mm OD Push-in (Metric)	<b>VLVF-008</b>	<b>1 or 2</b>
Buna-N Seal Repair Kit	<b>SLKT-160</b>	<b>1</b>
Viton® Seal Repair Kit	<b>SLKT-160V</b>	<b>1</b>

### MOUNTING ACCESSORIES

Adjustment Stop Kit (1 Shielded Plate + 1 Stop)	<b>KP-DCT16-BR</b>	<b>1</b>
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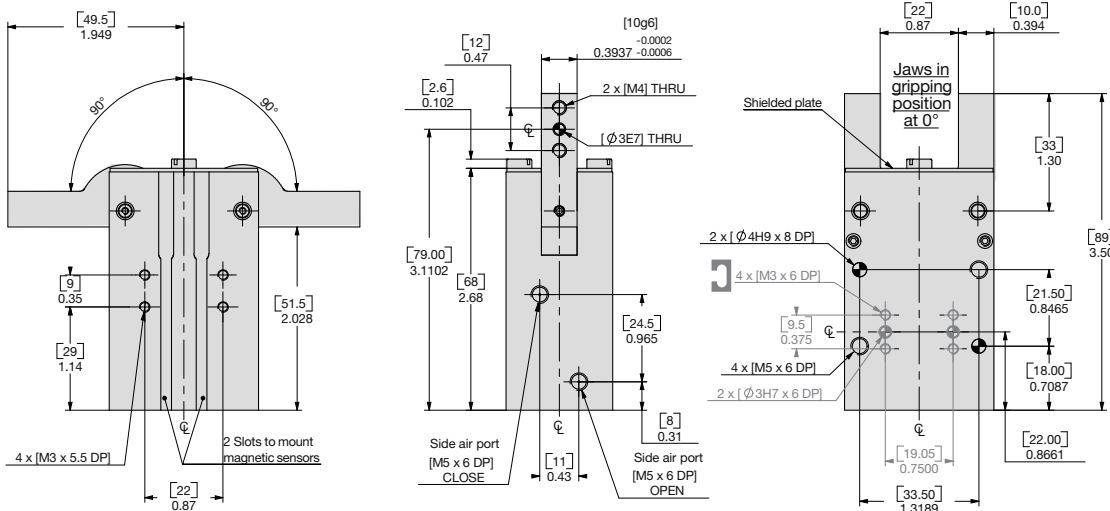
\*Sensor and cable sold separately.



# ANGULAR GRIPPER DCT-20M 180° SERIES

DCT SERIES

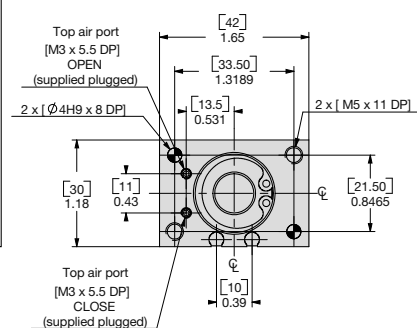
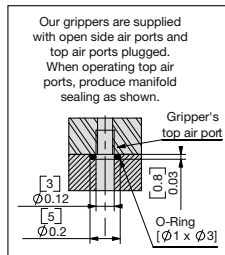
2.36



### Specifications

### DCT-20M

Total Rated Grip Force, <b>F</b> @ 100 psi [7 bar] <b>L</b> = 1.25 in. [32mm] @ 0°.....	25 lbs.	112 N
Stroke.....	90° of stroke for each finger	
Weight.....	0.62 lbs.	0.28 Kg
Pressure Range.....	40-100 psi	3-7 Bar
Cylinder Bore Ø.....	0.787 in.	20 mm
Displacement.....	0.483 in <sup>3</sup>	7.92 cm <sup>3</sup>
Temperature Range		
Standard Seals.....	-30°~180° F	-35°~80° C
Viton® Seals.....	-20°~300° F	-30°~150° C
Actuation.....	0.16 sec.	0.16 sec.
Accuracy.....	±0.003 in.	±0.08 mm
Repeatability.....	±0.002 in.	±0.05 mm
Valve required to actuate.....	4-way, 2-position	



NOTE: DIRECTCONNECT™ DIMENSIONS ARE SHOWN IN BLUE

### UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

Dimensions are symmetrical about centerline

Third Angle Projection

Metric Threads  
Course Pitch

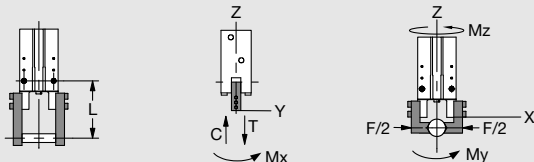
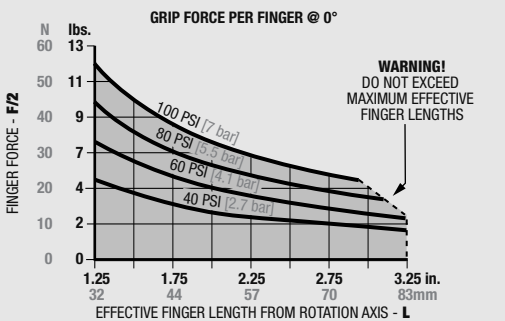
Imperial in.  
0.00 = ±.01  
0.000 = ±.005  
0.0000 = ±.0005

Metric [mm]  
[0.] = [±.25]  
[0.0] = [±.13]  
[0.00] = [±.013]

NOTE: Jaws have to be designed for a 0° gripping position (parallel jaws). Jaws will close 1.5° past parallel. To limit shocks at the end of an opening or closing stroke, it is highly recommended to design jaws with minimal inertia (as light and short as possible).  
Flow Controls make it possible to reduce the rotation speed and are highly recommended.

## Loading Information

## How to Order: (Order Accessories separately from Basic Model)



Loading Capacity <sup>†</sup>	Static		Dynamic	
	Imperial	Metric	Imperial	Metric
Maximum Tensile <b>T</b>	34 lbs.	150 N	7 lbs.	30 N
Maximum Compressive <b>C</b>	34 lbs.	150 N	7 lbs.	30 N
Maximum Moment <b>M<sub>x</sub></b>	53 in.-lbs.	6 Nm	13 in.-lbs.	1.5 Nm
Maximum Moment <b>M<sub>y</sub></b>	53 in.-lbs.	6 Nm	13 in.-lbs.	1.5 Nm
Maximum Moment <b>M<sub>z</sub></b>	53 in.-lbs.	6 Nm	13 in.-lbs.	1.5 Nm

<sup>†</sup>Capacities are per set of jaws and are not simultaneous

### BASIC MODEL

**DCT-20M-V**

SIZE VITON® SEALS

NOTE: DCT-20 can be used as an exact replacement for CT-20

### SENSOR ACCESSORIES\*

M8 PNP Magneto Resistive Sensor Short Barrel w/Qk Disc*	<b>OHSP-017</b>	<b>1 or 2</b>
M8 NPN Magneto Resistive Sensor Short Barrel w/Qk Disc*	<b>OHSN-017</b>	<b>1 or 2</b>
Inductive Sensor Mounting Kit (mounts 2 sensors)	<b>SDCT16-20</b>	<b>1</b>
4mm PNP Inductive Sensor with Quick Disconnect*	<b>OISP-014</b>	<b>1 or 2</b>
4mm NPN Inductive Sensor with Quick Disconnect*	<b>OISN-014</b>	<b>1 or 2</b>
M8 Quick Disconnect 2 Meter Cable Length*	<b>CABL-010</b>	<b>1 or 2</b>
M8 Quick Disconnect 5 Meter Cable Length*	<b>CABL-013</b>	<b>1 or 2</b>

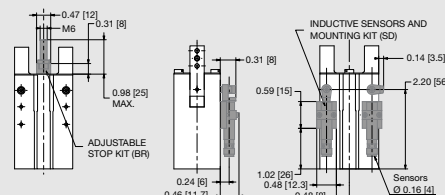
### PNEUMATIC ACCESSORIES

Adj. Flow Control M5 Elbow - 6mm OD Push-in (Metric)	<b>VLVF-008</b>	<b>1 or 2</b>
Buna-N Seal Repair Kit	<b>SLKT-161</b>	<b>1</b>
Viton® Seal Repair Kit	<b>SLKT-161V</b>	<b>1</b>

### MOUNTING ACCESSORIES

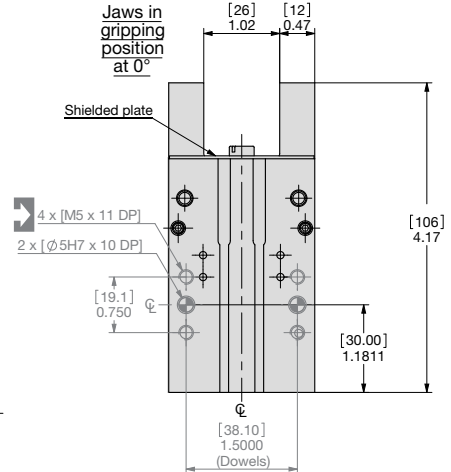
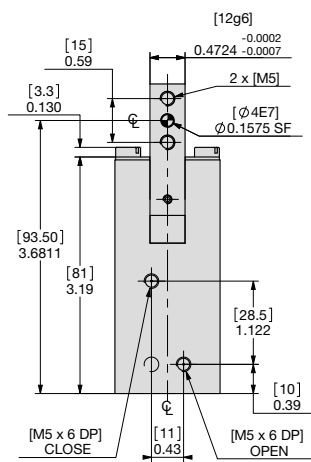
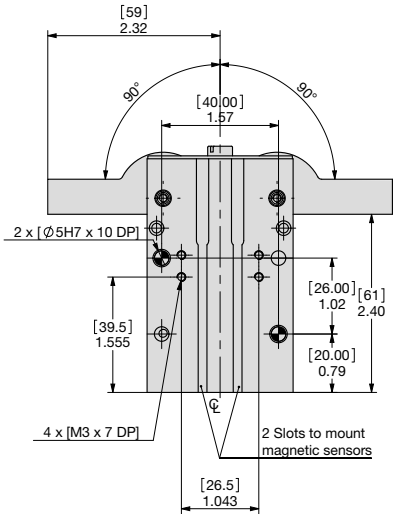
Adjustment Stop Kit (1 Shielded Plate + 1 Stop)	<b>KP-DCT20-BR</b>	<b>1</b>
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\*Sensor and cable sold separately.



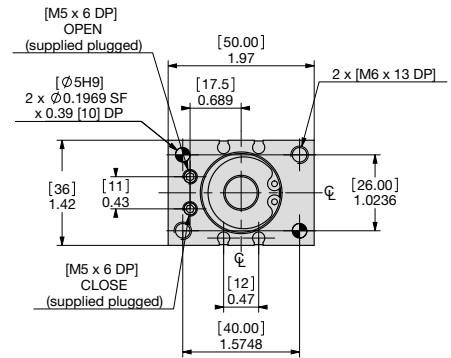
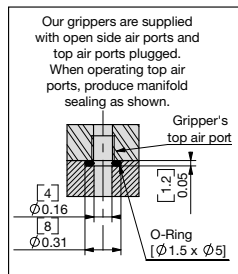
DIRECTCONNECT™





### Specifications

	DCT-25M	
Total Rated Grip Force, <b>F</b> @ 100 psi [7 bar] <b>L</b> = 1.75 in. [44mm] @ 0°	35 lbs.	157 N
Stroke	90° of stroke for each finger	
Weight	1.08 lbs.	0.49 Kg
Pressure Range	40-100 psi	3-7 Bar
Cylinder Bore Ø	0.984 in.	25 mm
Displacement	0.909 in <sup>3</sup>	14.9 cm <sup>3</sup>
Temperature Range		
Standard Seals	-30°~180° F	-35°~80° C
Viton® Seals	-20°~300° F	-30°~150° C
Actuation	0.21 sec.	0.21 sec.
Accuracy	±0.003 in.	±0.08 mm
Repeatability	±0.002 in.	±0.05 mm.
Valve required to actuate	4-way, 2-position	



NOTE: DIRECTCONNECT™ DIMENSIONS ARE SHOWN IN BLUE

### UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

Dimensions are symmetrical about centerline

Third Angle Projection

Metric Threads  
Course Pitch

**Imperial in.**  
0.00 = ±.01  
0.000 = ±.005  
0.0000 = ±.0005

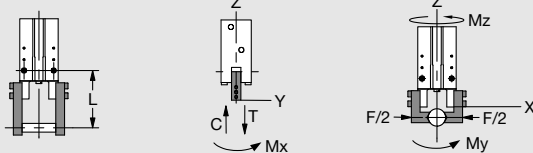
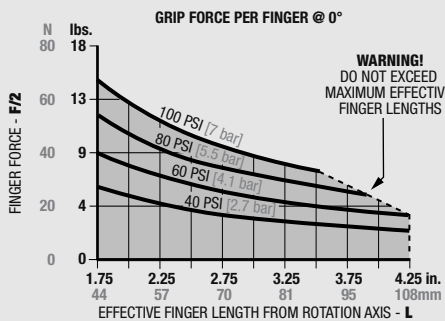
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[0.0] = [±.13]  
[0.00] = [±.013]

NOTE: Jaws have to be designed for a 0° gripping position (parallel jaws). Jaws will close 1.5° past parallel. To limit shocks at the end of an opening or closing stroke, it is highly recommended to design jaws with minimal inertia (as light and short as possible).

Flow Controls make it possible to reduce the rotation speed and are highly recommended.

## Loading Information

## How to Order: (Order Accessories separately from Basic Model)



Loading Capacity <sup>†</sup>	Static		Dynamic	
	Imperial	Metric	Imperial	Metric
Maximum Tensile <b>T</b>	46 lbs.	205 N	9 lbs.	41 N
Maximum Compressive <b>C</b>	46 lbs.	205 N	9 lbs.	41 N
Maximum Moment <b>M<sub>x</sub></b>	89 in.-lbs.	10 Nm	22 in.-lbs.	2.5 Nm
Maximum Moment <b>M<sub>y</sub></b>	89 in.-lbs.	10 Nm	22 in.-lbs.	2.5 Nm
Maximum Moment <b>M<sub>z</sub></b>	89 in.-lbs.	10 Nm	22 in.-lbs.	2.5 Nm

<sup>†</sup>Capacities are per set of jaws and are not simultaneous

### BASIC MODEL

**DCT-25M-V**

SIZE VITON® SEALS

### SENSOR ACCESSORIES\*

PNP Magneto Resistive Sensor Short Barrel w/Qk Disc*	<b>OHSP-017</b>	<b>1 or 2</b>
NPN Magneto Resistive Sensor Short Barrel w/Qk Disc*	<b>OHSN-017</b>	<b>1 or 2</b>
Inductive Sensor Mounting Kit (mounts 2 sensors)	<b>SDCT25-32</b>	<b>1</b>
M8 PNP Inductive Sensor with Quick Disconnect*	<b>OISP-011</b>	<b>1 or 2</b>
M8 NPN Inductive Sensor with Quick Disconnect*	<b>OISN-011</b>	<b>1 or 2</b>
M8 Quick Disconnect 2 Meter Cable Length*	<b>CABL-010</b>	<b>1 or 2</b>
M8 Quick Disconnect 5 Meter Cable Length*	<b>CABL-013</b>	<b>1 or 2</b>

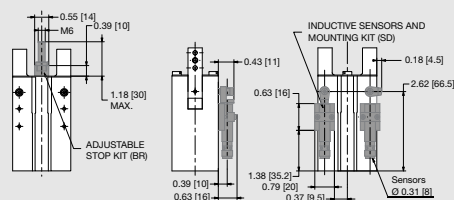
### PNEUMATIC ACCESSORIES

M5 Adjustable Flow Control	<b>VLVF-008</b>	<b>1 or 2</b>
Buna-N Seal Repair Kit	<b>SLKT-162</b>	<b>1</b>
Viton® Seal Repair Kit	<b>SLKT-162V</b>	<b>1</b>

### MOUNTING ACCESSORIES

Adjustment Stop Kit (1 Shielded Plate + 1 Stop)	<b>KP-DCT25-BR</b>	<b>1</b>
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\*Sensor and cable sold separately.

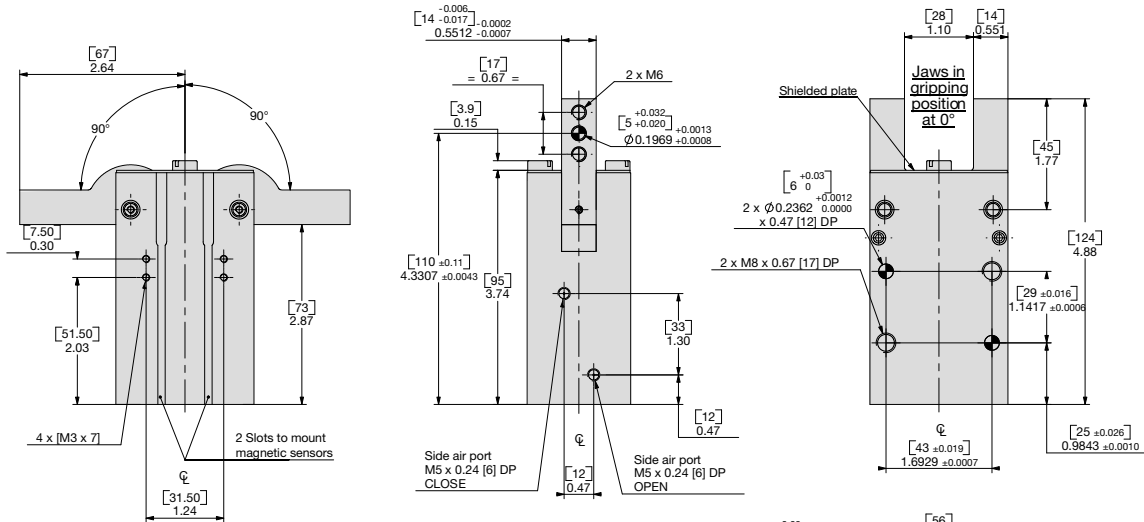




# ANGULAR GRIPPER CT-32M 180° SERIES

CT SERIES

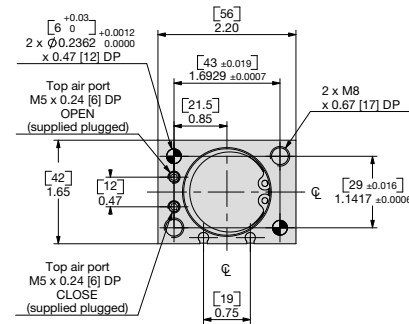
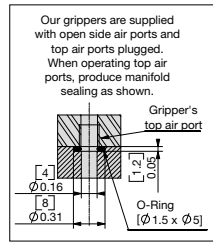
2.38



## Specifications

### CT-32M

Total Rated Grip Force, <b>F</b> @ 100 psi [7 bar]	61 lbs.	272 N
<b>L</b> = 1.75 in. [44mm] @ 0°	90° of stroke for each finger	
Stroke	1.59 lbs.	0.72 Kg
Weight	40-100 psi	3-7 Bar
Pressure Range	1.260 in.	32 mm
Cylinder Bore Ø	1.745 in <sup>3</sup>	28.6 cm <sup>3</sup>
Displacement	-30°~180° F	-35°~80° C
Temperature Range	Standard Seals	-20°~300° F
Standard Seals	Viton® Seals	-30°~150° C
Viton® Seals	0.29 sec.	0.29 sec.
Actuation	±0.003 in.	±0.08 mm
Accuracy	±0.002 in.	±0.05 mm
Repeatability	4-way, 2-position	
Valve required to actuate		



## UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

Dimensions are symmetrical about centerline

Third Angle Projection

Metric Threads  
Course Pitch

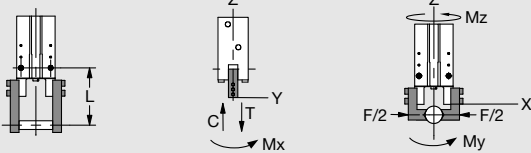
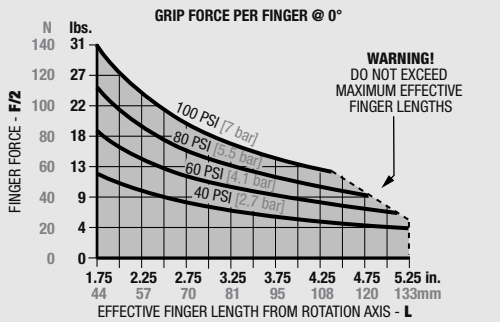
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0.000 = ±.005  
0.0000 = ±.0005

**Metric [mm]**  
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[0.0] = [±.13]  
[0.00] = [±.013]

**NOTE:** Jaws have to be designed for a 0° gripping position (parallel jaws). Jaws will close 1.5° past parallel. To limit shocks at the end of an opening or closing stroke, it is highly recommended to design jaws with minimal inertia (as light and short as possible).  
Flow Controls make it possible to reduce the rotation speed and are highly recommended.

## Loading Information

## How to Order: (Order Accessories separately from Basic Model)



Loading Capacity <sup>†</sup>	Static		Dynamic	
	Imperial	Metric	Imperial	Metric
Maximum Tensile <b>T</b>	65 lbs.	288 N	13 lbs.	57.6 N
Maximum Compressive <b>C</b>	65 lbs.	288 N	13 lbs.	57.6 N
Maximum Moment <b>M<sub>x</sub></b>	142 in.-lbs.	16 Nm	35 in.-lbs.	4 Nm
Maximum Moment <b>M<sub>y</sub></b>	142 in.-lbs.	16 Nm	35 in.-lbs.	4 Nm
Maximum Moment <b>M<sub>z</sub></b>	142 in.-lbs.	16 Nm	35 in.-lbs.	4 Nm

<sup>†</sup>Capacities are per set of jaws and are not simultaneous

## BASIC MODEL

**CT-32M-V**

SIZE VITON® SEALS

## SENSOR ACCESSORIES\*

PNP Magneto Resistive Sensor Short Barrel w/Qk Disc*	<b>OHSP-017</b>	<b>1 or 2</b>
NPN Magneto Resistive Sensor Short Barrel w/Qk Disc*	<b>OHSN-017</b>	<b>1 or 2</b>
Inductive Sensor Mounting Kit (mounts 2 sensors)	<b>SDCT25-32</b>	<b>1</b>
M8 PNP Inductive Sensor with Quick Disconnect*	<b>OISP-011</b>	<b>1 or 2</b>
M8 NPN Inductive Sensor with Quick Disconnect*	<b>OISN-011</b>	<b>1 or 2</b>
M8 Quick Disconnect 2 Meter Cable Length*	<b>CABL-010</b>	<b>1 or 2</b>
M8 Quick Disconnect 5 Meter Cable Length*	<b>CABL-013</b>	<b>1 or 2</b>

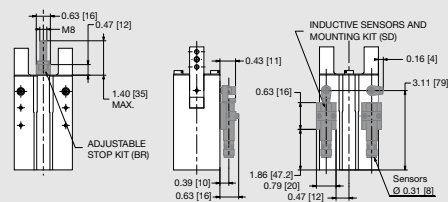
## PNEUMATIC ACCESSORIES

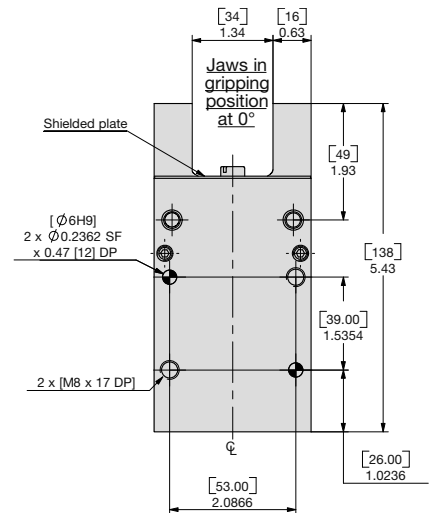
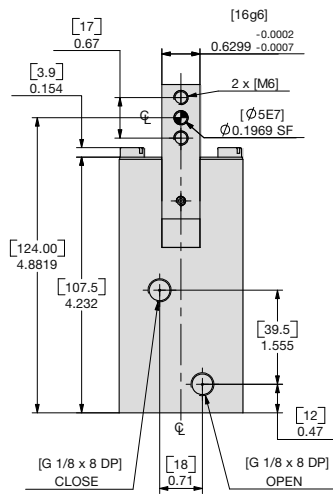
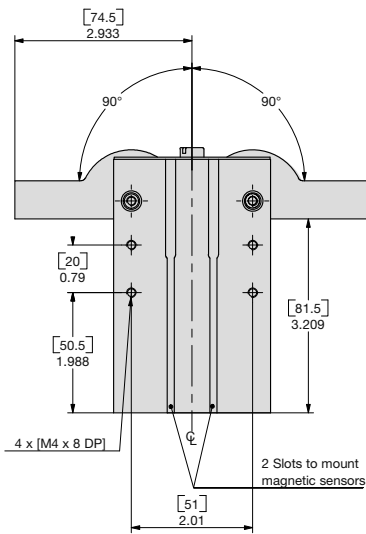
Adj. Flow Control M5 Elbow - 6mm OD Push-in (Metric)	<b>VLVF-008</b>	<b>1 or 2</b>
Buna-N Seal Repair Kit	<b>SLKT-163</b>	<b>1</b>
Viton® Seal Repair Kit	<b>SLKT-163V</b>	<b>1</b>

## MOUNTING ACCESSORIES

Adjustment Stop Kit (1 Shielded Plate + 1 Stop)	<b>KP-DCT32-BR</b>	<b>1</b>
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\*Sensor and cable sold separately.



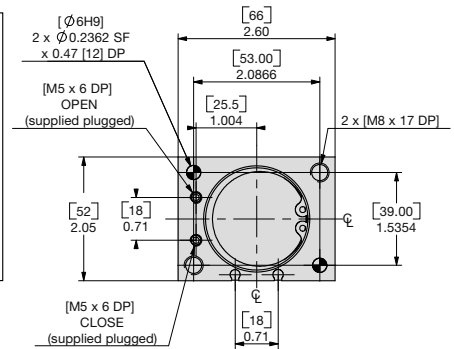
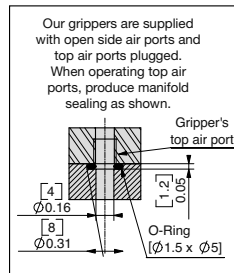


### Specifications

### CT-40M

**Total Rated Grip Force,  $F$  @ 100 psi [7 bar]**  
**L = 2 in. [51mm] @ 0°**

Stroke.....	100 lbs.	446 N
Weight.....	2.60 lbs.	1.18 Kg
Pressure Range.....	90° of stroke for each finger	
Cylinder Bore Ø.....	40~100 psi	3~7 Bar
Displacement.....	1.575 in.	40 mm
Temperature Range.....	3.173 in <sup>3</sup>	52 cm <sup>3</sup>
Standard Seals.....	-30°~180° F	-35°~80° C
Viton® Seals.....	-20°~300° F	-30°~150° C
Actuation.....	0.41 sec.	0.41 sec.
Accuracy.....	±0.0036 in.	±0.09 mm
Repeatability.....	±0.002 in.	±0.05 mm.
Valve required to actuate.....	4-way, 2-position	



### UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

Dimensions are symmetrical about centerline

Third Angle Projection

Metric Threads  
Course Pitch

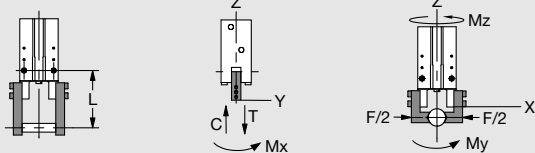
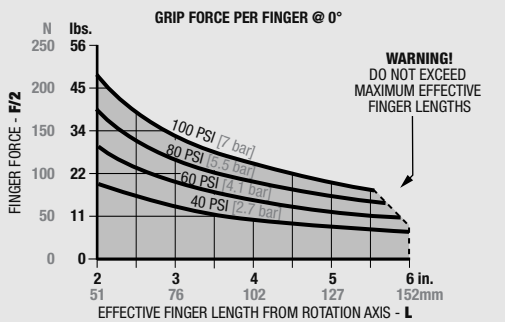
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0.000 = ±.005  
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**Metric [mm]**  
[0.] = [±.25]  
[0.0] = [±.13]  
[0.00] = [±.013]

**NOTE:** Jaws have to be designed for a 0° gripping position (parallel jaws). Jaws will close 1.5° past parallel. To limit shocks at the end of an opening or closing stroke, it is highly recommended to design jaws with minimal inertia (as light and short as possible).  
Flow Controls make it possible to reduce the rotation speed and are highly recommended.

## Loading Information

## How to Order: (Order Accessories separately from Basic Model)



### Loading Capacity<sup>†</sup>

	Static		Dynamic	
	Imperial	Metric	Imperial	Metric
Maximum Tensile <b>T</b>	94 lbs.	420 N	19 lbs.	84 N
Maximum Compressive <b>C</b>	94 lbs.	420 N	19 lbs.	84 N
Maximum Moment <b>M<sub>x</sub></b>	195 in.-lbs.	22 Nm	49 in.-lbs.	5.5 Nm
Maximum Moment <b>M<sub>y</sub></b>	195 in.-lbs.	22 Nm	49 in.-lbs.	5.5 Nm
Maximum Moment <b>M<sub>z</sub></b>	195 in.-lbs.	22 Nm	49 in.-lbs.	5.5 Nm

<sup>†</sup>Capacities are per set of jaws and are not simultaneous

### BASIC MODEL

**CT-40M-V**

SIZE VITON® SEALS

### SENSOR ACCESSORIES\*

PNP Magneto Resistive Sensor Short Barrel M8 w/Qk Disc*	<b>OHSP-017</b>	<b>1 or 2</b>
NPN Magneto Resistive Sensor Short Barrel M8 w/Qk Disc*	<b>OHSN-017</b>	<b>1 or 2</b>
Inductive Sensor Mounting Kit (mounts 2 sensors)	<b>SCT40-63</b>	<b>1</b>
M12 PNP Inductive Sensor with M12 Quick Disconnect*	<b>OISP-017</b>	<b>1 or 2</b>
M12 NPN Inductive Sensor with M12 Quick Disconnect*	<b>OISN-017</b>	<b>1 or 2</b>
M8 Quick Disconnect 2 Meter Cable Length*	<b>CABL-010</b>	<b>1 or 2</b>
M8 Quick Disconnect 5 Meter Cable Length*	<b>CABL-013</b>	<b>1 or 2</b>
M12 Quick Disconnect 2 Meter Cable Length*	<b>CABL-014</b>	<b>1 or 2</b>
M12 Quick Disconnect 5 Meter Cable Length*	<b>CABL-018</b>	<b>1 or 2</b>

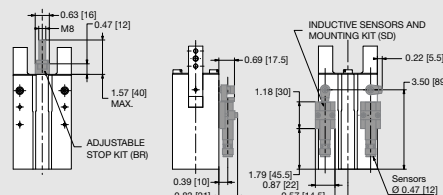
### PNEUMATIC ACCESSORIES

Adj. Flow Control G1/8 Elbow - 6mm OD Push-in (Metric)	<b>VLVF-005</b>	<b>1 or 2</b>
Buna-N Seal Repair Kit	<b>SLKT-164</b>	<b>1</b>
Viton® Seal Repair Kit	<b>SLKT-164V</b>	<b>1</b>

### MOUNTING ACCESSORIES

Adjustment Stop Kit (1 Shielded Plate + 1 Stop)	<b>KP-CT40-BR</b>	<b>1</b>
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\*Sensor and cable sold separately.

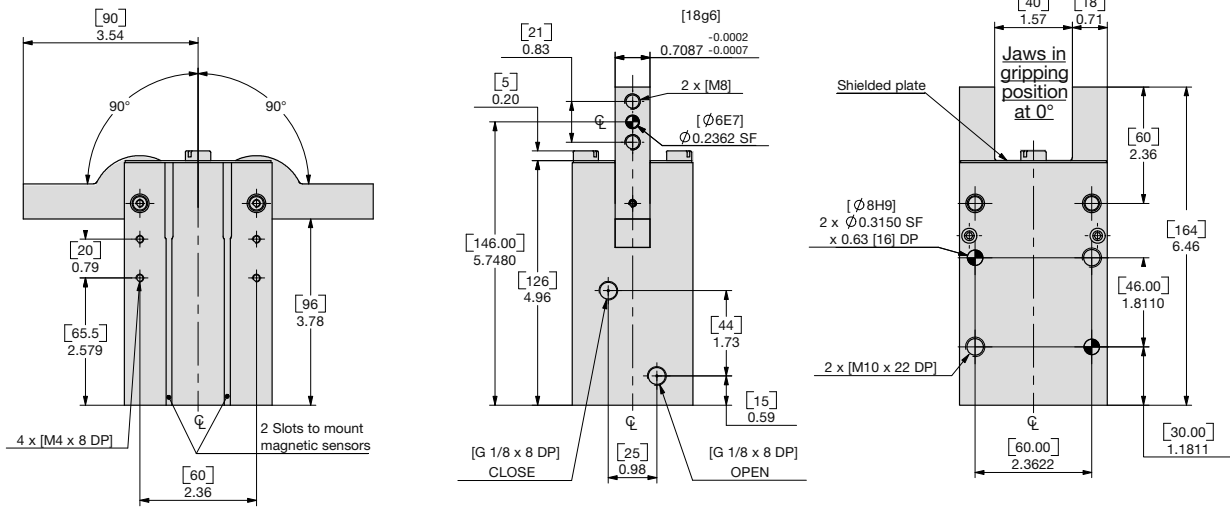


# ANGULAR GRIPPER CT-50M 180° SERIES



CT SERIES

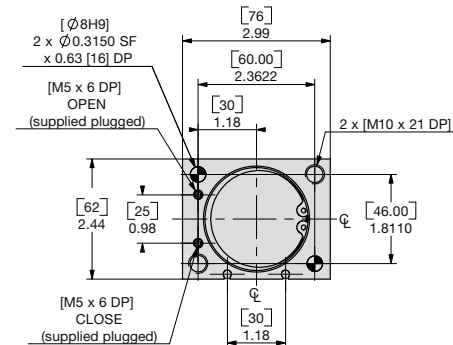
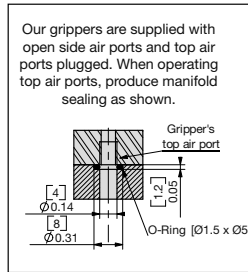
2.40



### Specifications

### CT-50M

Total Rated Grip Force, <b>F</b> @ 100 psi [7 bar] <b>L</b> = 2.25 in. [64mm] @ 0°	146 lbs.	651 N
Stroke	90° of stroke for each finger	
Weight	4.01 lbs.	1.82 Kg
Pressure Range	40-100 psi	3-7 Bar
Cylinder Bore $\varnothing$	1.968 in.	50 mm
Displacement	5.614 in. <sup>3</sup>	92 cm <sup>3</sup>
Temperature Range		
Standard Seals	-30°~180° F	-35°~80° C
Viton® Seals	-20°~300° F	-30°~150° C
Actuation	0.46 sec.	0.46 sec.
Accuracy	±0.0036 in.	±0.09 mm
Repeatability	±0.002 in.	±0.05 mm.
Valve required to actuate	4-way, 2-position	



### UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

Dimensions are symmetrical about centerline

Third Angle Projection

Metric Threads  
Course Pitch

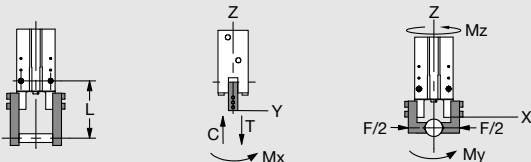
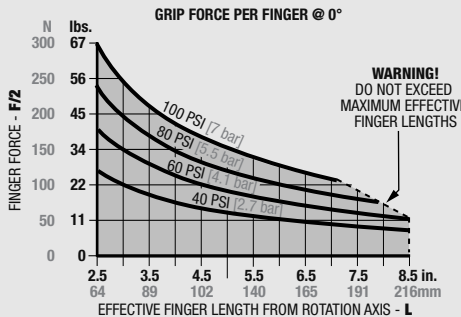
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**Metric [mm]**  
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[0.0] = [±.13]  
[0.00] = [±.013]

**NOTE:** Jaws have to be designed for a 0° gripping position (parallel jaws). Jaws will close 1.5° past parallel. To limit shocks at the end of an opening or closing stroke, it is highly recommended to design jaws with minimal inertia (as light and short as possible).  
Flow Controls make it possible to reduce the rotation speed and are highly recommended.

## Loading Information

## How to Order: (Order Accessories separately from Basic Model)



Loading Capacity <sup>†</sup>	Static		Dynamic	
	Imperial	Metric	Imperial	Metric
Maximum Tensile <b>T</b>	110 lbs.	490 N	22 lbs.	98 N
Maximum Compressive <b>C</b>	110 lbs.	490 N	22 lbs.	98 N
Maximum Moment <b>M<sub>x</sub></b>	266 in.-lbs.	30 Nm	66 in.-lbs.	7.5 Nm
Maximum Moment <b>M<sub>y</sub></b>	266 in.-lbs.	30 Nm	66 in.-lbs.	7.5 Nm
Maximum Moment <b>M<sub>z</sub></b>	266 in.-lbs.	30 Nm	66 in.-lbs.	7.5 Nm

<sup>†</sup>Capacities are per set of jaws and are not simultaneous

### BASIC MODEL

**CT-50M-V**

SIZE VITON® SEALS

### SENSOR ACCESSORIES\*

M8 PNP Magneto Resistive Sensor Short Barrel M8 w/Qk Disc*	<b>OHSP-017</b>	<b>1 or 2</b>
M8 NPN Magneto Resistive Sensor Short Barrel M8 w/Qk Disc*	<b>OHSN-017</b>	<b>1 or 2</b>
Inductive Sensor Mounting Kit (mounts 2 sensors)	<b>SDCT40-63</b>	<b>1</b>
M12 PNP Inductive Sensor with M12 Quick Disconnect*	<b>OISP-017</b>	<b>1 or 2</b>
M12 NPN Inductive Sensor with M12 Quick Disconnect*	<b>OISN-017</b>	<b>1 or 2</b>
M8 Quick Disconnect 2 Meter Cable Length*	<b>CABL-010</b>	<b>1 or 2</b>
M8 Quick Disconnect 5 Meter Cable Length*	<b>CABL-013</b>	<b>1 or 2</b>
M12 Quick Disconnect 2 Meter Cable Length*	<b>CABL-014</b>	<b>1 or 2</b>
M12 Quick Disconnect 5 Meter Cable Length*	<b>CABL-018</b>	<b>1 or 2</b>

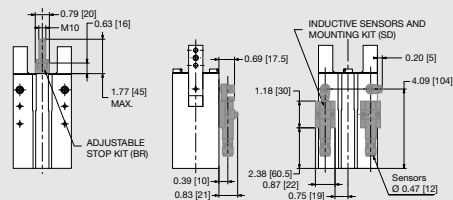
### PNEUMATIC ACCESSORIES

Adj. Flow Control G1/8 Elbow - 6mm OD Push-in (Metric)	<b>VLVF-005</b>	<b>1 or 2</b>
Buna-N Seal Repair Kit	<b>SLKT-165</b>	<b>1</b>
Viton® Seal Repair Kit	<b>SLKT-165V</b>	<b>1</b>

### MOUNTING ACCESSORIES

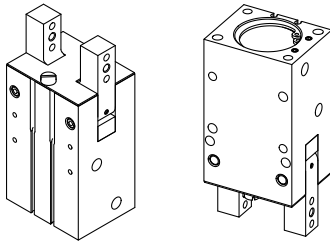
Adjustment Stop Kit (1 Shielded Plate + 1 Stop)	<b>KP-CT50-BR</b>	<b>1</b>
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\*Sensor and cable sold separately.

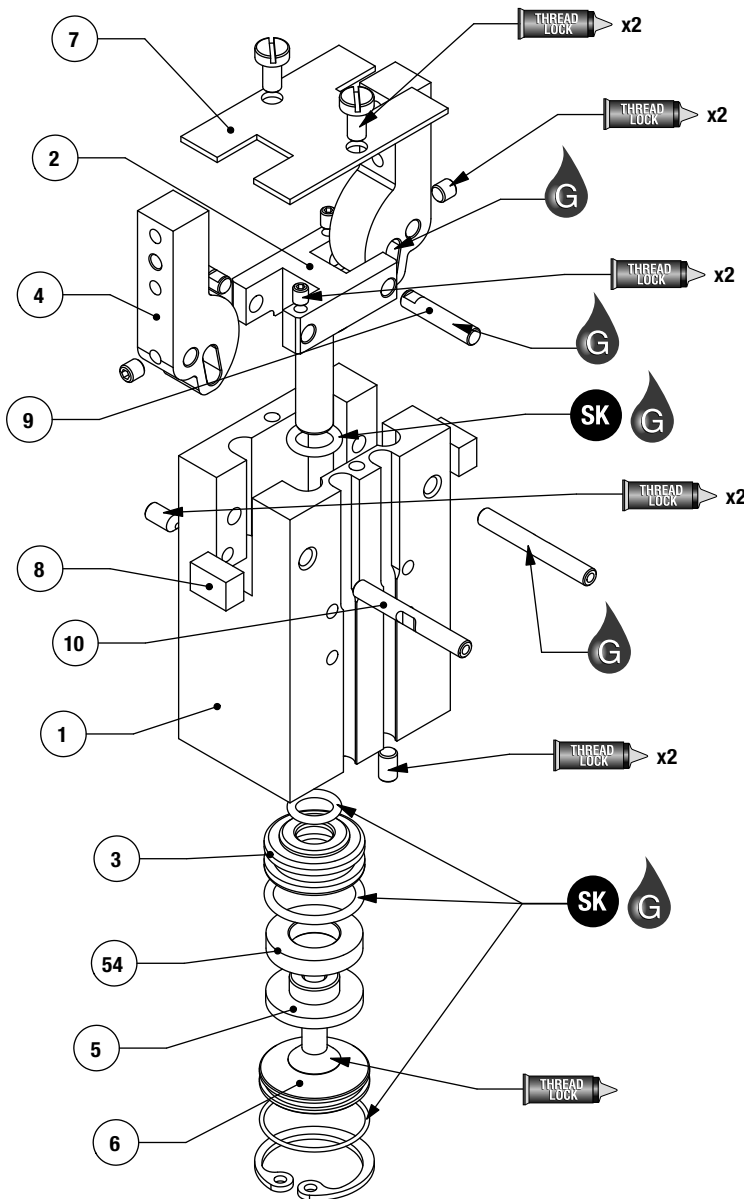


Please see back cover for DE-STA-CO Global Locations. [www.destaco.com](http://www.destaco.com)

[www.comoso.com](http://www.comoso.com)



Item	Qty	Name
01	1	Body
02	1	Driver
03	1	Piston
04	2	Jaw
05	1	Washer
06	1	Cap
07	1	Shielded Plate
08	2	Wiper Cover
09	2	Drive Pin
10	2	Pivot Pin
54	1	Magnet



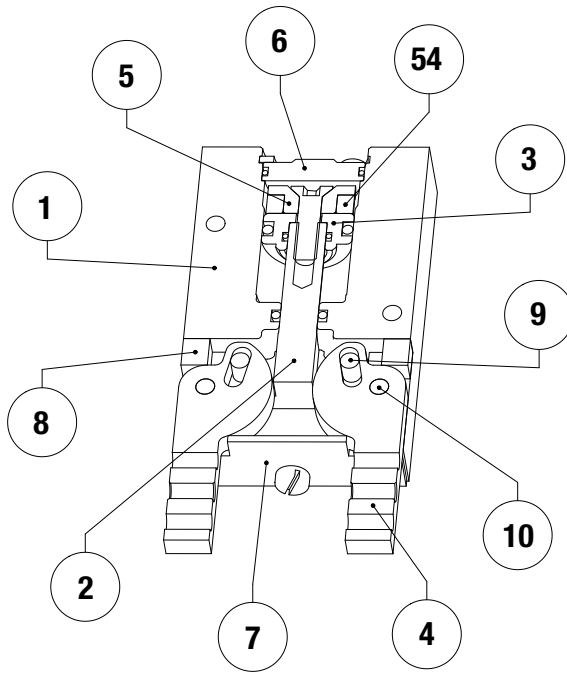
**NOTE:** Contact the Robohand Sales Department for a complete spare parts list with order numbers and prices.

**Assembly Procedure**

- Lubricate and install the seals into cap (x1), piston (x2) and body (x1)
- If top air ports are used, clear them and plug the side air ports on the body (#1)
- Lubricate the sloping rack of jaws (#4)
- Install both drive pins (#9) into driver (#2) through sloping racks of jaws. Check that the pin flat surface is correctly aligned before continuing with their installation.
- Lock drive pins in the driver with screws, tightening down on to the flat surface of the pins.
- Position driver and jaws assembly into body.
- Install both pivot pins (#10) into body, through the bore of jaws. Check that the pin flat surface is correctly aligned before continuing with their installation.
- Pivot pin locking:
  - DCT-12 (not shown): lock pivot pins into body with screws, tightening down on to the flat surface of the pins (pins are fixed into body and rotating into jaws)
  - DCT-16 to CT-50: lock pivot pins into jaws with screws, tightening down on to the flat surface of the pins (pins are fixed into jaws and rotating into body)
- Magnet mounting:
  - DCT-12 to DCT-20: install the magnet (#54) on the washer (#5)
  - DCT-25 to CT-50 (not shown): install magnet (#54) onto piston (#3) and lock it by means of its retaining ring.
- Piston mounting:
  - DCT-12 to DCT-20: insert the piston and the washer with magnet into body. Fix the assembly at the end of the driver with screw.
  - DCT-25 to CT-50 (not shown): insert the piston with magnet into body. Fix the assembly at the end of the drivers with screw.
- Check unit operation unladen.
- Install the cap (#6) into body and lock it by means of its retaining ring.
- Place both wiper covers (#8) into body and lock them with their screws.
- Fix the shielded plate (#7) onto body with both screws.

**SK Seal Repair Kit Order #'s See Product Data Sheets**

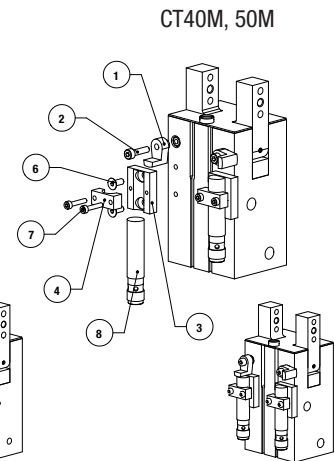
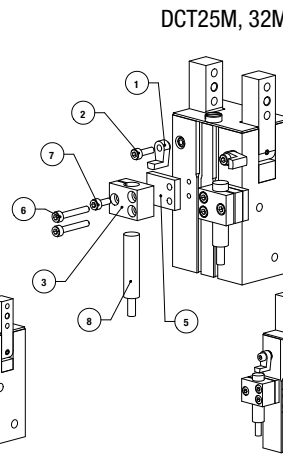
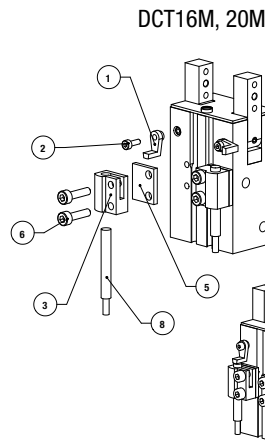
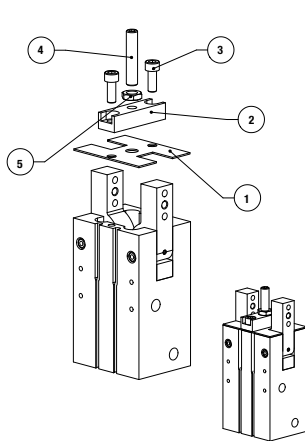
Seal Kit Items	Thread Locker	Krytox™ Lubricant	Lightweight Machine Oil	Teflon® Based Grease	Super Bonder	Third Angle Projection



Item	Qty	Name
01	1	Body
02	1	Driver
03	1	Piston
04	2	Jaw
05	1	Washer
06	1	Cap
07	1	Shielded Plate
08	2	Wiper Cover
09	2	Drive Pin
10	2	Pivot Pin
54	1	Magnet

**NOTE:** Contact the Robohand Sales Department for a complete spare parts list with order numbers and prices.

## Accessory Installation & Adjustment Instructions



### Installation - Adjustment Stop

- 1) Unscrew both screws for mounting of the shielded plate and remove it.
- 2) Fix the new shielded plate (#1) and the stop (#2) onto body with both screws (#3)
- 3) Install the locknut system (#4) and (#5) on the stop.
- 4) Tighten screw for maximum target jaw opening and lock with locknut.

### Installation - Inductive Sensor Holders

- 1) Fix the flags (#1) at the end of pivot pins with their screws (#2)
- 2) Holder mounting:
  - DCT-16M to DCT-32M: fix holder (#3) and spacer (#5) onto body with both screws (#6)
  - DCT-40M to DCT-50M: fix holder (#3) onto body with both screws (#6)
- 3) Sensor mounting:
  - DCT-16M to DCT-20M: unscrew lightly both screws for mounting (#6) of holder and insert sensor (#8, not included) into it. Position sensor so that it senses up on flag. Lock the sensor by tightening both screws.
  - DCT-25M to DCT-32M: unscrew lightly screw (#7) on holder and insert sensor (#8, not included) into it. Position sensor so that it senses up the flag. Lock the sensor by tightening screw.
  - CT-40M to CT-50M: insert sensor (#8, not included) in stop into holder. Lock the sensor by tightening the collar holder with both screws (not shown).
- 4) Adjust flag position by unscrewing their screws for desired sensing positions.



Seal Kit  
Items



Thread  
Locker



Krytox™  
Lubricant



Lightweight  
Machine Oil



Teflon® Based  
Grease



Super  
Bonder



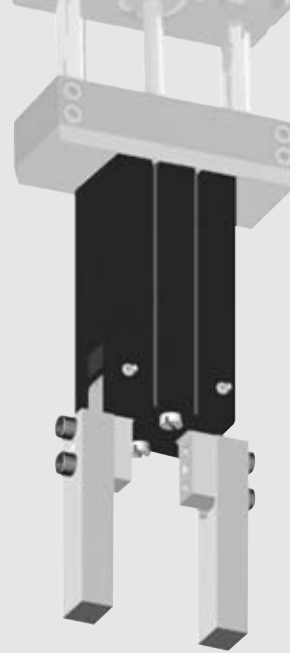
Third Angle  
Projection





# Angular Grippers - 180° Spring Assist Series

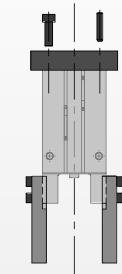
- 180° angular gripper:**  
The full jaw opening (180°) means that the part can be direct fed, avoiding any release movement by the robot or by the actuator.
- Multiple mounting locations:**  
DIRECTCONNECT™ mounting on back of body (sizes 12-25). Standard mounting on top.
- Fail safe operation:**  
The force supplied from the internal spring can be used to maintain gripping force if the gripper loses air pressure.
- Compact gripper:**  
This gripper is designed for use in confined spaces.
- Multipurpose gripper:**  
Several accessories (adjustable stop, magneto resistive or inductive sensors) allow this gripper to be used in a number of applications.
- Harsh environments:**  
Shielded design repels chips and other particulate from internal drive mechanism.



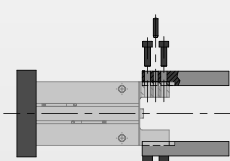
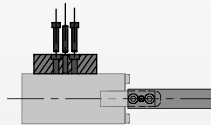
## Mounting Information:

### Grippers can be mounted & operated in any orientation

Gripper is located from the top with 2 dowel pins and assembled with 2 screws.



DIRECTCONNECT mounting pattern: Gripper is located with 2 dowel pins and assembled with 4 screws. Alternative pattern: Gripper is located with 2 dowel pins and assembled with 2 screws.



Fingers are centered over the jaws, located with 1 dowel pin and assembled with 2 screws.



The gripper is protected from falling debris when it is mounted and operated upside down.

Gripper can be operated utilizing top manifold air ports.

## Technical Specifications:

### Pneumatic Specifications

Pressure Operating Range  
Cylinder Type

**Imperial**  
60-100 psi

**Metric**  
4-7 bar

**Double Acting Spring Assist or Single Acting Spring Return**

**Internally Lubricated Buna-N 4-way, 2-position**

Dynamic Seals  
Valve Required to Operate

### Air Quality Requirements

Air Filtration  
Air Lubrication  
Air Humidity

**40 Micron or Better Not Necessary\*  
Low Moisture Content (dry)**

### Temperature Operating Range

Buna-N Seals (Standard)  
Viton® Seals (Optional)

**-30°~180° F  
-20°~300° F**

**-35°~80° C  
-30°~150° C**

### Maintenance Specifications†

Expected Life  
Normal Application  
w/ Preventative Maintenance  
Field Repairable  
Seal Repair Kits Available

**5 million cycles  
10+ million cycles\*  
Yes  
Yes**

\*Addition of lubrication will greatly increase service life  
† See Maintenance Section

## Product Features

### Gripper Attachment

Gripper mounting from side or bottom

### Viton Seals

Viton seals for high temperatures (-20°F to +300°F / -30°~150° C) are optional

### Quality Components

Made from aluminum alloy anodized with Teflon™ impregnation. The gripper's main components are made of heat treated steel.

### Inductive Sensor Mounting Kit

Accessory (SD) in order to control jaw position: comes with 2 holders for tubular sensors and 2 adjustable flags (except size -12)

### Magneto Resistive Sensor Mounting Kit

The gripper comes with adjustable slots for the 2 magnetic sensors (to control jaw position)

### Adjustable Stop

Accessory (BR) in order to adjust the opening of jaws, between 0° to 180°

### Shielded Plate and Wiper Covers

Gripper body is shielded to repel chips and other particulate from internal drive mechanism

### DIRECTCONNECT Mounting Patterns

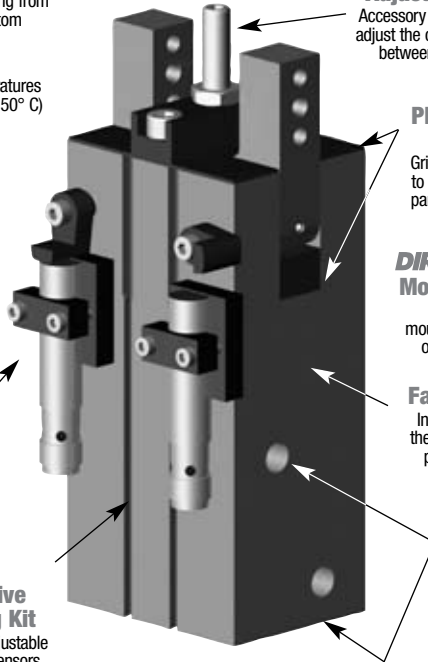
DIRECTCONNECT™ mounting surface on back of body (sizes 12-25)

### Fail Safe Spring

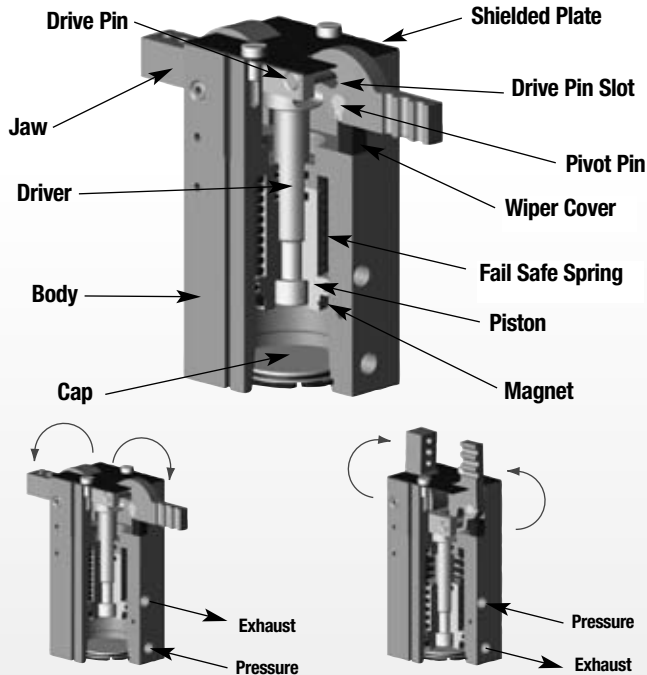
Internal spring allows the gripper to hold onto part with loss of air pressure

### Multiple Air Ports

Side or top air ports (top ports require 0-ring)



## Operating Principle



- A double acting piston, with a ring magnet for magneto resistive sensing, is connected to a fork driver on which 2 drive pins are fixed.
- Jaw rotation is synchronized with the drive pin-jaw assembly.
- Sliding in these slots, drive pins convert vertical motion of the piston into rotating opposite synchronous motion of both jaws.
- Each jaw has a useful rotation stroke of 90°, between the 90° open position and the 0° gripping position, plus a gripping over-stroke of approximately 1.5° before reaching the fully gripped position. Jaws have to be designed for a 0° gripping position (parallel jaws)
- The fail safe spring allow the gripper to retain the component should the air supply fail or for the gripper to be used in single acting mode.

## Style -DCT-RE Angular Gripper

Size -12M



Style: DCT-12M-RE  
Stroke: 90° each finger  
Grip Force: 9 lbs 40 N  
Weight: 0.26 lbs 0.12 Kg



See Page **2.46**

## Style -DCT-RE Angular Gripper

Size -16M



Style: DCT-16M-RE  
Stroke: 90° each finger  
Grip Force: 19 lbs 87 N  
Weight: 0.44 lbs 0.20 Kg



See Page **2.47**

## Style -DCT-RE Angular Gripper

Size -20M



Style: DCT-20M-RE  
Stroke: 90° each finger  
Grip Force: 32 lbs 141 N  
Weight: 0.73 lbs 0.33 Kg



See Page **2.48**

## Style -DCT-RE Angular Gripper

Size -25M



Style: DCT-25M-RE  
Stroke: 90° each finger  
Grip Force: 45 lbs 199 Nm  
Weight: 1.26 lbs 0.57 Kg



See Page **2.49**

## Style -CT-RE Angular Gripper

Size -32M



Style: CT-32M-RE  
Stroke: 90° each finger  
Grip Force: 79 lbs 353 N  
Weight: 1.83 lbs 0.83 Kg

See Page **2.50**

## Style -CT-RE Angular Gripper

Size -40M



Style: CT-40M-RE  
Stroke: 90° each finger  
Grip Force: 133 lbs 592 N  
Weight: 3.06 lbs 1.39 Kg

See Page **2.51**

## Style -CT-RE Angular Gripper

Size -50M



Style: CT-50M-RE  
Stroke: 90° each finger  
Grip Force: 201 in-lbs 893 N  
Weight: 4.87 lbs 2.21 Kg

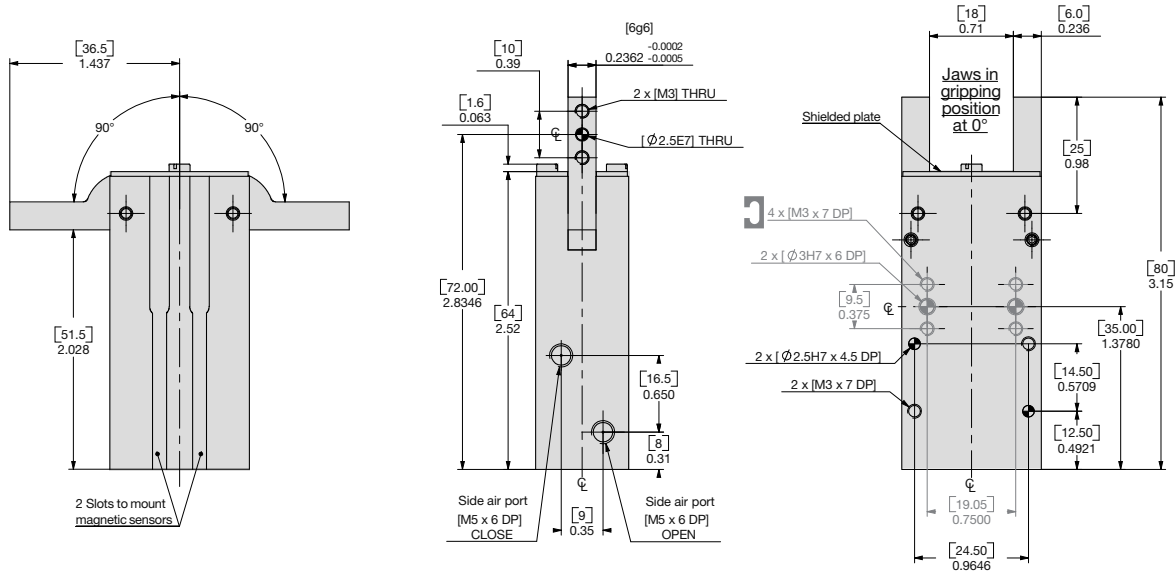
See Page **2.52**



# ANGULAR GRIPPER DCT-12M-RE 180° SERIES

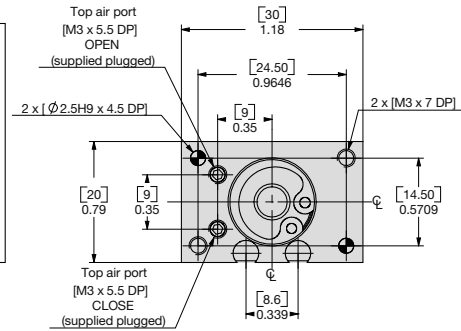
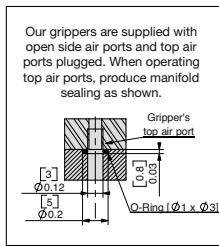
DCT-RE SERIES

2.46



### Specifications

		DCT-12M-RE	
Total Rated Grip Force, <b>F</b> @ 100 psi [7 bar]	<b>L</b> = 1 in. [25mm] @ 0°	9 lbs.	40 N
Stroke		90° of stroke for each finger	
Weight		0.26 lbs.	0.12 Kg
Pressure Range		60-100 psi	4-7 Bar
Cylinder Bore Ø		0.472 in.	12 mm
Displacement		0.117 in <sup>3</sup>	1.92 cm <sup>3</sup>
Temperature Range			
Standard Seals		-30°~180° F	-35°~80° C
Viton® Seals		-20°~300° F	-30°~150° C
Actuation (open/close)		0.08 / 0.05 sec.	
Accuracy		±0.0028 in.	±0.07 mm
Repeatability		±0.002 in.	±0.05 mm
Valve required to actuate single acting		3-way, 2-position	
Valve required to actuate double acting		4-way, 2-position	



NOTE: DIRECTCONNECT™ DIMENSIONS ARE SHOWN IN BLUE

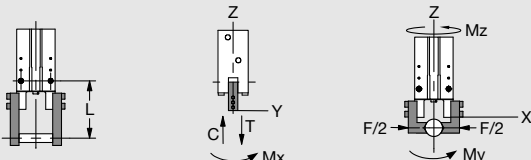
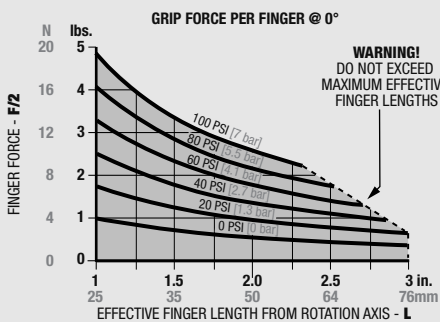
### UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

Symbol	Imperial in.	Metric [mm]
	0.00 ± .01	[0.] = [±.25]
	0.000 ± .005	[0.0] = [±.13]
	0.0000 ± .0005	[0.00] = [±.013]

NOTE: Jaws have to be designed for a 0° gripping position (parallel jaws). Jaws will close 1.5° past parallel. To limit shocks at the end of an opening or closing stroke, it is highly recommended to design jaws with minimal inertia (as light and short as possible). Flow Controls make it possible to reduce the rotation speed and are highly recommended.

### Loading Information

### How to Order: (Order Accessories separately from Basic Model)



Loading Capacity <sup>†</sup>	Static		Dynamic	
	Imperial	Metric	Imperial	Metric
Maximum Tensile <b>T</b>	11 lbs.	47 N	2 lbs.	9.4 N
Maximum Compressive <b>C</b>	11 lbs.	47 N	2 lbs.	9.4 N
Maximum Moment <b>M<sub>x</sub></b>	10 in.-lbs.	1.1 Nm	3 in.-lbs.	1.1 Nm
Maximum Moment <b>M<sub>y</sub></b>	10 in.-lbs.	1.1 Nm	3 in.-lbs.	1.1 Nm
Maximum Moment <b>M<sub>z</sub></b>	10 in.-lbs.	1.1 Nm	3 in.-lbs.	1.1 Nm

<sup>†</sup>Capacities are per set of jaws and are not simultaneous

**BASIC MODEL**    **VITON® SEALS**

**DCT-12M-RE-V**

**SIZE**    **SPRING**

NOTE: DCT-12-RE can be used as an exact replacement for CT-12-RE

#### SENSOR ACCESSORIES\*

PNP Magneto Resistive Sensor Short Barrel w/Qk Disc*	<b>OHSP-017</b>	<b>1 or 2</b>
NPN Magneto Resistive Sensor Short Barrel w/Qk Disc*	<b>OHSN-017</b>	<b>1 or 2</b>
Quick Disconnect 2 Meter Cable Length*	<b>CABL-010</b>	<b>1 or 2</b>
Quick Disconnect 5 Meter Cable Length*	<b>CABL-013</b>	<b>1 or 2</b>

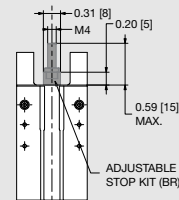
#### PNEUMATIC ACCESSORIES

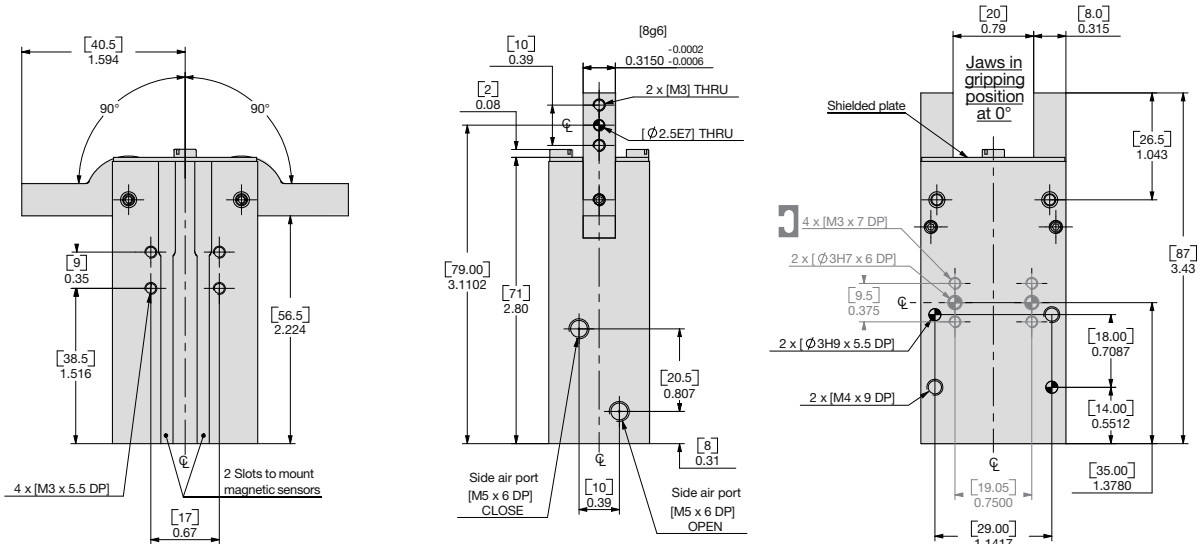
Adj. Flow Control M5 Elbow - 6mm OD Push-in (Metric)	<b>VLVF-008</b>	<b>1 or 2</b>
Buna-N Seal Repair Kit	<b>SLKT-159</b>	<b>1</b>
Viton® Seal Repair Kit	<b>SLKT-159V</b>	<b>1</b>

#### MOUNTING ACCESSORIES

Adjustment Stop Kit (1 Shielded Plate + 1 Stop)	<b>KP-DCT12-BR</b>	<b>1</b>
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\*Sensor and cable sold separately.



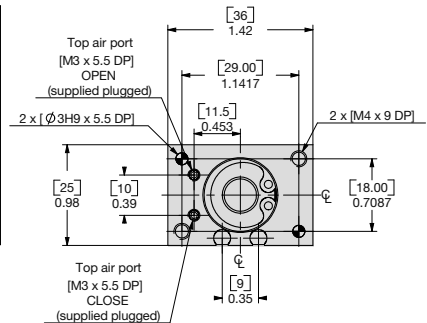
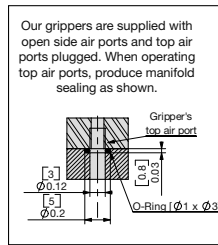


**Specifications**

**DCT-16M-RE**

Total Rated Grip Force, **F** @ 100 psi [7 bar]  
**L** = 1 in. [25mm] @ 0°

Stroke.....	90° of stroke for each finger
Weight.....	0.44 lbs. 0.20 Kg
Pressure Range.....	60-100 psi 4-7 Bar
Cylinder Bore Ø.....	0.630 in. 16 mm
Displacement.....	0.251 in <sup>3</sup> 4.12 cm <sup>3</sup>
Temperature Range	
Standard Seals.....	-30°~180° F -35°~80° C
Viton® Seals.....	-20°~300° F -30°~150° C
Actuation (open/close).....	0.15 / 0.12 sec.
Accuracy.....	±0.0028 in. ±0.07 mm
Repeatability.....	±0.002 in. ±0.05 mm.
Valve required to actuate single acting.....	3-way, 2-position
Valve required to actuate double acting.....	4-way, 2-position



NOTE: DIRECTCONNECT™ DIMENSIONS ARE SHOWN IN BLUE

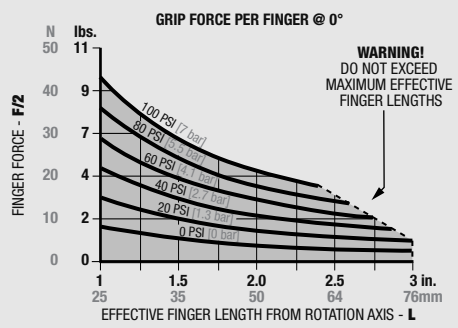
**UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW**

	Dimensions are symmetrical about centerline		Third Angle Projection		All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or ±.013mm		Metric Threads Course Pitch	<b>Imperial in.</b>	<b>Metric [mm]</b>
								0.00 ± .01	[0.] = ±.25
								0.000 ± .005	[0.0] = ±.13
								0.0000 ± .0005	[0.00] = ±.013

NOTE: Jaws have to be designed for a 0° gripping position (parallel jaws). Jaws will close 1.5° past parallel. To limit shocks at the end of an opening or closing stroke, it is highly recommended to design jaws with minimal inertia (as light and short as possible). Flow Controls make it possible to reduce the rotation speed and are highly recommended.

**Loading Information**

**How to Order:** (Order Accessories separately from Basic Model)



**BASIC MODEL**     **VITON® SEALS**

**DCT-16M-RE-V**

**SIZE**     **SPRING**

NOTE: DCT-16-RE can be used as an exact replacement for CT-16-RE

**SENSOR ACCESSORIES\***

PNP Magneto Resistive Sensor Short Barrel w/Qk Disc*	<b>OHSP-017</b>	<b>1 or 2</b>
NPN Magneto Resistive Sensor Short Barrel w/Qk Disc*	<b>OHSN-017</b>	<b>1 or 2</b>
Inductive Sensor Mounting Kit (mounts 2 sensors)	<b>SDCT16-20</b>	<b>1</b>
4mm PNP Inductive Sensor with Quick Disconnect*	<b>OISP-014</b>	<b>1 or 2</b>
4mm NPN Inductive Sensor with Quick Disconnect*	<b>OISN-014</b>	<b>1 or 2</b>
Quick Disconnect 2 Meter Cable Length*	<b>CABL-010</b>	<b>1 or 2</b>
Quick Disconnect 5 Meter Cable Length*	<b>CABL-013</b>	<b>1 or 2</b>

**PNEUMATIC ACCESSORIES**

Adj. Flow Control M5 Elbow - 6mm OD Push-in (Metric)	<b>VLVF-008</b>	<b>1 or 2</b>
Buna-N Seal Repair Kit	<b>SLKT-160</b>	<b>1</b>
Viton® Seal Repair Kit	<b>SLKT-160V</b>	<b>1</b>

**MOUNTING ACCESSORIES**

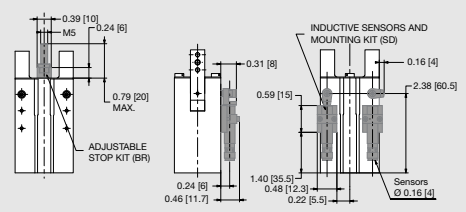
Adjustment Stop Kit (1 Shielded Plate + 1 Stop)	<b>KP-DCT16-BR</b>	<b>1</b>
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\*Sensor and cable sold separately.

**Loading Capacity†**

	Static		Dynamic	
	Imperial	Metric	Imperial	Metric
Maximum Tensile <b>T</b>	20 lbs.	90 N	4 lbs.	18 N
Maximum Compressive <b>C</b>	20 lbs.	90 N	4 lbs.	18 N
Maximum Moment <b>M<sub>x</sub></b>	26 in.-lbs.	2.9 Nm	6 in.-lbs.	0.7 Nm
Maximum Moment <b>M<sub>y</sub></b>	26 in.-lbs.	2.9 Nm	6 in.-lbs.	0.7 Nm
Maximum Moment <b>M<sub>z</sub></b>	26 in.-lbs.	2.9 Nm	6 in.-lbs.	0.7 Nm

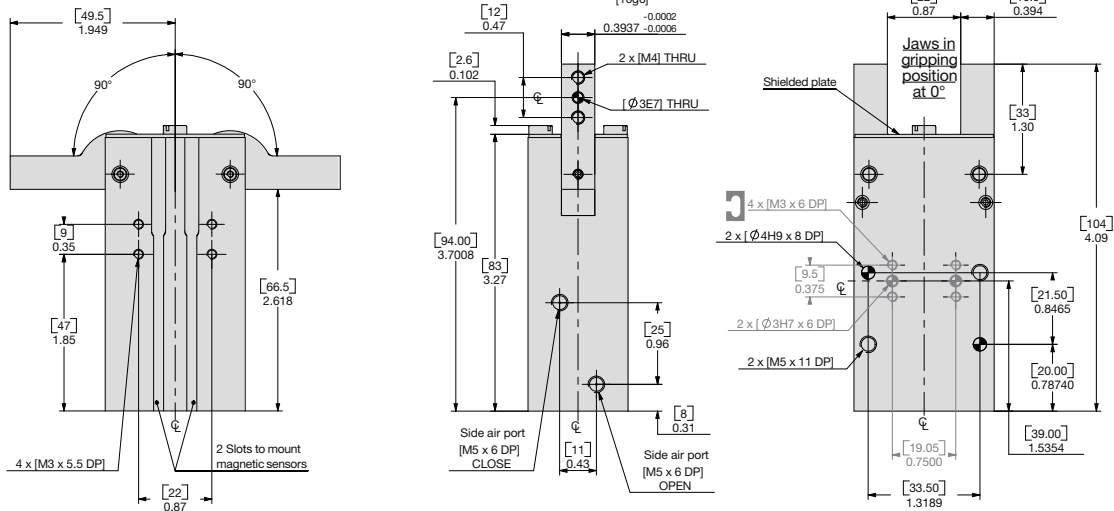
†Capacities are per set of jaws and are not simultaneous



# ANGULAR GRIPPER DCT-20M-RE 180° SERIES

DCT-RE SERIES

2.48



### Specifications

### DCT-20M-RE

Total Rated Grip Force, **F** @ 100 psi [7 bar]  
**L** = 1.25 in. [32mm] @ 0°..... 32 lbs. 141 N

Stroke..... 90° of stroke for each finger

Weight..... 0.73 lbs. 0.33 Kg

Pressure Range..... 60-100 psi 4-7 Bar

Cylinder Bore Ø..... 0.787 in. 20 mm

Displacement..... 0.483 in<sup>3</sup> 7.92 cm<sup>3</sup>

Temperature Range

Standard Seals..... -30°~180° F -35°~80° C

Viton® Seals..... -20°~300° F -30°~150° C

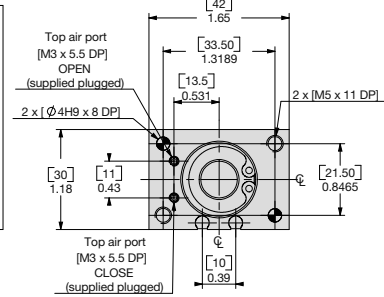
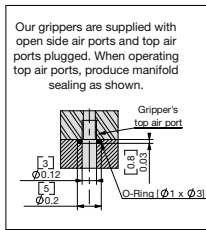
Actuation (open/close)..... 0.20 / 0.14 sec.

Accuracy..... ±0.003 in. ±0.08 mm

Repeatability..... ±0.002 in. ±0.05 mm

Valve required to actuate single acting..... 3-way, 2-position

Valve required to actuate double acting..... 4-way, 2-position



NOTE: DIRECTCONNECT™ DIMENSIONS ARE SHOWN IN BLUE

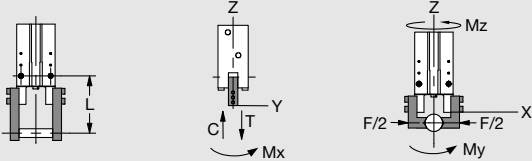
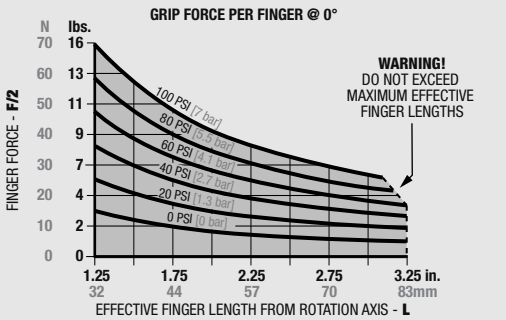
### UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

	Dimensions are symmetrical about centerline		Third Angle Projection		All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or ±.013mm		Thread Tolerances Course Pitch	<b>Imperial in.</b>	<b>Metric [mm]</b>
								0.00 ± .01	[0.] = ±.25
								0.000 ± .005	[0.0] = ±.13
								0.0000 ± .0005	[0.00] = ±.013

**NOTE:** Jaws have to be designed for a 0° gripping position (parallel jaws). Jaws will close 1.5° past parallel. To limit shocks at the end of an opening or closing stroke, it is highly recommended to design jaws with minimal inertia (as light and short as possible). Flow Controls make it possible to reduce the rotation speed and are highly recommended.

## Loading Information

## How to Order: (Order Accessories separately from Basic Model)



Loading Capacity <sup>†</sup>	Static		Dynamic	
	Imperial	Metric	Imperial	Metric
Maximum Tensile <b>T</b>	34 lbs.	150 N	7 lbs.	30 N
Maximum Compressive <b>C</b>	34 lbs.	150 N	7 lbs.	30 N
Maximum Moment <b>M<sub>x</sub></b>	53 in.-lbs.	6 Nm	13 in.-lbs.	1.5 Nm
Maximum Moment <b>M<sub>y</sub></b>	53 in.-lbs.	6 Nm	13 in.-lbs.	1.5 Nm
Maximum Moment <b>M<sub>z</sub></b>	53 in.-lbs.	6 Nm	13 in.-lbs.	1.5 Nm

<sup>†</sup>Capacities are per set of jaws and are not simultaneous

### BASIC MODEL VITON® SEALS

**DCT-20M-RE-V**

SIZE SPRING

**NOTE:** DCT-20-RE can be used as an exact replacement for CT-20-RE

### SENSOR ACCESSORIES\*

PNP Magneto Resistive Sensor Short Barrel w/Qk Disc*	<b>OHSP-017</b>	<b>1 or 2</b>
NPN Magneto Resistive Sensor Short Barrel w/Qk Disc*	<b>OHSN-017</b>	<b>1 or 2</b>
Inductive Sensor Mounting Kit (mounts 2 sensors)	<b>SDCT16-20</b>	<b>1</b>
4mm PNP Inductive Sensor with Quick Disconnect*	<b>OISP-014</b>	<b>1 or 2</b>
4mm NPN Inductive Sensor with Quick Disconnect*	<b>OISN-014</b>	<b>1 or 2</b>
Quick Disconnect 2 Meter Cable Length*	<b>CABL-010</b>	<b>1 or 2</b>
Quick Disconnect 5 Meter Cable Length*	<b>CABL-013</b>	<b>1 or 2</b>

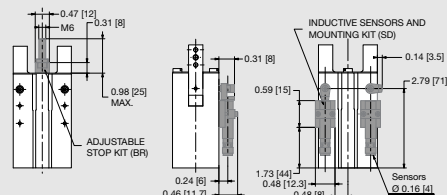
### PNEUMATIC ACCESSORIES

Adj. Flow Control M5 Elbow - 6mm OD Push-in (Metric)	<b>VLVF-008</b>	<b>1 or 2</b>
Buna-N Seal Repair Kit	<b>SLKT-161</b>	<b>1</b>
Viton® Seal Repair Kit	<b>SLKT-161V</b>	<b>1</b>

### MOUNTING ACCESSORIES

Adjustment Stop Kit (1 Shielded Plate + 1 Stop)	<b>KP-DCT20-BR</b>	<b>1</b>
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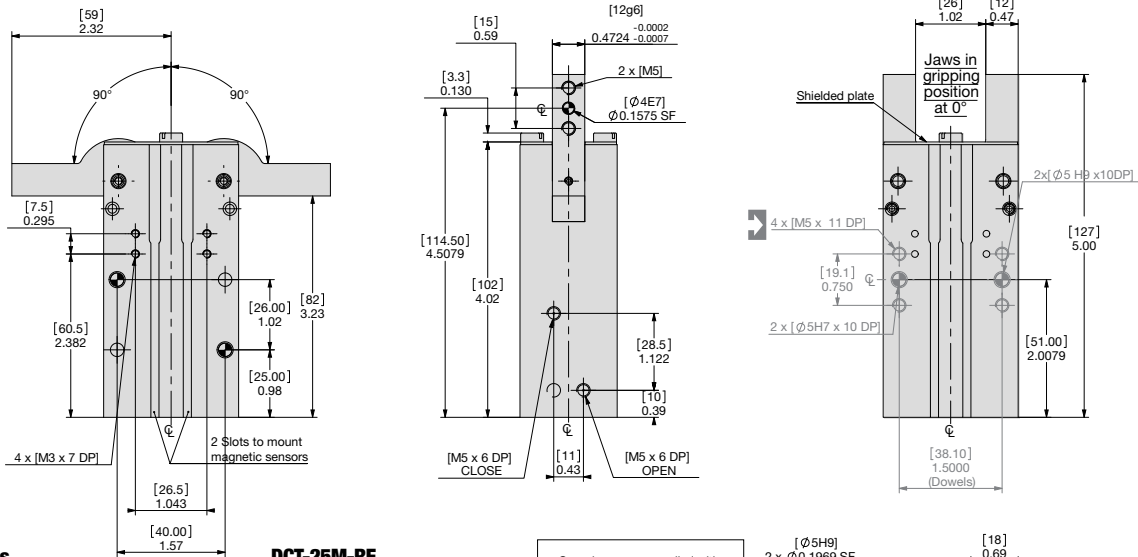
\*Sensor and cable sold separately.







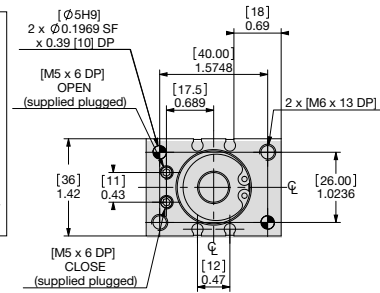
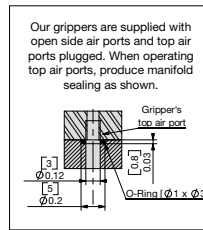
# ANGULAR GRIPPER DCT-25M-RE 180° SERIES



### Specifications

<b>Total Rated Grip Force, F @ 100 psi [7 bar]</b>	45 lbs.	199 N
<b>L = 1.75 in. [44mm] @ 0°</b>	90° of stroke for each finger	
<b>Stroke</b>	1.26 lbs.	0.57 Kg
<b>Weight</b>	60-100 psi	4-7 Bar
<b>Pressure Range</b>	0.984 in.	25 mm
<b>Cylinder Bore Ø</b>	0.909 in <sup>3</sup>	14.9 cm <sup>3</sup>
<b>Displacement</b>		
<b>Temperature Range</b>		
Standard Seals	-30°~180° F	-35°~80° C
Viton® Seals	-20°~300° F	-30°~150° C
<b>Actuation (open/close)</b>	0.25 / 0.19 sec.	
<b>Accuracy</b>	±0.003 in.	±0.08 mm
<b>Repeatability</b>	±0.002 in.	±0.05 mm.
<b>Valve required to actuate single acting</b>	3-way, 2-position	
<b>Valve required to actuate double acting</b>	4-way, 2-position	

### DCT-25M-RE



NOTE: DIRECTCONNECT™ DIMENSIONS ARE SHOWN IN BLUE

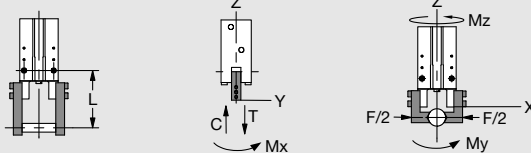
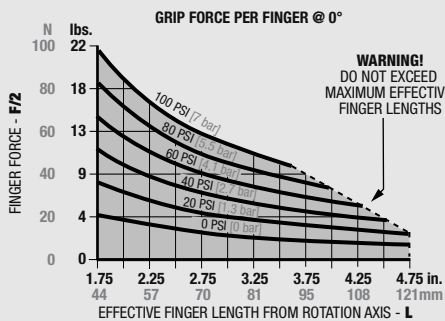
### UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

Dimensions are symmetrical about centerline	Third Angle Projection	All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or ±.013mm	Metric Threads Course Pitch	<b>Imperial in.</b> 0.00 ± .01 0.000 ± .005 0.0000 ± .0005	<b>Metric [mm]</b> [0.] = ±.25 [0.0] = ±.13 [0.00] = ±.013
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NOTE: Jaws have to be designed for a 0° gripping position (parallel jaws). Jaws will close 1.5° past parallel. To limit shocks at the end of an opening or closing stroke, it is highly recommended to design jaws with minimal inertia (as light and short as possible). Flow Controls make it possible to reduce the rotation speed and are highly recommended.

## Loading Information

## How to Order: (Order Accessories separately from Basic Model)



Loading Capacity†	Static		Dynamic	
	Imperial	Metric	Imperial	Metric
Maximum Tensile <b>T</b>	46 lbs.	205 N	9 lbs.	41 N
Maximum Compressive <b>C</b>	46 lbs.	205 N	9 lbs.	41 N
Maximum Moment <b>M<sub>x</sub></b>	89 in.-lbs.	10 Nm	22 in.-lbs.	2.5 Nm
Maximum Moment <b>M<sub>y</sub></b>	89 in.-lbs.	10 Nm	22 in.-lbs.	2.5 Nm
Maximum Moment <b>M<sub>z</sub></b>	89 in.-lbs.	10 Nm	22 in.-lbs.	2.5 Nm

†Capacities are per set of jaws and are not simultaneous

BASIC MODEL    VITON® SEALS

**DCT-25M-RE-V**

SIZE    SPRING

### SENSOR ACCESSORIES\*

PNP Magneto Resistive Sensor Short Barrel w/Qk Disc*	<b>OHSP-017</b>	<b>1 or 2</b>
NPN Magneto Resistive Sensor Short Barrel w/Qk Disc*	<b>OHSN-017</b>	<b>1 or 2</b>
Inductive Sensor Mounting Kit (mounts 2 sensors)	<b>SDCT25-32</b>	<b>1</b>
M8 PNP Inductive Sensor with Quick Disconnect*	<b>OISP-011</b>	<b>1 or 2</b>
M8 NPN Inductive Sensor with Quick Disconnect*	<b>OISN-011</b>	<b>1 or 2</b>
Quick Disconnect 2 Meter Cable Length*	<b>CABL-010</b>	<b>1 or 2</b>
Quick Disconnect 5 Meter Cable Length*	<b>CABL-013</b>	<b>1 or 2</b>

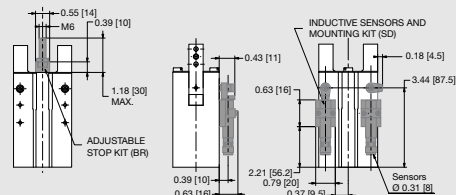
### PNEUMATIC ACCESSORIES

M5 Adjustable Flow Control	<b>VLVF-008</b>	<b>1 or 2</b>
Buna-N Seal Repair Kit	<b>SLKT-162</b>	<b>1</b>
Viton® Seal Repair Kit	<b>SLKT-162V</b>	<b>1</b>

### MOUNTING ACCESSORIES

Adjustment Stop Kit (1 Shielded Plate + 1 Stop)	<b>KP-DCT25-BR</b>	<b>1</b>
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\*Sensor and cable sold separately.



Please see back cover for DE-STA-CO Global Locations. [www.destaco.com](http://www.destaco.com)

[www.comoso.com](http://www.comoso.com)

DCT-RE SERIES

2.49



DIRECTCONNECT™



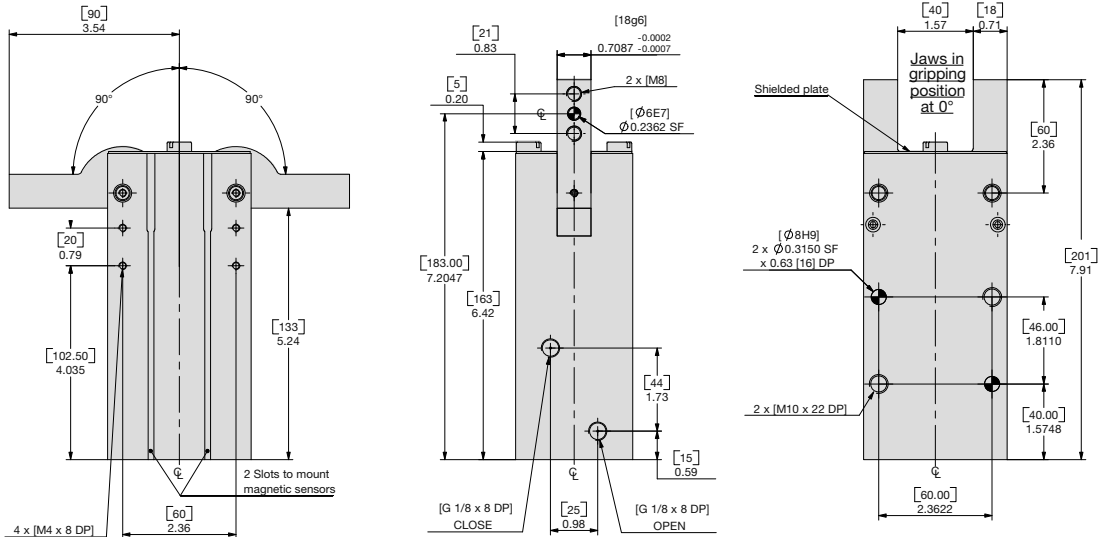




# ANGULAR GRIPPER CT-50M-RE 180° SERIES

CT-RE SERIES

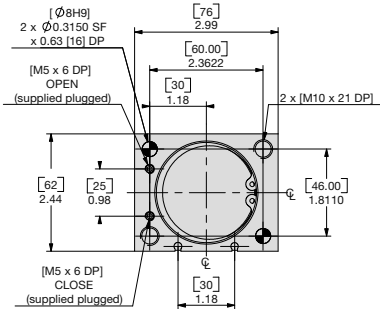
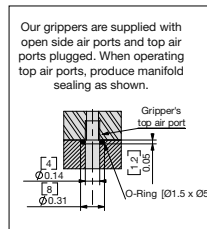
2.52



### Specifications

### CT-50M-RE

Total Rated Grip Force, <b>F</b> @ 100 psi [7 bar] <b>L</b> = 2.5 in. [64mm] @ 0°	201 lbs.	893 N
Stroke	90° of stroke for each finger	
Weight	4.87 lbs.	2.21 Kg
Pressure Range	60-100 psi	4-7 Bar
Cylinder Bore Ø	1.968 in.	50 mm
Displacement	5.614 in <sup>3</sup>	92 cm <sup>3</sup>
Temperature Range		
Standard Seals	-30°~180° F	-35°~80° C
Viton® Seals	-20°~300° F	-30°~150° C
Actuation (open/close)	0.54 / 0.42 sec.	
Accuracy	±0.0036 in.	±0.09 mm
Repeatability	±0.002 in.	±0.05 mm.
Valve required to actuate single acting	3-way, 2-position	
Valve required to actuate double acting	4-way, 2-position	



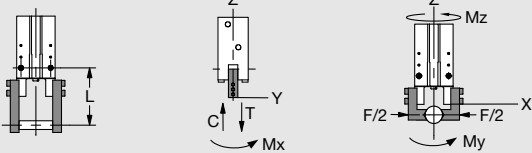
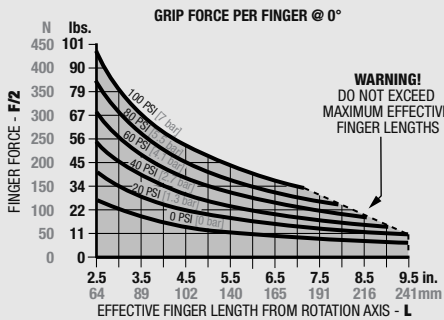
### UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

Dimensions are symmetrical about centerline	Third Angle Projection	All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or [±.013mm]	Metric Threads Course Pitch	<b>Imperial in.</b> 0.00 = ±.01 0.000 = ±.005	<b>Metric [mm]</b> [0.] = [±.25] [0.0] = [±.13] [0.00] = [±.013]
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**NOTE:** Jaws have to be designed for a 0° gripping position (parallel jaws). Jaws will close 1.5° past parallel. To limit shocks at the end of an opening or closing stroke, it is highly recommended to design jaws with minimal inertia (as light and short as possible).  
Flow Controls make it possible to reduce the rotation speed and are highly recommended.

## Loading Information

## How to Order: (Order Accessories separately from Basic Model)



### Loading Capacity<sup>†</sup>

	Static		Dynamic	
	Imperial	Metric	Imperial	Metric
Maximum Tensile <b>T</b>	110 lbs.	490 N	22 lbs.	98 N
Maximum Compressive <b>C</b>	110 lbs.	490 N	22 lbs.	98 N
Maximum Moment <b>M<sub>x</sub></b>	266 in.-lbs.	30 Nm	66 in.-lbs.	7.5 Nm
Maximum Moment <b>M<sub>y</sub></b>	266 in.-lbs.	30 Nm	66 in.-lbs.	7.5 Nm
Maximum Moment <b>M<sub>z</sub></b>	266 in.-lbs.	30 Nm	66 in.-lbs.	7.5 Nm

<sup>†</sup>Capacities are per set of jaws and are not simultaneous

### BASIC MODEL VITON® SEALS

**CT-50M-RE-V**  
SIZE SPRING

### SENSOR ACCESSORIES\*

PNP Magneto Resistive Sensor Short Barrel M8 w/Qk Disc*	<b>OHSP-017</b>	<b>1 or 2</b>
NPN Magneto Resistive Sensor Short Barrel M8 w/Qk Disc*	<b>OHSN-017</b>	<b>1 or 2</b>
Inductive Sensor Mounting Kit (mounts 2 sensors)	<b>SDCT40-63</b>	<b>1</b>
M12 PNP Inductive Sensor with Quick Disconnect*	<b>OISP-017</b>	<b>1 or 2</b>
M12 NPN Inductive Sensor with Quick Disconnect*	<b>OISN-017</b>	<b>1 or 2</b>
M8 Quick Disconnect 2 Meter Cable Length*	<b>CABL-010</b>	<b>1 or 2</b>
M8 Quick Disconnect 5 Meter Cable Length*	<b>CABL-013</b>	<b>1 or 2</b>
M12 Quick Disconnect 2 Meter Cable Length*	<b>CABL-014</b>	<b>1 or 2</b>
M12 Quick Disconnect 5 Meter Cable Length*	<b>CABL-018</b>	<b>1 or 2</b>

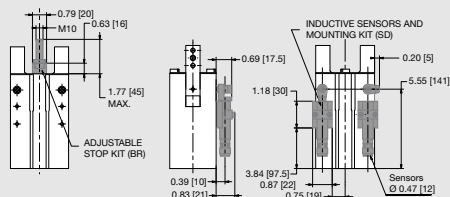
### PNEUMATIC ACCESSORIES

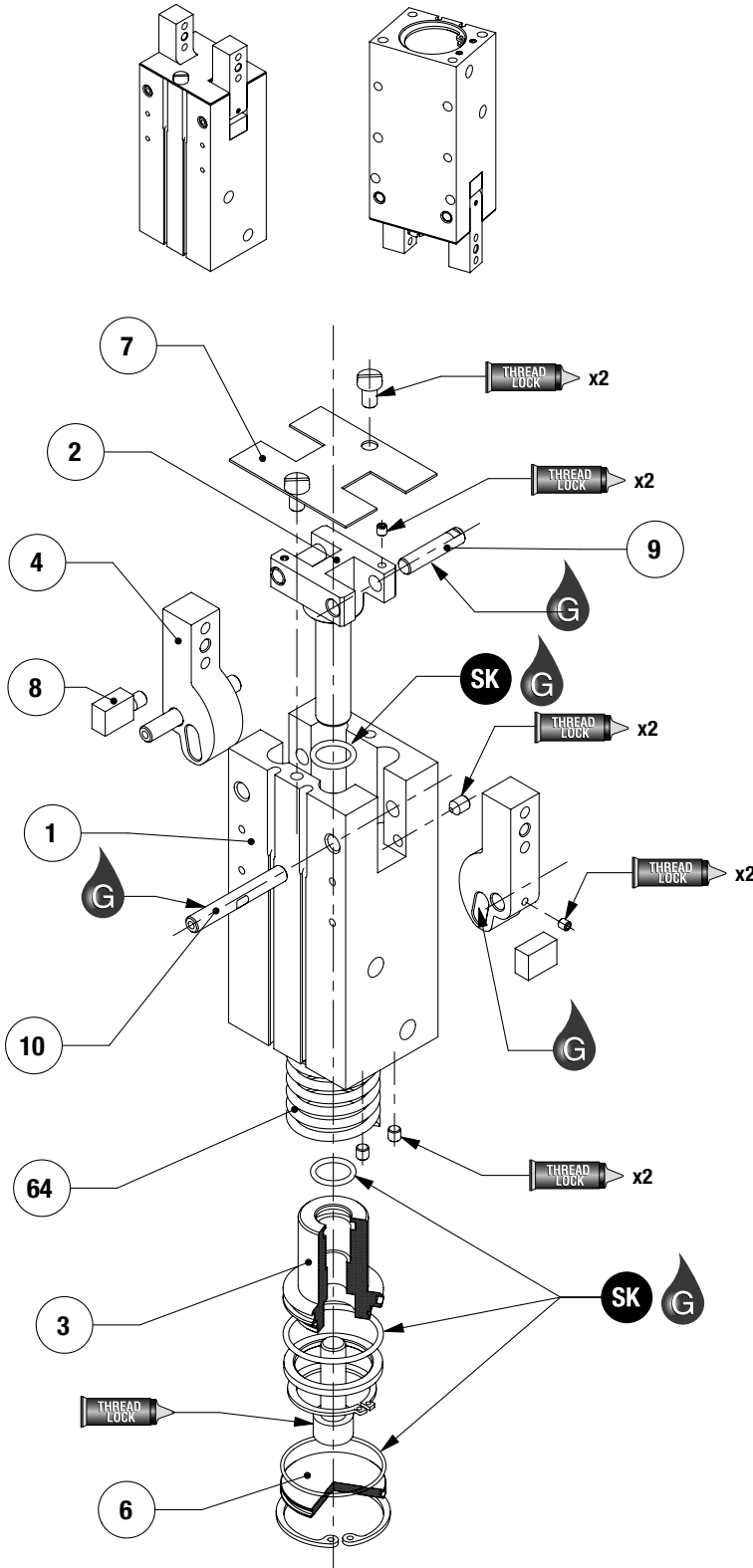
Adj. Flow Control G1/8 Elbow - 6mm OD Push-in (Metric)	<b>VLVF-005</b>	<b>1 or 2</b>
Buna-N Seal Repair Kit	<b>SLKT-165</b>	<b>1</b>
Viton® Seal Repair Kit	<b>SLKT-165V</b>	<b>1</b>

### MOUNTING ACCESSORIES

Adjustment Stop Kit (1 Shielded Plate + 1 Stop)	<b>KP-CT50-BR</b>	<b>1</b>
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\*Sensor and cable sold separately.





Item	Qty	Name
01	1	Body
02	1	Driver
03	1	Piston
04	2	Jaw
05	1	Washer
06	1	Cap
07	1	Shielded Plate
08	2	Wiper Cover
09	2	Drive Pin
10	2	Pivot Pin
54	1	Magnet
64	1	Spring

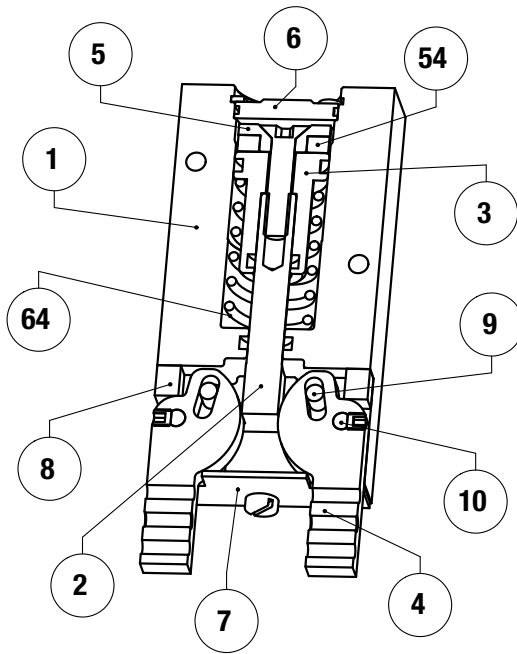
**NOTE:** Contact the Robohand Sales Department for a complete spare parts list with order numbers and prices.

### Assembly Procedure

- Lubricate and install the seals into cap (x1), piston (x2) and body (x1)
- If top air ports are used, clear them and plug the side air ports on the body (#1)
- Lubricate the sloping rack of jaws (#4)
- Install both drive pins (#9) into driver (#2) through sloping racks of jaws. Check that the pin flat surface is correctly aligned before continuing with their installation.
- Lock drive pins in the driver with screws, tightening down on to the flat surface of the pins.
- Position driver and jaws assembly into body.
- Install both pivot pins (#10) into body, through the bore of jaws. Check that the pin flat surface is correctly aligned before continuing with their installation.
- Pivot pin locking:
  - DCT-12 (not shown): lock pivot pins into body with screws, tightening down on to the flat surface of the pins (pins are fixed into body and rotating into jaws)
  - DCT-16 to CT-50: lock pivot pins into jaws with screws, tightening down on to the flat surface of the pins (pins are fixed into jaws and rotating into body)
- Magnet mounting:
  - DCT-12 to DCT-20: install the magnet (#54) on the washer (#5)
  - DCT-25 to CT-50 (not shown): install magnet (#54) onto piston (#3) and lock it by means of its retaining ring.
- Piston mounting:
  - DCT-12 to DCT-20: insert the spring, then the piston and the washer with magnet into body. Fix the assembly at the end of the driver with screw.
  - DCT-25 to CT-50 (not shown): insert the spring, then the piston with magnet into body. Fix the assembly at the end of the drivers with screw.
- Check unit operation unladen.
- Install the cap (#6) into body and lock it by means of its retaining ring.
- Place both wiper covers (#8) into body and lock them with their screws.
- Fix the shielded plate (#7) onto body with both screws.

**SK Seal Repair Kit Order #'s  
See Product Data Sheets**

SK Seal Kit Items	Thread Locker	KRYTOX™ Lubricant	Lightweight Machine Oil	Teflon® Based Grease	Super Bonder	Third Angle Projection

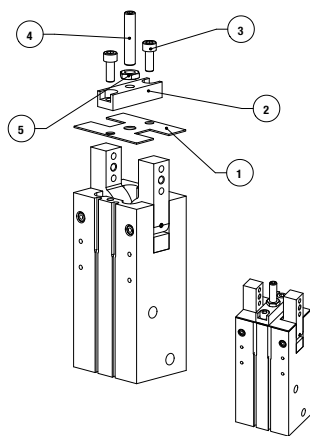


**Item Qty Name**

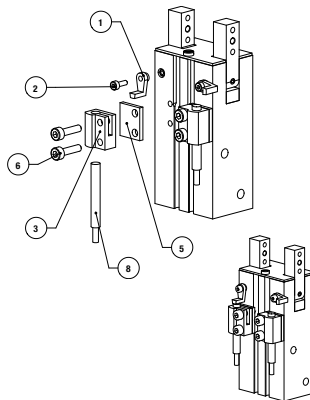
01	1	Body
02	1	Driver
03	1	Piston
04	2	Jaw
05	1	Washer
06	1	Cap
07	1	Shielded Plate
08	2	Wiper Cover
09	2	Drive Pin
10	2	Pivot Pin
54	1	Magnet
64	1	Spring

**NOTE:** Contact the Robohand Sales Department for a complete spare parts list with order numbers and prices.

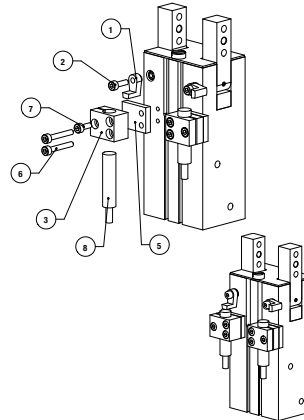
## Accessory Installation & Adjustment Instructions



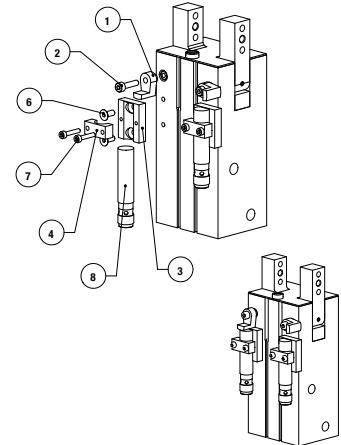
DCT16M, 20M-RE



DCT-25M, 32M-RE



CT-40M, 50M-RE



### Installation - Adjustment Stop

- 1) Unscrew both screws for mounting of the shielded plate and remove it.
- 2) Fix the new shielded plate (#1) and the stop (#2) onto body with both screws (#3)
- 3) Install the locknut system (#4) and (#5) on the stop.
- 4) Tighten screw for maximum target jaw opening and lock with locknut.

### Installation - Inductive Sensor Holders

- 1) Fix the flags (#1) at the end of pivot pins with their screws (#2)
- 2) Holder mounting:
  - DCT-16M to DCT-32M: fix holder (#3) and spacer (#5) onto body with both screws (#6)
  - CT-40M to CT-50M: fix holder (#3) onto body with both screws (#6)
- 3) Sensor mounting:
  - DCT-16M to DCT-20M: unscrew lightly both screws for mounting (#6) of holder and insert sensor (#8, not included) into it. Position sensor so that it senses up on flag. Lock the sensor by tightening both screws.
  - DCT-25M to DCT-32M: unscrew lightly screw (#7) on holder and insert sensor (#8, not included) into it. Position sensor so that it senses up the flag. Lock the sensor by tightening screw.
  - CT-40M to CT-50M: insert sensor (#8, not included) in stop into holder. Lock the sensor by tightening the collar holder with both screws (not shown).
- 4) Adjust flag position by unscrewing their screws for desired sensing positions.



Seal Kit Items



Thread Locker



Krytox™ Lubricant



Lightweight Machine Oil



Teflon® Based Grease



Super Bonder



Third Angle Projection





# Angular Grippers - Food Handling Gripper Series

## FEATURES & BENEFITS:

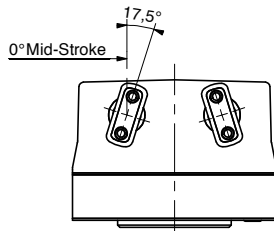
- Designed for direct product contact in the food zone, according to the food industry standard (EN 1672-2)
- All parts are corrosion resistant, non-toxic, non-contaminating, non-porous, non-absorbent and non-reactive
- Stainless steel design resists chemical cleaning procedures
- Optional body made of High Performance Polymer, conform to FDA, for a significantly lighter weight
- Electro-polished exterior with no recessed or inaccessible zones prevents retention of contaminants and simplifies cleaning
- Sealed motion components (IP69K design) for high-pressure and high-temperature daily cleanings
- Any metal/metal contact protected by gasket to obtain a leakproof assembly against bacteria
- Angular gripper design for easier radial sealing of jaws
- Optional security springs for external gripping, in case of air supply failure, in single acting or spring assist mode
- No external fasteners to avoid any foreign matter in food
- Contains special lubricants suitable for food industry
- Long maintenance-free service life

## APPLICATIONS:

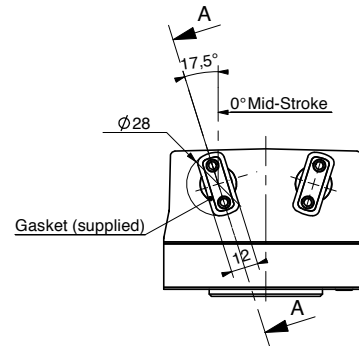
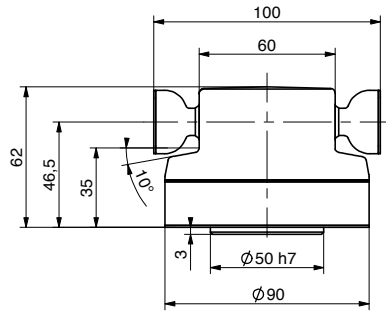
- Food zone and splash zone handling of product
- Non-food zone applications
- Other applications requiring a sealed and corrosion resistant gripper



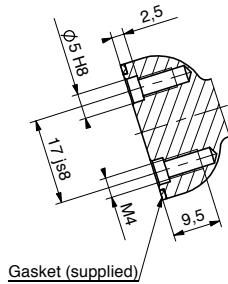
Shown with Optional  
Finger Attachment Kit



**CLOSED GRIPPER**

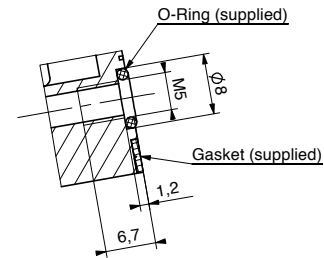
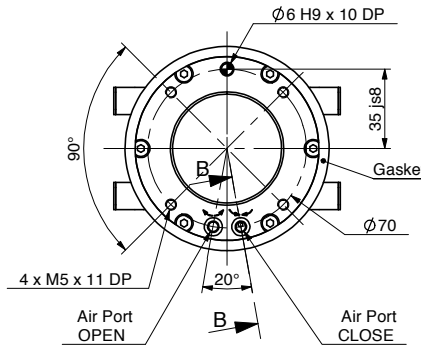


**OPEN GRIPPER**



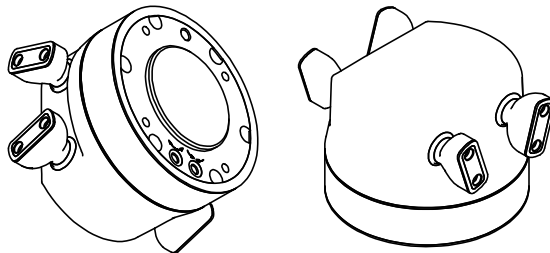
**4 x Jaws**

**SECTION A-A**  
SCALE 2 : 3



**SECTION B-B**  
SCALE 1 : 1

**2 x Air ports**



**Other Sizes Planned**  
**Patent Pending**

**Specifications**

**FUA-63M**

Torque, Jaws @ 0° (mid-stroke)	
6 bar with springs	32 Nm
0 bar with springs	9 Nm
Total Stroke	70°
Weight	
Stainless Steel	1.7 Kg
Polymer	0.8 Kg
Pressure Range (without springs)	2-7 bar
Pressure Range (with springs)	3.5-7 bar
Cylinder Bore Ø	63 mm
Displacement	54 cm³
Temperature Range	-15~80° C

**UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW**

Dimensions are symmetrical about centerline	Third Angle Projection	All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or ±.013mm	Metric Threads Course Pitch	<b>Imperial in.</b> 0.00 ± .01 0.000 ± .005 0.0000 ± .0005	<b>Metric [mm]</b> [0.1] = [±.25] [0.0] = [±.13] [0.00] = [±.013]
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**How to Order:** (Order Accessories separately from Basic Model)

**BASIC MODEL**   **MATERIAL**  
**FUA-63M - LI - C**  
**SPRING**

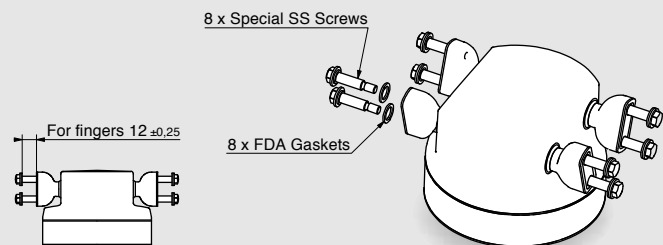
- MATERIAL LI** Body made of High Performance Polymer  
Leave Blank. Stainless Steel (Standard)
- SPRING C** Closed  
Leave Blank. No Spring Option (Standard)

**ACCESSORIES**

Fingers Attachment Kit  
(includes 8 x SS Screws & Gaskets)

**ORDER #**

**KVMFUA63 1**



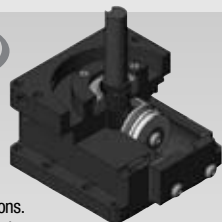
**SAMPLE ORDER: FUA-63M-LI-C**

Ex: FUA-63M Food Gripper, Polymer Body, Spring Closed



# Rotary Actuators

**DRG**  
**DIRECTCONNECT**  
**Shaft Output**



- For use in applications where low precision end stop positioning and backlash are acceptable
- Great for inverter gates, escapements, ejection stations.
- Provides rotational torque for payloads positioned and decelerated by customers supplied shocks and stops.
- End stop positioning for built-in precision end stop positioning and zero backlash see our DRF Rotary Actuator Series.
- Multiple Body Mounting Locations: Tapped and thru flange on top and bottom mounting surfaces, DIRECTCONNECT tapped pattern on bottom surface.

See Page **3.2**

Preferred Market: ● Global

**DRF**  
**DIRECTCONNECT**  
**Flange Output**



- For use in applications where precision end stop position and zero backlash are required.
- Multiple Mounting Locations: Tapped and thru flange on top and bottom mounting surfaces, DIRECTCONNECT tapped pattern on bottom flange.
- Turntable has DIRECTCONNECT mounting pattern.

See Page **3.14**

Preferred Market: ● Global

**RR-18/28**  
**Light Duty**  
**Rack and Pinion**



- Designed for small or lightweight
- Low profile and bearing supported turn table provides an extremely compact package for tight space applications
- Payload can be connected directly to the turn table. Eliminates the need for a bearing block.
- Zero backlash, preloaded ball bearings, and slip fit dowel pins make this a very precise and repeatable rotary actuator

See Page **3.26**

Preferred Market: ● Global

**RR-36/46**  
**Medium Duty**  
**Rack and Pinion**



- Low profile and bearing supported turn table provides an extremely compact package for tight space applications
- Payload can be connected directly to the turn table. Eliminates the need for a bearing block.
- Zero backlash, preloaded ball bearings, and slip fit dowel pins make this a very precise and repeatable rotary actuator
- Air manifold option available
- Midstop position available

See Page **3.32**

Preferred Market: ● Global

**Optional Mid Stop**  
**Model RR-36M**  
**Model RR-46M**

See Page **3.35**  
See Page **3.37**

**Optional Rotary Manifold**  
**Model RR-36M**  
**Model RR-46M**

See Page **3.35**  
See Page **3.37**

**RR-56/66/76**  
**Heavy Duty**  
**Rack and Pinion**  
**Rotary Actuator Series**



- Designed for large or heavy-duty applications
- Low profile and bearing supported turn table provides an extremely compact package for tight space applications
- Payload can be connected directly to the turn table. Eliminates the need for a bearing block.
- Zero backlash, preloaded ball bearings, and slip fit dowel pins make this a very precise and repeatable rotary actuator
- Air manifold option available
- Midstop position available

See Page **3.42**

Preferred Market: ● Global

**Optional Mid Stop**  
**Model RR-56M**  
**Model RR-66M**  
**Model RR-76M**

See Page **3.45**  
See Page **3.47**  
See Page **3.53**

**Optional Rotary Manifold**  
**Model RR-56M**  
**Model RR-66M**  
**Model RR-76M**

See Page **3.45**  
See Page **3.47**  
See Page **3.53**



# Rotary Actuator - DRG DIRECTCONNECT Shaft Output Rotaries

DRG SERIES

3.2

**NO  
ADAPTER  
PLATES!**

**Application:** Use in applications where low precision end stop positioning and backlash are acceptable

**Application Examples:** Diverter gates, escapements, ejection stations.

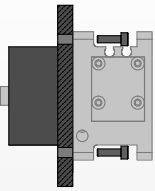
**Torque Generation:** Provides rotational torque for payloads positioned and decelerated by customer supplied shocks and stops.

**End Stop Positioning:** For built-in precision end stop positioning and zero backlash see our DRF Rotary Actuator Series.

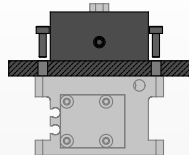
**Multiple Body Mounting Locations:** Tapped and thru flange on top and bottom mounting surfaces, DirectConnect tapped pattern on bottom surface.

## Mounting Information:

Rotaries can be mounted & operated in any orientation



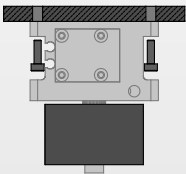
Mounting thru top flange  
clearance holes into tapped holes  
in customer application



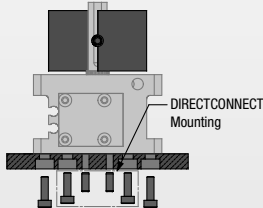
Mounting from underside of table  
using tapped holes in body top flange



Payload is attached to  
output shaft using standard  
keys and set screws



Mounting thru bottom flange  
clearance holes into tapped holes  
in customer application



Body mounts with screws and  
slip fit dowels from bottom side

## Technical Specifications:

### Pneumatic Specifications

Pressure Operating Range  
Cylinder Type  
Dynamic Seals  
Valve Required  
to Operate

### Imperial

40-100 psi  
Double Acting  
Internally Lubricated Buna-N  
4-way, 2-position

### Metric

3-7 bar

### Air Quality Requirements

Air Filtration  
Air Lubrication  
Air Humidity

40 Micron or Better  
Not Necessary\*  
Low Moisture Content (dry)

### Temperature Operating Range

Buna-N Seals (standard)

-30°~180° F

-35°~80° C

### Maintenance Specifications<sup>†</sup>

Expected Life  
Normal Application  
w/ Preventative Maintenance  
Field Repairable  
Seal Repair Kits Available

5 million cycles  
10+ million cycles\*  
Yes  
Yes

### Application Restrictions

Application requiring precise positioning and no backlash  
(See DRF product line)

\*Addition of lubrication will greatly increase service life

DIRECTCONNECT™

## Product Features

**Black Anodized**  
The body and all Aluminum parts have Black anodize, steel parts are Black oxide

### Sensor Mounting Slots

Standard mounting slots for Magneto Resistive Sensors. Magnet mounted in piston standard (sensors sold separately)

### One Piece Body

One piece lightweight aircraft quality aluminum body

### Dowel Holes

Slip fit dowel pin holes in bottom of body

### DIRECTCONNECT<sup>™</sup> Mounting Patterns

Tapped and Dowel mounting on bottom surface

**Keyways**  
Metric keyways for coupling payload

### Case Hardened

Rack and pinion are case hardened for wear and long life

### Extremely Rugged Design

Pinion is supported top and bottom with sealed bearings

### End Stop Cushioning

Urethane bumpers on piston to cushion and stop load standard

### Piston

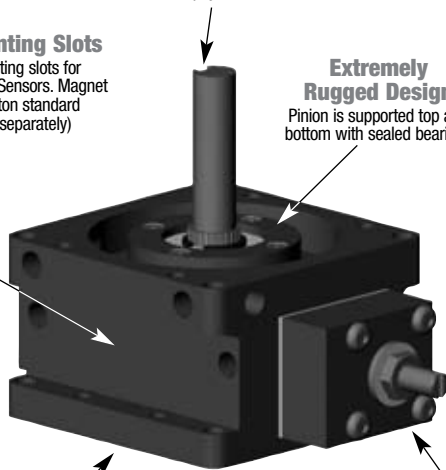
Made of Delrin<sup>®</sup> for extended life

### Rotational Adjustments

-R option allows for rotational adjustment from the standard 45° 90° 135° 180° configuration

### Mounting

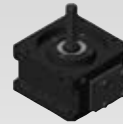
Tapped and thru hole mounting on top & bottom flanges for base or bulkhead mount



## Style - DRG Rotary Actuator

### Size -075M

Style:	DRG-075M	
Max. Payload:	0.5 lbs.	.2 kg
Torque:	8 in.-lbs.	.9 N-m
Weight:	0.54 lbs.	0.24 Kg



See Page **3.4**

## Style - DRG Rotary Actuator

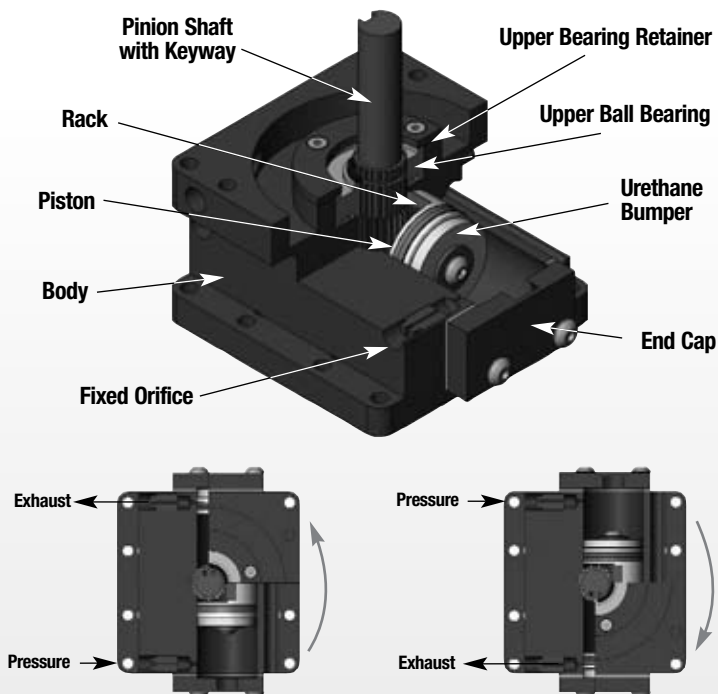
### Size -094M

Style:	DRG-094M	
Max. Payload:	1.5 lbs.	.7 kg
Torque:	17 in.-lbs.	2.0 N-m
Weight:	1.0 lbs.	0.45 Kg



See Page **3.6**

## Operating Principle



- Air pressure supplied to the piston drives the piston/rack.
- The piston/rack drives the pinion.
- The pinion is supported in the body by two sealed ball bearings.
- Ends of the piston have Urethane bumpers to cushion, stop and position the load at the end of the stroke.
- This rotary is suitable for operation in any orientation

**Designed and manufactured in the USA**

## Style - DRG Rotary Actuator

### Size -106M

Style:	DRG-106M	
Max. Payload:	4 lbs.	1.8 kg
Torque:	33 in.-lbs.	3.7 N-m
Weight:	2.5 lbs.	1.1 Kg



See Page **3.8**

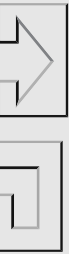
## Style - DRG Rotary Actuator

### Size -131M

Style:	DRG-131M	
Max. Payload:	8 lbs.	3.6 kg
Torque:	68 in.-lbs.	7.6 N-m
Weight:	5.4 lbs.	2.4 Kg



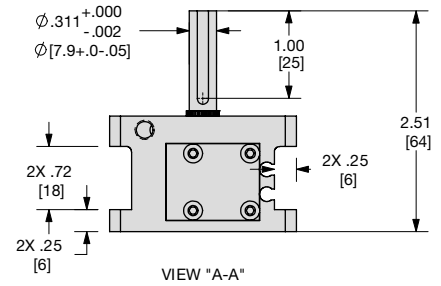
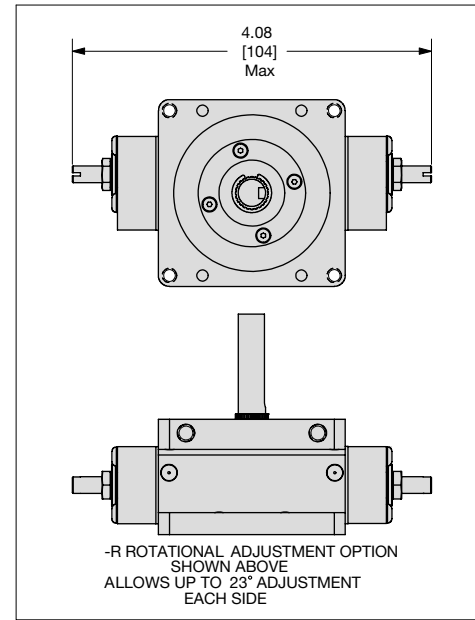
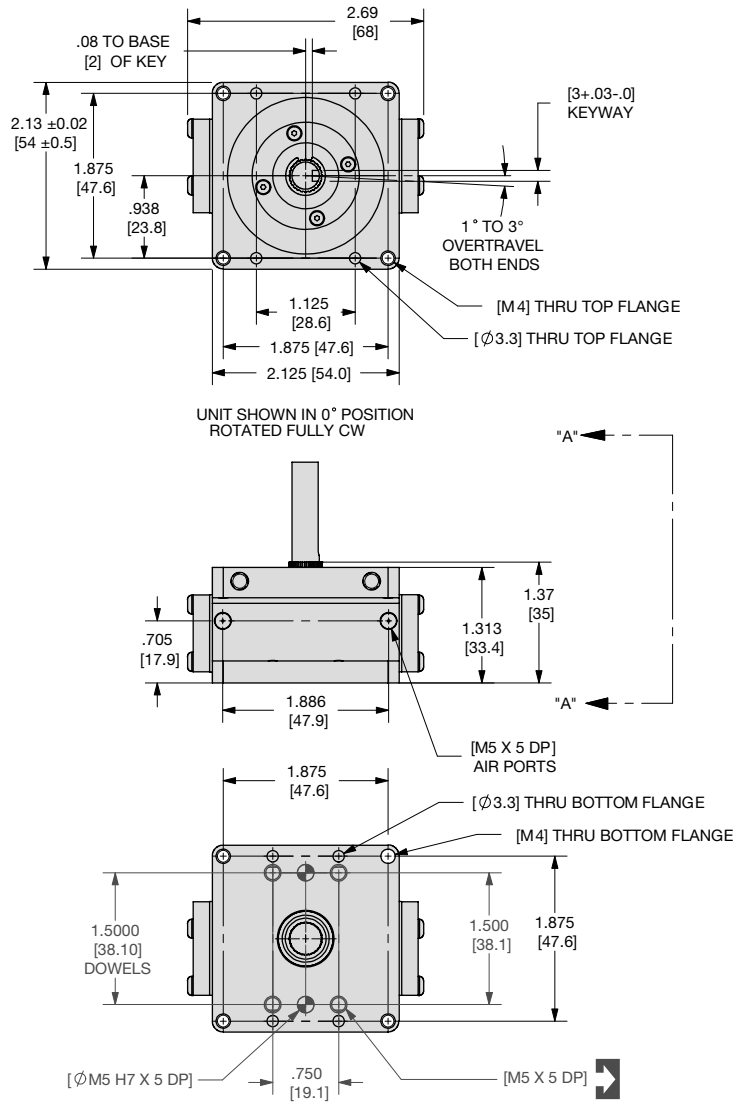
See Page **3.10**







# ROTARY ACTUATOR DRG-075M SHAFT OUTPUT SERIES

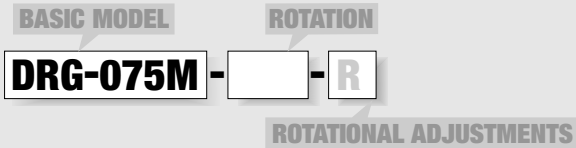


**UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW**

	Dimensions are symmetrical about centerline		Third Angle Projection		All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or [±.013mm]
	Metric Threads Course Pitch	<b>Imperial in.</b>	0.00 = ±.01 0.000 = ±.005 0.0000 = ±.0005	<b>Metric [mm]</b>	[0] = [±.25] [0.0] = [±.13] [0.00] = [±.013]

NOTE: DIRECTCONNECT™ DIMENSIONS ARE SHOWN IN BLUE

## How to Order: (Order Accessories separately from Basic Model)



DEGREES OF ROTATION: 45°, 90°, 135°, 180°  
(for intermediate degrees of rotation use -R option)

### SENSOR ACCESSORIES

	ORDER #	QTY/UNIT
Magneto Resistive Sensor (PNP)*	<b>OHSP-017</b>	<b>1 or 2</b>
Magneto Resistive Sensor (NPN)*	<b>OHSN-017</b>	<b>1 or 2</b>
Magneto Resistive Sensor 90° Barrel (PNP)*	<b>OHSP-011</b>	<b>1 or 2</b>
Magneto Resistive Sensor 90° Barrel (NPN)*	<b>OHSN-011</b>	<b>1 or 2</b>
Quick Disconnect Cable (2 meters long)*	<b>CABL-010</b>	<b>1 or 2</b>
Quick Disconnect Cable (5 meters long)*	<b>CABL-013</b>	<b>1 or 2</b>

### PNEUMATIC ACCESSORIES

	ORDER #	QTY/UNIT
Seal Repair kit (Standard Buna-N)	<b>SLKT-210</b>	<b>1</b>
Rotational Adjustment Seal Kit (Standard Buna-N)	<b>SLKT-212</b>	<b>1</b>
Flow Control Push-in 90° Elbow M5-6mm O.D. Tube**	<b>VLVF-008</b>	<b>1 or 2</b>

\*Sensor and cable sold separately  
\*\*Flow Controls recommended for most applications

### SAMPLE ORDER: DRG-075M-180-R

Ex: DRG Rotary, size 075, metric, 180° rotation with rotational adjustment option

Please see back cover for DE-STA-CO Global Locations. [www.destaco.com](http://www.destaco.com)

[www.comoso.com](http://www.comoso.com)

DIRECTCONNECT™

DRG SERIES

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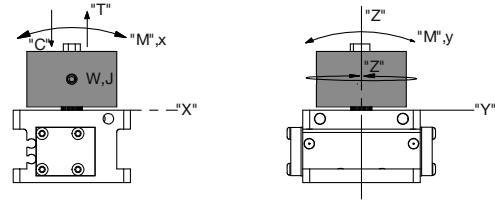
# ROTARY ACTUATOR DRG-075M SHAFT OUTPUT SERIES



## Specifications

### DRG-075M

Maximum Payload.....	0.5 lbs.	0.23 kg
Maximum Payload Inertia.....	0.0008 in-lbs.-sec. <sup>2</sup>	9.0 X 10 <sup>-6</sup> N-m-sec. <sup>2</sup>
Maximum Torque @ 100psi/7 bar .....	8.3 lbs.-in.	0.9 N-m
Maximum Rotation .....	180°	180°
Pitch Diameter of Pinion .....	0.375 in.	9.5 mm
Weight without rotational adjuster .....	0.52 lbs.	0.24 kg
Weight without rotational adjuster (-R option) .....	0.72 lbs.	0.33 kg
Pressure Range .....	40-100 psi	3-7 bar
Bore.....	0.750 in.	19.1 mm
Displacement (180°) .....	0.31 in <sup>3</sup>	5.1 cm <sup>3</sup>
Actuation Time (180° @ 100psi/7 bar) .....	0.38 sec.	0.38 sec.
Actuation Time (90° @ 100psi/7 bar) .....	0.29 sec.	0.29 sec.
Temperature Range: Standard Seals.....	-30°~180° F	-35°~82° C
End Stop Adjustability (-R option) .....	23°	23°
Over Travel (each end).....	1° to 3°	1° to 3°
Valve required to actuate .....	4-way, 2-position	

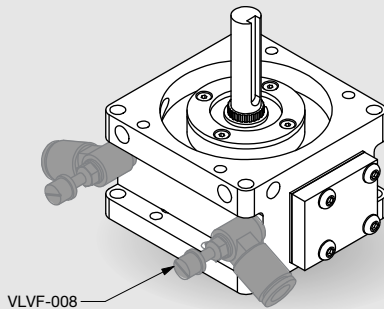


## Loading Capacity

	Static	Dynamic
Maximum Tensile <b>T</b>	10 lbs. [44 N]	2 lbs. [9 N]
Maximum Compressive <b>C</b>	20 lbs. [89 N]	4 lbs. [18 N]
Maximum Moment <b>M<sub>x</sub></b>	20 in-lbs. [2.3 Nm]	4 in-lbs. [0.5 Nm]
Maximum Moment <b>M<sub>y</sub></b>	20 in-lbs. [2.3 Nm]	4 in-lbs. [0.5 Nm]
Maximum Payload <b>W</b>	0.5 lbs. [23 kg]	
Maximum Inertia <b>J</b>	.0008 in-lbs.-sec. <sup>2</sup> [9.0 X 10 <sup>-6</sup> N-m-sec. <sup>2</sup> ]	

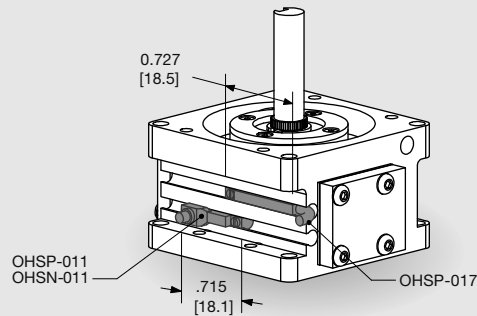
**Note:** Higher payloads and inertia possible with external shocks and stops.

## Accessory Mounting Technical Data



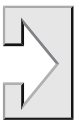
### Flow Controls

- Flow controls for adjusting rotational speed



### Sensors

- PNP and NPN Magneto Resistive available
- Sensors are slot mounted, no mounting kits required
- Simple adjustment with slotted screw driver
- Built-in LED for ease of positioning and troubleshooting
- Low profile underflush sensor version or 90° wire exit sensor version
- Available with 2M or 5M Quick Disconnect mating cable (order separately)
- Sensor Magnet standard

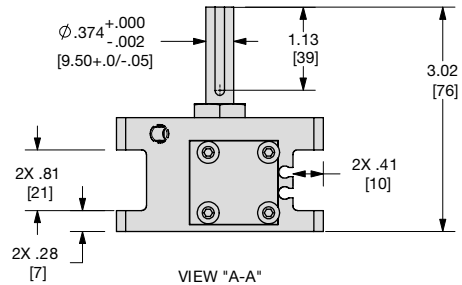
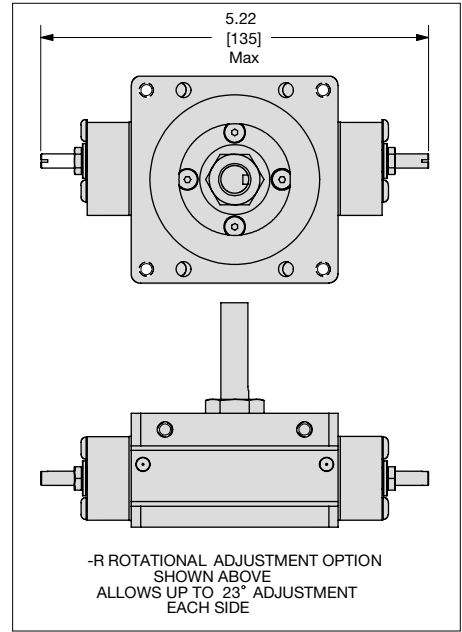
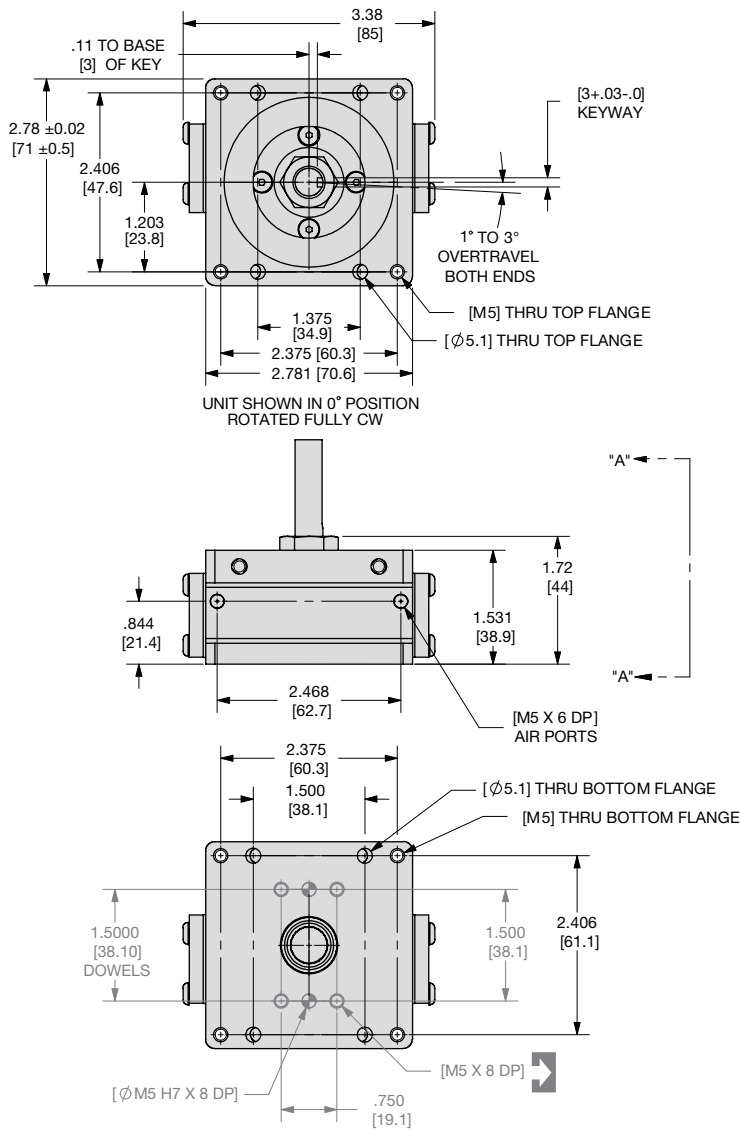


# ROTARY ACTUATOR DRG-094M SHAFT OUTPUT SERIES



DRG SERIES

3.6



VIEW "A-A"

UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

	Dimensions are symmetrical about centerline		Third Angle Projection		All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or [±.013mm]
	Metric Threads Course Pitch	<b>Imperial in.</b>	0.00 = ±.01 0.000 = ±.005 0.0000 = ±.0005	<b>Metric [mm]</b>	[0] = [±.25] [0.0] = [±.13] [0.00] = [±.013]

NOTE: DIRECTCONNECT™ DIMENSIONS ARE SHOWN IN BLUE

## How to Order: (Order Accessories separately from Basic Model)

BASIC MODEL

ROTATION

**DRG-094M** - [ ] - **R**

ROTATIONAL ADJUSTMENTS

DEGREES OF ROTATION: 45°, 90°, 135°, 180°  
(for intermediate degrees of rotation use -R option)

### SENSOR ACCESSORIES

	ORDER #	QTY/UNIT
Magneto Resistive Sensor (PNP)*	<b>OHSP-017</b>	<b>1 or 2</b>
Magneto Resistive Sensor (NPN)*	<b>OHSN-017</b>	<b>1 or 2</b>
Magneto Resistive Sensor 90° Barrel (PNP)*	<b>OHSP-011</b>	<b>1 or 2</b>
Magneto Resistive Sensor 90° Barrel (NPN)*	<b>OHSN-011</b>	<b>1 or 2</b>
Quick Disconnect Cable (2 meters long)*	<b>CABL-010</b>	<b>1 or 2</b>
Quick Disconnect Cable (5 meters long)*	<b>CABL-013</b>	<b>1 or 2</b>

### PNEUMATIC ACCESSORIES

	ORDER #	QTY/UNIT
Seal Repair kit (Standard Buna-N)	<b>SLKT-216</b>	<b>1</b>
Rotational Adjustment Seal Kit (Standard Buna-N)	<b>SLKT-218</b>	<b>1</b>
Flow Control Push-in 90° Elbow M5-6mm O.D. Tube**	<b>VLVF-008</b>	<b>1 or 2</b>

\*Sensor and cable sold separately  
\*\*Flow Controls recommended for most applications

### SAMPLE ORDER: DRG-094M-180-R

Ex: DRG Rotary, size 094, metric, 180° rotation with rotational adjustment option

Please see back cover for DE-STA-CO Global Locations. [www.destaco.com](http://www.destaco.com)

[www.comoso.com](http://www.comoso.com)

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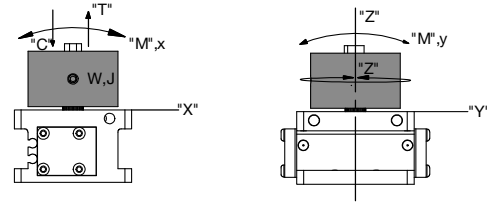
# ROTARY ACTUATOR DRG-094M SHAFT OUTPUT SERIES



## Specifications

### DRG-094M

Maximum Payload.....	1.5 lbs.	0.68 kg
Maximum Payload Inertia.....	0.0056 in-lbs.-sec. <sup>2</sup>	6.3 X10 <sup>-4</sup> N-m-sec. <sup>2</sup>
Maximum Torque @ 100psi/7 bar .....	17.3 lbs.-in.	1.9 N-m
Maximum Rotation .....	180°	180°
Pitch Diameter of Pinion.....	0.500 in.	12.7 mm
Weight without rotational adjuster .....	1.0 lbs.	0.45 kg
Weight without rotational adjuster (-R option) .....	1.2 lbs.	0.54 kg
Pressure Range .....	40-100 psi	3-7 bar
Bore.....	0.938 in.	23.8 mm
Displacement (180°) .....	0.55 in <sup>3</sup>	9.0 cm <sup>3</sup>
Actuation Time (180° @ 100psi/7 bar) .....	0.38 sec.	0.38 sec.
Actuation Time (90° @ 100psi/7 bar) .....	0.29 sec.	0.29 sec.
Temperature Range: Standard Seals.....	-30°~180° F	-35°~82° C
End Stop Adjustability (-R option) .....	23°	23°
Over Travel (each end).....	1° to 3°	1° to 3°
Valve required to actuate .....	4-way, 2-position	



## Loading Capacity

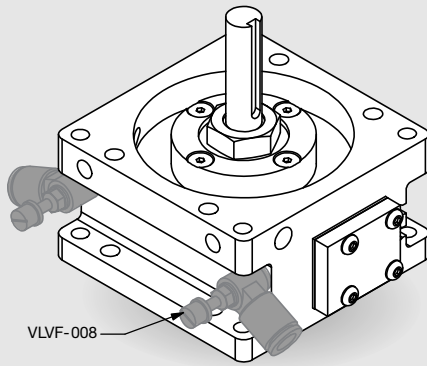
	Static	Dynamic
Maximum Tensile <b>T</b>	15 lbs. [67 N]	3 lbs. [13 N]
Maximum Compressive <b>C</b>	30 lbs. [133 N]	6 lbs. [27 N]
Maximum Moment <b>M<sub>x</sub></b>	50 in-lbs. [5.6 Nm]	10 in-lbs. [1.1 Nm]
Maximum Moment <b>M<sub>y</sub></b>	50 in-lbs. [5.6 Nm]	10 in-lbs. [1.1 Nm]
Maximum Payload <b>W</b>	1.5 lbs. [0.68 kg]	
Maximum Inertia <b>J</b>	0.0056 in-lbs.-sec. <sup>2</sup> [6.3 X 10 <sup>-4</sup> N-m-sec. <sup>2</sup> ]	

**Note:** Higher payloads and inertia possible with external shocks and stops.

DRG SERIES

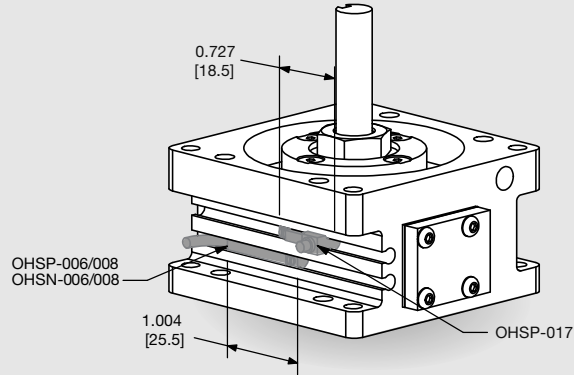
3.7

## Accessory Mounting Technical Data



### Flow Controls

- Flow controls for adjusting rotational speed

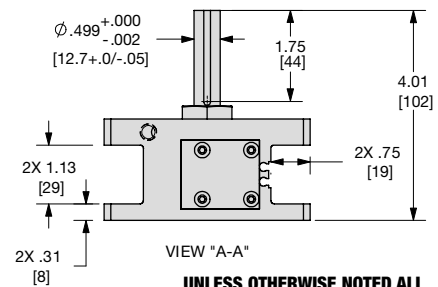
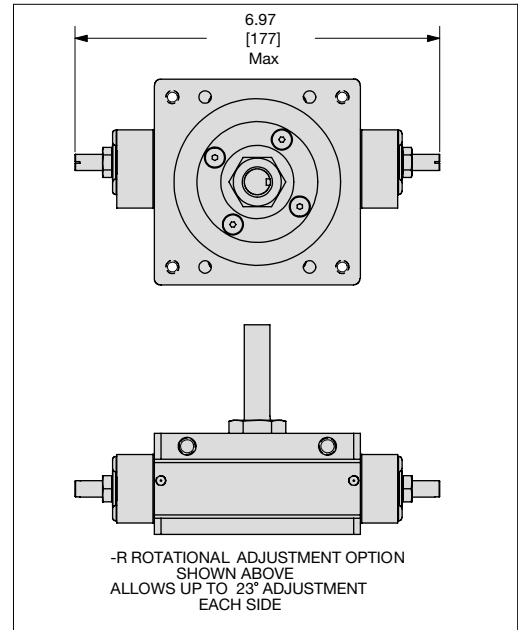
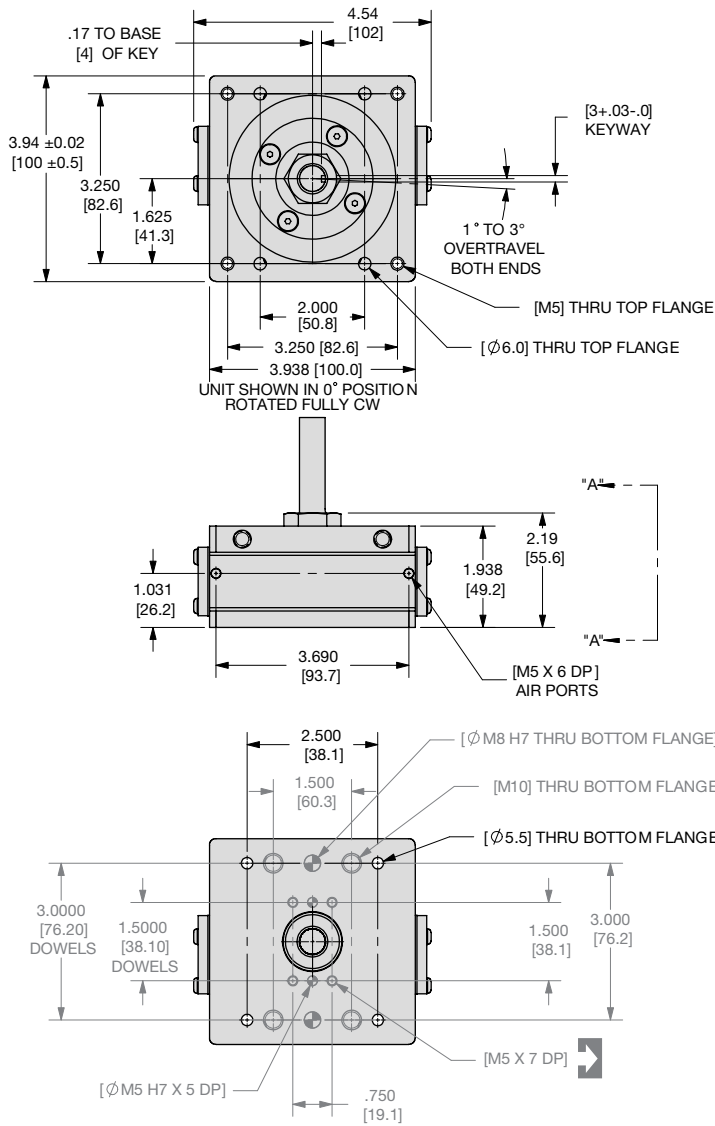


### Sensors

- PNP and NPN Magneto Resistive available
- Sensors are slot mounted, no mounting kits required
- Simple adjustment with slotted screw driver
- Built-in LED for ease of positioning and troubleshooting
- Low profile underflush sensor version or 90° wire exit sensor version
- Available with 2M or 5M Quick Disconnect mating cable (order separately)
- Sensor Magnet standard

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# ROTARY ACTUATOR DRG-106M SHAFT OUTPUT SERIES

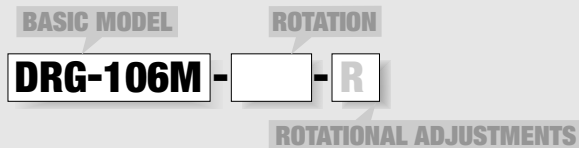


**UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW**

Dimensions are symmetrical about centerline	Third Angle Projection	All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or (±.013mm)
Metric Threads Course Pitch	<b>Imperial in.</b> 0.00 = ±.01 0.000 = ±.005 0.0000 = ±.0005	<b>Metric [mm]</b> [0] = [±.25] [0.0] = [±.13] [0.00] = [±.013]

NOTE: DIRECTCONNECT™ DIMENSIONS ARE SHOWN IN BLUE

## How to Order: (Order Accessories separately from Basic Model)



**DEGREES OF ROTATION:** 45°, 90°, 135°, 180°  
(for intermediate degrees of rotation use **-R** option)

### SENSOR ACCESSORIES

	ORDER #	QTY/UNIT
Magneto Resistive Sensor (PNP)*	<b>OHSP-017</b>	<b>1 or 2</b>
Magneto Resistive Sensor (NPN)*	<b>OHSN-017</b>	<b>1 or 2</b>
Magneto Resistive Sensor 90° Barrel (PNP)*	<b>OHSP-011</b>	<b>1 or 2</b>
Magneto Resistive Sensor 90° Barrel (NPN)*	<b>OHSN-011</b>	<b>1 or 2</b>
Quick Disconnect Cable (2 meters long)*	<b>CABL-010</b>	<b>1 or 2</b>
Quick Disconnect Cable (5 meters long)*	<b>CABL-013</b>	<b>1 or 2</b>

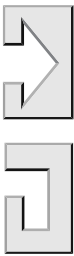
### PNEUMATIC ACCESSORIES

	ORDER #	QTY/UNIT
Seal Repair kit (Standard Buna-N)	<b>SLKT-222</b>	<b>1</b>
Rotational Adjustment Seal Kit (Standard Buna-N)	<b>SLKT-224</b>	<b>1</b>
Flow Control Push-in 90° Elbow M5-6mm O.D. Tube**	<b>VLVF-008</b>	<b>1 or 2</b>

\*Sensor and cable sold separately  
\*\*Flow Controls recommended for most applications

### SAMPLE ORDER: DRG-106M-180-R

Ex: DRG Rotary, size 106, metric, 180° rotation with rotational adjustment option



DRG SERIES

3.8

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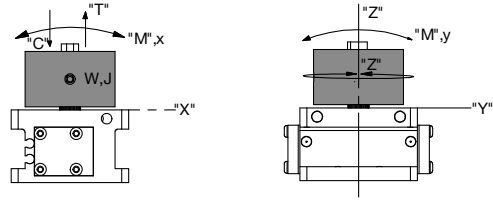


# ROTARY ACTUATOR DRG-106M SHAFT OUTPUT SERIES

## Specifications

### DRG-106M

Maximum Payload.....	4 lbs.	1.8 kg
Maximum Payload Inertia.....	0.0207 in.-lbs.-sec. <sup>2</sup>	2.3 X10 <sup>-3</sup> N-m-sec. <sup>2</sup>
Maximum Torque @ 100psi/7 bar .....	33.2 lbs.-in.	3.8 N-m
Maximum Rotation .....	180°	180°
Pitch Diameter of Pinion .....	0.750 in.	19.1 mm
Weight without rotational adjuster .....	2.5 lbs.	1.1 kg
Weight without rotational adjuster (-R option) .....	2.7 lbs.	1.2 kg
Pressure Range .....	40-100 psi	3-7 bar
Bore.....	1.063 in.	27.0 mm
Displacement (180°) .....	1.16 in <sup>3</sup>	19.0 cm <sup>3</sup>
Actuation Time (180° @ 100psi/7 bar) .....	0.60 sec.	0.60 sec.
Actuation Time (90° @ 100psi/7 bar) .....	0.45 sec.	0.45 sec.
Temperature Range: Standard Seals.....	-30°~180° F	-35°~82° C
End Stop Adjustability (-R option).....	23°	23°
Over Travel (each end).....	1° to 3°	1° to 3°
Valve required to actuate .....	4-way, 2-position	

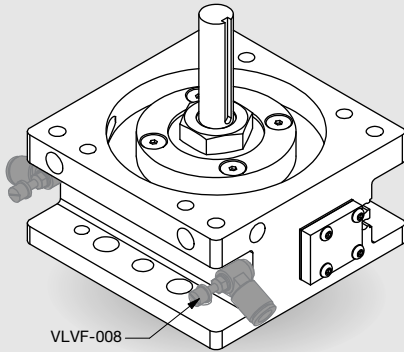


## Loading Capacity

	Static	Dynamic
Maximum Tensile <b>T</b>	25 lbs. [111 N]	5 lbs. [22 N]
Maximum Compressive <b>C</b>	50 lbs. [222 N]	10 lbs. [44 N]
Maximum Moment <b>M<sub>x</sub></b>	75 in.-lbs. [8.5 Nm]	15 in.-lbs. [1.7 Nm]
Maximum Moment <b>M<sub>y</sub></b>	75 in.-lbs. [8.5 Nm]	15 in.-lbs. [1.7 Nm]
Maximum Payload <b>W</b>	4 lbs. [1.8 kg]	
Maximum Inertia <b>J</b>	0.0207 in.-lbs.-sec. <sup>2</sup> [2.3 X 10 <sup>-3</sup> N-m-sec. <sup>2</sup> ]	

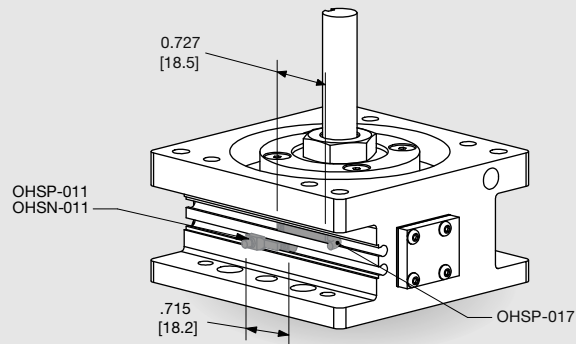
**Note:** Higher payloads and inertia possible with external shocks and stops.

## Accessory Mounting Technical Data



### Flow Controls

- Flow controls for adjusting rotational speed



### Sensors

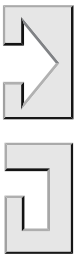
- PNP and NPN Magneto Resistive available
- Sensors are slot mounted, no mounting kits required
- Simple adjustment with slotted screw driver
- Built-in LED for ease of positioning and troubleshooting
- Low profile underflush sensor version or 90° wire exit sensor version
- Available with 2M or 5M Quick Disconnect mating cable (order separately)
- Sensor Magnet standard



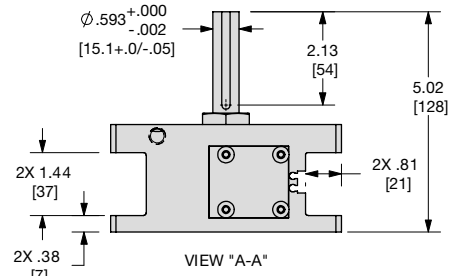
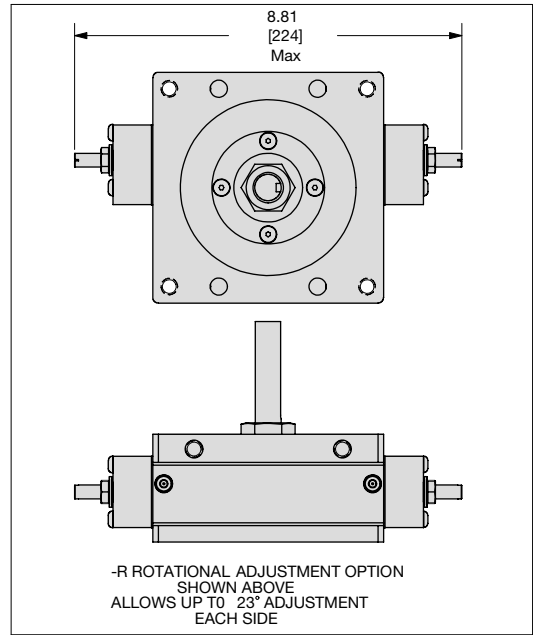
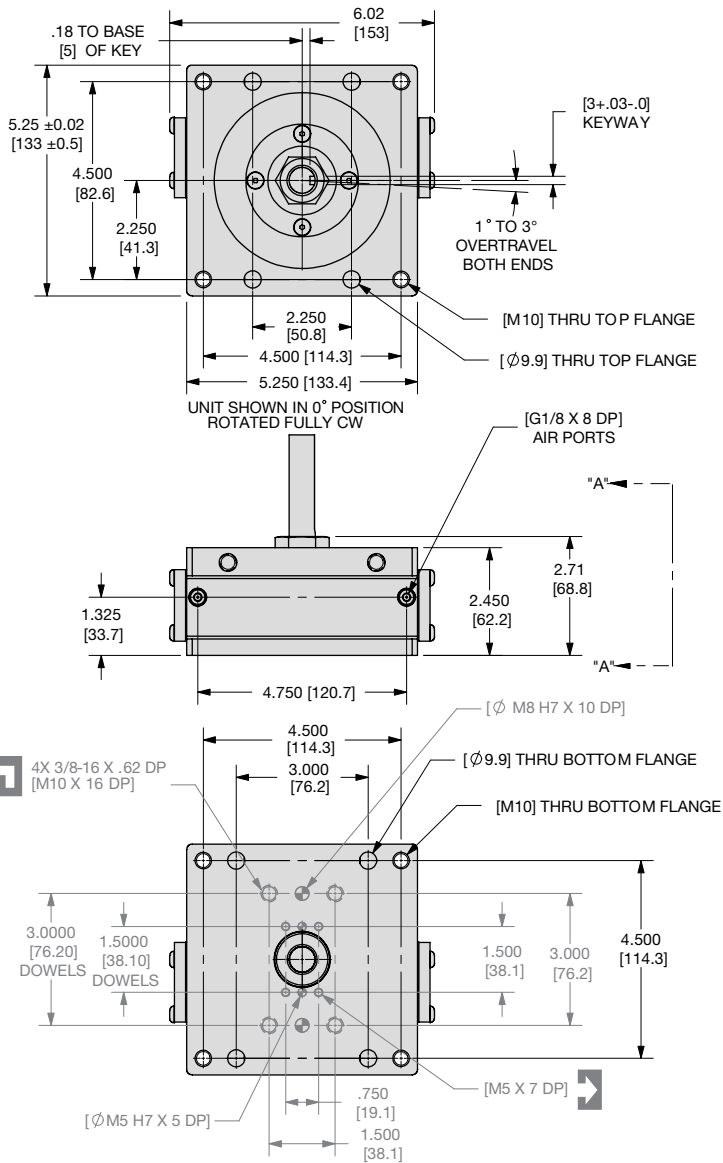




# ROTARY ACTUATOR DRG-131M SHAFT OUTPUT SERIES



DRG SERIES  
3.10



**UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW**

Dimensions are symmetrical about centerline	Third Angle Projection	All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or (±.013mm)
Metric Threads Course Pitch	<b>Imperial in.</b> 0.00 = ±.01 0.000 = ±.005 0.0000 = ±.0005	<b>Metric [mm]</b> [0] = (±.25) [0.0] = (±.13) [0.00] = (±.013)

NOTE: DIRECTCONNECT™ DIMENSIONS ARE SHOWN IN BLUE

## How to Order: (Order Accessories separately from Basic Model)

**BASIC MODEL**      **ROTATION**

**DRG-131M** - [ ] - **R**

**ROTATIONAL ADJUSTMENTS**

DEGREES OF ROTATION: 45°, 90°, 135°, 180°  
(for intermediate degrees of rotation use -R option)

### SENSOR ACCESSORIES

	ORDER #	QTY/UNIT
Magneto Resistive Sensor (PNP)*	<b>OHSP-017</b>	<b>1 or 2</b>
Magneto Resistive Sensor (NPN)*	<b>OHSN-017</b>	<b>1 or 2</b>
Magneto Resistive Sensor 90° Barrel (PNP)*	<b>OHSP-011</b>	<b>1 or 2</b>
Magneto Resistive Sensor 90° Barrel (NPN)*	<b>OHSN-011</b>	<b>1 or 2</b>
Quick Disconnect Cable (2 meters long)*	<b>CABL-010</b>	<b>1 or 2</b>
Quick Disconnect Cable (5 meters long)*	<b>CABL-013</b>	<b>1 or 2</b>

### PNEUMATIC ACCESSORIES

	ORDER #	QTY/UNIT
Seal Repair kit (Standard Buna-N)	<b>SLKT-228</b>	<b>1</b>
Rotational Adjustment Seal Kit (Standard Buna-N)	<b>SLKT-230</b>	<b>1</b>
Fitting Push-in 90° Elbow G1/8, 6mm O.D. Tube	<b>PLFT-042</b>	<b>1 or 2</b>
Fitting Push-in 90° Elbow G1/8, 8mm O.D. Tube	<b>PLFT-048</b>	<b>1 or 2</b>
Fitting Push-in Straight G1/8, 6mm O.D. Tube	<b>PLFT-038</b>	<b>1 or 2</b>
Fitting Push-in Straight G1/8, 8mm O.D. Tube	<b>PLFT-045</b>	<b>1 or 2</b>
Flow Control Push-in 90° Elbow G1/8, 6mm O.D. Tube**	<b>VLVF-005</b>	<b>1 or 2</b>

\*Sensor and cable sold separately  
\*\*Flow Controls recommended for most applications

### SAMPLE ORDER: DRG-131M-180-R

Ex: DRG Rotary, size 131, metric, 180° rotation with rotational adjustment option

Please see back cover for DE-STA-CO Global Locations. [www.destaco.com](http://www.destaco.com)

[www.comoso.com](http://www.comoso.com)

DIRECTCONNECT™

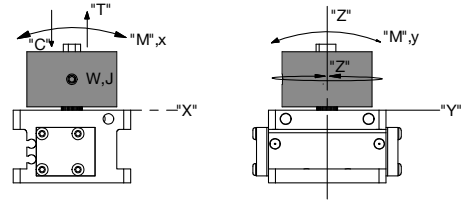


# ROTARY ACTUATOR DRG-131M SHAFT OUTPUT SERIES

## Specifications

### DRG-131M

Maximum Payload.....	7.5 lbs.	3.4 kg
Maximum Payload Inertia.....	0.0485 in.-lbs.-sec. <sup>2</sup>	5.5 X 10 <sup>-3</sup> N-m-sec. <sup>2</sup>
Maximum Torque @ 100psi/7 bar .....	68 lbs-in.	7.6 N-m
Maximum Rotation .....	180°	180°
Pitch Diameter of Pinion.....	1.000 in.	25.4 mm
Weight without rotational adjuster .....	5.4 lbs.	2.4 kg
Weight without rotational adjuster (-R option) .....	5.6 lbs.	2.5 kg
Pressure Range .....	40-100 psi	3-7 bar
Bore.....	1.313 in.	33.4 mm
Displacement (180°) .....	2.11 in <sup>3</sup>	34.6 cm <sup>3</sup>
Actuation Time (180° @ 100psi/7 bar) .....	0.87 sec.	0.87 sec.
Actuation Time (90° @ 100psi/7 bar) .....	0.68 sec.	0.68 sec.
Temperature Range: Standard Seals.....	-30°~180° F	-35°~82° C
End Stop Adjustability (-R option) .....	23°	23°
Over Travel (each end).....	1° to 3°	1° to 3°
Valve required to actuate .....	4-way, 2-position	

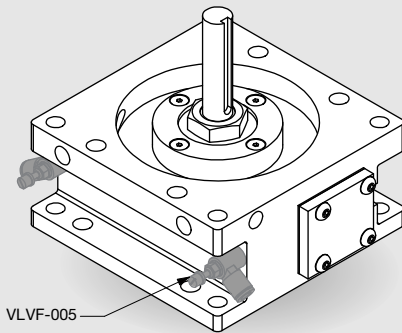


## Loading Capacity

	Static	Dynamic
Maximum Tensile <b>T</b>	50 lbs. [222 N]	10 lbs. [44 N]
Maximum Compressive <b>C</b>	100 lbs. [445 N]	20 lbs. [89 N]
Maximum Moment <b>M<sub>x</sub></b>	100 in.-lbs. [11.3 Nm]	20 in.-lbs. [2.5 Nm]
Maximum Moment <b>M<sub>y</sub></b>	100 in.-lbs. [11.3 Nm]	20 in.-lbs. [2.5 Nm]
Maximum Payload <b>W</b>	7.5 lbs. [3.4 kg]	
Maximum Inertia <b>J</b>	0.0485 in.-lbs.-sec. <sup>2</sup> [5.5 X 10 <sup>-3</sup> N-m-sec. <sup>2</sup> ]	

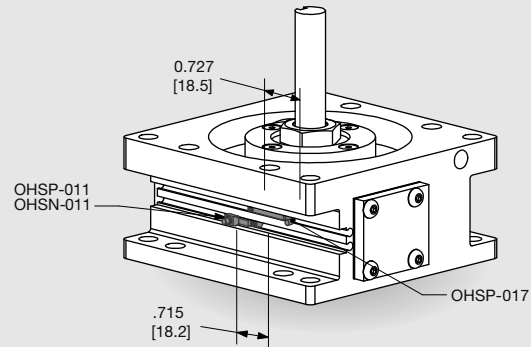
**Note:** Higher payloads and inertia possible with external shocks and stops.

## Accessory Mounting Technical Data



### Flow Controls

- Flow controls for adjusting rotational speed



### Sensors

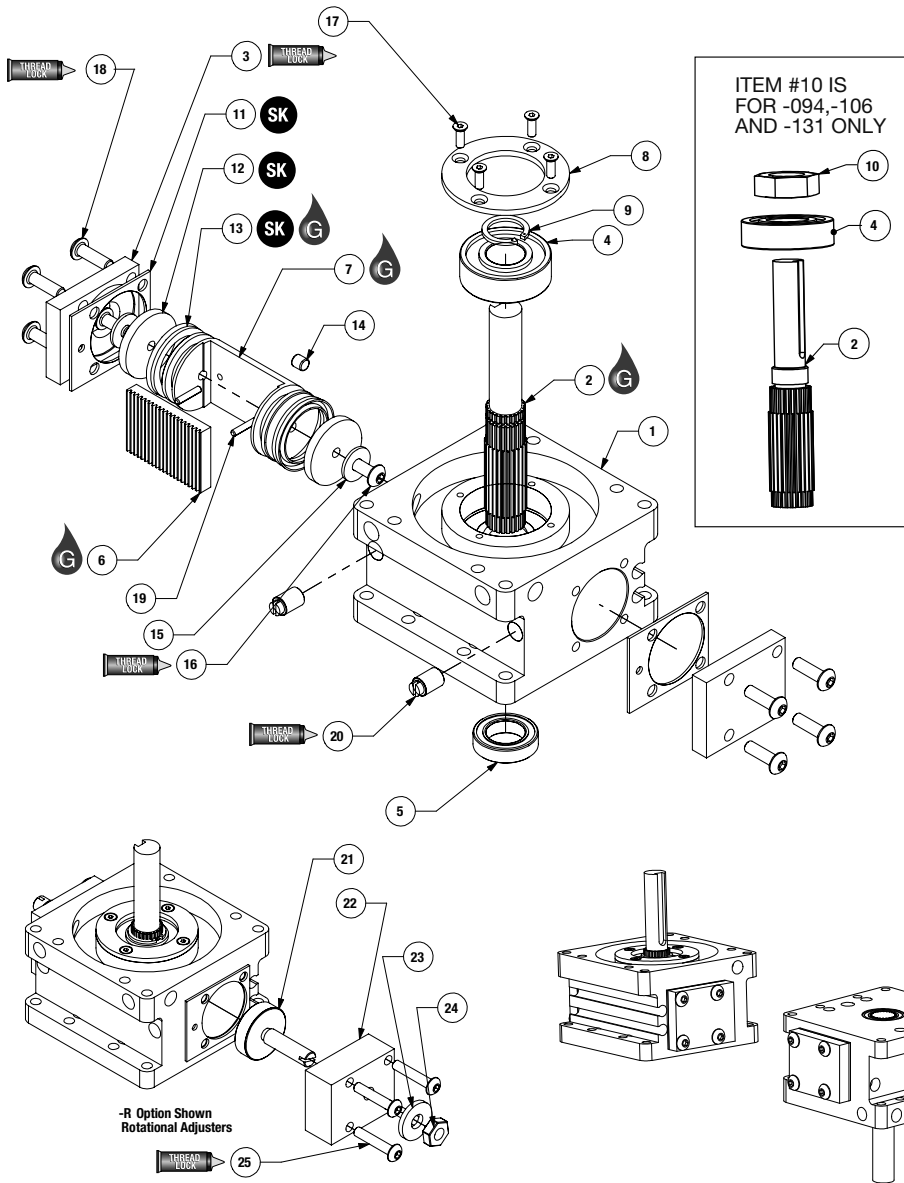
- PNP and NPN Magneto Resistive available
- Sensors are slot mounted, no mounting kits required
- Simple adjustment with slotted screw driver
- Built-in LED for ease of positioning and troubleshooting
- Low profile underflush sensor version or 90° wire exit sensor version
- Available with 2M or 5M Quick Disconnect mating cable (order separately)
- Sensor Magnet standard



# DRG SERIES EXPLODED VIEW

DRG SERIES  
MAINTENANCE

3.12



Item	Qty	Name
01	1	Body
02	1	Pinion Shaft
03	2	End Plate
04	1	Upper Bearing
05	1	Lower Bearing
06	1	Rack
07	1	Piston
08*	1	Bearing Retainer
09*	1	Retaining Ring
10	1	Hex Nut
11	2	Gasket
12	2	Bumper
13	2	U-cup
14	1	Magnet
15	2	Bumper Washer
16	2	Bumper Screw
17	4	Retainer Screw
18	8	End Plate Screw
19	2	Roll Pin
20*	2	Fixed Orifice
21	2	Angle Adjuster
22	2	End Plate Rotational Adjuster
23	2	Seal Washer
24	2	Hex Nut
25	8	End Plate Rotational Adj. Screw

**\*NOTES:**

- 1) Contact the Robohand Sales Department for a complete spare parts list with order numbers and prices.
- 2) Item #09 is for size -075 only.
- 3) Item #10 is for size -094, -106 and -131 respectively.
- 4) Item #20 not in size -131

**Assembly Procedure**

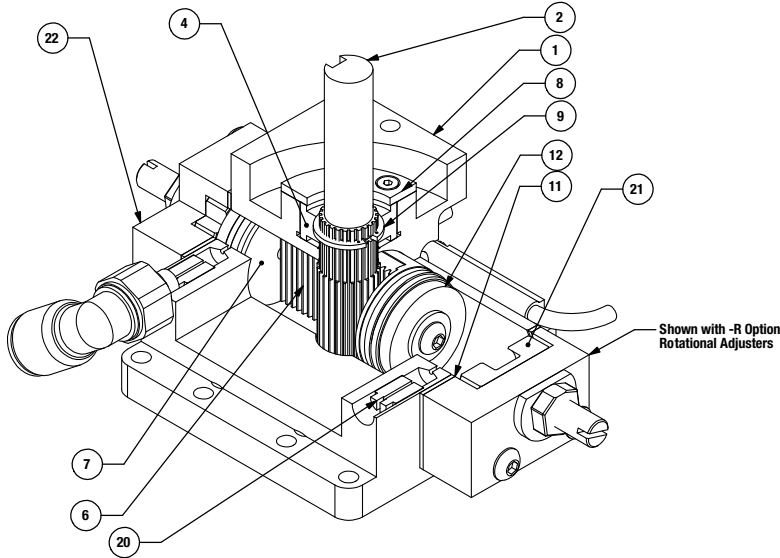
- 1) Press the Upper Bearing #4 onto the Pinion #2.
- 2) Install the Retaining Ring#9 or Hex Nut #10 onto the Pinion #2.
- 3) Assemble the Rack #6 to the Piston #7 with Roll Pins #19.
- 4) Grease the U-Cups #13 and install them onto the Piston #7.
- 5) Press the Magnet #14 into the Piston #7.
- 6) Assemble the Bumper #12, Washers #15 and Bumper Screw #16 onto the Piston #7.
- 7) Lubricate the Body #1 bore and install the Piston Assembly into the body.
- 8) Press the Lower Bearing #5 into the Body #1.
- 9) Locate the Piston assembly so it is aligned with an outer edge of the body.
- 10) Lubricate the Pinion assembly and align the key with the same edge of the Body as the Piston and Press the Pinion into the Body.

- 11) Rotate the Pinion through the full travel and insure that the Piston is correctly located in the Body, adjust the travel of the Piston if necessary.
- 12) Grease the Gasket and install the End Plate #3 onto the Body #1.
- 13) Install the 2 Orifice #20 into the Body #1 screw them in until they bottom.
- 14) Install the Bearing Flange #8 with the 4 Flange Screws #17.

**-R Option Assembly Procedure:**

- 1) Screw the Angle Adjuster into the End Block Angle Adjuster.
- 2) Place the sealing washer over the threaded extension.
- 3) Screw on the Hex Nut over the Sealing Washer.
- 4) Screw the End Block onto the Body with a Gasket.

Seal Kit Items	Thread Locker	Krytox™ Lubricant	Lightweight Machine Oil	Teflon™ Based Grease	Super Bonder	Third Angle Projection
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Item	Qty	Name
01	1	Body
02	1	Pinion Shaft
04	1	Upper Bearing
06	1	Rack
07	1	Piston
08*	1	Bearing Retainer
09*	1	Retaining Ring
11	2	Gasket
12	2	Bumper
20	2	Fixed Orifice
21	2	Angle Adjuster
22	2	End Plate Rotational Adjuster

**\*NOTES:**

- 1) Contact the Robohand Sales Department for a complete spare parts list with order numbers and prices.
- 2) Item #09 is for size -075 only.

**Warning:** Removal of Orifices will void warranty.

## Accessory Installation & Adjustment Instructions

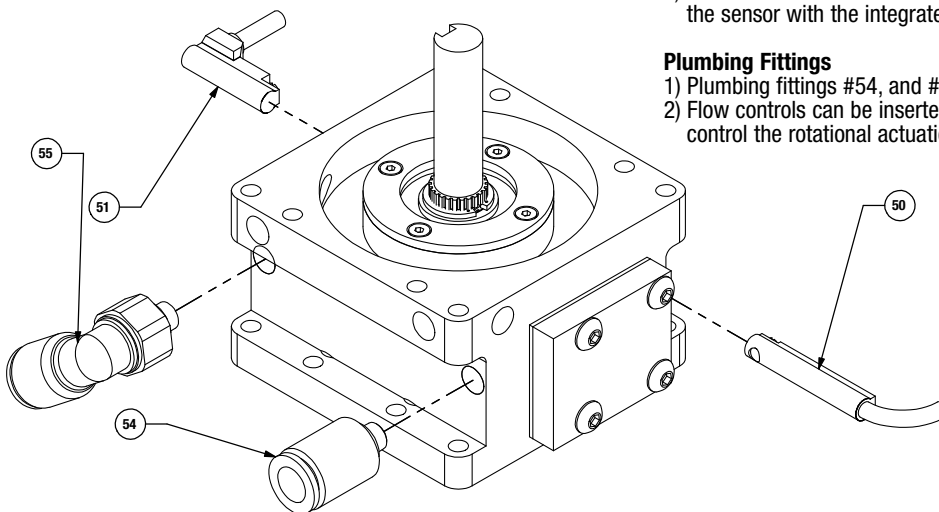
Item	Qty	Name
50	1 or 2	Magneto Resistive Sensor with Quick Disconnect
51	1 or 2	Magneto Resistive Sensor (90° barrel) with Quick Disconnect
54	1 or 2	Fitting Push-in Straight 1/8 NPT, 1/4" O.D. Tube (-131 Only)
55	1 or 2	Fitting Push-in 90° Elbow 1/8 NPT, 1/4" O.D. Tube (-131 Only)

**Magneto Resistive Sensors**

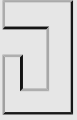
- 1) Insert sensors #50 or #51 from either end of the profile slots and set the sensor with the integrated slotted screw set.

**Plumbing Fittings**

- 1) Plumbing fittings #54, and #55 can be used in any airport
- 2) Flow controls can be inserted and used in any airport to help control the rotational actuation



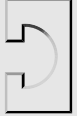
<p>SK Seal Kit Items</p>	<p>THREAD LOCK</p> <p>Thread Locker</p>	<p>KRYTOX</p> <p>Krytox™ Lubricant</p>	<p>Lightweight Machine Oil</p>	<p>Teflon™ Based Grease</p>	<p>GLUE</p> <p>Super Bonder</p>	<p>Third Angle Projection</p>
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# Rotary Actuator - DRF DIRECTCONNECT Flange Output Rotaries

DRF SERIES

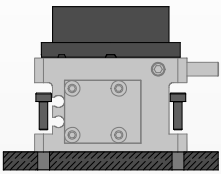
3.14



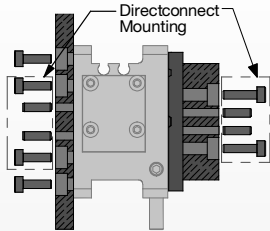
**NO  
ADAPTER  
PLATES!**

## Mounting Information:

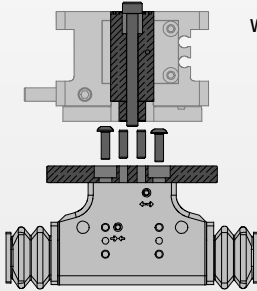
Rotaries can be mounted & operated in any orientation



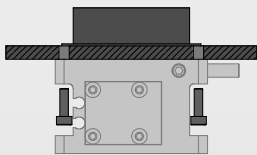
Mounting thru bottom flange clearance holes into tapped holes in customer application.



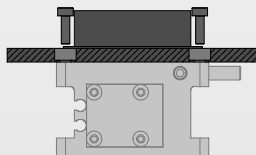
Body mounts with screws and slip fit dowels from bottom. Payload is attached with screw and slip fit dowels.



**DIRECTCONNECT Mounting:** Gripper is mounted from the under side of Turntable with Button Head screws and slip fit dowels. Turntable is then mounted to rotary with one screw thru the center of the pinion and two slip fit dowel pins.



Mounting thru top flange clearance holes into tapped holes in customer application.



Top mounting from underside of table using tapped holes in body top flange.

**Application:** Use in applications where precision end stop position and zero backlash are required.

**Multiple Mounting Locations:** Tapped and thru flange on top and bottom mounting surfaces, DIRECTCONNECT tapped pattern on bottom flange.

**Turntable:** Has DIRECTCONNECT mounting pattern.

## Technical Specifications:

### Pneumatic Specifications

Pressure Operating Range  
Cylinder Type  
Dynamic Seals  
Valve Required to Operate

**Imperial**  
40-100 psi

**Metric**  
3-7 bar  
Double Acting  
Internally Lubricated Buna-N  
4-way, 2-position

### Air Quality Requirements

Air Filtration  
Air Lubrication  
Air Humidity

40 Micron or Better  
Not Necessary\*  
Low Moisture Content (dry)

### Temperature Operating Range

Buna-N Seals (standard) with shocks

-30°~180° F  
32°~150° F

-35°~80° C  
0°~66° C

### Maintenance Specifications

Expected Life  
Normal Application w/ Preventative Maintenance  
Field Repairable  
Seal Repair Kits Available

5 million cycles  
10+ million cycles\*  
Yes  
Yes

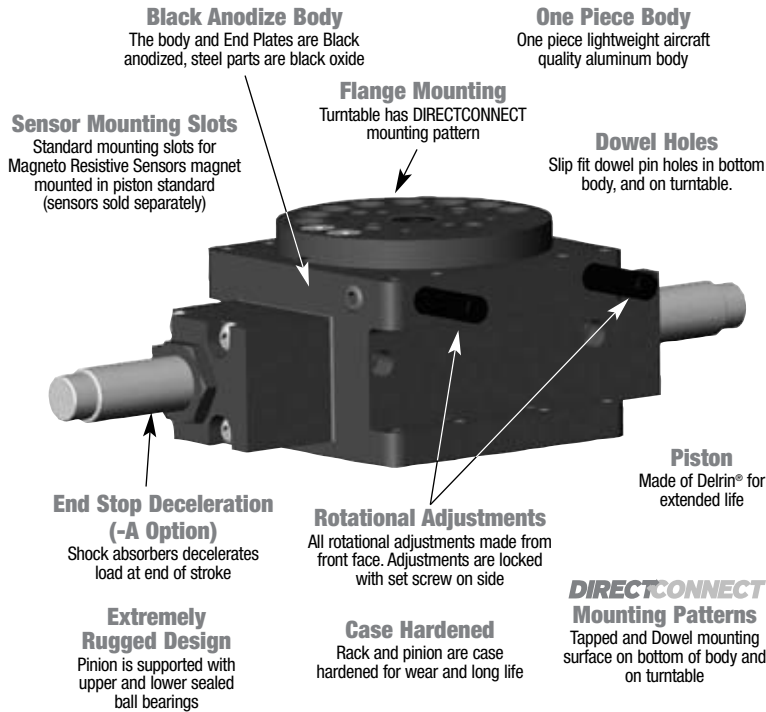
\*Addition of lubrication will greatly increase service life

Please see back cover for DE-STA-CO Global Locations. [www.destaco.com](http://www.destaco.com)

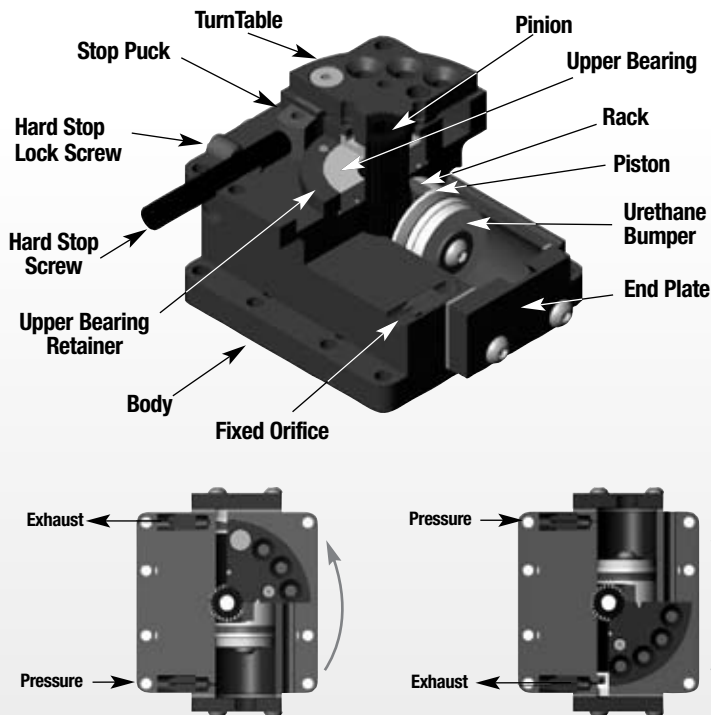
[www.comoso.com](http://www.comoso.com)

DIRECTCONNECT™

## Product Features



## Operating Principle



- Air pressure supplied to one port causing the piston/rack to move.
- The rack drives the pinion which is mounted to the output flange and by two sealed ball bearings.
- The turntable has a stop puck mounted on its underside which hits the hard stop screw at end of stroke.

**Designed and manufactured in the USA**

## Style - DRF Rotary Actuator

**Size -075M**

**Style:** DRF-075M  
**Max. Payload:**\* 1 lbs. 0.45 kg  
**Torque:** 8 in.-lbs. 0.9 N-m  
**Weight:** 0.54 lbs. 0.24 Kg  
 \*Max. payload based on -A shock option.



See Page **3.16**

## Style - DRF Rotary Actuator

**Size -094M**

**Style:** DRF-094M  
**Max. Payload:**\* 3 lbs. 1.4 kg  
**Torque:** 17 in.-lbs. 1.9 N-m  
**Weight:** 1.1 lbs. 0.50 Kg  
 \*Max. payload based on -A shock option.



See Page **3.18**

## Style - DRF Rotary Actuator

**Size -106M**

**Style:** DRF-106M  
**Max. Payload:**\* 8 lbs. 3.6 kg  
**Torque:** 33 in.-lbs. 3.8 N-m  
**Weight:** 2.5 lbs. 1.1 Kg  
 \*Max. payload based on -A shock option.



See Page **3.20**

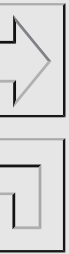
## Style - DRF Rotary Actuator

**Size -131M**

**Style:** DRF-131M  
**Max. Payload:**\* 15 lbs. 6.8 kg  
**Torque:** 68 in.-lbs. 7.6 N-m  
**Weight:** 6.3 lbs. 2.9 Kg  
 \*Max. payload based on -A shock option.



See Page **3.22**



DRF SERIES

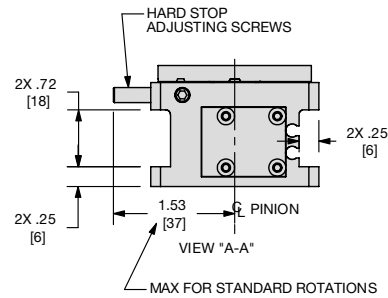
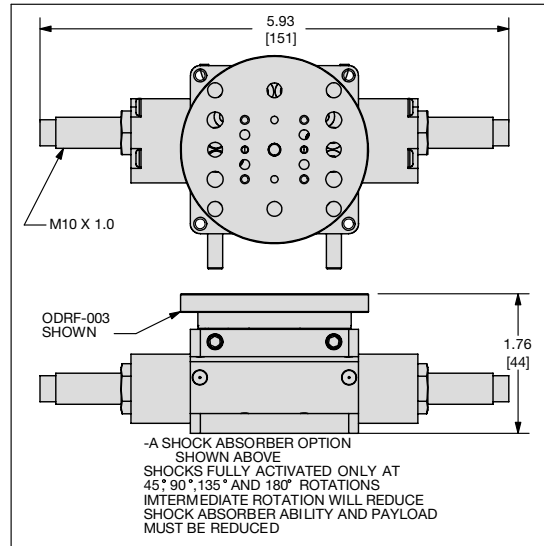
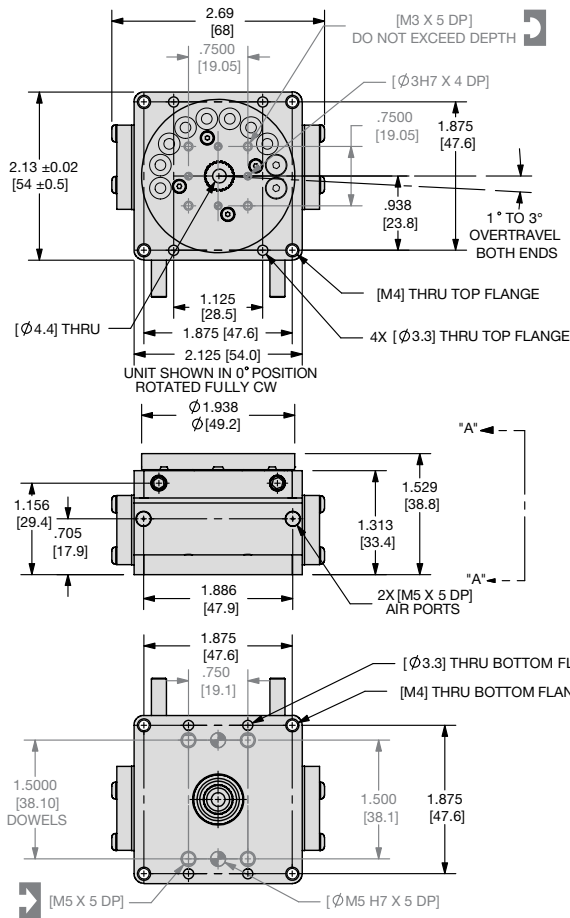
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DIRECTCONNECT™



# ROTARY ACTUATOR DRF-075M FLANGED SERIES



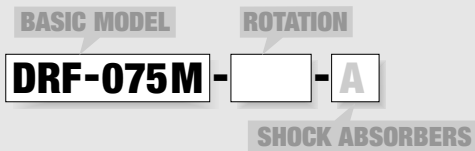
DRF SERIES  
3.16

UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

Imperial in.	Metric [mm]
0.00 ± .01	[0.] = [±.25]
0.000 ± .005	[0.0] = [±.13]
0.0000 ± .0005	[0.00] = [±.013]

NOTE: DIRECTCONNECT™ DIMENSIONS ARE SHOWN IN BLUE

## How to Order: (Order Accessories separately from Basic Model)



DEGREES OF ROTATION: 45°, 90°, 135°, 180°  
(Consult factory for intermediate degrees of rotation)

### ROTARY ACCESSORIES

Turntable Blank, Metric  
DIRECTCONNECT Turntable

ORDER #	QTY/UNIT
ODRF-002	1
ODRF-003	1

### SENSOR ACCESSORIES

Magneto Resistive Sensor (PNP)\*  
Magneto Resistive Sensor (NPN)\*  
Magneto Resistive Sensor 90° Barrel (PNP)\*  
Magneto Resistive Sensor 90° Barrel (NPN)\*  
Quick Disconnect Cable (2 meters long)\*  
Quick Disconnect Cable (5 meters long)\*

ORDER #	QTY/UNIT
OHSP-017	1 or 2
OHSN-017	1 or 2
OHSP-011	1 or 2
OHSN-011	1 or 2
CABL-010	1 or 2
CABL-013	1 or 2

### PNEUMATIC ACCESSORIES

Seal Repair Kit (Standard Buna-N)  
Shock Seal Repair Kit  
Flow Control Push-in 90° Elbow M5-6mm O.D. Tube\*\*

ORDER #	QTY/UNIT
SLKT-210	1
SLKT-214	1
VLVF-008	1 or 2

\*Sensor and cable sold separately

\*\*Flow Controls recommended for most applications

### SAMPLE ORDER: DRF-075M-180-A

Ex: DRF Rotary, size 075, metric, 180° rotation with Shock Absorbers

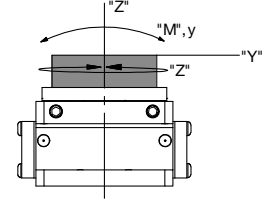
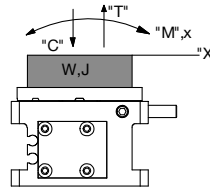


# ROTARY ACTUATOR DRF-075M FLANGED SERIES

## Specifications

### DRF-075M

Maximum Payload with shocks (-A).....	1 lbs.	0.45 kg
Maximum Payload without shocks .....	0.5 lbs.	0.23 kg
Maximum Payload Inertia with shocks (-A) .....	0.0016 in-lbs.-sec. <sup>2</sup>	1.8 X10 <sup>-4</sup> N-m-sec. <sup>2</sup>
Maximum Payload Inertia without shocks .....	0.0008 in-lbs.-sec. <sup>2</sup>	9.0 X10 <sup>-5</sup> N-m-sec. <sup>2</sup>
Maximum Torque @ 100psi/7 bar.....	8.3 lbs.-in.	0.9 N-m
Maximum Rotation .....	180°	180°
Pitch Diameter of Pinion.....	0.375 in.	9.5 mm
Weight with shocks (-A Option).....	0.72 lbs.	0.34 kg
Weight without shocks .....	0.54 lbs.	0.24 kg
Pressure Range .....	40-100 psi	3-7 bar
Bore .....	0.750 in.	19.1 mm
Displacement (180°).....	0.31 in. <sup>3</sup>	5.1 cm <sup>3</sup>
Actuation Time (180° @ 100psi/7 bar) .....	0.38 sec.	0.38 sec.
Actuation Time (90° @ 100psi/7 bar) .....	0.29 sec.	0.29 sec.
Over Travel (each end).....	1° to 3°	1° to 3°
Temperature Range without Shocks .....	-30°~180° F	-35°~82° C
Temperature Range with Shocks (-A) .....	32°~150° F	0°~66° C
End Stop Adjustability (each end) .....	23°	23°
Repeatability .....	±0.02°	±0.02°
Valve required to actuate.....	4-way, 2-position	

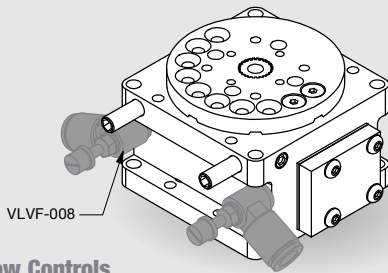


## Loading Capacity

	Static	Dynamic
Maximum Tensile <b>T</b>	10 lbs. [44 N]	2 lbs. [9 N]
Maximum Compressive <b>C</b>	20 lbs. [89 N]	4 lbs. [18 N]
Maximum Moment <b>M<sub>x</sub></b>	20 in-lbs. [2.3 Nm]	4 in-lbs. [0.5 Nm]
Maximum Moment <b>M<sub>y</sub></b>	20 in-lbs. [2.3 Nm]	4 in-lbs. [0.5 Nm]
Maximum Payload <b>W (with shocks)</b>	1.0 lbs. [0.45 kg]	
Maximum Inertia <b>J (with shocks)</b>	0.0016 in-lbs.-sec. <sup>2</sup> (1.8 X 10 <sup>-4</sup> N-m-sec. <sup>2</sup> )	

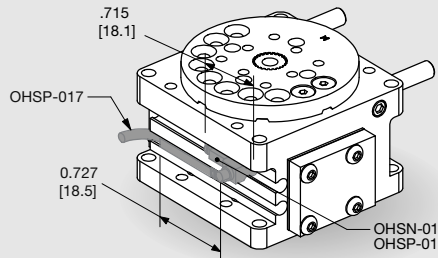
**Note:** Higher payloads and inertia possible with external shocks and stops.

## Accessory Mounting Technical Data



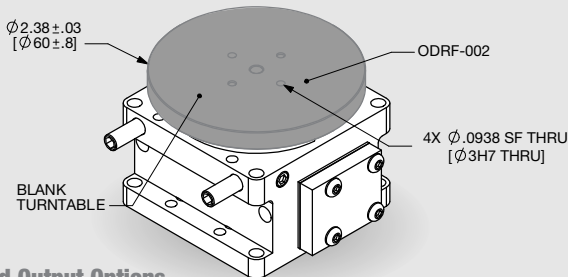
### Flow Controls

- Flow controls for adjusting rotational speed



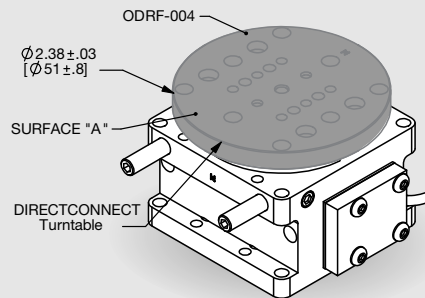
### Sensors

- PNP and NPN Magneto
- Resistive available
- Sensors are slot mounted, no mounting kits required
- Simple adjustment with slotted screw driver
- Built-in LED for ease of positioning and troubleshooting
- Low profile underflush sensor version or 90° wire exit sensor version
- Available with 2M or 5M Quick Disconnect mating cable (order separately)
- Sensor Magnet standard



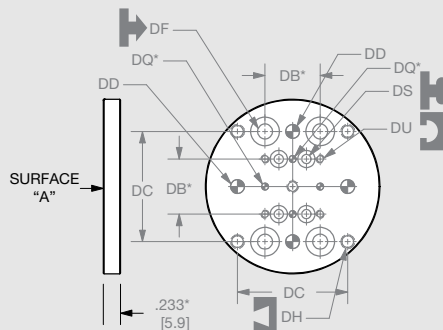
### Flanged Output Options

- Easily machinable by customer
- Blank Turntable, easily removed, pin located
- High quality aircraft aluminum, Black anodize finish
- Mounts through pinion with one screw & two dowels



### Flanged Output DIRECTCONNECT Turntable

- DIRECTCONNECT Turntable, easily removed, pin located
- High quality aircraft aluminum, Black anodize finish
- Mounts through pinion with one screw & two dowels
- No machining required, DIRECTCONNECT Grippers mount directly
- 90° orientations

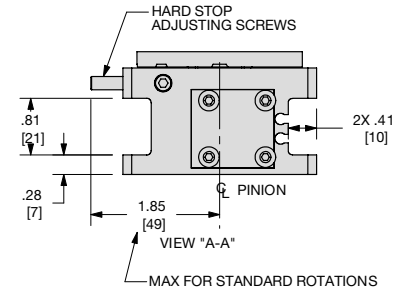
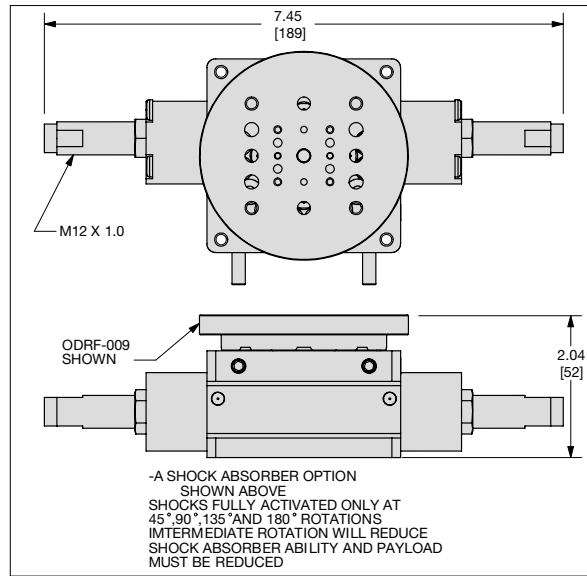
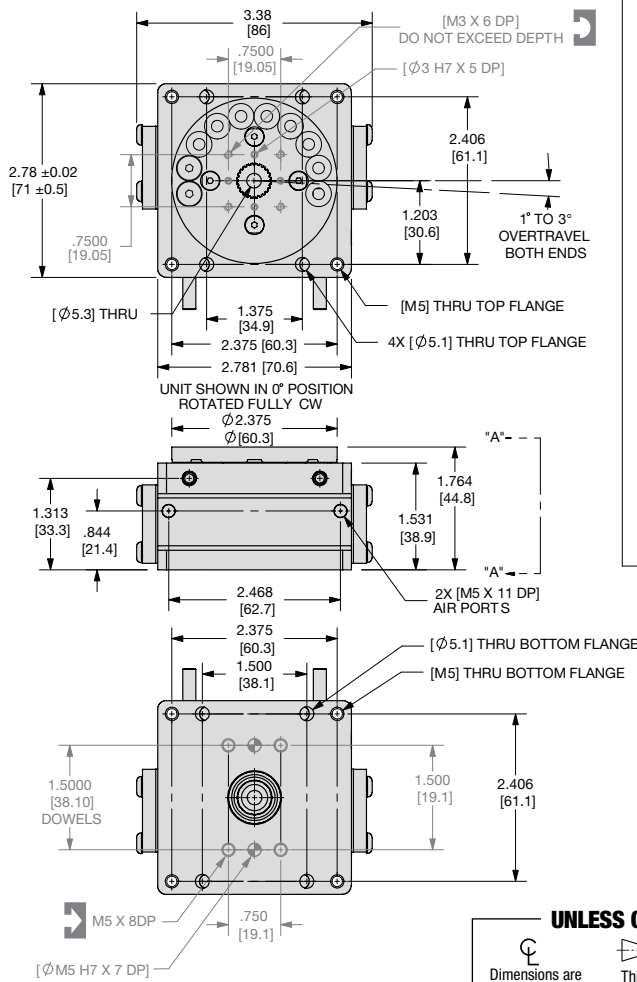


\* DIMENSIONS ALSO APPLY TO BLANK TURNTABLE  
C'BORE FOR BUTTON HEAD SCREWS

### DIRECTCONNECT DIMENSIONS STANDARD MOUNTING PATTERN FOR ALL SIZES

	Imperial (inches)	Metric (mm)
DA	.375	9.5
DB	.750	19.1
DC	1.500	38.1
DD		5 mm THRU
DF		C'bore for M5 Button head screws
DH		M5 THRU
DQ		3 H7 THRU
DS		C'bored for M3 Button head screws
DU		M3 THRU

# ROTARY ACTUATOR DRF-094M FLANGED SERIES



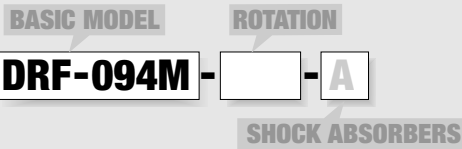
UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

Symbol	Imperial in.	Metric [mm]
	0.00 ± .01	[0.] = ± .25
	0.000 ± .005	[0.0] = ± .13
	0.0000 ± .0005	[0.00] = ± .013

Dimensions are symmetrical about centerline  
Third Angle Projection  
All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or [±.013mm]  
Metric Threads Course Pitch

NOTE: DIRECTCONNECT™ DIMENSIONS ARE SHOWN IN BLUE

## How to Order: (Order Accessories separately from Basic Model)



DEGREES OF ROTATION: 45°, 90°, 135°, 180°  
(Consult factory for intermediate degrees of rotation)

### ROTARY ACCESSORIES

Turntable Blank, Metric  
DIRECTCONNECT Turntable, Metric

ORDER # QTY/UNIT

ODRF-008 1  
ODRF-010 1

### SENSOR ACCESSORIES

Magneto Resistive Sensor (PNP)\*  
Magneto Resistive Sensor (NPN)\*  
Magneto Resistive Sensor 90° Barrel (PNP)\*  
Magneto Resistive Sensor 90° Barrel (NPN)\*  
Quick Disconnect Cable (2 meters long)\*  
Quick Disconnect Cable (5 meters long)\*

ORDER # QTY/UNIT

OHSP-017 1 or 2  
OHSN-017 1 or 2  
OHSP-011 1 or 2  
OHSN-011 1 or 2  
CABL-010 1 or 2  
CABL-013 1 or 2

### PNEUMATIC ACCESSORIES

Seal Repair Kit (Standard Buna-N)  
Shock Seal Repair Kit  
Flow Control Push-in 90° Elbow M5-6mm O.D. Tube\*\*

ORDER # QTY/UNIT

SLKT-216 1  
SLKT-219 1  
VLVF-008 1 or 2

\*Sensor and cable sold separately

\*\*Flow Controls recommended for most applications

**SAMPLE ORDER: DRF-094M-180-A**

Ex: DRF Rotary, size 094, metric, 180° rotation with Shock Absorbers

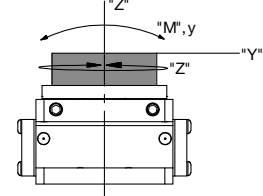
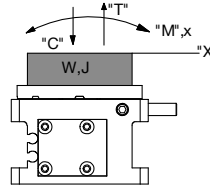


# ROTARY ACTUATOR DRF-094M FLANGED SERIES

## Specifications

### DRF-094M

Maximum Payload with shocks (-A).....	3 lbs.	1.4 kg
Maximum Payload without shocks .....	1.5 lbs.	0.68 kg
Maximum Payload Inertia with shocks (-A).....	0.0111 in.-lbs.-sec. <sup>2</sup>	1.3 X 10 <sup>-3</sup> N-m-sec. <sup>2</sup>
Maximum Payload Inertia without shocks .....	0.0056 in.-lbs.-sec. <sup>2</sup>	6.3 X 10 <sup>-4</sup> N-m-sec. <sup>2</sup>
Maximum Torque @ 100psi/7 bar.....	17.3 lbs.-in.	1.9 N-m
Maximum Rotation .....	180°	180°
Pitch Diameter of Pinion.....	0.500 in.	12.7 mm
Weight with shocks (-A Option).....	1.4 lbs.	0.64 kg
Weight without shocks .....	1.1 lbs.	0.50 kg
Pressure Range .....	40-100 psi	3-7 bar
Bore.....	0.938 in.	23.8 mm
Displacement (180°) .....	0.55 in. <sup>3</sup>	9.0 cm <sup>3</sup>
Actuation Time (180° @ 100psi/7 bar) .....	0.38 sec.	0.38 sec.
Actuation Time (90° @ 100psi/7 bar) .....	0.29 sec.	0.29 sec.
Over Travel (each end).....	1° to 3°	1° to 3°
Temperature Range without Shocks .....	-30°~180° F	-35°~82° C
Temperature Range with Shocks (-A) .....	32°~150° F	0°~66° C
End Stop Adjustability (each end).....	23°	23°
Repeatability.....	±0.02°	±0.02°
Valve required to actuate.....	4-way, 2-position	

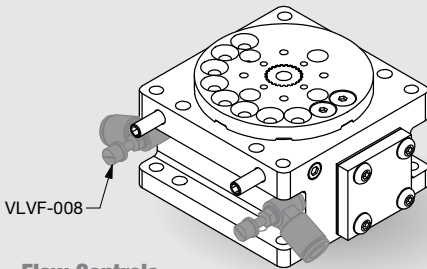


## Loading Capacity

	Static	Dynamic
Maximum Tensile <b>T</b>	15 lbs. [67 N]	3 lbs. [13 N]
Maximum Compressive <b>C</b>	30 lbs. [133 N]	6 lbs. [27 N]
Maximum Moment <b>M<sub>x</sub></b>	50 in.-lbs. [5.6 Nm]	10 in.-lbs. [1.1 Nm]
Maximum Moment <b>M<sub>y</sub></b>	50 in.-lbs. [5.6 Nm]	10 in.-lbs. [1.1 Nm]
Maximum Payload <b>W (with shocks)</b>		3 lbs. [1.4 kg]
Maximum Inertia <b>J (with shocks)</b>		0.0111 in.-lbs.-sec. <sup>2</sup> (1.3 X 10 <sup>-3</sup> N-m-sec. <sup>2</sup> )

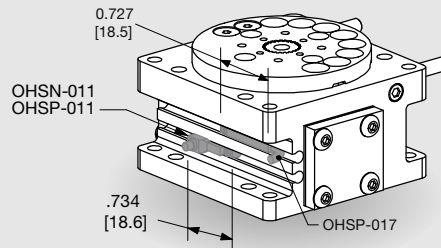
**Note:** Higher payloads and inertia possible with external shocks and stops.

## Accessory Mounting Technical Data



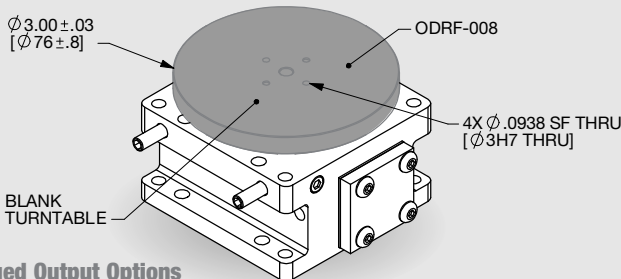
### Flow Controls

- Flow controls for adjusting rotational speed



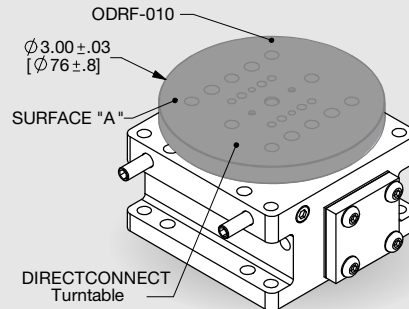
### Sensors

- PNP and NPN Magneto
- Resistive available
- Sensors are slot mounted, no mounting kits required
- Simple adjustment with slotted screw driver
- Built-in LED for ease of positioning and troubleshooting
- Low profile underflush sensor version or 90° wire exit sensor version
- Available with 2M or 5M Quick Disconnect mating cable (order separately)
- Sensor Magnet standard



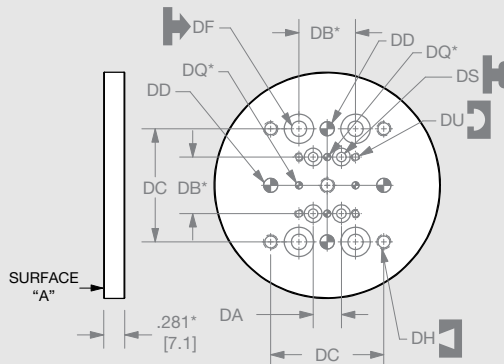
### Flanged Output Options

- Easily machinable by customer
- Blank Turntable, easily removed, pin located
- High quality aircraft aluminum, Black anodize finish
- Mounts through pinion with one screw & two dowels



### Flanged Output DIRECTCONNECT Turntable

- DIRECTCONNECT Turntable, easily removed, pin located
- High quality aircraft aluminum, Black anodize finish
- Mounts through pinion with one screw & two dowels
- No machining required, DIRECTCONNECT Grippers mount directly
- 90° orientations



\* DIMENSIONS ALSO APPLY TO BLANK TURNTABLE  
C'BORE FOR BUTTON HEAD SCREWS

### DIRECTCONNECT DIMENSIONS STANDARD MOUNTING PATTERN FOR ALL SIZES

	Imperial (inches)	Metric (mm)
DA	.375	9.5
DB	.750	19.1
DC	1.500	38.1
DD		5 mm THRU
DF		C'bore for M5 Button head screws
DH		M5 THRU
DQ		3 H7 THRU
DS		C'bored for M3 Button head screws
DU		M3 THRU





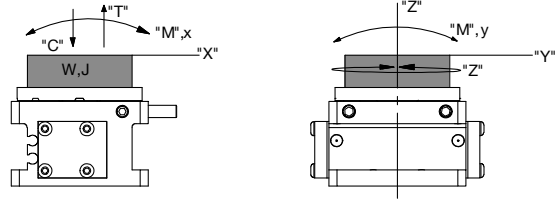


# ROTARY ACTUATOR DRF-106M FLANGED SERIES

## Specifications

### DRF-106M

Maximum Payload with shocks (-A)	8 lbs.	3.6 kg
Maximum Payload without shocks	4 lbs.	1.8 kg
Maximum Payload Inertia with shocks (-A)	0.0414 in-lbs.-sec. <sup>2</sup>	4.7 X 10 <sup>-3</sup> N-m-sec. <sup>2</sup>
Maximum Payload Inertia without shocks	0.0207 in-lbs.-sec. <sup>2</sup>	2.3 X 10 <sup>-3</sup> N-m-sec. <sup>2</sup>
Maximum Torque @ 100psi/7 bar	33.2 lbs.-in.	3.8 N-m
Maximum Rotation	180°	180°
Pitch Diameter of Pinion	0.750 in.	19.1 mm
Weight with shocks (-A Option)	3.1 lbs.	1.4 kg
Weight without shocks	2.5 lbs.	1.1 kg
Pressure Range	40-100 psi	3-7 bar
Bore	1.063 in.	27.0 mm
Displacement (180°)	1.16 in. <sup>3</sup>	19.0 cm <sup>3</sup>
Actuation Time (180° @ 100psi/7 bar)	0.60 sec.	0.60 sec.
Actuation Time (90° @ 100psi/7 bar)	0.45 sec.	0.45 sec.
Over Travel (each end)	1° to 3°	1° to 3°
Temperature Range without Shocks	-30°~180° F	-35°~82° C
Temperature Range with Shocks (-A)	32°~150° F	0°~66° C
End Stop Adjustability (each end)	23°	23°
Repeatability	±0.02°	±0.02°
Valve required to actuate	4-way, 2-position	

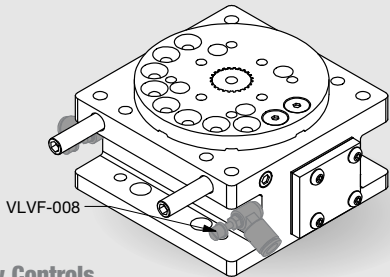


## Loading Capacity

	Static	Dynamic
Maximum Tensile <b>T</b>	25 lbs. [111 N]	5 lbs. [22 N]
Maximum Compressive <b>C</b>	50 lbs. [89 N]	10 lbs. [44 N]
Maximum Moment <b>M<sub>x</sub></b>	75 in-lbs. [8.5 Nm]	15 in-lbs. [1.7 Nm]
Maximum Moment <b>M<sub>y</sub></b>	75 in-lbs. [8.5 Nm]	15 in-lbs. [1.7 Nm]
Maximum Payload <b>W (with shocks)</b>	8 lbs. [3.6 kg]	
Maximum Inertia <b>J (with shocks)</b>	0.0414 in-lbs.-sec. <sup>2</sup> (4.7 X 10 <sup>-3</sup> N-m-sec. <sup>2</sup> )	

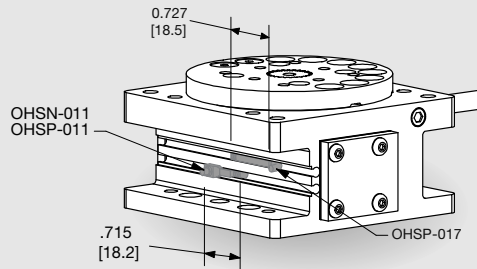
**Note:** Higher payloads and inertia possible with external shocks and stops.

## Accessory Mounting Technical Data



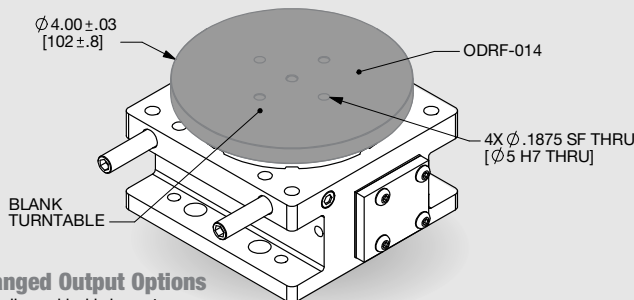
### Flow Controls

- Flow controls for adjusting rotational speed



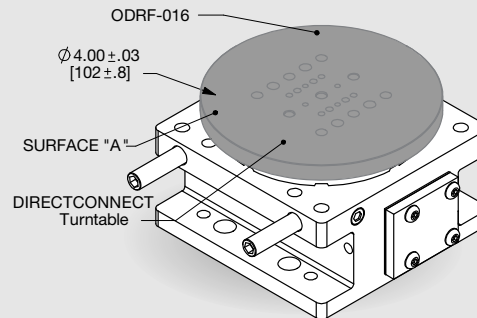
### Sensors

- PNP and NPN Magneto
- Resistive available
- Sensors are slot mounted, no mounting kits required
- Simple adjustment with slotted screw driver
- Built-in LED for ease of positioning and troubleshooting
- Low profile underflush sensor version or 90° wire exit sensor version
- Available with 2M or 5M Quick Disconnect mating cable (order separately)
- Sensor Magnet standard



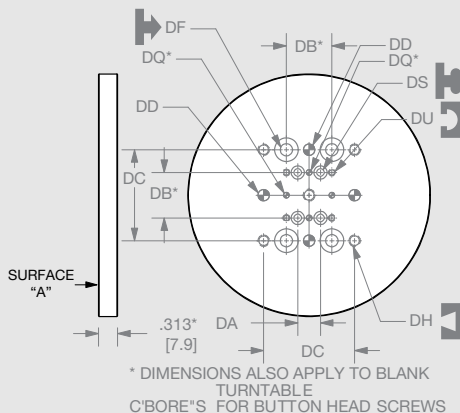
### Flanged Output Options

- Easily machinable by customer
- Blank Turntable, easily removed, pin located
- High quality aircraft aluminum, Black anodize finish
- Mounts through pinion with one screw & two dowels



### Flanged Output DIRECTCONNECT Turntable

- DIRECTCONNECT Turntable, easily removed, pin located
- High quality aircraft aluminum, Black anodize finish
- Mounts through pinion with one screw & two dowels
- No machining required, DIRECTCONNECT Grippers mount directly
- 90° orientations



### DIRECTCONNECT DIMENSIONS

#### STANDARD MOUNTING PATTERN FOR ALL SIZES

	Imperial (inches)	Metric (mm)
DA	.375	9.5
DB	.750	19.1
DC	1.500	38.1
DD		5 mm THRU
DF		C'bore for M5 Button head screws
DH		M5 THRU
DQ		3 H7 THRU
DS		C'bored for M3 Button head screws
DU		M3 THRU





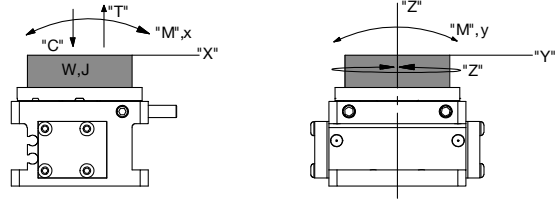


# ROTARY ACTUATOR DRF-131M FLANGED SERIES

## Specifications

### DRF-131M

Maximum Payload with shocks (-A) .....	15 lbs.	6.8 kg
Maximum Payload without shocks .....	7.5 lbs.	3.4 kg
Maximum Payload Inertia with shocks (-A) .....	0.0970 in.-lbs.-sec. <sup>2</sup>	1.1 X10 <sup>-2</sup> N-m-sec. <sup>2</sup>
Maximum Payload Inertia without shocks .....	0.0485 in.-lbs.-sec. <sup>2</sup>	5.5 X10 <sup>-3</sup> N-m-sec. <sup>2</sup>
Maximum Torque @ 100psi/7 bar .....	67.6 lbs-in.	7.6 N-m
Maximum Rotation .....	180°	180°
Pitch Diameter of Pinion .....	1.000 in.	25.4 mm
Weight with shocks (-A Option) .....	6.8 lbs.	3.1kg
Weight without shocks .....	6.3 lbs.	2.9 kg
Pressure Range .....	40-100 psi	3-7 bar
Bore .....	1.313 in.	33.4 mm
Displacement (180°) .....	2.11 in. <sup>3</sup>	34.6 cm <sup>3</sup>
Actuation Time (180° @ 100psi/7 bar) .....	0.87 sec.	0.87 sec.
Actuation Time (90° @ 100psi/7 bar) .....	0.68 sec.	0.68 sec.
Over Travel (each end) .....	1° to 3°	1° to 3°
Temperature Range without Shocks .....	-30°~180° F	-35°~82° C
Temperature Range with Shocks (-A) .....	32°~150° F	0°~66° C
End Stop Adjustability (each end) .....	23°	23°
Repeatability .....	±0.02°	±0.02°
Valve required to actuate .....	4-way, 2-position	

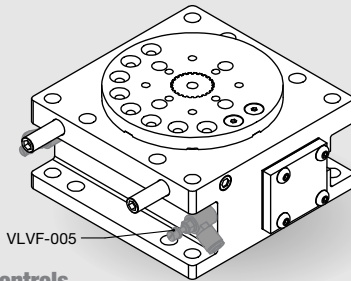


## Loading Capacity

	Static	Dynamic
Maximum Tensile <b>T</b>	50 lbs. [222 N]	10 lbs. [44 N]
Maximum Compressive <b>C</b>	100 lbs. [445 N]	20 lbs. [89 N]
Maximum Moment <b>M<sub>x</sub></b>	100 in.-lbs. [11.3 Nm]	20 in.-lbs. [2.3 Nm]
Maximum Moment <b>M<sub>y</sub></b>	100 in.-lbs. [11.3 Nm]	20 in.-lbs. [2.3 Nm]
Maximum Payload <b>W (with shocks)</b>	15 lbs. [6.8 kg]	
Maximum Inertia <b>J (with shocks)</b>	0.0970 in.-lbs.-sec. <sup>2</sup> (1.1 X 10 <sup>-2</sup> N-m-sec. <sup>2</sup> )	

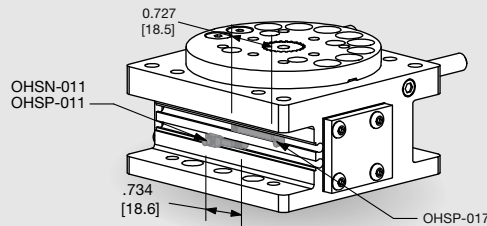
**Note:** Higher payloads and inertia possible with external shocks and stops.

## Accessory Mounting Technical Data



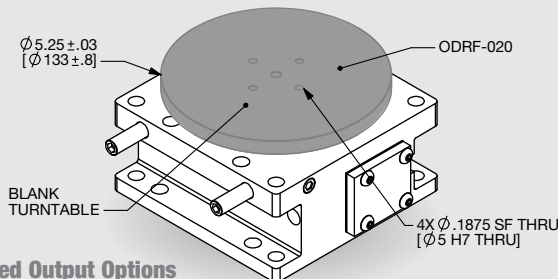
### Flow Controls

- Flow controls for adjusting rotational speed



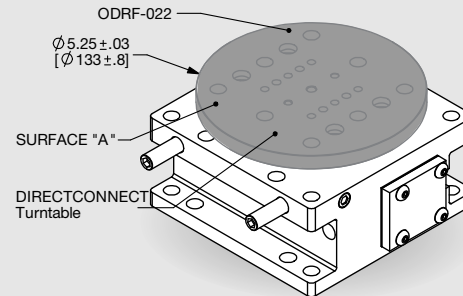
### Sensors

- PNP and NPN Magneto
- Resistive available
- Sensors are slot mounted, no mounting kits required
- Simple adjustment with slotted screw driver
- Built-in LED for ease of positioning and troubleshooting
- Low profile underflush sensor version or 90° wire exit sensor version
- Available with 2M or 5M Quick Disconnect mating cable (order separately)
- Sensor Magnet standard



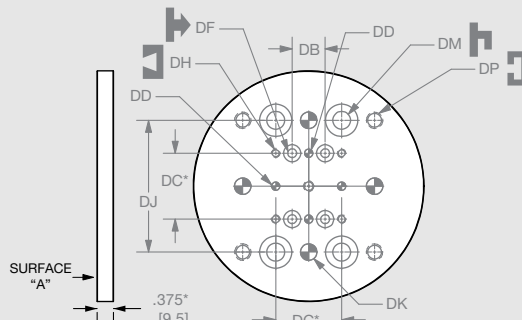
### Flanged Output Options

- Easily machinable by customer
- Blank Turntable, easily removed, pin located
- High quality aircraft aluminum, Black anodize finish
- Mounts through pinion with one screw & two dowels



### Flanged Output DIRECTCONNECT Turntable

- DIRECTCONNECT Turntable, easily removed, pin located
- High quality aircraft aluminum, Black anodize finish
- Mounts through pinion with one screw & two dowels
- No machining required, DIRECTCONNECT Grippers mount directly
- 90° orientations



\* DIMENSIONS ALSO APPLY TO BLANK TURNTABLE C'BORE'S FOR BUTTON HEAD SCREWS

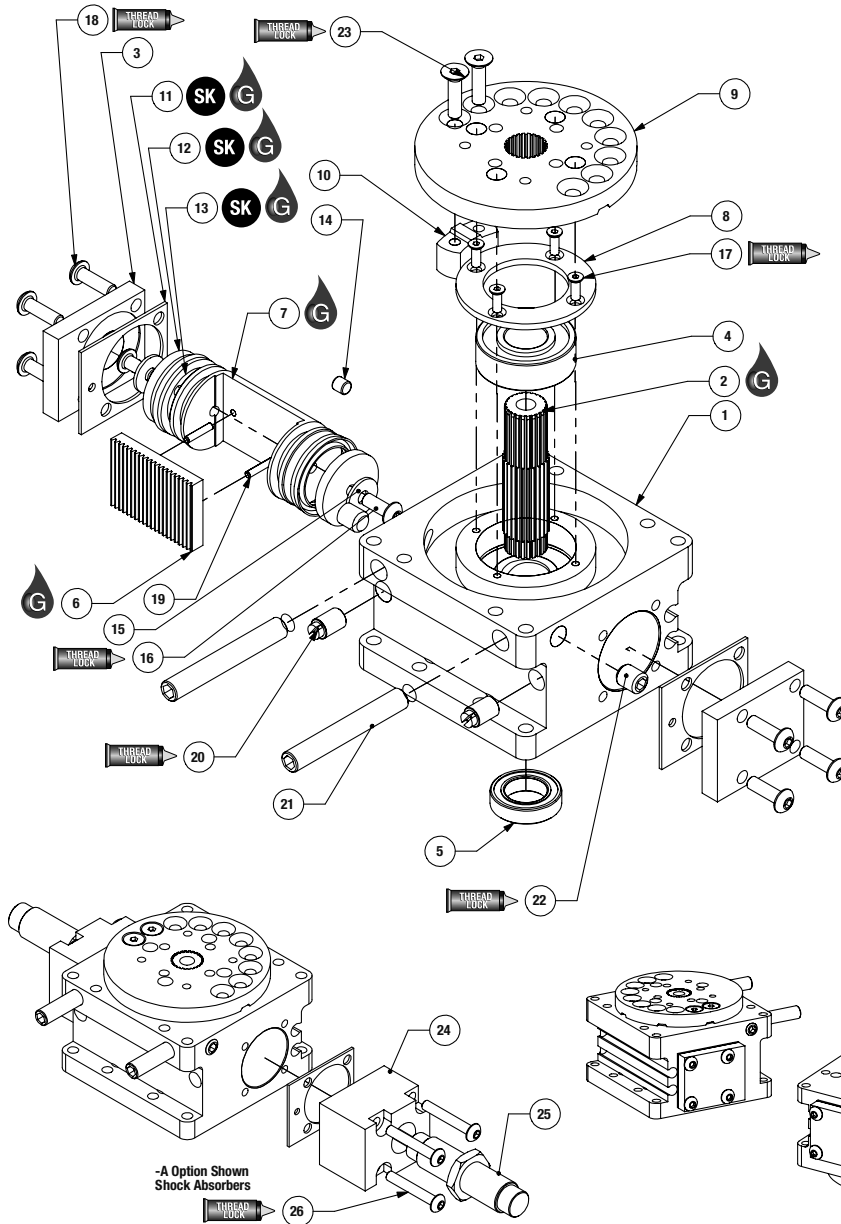
### DIRECTCONNECT DIMENSIONS STANDARD MOUNTING PATTERN FOR ALL SIZES

	Imperial (inches)	Metric (mm)
DB	.750	19.1
DC	1.500	38.1
DD	.1880 THRU	5 mm THRU
DF		C'bore for M5 Button head screws
DH		M5 THRU
DJ		76.2
DK		10mm THRU
DM		C'bore for M10 Button head screws
DP		M10 THRU

# DRF SERIES EXPLODED VIEW

DRF SERIES  
MAINTENANCE

3.24



Item	Qty	Name
01	1	Body
02	1	Pinion Shaft
03	2	End Plates
04	1	Upper Bearing
05	1	Lower Bearing
06	1	Rack
07	1	Piston
08	1	Bearing Retainer
09	1	Hub
10*	1	Stop Puck
11	2	Gaskets
12	2	Urethane Bumpers
13	2	U-cups
14	1	Magnet
15	2	Bumper Washers
16	2	Bumper Screws
17	4	Retainer Screws
18	8	End Plate Screws
19	2	Roll Pins
20*	2	Fixed Orifices
21	2	Stop Screws
22	2	Stop Screw Locking Screws
23	2	Stop Puck Screws
24	2	Shock Block
25	2	Shocks
26	8	Shock Block Mounting Screws

**\*NOTES:**

- 1) Contact the Robohand Sales Department for a complete spare parts list with order numbers and prices.
- 2) Item #10 Quantity 1 for 180° rotations, all other rotations Quantity 2
- 3) Item #20 not in size -131

**Assembly Procedure**

- 1) Press the Upper Bearing #4 onto the Pinion #2.
- 2) Install the Bearing Retainer #8 onto the Pinion #2 and press the Hub #9 onto the pinion: install the Stop Puck #10 onto the Hub with the stop puck Screws #23.
- 3) Assemble the Rack #6 to the Piston #7 with Roll Pins #19.
- 4) Grease the U-Cups #13 and install them onto the Piston #7.
- 5) Press the Magnet #14 into the Piston #7.
- 6) Assemble the Bumper #12, Washers #15 and Bumper Screw #16 onto the Piston #7.
- 7) Lubricate the Body #1 bore and install the Piston Assembly into the body.
- 8) Press the Lower Bearing #5 into the Body #1.
- 9) Locate the Piston assembly so it is aligned with an outer edge of the body.

- 10) Lubricate the Pinion assembly and align the key with the same edge of the Body as the Piston and Press the Pinion into the Body.
- 11) Rotate the Hub Assembly through the full travels and insure that the Piston is correctly located in the Body, adjust the travel of the Piston if necessary.
- 12) Grease the Gasket #11 and install the End Plate #3 onto the Body #1.
- 13) Install the 2 Orifices #20 into the Body #1 screw them in until they bottom.
- 14) Install the Bearing Retainer Screws #17.

**-A Option Assembly Procedure:**

- 1) Install the Shock Absorber #25 in to the Shock Blocks #24, use Teflon® tape to seal and tighten the lock nut if shock comes with one.
- 2) Screw the Shock Block onto the Body using the



Seal Kit Items



Thread Locker



Krytox™ Lubricant



Lightweight Machine Oil



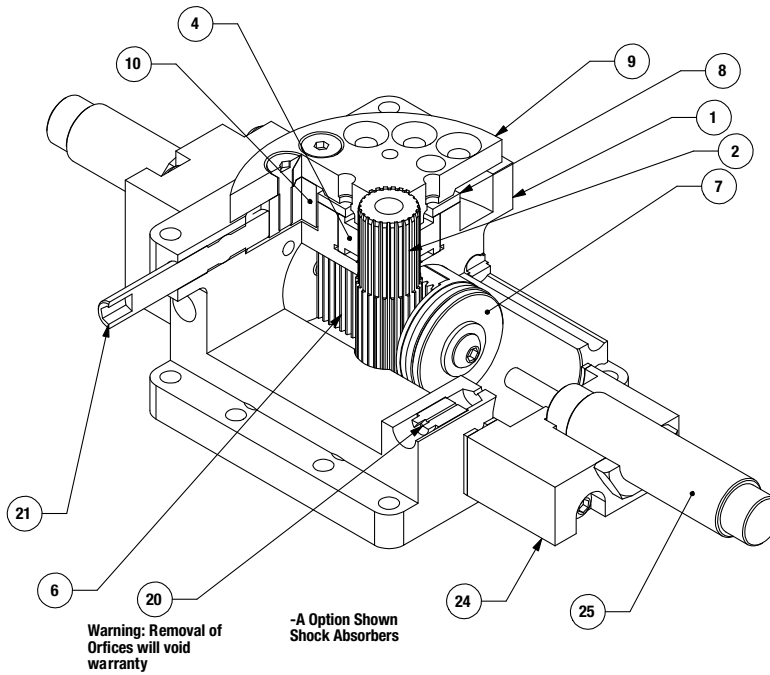
Teflon™ Based Grease



Super Bonder



Third Angle Projection

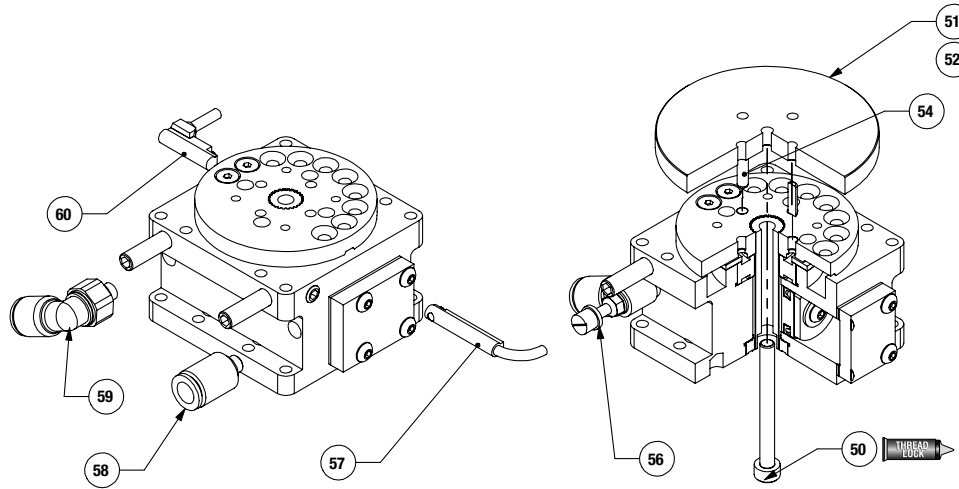


Item	Qty	Name
01	1	Body
02	1	Pinion Shaft
04	1	Upper Bearing
06	1	Rack
07	1	Piston
08	1	Upper Bearing Retainer
09	1	Hub
10*	2	Stop Pucks
20	2	Fixed Orifices
21	2	Stop Screws
24	2	Shock Blocks
25	2	Shocks

**\*NOTES:**

- 1) Contact the Robohand Sales Department for a complete spare parts list with order numbers and prices.
- 2) Item #10 Quantity 1 for 180° rotations, all other rotations Quantity 2.

## Accessory Installation & Adjustment Instructions



Item	Qty	Name
50	1	Soc Head Cap Screw
51	1	Blank Turntable
52	1	DIRECTCONNECT Turntable
54	2	Dowel Pins
56	1 or 2	Adjustable Flow Control
57	1 or 2	Magneto Resistive Sensor, with Quick Disconnect
58	1 or 2	Plumbing Fitting, Push-in straight
59	1 or 2	Plumbing Fitting, Push-in 90° Elbow
60	1 or 2	Magneto Resistive Sensor, 90° barrel, with Quick Disconnect

**Magneto Resistive Sensors**

- 1) Insert sensors #57 or #60 from either end of the profile slots and set the sensor with the integrated slotted screw set.

**Plumbing Fittings**

- 1) Plumbing fittings #58 & #59 can be used in any airport.
- 2) Flow controls #56 can be inserted and used in any airport.

**Turntable**

- 1) Insert the two Dowel Pins #54 into the hub (slip fit).
- 2) Attach the turntable #51 or #52, onto the dowel Pins.
- 3) Put thread lock on the Socket Head Screw #50, insert it through the Pinion and tighten.

--	--	--	--	--	--	--

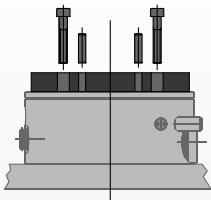
# Rotary Actuators- Light Duty, Flange Output

- Tight spaces:**  
 The "ultra thin" profile and bearing supported flange provide an extremely compact package for tight space applications. Payload can be connected directly to the flange without the need for extra bearing support.
- Precision applications:**  
 Zero backlash, preloaded ball bearings, and slip fit dowel pins make this a very precise and repeatable rotary actuator.
- Rotary Air Manifold**  
 Eliminates twisted airline.

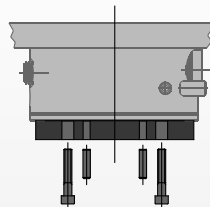


## Mounting Information:

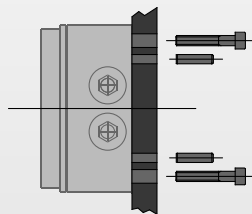
### Mounts and operates in any orientation



Payload attaches to flange with screws and locates by using dowel pins



Unit can operate inverted with payload attached to the flange.



Body mounts with screws and locates with dowel pins for accuracy

## Technical Specifications:

### Pneumatic Specifications

Pressure Operating Range  
Cylinder Type  
Dynamic Seals  
Valve Required to Operate

<b>Imperial</b>	<b>Metric</b>
30-100 psi	2-7 bar
Dual Double Acting	
Internally Lubricated Buna-N	
4-way, 2-position	

### Air Quality Requirements

Air Filtration  
Air Lubrication  
Air Humidity

40 Micron or Better
Not Necessary*
Low Moisture Content (dry)

### Temperature Operating Range

Buna-N Seals (standard)  
Viton Seals (optional)

-30°~180° F	-35°~80° C
-20°~300° F	-30°~150° C

### Maintenance Specifications<sup>†</sup>

Expected Life  
Normal Application  
w/ Preventative Maintenance  
Field Repairable  
Seal Repair Kits Available

5 million cycles
10+ million cycles*
Yes
Yes

\*Addition of lubrication will greatly increase service life  
† See Maintenance Section

## Product Features

### Non-Adjustable Flow Controls

Built-in for smooth motion. Additional adjustable flow controls available

### Hardened Tool Steel

Rack and pinion components are made from hardened tool steels

### Optional Flange Seal

For harsh environments. Can be used with purge or scavenge port

### Dowel Holes

Slip fit dowel holes in body and flange

### Flange Hardstops

Located directly on the flange beneath the payload

### Optional Clean Room Seal

Assembled with flange seal, clean room grade lubricant, and corrosion resistant hardware

### Sensors

Sensors and Mounting Kits sold separately

### Preloaded Bearing

Precision bearing is preloaded for maximum support and zero play

### Optional Single Line Rotary Manifold

Eliminates twisted air line

### Adjustable Stop Screws

Adjustable stop screws to adjust rotational position

### Self-Lubricating Seals

Self lubricating dynamic seals (Buna-N only)

### Direct Replacement

RR-18 & RR-28 are retrofittable from RR-16 & RR-26

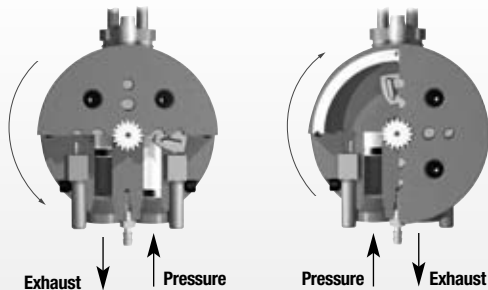
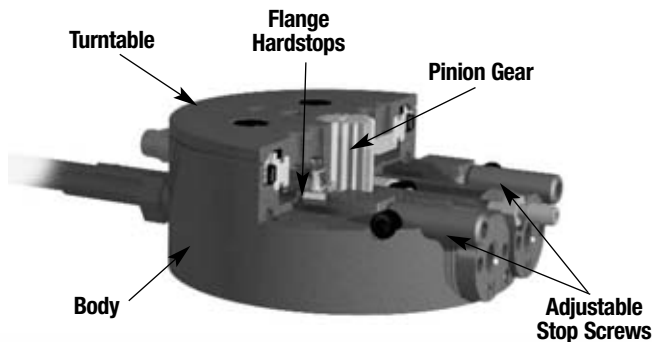
### Quality Components

One piece high strength 6013-T6 aircraft quality aluminum body and flange

### Anodized Components

Body and flange are hard-coat anodize to 60RC with Teflon® impregnation

## Operating Principle



- Air pressure supplied to both cylinders simultaneously using internal porting, drives the piston racks in opposite directions.
- The piston racks simultaneously drive the pinion gear which is attached to the flange.
- The flange is supported in the body by a preloaded ball bearing
- Hardstops, located directly on the flange, reduce wear on internal drive components.

**Designed and manufactured in the USA**

## Style-RR Rotary Actuator

### Size -18M

Style:	RR-18	RR-18M
Max. Payload:	1 lbs.	0.45 Kg
Torque:	6.5 in/lbs	0.7 N-m
Weight:*	0.44 lbs.	0.20 Kg

\*Base unit.

See Page **3.28**



## Style-RR Rotary Actuator

### Size -28M

Style:	RR-28	RR-28M
Max. Payload:	3 lbs.	1.3 Kg
Torque:	22 in/lbs	2.5 N-m
Weight:*	1.20 lbs.	0.55 Kg

\*Base unit.

See Page **3.29**



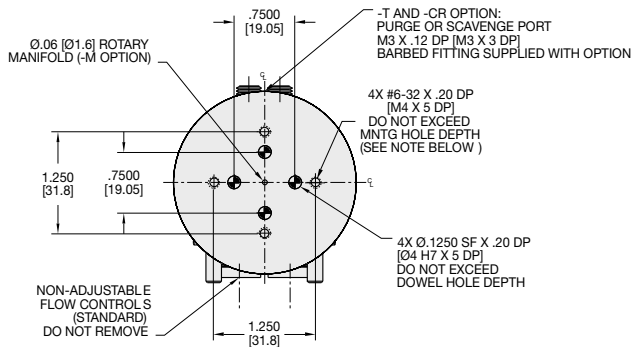


# ROTARY ACTUATORS RR-18M FLANGE OUTPUT SERIES

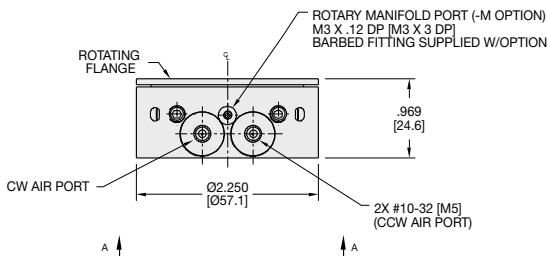


RR SERIES

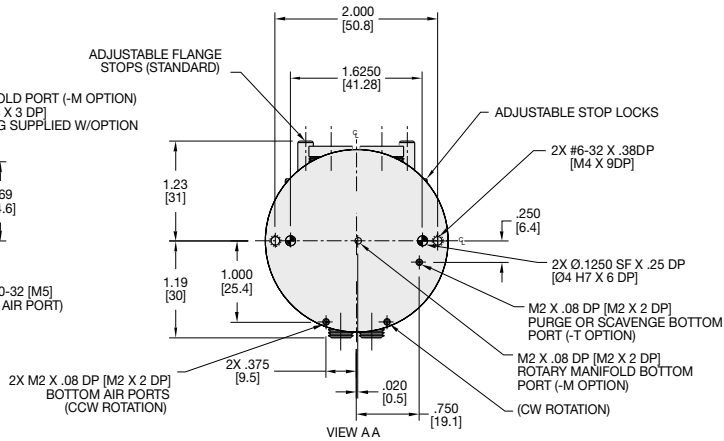
3.28



UNIT SHOWN IN 0° POSITION ROTATED FULLY CW



PLEASE NOTE: THE ONLY FEATURES THAT ARE NOT DIRECTLY RETROFITABLE TO THE RR-16 IS THE SHALLOWER TAP DOWEL DEPTH ON THE TURNTABLE AND THE DIFFERENT SENSORS AND SENSOR MOUNTING KIT.

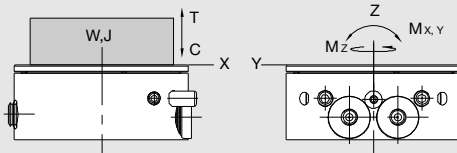


Specifications	RR-18	RR-18M
Maximum Payload.....	1.0 lbs.	0.45 Kg
Maximum Payload Inertia.....	0.0016 in-lb-sec <sup>2</sup>	0.000181 N-m-sec <sup>2</sup>
Maximum Rotation.....	180°	180°
Maximum Torque Mid-Stroke @ 100 PSI.....	6.5 in-lbs.	0.7 N-m
Maximum Torque End of Stroke @ 100 PSI..	6.5 in-lbs.	0.7 N-m
Pitch Diameter of Pinion.....	0.333 in.	8.46mm
Weight.....	0.48 lbs.	0.22 Kg
Pressure Range.....	30-100 psi	2-7 bar
Bore Ø (2X).....	0.500 in.	12.70 mm
Displacement.....	0.205 in <sup>3</sup>	3.37 cm <sup>3</sup>
Temperature Range		
Standard Seals.....	-30°~180° F	-35°~80° C
Viton Seals.....	-20°~300° F	-30°~150° C
Actuation Time (180° @ 80PSI/5.5 Bar).....	0.30 sec.	0.30 sec.
Actuation Time (90° @ 80PSI/5.5 Bar).....	0.25 sec.	0.25 sec.
End Stop Repeatability.....	±0.02°	±0.02°
End Stop Adjustability.....	23°	23°
Over-Travel (each direction).....	4°	4°
Valve required to actuate.....	4-way, 2-position	

### UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

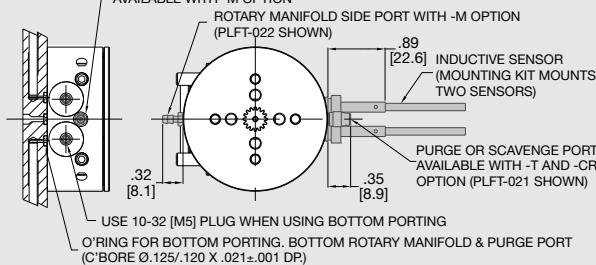
Dimensions are symmetrical about centerline	Third Angle Projection	All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or [±.013mm]	Metric Threads Course Pitch	<b>Imperial in.</b> 0.00 = ±.01 0.000 = ±.005 0.0000 = ±.0005	<b>Metric [mm]</b> [0.] = [±.25] [0.0] = [±.13] [0.00] = [±.013]
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## Loading Information



Loading Capacity	Static		Dynamic	
	Imperial	Metric	Imperial	Metric
Maximum Tension <b>T</b>	50 lbs	222 N	10 lbs	44 N
Maximum Compression <b>C</b>	250 lbs	1112 N	50 lbs	222 N
Maximum Moment <b>M<sub>x</sub></b>	100 in.-lbs.	11 Nm	20 in.-lbs.	2 Nm
Maximum Moment <b>M<sub>y</sub></b>	100 in.-lbs.	11 Nm	20 in.-lbs.	2 Nm
Maximum Payload <b>W</b>			1 lbs.	0.45 Kg
Maximum Inertia <b>J</b>			0.0016 in-lb-sec <sup>2</sup>	0.000181 N-m-sec <sup>2</sup>

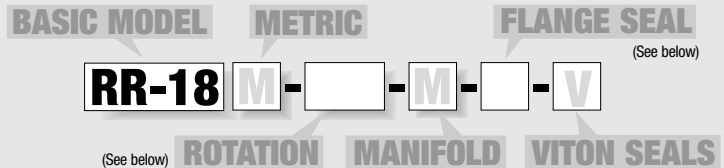
USE M3 PLUG WHEN USING BOTTOM PORT FOR BOTTOM MANIFOLD. AVAILABLE WITH -M OPTION



USE 10-32 [M5] PLUG WHEN USING BOTTOM PORTING

O-RING FOR BOTTOM PORTING. BOTTOM ROTARY MANIFOLD & PURGE PORT (C BORE Ø.125/.120 X .021±.001 DP)

## How to Order: (Order Accessories separately from Basic Model)



DEGREE OF ROTATION 45°, 90°, 135°, or 180°  
(consult factory for intermediate degrees of rotation)

### FLANGE SEAL OPTION -T, -CR

-T Sealed Flange, -CR Sealed Flange w/Food Grade Grease & Corrosion Resistant Hardware

### SENSOR ACCESSORIES

	STANDARD	METRIC	QTY/UNIT
Sensor Mounting Kit (mounts 2 sensors)	<b>OSMK-024</b>	<b>OSMK-024</b>	<b>1</b>
NPN Inductive Sensor with Quick Disconnect*	<b>OISN-014</b>	<b>OISN-014</b>	<b>1 or 2</b>
PNP Inductive Sensor with Quick Disconnect*	<b>OISP-014</b>	<b>OISP-014</b>	<b>1 or 2</b>
Quick Disconnect 2M Cable Length*	<b>CABL-010</b>	<b>CABL-010</b>	<b>1 or 2</b>
Quick Disconnect 5M Cable Length*	<b>CABL-013</b>	<b>CABL-013</b>	<b>1 or 2</b>

### PNEUMATIC ACCESSORIES

M3 Plumbing Fitting Push-In for 3mm OD Tube	<b>PLFT-021</b>	<b>PLFT-021</b>	<b>2</b>
M3 Plumbing Fitting Barb for 2mm ID Tube	<b>PLFT-022</b>	<b>PLFT-022</b>	<b>2</b>
#10-32 Flow Control	<b>VLVF-007</b>		<b>2</b>
M5 Flow Control		<b>VLVF-008</b>	<b>2</b>
Standard Seal Repair Kit	<b>SLKT-173</b>	<b>SLKT-173</b>	<b>1</b>
Viton Seal Repair Kit	<b>SLKT-173V</b>	<b>SLKT-173V</b>	<b>1</b>
Bottom Air Ports Manifold Seal Kit	<b>SLKT-174V</b>	<b>SLKT-174V</b>	<b>1</b>

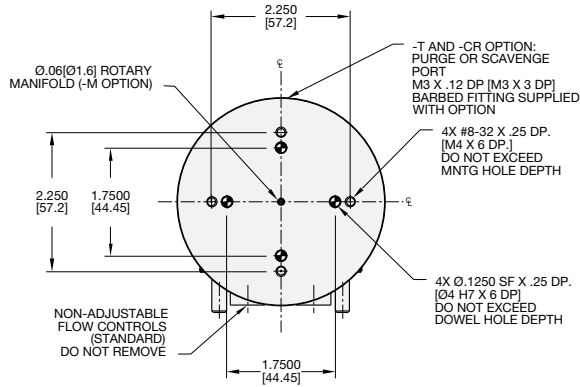
\*Sensor and cable sold separately.

Please see back cover for DE-STA-CO Global Locations. [www.destaco.com](http://www.destaco.com)

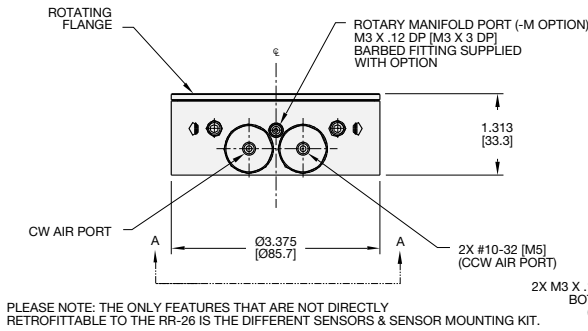
[www.comoso.com](http://www.comoso.com)



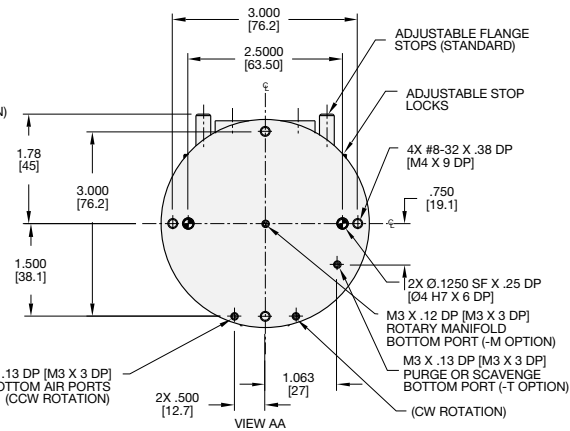
# ROTARY ACTUATORS RR-28M FLANGE OUTPUT SERIES



UNIT SHOWN IN 0° POSITION ROTATED FULLY CW



Specifications	RR-28	RR-28M
Maximum Payload.....	3.0 lbs.	1.36 Kg
Maximum Payload Inertia.....	0.0111 in-lb-sec <sup>2</sup>	0.001255 N-m-sec <sup>2</sup>
Maximum Rotation.....	180°	180°
Maximum Torque Mid-Stroke @ 100 PSI.....	22 in-lbs.	2.5 N-m
Maximum Torque End of Stroke @ 100 PSI.....	22 in-lbs.	2.5 N-m
Pitch Diameter of Pinion.....	0.50 in.	12.7 mm
Weight.....	1.44 lbs.	0.65 Kg
Pressure Range.....	30-100 psi	2-7 bar
Bore Ø (2X).....	0.750 in.	19.05 mm
Displacement.....	0.69 in <sup>3</sup>	11.4 cm <sup>3</sup>
Temperature Range		
Standard Seals.....	-30°~180° F	-35°~80° C
Viton Seals.....	-20°~300° F	-30°~150° C
Actuation Time (180° @ 80PSI/5.5 Bar).....	0.35 sec.	0.35 sec.
Actuation Time (90° @ 80PSI/5.5 Bar).....	0.30 sec.	0.30 sec.
End Stop Repeatability.....	±0.02°	±0.02°
End Stop Adjustability.....	23°	23°
Over-Travel (each direction).....	8°	8°
Valve required to actuate.....	4-way, 2-position	

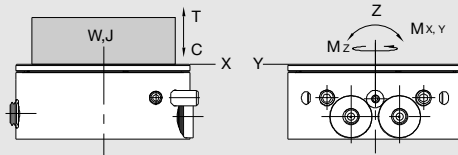


### UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

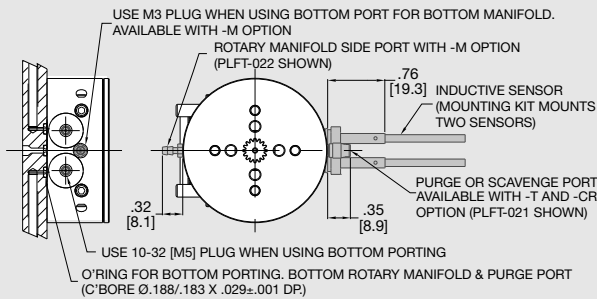
Symbol	Imperial in.	Metric [mm]
⊕	0.00 ± .01	[0.] = ± .25
⊖	0.000 ± .005	[0.0] = ± .13
⊙	0.0000 ± .0005	[0.00] = ± .013

Dimensions are symmetrical about centerline  
Third Angle Projection  
All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or [±.013mm]  
Metric Threads Course Pitch

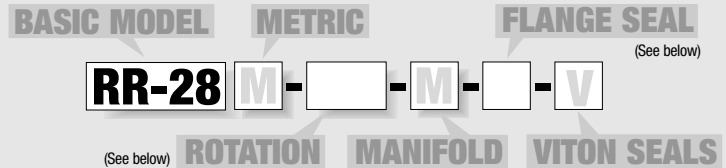
## Loading Information



Loading Capacity	Static		Dynamic	
	Imperial	Metric	Imperial	Metric
Maximum Tension <b>T</b>	75 lbs	334 N	15 lbs	67 N
Maximum Compression <b>C</b>	500 lbs	2224 N	100 lbs	445 N
Maximum Moment <b>M<sub>x</sub></b>	250 in.-lbs.	28 Nm	50 in.-lbs.	6 Nm
Maximum Moment <b>M<sub>y</sub></b>	250 in.-lbs.	28 Nm	50 in.-lbs.	6 Nm
Maximum Payload <b>W</b>	3 lbs.		1.36 Kg	
Maximum Inertia <b>J</b>	0.0111 in-lb-sec <sup>2</sup>		0.001255 N-m-sec <sup>2</sup>	



## How to Order: (Order Accessories separately from Basic Model)



DEGREE OF ROTATION 45°, 90°, 135°, or 180°  
(consult factory for intermediate degrees of rotation)

### FLANGE SEAL OPTION -T, -CR

-T Sealed Flange, -CR Sealed Flange w/Food Grade Grease & Corrosion Resistant Hardware

### SENSOR ACCESSORIES

	STANDARD	METRIC	QTY/UNIT
Sensor Mounting Kit (mounts 2 sensors)	<b>OSMK-024</b>	<b>OSMK-024</b>	<b>1</b>
NPN Inductive Sensor with Quick Disconnect*	<b>OISP-014</b>	<b>OISP-014</b>	<b>1 or 2</b>
PNP Inductive Sensor with Quick Disconnect*	<b>OISP-014</b>	<b>OISP-014</b>	<b>1 or 2</b>
Quick Disconnect 2M Cable Length*	<b>CABL-010</b>	<b>CABL-010</b>	<b>1 or 2</b>
Quick Disconnect 5M Cable Length*	<b>CABL-013</b>	<b>CABL-013</b>	<b>1 or 2</b>

### PNEUMATIC ACCESSORIES

	STANDARD	METRIC	QTY/UNIT
M3 Plumbing Fitting Push-In for 3mm OD Tube	<b>PLFT-021</b>	<b>PLFT-021</b>	<b>2</b>
M3 Plumbing Fitting Barb for 2mm ID Tube	<b>PLFT-022</b>	<b>PLFT-022</b>	<b>2</b>
#10-32 Flow Control	<b>VLVF-007</b>		<b>2</b>
M5 Flow Control		<b>VLVF-008</b>	<b>2</b>
Standard Seal Repair Kit	<b>SLKT-175</b>	<b>SLKT-175</b>	<b>1</b>
Viton Seal Repair Kit	<b>SLKT-175V</b>	<b>SLKT-175V</b>	<b>1</b>
Bottom Air Ports Manifold Seal Kit	<b>SLKT-176V</b>	<b>SLKT-176V</b>	<b>1</b>

\*Sensor and cable sold separately.

Please see back cover for DE-STA-CO Global Locations. [www.destaco.com](http://www.destaco.com)

[www.comoso.com](http://www.comoso.com)

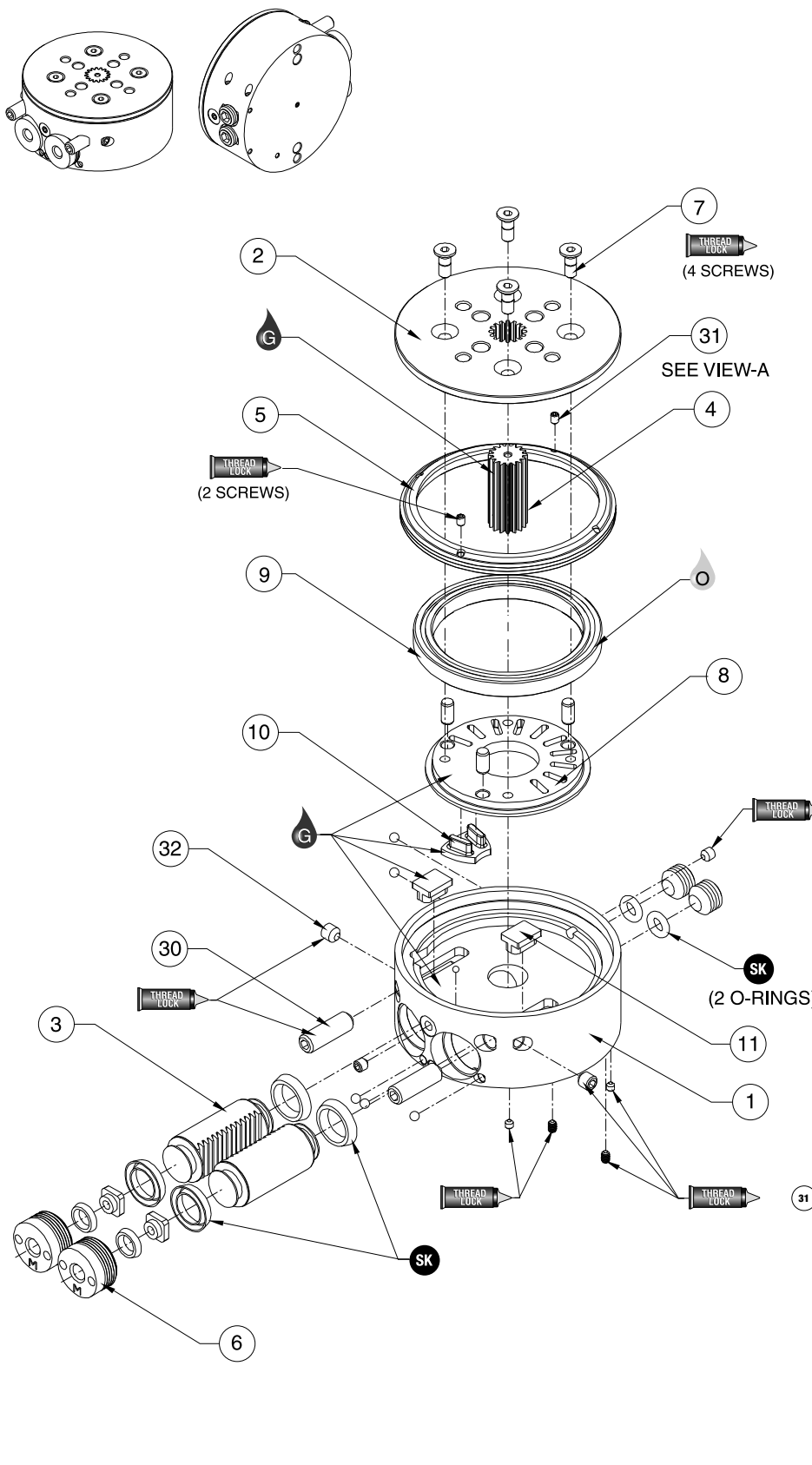
RR SERIES

3.29

# RR-18, -28 Series Exploded View

RR-18 & 28  
SERIES  
MAINTENANCE

3.30



Item	Qty	Name
01	1	Body
02	1	Flange/Turntable
03	2	Rack, Piston
04	1	Pinion
05	1	Lock Nut
06	2	Plug, Flow Control
07	4	Turntable Mounting Screws
08	1	Clamp Plate
09	1	Bearing, Radial
10	1 or 2	Striker
11	2	Puck
30	2	Stop Screw (Stroke Adjustment)
31	2	Sss, Cone Point
32	2	Stop Screw

**NOTE:** Contact the Robohand Sales Department for a complete spare part list with order numbers and prices.

### Assembly Procedure

1. Lubricate and install seals
2. Install racks inside body
3. Install plugs
4. Install stop screws, stop screw locks, and pucks
5. Install striker(s) into desired slot from the chamfer side of the clamp plate and place (striker facing down and away from plugs) onto the pucks.
6. Place bearing over clamp plate and install the lock nut.
7. Using a .035" or 2mm allen wrench, install and lock the 2 cone point set screws (#31) to lock the lock nut in place.
8. Install pinion and dowel pins into turntable and then mate that subassembly to the clamp plate.
9. Install turntable-mounting screws.
10. Fine-tune the stop screws to achieve the desired stroke and then tighten the stop screw locks.

**SK Seal Repair Kit Order #'s  
See Product Data Sheets**

VIEW-A



Seal Kit  
Items



Thread  
Locker



Krytox™  
Lubricant



Lightweight  
Machine Oil



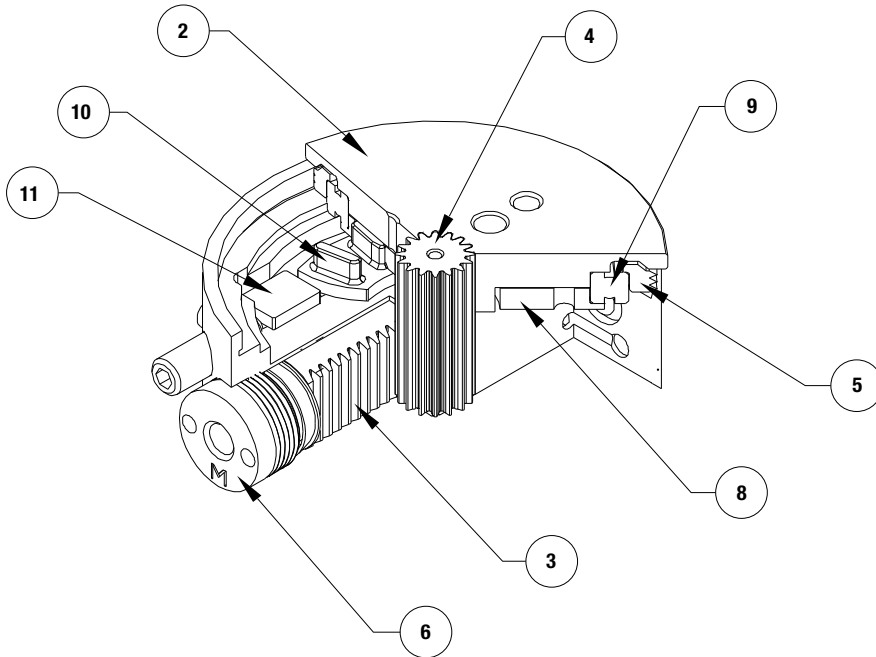
Teflon® Based  
Grease



Super  
Bonder



Third Angle  
Projection



Item	Qty	Name
02	1	Flange/Turntable
03	2	Rack, Piston
04	1	Pinion
05	1	Lock Nut
06	2	Plug, Flow Control
08	1	Clamp Plate
09	1	Bearing, Radial
10	1 or 2	Striker
11	2	Puck
15	1 or 2	Sensor
21	1 or 2	Push-in Fitting
22	1 or 2	Barb Fitting
25	1	Sensor Coupler

**NOTE:** Contact the Robohand Sales Department for a complete spare parts list with order numbers and prices.

## Accessory Installation & Adjustment Instructions

### Installation

For each sensor.

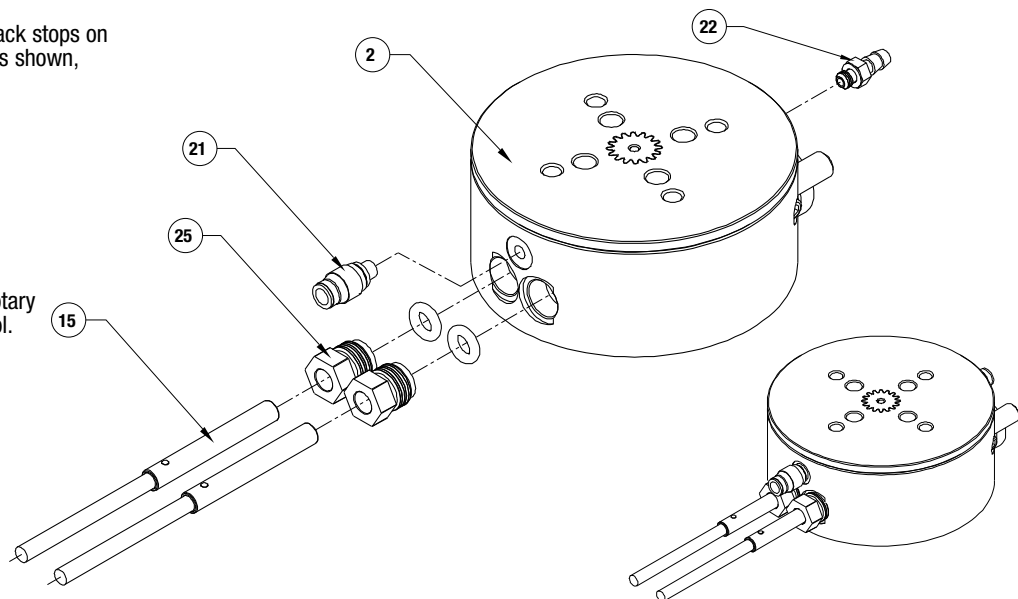
1. Rotate flange so piston rack stops on end stop. Install sensor as shown, pushing in until it stops.
2. Tighten nut.

### Plumbing fittings:

Either the barb fitting or the push-in fitting can be used for any M3 port.

Flow controls (not shown) can be used for the main rotary airports as additional control.

Note: Sensors need to be readjusted when end stops are adjusted.



Seal Kit Items



Thread Locker



Krytox™ Lubricant



Lightweight Machine Oil



Teflon® Based Grease



Super Bonder

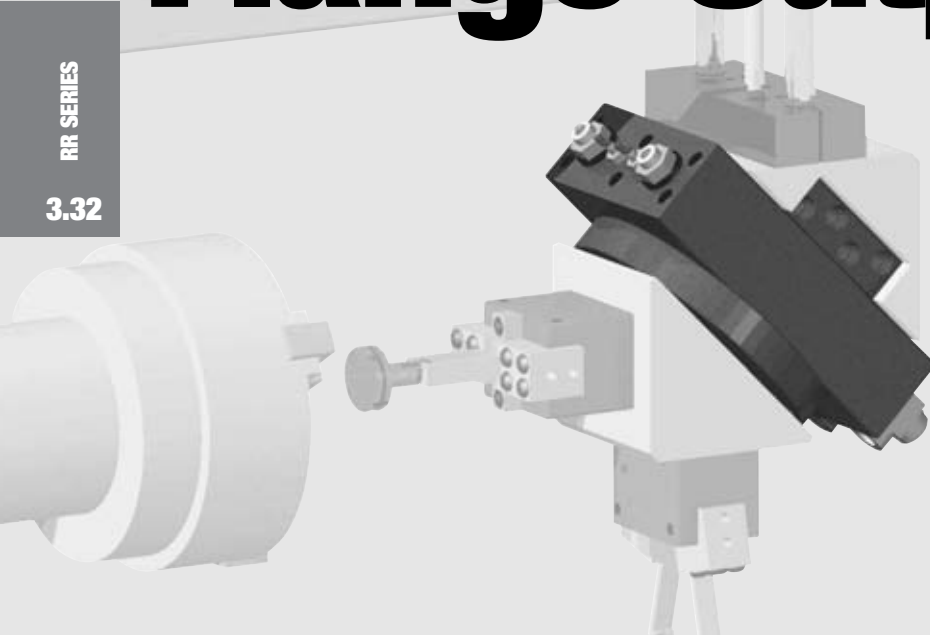


Third Angle Projection

# Rotary Actuators- Medium Duty, Flange Output

RR SERIES

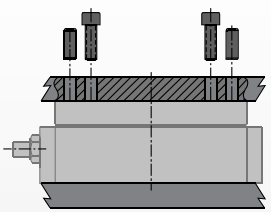
3.32



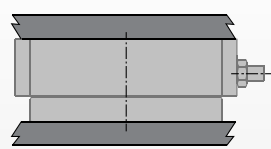
- Tight spaces:**  
 The “ultra thin” profile and bearing supported flange provide an extremely compact package for tight space applications. Payload can be connected directly to the flange without the need for extra bearing support.
- Precision applications:**  
 Zero backlash, preloaded ball bearings, and slip fit dowel pins make this a very precise and repeatable rotary actuator.
- Rotary Air Manifold**  
 Eliminates twisting airlines.

## Mounting Information:

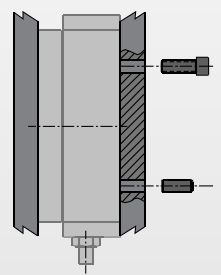
Mounts and operates in any orientation



Payload attaches to flange with screws and locates by using dowel pins



Unit can operate inverted with payload attached to the flange.



Body mounts with screws and locates with dowel pins for accuracy

## Technical Specifications:

<b>Pneumatic Specifications</b>	<b>Imperial</b>	<b>Metric</b>
Pressure Operating Range	40-100 psi	3-7 bar
Cylinder Type	Dual Double Acting	
Dynamic Seals	Internally Lubricated Buna-N	
Valve Required to Operate	4-way, 2-position	

<b>Air Quality Requirements</b>	
Air Filtration	40 Micron or Better
Air Lubrication	Not Necessary*
Air Humidity	Low Moisture Content (dry)

<b>Temperature Operating Range</b>		
Buna-N Seals (standard)	-30°~180° F	-35°~80° C
Viton Seals (optional)	-20°~300° F	-30°~150° C
Temperature range is limited by internal shock absorber (RR-36 and RR-46 only)		
	-32°~150° F	-0°~66° C

<b>Maintenance Specifications<sup>†</sup></b>	
Expected Life	
with Shock Absorbers	1 million cycles
without Shock Absorbers	5 million cycles
w/ Preventative Maintenance	10+ million cycles*
Field Repairable	Yes
Seal Repair Kits Available	Yes

\*Addition of lubrication will greatly increase service life  
<sup>†</sup> See Maintenance Section

## Product Features

**Quality Components**  
One piece high strength 6013-T6 aircraft quality aluminum body and flange

**Internal Shock Absorber**  
Built-in shock absorber

**Dowel Holes**  
Slip fit dowel holes in body and flange

**Anodized Components**  
Body and flange are hard-coat anodize to 60RC with Teflon® impregnation

**Sensors**  
(sold separately-see Accessories Section for more info)

**Adjustable Flow Controls**

**Hardened Tool Steel**  
Rack and pinion components are made from hardened tool steels

**Optional Mid Position Stop**  
Mid position stop for three position applications

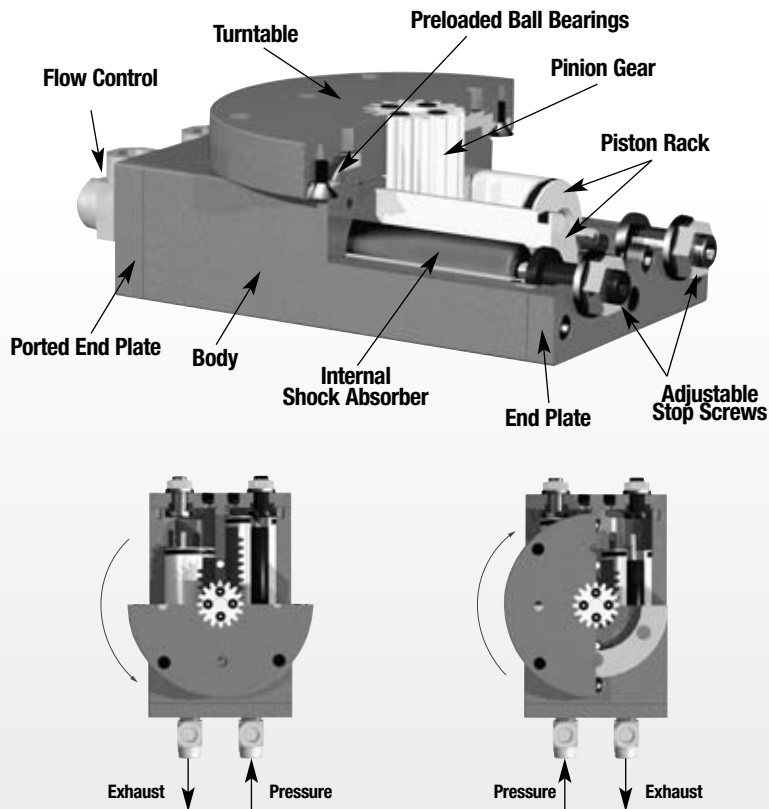
**Adjustable Stop Screws**  
Adjustable stop screws to adjust rotational position

**Self-Lubricating Seals**  
Self lubricating dynamic seals (Buna-N only)

**Preloaded Bearing**  
Precision bearing is preloaded for maximum support and zero play

**Optional Rotary Manifold**  
Eliminates twisting air lines

## Operating Principle



- Air pressure supplied to both cylinders simultaneously using internal porting, drives the piston racks in opposite directions.
- The piston racks simultaneously drive the pinion gear which is attached to the flange.
- The flange is supported in the body by a preloaded ball bearing

**Designed and manufactured in the USA**

## Style-RR Rotary Actuator

### Size -36M

Style:	RR-36	RR-36M
Max. Payload:	8 lbs.	3.6 Kg
Torque:	65 in/lbs	7.4 N-m
Weight:*	2.9 lbs.	1.3 Kg

\*Base unit.



See Pages **3.34**

## Style-RR Rotary Actuator

### Size -46M

Style:	RR-46	RR-46M
Max. Payload:	15 lbs.	6.8 Kg
Torque:	122 in/lbs	14 N-m
Weight:*	5.0 lbs.	2.3 Kg

\*Base unit.



See Pages **3.36**

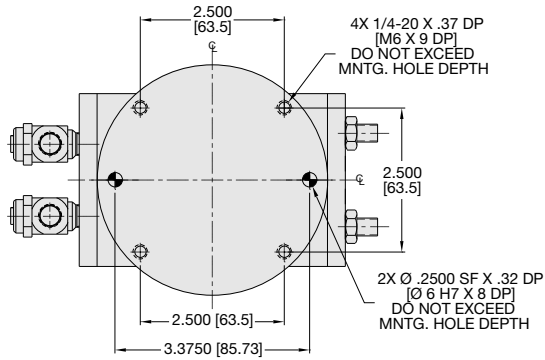


# ROTARY ACTUATORS RR-36M FLANGE OUTPUT SERIES BASE UNIT

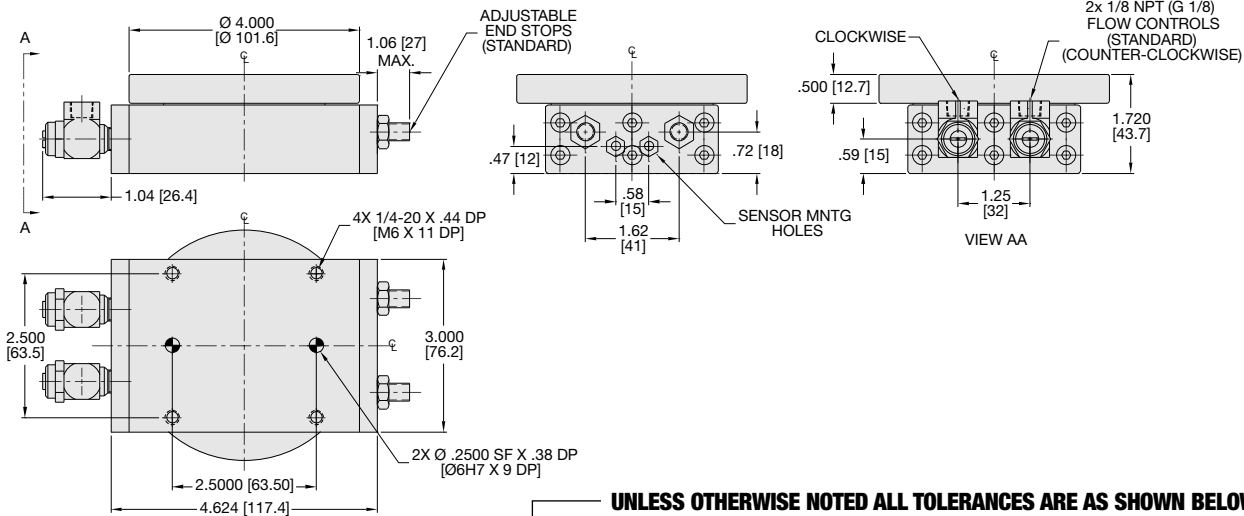


RR SERIES

3.34



UNIT SHOWN IN 0° POSITION ROTATED FULLY CW



Specifications	RR-36	RR-36M
Maximum Payload	8.0 lbs.	3.6 Kg
Maximum Payload Inertia	.0414 in.-lbs.-sec <sup>2</sup>	.00468 N-m-sec <sup>2</sup>
Maximum Rotation	180°	180°
Maximum Torque Mid-Stroke @ 100 PSI	65 in.-lbs.	7.4 N-m
Maximum Torque End of Stroke @ 100 PSI	32 in.-lbs.	3.7 N-m
Weight of Base Unit	2.9 lbs.	1.3 Kg
Pressure Range	40-100 psi	3-7 bar
Bore Ø (2X)	1.0 in.	25.40 mm
Displacement	2.05 in <sup>3</sup>	33.6 cm <sup>3</sup>
Temperature Range		
Standard Seals	32°~150° F	0°~66° C
Viton Seals	32°~150° F	0°~66° C
Actuation Time (180° @ 80PSI/5.5 Bar)	0.35 sec.	0.35 sec.
Actuation Time (90° @ 80PSI/5.5 Bar)	0.25 sec.	0.25 sec.
End Stop Repeatability	±0.02°	±0.02°
End Stop Adjustability	60°	60°
Over-Travel (each direction)	4°	4°
Valve required to actuate		4-way, 2-position

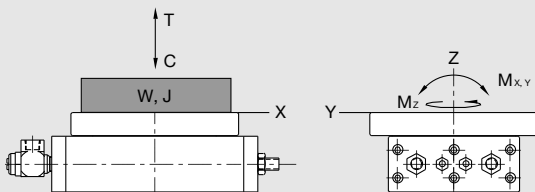
### UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

Dimensions are symmetrical about centerline	Third Angle Projection	All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or [±.013mm]	Metric Threads Course Pitch	<b>Imperial in.</b> 0.00 = ±.01 0.000 = ±.005 0.0000 = ±.0005	<b>Metric [mm]</b> [0.] = [±.25] [0.0] = [±.13] [0.00] = [±.013]
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## Loading Information

## How to Order: (Order Accessories separately from Basic Model)

**RR-36 See Next Page**



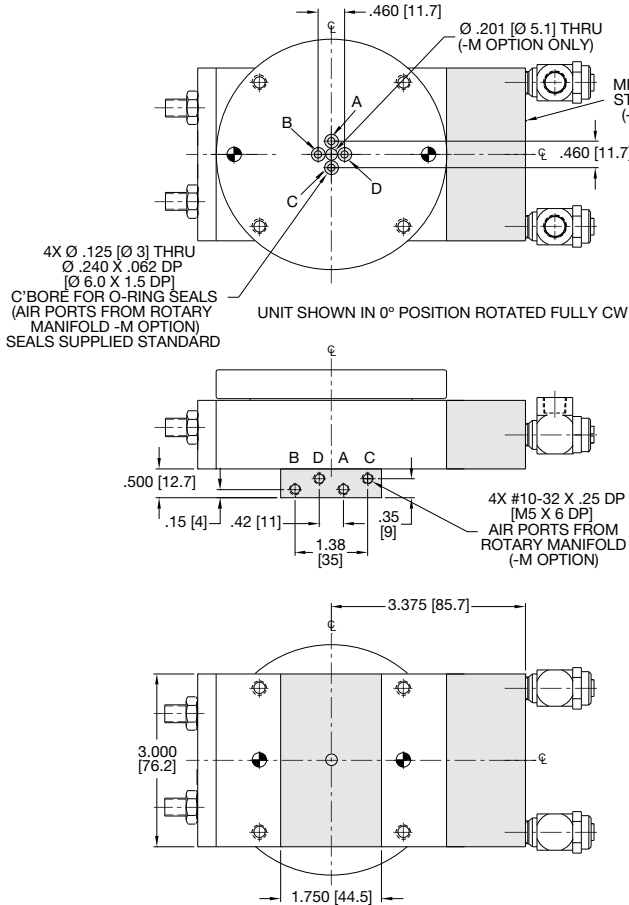
Loading Capacity <sup>†</sup>	Static		Dynamic	
	Imperial	Metric	Imperial	Metric
Maximum Tension <b>T</b>	100 lbs	445 N	20 lbs	89 N
Maximum Compression <b>C</b>	500 lbs	2224 N	100 lbs	445 N
Maximum Moment <b>M<sub>x</sub></b>	300 in.-lbs.	34 Nm	75 in.-lbs.	8 Nm
Maximum Moment <b>M<sub>y</sub></b>	300 in.-lbs.	34 Nm	75 in.-lbs.	8 Nm
Maximum Payload <b>W</b>			8 lbs.	3.64 Kg
Maximum Inertia <b>J</b>			0.0414 in-lb-sec <sup>2</sup>	.00468 N-m-sec <sup>2</sup>

Please see back cover for DE-STA-CO Global Locations. [www.destaco.com](http://www.destaco.com)

[www.comoso.com](http://www.comoso.com)

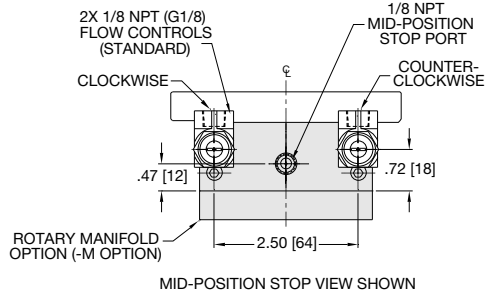


# RR-36M ROTARY ACTUATOR OPTIONS -S, -M, OPTIONAL MID-STOP, ROTARY MANIFOLD



## Specifications

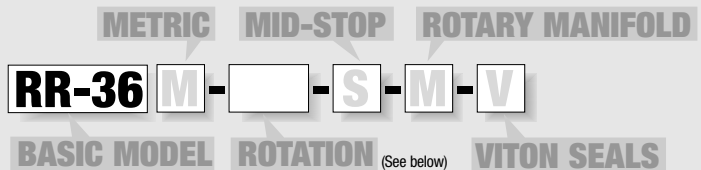
	RR-36	RR-36M
Weight (base unit)	2.9 lbs.	1.3 Kg
Weight Adder for Mid-Position Stop	0.4 lbs.	0.18 Kg
Weight Adder for Rotary Manifold	0.1 lbs.	0.04 Kg
Pressure Range	40-100 psi	3-7 bar
Bore Ø of Mid-Position Stop 2X	1.064 in.	27 mm
Mid-Stop Repeatability	±.5°	±.5°
Displacement of Mid-Position Stop	1.200 in <sup>3</sup>	19.66 cm <sup>3</sup>
Temperature Range		
Standard Seals	32°~150° F	0°~66° C
Viton Seals	32°~150° F	0°~66° C
Valve required to actuate Mid-Stop	3-way, 2-position	



## UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

Dimensions are symmetrical about centerline	Third Angle Projection	All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or [±.013mm]
Metric Threads Course Pitch	<b>Imperial in.</b> 0.00 = ±.01 0.000 = ±.005 0.0000 = ±.0005	<b>Metric [mm]</b> [0.] = [±.25] [0.0] = [±.13] [0.00] = [±.013]

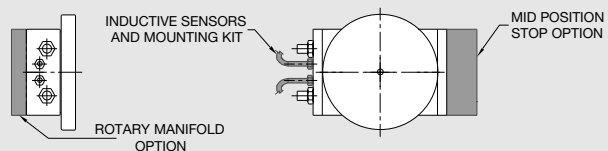
## How to Order: (Order Accessories separately from Basic Model)



**DEGREE OF ROTATION 45°, 90°, 135° or 180°**  
(consult factory for intermediate degrees of rotation)

SENSOR ACCESSORIES	MODEL CODE	ORDER#	QTY/UNIT
Sensor Mounting Kit (Mounts 2 Sensors)		<b>OSMK-024</b>	<b>1</b>
NPN Inductive Sensor with Quick Disconnect*		<b>OISN-014</b>	<b>1 or 2</b>
PNP Inductive Sensor with Quick Disconnect*		<b>OISP-014</b>	<b>1 or 2</b>
Quick Disconnect 2M Cable Length*		<b>CABL-010</b>	<b>1 or 2</b>
Quick Disconnect 5M Cable Length*		<b>CABL-013</b>	<b>1 or 2</b>
PNEUMATIC ACCESSORIES			
Standard Base Unit Seal Repair Kit		<b>SLKT-016</b>	<b>1</b>
Viton Base Unit Seal Repair Kit	<b>-V</b>	<b>SLKT-016V</b>	<b>1</b>
Standard Manifold Seal Repair Kit	<b>-M</b>	<b>SLKT-061</b>	<b>1</b>
Viton Manifold Seal Repair Kit	<b>-M-V</b>	<b>SLKT-061V</b>	<b>1</b>
Standard Mid-Stop Seal Repair Kit	<b>-S</b>	<b>SLKT-062</b>	<b>1</b>
Viton Mid-Stop Seal Repair Kit	<b>-S-V</b>	<b>SLKT-062V</b>	<b>1</b>

\*Sensor and cable sold separately.

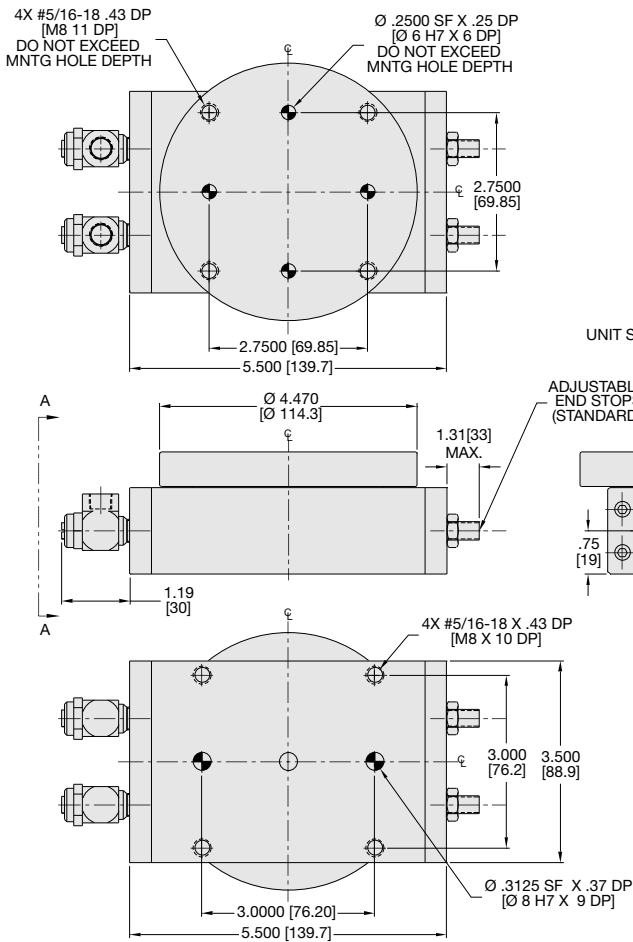


# ROTARY ACTUATORS RR-46M FLANGE OUTPUT SERIES BASE UNIT



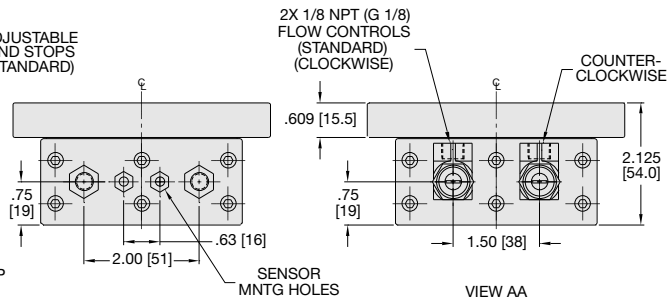
RR SERIES

3.36



Specifications	RR-46	RR-46M
Maximum Payload	15 lbs.	6.8 Kg
Maximum Payload Inertia	.0970 in.-lbs.-sec <sup>2</sup>	.01096 N-m-sec <sup>2</sup>
Maximum Rotation	180°	180°
Maximum Torque Mid-Stroke @ 100 PSI	122 in.-lbs.	14 N-m
Maximum Torque End of Stroke @ 100 PSI	61 in.-lbs.	7 N-m
Weight of Base Unit	5 lbs.	2.3 Kg
Pressure Range	40-100 psi	3-7 bar
Bore Ø (2X)	1.250 in.	31.75 mm
Displacement	3.855 in <sup>3</sup>	63.18 cm <sup>3</sup>
Temperature Range		
Standard Seals	32°~150° F	0°~66° C
Viton Seals	32°~150° F	0°~66° C
Actuation Time (180° @ 80PSI/5.5 Bar)	0.41 sec.	0.41 sec.
Actuation Time (90° @ 80PSI/5.5 Bar)	0.36 sec.	0.36 sec.
End Stop Repeatability	±0.02°	±0.02°
End Stop Adjustability	30°	30°
Over-Travel (each direction)	4°	4°
Valve required to actuate		4-way, 2-position

UNIT SHOWN IN 0° POSITION ROTATED FULLY CW



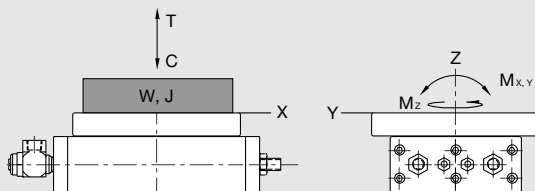
**UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW**

Dimensions are symmetrical about centerline	Third Angle Projection	All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or ±.013mm
Metric Threads Course Pitch	<b>Imperial in.</b> 0.00 = ±.01 0.000 = ±.005 0.0000 = ±.0005	<b>Metric [mm]</b> [0.] = ±.25 [0.0] = ±.13 [0.00] = ±.013

## Loading Information

**How to Order:** (Order Accessories separately from Basic Model)

**RR-46 See Next Page**



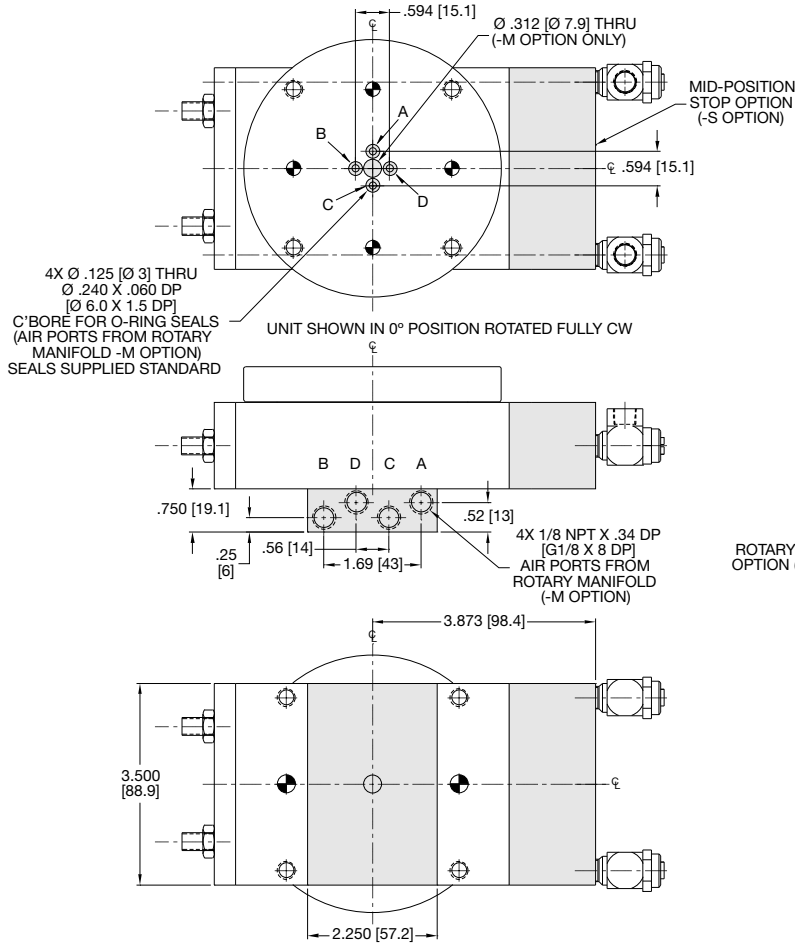
Loading Capacity <sup>†</sup>	Static		Dynamic	
	Imperial	Metric	Imperial	Metric
Maximum Tension <b>T</b>	200 lbs	890 N	40 lbs	178 N
Maximum Compression <b>C</b>	1000 lbs	4448 N	200 lbs	890 N
Maximum Moment <b>M<sub>x</sub></b>	500 in.-lbs.	57 Nm	100 in.-lbs.	11 Nm
Maximum Moment <b>M<sub>y</sub></b>	500 in.-lbs.	57 Nm	100 in.-lbs.	11 Nm
Maximum Payload <b>W</b>			15 lbs.	6.8 Kg
Maximum Inertia <b>J</b>			0.0970 in-lb-sec <sup>2</sup>	.01096 N-m-sec <sup>2</sup>

Please see back cover for DE-STA-CO Global Locations. [www.destaco.com](http://www.destaco.com)

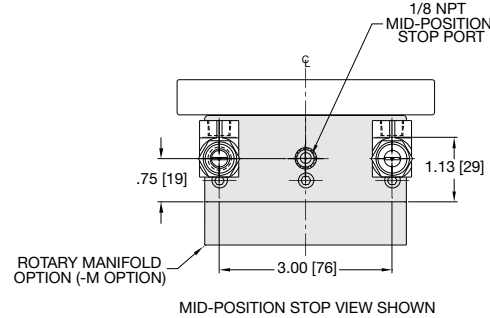
[www.comoso.com](http://www.comoso.com)



# RR-46M ROTARY ACTUATOR OPTIONS -S, -M, OPTIONAL MID-STOP, ROTARY MANIFOLD



Specifications	RR-46	RR-46M
Weight (base unit)	5.0 lbs.	2.3 Kg
Weight Adder for Mid-Position Stop	0.42 lbs.	0.19 Kg
Weight Adder for Rotary Manifold	0.38 lbs.	0.17 Kg
Pressure Range	40-100 psi	3-7 bar
Bore Ø of Mid-Position Stop 2X	1.314 in.	33.37 mm
Displacement of Mid-Position Stop	2.194 in <sup>3</sup>	35.95 cm <sup>3</sup>
Mid-Stop Repeatability	±.5°	±.5°
Temperature Range		
Standard Seals	32°~150° F	0°~66° C
Viton Seals	32°~150° F	0°~66° C
Valve required to actuate Mid-Stop	3-way, 2-position	



**UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW**

Dimensions are symmetrical about centerline	Third Angle Projection	All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or [±.013mm]
Metric Threads Course Pitch	<b>Imperial in.</b> 0.00 = ±.01 0.000 = ±.005 0.0000 = ±.0005	<b>Metric [mm]</b> [0.] = [±.25] [0.0] = [±.13] [0.00] = [±.013]

## How to Order: (Order Accessories separately from Basic Model)

**METRIC MID-STOP ROTARY MANIFOLD**

**RR-46 M - S - M - V**

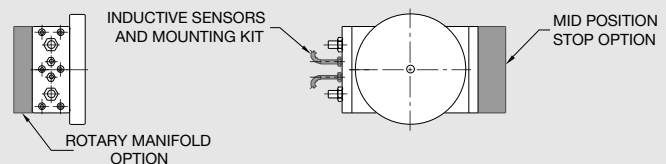
**BASIC MODEL ROTATION** (See below)

**VITON SEALS**

**DEGREE OF ROTATION 45°, 90°, 135° or 180°**  
(consult factory for intermediate degrees of rotation)

SENSOR ACCESSORIES	MODEL CODE	ORDER#	QTY/UNIT
Sensor Mounting Kit (Mounts 2 Sensors)		<b>OSMK-024</b>	<b>1</b>
NPN Inductive Sensor with Quick Disconnect*		<b>OISN-014</b>	<b>1 or 2</b>
PNP Inductive Sensor with Quick Disconnect*		<b>OISP-014</b>	<b>1 or 2</b>
Quick Disconnect 2M Cable Length*		<b>CABL-010</b>	<b>1 or 2</b>
Quick Disconnect 5M Cable Length*		<b>CABL-013</b>	<b>1 or 2</b>
PNEUMATIC ACCESSORIES			
Standard Base Unit Seal Repair Kit		<b>SLKT-017</b>	<b>1</b>
Viton Base Unit Seal Repair Kit	<b>-V</b>	<b>SLKT-017V</b>	<b>1</b>
Standard Manifold Seal Repair Kit	<b>-M</b>	<b>SLKT-067</b>	<b>1</b>
Viton Manifold Seal Repair Kit	<b>-M-V</b>	<b>SLKT-067V</b>	<b>1</b>
Standard Mid-Stop Seal Repair Kit	<b>-S</b>	<b>SLKT-068</b>	<b>1</b>
Viton Mid-Stop Seal Repair Kit	<b>-S-V</b>	<b>SLKT-068V</b>	<b>1</b>

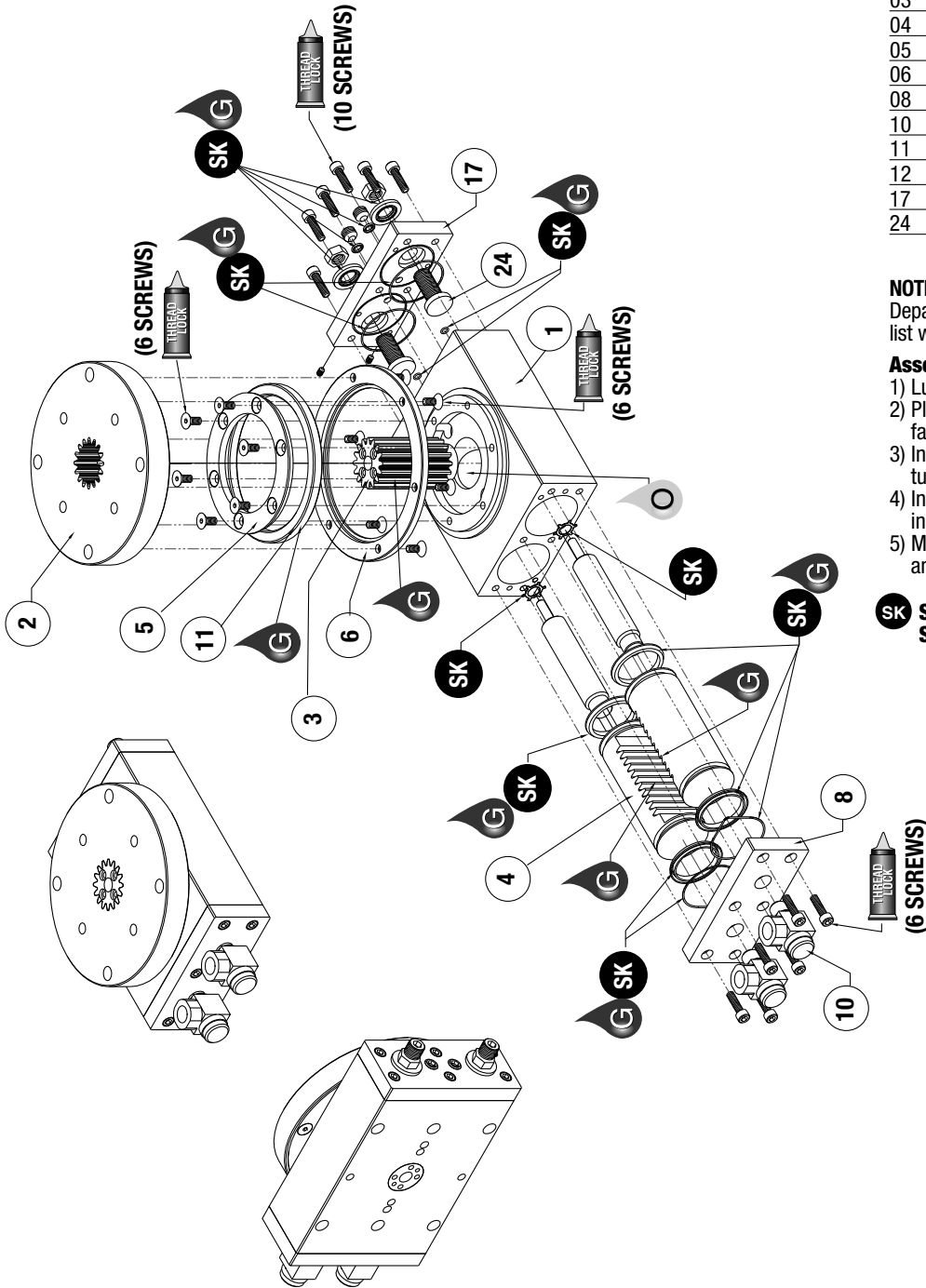
\*Sensor and cable sold separately.



# RR-36 & 46 Series Exploded View



RR-36 & 46  
SERIES  
MAINTENANCE  
3.38



Item	Qty	Name
01	1	Body, Main
02	1	Turntable
03	1	Pinion
04	2	Rack, Piston
05	1	Inner Bearing Ring
06	1	Ring, Outer Bearing
08	1	Plate, Ported End
10	2	Flow Control
11	1	Bearing
12	1	Shock Absorber
17	1	Plate, End
24	2	Stop Adjustment Screws

**NOTE:** Contact the Robohand Sales Department for a complete spare parts list with order numbers and prices.

### Assembly Procedure

- 1) Lubricate and install seals.
- 2) Place outer ring and bearing on body, fasten inner ring to body.
- 3) Install outer bearing ring on turntable/pinion subassembly.
- 4) Install shocks in racks and install inside body.
- 5) Mount end plates, adjustable stops, and flow controls to body.

**SK Seal Repair Kit Order #'s See Product Data Sheets**



Seal Kit Items



Thread Locker



Krytox™ Lubricant



Lightweight Machine Oil



Teflon® Based Grease



Super Bonder



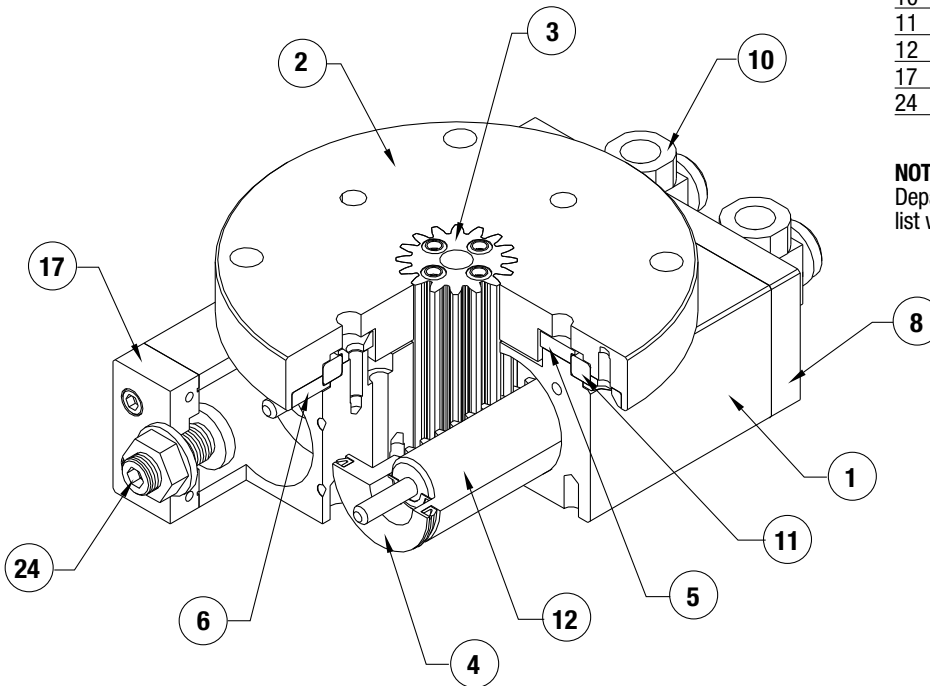
Third Angle Projection

Please see back cover for DE-STA-CO Global Locations. [www.destaco.com](http://www.destaco.com)

[www.comoso.com](http://www.comoso.com)

Item	Qty	Name
01	1	Body, Main
02	1	Turntable
03	1	Pinion
04	2	Rack, Piston
05	1	Inner Bearing Ring
06	1	Ring, Outer Bearing
08	1	Plate, Ported End
10	2	Flow Control
11	1	Bearing
12	1	Shock Absorber
17	1	Plate, End
24	2	Stop Adjustment Screws

**NOTE:** Contact the Robohand Sales Department for a complete spare parts list with order numbers and prices.



RR-36 & 46  
SERIES  
MAINTENANCE  
3.39

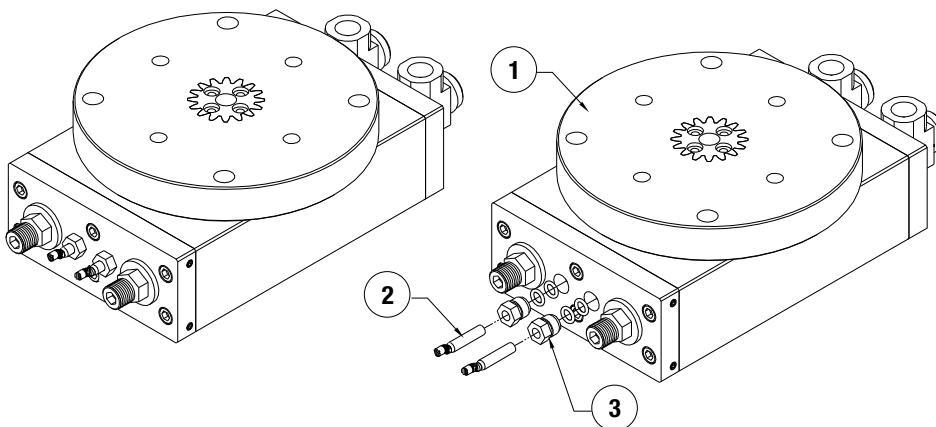
## Accessory Installation & Adjustment Instructions

### Installation

For Each Sensor:

- 1) Rotate flange so piston rack stops on end stop install sensor as shown, pushing sensor in until it stops.
- 2) Tighten nut.

Note: Sensors need to be readjusted when end stops are adjusted.



Seal Kit  
Items



Thread  
Locker



Krytox™  
Lubricant



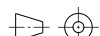
Lightweight  
Machine Oil



Teflon® Based  
Grease

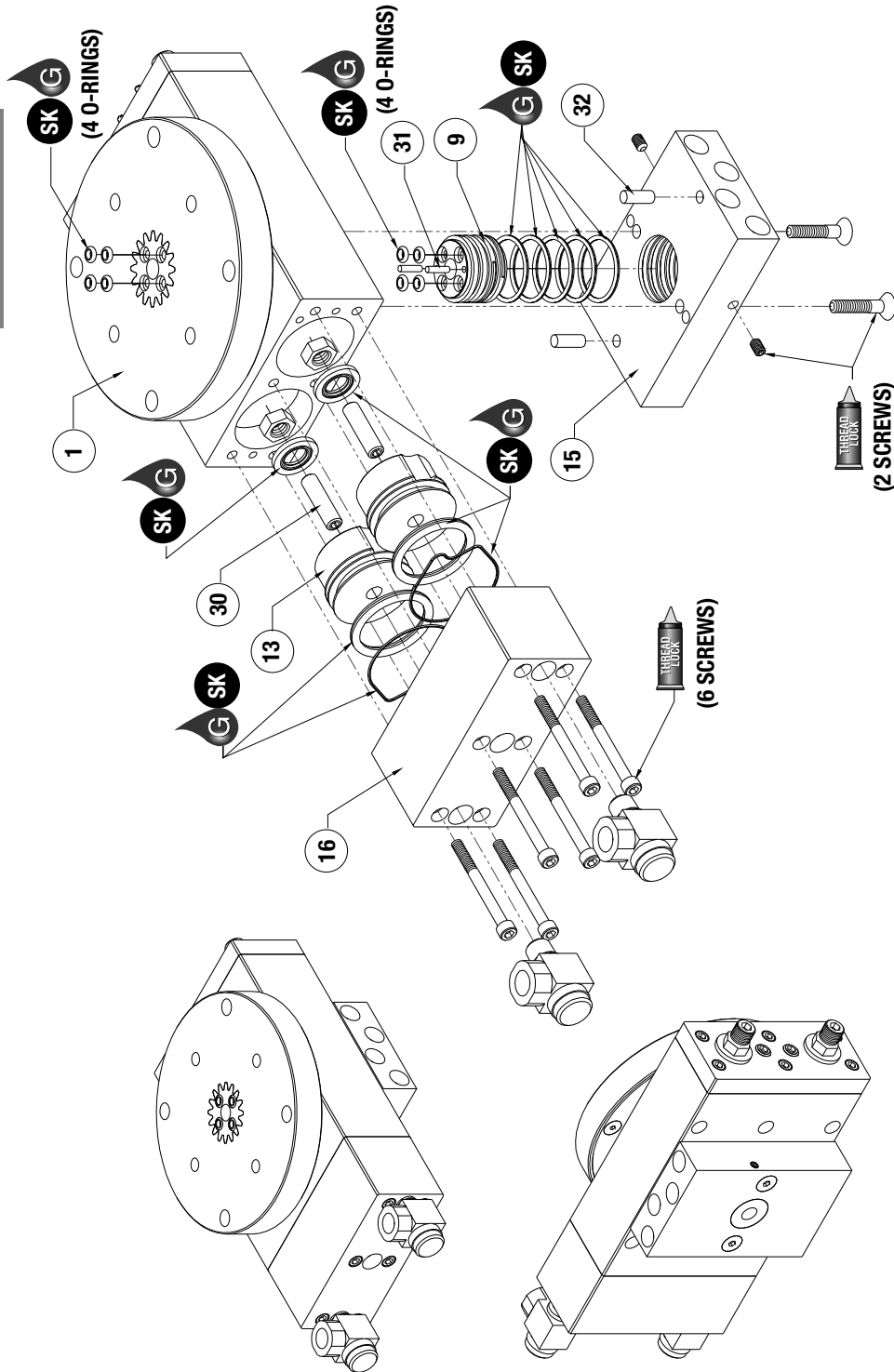


Super  
Bonder



Third Angle  
Projection





## Item Qty Name

RR-36&46-S (Mid Position Stop Option)		
13	2	Piston, Midstop
16	1	Body, Midstop
30	2	Mid-Stop Adjustment Screws

RR-36&46-M (Rotary Manifold Option)		
09	1	Manifold, Rotary
15	1	Manifold
31	2	Dowel Pin
32	2	Dowel Pin

**NOTE:** Contact the Robohand Sales Department for a complete spare parts list with order numbers and prices.

### Manifold Option Assembly Procedure

- 1) Lubricate and install 8 small o-rings. (4 in the pinion, 4 in the rotary manifold body).
- 2) Install 5 large O-rings on the rotary manifold.
- 3) Press dowel pin into rotary manifold
- 4) Install rotary manifold in manifold body.
- 5) Attach manifold assembly to rotary actuator body.

### Mid-Stop Option Assembly Procedure

- 1) Lubricate and install o-rings.
- 2) Install mid-stop pistons, adjustment screws, seal washers, and hex nuts in rotary actuator body.
- 3) Attach mid-stop body to rotary actuator body.
- 4) Install flow controls.

### Mid-Stop Adjustment Procedure

- 1) Remove mid-stop body from actuator base.
- 2) Remove the two mid-stop pistons from the mid-stop body and insert them into their respective cylinder bores in the actuator base.
- 3) Back off both mid-stop adjustment screws (#30) while pushing the mid-stop pistons firmly into the cylinder bores. The face of the pistons should seat against the actuator base. If not, then continue to back out the stop screws.
- 4) Turn the turntable to the desired position and advance the mid-stop adjustment screws until both screws touch the main piston faces
- 5) Re-attach the two mid-stop pistons to the mid-stop body and fasten mid-stop body back onto actuator base.

**SK** Seal Repair Kit Order #'s  
See Product Data Sheets



Seal Kit Items



Thread Locker



Krytox™ Lubricant



Lightweight Machine Oil



Teflon® Based Grease



Super Bonder



Third Angle Projection

## Item Qty Name

RR-36&46-S (Mid Position Stop Option)		
13	2	Piston, Midstop
16	1	Body, Midstop
30	2	Mid-Stop Adjustment Screws

RR-36&46-M (Rotary Manifold Option)		
09	1	Manifold, Rotary
15	1	Manifold
31	2	Dowel Pin
32	2	Dowel Pin

**NOTE:** Contact the Robohand Sales Department for a complete spare parts list with order numbers and prices.

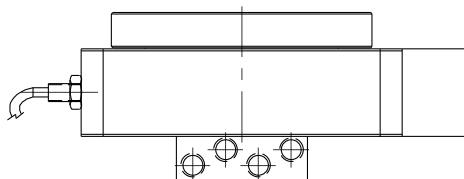
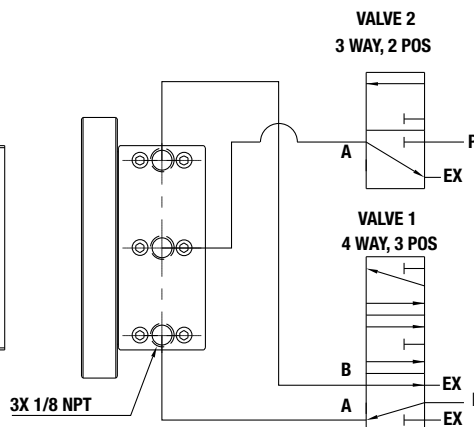
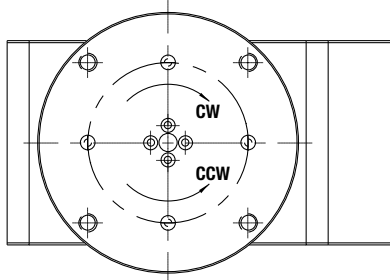
### Valve 1:

- Actuate Port A to Rotate CW.
- Actuate Port B to Rotate CCW.
- Neutral ( Center ) position when actuating Valve 2 for mid-position stop.

### Valve 2:

Port A Open to Exhaust for Normal Operation.  
Actuate Port A for Mid-Position Stop.  
Valve1 Must be in Neutral ( Center ) Position

RR-36, -46 MID-STOP OPERATION.



Seal Kit Items



Thread Locker



Krytox™ Lubricant



Lightweight Machine Oil



Teflon® Based Grease



Super Bonder



Third Angle Projection

# Rotary Actuators- Heavy Duty, Flange Output

RR SERIES

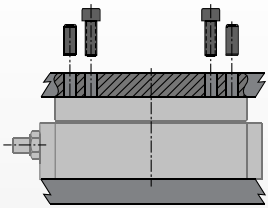
3.42



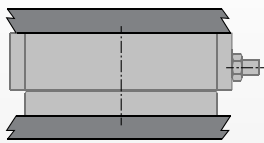
- Tight spaces:**  
 The "Ultra Thin" profile and bearing supported flange provide an extremely compact package for tight space applications. Payload can be connected directly to the flange without the need for extra bearing support.
- Large Payload, High Torque:**  
 The RR-55, RR-66, RR-76 are design for heavy-duty industrial and foundry applications
- Precision applications:**  
 Zero backlash, preloaded ball bearings, and slip fit dowel pins make this a very precise and repeatable rotary actuator.
- Rotary Air Manifold**  
 Eliminates twisting airlines.
- Pneumatic/Hydraulic Operation:**  
 The RR-76 can be used for either pneumatic or hydraulic operation.

## Mounting Information:

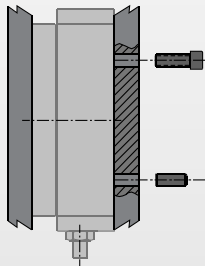
Mounts and operates in any orientation



Payload attaches to flange with screws and locates by using dowel pins



Unit can operate inverted with payload attached to the flange.



Body mounts with screws and locates with dowel pins for accuracy

## Technical Specifications:

### Pneumatic Specifications

Pressure Operating Range  
Cylinder Type  
Dynamic Seals  
Valve Required to Operate

<b>Imperial</b>	<b>Metric</b>
40-100 psi	3-7 bar
Dual Double Acting	
Internally Lubricated Buna-N	
4-way, 2-position	

### Air Quality Requirements

Air Filtration  
Air Lubrication  
Air Humidity

40 Micron or Better  
Not Necessary\*  
Low Moisture Content (dry)

### Temperature Operating Range

Buna-N Seals (standard)  
Viton Seals (optional)

-30°~180° F	-35°~80° C
-20°~300° F	-30°~150° C

### Maintenance Specifications<sup>†</sup>

Expected Life  
with Shock Absorbers  
without Shock Absorbers  
w/ Preventative Maintenance  
Field Repairable  
Seal Repair Kits Available

1 million cycles  
5 million cycles  
10+ million cycles\*  
Yes  
Yes

\*Addition of lubrication will greatly increase service life  
† See Maintenance Section

# Product Features

**Quality Components**  
One piece high strength 6013-T6 aircraft quality aluminum body and flange

**Anodized Components**  
Body and flange are hard-coat anodize to 60RC with Teflon® impregnation

**Dowel Holes**  
Slip fit dowel holes in body and flange

**Adjustable Flow Controls**

**Sensors, External Shock Absorbers**  
(sold separately-see Accessories Section for more info)

**Optional Mid Position Stop**  
Mid position stop for three position applications

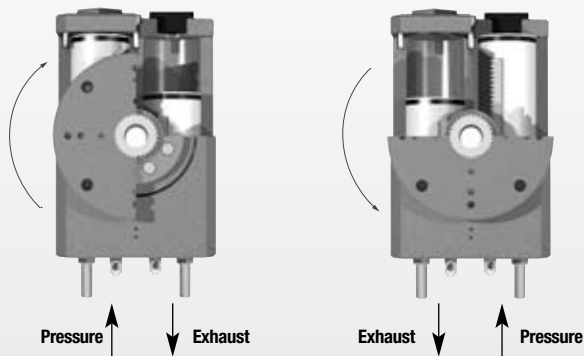
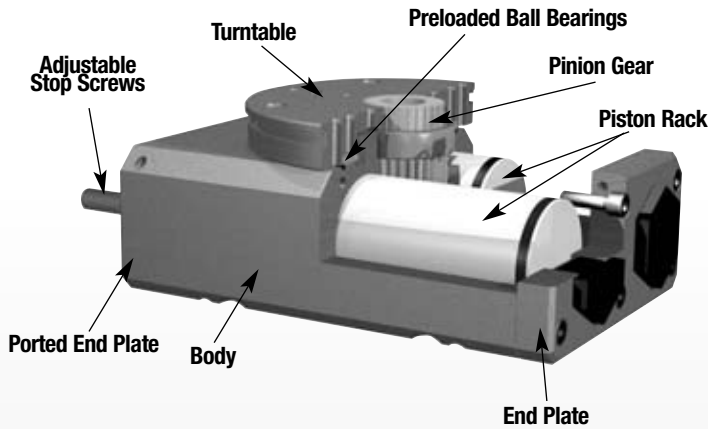
**Hardened Tool Steel**  
Rack and pinion components are made from hardened tool steels

**Preloaded Bearing**  
Precision bearing is preloaded for maximum support and zero play

**Self-Lubricating Seals**  
Self lubricating dynamic seals (Viton® only)

**Optional Rotary Manifold**  
Eliminates twisting air lines

# Operating Principle



- Air pressure supplied to both cylinders simultaneously using internal porting, drives the piston racks in opposite directions.
- The piston racks simultaneously drive the pinion gear which is attached to the flange.
- The flange is supported in the body by a preloaded ball bearing

**Designed and manufactured in the USA**

# Style-RR Rotary Actuator

**Size -56M**

<b>Style:</b>	<b>RR-56</b>	<b>RR-56M</b>
<b>Max. Payload:†</b>	30 lbs.	13 Kg
<b>Torque:</b>	311 in/lbs	35 N-m
<b>Weight:*</b>	11.6 lbs.	5.3 Kg
† Max. payload based on -A shock option. *Base unit.		



See Pages **3.44**

# Style-RR Rotary Actuator

**Size -66M**

<b>Style:</b>	<b>RR-66</b>	<b>RR-66M</b>
<b>Max. Payload:†</b>	75 lbs.	34 Kg
<b>Torque:</b>	728 in/lbs	82 N-m
<b>Weight:*</b>	26.8 lbs.	11.8 Kg
† Max. payload based on -A shock option. *Base unit.		

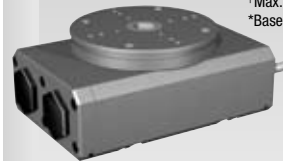


See Pages **3.46**

# Style-RR Rotary Actuator

**Size -76M**

<b>Style:</b>	<b>RR-76</b>	<b>RR-76M</b>
<b>Max. Payload:†</b>	200 lbs.	91 Kg
<b>Torque:</b>	1900 in/lbs	215 N-m
<b>Weight:*</b>	53 lbs.	24 Kg
† Max. payload based on -A shock option. *Base unit.		



See Pages **3.52**

RR SERIES

3.43

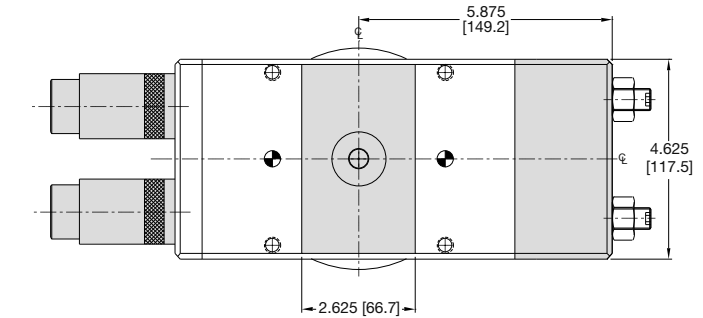
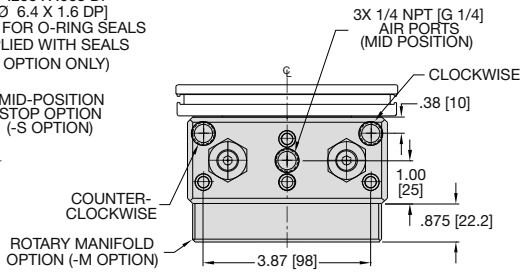
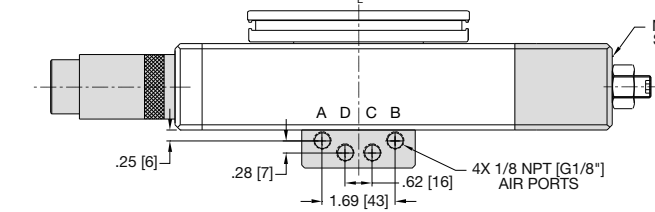
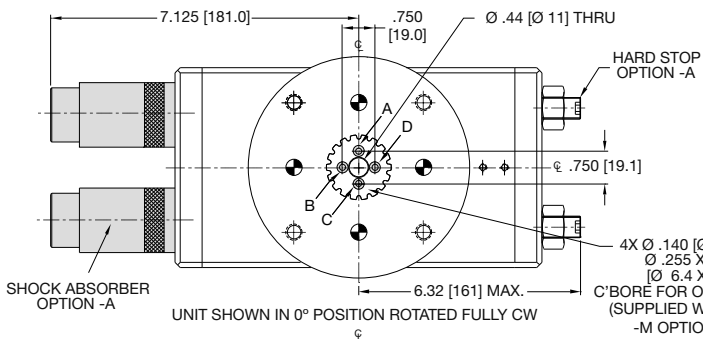




# RR-56M ROTARY ACTUATOR OPTIONS -S, -M, OPTIONAL MID-STOP, ROTARY MANIFOLD

RR SERIES

3.45



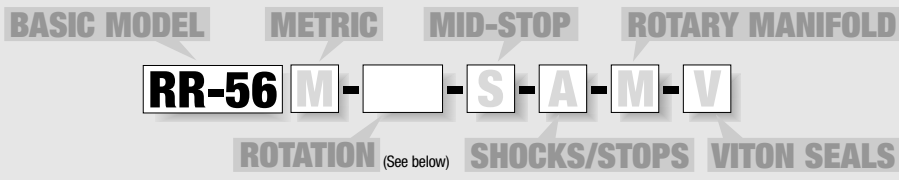
### Specifications

Weight (base unit)	RR-56	RR-56M
Weight Adder for Mid-Position Stop	11.6 lbs.	5.3 Kg
Weight Adder for Rotary Manifold	1.8 lbs.	0.82Kg
Pressure Range	1.2 lbs.	0.54 Kg
Bore Ø of Mid-Position Stop 2X	40-100 psi	3-7 bar
Displacement of Mid-Position Stop	1.674 in.	42.51 mm
Mid-Stop Repeatability	5.502 in <sup>3</sup>	90.16 cm <sup>3</sup>
Temperature Range	±5°	±5°
Standard Seals	-30°~180° F	-35°~80° C
Viton Seals	-20°~300° F	-30°~150° C
Valve required to actuate Mid-Stop	3-way, 2-position	

### UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

	Dimensions are symmetrical about centerline		Third Angle Projection		All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or [±.013mm]
	Metric Threads Course Pitch	<b>Imperial in.</b>	<b>Metric [mm]</b>		
		0.00 = ±.01	[0.] = [±.25]		
		0.000 = ±.005	[0.0] = [±.13]		
		0.0000 = ±.0005	[0.00] = [±.013]		

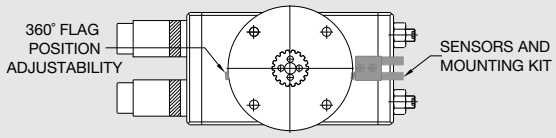
## How to Order: (Order Accessories separately from Basic Model)



**DEGREE OF ROTATION 45°, 90°, 135° or 180°**  
(consult factory for intermediate degrees of rotation)

SENSOR ACCESSORIES	MODEL CODE	ORDER#	QTY/UNIT
Inductive Sensor Mounting Kit (Mounts 2 Sensors)		<b>OSMK-075</b>	<b>1</b>
Magneto Resistive Sensor Mounting Kit (Mounts 2 Sensors)		<b>OSMK-069</b>	<b>1</b>
NPN Inductive Sensor with Quick Disconnect*		<b>OISN-011</b>	<b>1 or 2</b>
PNP Inductive Sensor with Quick Disconnect*		<b>OISP-011</b>	<b>1 or 2</b>
NPN Magneto Resistive Sensor with Quick Disconnect*		<b>OHSN-017</b>	<b>1 or 2</b>
PNP Magneto Resistive Sensor with Quick Disconnect*		<b>OHSP-017</b>	<b>1 or 2</b>
Quick Disconnect 2M Cable Length*		<b>CABL-010</b>	<b>1 or 2</b>
Quick Disconnect 5M Cable Length*		<b>CABL-013</b>	<b>1 or 2</b>

PNEUMATIC ACCESSORIES	MODEL CODE	ORDER#	QTY/UNIT
1/4 NPT Flow Controls (Imperial Units Only)		<b>VLVF-009</b>	<b>2</b>
G1/4 BSPP Flow Controls (Metric Units Only)		<b>VLVF-010</b>	<b>2</b>
Standard Base Unit Seal Repair Kit		<b>SLKT-124</b>	<b>1</b>
Viton Base Unit Seal Repair Kit	<b>-V</b>	<b>SLKT-124V</b>	<b>1</b>
Standard Manifold Seal Repair Kit	<b>-M</b>	<b>SLKT-126</b>	<b>1</b>
Viton Manifold Seal Repair Kit	<b>-M-V</b>	<b>SLKT-126V</b>	<b>1</b>
Standard Mid-Stop Seal Repair Kit	<b>-S</b>	<b>SLKT-127</b>	<b>1</b>
Viton Mid-Stop Seal Repair Kit	<b>-S-V</b>	<b>SLKT-127V</b>	<b>1</b>
Standard Shock Seal Repair Kit	<b>-A</b>	<b>SLKT-125</b>	<b>1</b>
Viton Shock Seal Repair Kit	<b>-A-V</b>	<b>SLKT-125V</b>	<b>1</b>



\*Sensor and cable sold separately.

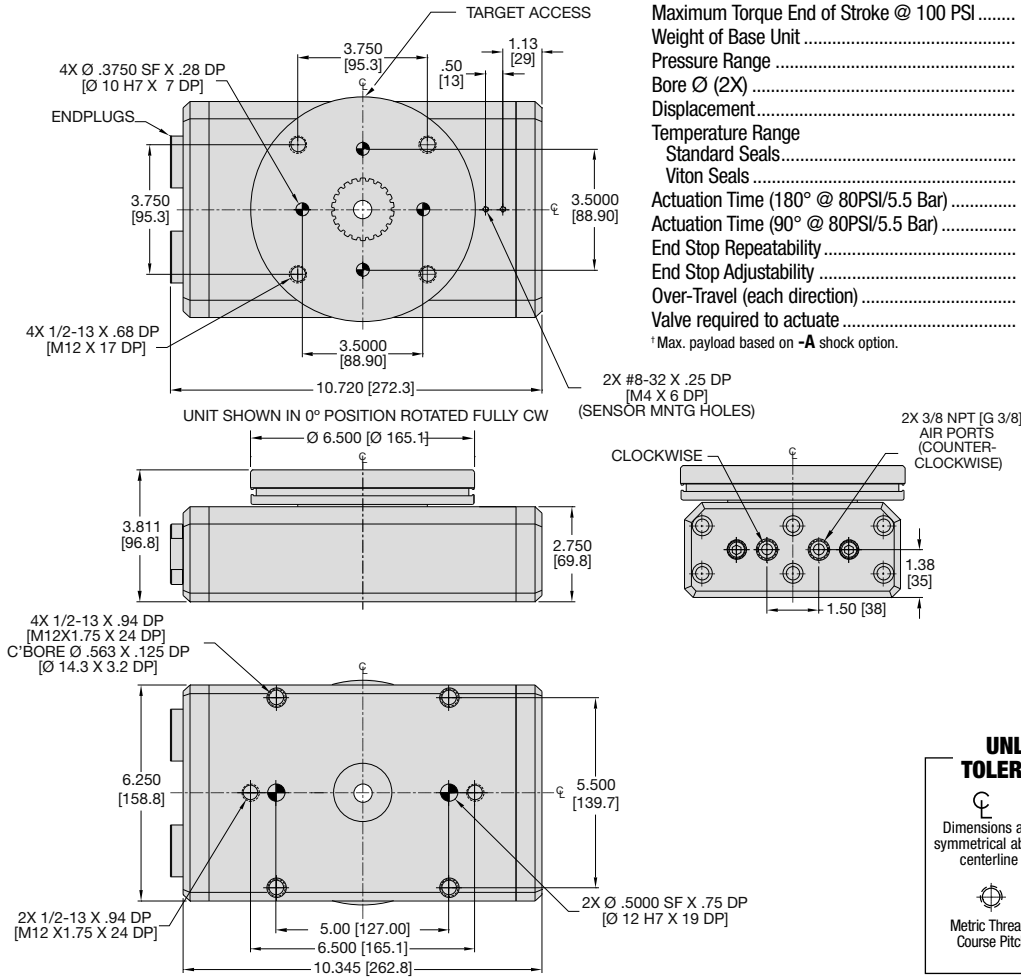


# ROTARY ACTUATORS RR-66M FLANGE OUTPUT SERIES BASE UNIT



RR SERIES

3.46



## Specifications

	RR-66	RR-66M
Maximum Payload <sup>†</sup> .....	75 lbs.	34 Kg
Maximum Payload Inertia <sup>†</sup> .....	1.0251 in.-lbs.-sec <sup>2</sup>	.11584 N-m-sec <sup>2</sup>
Maximum Rotation .....	180°	180°
Maximum Torque Mid-Position @ 100 PSI .....	728 in.-lbs.	82 N-m
Maximum Torque End of Stroke @ 100 PSI .....	364 in.-lbs.	41 N-m
Weight of Base Unit .....	26 lbs.	11.8 Kg
Pressure Range .....	40-100 psi	3-7 bar
Bore Ø (2X) .....	2.250 in.	57.15 mm
Displacement .....	22.8 in <sup>3</sup>	375 cm <sup>3</sup>
Temperature Range		
Standard Seals .....	-30°~180° F	-35°~80° C
Viton Seals .....	-20°~300° F	-30°~150° C
Actuation Time (180° @ 80PSI/5.5 Bar) .....	0.70 sec.	0.70 sec.
Actuation Time (90° @ 80PSI/5.5 Bar) .....	0.50 sec.	0.50 sec.
End Stop Repeatability .....	±0.02°	±0.02°
End Stop Adjustability .....	20°	20°
Over-Travel (each direction) .....	4°	4°
Valve required to actuate .....	4-way, 2-position	

<sup>†</sup>Max. payload based on -A shock option.

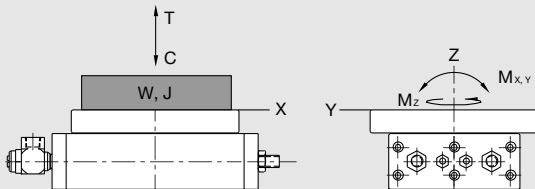
## UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

Dimensions are symmetrical about centerline	Third Angle Projection	All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or ±.013mm
Metric Threads Course Pitch	<b>Imperial in.</b> 0.00 = ±.01 0.000 = ±.005 0.0000 = ±.0005	<b>Metric [mm]</b> [0.] = [±.25] [0.0] = [±.13] [0.00] = [±.013]

## Loading Information

## How to Order: (Order Accessories separately from Basic Model)

**RR-66 See Next Page**



Loading Capacity	Static		Dynamic	
	Imperial	Metric	Imperial	Metric
Maximum Tension <b>T</b>	1000 lbs	4448 N	200 lbs	890 N
Maximum Compression <b>C</b>	3500 lbs	15569 N	700 lbs	3114 N
Maximum Moment <b>M<sub>x</sub></b>	2000 in.-lbs.	226 Nm	400 in.-lbs.	45 Nm
Maximum Moment <b>M<sub>y</sub></b>	2000 in.-lbs.	226 Nm	400 in.-lbs.	45 Nm
Maximum Payload <b>W</b> <sup>†</sup>			75 lbs.	34 Kg
Maximum Inertia <b>J</b> (with Shock Absorbers) <sup>†</sup>			1.025 in-lb-sec <sup>2</sup>	.1158 N-m-sec <sup>2</sup>

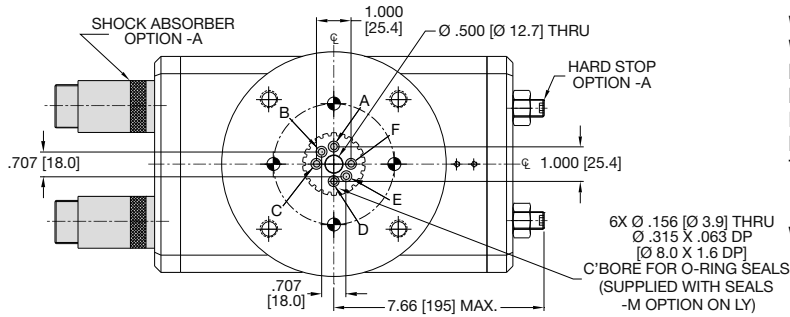
<sup>†</sup>Max. payload based on -A shock option.

Please see back cover for DE-STA-CO Global Locations. [www.destaco.com](http://www.destaco.com)

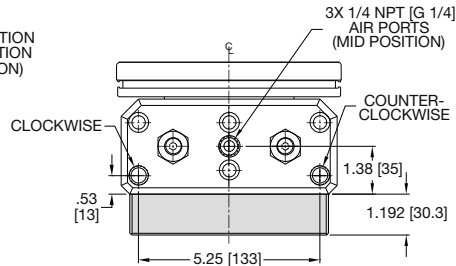
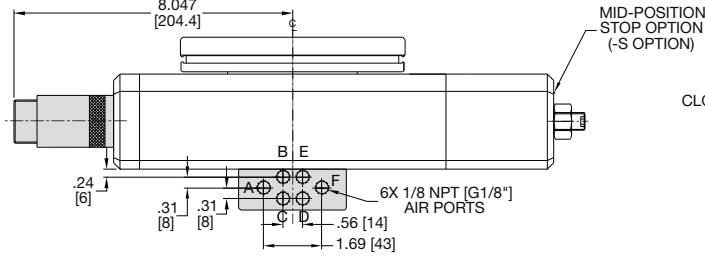
[www.comoso.com](http://www.comoso.com)



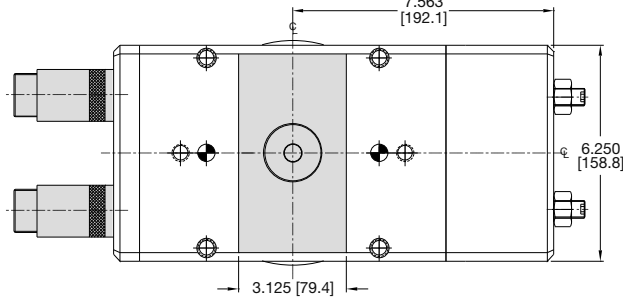
# RR-66M ROTARY ACTUATOR OPTIONS -S, -M, OPTIONAL MID-STOP, ROTARY MANIFOLD



UNIT SHOWN IN 0° POSITION ROTATED FULLY CW



MID-POSITION STOP VIEW SHOWN



Specifications	RR-66	RR-66M
Weight (base unit)	26 lbs.	11.8 Kg
Weight Adder for Mid-Position Stop	1.80 lbs.	0.82 Kg
Weight Adder for Rotary Manifold	0.80 lbs.	0.36 Kg
Pressure Range	40-100 psi	3-7 bar
Bore Ø of Mid-Position Stop 2X	2.375 in.	60.32 mm
Displacement of Mid-Position Stop	19.643 in³	321.89 cm³
Mid-Stop Repeatability	±.5°	±.5°
Temperature Range		
Standard Seals	-30°~180° F	-35°~80° C
Viton Seals	-20°~300° F	-30°~150° C
Valve required to actuate Mid-Stop	3-way, 2-position	

RR SERIES

3.47

### UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

Dimensions are symmetrical about centerline	Third Angle Projection	All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or [±.013mm]
Metric Threads Course Pitch	<b>Imperial in.</b> 0.00 = ±.01 0.000 = ±.005 0.0000 = ±.0005	<b>Metric [mm]</b> [0.] = [±.25] [0.0] = [±.13] [0.00] = [±.013]

## How to Order: (Order Accessories separately from Basic Model)

BASIC MODEL    METRIC    MID-STOP    ROTARY MANIFOLD

**RR-66** **M** - **S** - **A** - **M** - **V**

ROTATION (See below)    SHOCKS/STOPS    VITON SEALS

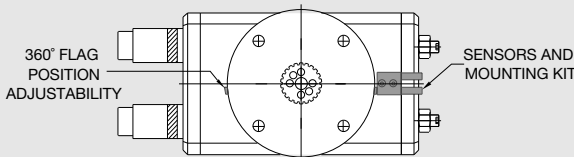
DEGREE OF ROTATION **45°, 90°, 135° or 180°**  
(consult factory for intermediate degrees of rotation)

SENSOR ACCESSORIES	MODEL CODE	ORDER#	QTY/UNIT
Inductive Sensor Mounting Kit (Mounts 2 Sensors)		<b>OSMK-075</b>	<b>1</b>
Magneto Resistive Sensor Mounting Kit (Mounts 2 Sensors)		<b>OSMK-069</b>	<b>1</b>
NPN Inductive Sensor with Quick Disconnect*		<b>OISN-011</b>	<b>1 or 2</b>
PNP Inductive Sensor with Quick Disconnect*		<b>OISP-011</b>	<b>1 or 2</b>
NPN Magneto Resistive Sensor with Quick Disconnect*		<b>OHSN-017</b>	<b>1 or 2</b>
PNP Magneto Resistive Sensor with Quick Disconnect*		<b>OHSP-017</b>	<b>1 or 2</b>
Quick Disconnect 2M Cable Length*		<b>CABL-010</b>	<b>1 or 2</b>
Quick Disconnect 5M Cable Length*		<b>CABL-013</b>	<b>1 or 2</b>

### PNEUMATIC ACCESSORIES

3/8 NPT Flow Controls (Imperial Units Only)		<b>VLVF-011</b>	<b>2</b>
G3/8 BSPP Flow Controls (Metric Units Only)		<b>VLVF-012</b>	<b>2</b>
Standard Base Unit Seal Repair Kit		<b>SLKT-128</b>	<b>1</b>
Viton Base Unit Seal Repair Kit	<b>-V</b>	<b>SLKT-128V</b>	<b>1</b>
Standard Manifold Seal Repair Kit	<b>-M</b>	<b>SLKT-130</b>	<b>1</b>
Viton Manifold Seal Repair Kit	<b>-M-V</b>	<b>SLKT-130V</b>	<b>1</b>
Standard Mid-Stop Seal Repair Kit	<b>-S</b>	<b>SLKT-131</b>	<b>1</b>
Viton Mid-Stop Seal Repair Kit	<b>-S-V</b>	<b>SLKT-131V</b>	<b>1</b>
Standard with Shocks Seal Repair Kit	<b>-A</b>	<b>SLKT-129</b>	<b>1</b>
Viton with Shocks Seal Repair Kit	<b>-A-V</b>	<b>SLKT-129V</b>	<b>1</b>

\*Sensor and cable sold separately.



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# RR-56 & 66 Series Exploded View



RR-56 & 66  
SERIES  
MAINTENANCE

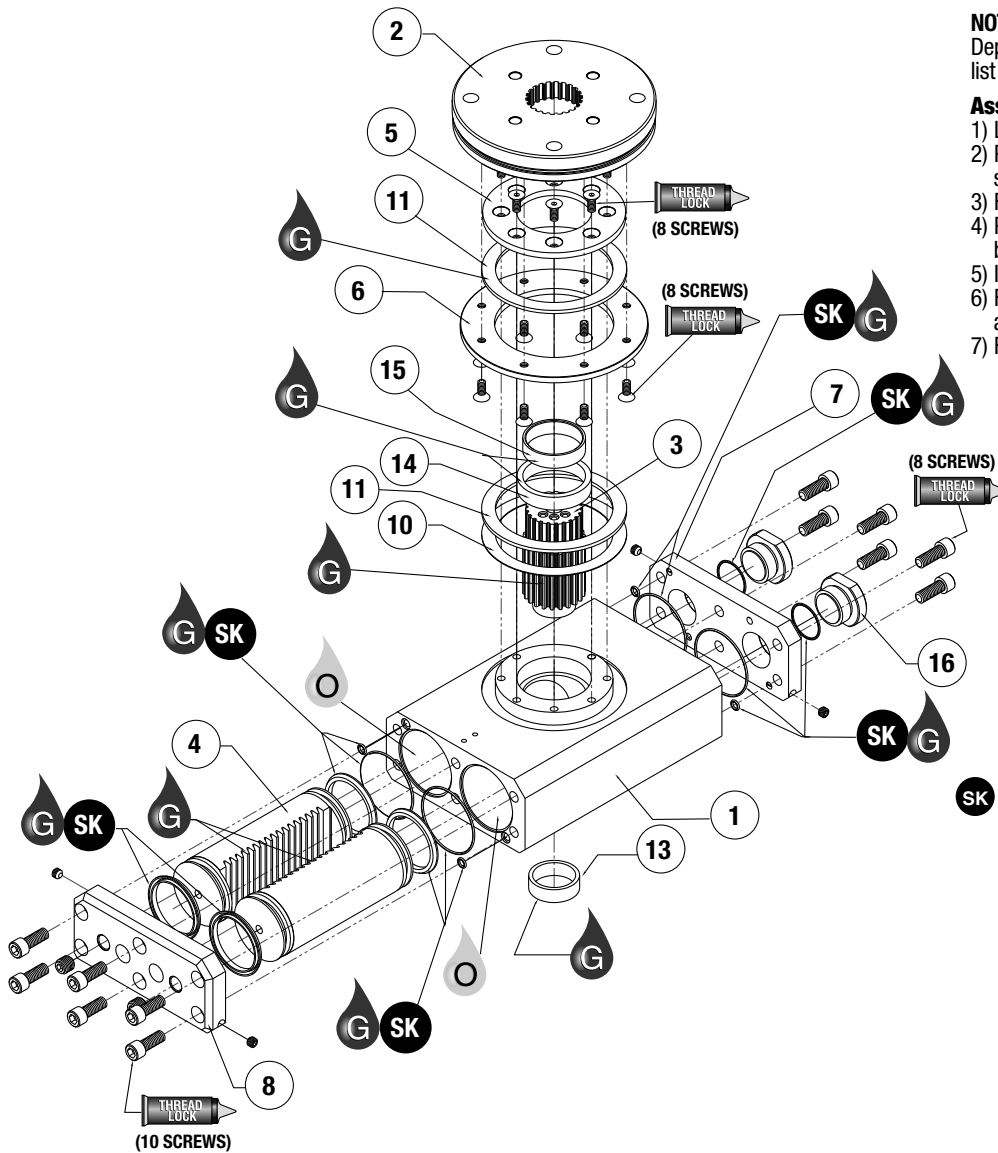
3.48

Item	Qty	Name
01	1	Body, Main
02	1	Flange
03	1	Pinion
04	2	Rack, Piston
05	1	Ring, Inner Bearing
06	1	Ring, Outer Bearing
07	1	End Plate
08	1	Ported End Plate
10	1	Washer, Thrust
11	2	Bearing, Thrust
13	1	Bearing, Needle
14	1	Bearing, Needle
16	1	Cap

**NOTE:** Contact the Robohand Sales Department for a complete spare parts list with order numbers and prices.

### Assembly Procedure

- 1) Lubricate and install seals
- 2) Place needle bearings, outer ring and spacers into body
- 3) Fasten inner ring to body..
- 4) Press radial bearing into underside of body.
- 5) Install racks into body.
- 6) Fasten outer ring to turntable/pinion assembly.
- 7) Fasten end plates and plugs.



**SK Seal Repair Kit Order #'s See Product Data Sheets**

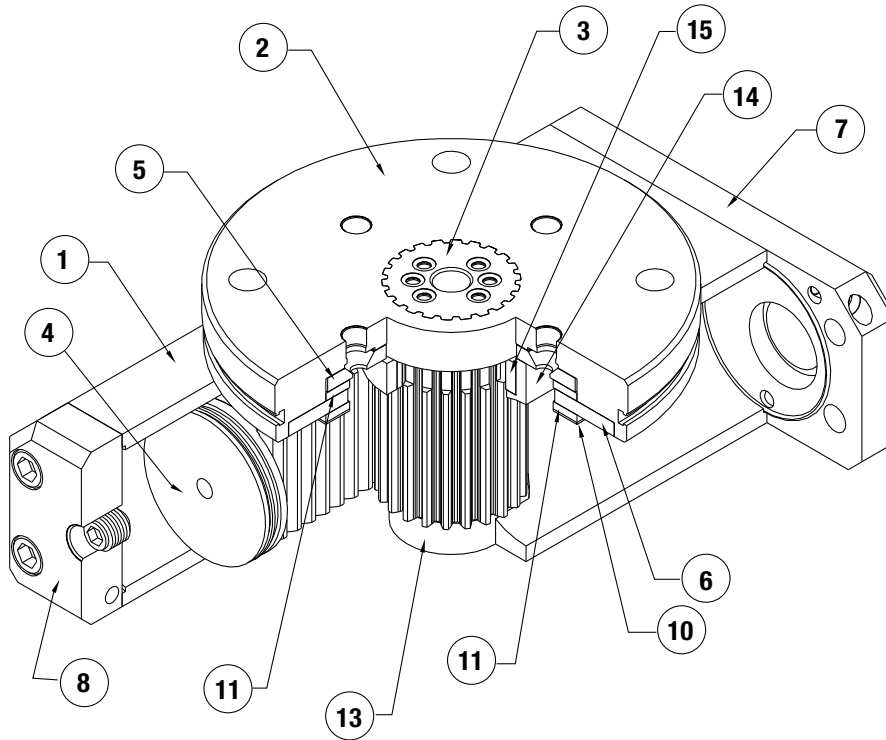
SK Seal Kit Items	THREAD LOCK Thread Locker	KRYTOX Krytox™ Lubricant	O Lightweight Machine Oil	G Teflon® Based Grease	GLUE Super Bonder	Third Angle Projection
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### Item Qty Name

01	1	Body, Main
02	1	Flange
03	1	Pinion
04	2	Rack, Piston
05	1	Ring, Inner Bearing
06	1	Ring, Outer Bearing
07	1	End Plate
08	1	Ported End Plate
10	1	Washer, Thrust
11	2	Bearing, Thrust
13	1	Bearing, Needle
14	1	Bearing, Needle
16	1	Cap



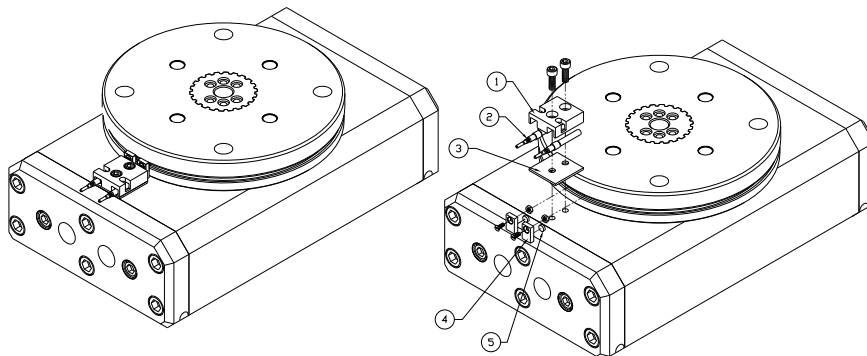
**NOTE:** Contact the Robohand Sales Department for a complete spare parts list with order numbers and prices.

RR-56 & 66  
SERIES  
MAINTENANCE

3.49

## Accessory Installation & Adjustment Instructions

- 1) Install sensors and brackets as shown,
- 2) Install targets so when a turntable is at each end of stroke, a target is aligned with a sensor



Seal Kit  
Items



Thread  
Locker



Krytox™  
Lubricant



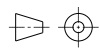
Lightweight  
Machine Oil



Teflon® Based  
Grease



Super  
Bonder



Third Angle  
Projection

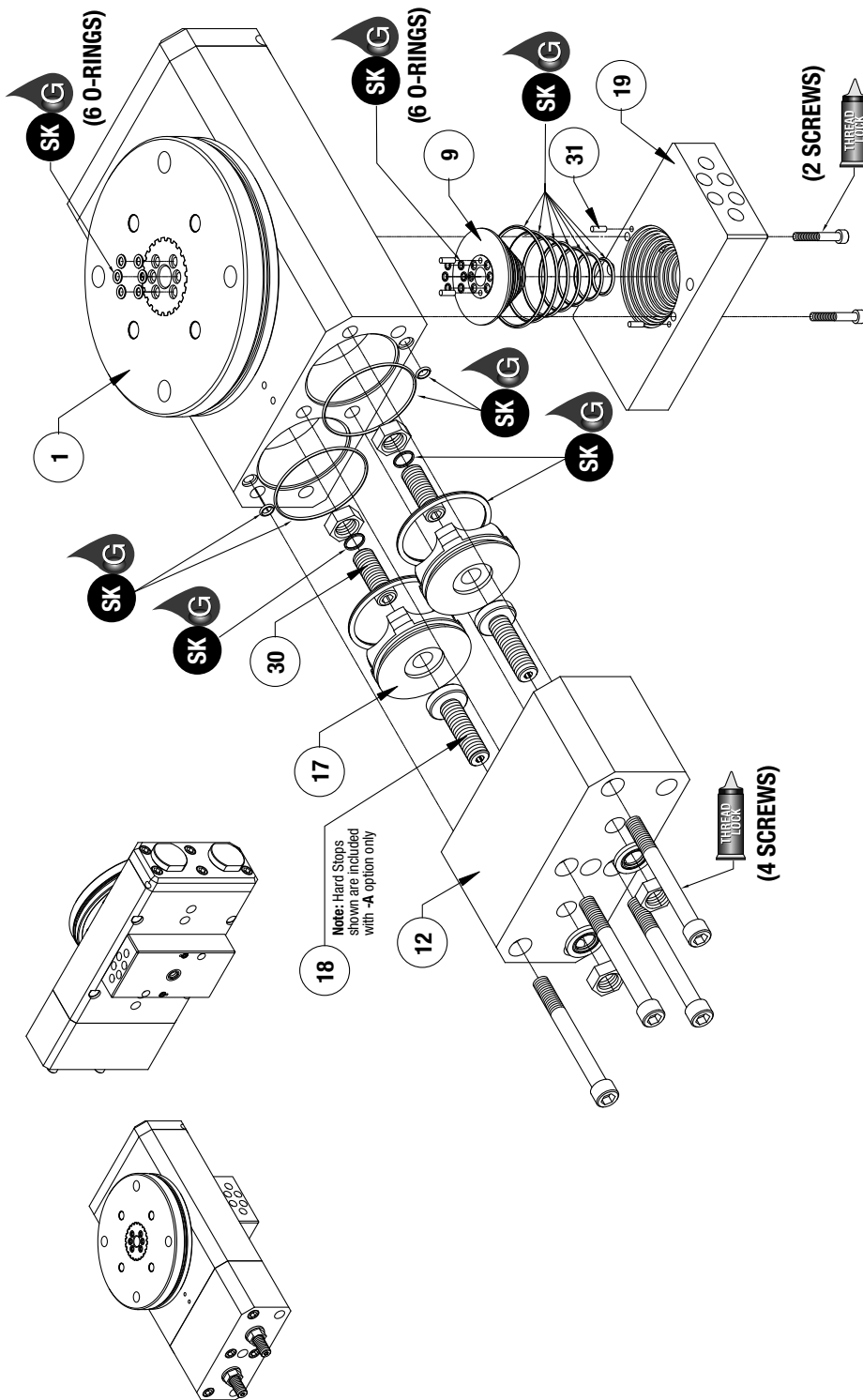
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# RR-56 & 66 Options Exploded View



RR-56 & 66  
OPTIONS  
MAINTENANCE  
3.50



## Item Qty Name

RR-56 & 66-S ( Midstop )		
12	1	Body, Mid-Stop
17	2	Piston, Mid-Stop
30	2	Mid-Stop Adjustment Screws

RR-56-M ( Rotary Manifold )		
09	1	Manifold, Rotary
19	1	Manifold
31	4	Dowel Pin

**NOTE:** Contact the Robohand Sales Department for a complete spare parts list with order numbers and prices.

### Manifold Option Assembly Procedure

- 1) Lubricate and install 12 small o-rings. (6 in the pinion, 6 in the rotary manifold.
- 2) Install 7 O-rings on the rotary manifold.
- 3) Press 1/8" dia. dowel pin into manifold.
- 4) Install rotary manifold in manifold block.
- 5) Attach manifold block to rotary actuator body.

### Mid-Stop Option Assembly Procedure

- 1) Lubricate and install o-rings.
- 2) Install mid-stop pistons, adjustment screws, seal washers, and hex nuts in rotary actuator body.
- 3) Attach mid-stop body to rotary actuator body.
- 4) Install flow controls.

### Mid-Stop Adjustment Procedure

- 1) Remove mid-stop body from actuator base.
- 2) Remove the two mid-stop pistons from the mid-stop body and insert them into their respective cylinder bores in the actuator base.
- 3) Back off both mid-stop adjustment screws (#30) while pushing the mid-stop pistons firmly into the cylinder bores. the face of the pistons should seat against the actuator base. If not, then continue to back out the stop screws.
- 4) Turn the turntable to the desired position and advance the mid-stop adjustment screws until both screws touch the main piston faces.
- 5) Re-attach the two mid-stop pistons to the mid-stop body and fasten mid-stop body back onto actuator base.

**SK Seal Repair Kit Order #'s  
See Product Data Sheets**



Seal Kit Items



Thread Locker



Krytox™ Lubricant



Lightweight Machine Oil



Teflon® Based Grease



Super Bonder



Third Angle Projection

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[www.comoso.com](http://www.comoso.com)

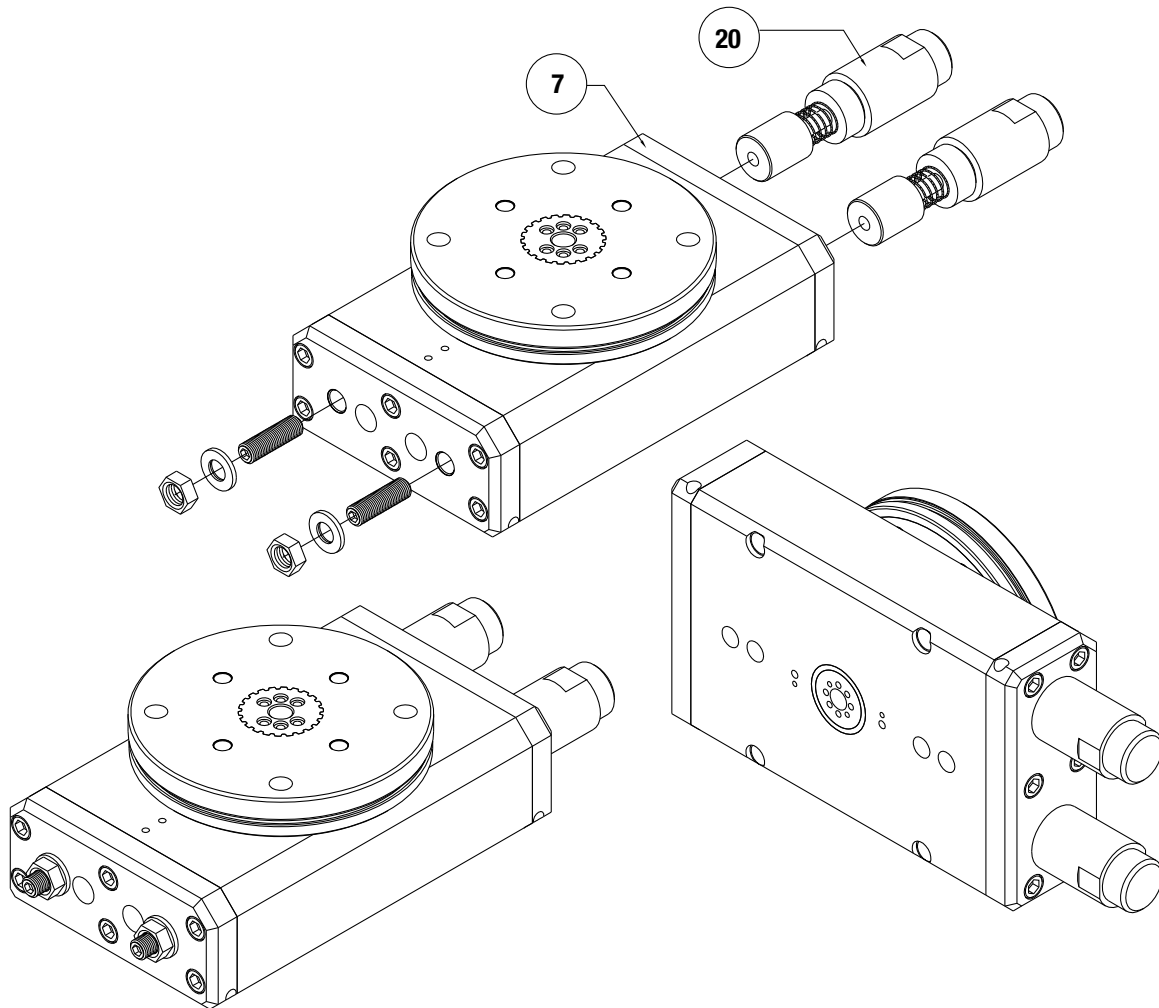


# RR-56 & 66 Options Assembled View

## Item Qty Name

7	1	Plate, End
20	2	Shock Absorber

**NOTE:** Contact the Robohand Sales Department for a complete spare parts list with order numbers and prices.



RR-56 & 66  
OPTIONS  
MAINTENANCE  
351



Seal Kit  
Items



Thread  
Locker



Krytox™  
Lubricant



Lightweight  
Machine Oil



Teflon® Based  
Grease



Super  
Bond



Third Angle  
Projection

Please see back cover for DE-STA-CO Global Locations. [www.destaco.com](http://www.destaco.com)

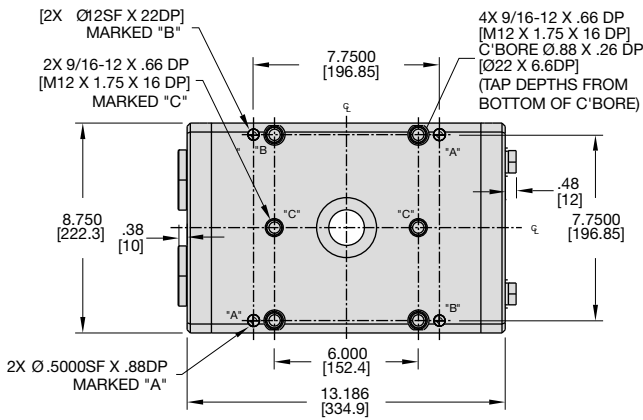
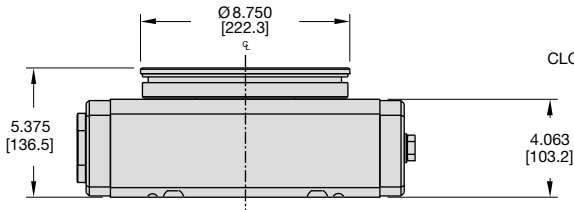
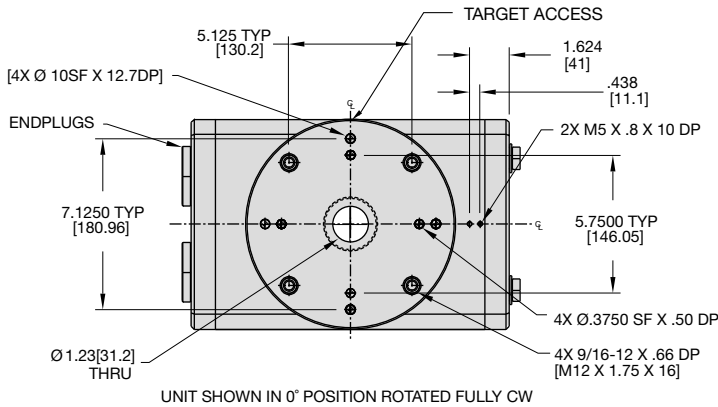
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# ROTARY ACTUATORS RR-76M FLANGE OUTPUT SERIES BASE UNIT



**Note:** Shock Absorbers "Option -A" are recommended for most applications.  
All specifications provided are with this option

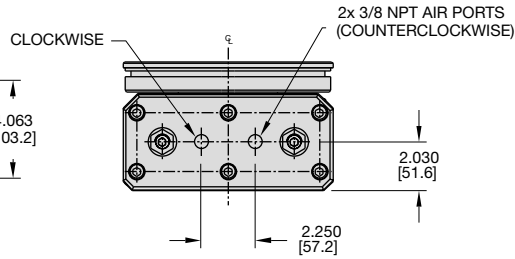


Specifications	RR-76	RR-76M
Maximum Payload <sup>†</sup>	200 lbs.	91 Kg
Maximum Payload Inertia <sup>†</sup>	4.95 in.-lbs.-sec <sup>2</sup>	0.5596 N-m-sec <sup>2</sup>
Maximum Rotation	180°	180°
Max. Torque Mid-Position @ 100 PSI	1900 in.-lbs.	215 N-m
Max. Torque End of Stroke @ 100 PSI	950 in.-lbs.	107 N-m
Weight of Base Unit	53 lbs.	24 Kg
Pressure Range	40-100 psi	3-7 bar
Bore Ø (2X)	3.250 in.	82.55 mm
Displacement	62.6 in <sup>3</sup>	1026 cm <sup>3</sup>
Temperature Range - Viton® Seals	20°~300° F	-30°~150° C
Shock Absorber Temperature Max.	160° F	71° C
Actuation Time (180° @ 80PSI/5.5 Bar)	1.4 sec.	1.4 sec.
Actuation Time (90° @ 80PSI/5.5 Bar)	0.8 sec.	0.8 sec.
End Stop Repeatability	±0.02°	±0.02°
End Stop Adjustability*	20°	20°
Over-Travel (each direction)	4°	4°
Valve required to actuate	4-way, 2-position	

\*Any adjustment of the End Stop Adjustment Screw must be accompanied by an equal adjustment of the Shock Absorbers to prevent bottoming of the pistons against the Shock Absorbers.

<sup>†</sup>Max. payload based on -A shock option.

Hydraulic Specifications	RR-76	RR-76M
Actuation Time (180° @ 80PSI/5.5 Bar)	4.8 sec.	4.8 sec.
Actuation Time (90° @ 80PSI/5.5 Bar)	2.4 sec.	2.4 sec.
Mid Stop Actuation Time (80PSI/5.5 Bar)	4.1 sec.	4.1 sec.

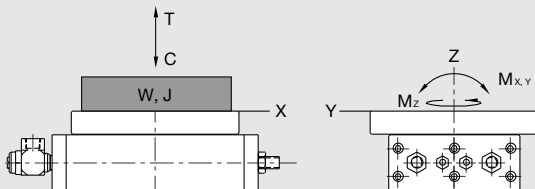


### UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

Dimensions are symmetrical about centerline	Third Angle Projection	All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or [±.013mm]
Metric Threads Course Pitch	<b>Imperial in.</b> 0.00 = ±.01 0.000 = ±.005 0.0000 = ±.0005	<b>Metric [mm]</b> [0.] = [±.25] [0.0] = [±.13] [0.00] = [±.013]

## Loading Information

## How to Order: (Order Accessories separately from Basic Model)



**RR-76 See Next Page**

Loading Capacity	Static		Dynamic	
	Imperial	Metric	Imperial	Metric
Maximum Tension <b>T</b>	2000 lbs	8896 N	1000 lbs	4448 N
Maximum Compression <b>C</b>	4500 lbs	20017 N	2000 lbs	8896 N
Maximum Moment <b>M<sub>x</sub></b>	4000 in.-lbs.	452 Nm	2000 in.-lbs.	226 Nm
Maximum Moment <b>M<sub>y</sub></b>	4000 in.-lbs.	452 Nm	2000 in.-lbs.	226 Nm
Maximum Payload <b>W<sup>†</sup></b>			200 lbs.	91 Kg
Maximum Inertia <b>J<sup>†</sup></b>			4.952 in-lb-sec <sup>2</sup>	0.5596 N-m-sec <sup>2</sup>

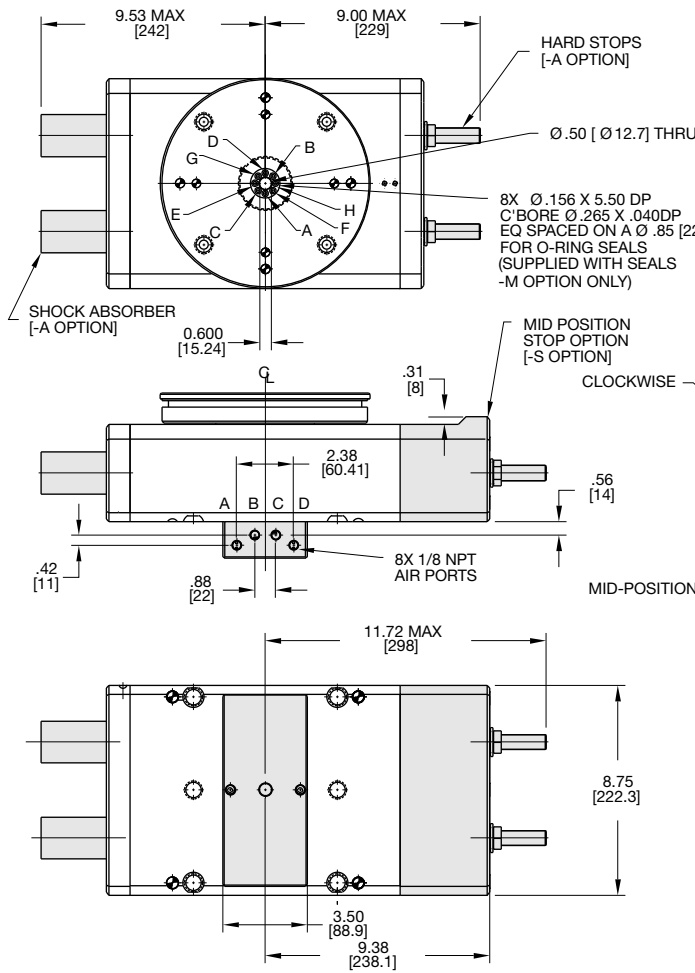
<sup>†</sup>Max. payload based on -A shock option.

Please see back cover for DE-STA-CO Global Locations. [www.destaco.com](http://www.destaco.com)

[www.comoso.com](http://www.comoso.com)



# RR-76M ROTARY ACTUATOR OPTIONS -S, -A, -M, -H OPTIONAL MID-STOP, ROTARY MANIFOLD



### Specifications

	RR-76	RR-76M
Weight (Base Unit)	53 lbs.	24 Kg
Weight Adder for Mid-Position Stop	8.3 lbs.	3.8 Kg
Weight Adder for Rotary Manifold	4.2 lbs.	2.0 Kg
Mid-Stop Torque @ 100psi	890 in-lb	100.5 N-m
Pressure Range	40-100 psi	3-7 bar
Bore Ø of Mid-Position Stop 2X	3.375 in.	85.7 mm
Displacement of Mid-Position Stop	54 in <sup>3</sup>	885 cm <sup>3</sup>
Temperature Range - Viton® Seals	-20°~300° F	-30°~150° C
Mid-Stop Repeatability	±0.5°	±0.5°
Valve required to actuate Mid Stop		3-way, 2-position

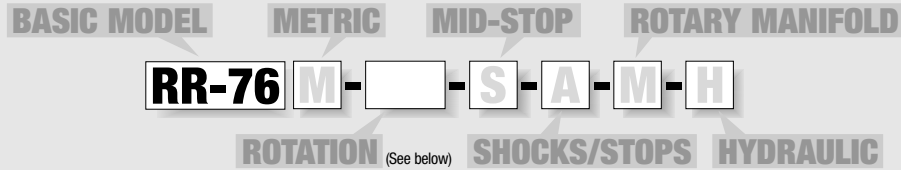
**UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW**

Dimensions are symmetrical about centerline      Third Angle Projection      All Dowel Holes are SF (Slip Fit).  
 Locational Tolerance ±.0005" or ±.013mm

	Imperial in.	Metric [mm]
Metric Threads	0.00 = ±.01	[0.] = [±.25]
Course Pitch	0.000 = ±.005	[0.0] = [±.13]
	0.0000 = ±.0005	[0.00] = [±.013]

RR SERIES  
3.53

## How to Order: (Order Accessories separately from Basic Model)



**DEGREE OF ROTATION 45°, 90°, 135° or 180°**  
(consult factory for intermediate degrees of rotation)

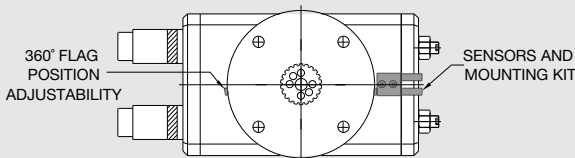
### SENSOR ACCESSORIES

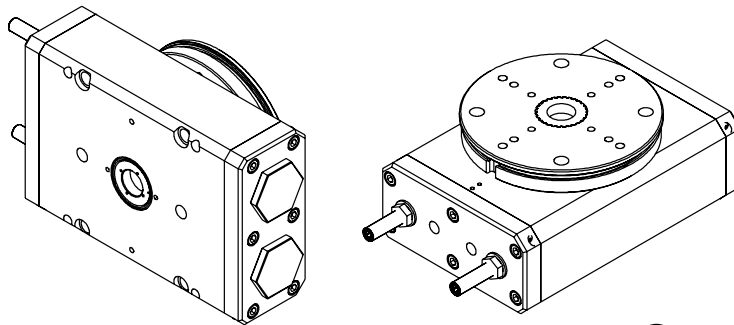
	MODEL CODE	ORDER#	QTY/UNIT
Inductive Sensor Mounting Kit (Mounts 2 Sensors)		<b>OSMK-096</b>	<b>1</b>
NPN Inductive Sensor with Quick Disconnect*		<b>OISN-017</b>	<b>1 or 2</b>
PNP Inductive Sensor with Quick Disconnect*		<b>OISP-017</b>	<b>1 or 2</b>
Quick Disconnect 2M Cable Length*		<b>CABL-014</b>	<b>1 or 2</b>
Quick Disconnect 5M Cable Length*		<b>CABL-018</b>	<b>1 or 2</b>

### PNEUMATIC ACCESSORIES

3/8 NPT Flow Controls (Imperial Units Only)		<b>VLVF-011</b>	<b>2</b>
G3/8 BSPP Flow Controls (Metric Units Only)		<b>VLVF-012</b>	<b>2</b>
Adapter 1/8 NPT to G 1/8		<b>PLFT-028</b>	<b>1</b>
Adapter 3/8 NPT to G 3/8		<b>PLFT-029</b>	<b>1</b>
Standard Base Unit Seal Repair Kit		<b>SLKT-167V</b>	<b>1</b>
Standard Manifold Seal Repair Kit	<b>-M</b>	<b>SLKT-169V</b>	<b>1</b>
Standard Mid-Stop Seal Repair Kit	<b>-S</b>	<b>SLKT-168V</b>	<b>1</b>
Standard with Shocks Seal Repair Kit	<b>-A</b>	<b>SLKT-179</b>	<b>1</b>
Hydraulic Seal Repair Kit (Base)	<b>-H</b>	<b>SLKT-177H</b>	<b>1</b>
Hydraulic Seal Repair Kit (Mid Stop)	<b>-S</b>	<b>SLKT-178H</b>	<b>1</b>

\*Sensor and cable sold separately.





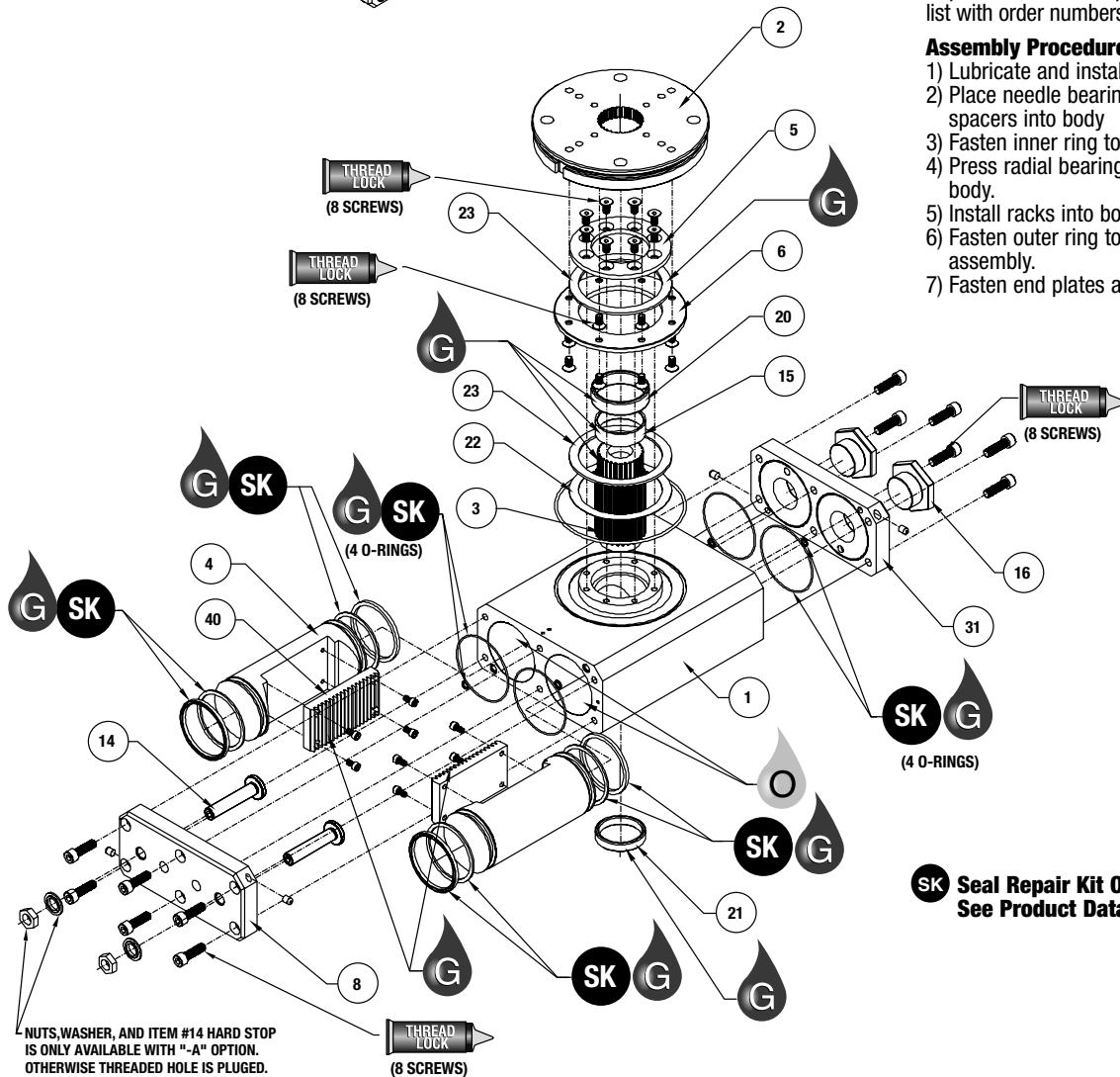
### Item Qty Name

01	1	Body, Main
02	1	Flange
03	1	Pinion
04	2	Rack, Piston
05	1	Ring, Inner Bearing
06	1	Ring, Outer Bearing
08	1	End Plate
16	1	Plug
20	1	Bearing, Needle
21	1	Bearing, Needle
22	1	Washer, Thrust
23	2	Bearing, Thrust
31	1	Ported End Plate

**NOTE:** Contact the Robohand Sales Department for a complete spare parts list with order numbers and prices.

### Assembly Procedure

- 1) Lubricate and install seals
- 2) Place needle bearings, outer ring and spacers into body
- 3) Fasten inner ring to body..
- 4) Press radial bearing into underside of body.
- 5) Install racks into body.
- 6) Fasten outer ring to turntable/pinion assembly.
- 7) Fasten end plates and plugs.



**SK Seal Repair Kit Order #'s  
See Product Data Sheets**



Seal Kit Items



Thread Locker



Krytox™ Lubricant



Lightweight Machine Oil



Teflon® Based Grease

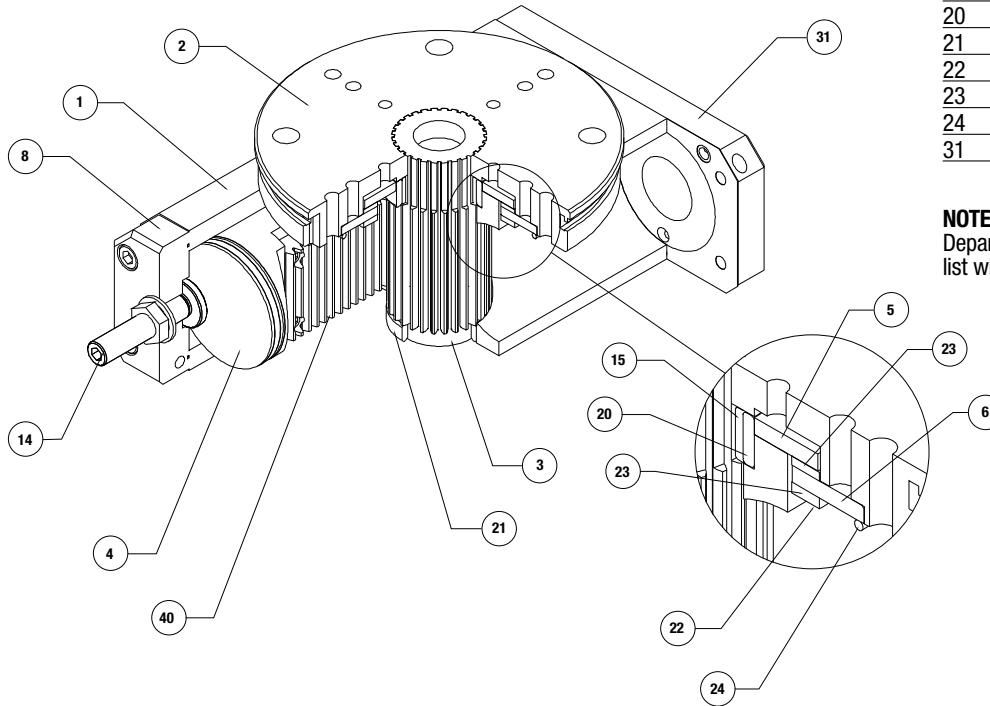


Super Bonder



Third Angle Projection

Item	Qty	Name
01	1	Body, Main
02	1	Flange
03	1	Pinion
04	2	Rack, Piston
05	1	Ring, Inner Bearing
06	1	Ring, Outer Bearing
07	1	End Plate
16	1	Plug
20	1	Bearing, Needle
21	1	Bearing, Needle
22	1	Washer, Thrust
23	2	Bearing, Thrust
24	1	O-Ring
31	1	Ported End Plate

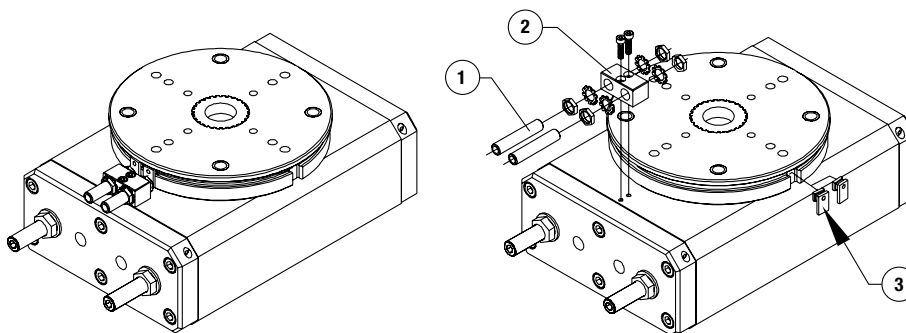


**NOTE:** Contact the Robohand Sales Department for a complete spare parts list with order numbers and prices.

RR-76 SERIES  
MAINTENANCE  
3.55

## Accessory Installation & Adjustment Instructions

- 1) Install sensors and brackets as shown,
- 2) Install targets so when a turntable is at each end of stroke, a target is aligned with a sensor



Seal Kit  
Items



Thread  
Locker



Krytox™  
Lubricant



Lightweight  
Machine Oil



Teflon® Based  
Grease



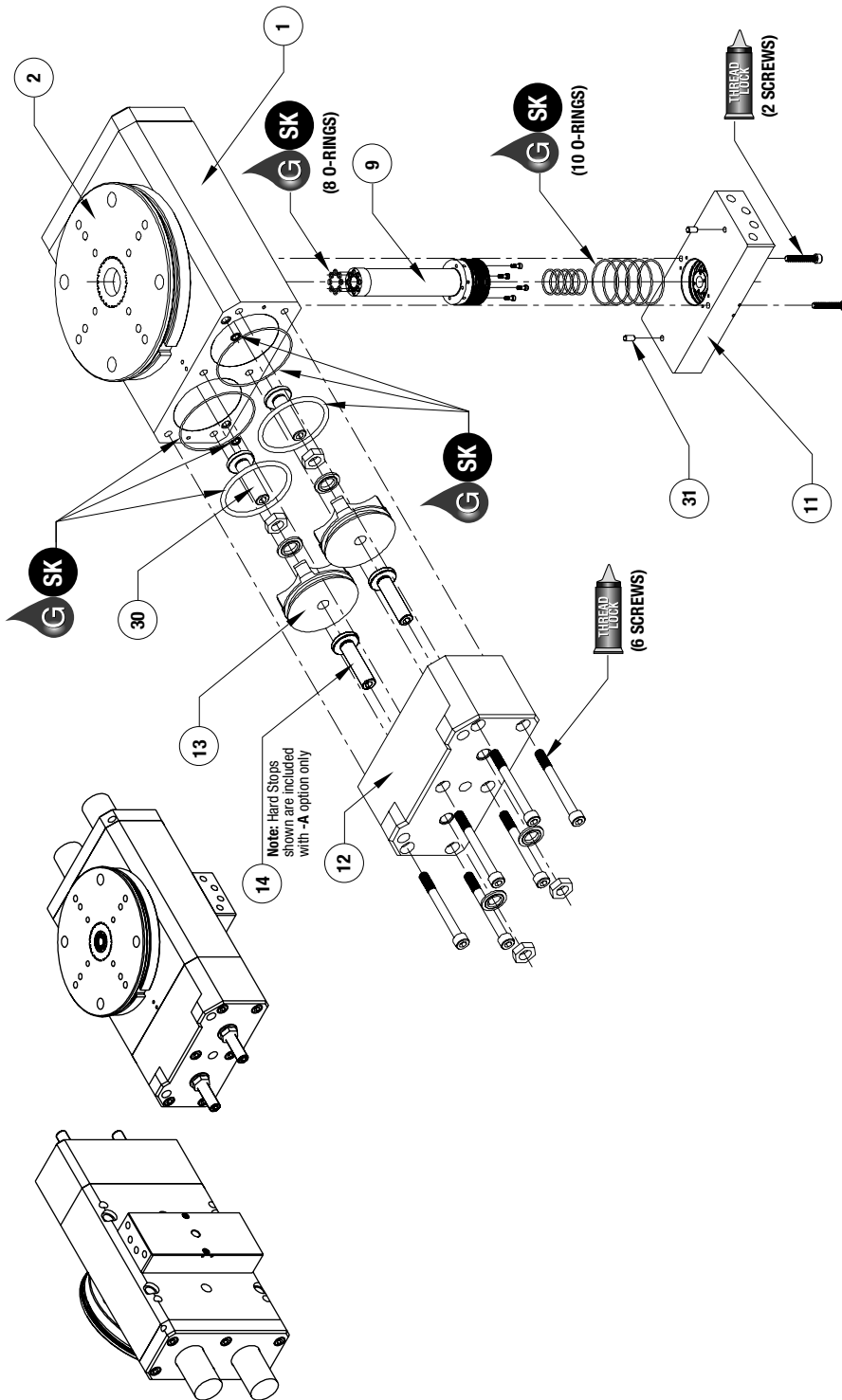
Super  
Bonder



Third Angle  
Projection

Please see back cover for DE-STA-CO Global Locations. [www.destaco.com](http://www.destaco.com)

[www.comoso.com](http://www.comoso.com)



### Item Qty Name

RR-56 & 66-S ( Midstop )		
12	1	Body, Mid-Stop
13	2	Piston, Mid-Stop
30	2	Mid-Stop Adjustment Screws

RR-56-M ( Rotary Manifold )		
09	1	Manifold, Rotary
11	1	Manifold
31	4	Dowel Pin

**NOTE:** Contact the Robohand Sales Department for a complete spare parts list with order numbers and prices.

#### Manifold Option Assembly Procedure

- 1) Lubricate and install 10 small O-rings.
- 2) Press 1/8" dia. dowel pin into manifold.
- 3) Install rotary manifold into pinion with shoulder screws.
- 4) Attach manifold block to rotary actuator body.

#### Mid-Stop Option Assembly Procedure

- 1) Lubricate and install o-rings.
- 2) Install mid-stop pistons, adjustment screws, seal washers, and hex nuts in rotary actuator body.
- 3) Attach mid-stop body to rotary actuator body.
- 4) Install flow controls.

#### Mid-Stop Adjustment Procedure

- 1) Remove mid-stop body from actuator base.
- 2) Remove the two mid-stop pistons from the mid-stop body and insert them into their respective cylinder bores in the actuator base.
- 3) Back off both mid-stop adjustment screws (#30) while pushing the mid-stop pistons firmly into the cylinder bores. The face of the pistons should seat against the actuator base. If not, then continue to back out the stop screws.
- 4) Turn the turntable to the desired position and advance the mid-stop adjustment screws until both screws touch the main piston faces.
- 5) Re-attach the two mid-stop pistons to the mid-stop body and fasten mid-stop body back onto actuator base.

**SK Seal Repair Kit Order #'s  
See Product Data Sheets**

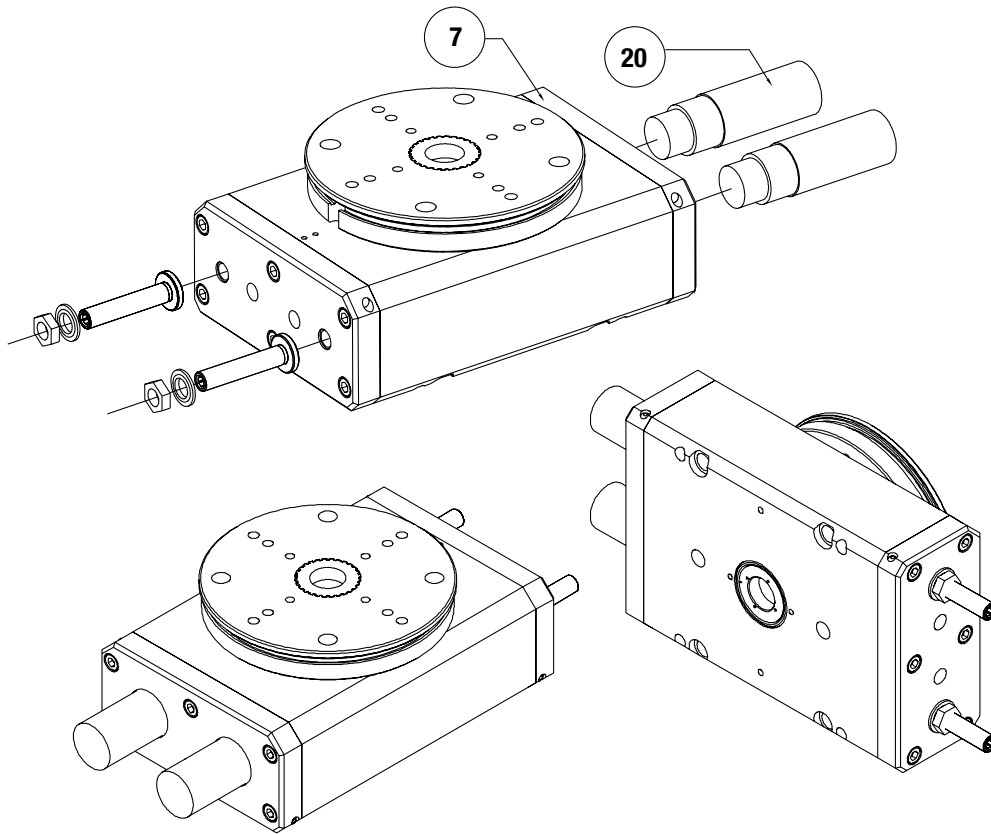
Seal Kit Items	Thread Locker	Krytox™ Lubricant	Lightweight Machine Oil	Teflon® Based Grease	Super Bonder	Third Angle Projection
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# RR-76 Options Assembled View

Item	Qty	Name
7	1	Plate, End
20	2	Shock Absorber

**NOTE:** Contact the Robohand Sales Department for a complete spare parts list with order numbers and prices.



RR-76 OPTIONS  
MAINTENANCE  
357



Seal Kit  
Items



Thread  
Locker



Krytox™  
Lubricant



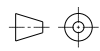
Lightweight  
Machine Oil



Teflon® Based  
Grease



Super  
Bonder



Third Angle  
Projection

Please see back cover for DE-STA-CO Global Locations. [www.destaco.com](http://www.destaco.com)

[www.comoso.com](http://www.comoso.com)





# Linear Motion Slides

## DLB DIRECTCONNECT



### Internally Powered Series

#### DESIGN ADVANTAGES -B

- Built-in Repairable Cylinder
- Compact for Extremely Small Spaces
- Shortest Strokes
- Very Rigid

See Page **4.8**

#### DESIGN ADVANTAGES -L

- Built-in Repairable Cylinder
- Longer Strokes in Compact Space Saving Package
- Very Rigid

## DLB DIRECTCONNECT



### Externally Powered Series

#### DESIGN ADVANTAGES -T

- Disposable Air Cylinder with Sensor Magnet
- Low Cost
- Long Strokes
- Carefree Maintenance

See Page **4.20**

#### DESIGN ADVANTAGES -A

- Disposable Air Cylinder with Adjustable Air Cushions and Sensor Magnet
- Inexpensive Alternative to Shock Absorbers for Light Payloads

#### DESIGN ADVANTAGES -N

- NFPA or VDMA Style Cylinders with Adjustable Air Cushions and Sensor Magnet
- Inexpensive Alternative to Shock Absorbers for Light Payloads

#### DESIGN ADVANTAGES -R

- Position Control in Event of Loss of Air Pressure
- Safety Locking Feature
- VDMA Style Locking Cylinder with Adjustable Air Cushions and Sensor Magnet
- Exhaust Air (from Locking Mechanism) may be Plumbed Away for Contaminant Free Operation

#### DESIGN ADVANTAGES -J

- Customer Supplies Cylinder. NFPA or VDMA Mounting Kits Available
- Least Expensive
- Design Flexibility

Preferred Market: ● Global

## DLT DIRECTCONNECT



### Internally Powered Series

#### DESIGN ADVANTAGES -B, -E

- Built-in Repairable Cylinder
- Compact for Extremely Small Spaces
- Can Be Used as a Lift Table (-B)
- Greater Shaft Support (-E)
- Shortest Strokes • Lightest Weight

See Page **4.32**

#### DESIGN ADVANTAGES -L

- Built-in Repairable Cylinder • Longer Strokes
- Compact Design for Small Spaces

## DLT DIRECTCONNECT



### Externally Powered Series

#### DESIGN ADVANTAGES -T

- Disposable Air Cylinder with Sensor Magnet
- Low Cost
- Long Strokes
- Carefree Maintenance

See Page **4.56**

#### DESIGN ADVANTAGES -A

- Disposable Air Cylinder with Adjustable Air Cushions and Sensor Magnet
- Inexpensive Alternative to Shock Absorbers for Light Payloads

#### DESIGN ADVANTAGES -N

- NFPA or VDMA Style Cylinders with Adjustable Air Cushions and Sensor Magnet
- Adjustable Air Cushions Replace Shock Absorbers for Light Payloads

#### DESIGN ADVANTAGES -R

- Position Control in Event of Loss of Air Pressure
- Safety Locking Feature
- VDMA Style Locking Cylinder with Adjustable Air Cushions and Sensor Magnet
- Exhaust Air (from Locking Mechanism) may be Plumbed Away for Contaminant Free Operation

#### DESIGN ADVANTAGES -J

- Customer Supplies Cylinder. NFPA or VDMA Mounting Kits Available
- Least Expensive
- Design Flexibility

Preferred Market: ● Global

## DLM DIRECTCONNECT



### Mini Ball Rail Slide Series

#### DESIGN ADVANTAGES

- Multiple Air Port Positions
- Manifold Air Porting
- Retract and extend stroke adjustments for precise positioning with infinite stroke adjustability
- Double Bearing Option for greater load and moment capacity
- Multiple DIRECTCONNECT Mounting Locations
- Thru Mounting on tool plate and body

See Page **4.70**

Preferred Market: ● Global

# Destaco-Robohand Slide Product Selector

Model #	Type of Slide	Maximum Thrust Force Range	Maximum Stroke	Maximum Payload	Operating Pressure	Cylinder Type	Bearings	Inductive Sensors	Magneto Resistive Sensors	Shock Absorbers w/Stops	Bumpers and Collars	Independent End Stops	Air Cushioned Cylinder	Telescopic Airlines
<b>BASE SLIDE - INTERNALLY POWERED - SHORT BODY</b>														
DLB-10-B	•	0 - 25 lbs. [0 - 111N]	0 - 2 in. [0 - 50.8mm]	0 - 10 lbs. [0 - 5kg]	20 - 100 psi [1.5 - 7 bar]	Internal (Repairable)	Preloaded Ball Bushing	•	•	•	•	•	•	•
DLB-12-B	•	25 - 50 lbs. [111 - 223N]	2 - 4 in. [50.8 - 102mm]	10 - 25 lbs. [5 - 11kg]	40 - 100 psi [3 - 7 bar]	External (Replaceable)	Composite Bushings	•	•	•	•	•	•	•
DLB-16-B	•	50 - 100 lbs. [223 - 445N]	4 - 6 in. [102 - 152mm]	25 - 50 lbs. [11 - 23kg]		External (ISO)	Roller Bearings	•	•	•	•	•	•	•
DLB-20-B	•	100 - 150 lbs. [445 - 678N]	6 - 8 in. [152 - 203mm]	50 - 100 lbs. [23 - 45kg]		External (NFPA)	Bronze Bushings	•	•	•	•	•	•	•
DLB-25-B	•	150 - 200 lbs. [678 - 890N]	8 - 10 in. [203 - 254mm]	100 - 150 lbs. [45 - 68kg]		External (VDMA)		•	•	•	•	•	•	•
		200 - 300 lbs. [890 - 1350N]	10 - 12 in. [254 - 305mm]	150 lbs. + [68 + kg]		External Locking Customer Supplied		•	•	•	•	•	•	•
		300+ lbs. [1350+ N]	12 - 14 in. [305 - 356mm]					•	•	•	•	•	•	•
			14 - 16 in. [356 - 406mm]					•	•	•	•	•	•	•
			16 - 18 in. [406 - 457mm]					•	•	•	•	•	•	•
			18 - 20 in. [457 - 508mm]					•	•	•	•	•	•	•
			20 - 22 in. [508 - 558mm]					•	•	•	•	•	•	•
			22 - 24 in. [558 - 610mm]					•	•	•	•	•	•	•
			24 in. + [610+ mm]					•	•	•	•	•	•	•
<b>BASE SLIDE - INTERNALLY POWERED - LONG BODY</b>														
DLB-10-L	•	0 - 25 lbs. [0 - 111N]	0 - 2 in. [0 - 50.8mm]	0 - 10 lbs. [0 - 5kg]	20 - 100 psi [1.5 - 7 bar]	Internal (Repairable)	Preloaded Ball Bushing	•	•	•	•	•	•	•
DLB-12-L	•	25 - 50 lbs. [111 - 223N]	2 - 4 in. [50.8 - 102mm]	10 - 25 lbs. [5 - 11kg]	40 - 100 psi [3 - 7 bar]	External (Replaceable)	Composite Bushings	•	•	•	•	•	•	•
DLB-16-L	•	50 - 100 lbs. [223 - 445N]	4 - 6 in. [102 - 152mm]	25 - 50 lbs. [11 - 23kg]		External (ISO)	Roller Bearings	•	•	•	•	•	•	•
DLB-20-L	•	100 - 150 lbs. [445 - 678N]	6 - 8 in. [152 - 203mm]	50 - 100 lbs. [23 - 45kg]		External (NFPA)	Bronze Bushings	•	•	•	•	•	•	•
DLB-25-L	•	150 - 200 lbs. [678 - 890N]	8 - 10 in. [203 - 254mm]	100 - 150 lbs. [45 - 68kg]		External (VDMA)		•	•	•	•	•	•	•
		200 - 300 lbs. [890 - 1350N]	10 - 12 in. [254 - 305mm]	150 lbs. + [68 + kg]		External Locking Customer Supplied		•	•	•	•	•	•	•
		300+ lbs. [1350+ N]	12 - 14 in. [305 - 356mm]					•	•	•	•	•	•	•
			14 - 16 in. [356 - 406mm]					•	•	•	•	•	•	•
			16 - 18 in. [406 - 457mm]					•	•	•	•	•	•	•
			18 - 20 in. [457 - 508mm]					•	•	•	•	•	•	•
			20 - 22 in. [508 - 558mm]					•	•	•	•	•	•	•
			22 - 24 in. [558 - 610mm]					•	•	•	•	•	•	•
			24 in. + [610+ mm]					•	•	•	•	•	•	•
<b>BASE SLIDE-EXTERNALLY POWERED</b>														
DLB-10-T, A, N, U	•	0 - 25 lbs. [0 - 111N]	0 - 2 in. [0 - 50.8mm]	0 - 10 lbs. [0 - 5kg]	20 - 100 psi [1.5 - 7 bar]	Internal (Repairable)	Preloaded Ball Bushing	•	•	•	•	•	•	•
DLB-12-T, A, N, U	•	25 - 50 lbs. [111 - 223N]	2 - 4 in. [50.8 - 102mm]	10 - 25 lbs. [5 - 11kg]	40 - 100 psi [3 - 7 bar]	External (Replaceable)	Composite Bushings	•	•	•	•	•	•	•
DLB-16-T, A, N, U	•	50 - 100 lbs. [223 - 445N]	4 - 6 in. [102 - 152mm]	25 - 50 lbs. [11 - 23kg]		External (ISO)	Roller Bearings	•	•	•	•	•	•	•
DLB-20-T, A, N, R, U	•	100 - 150 lbs. [445 - 678N]	6 - 8 in. [152 - 203mm]	50 - 100 lbs. [23 - 45kg]		External (NFPA)	Bronze Bushings	•	•	•	•	•	•	•
DLB-25-T, A, N, R, U	•	150 - 200 lbs. [678 - 890N]	8 - 10 in. [203 - 254mm]	100 - 150 lbs. [45 - 68kg]		External (VDMA)		•	•	•	•	•	•	•
		200 - 300 lbs. [890 - 1350N]	10 - 12 in. [254 - 305mm]	150 lbs. + [68 + kg]		External Locking Customer Supplied		•	•	•	•	•	•	•
		300+ lbs. [1350+ N]	12 - 14 in. [305 - 356mm]					•	•	•	•	•	•	•
			14 - 16 in. [356 - 406mm]					•	•	•	•	•	•	•
			16 - 18 in. [406 - 457mm]					•	•	•	•	•	•	•
			18 - 20 in. [457 - 508mm]					•	•	•	•	•	•	•
			20 - 22 in. [508 - 558mm]					•	•	•	•	•	•	•
			22 - 24 in. [558 - 610mm]					•	•	•	•	•	•	•
			24 in. + [610+ mm]					•	•	•	•	•	•	•
<b>THRUSTER SLIDE - INTERNALLY POWERED - SHORT BODY</b>														
DLT-06-B, E	•	0 - 25 lbs. [0 - 111N]	0 - 2 in. [0 - 50.8mm]	0 - 10 lbs. [0 - 5kg]	20 - 100 psi [1.5 - 7 bar]	Internal (Repairable)	Preloaded Ball Bushing	•	•	•	•	•	•	•
DLT-08-B, E	•	25 - 50 lbs. [111 - 223N]	2 - 4 in. [50.8 - 102mm]	10 - 25 lbs. [5 - 11kg]	40 - 100 psi [3 - 7 bar]	External (Replaceable)	Composite Bushings	•	•	•	•	•	•	•
DLT-10-B, E	•	50 - 100 lbs. [223 - 445N]	4 - 6 in. [102 - 152mm]	25 - 50 lbs. [11 - 23kg]		External (ISO)	Roller Bearings	•	•	•	•	•	•	•
DLT-12-B, E	•	100 - 150 lbs. [445 - 678N]	6 - 8 in. [152 - 203mm]	50 - 100 lbs. [23 - 45kg]		External (NFPA)	Bronze Bushings	•	•	•	•	•	•	•
DLT-16-B, E	•	150 - 200 lbs. [678 - 890N]	8 - 10 in. [203 - 254mm]	100 - 150 lbs. [45 - 68kg]		External (VDMA)		•	•	•	•	•	•	•
DLT-20-B, E	•	200 - 300 lbs. [890 - 1350N]	10 - 12 in. [254 - 305mm]	150 lbs. + [68 + kg]		External Locking Customer Supplied		•	•	•	•	•	•	•
DLT-25-B, E	•	300+ lbs. [1350+ N]	12 - 14 in. [305 - 356mm]					•	•	•	•	•	•	•
			14 - 16 in. [356 - 406mm]					•	•	•	•	•	•	•
			16 - 18 in. [406 - 457mm]					•	•	•	•	•	•	•
			18 - 20 in. [457 - 508mm]					•	•	•	•	•	•	•
			20 - 22 in. [508 - 558mm]					•	•	•	•	•	•	•
			22 - 24 in. [558 - 610mm]					•	•	•	•	•	•	•
			24 in. + [610+ mm]					•	•	•	•	•	•	•
<b>THRUSTER SLIDE - INTERNALLY POWERED - LONG BODY</b>														
DLT-06-L	•	0 - 25 lbs. [0 - 111N]	0 - 2 in. [0 - 50.8mm]	0 - 10 lbs. [0 - 5kg]	20 - 100 psi [1.5 - 7 bar]	Internal (Repairable)	Preloaded Ball Bushing	•	•	•	•	•	•	•
DLT-08-L	•	25 - 50 lbs. [111 - 223N]	2 - 4 in. [50.8 - 102mm]	10 - 25 lbs. [5 - 11kg]	40 - 100 psi [3 - 7 bar]	External (Replaceable)	Composite Bushings	•	•	•	•	•	•	•
DLT-10-L	•	50 - 100 lbs. [223 - 445N]	4 - 6 in. [102 - 152mm]	25 - 50 lbs. [11 - 23kg]		External (ISO)	Roller Bearings	•	•	•	•	•	•	•
DLT-12-L	•	100 - 150 lbs. [445 - 678N]	6 - 8 in. [152 - 203mm]	50 - 100 lbs. [23 - 45kg]		External (NFPA)	Bronze Bushings	•	•	•	•	•	•	•
DLT-16-L	•	150 - 200 lbs. [678 - 890N]	8 - 10 in. [203 - 254mm]	100 - 150 lbs. [45 - 68kg]		External (VDMA)		•	•	•	•	•	•	•
DLT-20-L	•	200 - 300 lbs. [890 - 1350N]	10 - 12 in. [254 - 305mm]	150 lbs. + [68 + kg]		External Locking Customer Supplied		•	•	•	•	•	•	•
DLT-25-L	•	300+ lbs. [1350+ N]	12 - 14 in. [305 - 356mm]					•	•	•	•	•	•	•
			14 - 16 in. [356 - 406mm]					•	•	•	•	•	•	•
			16 - 18 in. [406 - 457mm]					•	•	•	•	•	•	•
			18 - 20 in. [457 - 508mm]					•	•	•	•	•	•	•
			20 - 22 in. [508 - 558mm]					•	•	•	•	•	•	•
			22 - 24 in. [558 - 610mm]					•	•	•	•	•	•	•
			24 in. + [610+ mm]					•	•	•	•	•	•	•
<b>THRUSTER SLIDE -EXTERNALLY POWERED</b>														
DLT-06-T, U	•	0 - 25 lbs. [0 - 111N]	0 - 2 in. [0 - 50.8mm]	0 - 10 lbs. [0 - 5kg]	20 - 100 psi [1.5 - 7 bar]	Internal (Repairable)	Preloaded Ball Bushing	•	•	•	•	•	•	•
DLT-08-T, U	•	25 - 50 lbs. [111 - 223N]	2 - 4 in. [50.8 - 102mm]	10 - 25 lbs. [5 - 11kg]	40 - 100 psi [3 - 7 bar]	External (Replaceable)	Composite Bushings	•	•	•	•	•	•	•
DLT-10-T, A, N, U	•	50 - 100 lbs. [223 - 445N]	4 - 6 in. [102 - 152mm]	25 - 50 lbs. [11 - 23kg]		External (ISO)	Roller Bearings	•	•	•	•	•	•	•
DLT-12-T, A, N, U	•	100 - 150 lbs. [445 - 678N]	6 - 8 in. [152 - 203mm]	50 - 100 lbs. [23 - 45kg]		External (NFPA)	Bronze Bushings	•	•	•	•	•	•	•
DLT-16-T, A, N, U	•	150 - 200 lbs. [678 - 890N]	8 - 10 in. [203 - 254mm]	100 - 150 lbs. [45 - 68kg]		External (VDMA)		•	•	•	•	•	•	•
DLT-20-T, A, N, R, U	•	200 - 300 lbs. [890 - 1350N]	10 - 12 in. [254 - 305mm]	150 lbs. + [68 + kg]		External Locking Customer Supplied		•	•	•	•	•	•	•
DLT-25-T, A, N, R, U	•	300+ lbs. [1350+ N]	12 - 14 in. [305 - 356mm]					•	•	•	•	•	•	•
			14 - 16 in. [356 - 406mm]					•	•	•	•	•	•	•
			16 - 18 in. [406 - 457mm]					•	•	•	•	•	•	•
			18 - 20 in. [457 - 508mm]					•	•	•	•	•	•	•
			20 - 22 in. [508 - 558mm]					•	•	•	•	•	•	•
			22 - 24 in. [558 - 610mm]					•	•	•	•	•	•	•
			24 in. + [610+ mm]					•	•	•	•	•	•	•

DIRECTCONNECT  
LINEAR MOTION  
ACTUATORS  
4.2

# Destaco-Robohand Parallel Gripper Product Selector

Model #	Type of Slide	Maximum Thrust Force Range	Maximum Stroke	Maximum Payload	Operating Pressure	Cylinder Type	Bearings	Inductive Sensors	Magnetic Resistive Sensors	Shock Absorbers w/Stops	Bumpers and Collars	Independent End Stops	Air Cushioned Cylinder	Telescopic Airlines
<b>MINI BALL RAIL SLIDE</b>														
DLM-07M-12	•	•	•	•	•	•	•	•	•	•	•	•	•	•
DLM-07M-25	•	•	•	•	•	•	•	•	•	•	•	•	•	•
DLM-07M-38	•	•	•	•	•	•	•	•	•	•	•	•	•	•
DLM-07M-50	•	•	•	•	•	•	•	•	•	•	•	•	•	•
DLM-09M-25	•	•	•	•	•	•	•	•	•	•	•	•	•	•
DLM-09M-50	•	•	•	•	•	•	•	•	•	•	•	•	•	•
DLM-09M-75	•	•	•	•	•	•	•	•	•	•	•	•	•	•
DLM-09M-100	•	•	•	•	•	•	•	•	•	•	•	•	•	•
DLM-12M-25	•	•	•	•	•	•	•	•	•	•	•	•	•	•
DLM-12M-50	•	•	•	•	•	•	•	•	•	•	•	•	•	•
DLM-12M-75	•	•	•	•	•	•	•	•	•	•	•	•	•	•
DLM-12M-100	•	•	•	•	•	•	•	•	•	•	•	•	•	•

Please see back cover for DE-STA-CO Global Locations. [www.destaco.com](http://www.destaco.com)

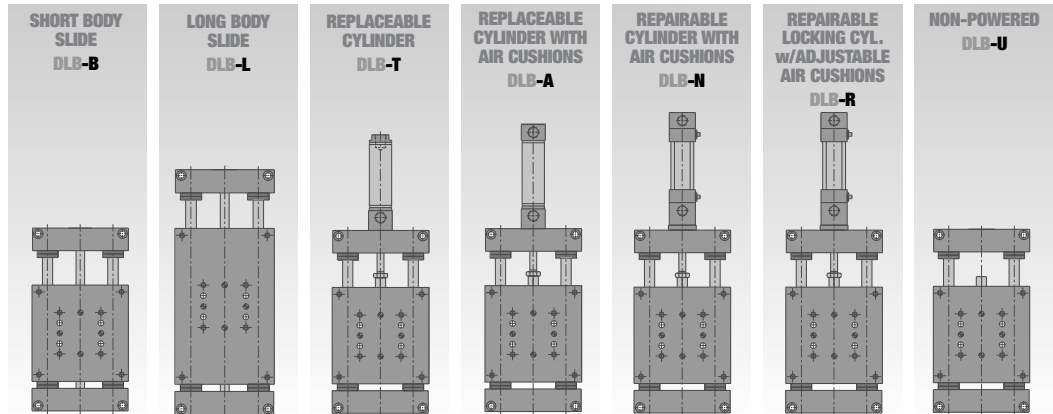
[www.comoso.com](http://www.comoso.com)

# DIRECTCONNECT™

**A full line of individual Base Slides,**

# 1.

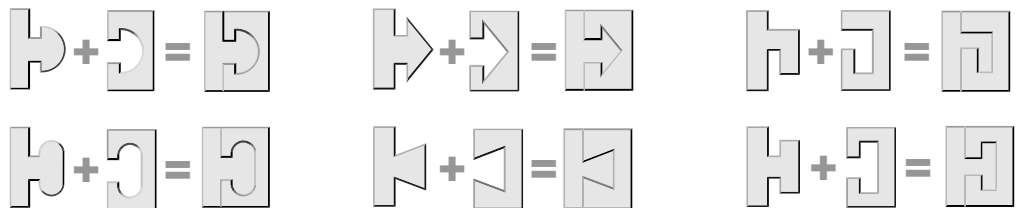
15 different styles of Base Slides, Thrusters, and Block Slides. Each style is available in 7 sizes; both Imperial and Metric!



DIRECTCONNECT  
LINEAR MOTION  
ACTUATORS  
4.4

**quickly & easily mount together**

Single icons represent various 4 screw, 2 dowel mounting patterns. Mated icons represent a **DIRECTCONNECT**

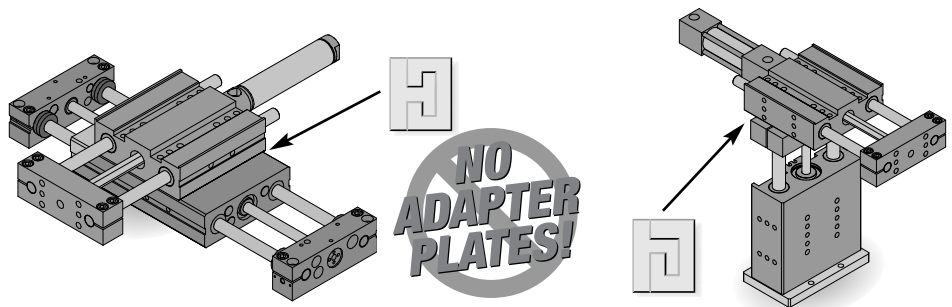


**DIRECTCONNECT** mounting selection is achieved by matching mating icons

# 3.

Combine 2, 3, or more units together to create an unlimited variety of Pick and Place applications to suit your application needs!

**create an almost unlimited array**



**DIRECTCONNECT**  
between Base Slides & Thrusters

**DIRECTCONNECT**  
between various styles

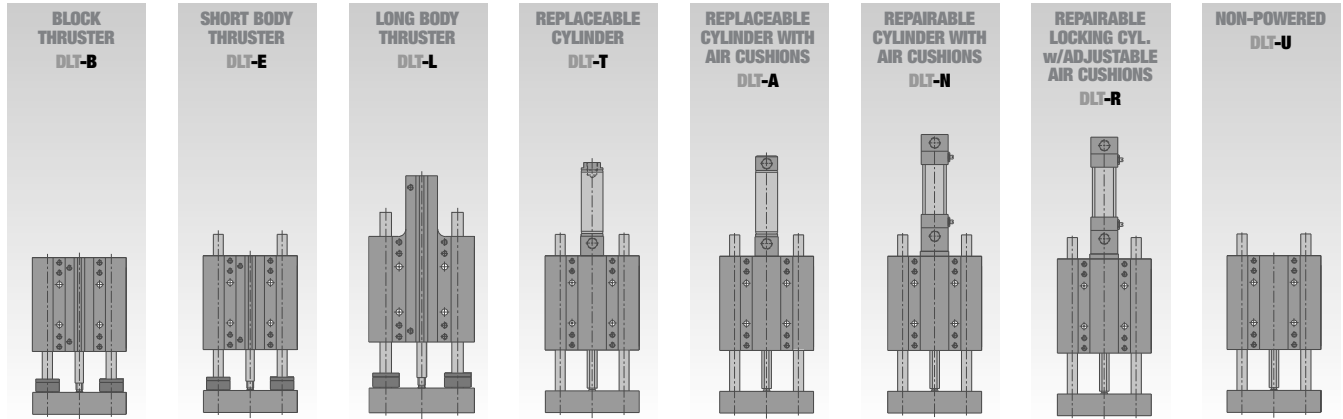
Please see back cover for DE-STA-CO Global Locations. [www.destaco.com](http://www.destaco.com)

[www.comoso.com](http://www.comoso.com)

DIRECTCONNECT™

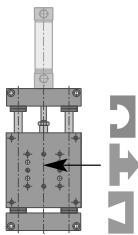
# IS AS EASY AS 1-2-3!

## Block Thrusters, and Thruster Slides that...

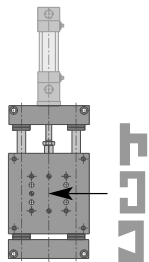


## WITHOUT ADAPTER PLATES to...

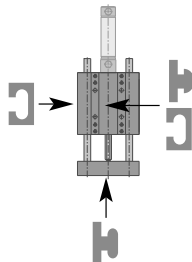
DLB -10  
-12  
-16



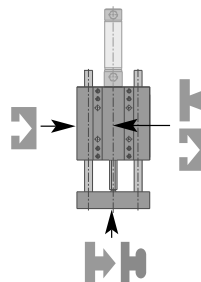
DLB -20  
-25



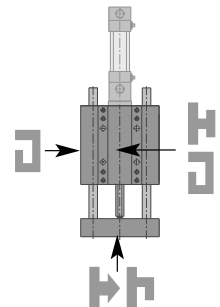
DLT -06  
-08



DLT -10  
-12  
-16

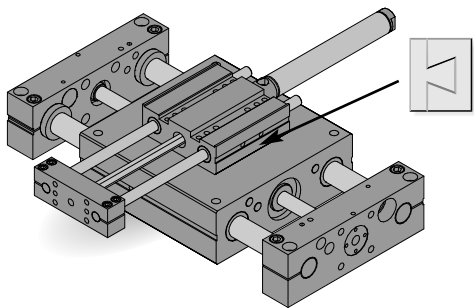


DLT -20  
-25

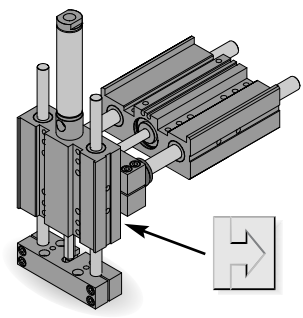
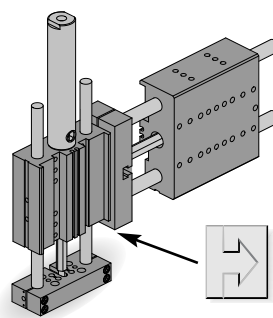


**DIRECTCONNECT** mounting patterns are common and standard on all styles and sizes

## of multi-axis Pick and Place devices!



**NO ADAPTER PLATES!**



**DIRECTCONNECT**  
between different sizes

**DIRECTCONNECT**  
in multiple orientations

DIRECTCONNECT  
LINEAR MOTION  
ACTUATORS  
4.5

DIRECTCONNECT™

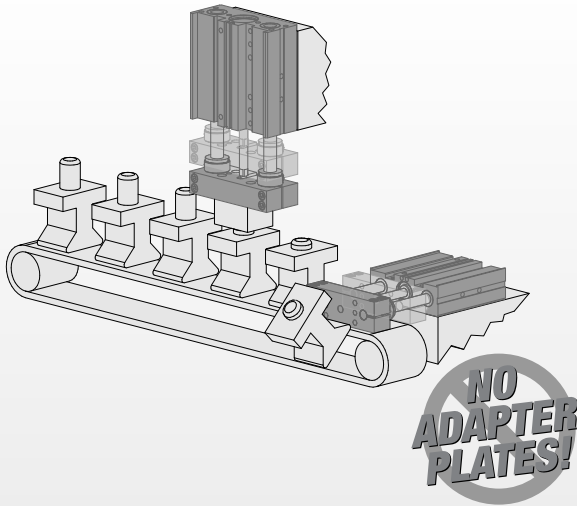


# DIRECTCONNECT™

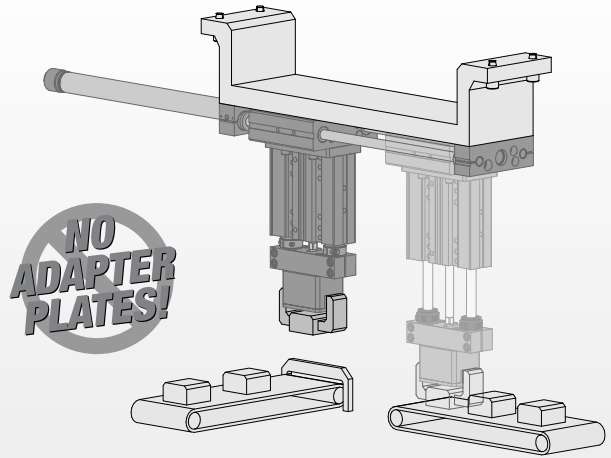
## Modular Automation Applications

The following applications represent only some of the unlimited variety of automation solutions made possible with DIRECTCONNECT. Configurations shown include individual components used in single axis applications as well as combinations of units connected **WITHOUT ADAPTER PLATES** to create multi-axis modular automation devices.

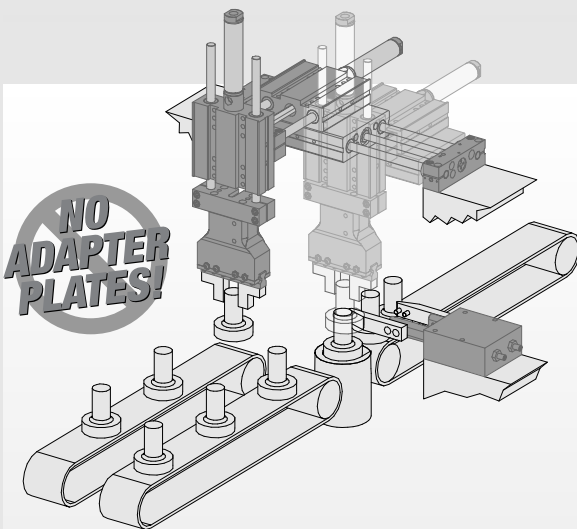
DIRECTCONNECT  
LINEAR MOTION  
ACTUATORS  
4.6



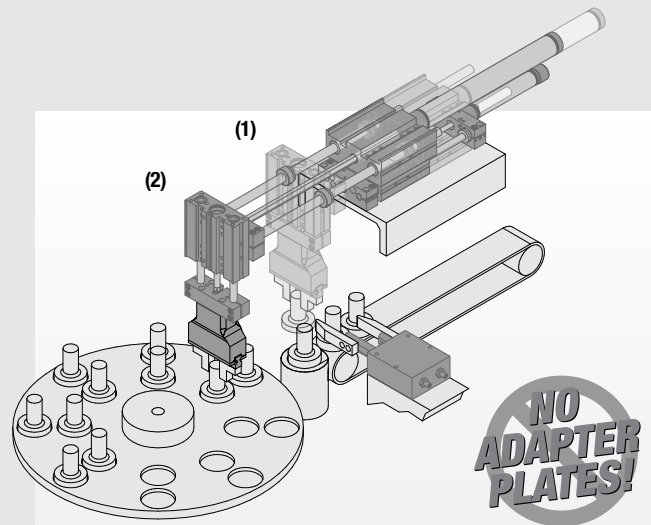
Individual Block Thrusters used independently to perform press and eject operations.  
The Block Thruster's compact design is ideal in applications where space is limited.



An overhead gantry created using an inverted Base Slide and Block Thruster with the Base Flange option. The externally powered Base Slide can provide long strokes while the Block Thruster offers a low profile package.



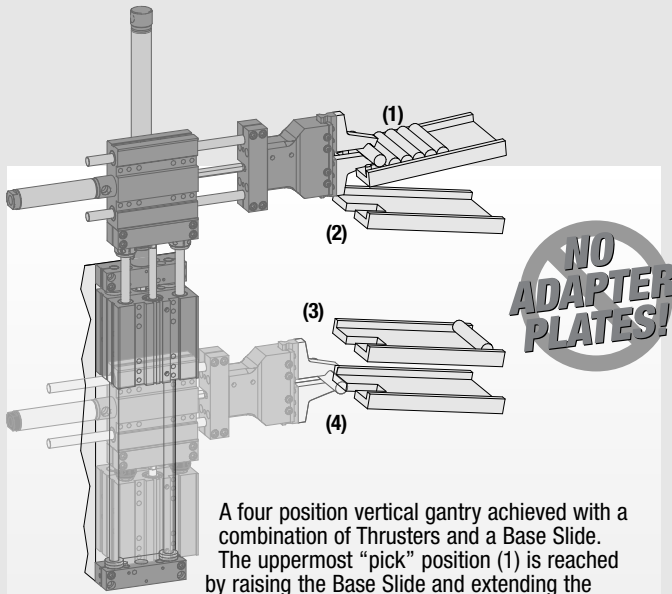
A three axis pick and place created using a Base Slide and two Thrusters. The system allows a single escapement station to feed two conveyor lines. All positions are precisely located with Hard Stops or Shocks. This set-up also allows for a "reject" position.



Mounting a Thruster to a Base Slide on the same axis is used to achieve a three or four position box motion pick and place.

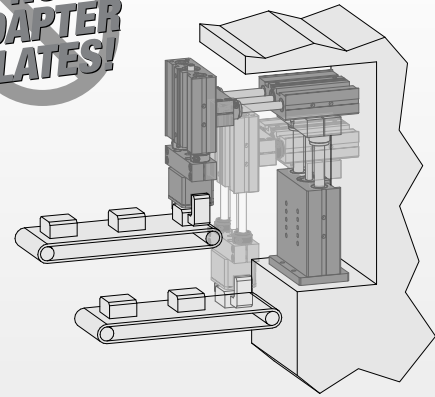
Retracting both Thruster and Base Slide puts the system at a home "pick" position (1). Extending both the horizontal Base Slide and Thruster allows the part to be placed in the inner turntable nest (2). The Slide returns to the "pick" position and the horizontal Thruster is extended allowing the part to be placed in the outer turntable nest. All three positions are precisely located with hard stops or shocks.

A fourth "reject" position could be simply added by extending the Base Slide while the Thruster is retracted.

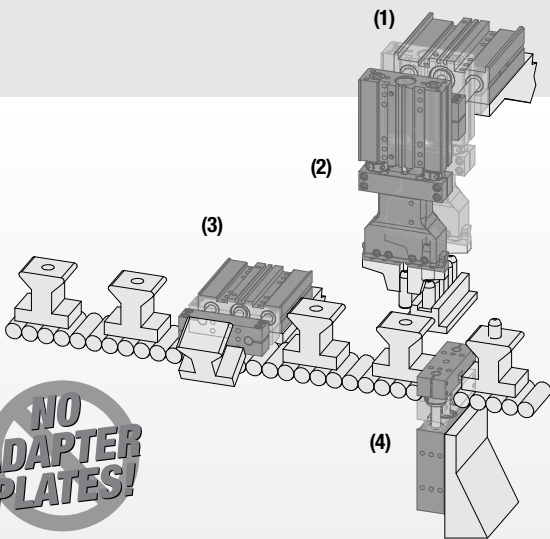


A four position vertical gantry achieved with a combination of Thrusters and a Base Slide. The uppermost “pick” position (1) is reached by raising the Base Slide and extending the vertical Block Thruster upward. A part picked from here could be placed in one of the three remaining positions. Position (2) is achieved by keeping the Base Slide in the raised position while retracting the vertical Thruster. Position (3) is attained by lowering the Base Slide while extending the vertical Thruster. Position (4) is obtained by retracting the vertical Thruster. All positions can be precisely located by using Hard Stops for accurate location of picking and placing.

**NO ADAPTER PLATES!**

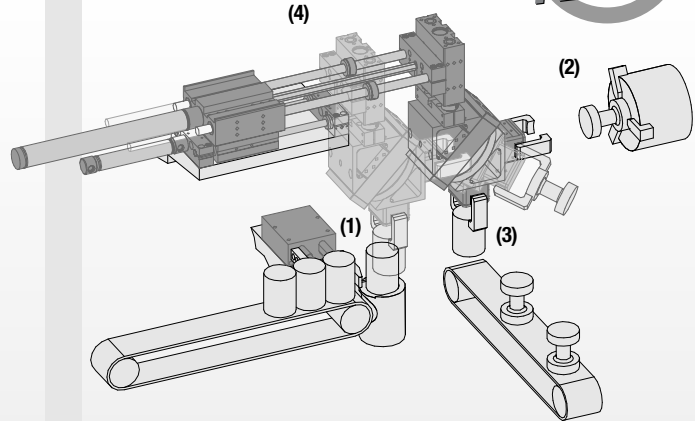


A more elaborate box motion pick and place using Block Thrusters to achieve part transfer between multi-level conveyors. Due to space limitations the application of Block Thrusters is a good choice.



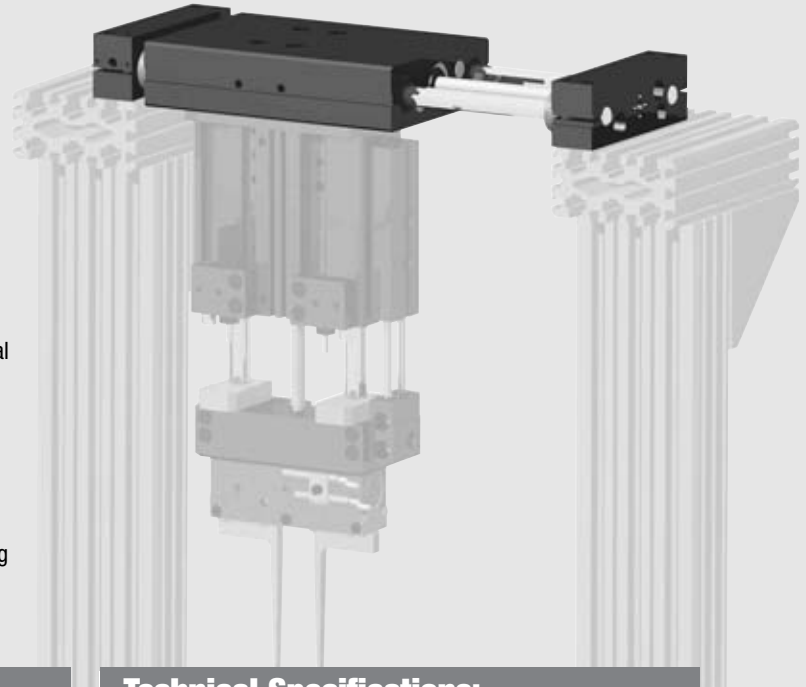
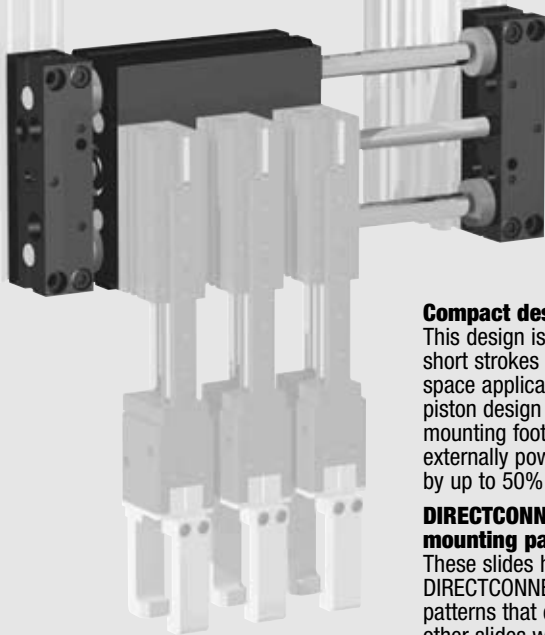
A combination of Thrusters used independently and together for various functions. A simple box motion pick and place utilizing a larger horizontal Thruster (1) for increased rigidity and smaller vertical Thruster (2) where deflection is not as much of a concern. An individual Block Thruster (3) used to eject defective (hole missing) parts and another Block Thruster (4) used as a conveyor stop. All units are compact and mount easily into a small area.

**NO ADAPTER PLATES!**



Machine load/unload application utilizes 3 or 4 positions in the horizontal axis for picking the billet (1), inserting/removing the finished part from the lathe (2) and placing the finished part on the conveyor (3). A fourth position could be utilized for a “reject” position. This pick and place device uses a Base Slide and a Thruster mounted in the same axis. The Thruster is a longer stroke version with its actual usable stroke reduced using adjustable collars (4). Vertical motion for the pick and place is accomplished using a Block Thruster. A right angle rotary is used to make the axis change between the billet and the machine axis. All components are standard, off-the-shelf, and quickly & easily designed and assembled.

# Internally Powered Base Slides



**Compact design:**  
This design is used for short strokes in limited space applications. Internal piston design reduces the mounting foot print over externally powered slides by up to 50%

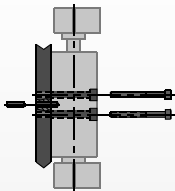
**DIRECTCONNECT mounting patterns:**  
These slides have DIRECTCONNECT mounting patterns that connect to other slides without the need for adapter plates.

DLB SERIES

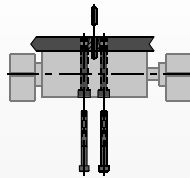
4.8

## Mounting Information:

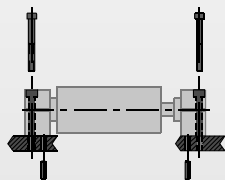
### Mounts and operates in any orientation



Payload attaches to tapped holes in body with screws and locates using slip fit dowel pin holes



Payload attaches with screws through clearance and counterbored holes in body and locates using slip fit dowel pin holes



End blocks mount with screws and locate with slip fit dowel pin holes

## Technical Specifications:

### Pneumatic Specifications

Pressure Operating Range\*  
Cylinder Type  
Dynamic Seals  
Valve Required to Operate

**Imperial**  
40-100 psi  
**Metric**  
3-7 bar  
Double Acting  
Internally Lubricated Buna-N  
4-way, 2-position

### Air Quality Requirements

Air Filtration  
Air Lubrication  
Air Humidity

40 Micron or Better  
Not Necessary\*\*  
Low Moisture Content (dry)

### Temperature Operating Range

Buna-N Seals (standard)  
Viton® Seals (optional)

-30°~180° F  
-20°~300° F  
-35°~80° C  
-30°~150° C

### Maintenance Specifications†

Expected Life  
Normal Application  
w/ Preventative Maintenance  
Field Repairable  
Seal Repair Kits Available

5 million cycles  
10+ million cycles†  
No  
No

### Application Restrictions

Flow controls, shock absorbers and urethane bumpers recommended for nearly all applications. Use composite bushing in dirty or gritty environments. Never use silicone based lubricants with composite bushings.

\*Higher pressure possible. Consult factory with application details.  
\*\*Addition of lubrication will greatly increase service life  
†See Maintenance Section

## Product Features

### DIRECTCONNECT Mounting Patterns

Main bodies have tapped and counterbored through holes including slip fit dowel holes on DIRECTCONNECT mounting surface

**Shock Absorbers**  
with built-in hard stop

**Inductive Proximity Sensors**  
8mm diameter, threaded body with quick disconnect

**Hardened Pads**  
Hardened steel stop, shock and sensor pads

**Aircraft Quality Aluminum**

**Precision Ground Shafting**

Case hardened to RC60-65. Corrosion resistant optional

**Oil Wick**  
Supplies constant bearing lubrication

**Adjustable Hard Stops**  
For precision (+/- .001" [0.01]) hard stop end point positioning. Allows for stop adjustment independent of shock absorber hard stop

**Bearing Options**  
Preloaded linear ball bushings or composite bushings

**Modular Telescoping Airlines**  
Eliminates flexing air lines. Patented self aligning air tube design extends useful seal life. (2) user air ports per module

**End Block Mounting Dowel Holes**

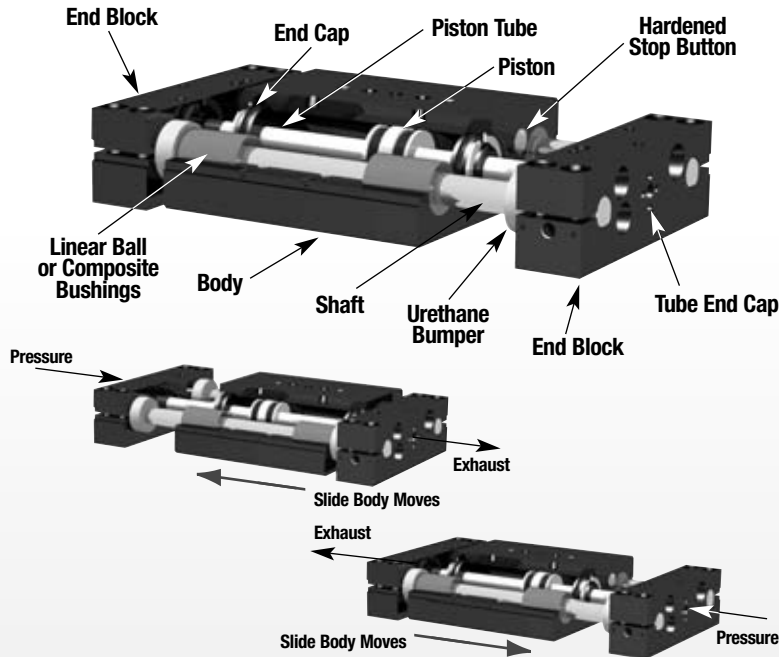
For precision mounting to machine bases (not available on -08)

**Urethane Bumpers**

**Seal Option**

Viton® or self-lubricating Buna-N dynamic seals

## Operating Principle

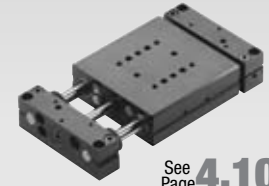


- A stationary piston is sandwiched between two fixed end blocks by two hollow piston tubes.
- The piston separates the cylinder bore in the body into two chambers
- The tubes fit into the piston in such a way that allows air to escape from the tube/ piston interface into one air chamber of the body.
- The body is guided by four linear bearings sliding on two shafts that are supported by the end blocks.
- The body has two end caps attached to each end of the cylinder bore which seals the air chambers.
- When air is supplied through a piston tube, it pressurizes that side of the cylinder of the body.
- The pressure creates a force against the end cap which pulls the body along with it.

**Designed and manufactured in the USA**

## Style-B Short Body Slide

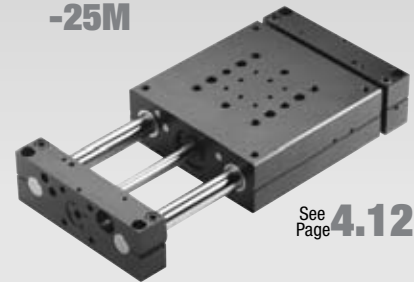
**Size** 10M (shown)  
12M  
16M



See Page **4.10**

## Style-B Short Body Slide

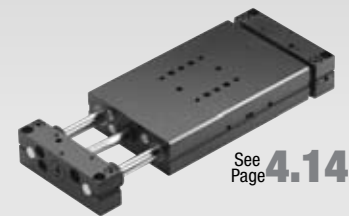
**Size** -20 (shown)  
-25  
-20M  
-25M



See Page **4.12**

## Style-L Long Body Slide

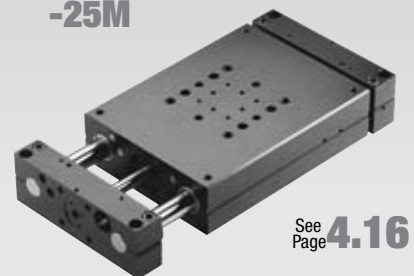
**Size** -10M (shown)  
-12M  
-16M



See Page **4.14**

## Style-L Long Body Slide

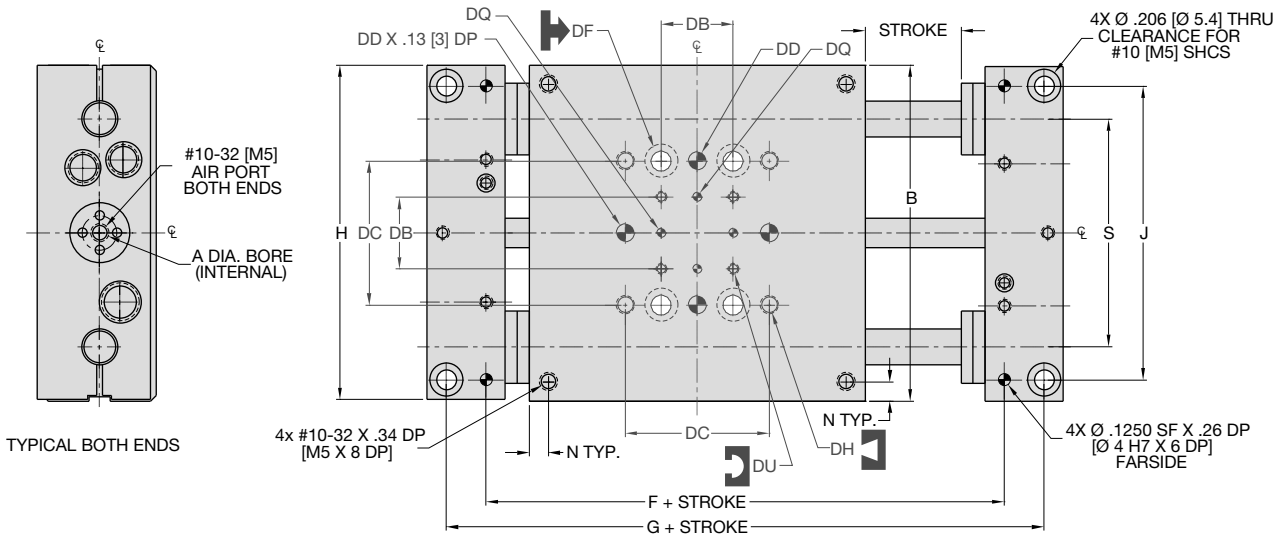
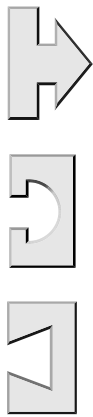
**Size** -20 (shown)  
-25  
-20M  
-25M



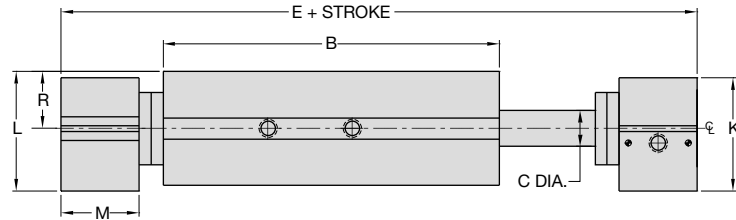
See Page **4.16**



# SHORT BODY SLIDE DLB -10M, 12M, 16M -B BUILT-IN REPAIRABLE CYLINDER



TYPICAL BOTH ENDS



### UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

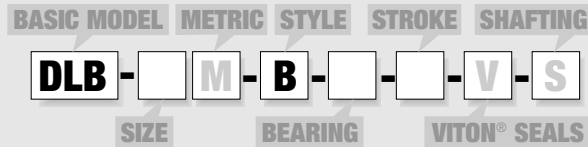
	Dimensions are symmetrical about centerline		Third Angle Projection		All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or [±.013mm]
	Metric Threads Course Pitch	Imperial in.	Metric [mm]		
		0.00 = ±.01	[0.] = [±.25]		
		0.000 = ±.005	[0.0] = [±.13]		
		0.0000 = ±.0005	[0.00] = [±.013]		

### DIRECTCONNECT DIMENSIONS STANDARD MOUNTING PATTERN FOR ALL SIZES

	Imperial (inches)	Metric (mm)
DB	.750	19.1
DC	1.500	38.1
DD	.1880 X .25 DP	5mm H7 X 6 DP
DF	Clearance for #10	Clearance for M5
DH	#10-32 X .34DP	M5 X 8.5DP
DQ	.0940 X .078 DP	3H7 X 2 DP
DU	#4-40 X .25 DP	M3 X 6 DP

MODEL #	BORE DIA.		BODY SIZE		SHAFT DIA.									
	A	B	C	E	F	G	H	J	K	L	M	N	R	S
DLB-10	3/4	3.50	.375	5.63	4.3975	5.228	3.485	3.0600	1.178	1.245	.813	N/A	.594	2.375
DLB-12	1	4.00	.472	6.13	4.8975	5.728	3.985	3.5000	1.615	1.657	.813	.375	.813	2.750
DLB-16	1	4.75	.630	6.88	5.6475	6.478	4.735	4.2500	1.615	1.657	.813	.375	.813	2.750
DLB-10M	19	88.9	9.5	143.0	111.70	132.8	88.5	77.72	29.9	31.6	20.7	N/A	15.09	60.33
DLB-12M	25	101.6	12	155.7	124.40	145.5	101.2	88.90	41.0	42.1	20.7	9.5	20.65	69.85
DLB-16M	25	120.7	16	174.8	143.45	164.5	120.3	107.95	41.0	42.1	20.7	9.5	20.65	69.85

## How to Order: Basic Unit



- SIZE** 10, 12, 16
- METRIC** M
- STYLE** B Short body slide with built-in repairable cylinder
- BEARING** B Linear ball bearings  
C Composite bushings
- STROKE** (inches)  
DLB-10 1-2 @ 1" increments  
DLB-12 1-2 @ 1" increments  
DLB-16 1-3 @ 1" increments  
Custom strokes available. Please consult factory.
- STROKE** (mm)  
DLB-10M 25, 50  
DLB-12M 25, 50  
DLB-16M 25, 50, 80
- VITON®** V Viton® Seals
- SHAFTING** S Corrosion resistant shafting

## Accessories: (Order Separately) DLB-10M DLB-12M DLB-16M QTY/SLIDE

### SHOCK/STOP ACCESSORIES

Shock Absorber	SHOK-028	SHOK-010	SHOK-010	1 or 2
Adjustable Hard Stop	DLT-1023	DLT-1023	DLT-1023	1 or 2

### INDUCTIVE SENSOR ACCESSORIES †

Inductive Sensor PNP Qk. Disconnect	OISP-011	OISP-011	OISP-011	1 or 2
Inductive Sensor NPN Qk. Disconnect	OISN-011	OISN-011	OISN-011	1 or 2
Quick Disconnect 2M Cable Length	CABL-010	CABL-010	CABL-010	1 or 2
Quick Disconnect 5M Cable Length	CABL-013	CABL-013	CABL-013	1 or 2

### PNEUMATIC ACCESSORIES

1/8 NPT Telescopic Airlines (up to 2")	OTAL-037	OTAL-037	OTAL-037	1, 2, 3 or 4
1/8 NPT Telescopic Airlines (up to 3")	OTAL-038	OTAL-038	OTAL-038	1, 2, 3 or 4
#10-32 Adjustable Flow Control	VLVF-007	VLVF-007	VLVF-007	1 or 2
G1/8 Telescopic Airlines (up to 50mm)	OTAL-043	OTAL-043	OTAL-043	1, 2, 3 or 4
G1/8 Telescopic Airlines (up to 80mm)	OTAL-044	OTAL-044	OTAL-044	1, 2, 3 or 4
M5 Adjustable Flow Control	VLVF-008	VLVF-008	VLVF-008	1 or 2
Cylinder Seal Repair Kit	SLKT-101	SLKT-103	SLKT-103	1
Viton® Cylinder Seal Repair Kit	SLKT-101V	SLKT-103V	SLKT-103V	1

### SAMPLE ORDER: DLB-12M-B-C-25

Ex: Base Slide, Size 12 Metric, Short Body Style w/Built-in Cylinder, Composite Bushings, 25mm Stroke

†Sensor and cable sold separately

Please see back cover for DE-STA-CO Global Locations. [www.destaco.com](http://www.destaco.com)

[www.comoso.com](http://www.comoso.com)

DIRECTCONNECT™

DLB SERIES

4.10



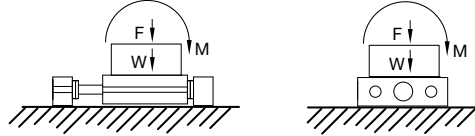


# SHORT BODY SLIDE DLB -10M, 12M, 16M -B BUILT-IN REPAIRABLE CYLINDER

## Loading Specifications Table - Style DLB-10M, 12M, 16M -B

	10	10M	12	12M	16	16M
Maximum Payload ( <b>W</b> ) horizontal motion w/Shock Absorbers	15 lbs.	6.8 kg	30 lbs.	13.6 kg	45 lbs.	20.4 kg
Maximum Payload ( <b>W</b> ) vertical motion w/Shock Absorbers	7 lbs.	3.1 kg	15 lbs.	6.8 kg	22 lbs.	9.9 kg
Maximum Payload ( <b>W</b> ) horizontal motion w/Urethane Bumpers	5 lbs.	2.2 kg	10 lbs.	4.5 kg	15 lbs.	6.8 kg
Maximum Total Applied Load + Payload ( <b>F+W</b> )	25 lbs.	111 N	40 lbs.	178 N	70 lbs.	311N
Total Maximum Moment about any Axis ( <b>M</b> )	75 in.-lbs.	8.4 N-m	150 in.-lbs.	16.9 N-m	300 in.-lbs.	33.9 N-m

**F**=Externally applied force  
**W**=Weight of payload  
**F+W**=Total force  
**M**=Maximum moment



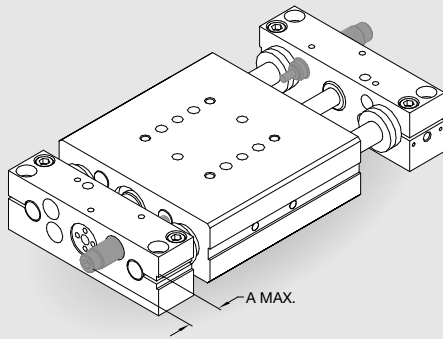
**Shock Absorbers and Flow Controls are recommended for nearly all applications**

Specifications	DLB-10	DLB-10M
Maximum Air Pressure.....	100 psi	6.9 bar
Thrust Force @ 80psi/5.5bar.	29 lbs.	129 N
Weight (Basic Unit).....	2.08 lbs.	0.93 kg
Additional Weight per Stroke..	0.08 lbs./in.	1.4g/mm
Cylinder Bore Diameter.....	3/4"	19mm
Shaft Diameter.....	0.375"	9.5mm

Specifications	DLB-12	DLB-12M
Maximum Air Pressure.....	100 psi	6.9 bar
Thrust Force @ 80psi/5.5bar.	57 lbs.	254 N
Weight (Basic Unit).....	3.83 lbs.	1.7 kg
Additional Weight per Stroke..	0.12 lbs./in.	2.1g/mm
Cylinder Bore Diameter.....	1.0"	25mm
Shaft Diameter.....	0.472"	12mm

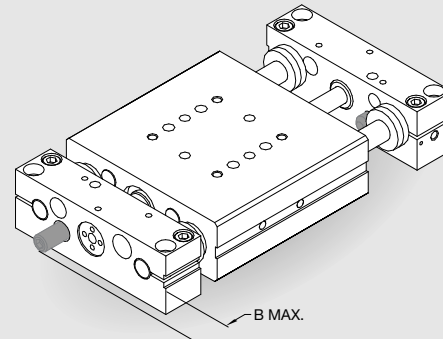
Specifications	DLB-16	DLB-16M
Maximum Air Pressure.....	100 psi	6.9 bar
Thrust Force @ 80psi/5.5bar.	57 lbs.	254 N
Weight (Basic Unit).....	5.19 lbs.	2.4 kg
Additional Weight per Stroke..	0.19 lbs./in.	3.3g/mm
Cylinder Bore Diameter.....	1.0"	25mm
Shaft Diameter.....	.630"	16mm

## Accessory Mounting Technical Data



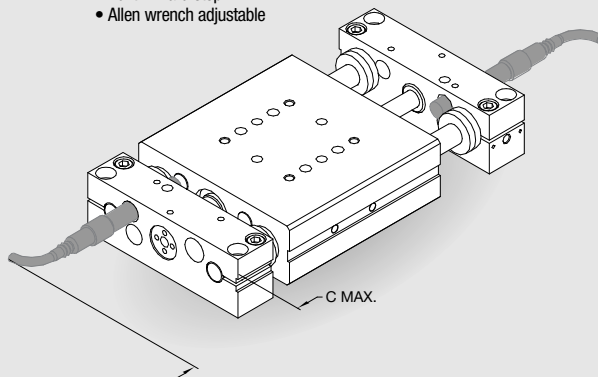
### Shock Absorbers

- Full stroking piston rod
- Built-in hard stop
- Allen wrench adjustable



### Adjustable Hard Stops

- For precision (+/- .001") hard stop end point positioning
- Allows for stop adjustment independent of shock absorber hard stop
- Allen wrench adjustable

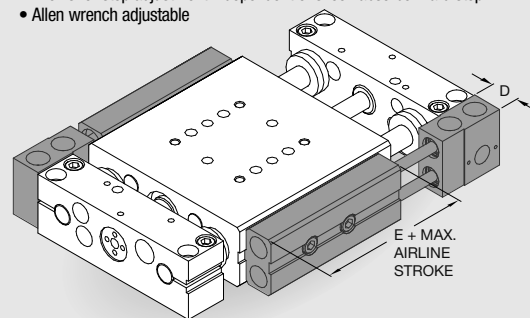


### Inductive Proximity Sensors

- 8mm diameter
- Threaded quick disconnect with built-in LED output
- PNP and NPN available

### Quick Disconnect Cable

- Threaded coupling with knurled head for secure electrical connections
- 2 meter cable length
- 5 meter cable length



### Telescoping Airlines

- Eliminate flexing air lines
- Self aligning air tube design extends useful seal life
- Modular stackable design. Up to (4) modules can be stacked
- Modules can be mounted on either side of slide
- 1/8 NPT or G1/8 pipe threads
- (2) user air ports per module

### Flow Controls for Cylinders

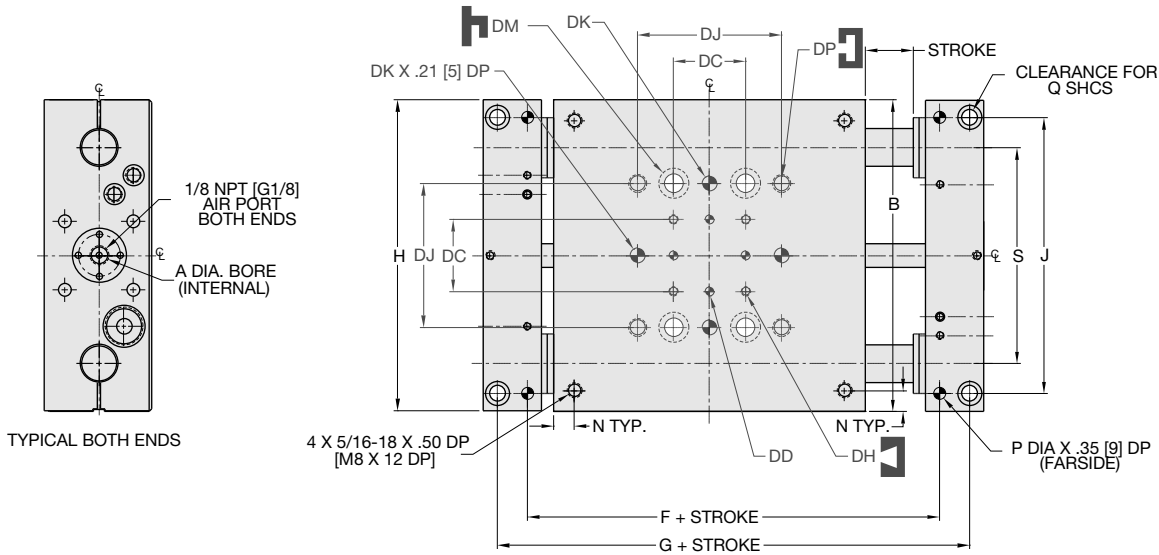
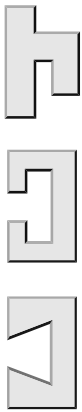
- Thumb screw adjust with locking nut for adjusting cylinder speed
- #10-32 or M5 pipe threads

	A	B	C	D	E
DLB-10	.70"	.47	2.5	.577	3.60
DLB-12	.95"	.47	2.5	.577	3.60
DLB-16	.95"	.47	2.5	.577	3.60
DLB-10M	17.8mm	11.9	63.5	14.7	91.4
DLB-12M	24.1mm	11.9	63.5	14.7	91.4
DLB-16M	24.1mm	11.9	63.5	14.7	91.4





# SHORT BODY SLIDE DLB -20M, 25M -B BUILT-IN REPAIRABLE CYLINDER

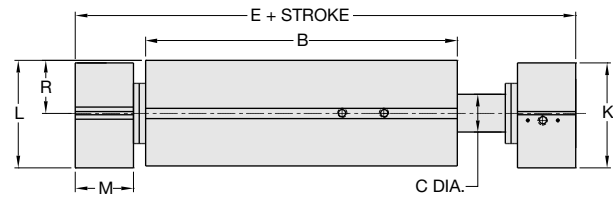


DLB SERIES

4.12

**UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW**

	Dimensions are symmetrical about centerline		Third Angle Projection		All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or [±.013mm]
	Metric Threads Course Pitch	<b>Imperial in.</b>		<b>Metric [mm]</b>	
		0.00 = ±.01		[0.] = [±.25]	
		0.000 = ±.005		[0.0] = [±.13]	
		0.0000 = ±.0005		[0.00] = [±.013]	



**DIRECTCONNECT DIMENSIONS**  
STANDARD MOUNTING PATTERN FOR ALL SIZES

	Imperial (inches)	Metric (mm)
DC	1.500	38.1
DD	.1880 X .25 DP	5 mm H7 X 6 DP
DH	#10-32 X .34 DP	M5 X 8.5 DP
DJ	3.000	76.2
DK	.3130 X .37 DP	8 mm H7 X 9.4 DP
DM	Clr & C'bore for 3/8	Clr & C'bore for M10
DP	3/8-16 X .50 DP	M10 X 12 DP

MODEL #	BORE DIA.		BODY SIZE		SHAFT DIA.		BASIC UNIT DIMENSIONS												
	A	B	C	E	F	G	H	J	K	L	M	N	P	Q	R	S			
DLB-20	1 1/2	6.50	.787	9.42	7.5850	8.836	6.480	5.7500	2.180	2.236	1.210	.438	.2505	5/16	1.100	4.500			
DLB-25	1 1/2	7.50	.984	10.84	8.7320	10.108	7.480	6.7500	2.180	2.236	1.420	.438	.3130	3/8	1.100	5.250			
DLB-20M	38	165.1	20	239.3	192.66	224.4	164.6	146.05	55.4	56.8	30.7	11.1	6.00	M8	27.94	114.30			
DLB-25M	38	190.5	25	275.3	221.79	256.7	190.0	171.45	55.4	56.8	36.1	11.1	8.00	M10	27.94	133.35			

DIRECTCONNECT™

**How to Order: Basic Unit**

**BASIC MODEL METRIC STYLE STROKE SHAFTING**

**DLB** -  -  - **B** -  -  - **V** - **S**

**SIZE** 20, 25

**METRIC** M

**STYLE** B Short body slide with built-in repairable cylinder

**BEARING** B Linear ball bearings  
C Composite bushings

**STROKE** (inches)  
DLB-20 1-4 @ 1" increments  
DLB-25 1-5 @ 1" increments

**STROKE** (mm)  
DLB-20M 25, 50, 80, 100  
DLB-25M 25, 50, 80, 100, 125

**VITON®** V Viton® seals

**SHAFTING** S Corrosion resistant shafting

Custom strokes available.  
Please consult factory.

**Accessories:** (Order Separately)

	DLB-20M	DLB-25M	QTY/SLIDE
<b>SHOCK/STOP ACCESSORIES</b>			
Shock Absorber (adjustable dampening)	SHOK-029	SHOK-029	1 or 2
Adjustable Hard Stop	DLT-1023	DLT-1023	1 or 2
<b>INDUCTIVE SENSOR Accessories*</b>			
Inductive Sensor PNP Qk. Disconnect	OISP-011	OISP-011	1 or 2
Inductive Sensor NPN Qk. Disconnect	OISN-011	OISN-011	1 or 2
Quick. Disconnect 2M Cable Length	CABL-010	CABL-010	1 or 2
Quick. Disconnect 5M Cable Length	CABL-013	CABL-013	1 or 2
<b>PNEUMATIC Accessories</b>			
1/8 NPT Telescopic Airlines (up to 4")	OTAL-049	OTAL-049	1, 2, 3 or 4
1/8 NPT Telescopic Airlines (up to 5")	OTAL-050	OTAL-050	1, 2, 3 or 4
1/8 NPT Adjustable Flow Control	VLVF-004	VLVF-004	1 or 2
G1/8 Telescopic Airlines (up to 100mm)	OTAL-051	OTAL-051	1, 2, 3 or 4
G1/8 Telescopic Airlines (up to 125mm)	OTAL-052	OTAL-052	1, 2, 3 or 4
G1/8 Adjustable Flow Control	VLVF-005	VLVF-005	1 or 2
Cylinder Seal Repair Kit	SLKT-105	SLKT-105	1
Viton® Cylinder Seal Repair Kit	SLKT-105V	SLKT-105V	1

**SAMPLE ORDER: DLB-20-B-C-3-V**

Ex: Base Slide, Size 20, Short Body Style w/Built-in Cylinder, Composite Bushings, 3 Inch Stroke, Viton® Seals

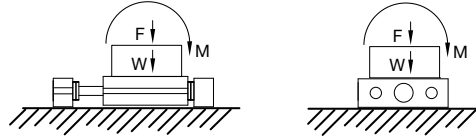


# SHORT BODY SLIDE DLB -20M, 25M -B BUILT-IN REPAIRABLE CYLINDER

## Loading Specifications Table - Style DLB-20M, 25M -B

	20	20M	25	25M
Maximum Payload ( <b>W</b> ) horizontal motion using Shock Absorbers	60 lbs.	27.2 kg	100 lbs.	45.3 kg
Maximum Payload ( <b>W</b> ) vertical motion using Shock Absorbers	30 lbs.	13.6 kg	50 lbs.	22.0 kg
Maximum Payload ( <b>W</b> ) horizontal motion using Urethane Bumpers	20 lbs.	9.1 kg	25 lbs.	11.3 kg
Maximum Total Applied Load + Payload ( <b>F+W</b> )	100 lbs.	444 N	150 lbs.	667 N
Total Maximum Moment about any Axis ( <b>M</b> )	600 in.-lbs.	67.7 N-m	1200 in.-lbs.	135.5 N-m

**F**=Externally applied force  
**W**=Weight of payload  
**F+W**=Total force  
**M**=Maximum moment

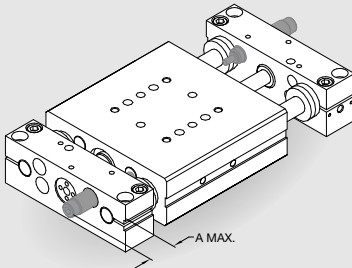


**Shock Absorbers and Flow Controls are recommended for nearly all applications**

Specifications	DLB-20	DLB-20M
Maximum Air Pressure .....	100 psi	6.9 bar
Thrust Force @ 80psi/5.5bar .....	126 lbs.	560 N
Weight (Basic Unit) .....	13.0 lbs.	5.9 kg
Additional Weight per Stroke .....	0.32 lbs./in.	5.54g/mm
Cylinder Bore Diameter .....	1-1/2"	38mm
Shaft Diameter .....	0.787"	20mm

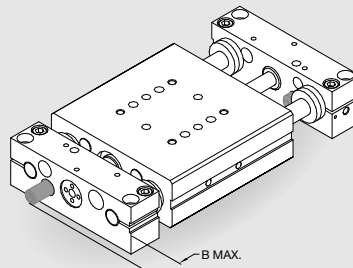
Specifications	DLB-25	DLB-25M
Maximum Air Pressure .....	100 psi	6.9 bar
Thrust Force @ 80psi/5.5bar .....	126 lbs.	560 N
Weight (Basic Unit) .....	18.2 lbs.	8.2 kg
Additional Weight per Stroke .....	0.47 lbs./in.	8.4g/mm
Cylinder Bore Diameter .....	1-1/2"	38mm
Shaft Diameter .....	0.984"	25mm

## Accessory Mounting Technical Data



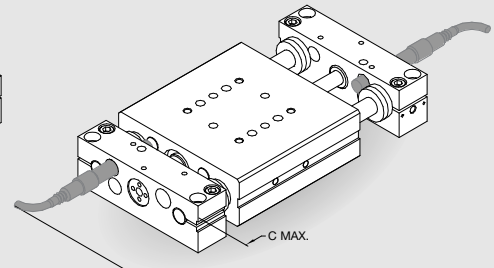
### Shock Absorbers

- Full stroking piston rod
- Built-in hard stop
- Position adjustable
- Adjustable dampening



### Adjustable Hard Stops

- For precision (+/- .001") hard stop end point positioning
- Allows for stop adjustment independent of shock absorber hard stop
- Allen wrench adjustable

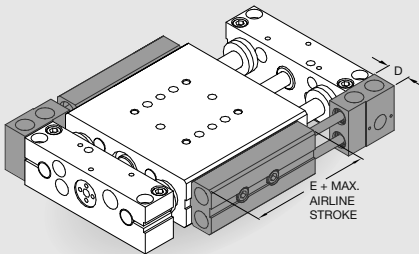


### Inductive Proximity Sensors

- 8mm diameter
- Threaded quick disconnect with built-in LED output
- PNP and NPN available

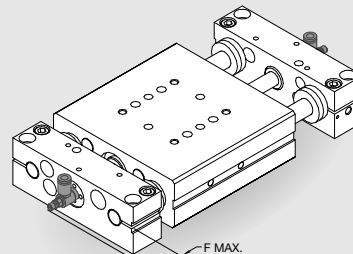
### Quick Disconnect Cable

- Threaded coupling with knurled head for secure electrical connections
- 2 meter cable length
- 5 meter cable length



### Telescoping Airlines

- Eliminate flexing air lines
- Self aligning air tube design extends useful seal life
- Modular stackable design. Up to (4) modules can be stacked
- Modules can be mounted on either side of slide
- 1/8 NPT or G1/8 pipe threads
- (2) user air ports per module

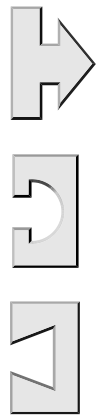


### Flow Controls for Cylinders

- Thumb screw adjust with locking nut for adjusting cylinder speed
- 1/8 NPT or G1/8 pipe threads

	A	B	C	D	E	F
DLB-20	2.03"	.10	2.1	.577	3.60	1.25
DLB-25	1.82"	.10	1.9	.577	3.60	1.25
DLB-20M	51.6mm	2.5	53.8	14.7	91.4	31.8
DLB-25M	46.2mm	2.5	48.3	14.7	91.4	31.8

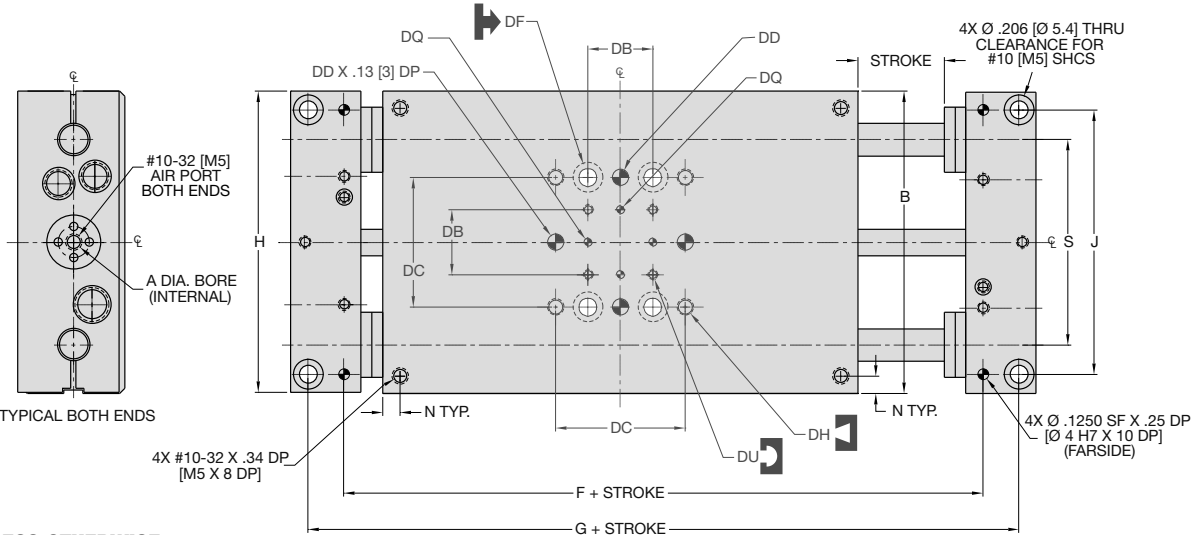
# LONG BODY SLIDE DLB-10M, 12M, 16M -L BUILT-IN REPAIRABLE CYLINDER



DLB SERIES

4.14

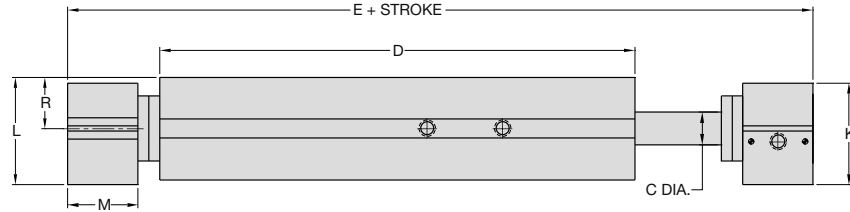
DIRECTCONNECT™



**UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW**

- Dimensions are symmetrical about centerline
- Third Angle Projection
- All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or [±.013mm]
- Metric Threads Course Pitch

Imperial in.	Metric [mm]
0.00 = ±.01	[0.] = [±.25]
0.000 = ±.005	[0.0] = [±.13]
0.0000 = ±.0005	[0.00] = [±.013]



## BASIC UNIT DIMENSIONS

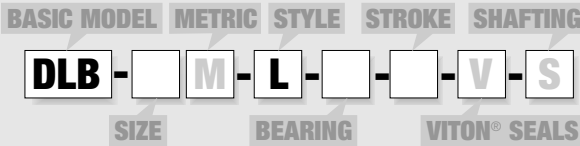
MODEL #	BORE DIA.			BODY SIZE											
	A	B	C	D	E	F	G	H	J	K	L	M	N	R	S
DLB-10	3/4	3.50	.375	5.50	7.63	6.3975	7.228	3.485	3.0600	1.178	1.245	.813	N/A	.594	2.375
DLB-12	1	4.00	.472	6.50	8.63	7.3975	8.228	3.985	3.5000	1.615	1.657	.813	.375	.813	2.750
DLB-16	1	4.75	.630	7.50	9.63	8.3975	9.228	4.735	4.2500	1.615	1.657	.813	.375	.813	3.250
DLB-10M	19	88.9	9.5	139.7	193.8	162.50	183.6	88.5	77.72	29.9	31.6	20.7	N/A	15.09	60.33
DLB-12M	25	101.6	12	165.1	219.2	187.90	209.0	101.2	88.90	41.0	42.1	20.7	9.5	20.65	69.85
DLB-16M	25	120.7	16	190.5	244.6	213.30	234.4	120.3	107.95	41.0	42.1	20.7	9.5	20.65	82.55

## DIRECTCONNECT DIMENSIONS STANDARD MOUNTING PATTERN FOR ALL SIZES

	Imperial (inches)	Metric (mm)
DB	.750	19.1
DC	1.500	38.1
DD	.1880 X .25 DP	5mm H7 X 6 DP
DF	Clearance for #10	Clearance for M5
DH	#10-32 X .34DP	M5 X 8.5DP
DQ	.0940 X .078 DP	3H7 X 2 DP
DU	#4-40 X .25 DP	M3 X 6 DP

## How to Order: Basic Unit

## Accessories: (Order Separately) DLB-10M DLB-12M DLB-16M QTY/SLIDE



SIZE 10, 12, 16

METRIC M

STYLE L Long body slide with built-in repairable cylinder

BEARING B Linear ball bearings  
C Composite bushings

STROKE (inches)  
DLB-10 1-4 @ 1" increments  
DLB-12 1-5 @ 1" increments  
DLB-16 1-6 @ 1" increments

STROKE (mm)  
DLB-10M 25, 50, 80, 100  
DLB-12M 25, 50, 80, 100, 125  
DLB-16M 25, 50, 80, 100, 125, 150

VITON® V Viton® seals

SHAFTING S Corrosion resistant shafting

Custom strokes available.  
Please consult factory.

### SHOCK/STOP ACCESSORIES

Shock Absorber	SHOK-028	SHOK-010	SHOK-010	1 or 2
Adjustable Hard Stop	DLT-1023	DLT-1023	DLT-1023	1 or 2

### INDUCTIVE SENSOR ACCESSORIES\*

Inductive Sensor PNP Qk. Disconnect	OISP-011	OISP-011	OISP-011	1 or 2
Inductive Sensor NPN Qk. Disconnect	OISN-011	OISN-011	OISN-011	1 or 2
Quick. Disconnect 2M Cable Length	CABL-010	CABL-010	CABL-010	1 or 2
Quick. Disconnect 2M Cable Length	CABL-013	CABL-013	CABL-013	1 or 2

### PNEUMATIC ACCESSORIES

1/8 NPT Telescopic Airlines (up to 4")	OTAL-049	OTAL-049	OTAL-049	1, 2, 3 or 4
1/8 NPT Telescopic Airlines (up to 5")	OTAL-050	OTAL-050	OTAL-050	1, 2, 3 or 4
1/8 NPT Telescopic Airlines (up to 6")	OTAL-039	OTAL-039	OTAL-039	1, 2, 3 or 4
#10-32 Adjustable Flow Control	VLVF-007	VLVF-007	VLVF-007	1 or 2
G1/8 Telescopic Airlines (up to 100mm)	OTAL-051	OTAL-051	OTAL-051	1, 2, 3 or 4
G1/8 Telescopic Airlines (up to 125mm)	OTAL-052	OTAL-052	OTAL-052	1, 2, 3 or 4
G1/8 Telescopic Airlines (up to 160mm)	OTAL-045	OTAL-045	OTAL-045	1, 2, 3 or 4
M5 Adjustable Flow Control	VLVF-008	VLVF-008	VLVF-008	1 or 2
Cylinder Seal Repair Kit	SLKT-101	SLKT-103	SLKT-103	1
Viton® Cylinder Seal Repair Kit	SLKT-101V	SLKT-103V	SLKT-103V	1

\*Sensor and cable sold separately

### SAMPLE ORDER: DLB-12M-L-C-25-V

Ex: Base Slide, Size 12 Metric, Long Body Style w/Built-in Cylinder, Composite Bushings, 25mm Stroke, Viton® Seals

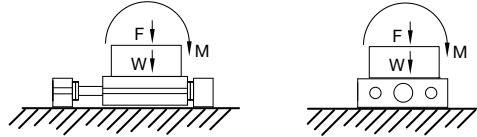


# LONG BODY SLIDE DLB -10M, 12M, 16M -L BUILT-IN REPAIRABLE CYLINDER

## Loading Specifications Table - Style DLB -010M, 12M, 16M -L

	10	10M	12	12M	16	16M
Maximum Payload ( <b>W</b> ) horizontal motion w/Shock Absorbers	15 lbs.	6.8 kg	30 lbs.	13.6 kg	45 lbs.	20.4 kg
Maximum Payload ( <b>W</b> ) vertical motion w/Shock Absorbers	7 lbs.	3.1 kg	15 lbs.	6.8 kg	22 lbs.	9.9 kg
Maximum Payload ( <b>W</b> ) horizontal motion w/Urethane Bumpers	5 lbs.	2.2 kg	10 lbs.	4.5 kg	15 lbs.	6.8 kg
Maximum Total Applied Load + Payload ( <b>F+W</b> )	25 lbs.	111 N	40 lbs.	178 N	70 lbs.	311 N
Total Maximum Moment about any Axis ( <b>M</b> )	75 in.-lbs.	8.4 N-m	150 in.-lbs.	16.9 N-m	300 in.-lbs.	33.9 N-m

**F**=Externally applied force  
**W**=Weight of payload  
**F+W**=Total force  
**M**=Maximum moment



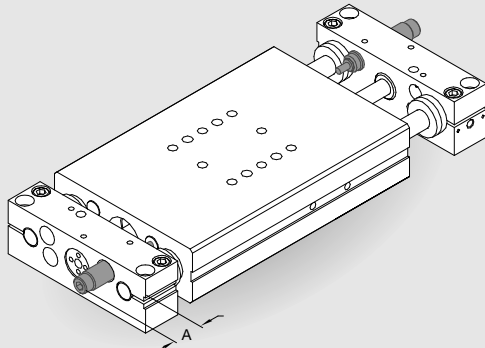
**Shock Absorbers and Flow Controls are recommended for nearly all applications**

Specifications	DLB-10	DLB-10M
Maximum Air Pressure.....	100 psi	6.9 bar
Thrust Force @ 80psi/5.5bar .	29 lbs.	129 N
Weight (Basic Unit).....	3.34 lbs.	1.5 kg
Additional Weight per Stroke..	0.08 lbs./in.	1.4g/mm
Cylinder Bore Diameter .....	3/4"	19mm
Shaft Diameter .....	0.375"	9.5mm

Specifications	DLB-12	DLB-12M
Maximum Air Pressure.....	100 psi	6.9 bar
Thrust Force @ 80psi/5.5bar .	57 lbs.	254 N
Weight (Basic Unit).....	5.13 lbs.	2.3 kg
Additional Weight per Stroke..	0.12 lbs./in.	2.1g/mm
Cylinder Bore Diameter .....	1.0"	25mm
Shaft Diameter .....	0.472"	12mm

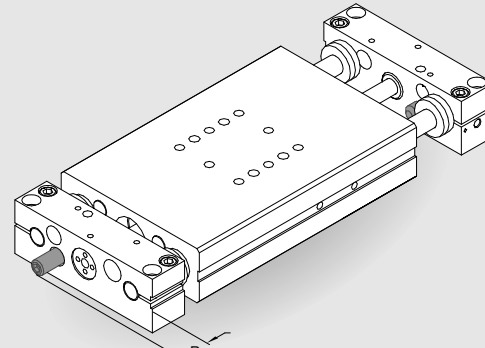
Specifications	DLB-16	DLB-16M
Maximum Air Pressure.....	100 psi	6.9 bar
Thrust Force @ 80psi/5.5bar .	57 lbs.	254 N
Weight (Basic Unit).....	7.30 lbs.	3.3 kg
Additional Weight per Stroke..	0.19 lbs./in.	3.3g/mm
Cylinder Bore Diameter .....	1.0"	25mm
Shaft Diameter .....	0.630"	16mm

## Accessory Mounting Technical Data



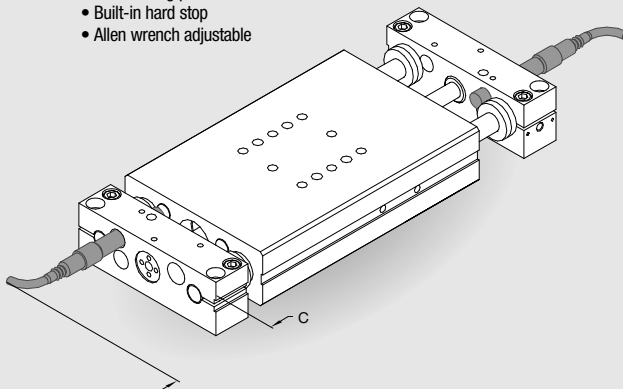
### Shock Absorbers

- Full stroking piston rod
- Built-in hard stop
- Allen wrench adjustable



### Adjustable Hard Stops

- For precision (+/- .001") hard stop end point positioning
- Allows for stop adjustment independent of shock absorber hard stop
- Allen wrench adjustable

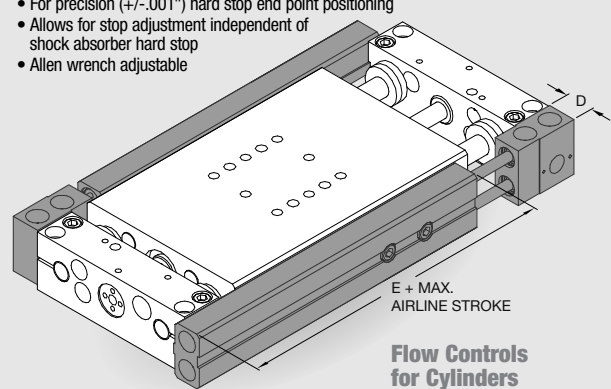


### Inductive Proximity Sensors

- 8mm diameter
- Threaded quick disconnect with built-in LED output
- PNP and NPN available

### Quick Disconnect Cable

- Threaded coupling with knurled head for secure electrical connections
- 2 meter cable length
- 5 meter cable length



### Telescoping Airlines

- Eliminate flexing air lines
- Self aligning air tube design extends useful seal life
- Modular stackable design. Up to (4) modules can be stacked
- Modules can be mounted on either side of slide
- 1/8 NPT or G1/8 pipe threads
- (2) user air ports per module

E + MAX. AIRLINE STROKE

### Flow Controls for Cylinders

- Thumb screw adjust with locking nut for adjusting cylinder speed
- #10-32 or M5 pipe threads

	A	B	C	D	E
DLB-10	.70"	.47	2.5	.577	3.60
DLB-12	.95"	.47	2.5	.577	3.60
DLB-16	.95"	.47	2.5	.577	3.60
DLB-10M	17.8mm	11.9	63.5	14.7	91.4
DLB-12M	24.1mm	11.9	63.5	14.7	91.4
DLB-16M	24.1mm	11.9	63.5	14.7	91.4

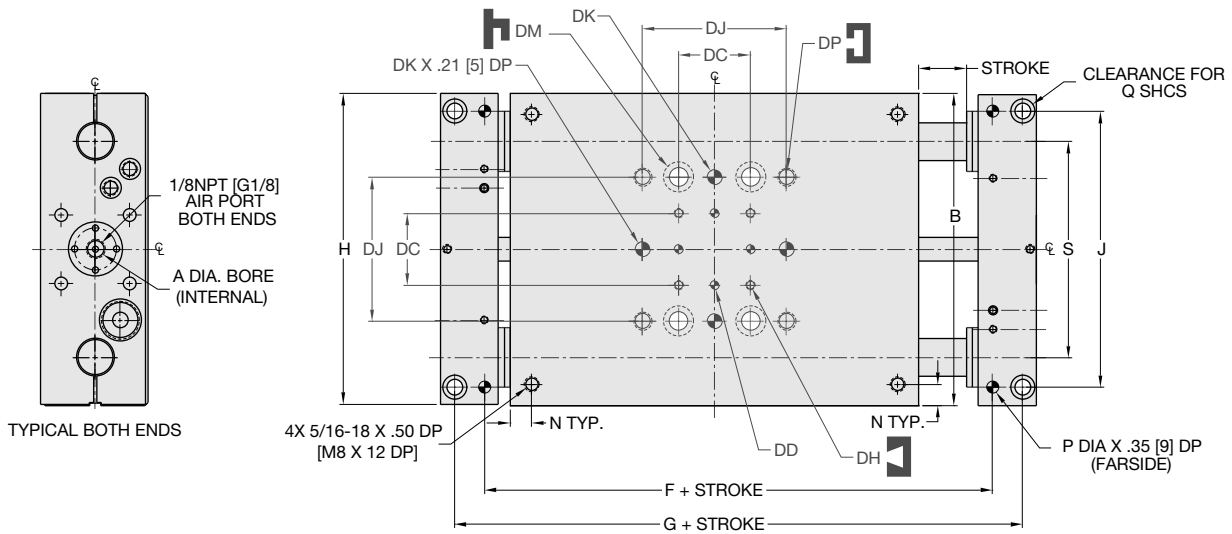


DLB SERIES

4.15

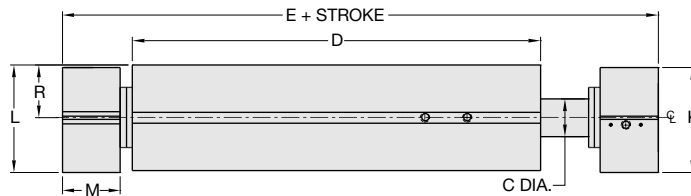
DIRECTCONNECT™

# LONG BODY SLIDE DLB -20M, 25M -L BUILT-IN REPAIRABLE CYLINDER



**UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW**

	Dimensions are symmetrical about centerline		Third Angle Projection		All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or [±.013mm]
	Metric Threads Course Pitch	<b>Imperial in.</b>		<b>Metric [mm]</b>	
		0.00 = ±.01		[0.] = [±.25]	
		0.000 = ±.005		[0.0] = [±.13]	
		0.0000 = ±.0005		[0.00] = [±.013]	



## DIRECTCONNECT DIMENSIONS STANDARD MOUNTING PATTERN FOR ALL SIZES

MODEL #	BORE DIA.		BODY SIZE		SHAFT DIA.												
	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S
DLB-20	1 1/2	6.50	.787	8.50	11.42	9.5850	10.836	6.480	5.7500	2.180	2.236	1.210	.438	.2505	5/16	1.100	4.500
DLB-25	1 1/2	7.50	.984	9.50	12.84	10.7320	12.108	7.480	6.7500	2.180	2.236	1.420	.438	.3130	3/8	1.100	5.250
DLB-20M	38	165.1	20	215.9	290.1	243.46	275.2	164.6	146.05	55.4	56.8	30.7	11.1	6.00	M8	27.94	114.30
DLB-25M	38	190.5	25	241.3	326.1	272.59	307.5	190.0	171.45	55.4	56.8	36.1	11.1	8.00	M10	27.94	133.35

	Imperial (inches)	Metric (mm)
DC	1.500	38.1
DD	.1880 X .25 DP	5 mm H7 X 6 DP
DH	#10-32 X .34 DP	M5 X 8.5 DP
DJ	3.000	76.2
DK	.3130 X .37 DP	8 mm H7 X 9.4 DP
DM	Clr & C'bore for 3/8	Clr & C'bore for M10
DP	3/8-16 X .50 DP	M10 X 12 DP

## How to Order: Basic Unit

BASIC MODEL METRIC STYLE STROKE SHAFTING

**DLB** - **M** - **L** - **C** - **80** - **V** - **S**

SIZE BEARING VITON® SEALS

SIZE **20, 25**

METRIC **M**

STYLE **L** Long body slide with built-in repairable cylinder

BEARING **B** Linear ball bearings  
**C** Composite bushings

STROKE (inches)  
DLB-20 **1-6** @ 1" increments  
DLB-25 **1-7** @ 1" increments

Custom strokes available.  
Please consult factory.

STROKE (mm)  
DLB-20M **25, 50, 80, 100, 125, 160**  
DLB-25M **25, 50, 80, 100, 125, 160, 175**

VITON® **V** Viton® seals

SHAFTING **S** Corrosion resistant shafting

## SAMPLE ORDER: DLB-20M-L-C-80-V

Ex: Base Slide, Size 20 Metric, Long Body Style w/Built-in Cylinder, Composite Bushings, 80mm Stroke, Viton® Seals

## Accessories: (Order Separately)

### SHOCK/STOP ACCESSORIES

	DLB-20M	DLB-25M	QTY/SLIDE
Shock Absorber (adjustable dampening)	<b>SHOK-029</b>	<b>SHOK-029</b>	<b>1 or 2</b>
Adjustable Hard Stop	<b>DLT-1023</b>	<b>DLT-1023</b>	<b>1 or 2</b>

### INDUCTIVE SENSOR ACCESSORIES<sup>1</sup>

	DLB-20M	DLB-25M	QTY/SLIDE
Inductive Sensor PNP Qk. Disconnect	<b>OISP-011</b>	<b>OISP-011</b>	<b>1 or 2</b>
Inductive Sensor NPN Qk. Disconnect	<b>OISN-011</b>	<b>OISN-011</b>	<b>1 or 2</b>
Quick. Disconnect 2M Cable Length	<b>CABL-010</b>	<b>CABL-010</b>	<b>1 or 2</b>
Quick. Disconnect 5M Cable Length	<b>CABL-013</b>	<b>CABL-013</b>	<b>1 or 2</b>

### PNEUMATIC ACCESSORIES

	DLB-20M	DLB-25M	QTY/SLIDE
1/8 NPT Telescopic Airlines (up to 6")	<b>OTAL-039</b>	<b>OTAL-039</b>	<b>1, 2, 3 or 4</b>
1/8 NPT Telescopic Airlines (up to 12")	<b>OTAL-040</b>	<b>OTAL-040</b>	<b>1, 2, 3 or 4</b>
1/8 NPT Adjustable Flow Control	<b>VLVF-004</b>	<b>VLVF-004</b>	<b>1 or 2</b>
G1/8 Telescopic Airlines (up to 160mm)	<b>OTAL-045</b>	<b>OTAL-045</b>	<b>1, 2, 3 or 4</b>
G1/8 Telescopic Airlines (up to 300mm)	<b>OTAL-046</b>	<b>OTAL-046</b>	<b>1, 2, 3 or 4</b>
G1/8 Adjustable Flow Control	<b>VLVF-005</b>	<b>VLVF-005</b>	<b>1 or 2</b>
Cylinder Seal Repair Kit	<b>SLKT-105</b>	<b>SLKT-105</b>	<b>1</b>
Viton® Cylinder Seal Repair Kit	<b>SLKT-105V</b>	<b>SLKT-105V</b>	<b>1</b>

<sup>1</sup>Sensor and cable sold separately



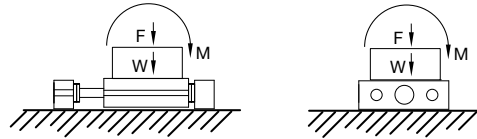


# LONG BODY SLIDE DLB -20M, 25M -L BUILT-IN REPAIRABLE CYLINDER

## Loading Specifications Table - Style DLB -20M, 25M -L

	20	20M	25	25M
Maximum Payload ( <b>W</b> ) horizontal motion using Shock Absorbers	60 lbs.	27.2 kg	100 lbs.	45.3 kg
Maximum Payload ( <b>W</b> ) vertical motion using Shock Absorbers	30 lbs.	13.6 kg	50 lbs.	22.0 kg
Maximum Payload ( <b>W</b> ) horizontal motion using Urethane Bumpers	20 lbs.	9.1 kg	25 lbs.	11.3 kg
Maximum Total Applied Load + Payload ( <b>F+W</b> )	100 lbs.	444 N	150 lbs.	667 N
Total Maximum Moment about any Axis ( <b>M</b> )	600 in.-lbs.	67.7 N-m	1200 in.-lbs.	135.5 N-m

**F**=Externally applied force  
**W**=Weight of payload  
**F+W**=Total force  
**M**=Maximum moment

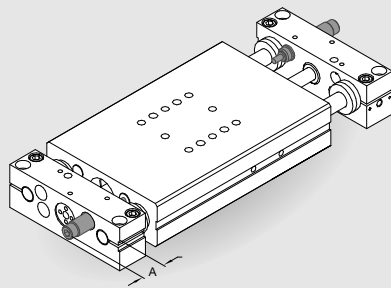


**Shock Absorbers and Flow Controls are recommended for nearly all applications**

Specifications	DLB-20	DLB-20M
Maximum Air Pressure.....	100 psi	6.9 bar
Thrust Force @ 80psi/5.5bar.....	126 lbs.	560 N
Weight (Basic Unit).....	15.6 lbs.	7.1 kg
Additional Weight per Stroke.....	0.32 lbs./in.	5.6g/mm
Cylinder Bore Diameter.....	1-1/2"	38mm
Shaft Diameter.....	0.787"	20mm

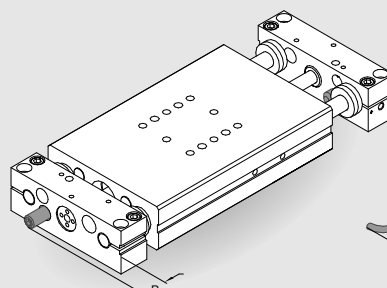
Specifications	DLB-25	DLB-25M
Maximum Air Pressure.....	100 psi	6.9 bar
Thrust Force @ 80psi/5.5bar.....	126 lbs.	560 N
Weight (Basic Unit).....	21.4 lbs.	9.7 kg
Additional Weight per Stroke.....	0.47 lbs./in.	8.4g/mm
Cylinder Bore Diameter.....	1-1/2"	38mm
Shaft Diameter.....	0.984"	25mm

## Accessory Mounting Technical Data



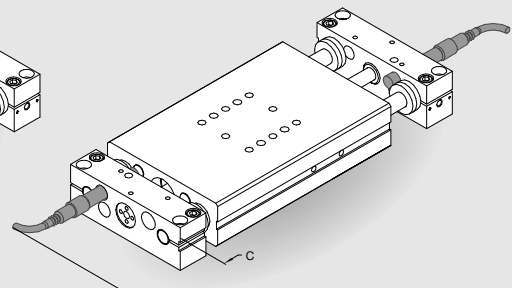
### Shock Absorbers

- Full stroking piston rod
- Built-in hard stop
- Position adjustable
- Adjustable dampening



### Adjustable Hard Stops

- For precision (+/- .001") hard stop end point positioning
- Allows for stop adjustment independent of shock absorber hard stop
- Allen wrench adjustable

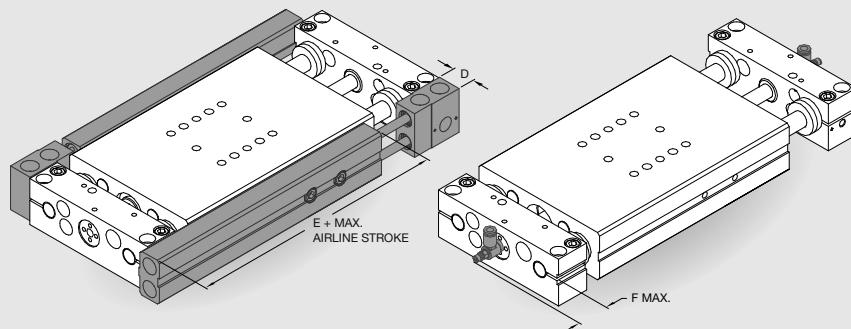


### Inductive Proximity Sensors

- 8mm diameter
- Threaded quick disconnect with built-in LED output
- PNP and NPN available

### Quick Disconnect Cable

- Threaded coupling with knurled head for secure electrical connections
- 2 meter cable length
- 5 meter cable length



### Telescoping Airlines

- Eliminate flexing air lines
- Self aligning air tube design extends useful seal life
- Modular stackable design. Up to (4) modules can be stacked
- Modules can be mounted on either side of slide
- 1/8 NPT or G1/8 pipe threads
- (2) user air ports per module

### Flow Controls for Cylinders

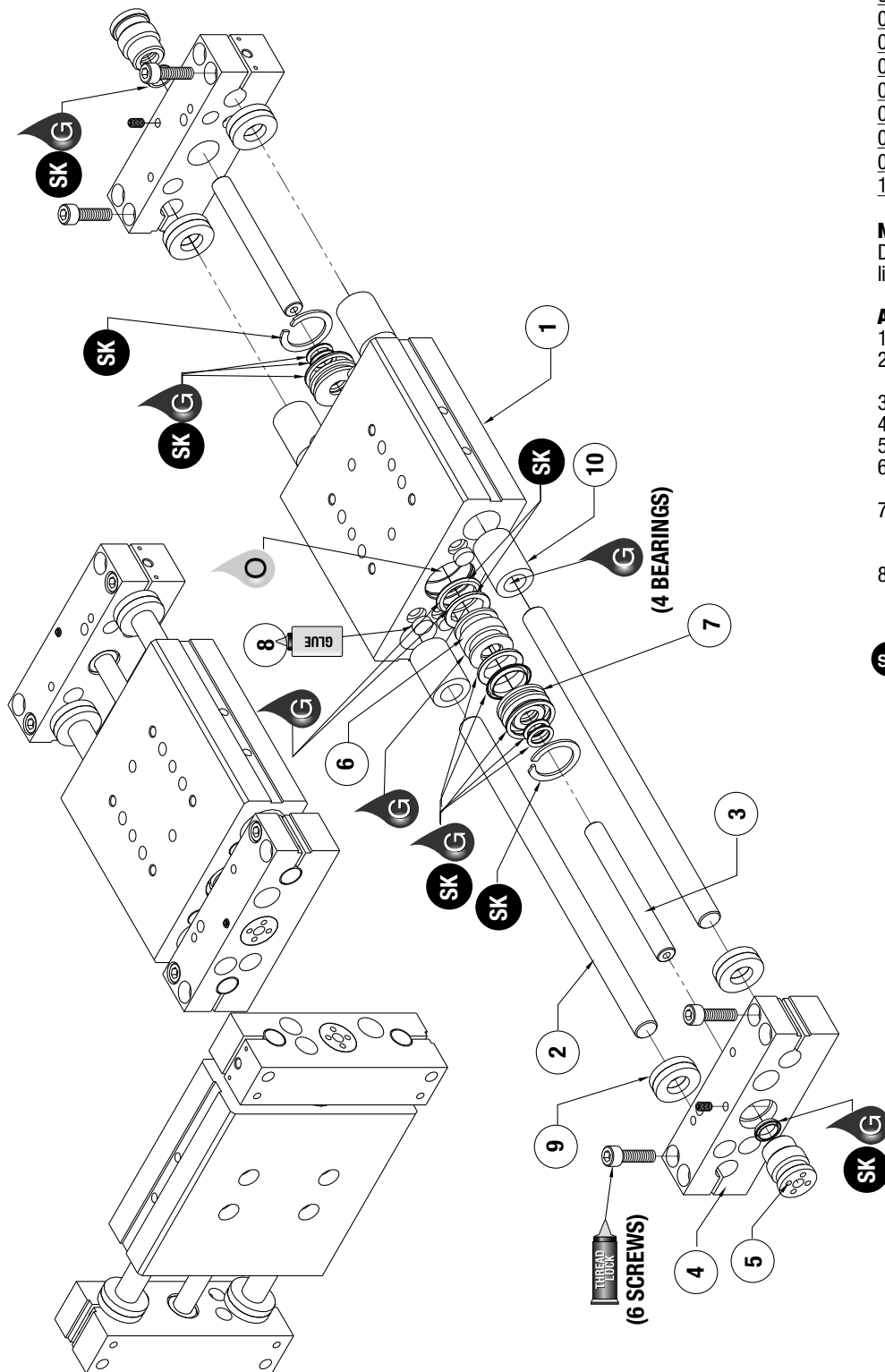
- Thumb screw adjust with locking nut for adjusting cylinder speed
- 1/8 NPT or G1/8 pipe threads

	A	B	C	D	E	F
DLB-20	2.03"	.10	2.1	.577	3.60	1.25
DLB-25	1.82"	.10	1.9	.577	3.60	1.25
DLB-20M	51.6mm	2.5	53.8	14.7	91.4	31.8
DLB-25M	46.2mm	2.5	48.3	14.7	91.4	31.8



# DLB-B & L Series Exploded View

DLB-B & L  
SERIES  
MAINTENANCE  
4.18



Item	Qty	Name
01	1	Body
02	2	Guide Shaft
03	2	Air Tube
04	2	End Block
05	2	Adapter, Internally Powered
06	1	Piston
07	2	Cap, Rod End
08	6	Stop Button
09	8	Shock Pad, Urethane
10	4	Bushing

**NOTE:** Contact the Robohand Sales Department for a complete spare parts list with order numbers and prices.

### Assembly Procedure

- 1) Lubricate and install seals.
- 2) Install piston, air shafts, bearings, caps, and retainer rings into body.
- 3) Install guide shafts into bearings.
- 4) Insert air shafts to piston.
- 5) Slide bumpers onto shaft ends.
- 6) Slide end blocks onto shaft ends and tighten.
- 7) Attach air port adapter to end of each air shaft through center of each end block using spanner wrench.
- 8) Set air port adapters into places with set screw.

**SK Seal Repair Kit Order #'s  
See Product Data Sheets**



Seal Kit Items



Thread Locker



Krytox™ Lubricant



Lightweight Machine Oil



Teflon® Based Grease



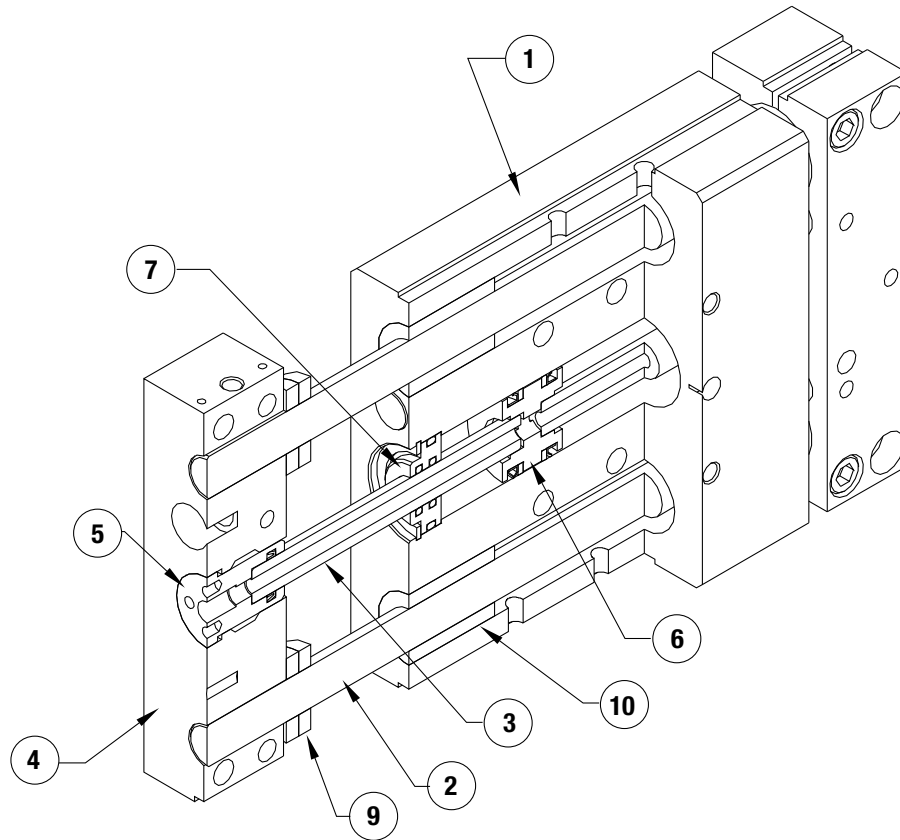
Super Bonder



Third Angle Projection

Item	Qty	Name
------	-----	------

01	1	Body
02	2	Guide Shaft
03	2	Air Tube
04	2	End Block
05	2	Adapter, Internally Powered
06	1	Piston
07	2	Cap, Rod End
08	6	Stop Button
09	8	Shock Pad, Urethane
10	4	Bushing



**NOTE:** Contact the Robohand Sales Department for a complete spare parts list with order numbers and prices.

**NOTE:** For accessory mounting information see Product Data Sheets.



Seal Kit  
Items



Thread  
Locker



Krytox™  
Lubricant



Lightweight  
Machine Oil



Teflon® Based  
Grease



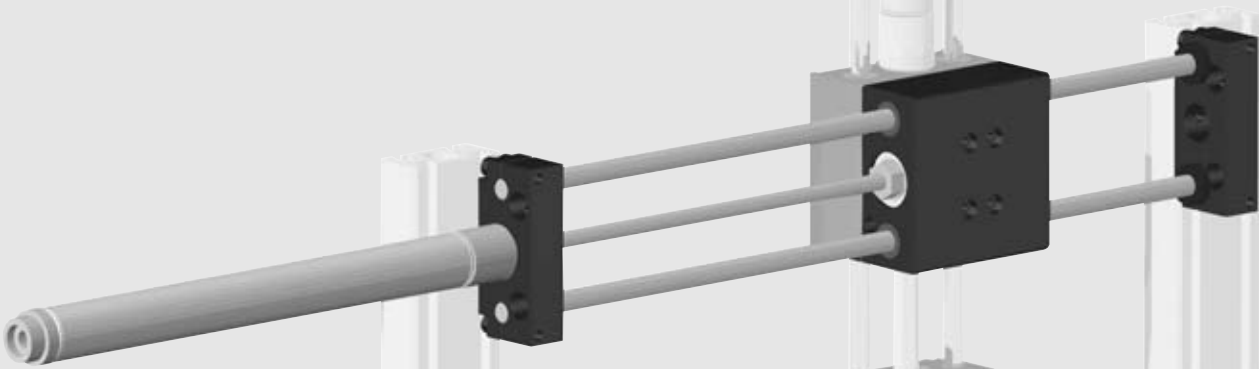
Super  
Bonder



Third Angle  
Projection



# Externally Powered Base Slides



DLB SERIES

4.20

### Cylinder options:

Externally powered base slides are available in a wide range of cylinder options. Choose from replaceable/disposable, replaceable with adjustable cushions, NFPA with adjustable cushions, ISO/Metric, VDMA, locking VDMA, or non-powered for use with customer supplied cylinders.

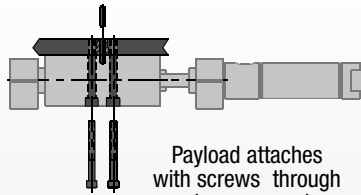
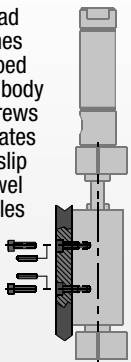
### DIRECTCONNECT mounting patterns:

These slides have DIRECTCONNECT mounting patterns that connect to other slides without the need for adapter plates.

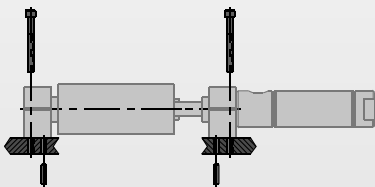
## Mounting Information:

### Mounts and operates in any orientation

Payload attaches to tapped holes in body with screws and locates using slip fit dowel pin holes



Payload attaches with screws through clearance and counterbored holes in body and locates using slip fit dowel pin holes



End blocks mount with screws and locate with slip fit dowel pin holes

## Technical Specifications:

### Pneumatic Specifications

Pressure Operating Range\*  
Cylinder Type  
Dynamic Seals  
Valve Required to Operate

**Imperial**  
40-100 psi  
**Metric**  
3-7 bar  
**Double Acting**  
**Internally Lubricated Buna-N**  
**4-way, 2-position**

### Air Quality Requirements

Air Filtration  
Air Lubrication  
Air Humidity

**40 Micron or Better**  
**Not Necessary\*\***  
**Low Moisture Content (dry)**

### Temperature Operating Range

Buna-N Seals (standard)  
Viton Seals (optional)

**-30°~180° F**      **-35°~80° C**  
**-20°~300° F**      **-30°~150° C**

### Maintenance Specifications†

Expected Life  
Normal Application  
w/ Preventative Maintenance  
Field Repairable  
Seal Repair Kits Available

**5 million cycles**  
**10+ million cycles†**  
**No**  
**No**

### Application Restrictions

Flow controls, shock absorbers and urethane bumpers recommended for nearly all applications.  
Use composite bushing in dirty or gritty environments.  
Never use silicone based lubricants with composite bushings.

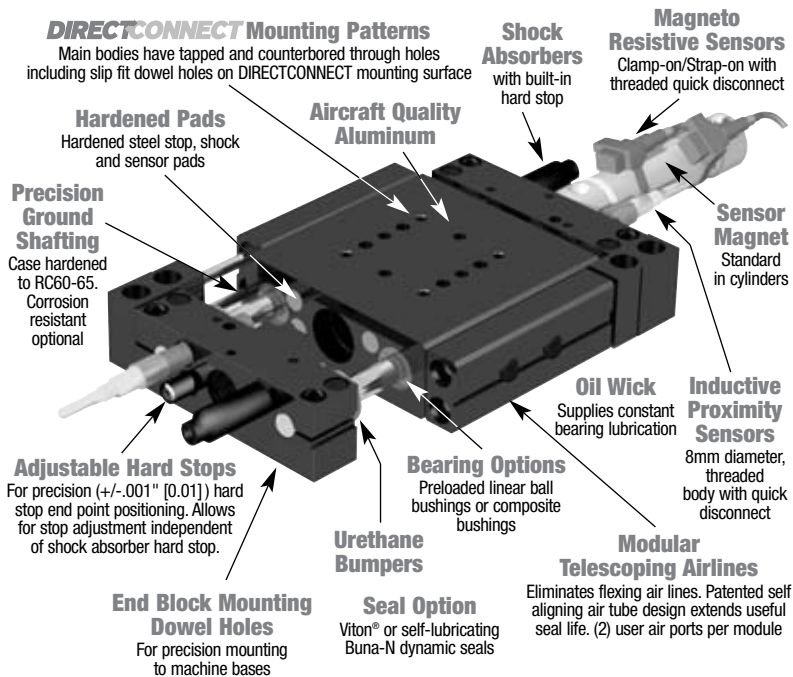
\*Higher pressure possible. Consult factory with application details.

\*\*Addition of lubrication will greatly increase service life

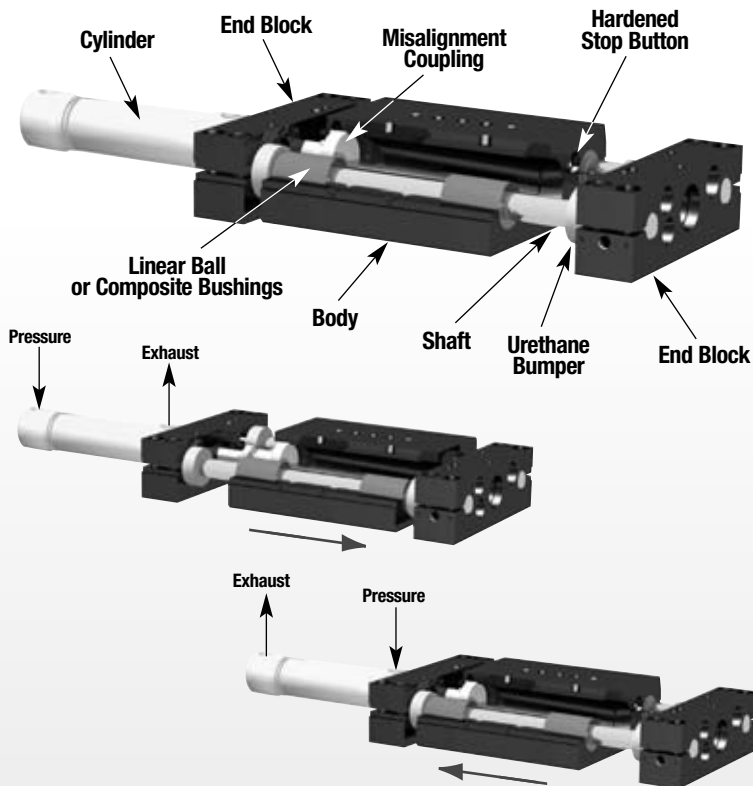
†See Maintenance Section

DIRECTCONNECT™

## Product Features



## Operating Principle

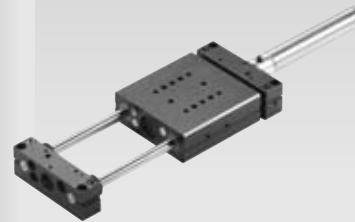


- A moveable body is supported by four linear bushings which slide on two hardened steel shafts.
- The shafts are supported on each end of the slide by two fixed end blocks.
- A double acting air cylinder is mounted to one of the end blocks.
- The piston rod of the cylinder is connected to the slide body with a misalignment coupling.
- When air pressure is applied to the cylinder the slide body moves.

**Designed and manufactured in the USA**

### Style-T, A Replaceable Cyl.

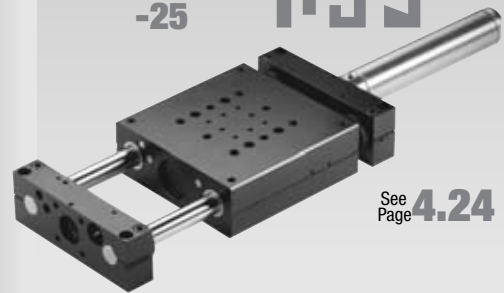
-10M (Metric -A only) (shown)  
-12M (Metric -A only)  
-16M (Metric -A only)



See Page **4.22**

### Style-T, A Replaceable Cyl.

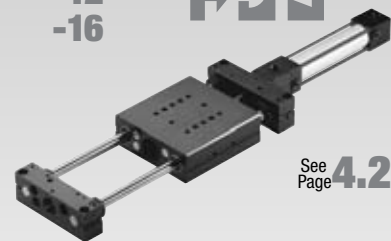
Size -20 (shown)  
-25



See Page **4.24**

### Style-N, U Repairable Cyl.

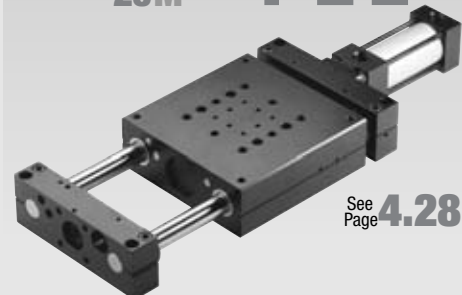
Size -10 (shown)  
-12  
-16



See Page **4.26**

### Style-N, R, U Repairable Cyl.

Size -20M (shown)  
-25M



See Page **4.28**



DLB SERIES

4.21



DIRECTCONNECT™







# BASE SLIDE DLB -10M, 12M, 16M -T, A REPLACEABLE CYLINDER WITH OR W/O ADJUST. AIR CUSHIONS

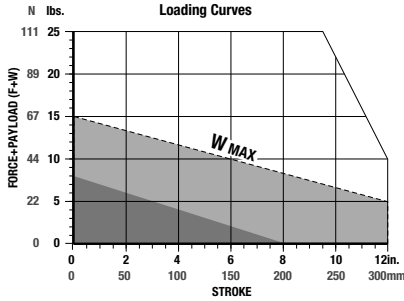


DLB SERIES

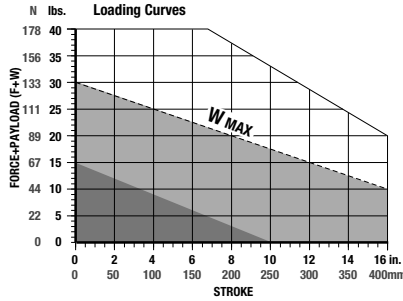
4.23

DIRECTCONNECT™

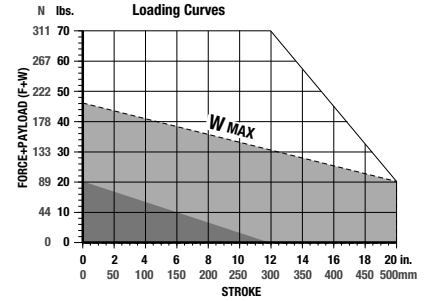
## DLB-10M-T,A,U



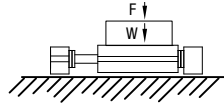
## DLB-12M-T,A,U



## DLB-16M-T,A,U



**F**=Externally applied force (lbs. or N)  
**W**=Weight of payload (lbs. or N)  
**F+W**=Total force (lbs. or N)



Shock Absorbers and Flow Controls are recommended for nearly all applications

(W) in this range use **Single Shock** in both directions

(W) in this range use **Bumpers or Cushioned Cylinder**

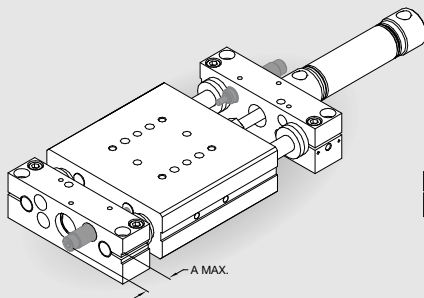
Shaded shock absorption ranges of horizontal payload (W) @ 80psi, flow controls fully open. For vertical applications do not exceed 1/2 of the recommended payload due to the additional acceleration effect of gravity.

Specifications	DLB-10	DLB-10M
Maximum Air Pressure.....	100 psi	6.9 bar
Thrust Force @ 80psi/5.5bar .	31 lbs.	145 N
Weight (Basic Unit -T, -A).....	1.98 lbs.	0.90 kg
Additional Weight per Stroke ..	0.09 lbs./in.	1.4 g/mm
Cylinder Bore Diameter .....	3/4"	20 mm
Shaft Diameter .....	0.375"	9.5 mm
Maximum Moment Load .....	75 in.-lbs.	8.4 N-m

Specifications	DLB-12	DLB-12M
Maximum Air Pressure.....	100 psi	6.9 bar
Thrust Force @ 80psi/5.5bar .	65 lbs.	289 N
Weight (Basic Unit -T, -A).....	3.73 lbs.	1.66 kg
Additional Weight per Stroke ..	0.15 lbs./in.	2.9 g/mm
Cylinder Bore Diameter .....	1-1/16"	25 mm
Shaft Diameter .....	0.472"	12 mm
Maximum Moment Load .....	150 in.-lbs.	16.9 N-m

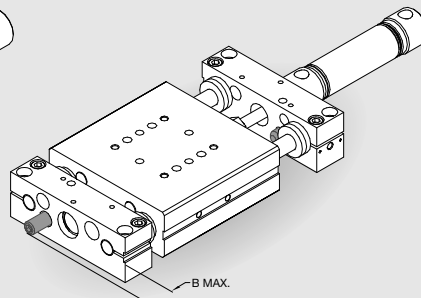
Specifications	DLB-16	DLB-16M
Maximum Air Pressure.....	100 psi	6.9 bar
Thrust Force @ 80psi/5.5bar .	65 lbs.	289 N
Weight (Basic Unit -T, -A).....	5.03 lbs.	2.3 kg
Additional Weight per Stroke ..	0.23 lbs./in.	4.2 g/mm
Cylinder Bore Diameter .....	1-1/16"	25 mm
Shaft Diameter .....	0.630"	16 mm
Maximum Moment Load .....	300 in.-lbs.	33.9 N-m

## Accessory Mounting Technical Data



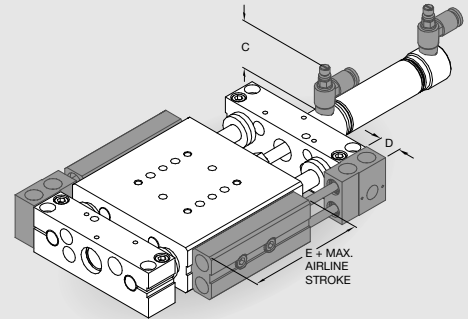
### Shock Absorbers

- Full stroking piston rod
- Built-in hard stop
- Allen wrench adjustable



### Adjustable Hard Stops

- For precision (+/- .001") hard stop end point positioning
- Allows for stop adjustment independent of shock absorber hard stop
- Allen wrench adjustable

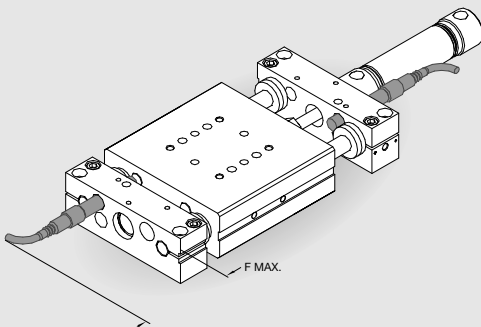


### Telescoping Airlines

- Eliminate flexing air lines
- Self aligning air tube design extends useful seal life
- Modular stackable design. Up to (4) modules can be stacked
- Modules can be mounted on either side of slide
- 1/8 NPT or G1/8 pipe threads
- (2) user air ports per module

### Flow Controls for Cylinders

- Thumb screw adjust with locking nut for adjusting cylinder speed
- 1/8 NPT or G1/8 pipe threads

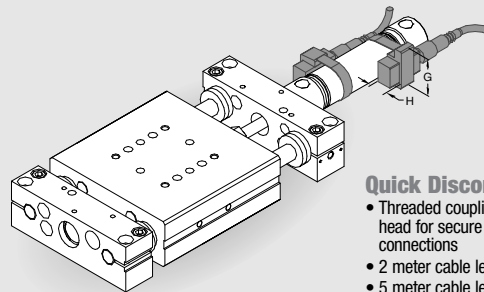


### Inductive Proximity Sensors

- 8mm diameter
- Threaded quick disconnect with built-in LED output
- PNP and NPN available

### Quick Disconnect Cable

- Threaded coupling with knurled head for secure electrical connections
- 2 meter cable length
- 5 meter cable length



### Magneto Resistive Sensors

- For all externally mounted cylinders
- Quick Disconnect with built in LED output
- Strap-on mounting kit included
- PNP and NPN available

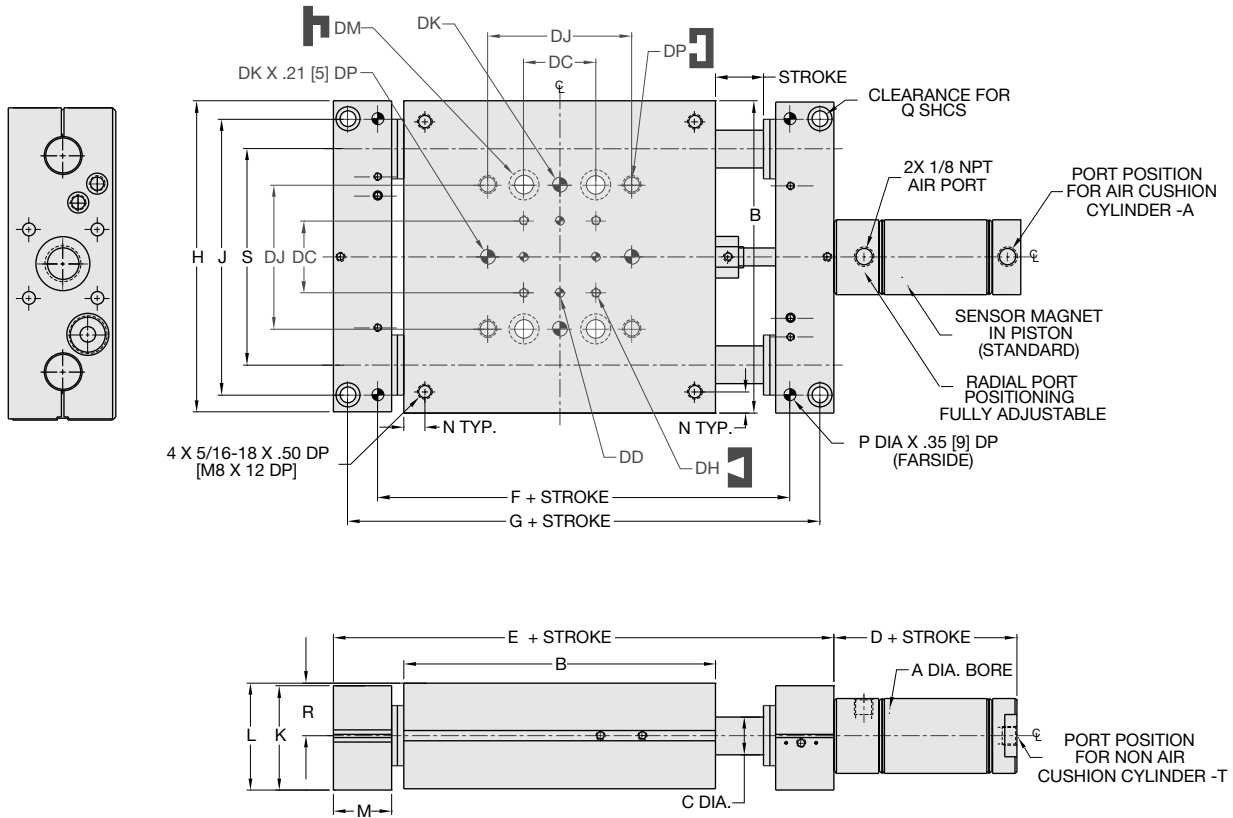
### Quick Disconnect Cable

- Threaded coupling with knurled head for secure electrical connections
- 2 meter cable length
- 5 meter cable length

	A	B	C	D	E	F	G	H
DLB-10	.70"	.47	1.25	.577	3.60	2.5	1.00	.43
DLB-12	.95"	.47	1.25	.577	3.60	2.5	1.00	.43
DLB-16	.95"	.47	1.25	.577	3.60	2.5	1.00	.43
DLB-10M	17.8mm	11.9	31.8	14.7	91.4	63.5	25.4	10.9
DLB-12M	24.1mm	11.9	31.8	14.7	91.4	63.5	25.4	10.9
DLB-16M	24.1mm	11.9	31.8	14.7	91.4	63.5	25.4	10.9



# BASE SLIDE DLB -20, 25 -T, A REPLACEABLE CYLINDER WITH OR W/O ADJUST. AIR CUSHIONS



UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

Dimensions are symmetrical about centerline	Third Angle Projection	All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or [±.013mm]	Metric Threads Course Pitch	<b>Imperial in.</b> 0.00 = ±.01 0.000 = ±.005 0.0000 = ±.0005	<b>Metric [mm]</b> [0.] = [±.25] [0.0] = [±.13] [0.00] = [±.013]
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## DIRECTCONNECT™

### DIMENSIONS

STANDARD MOUNTING PATTERN FOR ALL SIZES

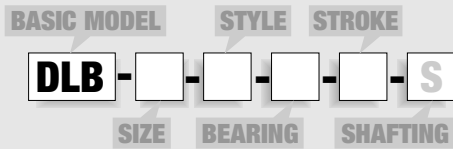
Imperial (inches)

DC	1.500
DD	.1880 x .25 DP
DH	#10-32 x .38 DP
DJ	3.000
DK	.3130 x .37 DP
DM	Clearance for 3/8
DP	3/8-16 x .50 DP

### BASIC UNIT DIMENSIONS

MODEL #	BORE DIA.		BODY SIZE		SHAFT DIA.		DIMENSIONS												
	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S		
DLB-20	1 1/2	6.50	.787	3.0	9.42	7.5850	8.836	6.480	5.7500	2.180	2.236	1.210	.438	.2505	5/16	1.100	4.500		
DLB-25	1 1/2	7.50	.984	3.0	10.84	8.7320	10.108	7.480	6.7500	2.180	2.236	1.420	.438	.3130	3/8	1.100	5.250		

## How to Order: Basic Unit



SIZE **20, 25**

STYLE **T** Replaceable cylinder w/o adjustable air cushions  
**A** Replaceable cylinder with adjustable air cushions

BEARING **B** Linear ball bearings  
**C** Composite bushings

STROKE (inches)  
DLB-20 **1-24** @ 1" increments  
DLB-25 **1-26** @ 1" increments

SHAFTING **S** Corrosion resistant shafting

Custom strokes available.  
Please consult factory.

### SAMPLE ORDER: DLB-20-A-B-8

Ex: Base Slide, Size 20, Replaceable Cylinder w/Adjustable Air Cushions, Linear Ball Bushings, 8 inch Stroke

## Accessories: (Order Separately)

### SHOCK/STOP ACCESSORIES

Shock Absorber (adjustable dampening)	<b>SHOK-029</b>	<b>SHOK-029</b>	<b>1 or 2</b>
Adjustable Hard Stop	<b>DLT-1023</b>	<b>DLT-1023</b>	<b>1 or 2</b>

### INDUCTIVE SENSOR ACCESSORIES †

Inductive Sensor PNP Qk. Disconnect	<b>OISP-011</b>	<b>OISP-011</b>	<b>1 or 2</b>
Inductive Sensor NPN Qk. Disconnect	<b>OISN-011</b>	<b>OISN-011</b>	<b>1 or 2</b>
Quick. Disconnect 2M Cable Length	<b>CABL-010</b>	<b>CABL-010</b>	<b>1 or 2</b>
Quick. Disconnect 5M Cable Length	<b>CABL-013</b>	<b>CABL-013</b>	<b>1 or 2</b>

### MAGNETIC SENSOR ACCESSORIES †\*\*

Magneto Resistive Sensor PNP Qk. Disc.	<b>OHSP-005</b>	<b>OHSP-005</b>	<b>1 or 2</b>
Magneto Resistive Sensor NPN Qk. Disc.	<b>OHSN-005</b>	<b>OHSN-005</b>	<b>1 or 2</b>
Quick. Disconnect 2M Cable Length	<b>CABL-010</b>	<b>CABL-010</b>	<b>1 or 2</b>
Quick. Disconnect 5M Cable Length	<b>CABL-013</b>	<b>CABL-013</b>	<b>1 or 2</b>

### PNEUMATIC ACCESSORIES

1/8 NPT Telescopic Airlines (up to 6")	<b>OTAL-039</b>	<b>OTAL-039</b>	<b>1, 2, 3 or 4</b>
1/8 NPT Telescopic Airlines (up to 12")	<b>OTAL-040</b>	<b>OTAL-040</b>	<b>1, 2, 3 or 4</b>
1/8 NPT Telescopic Airlines (up to 18")	<b>OTAL-041</b>	<b>OTAL-041</b>	<b>1, 2, 3 or 4</b>
1/8 NPT Telescopic Airlines (up to 24")	<b>OTAL-042</b>	<b>OTAL-042</b>	<b>1, 2, 3 or 4</b>
1/8 NPT Adjustable Flow Control	<b>VLVF-004</b>	<b>VLVF-004</b>	<b>1 or 2</b>

†Sensor and cable sold separately \*\*Piston magnet standard



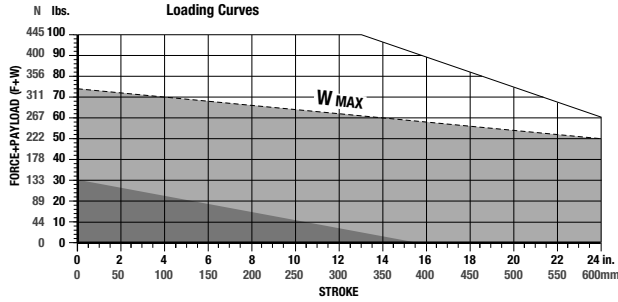
# BASE SLIDE DLB -20, 25 -T, A REPLACEABLE CYLINDER WITH OR W/O ADJUST. AIR CUSHIONS

DIRECTCONNECT

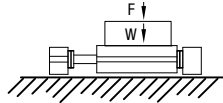
DLB SERIES  
4.25

DIRECTCONNECT™

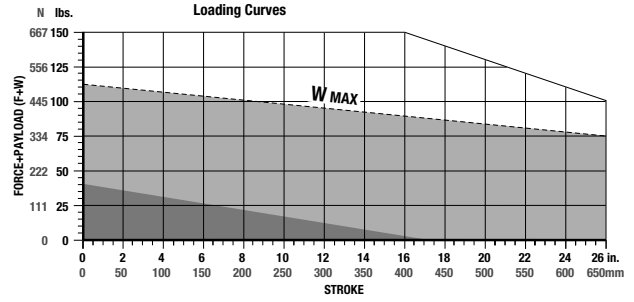
## DLB-20-T,A,U



**F**=Externally applied force (lbs. or N)  
**W**=Weight of payload (lbs. or N)  
**F+W**=Total force (lbs. or N)



## DLB-25-T,A,U



**Shock Absorbers and Flow Controls are recommended for nearly all applications**

(W) in this range use **Single Shock** in both directions

(W) in this range use **Bumpers or Cushioned Cylinder**

Shaded shock absorption ranges of horizontal payload (W) @ 80psi, flow controls fully open. For vertical applications do not exceed 1/2 of the recommended payload due to the additional acceleration effect of gravity.

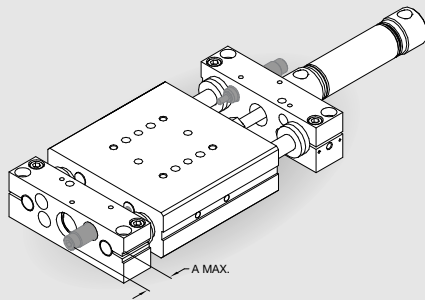
### Specifications

	DLB-20
Maximum Air Pressure .....	100 psi
Thrust Force @ 80psi/5.5bar .....	130 lbs.
Weight (Basic Unit -T, -A) .....	12.6 lbs.
Additional Weight per Stroke .....	0.38 lbs./in.
Cylinder Bore Diameter .....	1-1/2"
Shaft Diameter .....	0.787"
Maximum Moment Load .....	600 in.-lbs.

### Specifications

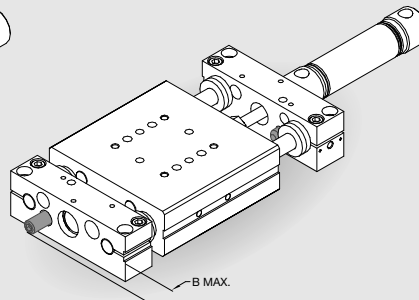
	DLB-25
Maximum Air Pressure .....	100 psi
Thrust Force @ 80psi/5.5bar .....	130 lbs.
Weight (Basic Unit -T, -A) .....	17.7 lbs.
Additional Weight per Stroke .....	0.53 lbs./in.
Cylinder Bore Diameter .....	1-1/2"
Shaft Diameter .....	0.984"
Maximum Moment Load .....	1200 in.-lbs.

## Accessory Mounting Technical Data



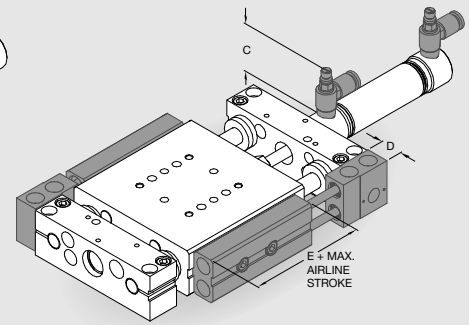
### Shock Absorbers

- Full stroking piston rod
- Built-in hard stop
- Position adjustable
- Adjustable dampening



### Adjustable Hard Stops

- For precision (+/- .001") hard stop end point positioning
- Allows for stop adjustment independent of shock absorber hard stop
- Allen wrench adjustable

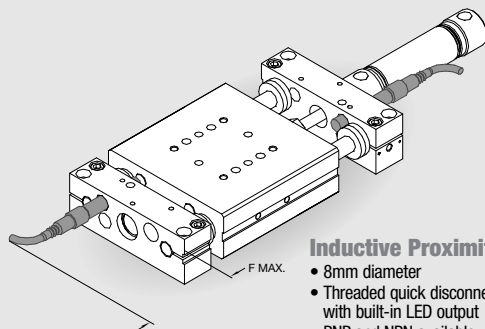


### Telescoping Airlines

- Eliminate flexing air lines
- Self aligning air tube design extends useful seal life
- Modular stackable design. Up to (4) modules can be stacked
- Modules can be mounted on either side of slide
- 1/8 NPT pipe threads
- (2) user air ports per module

### Flow Controls for Cylinders

- Thumb screw adjust with locking nut for adjusting cylinder speed
- 1/8 NPT pipe threads

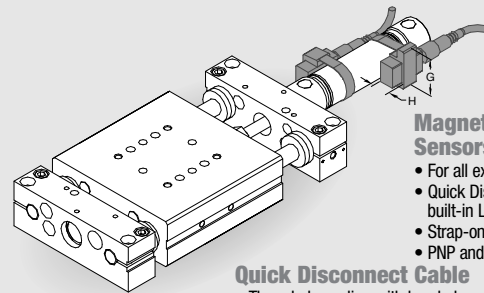


### Inductive Proximity Sensors

- 8mm diameter
- Threaded quick disconnect with built-in LED output
- PNP and NPN available

### Quick Disconnect Cable

- Threaded coupling with knurled head for secure electrical connections
- 2 meter cable length
- 5 meter cable length



### Magneto Resistive Sensors

- For all externally mounted cylinders
- Quick Disconnect with built-in LED output
- Strap-on mounting kit included
- PNP and NPN available

### Quick Disconnect Cable

- Threaded coupling with knurled head for secure electrical connections
- 2 meter cable length
- 5 meter cable length

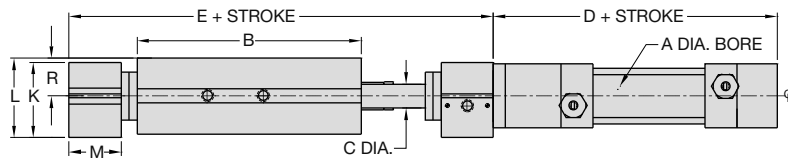
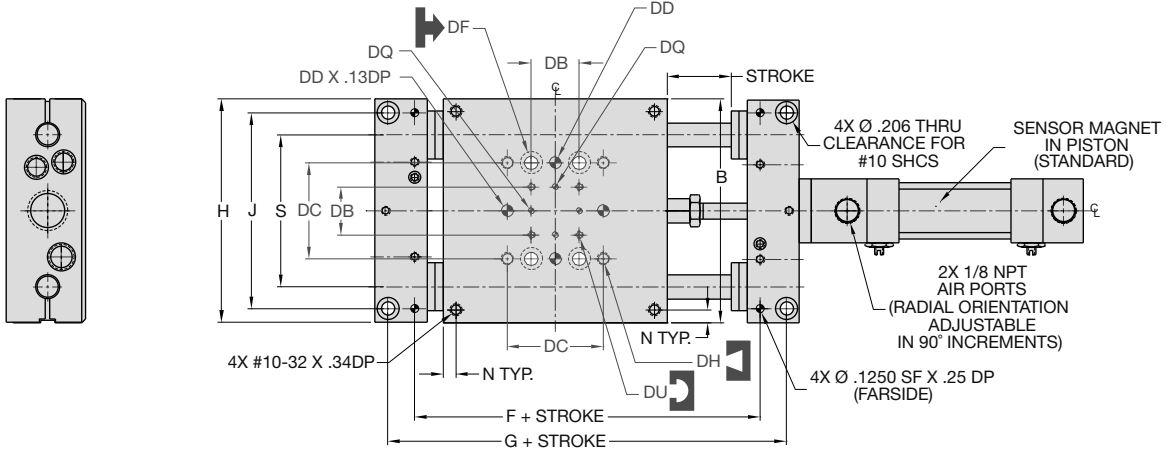
	A	B	C	D	E	F	G	H
DLB-20	2.03"	.10	1.25	.577	3.60	2.12	1.00	.43
DLB-25	1.82"	.10	1.25	.577	3.60	1.90	1.00	.43

Please see back cover for DE-STA-CO Global Locations. [www.destaco.com](http://www.destaco.com)

[www.comoso.com](http://www.comoso.com)



# BASE SLIDE DLB -10M, 12M, 16M -N, U REPAIRABLE (NFPA STYLE) CYLINDER W/FIXED AIR CUSHIONS



UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

				<b>Imperial in.</b>	<b>Metric [mm]</b>
Dimensions are symmetrical about centerline	Third Angle Projection	All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or [±.013mm]	Metric Threads Course Pitch	0.00 ± .01 0.000 ± .005 0.0000 ± .0005	[.0] = [±.25] [0.0] = [±.13] [0.00] = [±.013]

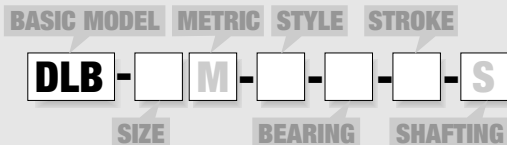
## DIRECTCONNECT DIMENSIONS

STANDARD MOUNTING PATTERN FOR ALL SIZES

	Imperial (inches)
DB	.750
DC	1.500
DD	.1880 x .25 DP
DF	Clearance for #10
DH	#10-32 x .34 DP
DQ	.0940 x .078 DP
DU	#4-40 X .25 DP

MODEL #	BORE DIA.		BODY SIZE		SHAFT DIA.		BASIC UNIT DIMENSIONS												
	A	B	C	D	E	F	G	H	J	K	L	M	N	R	S				
DLB-10	3/4	3.50	.375	3.44	5.63	4.3975	5.228	3.485	3.0600	1.178	1.245	.813	N/A	.594	2.375				
DLB-12	1 1/8	4.00	.472	3.44	6.13	4.8975	5.728	3.985	3.5000	1.615	1.657	.813	.375	.813	2.750				
DLB-16	1 1/8	4.75	.630	3.44	6.88	5.6475	6.478	4.735	4.2500	1.615	1.657	.813	.375	.813	3.250				

## How to Order: Basic Unit



**SIZE** 10, 12, 16

**STYLE** **N** Repairable NFPA cylinder w/ fixed air cushions (Not available in Metric)

**U** Non-powered unit (Without cylinder. **Metric Units:** Mount VDMA cylinder directly. NFPA not available. **Imperial Units:** Mount NFPA cylinders using NFPA mounting kit. VDMA not available.)

**BEARING** **B** Linear ball bearings  
**C** Composite bushings

**STROKE** (inches)  
DLB-10 **1-12** @ 1" increments  
DLB-12 **1-16** @ 1" increments  
DLB-16 **1-20** @ 1" increments

Custom strokes available. Please consult factory.

**STROKE** (mm)  
DLB-10M **25, 50, 80, 100, 125, 160, 200, 250, 300**  
DLB-12M **25, 50, 80, 100, 125, 160, 200, 250, 300, 320, 360, 400**  
DLB-16M **25, 50, 80, 100, 125, 160, 200, 250, 300, 320, 360, 400, 500**

**SHAFTING** **S** Corrosion resistant shafting

## SAMPLE ORDER: DLB-10-N-B-6

Ex: Base Slide, Size 10, Repairable Cylinder w/ Fixed Air Cushions, Linear Ball Bushings, 6 Inch Stroke

## Accessories: (Order Separately)

### SHOCK/STOP ACCESSORIES

	DLB-10	DLB-12	DLB-16	QTY/SLIDE
Shock Absorber	<b>SHOK-028</b>	<b>SHOK-010</b>	<b>SHOK-010</b>	<b>1 or 2</b>
Adjustable Hard Stop	<b>DLT-1023</b>	<b>DLT-1023</b>	<b>DLT-1023</b>	<b>1 or 2</b>

### INDUCTIVE SENSOR ACCESSORIES\*

	DLB-10	DLB-12	DLB-16	QTY/SLIDE
Inductive Sensor PNP Qk. Disconnect	<b>OISP-011</b>	<b>OISP-011</b>	<b>OISP-011</b>	<b>1 or 2</b>
Inductive Sensor NPN Qk. Disconnect	<b>OISN-011</b>	<b>OISN-011</b>	<b>OISN-011</b>	<b>1 or 2</b>
Quick. Disconnect 2M Cable Length	<b>CABL-010</b>	<b>CABL-010</b>	<b>CABL-010</b>	<b>1 or 2</b>
Quick. Disconnect 5M Cable Length	<b>CABL-013</b>	<b>CABL-013</b>	<b>CABL-013</b>	<b>1 or 2</b>

### MAGNETIC SENSOR ACCESSORIES\*\*

	DLB-10	DLB-12	DLB-16	QTY/SLIDE
Magneto Resistive Sensor PNP Qk. Disc.	<b>OHSP-005</b>	<b>OHSP-005</b>	<b>OHSP-005</b>	<b>1 or 2</b>
Magneto Resistive Sensor NPN Qk. Disc.	<b>OHSN-005</b>	<b>OHSN-005</b>	<b>OHSN-005</b>	<b>1 or 2</b>
Quick. Disconnect 2M Cable Length	<b>CABL-010</b>	<b>CABL-010</b>	<b>CABL-010</b>	<b>1 or 2</b>
Quick. Disconnect 5M Cable Length	<b>CABL-013</b>	<b>CABL-013</b>	<b>CABL-013</b>	<b>1 or 2</b>

### PNEUMATIC ACCESSORIES

	DLB-10	DLB-12	DLB-16	QTY/SLIDE
NFPA Cylinder Mounting Kit (-U only)	<b>ODLT-001</b>	<b>ODLT-002</b>	<b>ODLT-002</b>	<b>1</b>
1/8 NPT Telescopic Airlines (up to 6")	<b>OTAL-039</b>	<b>OTAL-039</b>	<b>OTAL-039</b>	<b>1,2,3 or 4</b>
1/8 NPT Telescopic Airlines (up to 12")	<b>OTAL-040</b>	<b>OTAL-040</b>	<b>OTAL-040</b>	<b>1,2,3 or 4</b>
1/8 NPT Telescopic Airlines (up to 18")	<b>OTAL-041</b>	<b>OTAL-041</b>	<b>OTAL-041</b>	<b>1,2,3 or 4</b>
1/8 NPT Telescopic Airlines (up to 24")	<b>OTAL-042</b>	<b>OTAL-042</b>	<b>OTAL-042</b>	<b>1,2,3 or 4</b>
1/8 NPT Adjustable Flow Control	<b>VLVF-004</b>	<b>VLVF-004</b>	<b>VLVF-004</b>	<b>1 or 2</b>

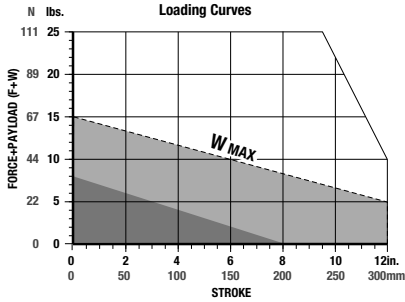
\*Sensor and cable sold separately \*\*Piston magnet standard



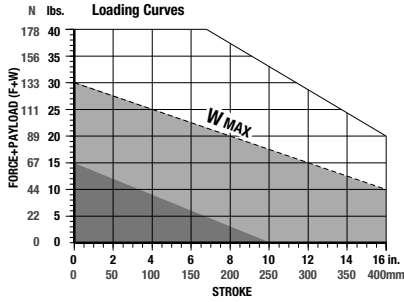
# BASE SLIDE DLB -10M, 12M, 16M -N, UNREPAIRABLE (NFPA STYLE) CYLINDER W/ADJ. AIR CUSHIONS



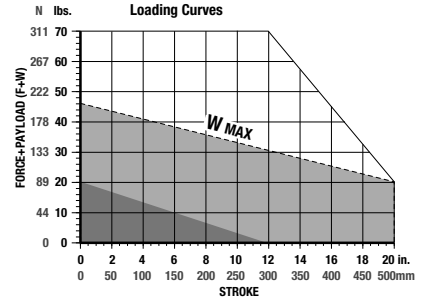
## DLB-10-N,U



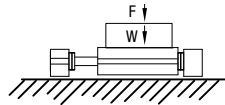
## DLB-12-N,U



## DLB-16-N,U



**F**=Externally applied force (lbs. or N)  
**W**=Weight of payload (lbs. or N)  
**F+W**=Total force (lbs. or N)



Shock Absorbers and Flow Controls are recommended for nearly all applications

(W) in this range use **Single Shock** in both directions

(W) in this range use **Bumpers or Cushioned Cylinder**

Shaded shock absorption ranges of horizontal payload (W) @ 80psi, flow controls fully open. For vertical applications do not exceed 1/2 of the recommended payload due to the additional acceleration effect of gravity.

### Specifications

	DLB-10
Maximum Air Pressure.....	100 psi
Thrust Force @ 80psi/5.5bar.....	29 lbs.
Weight (Basic Unit -N).....	2.01 lbs.
Additional Weight per Stroke.....	0.08 lbs./in.
Cylinder Bore Diameter.....	3/4"
Shaft Diameter.....	0.375"
Maximum Moment Load.....	75 in.-lbs.

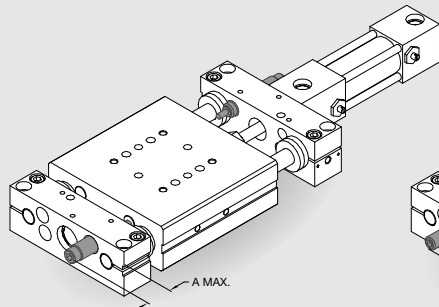
### Specifications

	DLB-12
Maximum Air Pressure.....	100 psi
Thrust Force @ 80psi/5.5bar.....	71 lbs.
Weight (Basic Unit -N).....	3.79 lbs.
Additional Weight per Stroke.....	0.16 lbs./in.
Cylinder Bore Diameter.....	1-1/8"
Shaft Diameter.....	0.472"
Maximum Moment Load.....	150 in.-lbs.

### Specifications

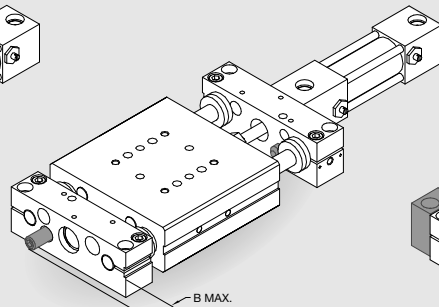
	DLB-16
Maximum Air Pressure.....	100 psi
Thrust Force @ 80psi/5.5bar.....	71 lbs.
Weight (Basic Unit -N).....	5.09 lbs.
Additional Weight per Stroke.....	0.24 lbs./in.
Cylinder Bore Diameter.....	1-1/8"
Shaft Diameter.....	0.630"
Maximum Moment Load.....	300 in.-lbs.

## Accessory Mounting Technical Data



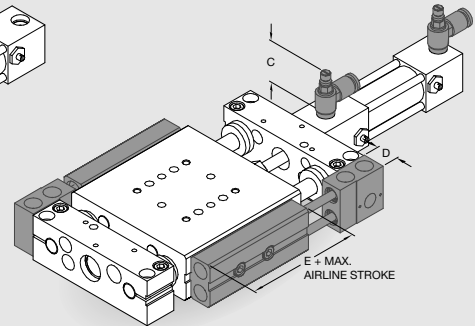
### Shock Absorbers

- Full stroking piston rod
- Built-in hard stop
- Allen wrench adjustable



### Adjustable Hard Stops

- For precision (+/- .001") hard stop end point positioning
- Allows for stop adjustment independent of shock absorber hard stop
- Allen wrench adjustable

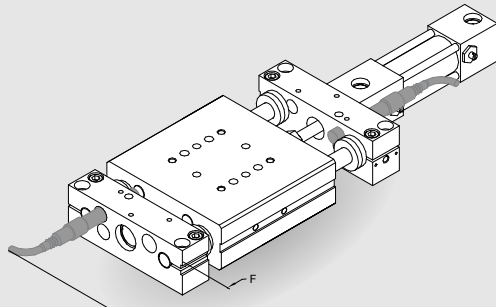


### Flow Controls for Cylinders

- Thumb screw adjust with locking nut for adjusting cylinder speed
- 1/8 NPT pipe threads

### Telescoping Airlines

- Eliminate flexing air lines
- Self aligning air tube design extends useful seal life
- Modular stackable design. Up to (4) modules can be stacked
- Modules can be mounted on either side of slide
- 1/8 NPT pipe threads
- (2) user air ports per module

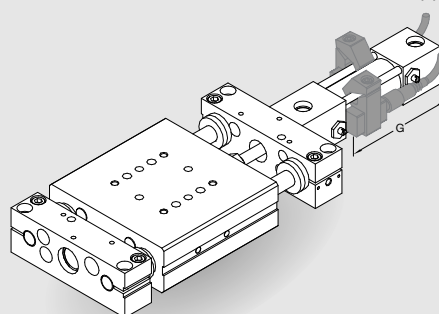


### Inductive Proximity Sensors

- 8mm diameter
- Threaded quick disconnect with built-in LED output
- PNP and NPN available

### Quick Disconnect Cable

- Threaded coupling with knurled head for secure electrical connections
- 2 meter cable length
- 5 meter cable length



### Magneto Resistive Sensors

- For all externally mounted cylinders
- Quick Disconnect with built in LED output
- Clamp-on mounting kit included
- PNP and NPN available

### Quick Disconnect Cable

- Threaded coupling with knurled head for secure electrical connections
- 2 meter cable length
- 5 meter cable length

### NFPA Cylinder Mounting Kit

- Used to mount standard face mounted NFPA cylinders to non-powered units (-U)

	A	B	C	D	E	F	G
DLB-10	.70"	.47	1.25	.577	3.60	2.5	3.00
DLB-12	.95"	.47	1.25	.577	3.60	2.5	3.00
DLB-16	.95"	.47	1.25	.577	3.60	2.5	3.00
DLB-10M	17.8mm	11.9	31.8	14.7	91.4	63.5	76.2
DLB-12M	24.1mm	11.9	31.8	14.7	91.4	63.5	76.2
DLB-16M	24.1mm	11.9	31.8	14.7	91.4	63.5	76.2

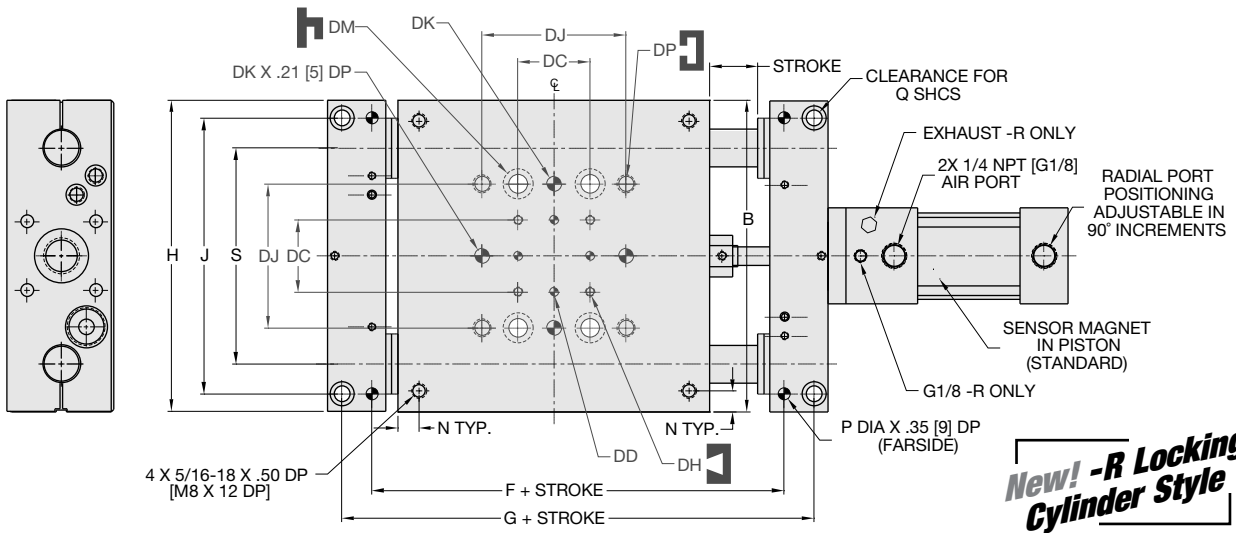
DLB SERIES

4.27

DIRECTCONNECT™



# BASE SLIDE DLB -20M, 25M -N, R, U REPAIRABLE (NFPA/VDMA) CYLINDER W/ ADJ. AIR CUSHIONS



**New! -R Locking  
Cylinder Style**

DLB SERIES

4.28

UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

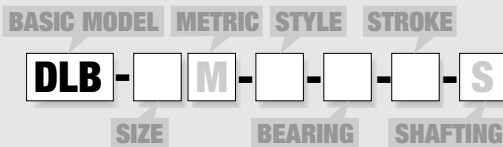
Dimensions are symmetrical about centerline	Third Angle Projection	All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or ±.013mm	Metric Threads Course Pitch	<b>Imperial in.</b> 0.00 = ±.01 0.000 = ±.005 0.0000 = ±.0005	<b>Metric [mm]</b> [0] = ±.25 [0.0] = ±.13 [0.00] = ±.013
---	------------------------	---	--------------------------------	--	--

### DIRECTCONNECT DIMENSIONS STANDARD MOUNTING PATTERN FOR ALL SIZES

Imperial (inches)	Metric (mm)
DC 1.500	38.1
DD .1880 x .25 DP	5mm H7 x 6 DP
DH #10-32 x .38 DP	M5 x 9 DP
DJ 3.000	76.2
DK .3130 x .37 DP	8mm H7 x 9.4 DP
DM Clearance for 3/8"	Clearance for M10
DP 3/8-16 X .50 DP	M10 X 12 DP

MODEL #	BORE DIA. -N		BORE DIA. -R		BODY SIZE		SHAFT DIA.		BASIC UNIT DIMENSIONS													
	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S					
DLB-20	1 1/2	32mm	6.50	.787	3.63	9.42	7.5850	8.836	6.480	5.7500	2.180	2.236	1.210	.438	.2505	5/16	1.100	4.500				
DLB-25	1 1/2	32mm	7.50	.984	3.63	10.84	8.7320	10.108	7.480	6.7500	2.180	2.236	1.420	.438	.3130	3/8	1.100	5.250				
DLB-20M	32	32	165.1	20	98.0	239.3	192.66	224.4	164.6	146.05	55.4	56.8	30.7	11.1	6.00	M8	27.94	114.30				
DLB-25M	32	32	190.5	25	98.0	275.3	221.79	256.7	190.0	171.45	55.4	56.8	36.1	11.1	8.00	M10	27.94	113.35				

## How to Order: Basic Unit



SIZE 20, 25

METRIC M

STYLE **N** Repairable NFPA/VDMA cylinder w/adjustable air cushions  
**R** Repairable locking VDMA cylinder w/adjustable air cushions  
**U** Non-powered unit (Without cylinder. Metric Units: Mount VDMA cylinder directly. NFPA not available. Imperial Units: Mount NFPA cylinders using NFPA mounting kit. VDMA not available.)

BEARING **B** Linear ball bearings  
**C** Composite bushings

STROKE (inches)  
DLB-20 1-24 @ 1" increments  
DLB-25 1-26 @ 1" increments

Custom strokes available.  
Please consult factory.

STROKE (mm)  
DLB-20M 25, 50, 80, 100, 125, 160, 200, 250, 300, 320, 360, 400, 500  
DLB-25M 25, 50, 80, 100, 125, 160, 200, 250, 300, 320, 360, 400, 500

SHAFTING **S** Corrosion resistant shafting

### SAMPLE ORDER: DLB-20-N-B-12

Ex: Base Slide, Size 20, Repairable NFPA Cylinder w/Adjustable Air Cushions, Linear Ball Bushings, Inch Stroke

## Accessories: (Order Separately)

### SHOCK/STOP ACCESSORIES

Shock Absorber (adjustable dampening)	<b>SHOK-029</b>	<b>SHOK-029</b>	<b>1 or 2</b>
Adjustable Hard Stop	<b>DLT-1023</b>	<b>DLT-1023</b>	<b>1 or 2</b>

### INDUCTIVE SENSOR ACCESSORIES†

Inductive Sensor PNP Qk. Disconnect	<b>OISP-011</b>	<b>OISP-011</b>	<b>1 or 2</b>
Inductive Sensor NPN Qk. Disconnect	<b>OISN-011</b>	<b>OISN-011</b>	<b>1 or 2</b>
Quick. Disconnect 2M Cable Length	<b>CABL-010</b>	<b>CABL-010</b>	<b>1 or 2</b>
Quick. Disconnect 5M Cable Length	<b>CABL-013</b>	<b>CABL-013</b>	<b>1 or 2</b>
Cable Extension Cord 1M Length	<b>CABL-015</b>	<b>CABL-015</b>	<b>1 or 2</b>
Cable Extension Cord 2M Length	<b>CABL-016</b>	<b>CABL-016</b>	<b>1 or 2</b>

### MAGNETIC SENSOR ACCESSORIES† \*\*

Magneto Resistive Sensor PNP Qk. Disc.	<b>OHSP-020</b>	<b>OHSP-020</b>	<b>1 or 2</b>
Magneto Resistive Sensor NPN Qk. Disc.	<b>OHSN-020</b>	<b>OHSN-020</b>	<b>1 or 2</b>
Quick. Disconnect 2M Cable Length	<b>CABL-010</b>	<b>CABL-010</b>	<b>1 or 2</b>
Quick. Disconnect 5M Cable Length	<b>CABL-013</b>	<b>CABL-013</b>	<b>1 or 2</b>
Cable Extension Cord 1M Length	<b>CABL-015</b>	<b>CABL-015</b>	<b>1 or 2</b>
Cable Extension Cord 2M Length	<b>CABL-016</b>	<b>CABL-016</b>	<b>1 or 2</b>

### PNEUMATIC ACCESSORIES

NFPA Cylinder Mounting Kit (-U only)	<b>ODLB-001</b>	<b>ODLB-001</b>	<b>1</b>
1/8 NPT Telescopic Airlines (up to 6")	<b>OTAL-039</b>	<b>OTAL-039</b>	<b>1, 2, 3 or 4</b>
1/8 NPT Telescopic Airlines (up to 12")	<b>OTAL-040</b>	<b>OTAL-040</b>	<b>1, 2, 3 or 4</b>
1/8 NPT Telescopic Airlines (up to 18")	<b>OTAL-041</b>	<b>OTAL-041</b>	<b>1, 2, 3 or 4</b>
1/8 NPT Telescopic Airlines (up to 24")	<b>OTAL-042</b>	<b>OTAL-042</b>	<b>1, 2, 3 or 4</b>
1/4 NPT Adjustable Flow Control	<b>VLVF-006</b>	<b>VLVF-006</b>	<b>1 or 2</b>
G1/8 Telescopic Airlines (up to 160mm)	<b>OTAL-045</b>	<b>OTAL-045</b>	<b>1, 2, 3 or 4</b>
G1/8 Telescopic Airlines (up to 300mm)	<b>OTAL-046</b>	<b>OTAL-046</b>	<b>1, 2, 3 or 4</b>
G1/8 Telescopic Airlines (up to 450mm)	<b>OTAL-047</b>	<b>OTAL-047</b>	<b>1, 2, 3 or 4</b>
G1/8 Telescopic Airlines (up to 600mm)	<b>OTAL-048</b>	<b>OTAL-048</b>	<b>1, 2, 3 or 4</b>
G1/8 Adjustable Flow Control	<b>VLVF-005</b>	<b>VLVF-005</b>	<b>1 or 2</b>
G1/8 Male to 1/8 NPT Adapter	<b>PLFT-025</b>	<b>PLFT-025</b>	<b>1 or 2</b>

†Sensor and cable sold separately \*\*Piston magnet standard

Please see back cover for DE-STA-CO Global Locations. [www.destaco.com](http://www.destaco.com)

[www.comoso.com](http://www.comoso.com)

DIRECTCONNECT™

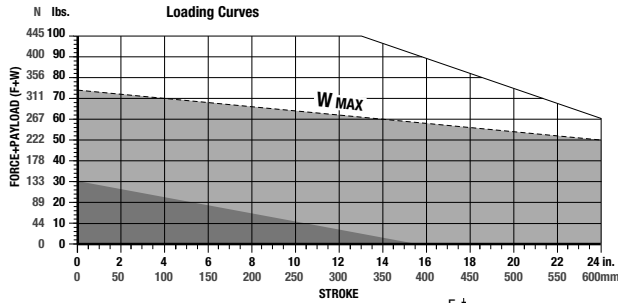




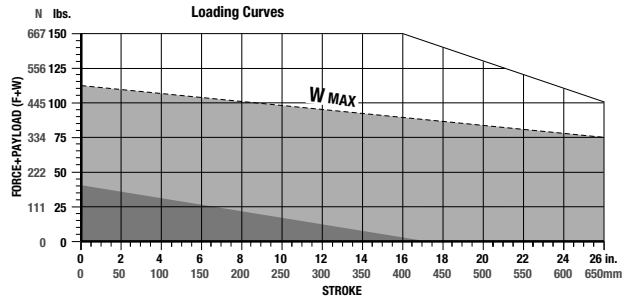
# BASE SLIDE DLB -20M, 25M -N, R, U REPAIRABLE (NFPA/VDMA) CYLINDER W/ ADJ. AIR CUSHIONS



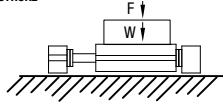
## DLB -20M -N, R, U



## DLB -25M -N, R, U



**F**=Externally applied force (lbs. or N)  
**W**=Weight of payload (lbs. or N)  
**F+W**=Total force (lbs. or N)



Shock Absorbers and Flow Controls are recommended for nearly all applications

(W) in this range use **Single Shock** in both directions

(W) in this range use **Bumpers or Cushioned Cylinder**

Shaded shock absorption ranges of horizontal payload (W) @ 80psi, flow controls fully open. For vertical applications do not exceed 1/2 of the recommended payload due to the additional acceleration effect of gravity.

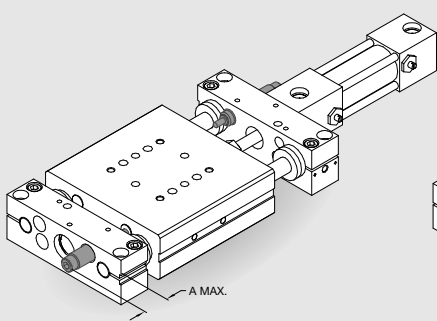
Specifications	DLB-20	DLB-20M
Maximum Air Pressure.....	100 psi	6.9 bar
Thrust Force @ 80psi/5.5bar.....	117 lbs.	443 N
Weight (Basic Unit <b>-N, -R</b> ).....	12.9 lbs.	5.9 kg
Additional Weight per Stroke <b>-N, -R</b> .....	0.53 lbs./in.	9.5 g/mm
Cylinder Bore Diameter <b>-N</b> .....	1-1/2"	32 mm
Cylinder Bore Diameter <b>-R</b> .....	32 mm	32 mm
Shaft Diameter.....	0.787"	20 mm
Maximum Moment Load.....	600 in.-lbs.	67.8 N-m
Min. Air Pressure to Release Cylinder Lock <b>-R</b> .....	60 psi	4 bar
Holding Force of Locking Mechanism <b>-R</b> .....	123 psi	550 N

Specifications	DLB-25	DLB-25M
Maximum Air Pressure.....	100 psi	6.9 bar
Thrust Force @ 80psi/5.5bar.....	117 lbs.	443 N
Weight (Basic Unit <b>-N, -R</b> ).....	18.0 lbs.	8.3 kg
Additional Weight per Stroke <b>-N, -R</b> .....	0.68 lbs./in.	12.1 g/mm
Cylinder Bore Diameter <b>-N</b> .....	1-1/2"	32 mm
Cylinder Bore Diameter <b>-R</b> .....	32 mm	32 mm
Shaft Diameter.....	0.984"	25 mm
Maximum Moment Load.....	1200 in.-lbs.	135 N-m
Min. Air Pressure to Release Cylinder Lock <b>-R</b> .....	60 psi	4 bar
Holding Force of Locking Mechanism <b>-R</b> .....	123 psi	550 N

DLB SERIES

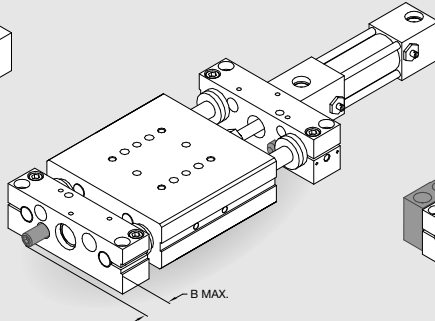
4.29

## Accessory Mounting Technical Data



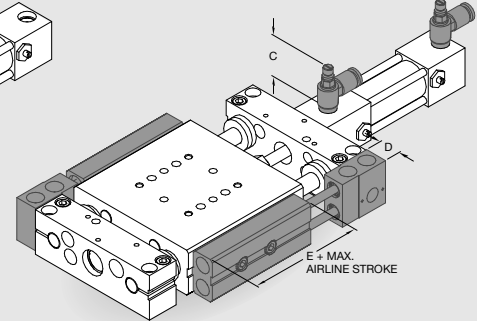
### Shock Absorbers

- Full stroking piston rod
- Built-in hard stop
- Position adjustable
- Adjustable dampening



### Adjustable Hard Stops

- For precision (+/- .001") hard stop end point positioning
- Allows for stop adjustment independent of shock absorber hard stop
- Allen wrench adjustable

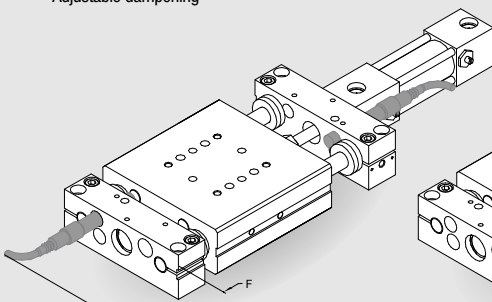


### Telescoping Air Lines

- Eliminate flexing air lines
- Self aligning air tube design extends useful seal life
- Modular stackable design. Up to (4) modules can be stacked
- Modules can be mounted on either side of slide
- 1/8 NPT or G1/8 pipe threads
- (2) user air ports per module

### Flow Controls for Cylinders

- Thumb screw adjust with locking nut for adjusting cylinder speed
- 1/4 NPT or G1/8 pipe threads

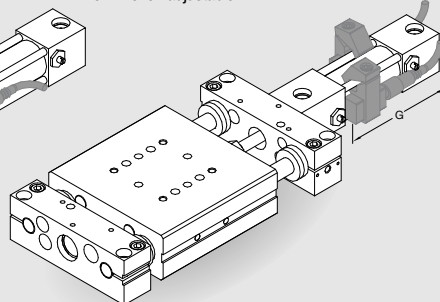


### Inductive Proximity Sensors

- 8mm diameter
- Threaded quick disconnect with built-in LED output
- PNP and NPN available

### Quick Disconnect Cable

- Threaded coupling with knurled head for secure electrical connections
- 2 meter cable length
- 5 meter cable length
- Quick disconnect cable extensions cords available in 1 or 2 meter lengths

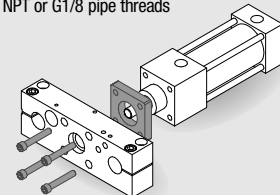


### Magneto Resistive Sensors

- For all externally mounted cylinders
- Quick Disconnect with built in LED output
- Clamp-on mounting kit included
- PNP and NPN available

### Quick Disconnect Cable

- Threaded coupling with knurled head for secure electrical connections
- 2 meter cable length
- 5 meter cable length
- Quick disconnect cable extensions cords available in 1 or 2 meter lengths



### NFPA Cylinder Mounting Kit

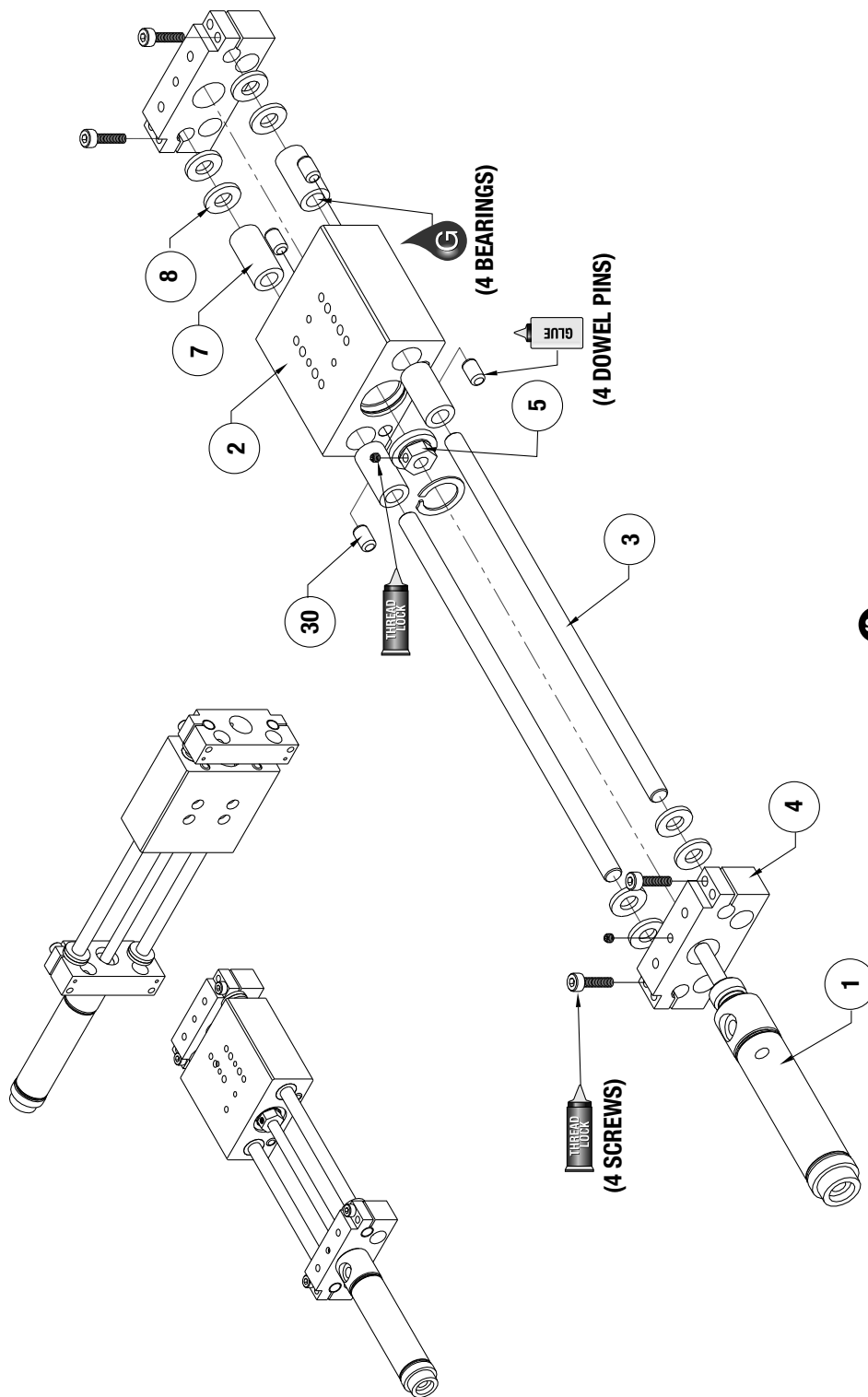
- Used to mount standard face mounted NFPA cylinders to non-powered units (-U) Refer to accessories mounting section.

	A	B	C	D	E	F	G
DLB-20	2.03"	.10	1.40	.577	3.60	2.12	3.00
DLB-25	1.82"	.10	1.40	.577	3.60	1.90	3.00
DLB-20M	51.6mm	2.5	31.8	14.7	91.4	53.8	76.2
DLB-25M	46.2mm	2.5	31.8	14.7	91.4	48.3	76.2





# DLB-T, A, N, R, U Series Exploded View



Item	Qty	Name
01	1	Cylinder
02	1	Body, Internally Powered
03	2	Guide Shaft
04	2	End Block
05	1	Coupling, Externally Powered
07	4	Bushing
08	8	Shock Pad, Urethane
30	4	Dowel Pin

**NOTE:** Contact the Robohand Sales Department for a complete spare parts list with order numbers and prices.

### Assembly Procedure

- 1) Press bearings into body, insert shafts, and slide bumpers over each shaft end.
- 2) Install external coupler to body with retainer ring.
- 3) Mount end blocks onto shaft ends and tighten.
- 4) Attach cylinder through end block and external coupler.
- 5) Lock cylinder in place by tightening set screws in the external coupler and end block.

**SK Seal Repair Kit Order #'s See Product Data Sheets**

DLB-T, A, N, R, U  
SERIES  
MAINTENANCE  
4.30

SK Seal Kit Items	Thread Locker	KRYTOX™ Lubricant	Lightweight Machine Oil	Teflon® Based Grease	Super Bonder	Third Angle Projection

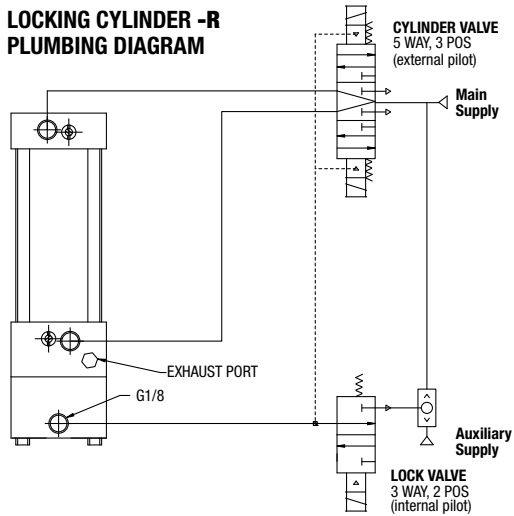
Please see back cover for DE-STA-CO Global Locations. [www.destaco.com](http://www.destaco.com)

[www.comoso.com](http://www.comoso.com)



# DLB-T, A, N, R, U Series Assembled View

## LOCKING CYLINDER -R PLUMBING DIAGRAM

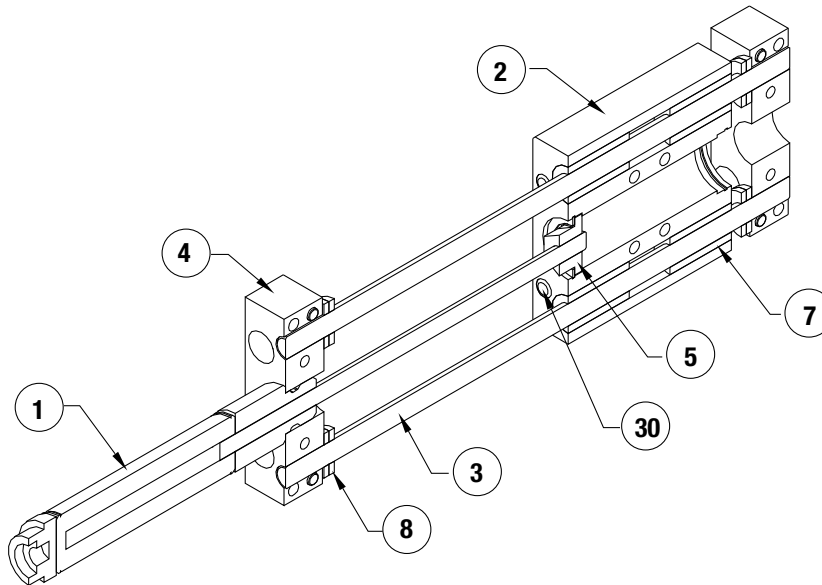


- 1) Lock valve must be maintained energized during cylinder motion, otherwise lock is engaged and cylinder valve shifts to mid position.
- 2) Cylinder valve must be maintained energized during extend or retract. Also, keep energized at end of stroke until change of direction is desired.
- 3) Mid-position of 5/3 cylinder valve may be pressurized outlets if the combination of pressure load on the cylinder and inertia effects of the attached load do not exceed the holding force rating of the locking device, including allowance for wear.
- 4) DO NOT use cylinder lines for any logic functions - pressure levels vary too much.

Item	Qty	Name
01	1	Cylinder
02	1	Body, Internally Powered
03	2	Guide Shaft
04	2	End Block
05	1	Coupling, Externally Powered
07	4	Bushing
08	8	Shock Pad, Urethane
30	4	Dowel Pin

**NOTE:** Contact the Robohand Sales Department for a complete spare parts list with order numbers and prices.

**NOTE:** For accessory mounting, see product data sheets.



DLB-T, A, N, R, U  
SERIES  
MAINTENANCE  
4.31



Seal Kit Items



Thread Locker



Krytox™ Lubricant



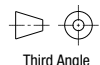
Lightweight Machine Oil



Teflon® Based Grease



Super Bonder



Third Angle Projection

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[www.comoso.com](http://www.comoso.com)

# Internally Powered Block Thrusters



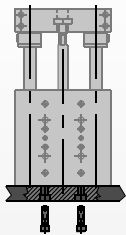
**Compact design:**  
This design is used for short strokes in limited space applications. Internal piston design reduces overall length.

**Lift table:**  
The block thruster can be used as a power lift table by attaching an optional mounting flange.

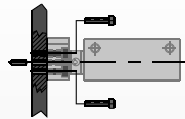
**DIRECTCONNECT mounting patterns:**  
These slides have DIRECTCONNECT mounting patterns that connect to other slides without the need for adapter plates.

## Mounting Information:

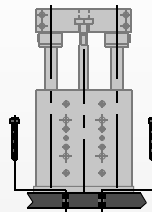
### Mounts and operates in any orientation



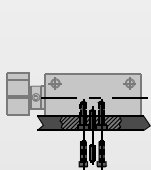
Body can be back mounted using DIRECTCONNECT mounting from the back or front of the thruster.



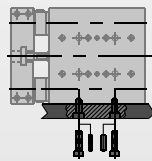
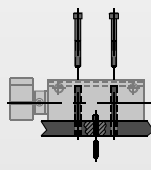
Payload attaches to tooling plate with screws and locates using slip fit dowel pin holes.



Body can end mount on end using optional mounting flange.



Body mounts with screws and locate with slip fit dowel pin holes on side or bottom using DIRECTCONNECT mounting patterns.



## Technical Specifications:

**Pneumatic Specifications**  
Pressure Operating Range\*  
Cylinder Type  
Dynamic Seals  
Valve Required to Operate

<b>Imperial</b>	<b>Metric</b>
40-100 psi	3-7 bar
<b>Double Acting</b>	
<b>Internally Lubricated Buna-N</b>	
<b>4-way, 2-position</b>	

**Air Quality Requirements**  
Air Filtration  
Air Lubrication  
Air Humidity

<b>40 Micron or Better</b>
<b>Not Necessary**</b>
<b>Low Moisture Content (dry)</b>

**Temperature Operating Range**  
Buna-N Seals (standard)  
Viton® Seals (optional)

<b>-30°~180° F</b>	<b>-35°~80° C</b>
<b>-20°~300° F</b>	<b>-30°~150° C</b>

**Maintenance Specifications†**  
Expected Life  
Normal Application  
w/ Preventative Maintenance  
Field Repairable  
Seal Repair Kits Available

<b>5 million cycles</b>
<b>10+ million cycles†</b>
<b>Yes</b>
<b>Yes</b>

### Application Restrictions

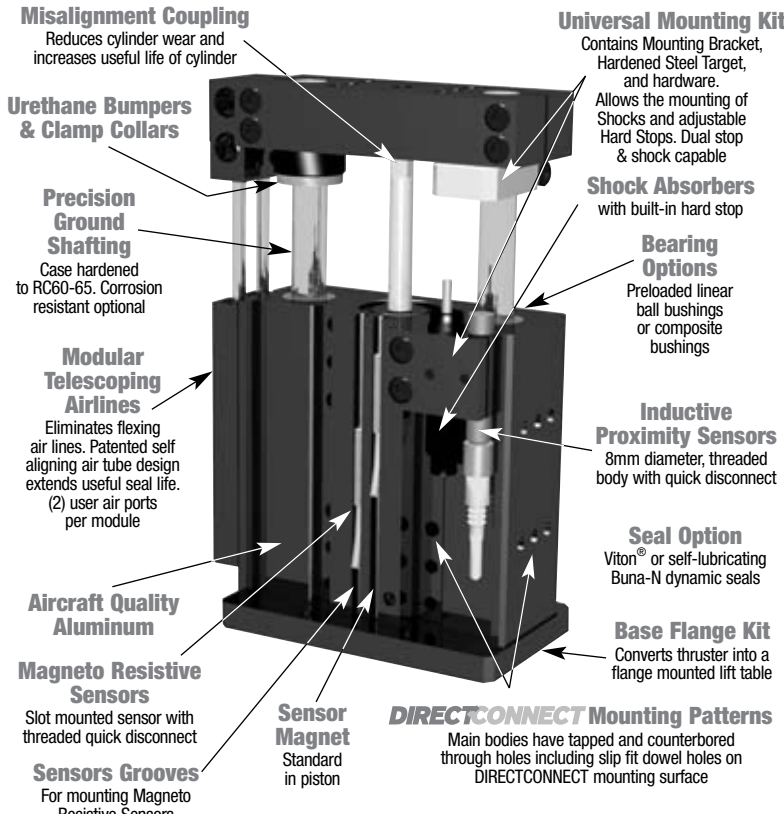
Flow controls, shock absorbers and urethane bumpers recommended for nearly all applications.  
Use composite bushing in dirty or gritty environments.  
Never use silicone based lubricants with composite bushings.

\*Higher pressure possible. Consult factory with application details.

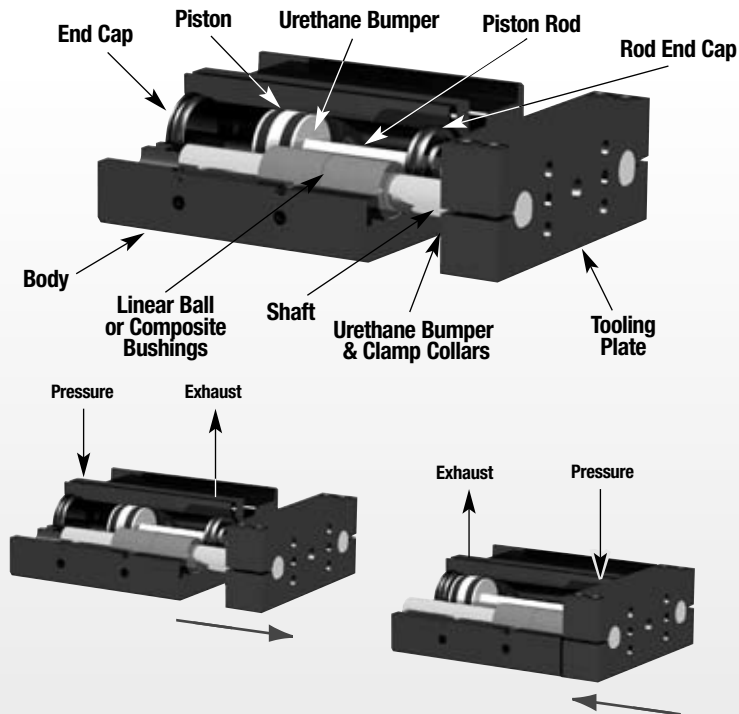
\*\*Addition of lubrication will greatly increase service life

† See Maintenance Section

# Product Features



# Operating Principle



- A double acting internal cylinder located within the body drives a piston rod that connects to the tooling plate with a misalignment coupling.
- The tooling is attached to two hardened steel shafts which are supported by and move in four linear bushings located in the body.

**Designed and manufactured in the USA**

## Style-B Block Thruster

**Size -06M**



See Page **4.34**

## Style-B Block Thruster

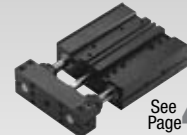
**Size -08M**



See Page **4.34**

## Style-B Block Thruster

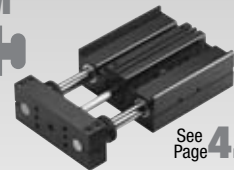
**Size -10M**



See Page **4.36**

## Style-B Block Thruster

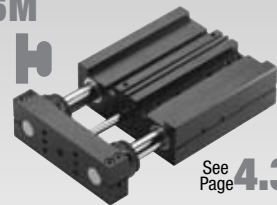
**Size -12M**



See Page **4.36**

## Style-B Block Thruster

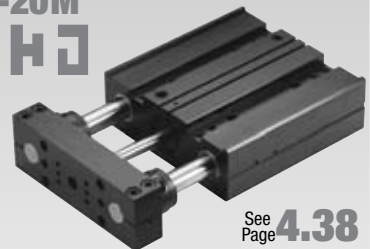
**Size -16M**



See Page **4.36**

## Style-B Block Thruster

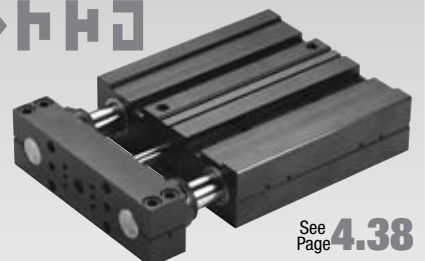
**Size -20M**



See Page **4.38**

## Style-B Block Thruster

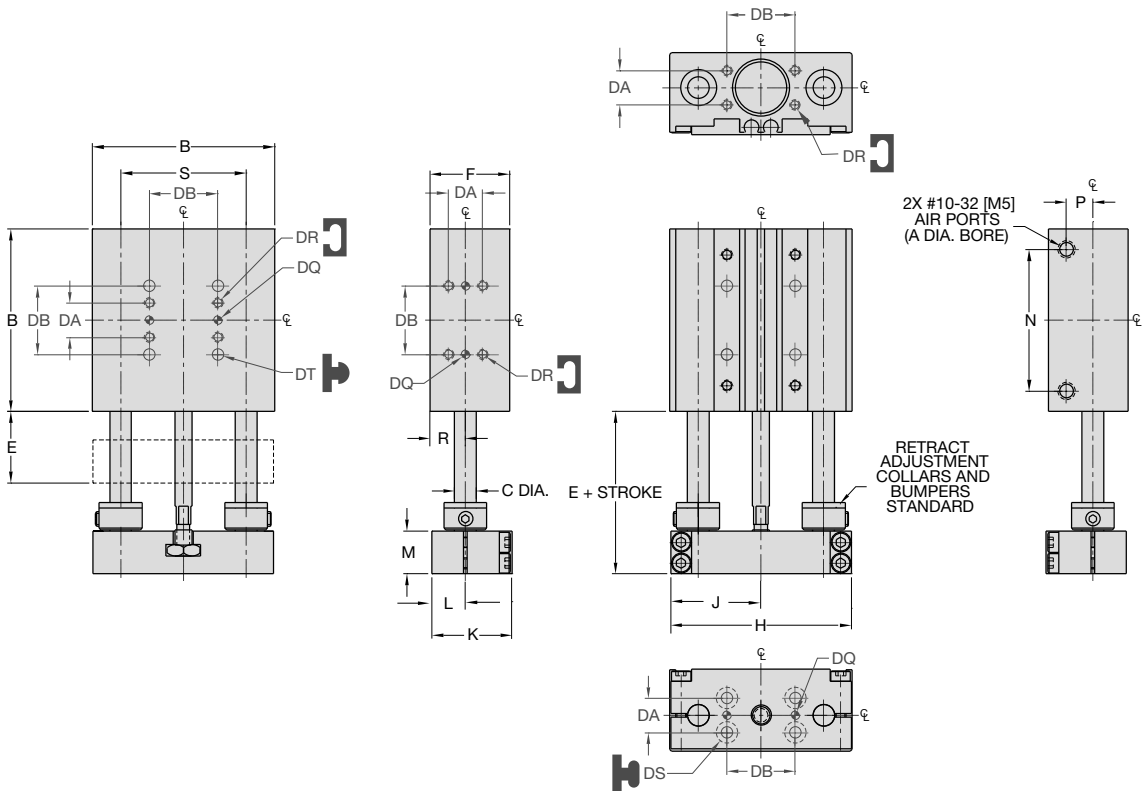
**Size -25M**



See Page **4.38**

DILT SERIES 4.33 DIRECTCONNECT™

# BLOCK THRUSTER DLT-06M, 08M -B BUILT-IN REPAIRABLE CYLINDER



UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

				<b>Imperial in.</b>	<b>Metric [mm]</b>
Dimensions are symmetrical about centerline	Third Angle Projection	All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or ±.013mm	Metric Threads Course Pitch	0.00 = ±.01 0.000 = ±.005 0.0000 = ±.0005	[0.] = ±.25 [0.0] = ±.13 [0.00] = ±.013

## DIRECTCONNECT DIMENSIONS STANDARD MOUNTING PATTERN FOR ALL SIZES

	Imperial (inches)	Metric (mm)
DA	.375	9.5
DB	.750	19.1
DQ	.0940 x .078 DP	3H7 x 2 DP
DR	#4-40 x .25 DP	M3 x 6 DP
DS	Clearance for #4	Clearance for M3
DT	Clearance for #4	Clearance for M3

## BASIC UNIT DIMENSIONS

MODEL #	BORE DIA.			BODY SIZE										
	A	B	C	E	F	H	J	K	L	M	N	P	R	S
DLT-06	0.563	2.00	0.236	0.783	0.88	1.980	.990	0.875	.365	0.470	1.55	0.29	.390	1.375
DLT-08	0.563	2.50	0.315	0.783	0.88	2.470	1.235	0.875	.365	0.470	2.05	0.29	.390	1.750
DLT-06M	14	50.8	6.0	19.9	22.4	50.3	25.1	22.2	9.3	11.9	39.4	7.4	9.9	34.93
DLT-08M	14	63.5	8.0	19.9	22.4	62.7	31.0	22.2	9.3	11.9	52.1	7.4	9.9	44.45

## How to Order: Basic Unit

BASIC MODEL METRIC STYLE STROKE SHAFTING

**DLT** - **M** - **B** - **C** - **1.5** - **V** - **S**

SIZE BEARING VITON® SEALS

SIZE **06, 08**

METRIC **M**

STYLE **B** Block thruster with built-in repairable cylinder

BEARING **C** Composite bushings

STROKE (inches)  
DLT-06 **.25, .5, 1, 1.25**  
DLT-08 **.25, .5, 1, 1.5, 1.75**

STROKE (mm)  
DLT-06M **6, 12, 25, 30**  
DLT-08M **6, 12, 25, 30, 40, 44**

VITON® **V** Viton® seals

SHAFTING **S** Corrosion resistant shafting

Custom strokes available.  
Please consult factory.

**SAMPLE ORDER: DLT-06-B-C-1.5-V**

Ex: Thruster, Size 06, Block Style, Composite Bushings, 1.5 Inch Stroke, Viton® Seals

## Accessories: (Order Separately) DLT-06M DLT-08M QTY/THRUSTER

### SHOCK/STOP ACCESSORIES

Universal Mounting Kit (Shock or Stop)	<b>OSAK-069</b>	<b>OSAK-070</b>	<b>1 or 2</b>
Shock Absorber*	<b>SHOK-030</b>	<b>SHOK-030</b>	<b>1 or 2</b>
Adjustable Hard Stop*	<b>DLT-623</b>	<b>DLT-623</b>	<b>1 or 2</b>

### INDUCTIVE SENSOR ACCESSORIES †

Inductive Sensor Mounting Kit	<b>OSMK-076</b>	<b>OSMK-077</b>	<b>1</b>
Inductive Sensor PNP Qk. Disconnect †	<b>OISP-014</b>	<b>OISP-014</b>	<b>1</b>
Inductive Sensor NPN Qk. Disconnect †	<b>OISN-014</b>	<b>OISN-014</b>	<b>1</b>
Quick Disconnect 2 M Cable Length	<b>CABL-010</b>	<b>CABL-010</b>	<b>1</b>
Quick Disconnect 5 M Cable Length	<b>CABL-013</b>	<b>CABL-013</b>	<b>1</b>

### MAGNETIC SENSOR ACCESSORIES \*\* †

Magneto Resistive Sensor PNP Qk. Disc.†	<b>OHSP-017</b>	<b>OHSP-017</b>	<b>1 or 2</b>
Magneto Resistive Sensor NPN Qk. Disc.†	<b>OHSN-017</b>	<b>OHSN-017</b>	<b>1 or 2</b>
Quick Disconnect 2 M Cable Length	<b>CABL-010</b>	<b>CABL-010</b>	<b>1 or 2</b>
Quick Disconnect 5 M Cable Length	<b>CABL-013</b>	<b>CABL-013</b>	<b>1 or 2</b>

### PNEUMATIC ACCESSORIES

#10-32 Adjustable Flow Control	<b>VLVF-007</b>	<b>VLVF-007</b>	<b>1 or 2</b>
M5 Adjustable Flow Control	<b>VLVF-008</b>	<b>VLVF-008</b>	<b>1 or 2</b>
Cylinder Seal Repair Kit	<b>SLKT-108</b>	<b>SLKT-108</b>	<b>1</b>
Viton® Seal Repair Kit	<b>SLKT-108V</b>	<b>SLKT-108V</b>	<b>1</b>

### MOUNTING ACCESSORIES

Base Flange Kit (Imperial & Metric)	<b>ODLT-015</b>	<b>ODLT-016</b>	<b>1</b>
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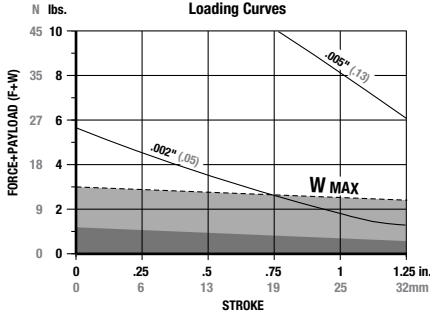
\*Requires Universal Mounting Kit †Sensor and cable sold separately \*\*Piston magnet standard



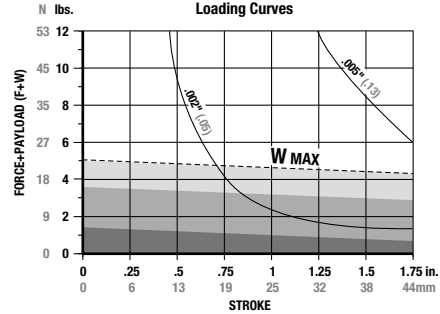
# BLOCK THRUSTER DLT-06M, 08M -B BUILT-IN REPAIRABLE CYLINDER



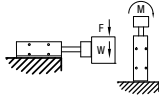
## DLT -06M -B



## DLT -08M -B



**F**=Externally applied force (lbs. or N)  
**W**=Weight of payload (lbs. or N)  
**F+W**=Total deflection force (lbs. or N)  
**M**=Maximum moment (in.-lb. or N-m)



**Shock Absorbers and Flow Controls are recommended for nearly all applications**

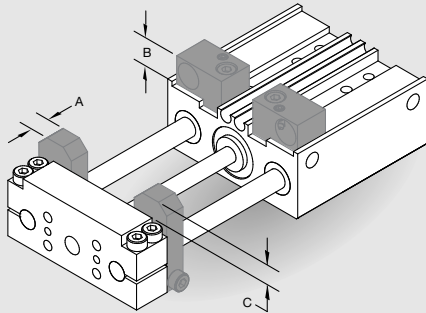
Use **Double Shocks** in both directions    Use **Single Shock** in both directions    Use **Bumpers or Cushioned Cylinder**

Shaded shock absorption ranges of horizontal payload (W) @ 80psi, flow controls fully open. For vertical applications do not exceed 1/2 of the recommended payload due to the additional acceleration effect of gravity.

Specifications	DLT-06	DLT-06M
Maximum Air Pressure .....	100 psi	7 bar
Thrust Force @ 80psi/5.5bar .....	20 lbs.	89 N
Weight (Basic Unit) .....	0.34 lbs.	0.15 kg
Cylinder Bore Diameter .....	0.563"	14.3 mm
Shaft Diameter .....	0.236"	6 mm
Max (M) Vertical Motion .....	5 in.-lbs.	0.6 N-m

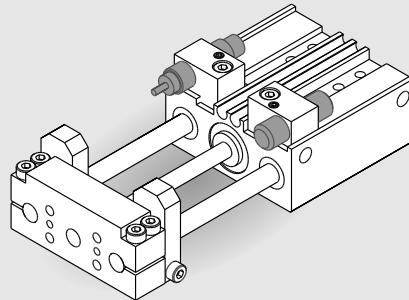
Specifications	DLT-08	DLT-08M
Maximum Air Pressure .....	100 psi	7 bar
Thrust Force @ 80psi/5.5bar .....	20 lbs.	89 N
Weight (Basic Unit) .....	0.65 lbs.	0.30 kg
Cylinder Bore Diameter .....	0.563"	14.3 mm
Shaft Diameter .....	0.315"	8 mm
Max (M) Vertical Motion .....	10 in.-lbs.	1.1 N-m

## Accessory Mounting Technical Data



### Universal Mounting Kit

- Kit mounts (1) Shock Absorber or (1) Adjustable Hard Stop
- Kit includes (1) Mounting Bracket, (1) Hardened Tool Steel Target and Hardware
- Target allows for unlimited retract stroke adjustment (no extend position adjustment). Fine adjustment is achieved using Adjustable Hard Stop or Shock Absorber
- Mounting Bracket keys into body for secure positioning and excellent rigidity
- Two possible mounting positions

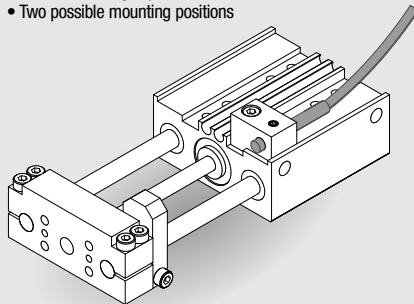


### Adjustable Hard Stops

- For precision (+/- .001") end point positioning of retract position
- Allows for end stop position adjustment independent of shock absorber hard stop
- Allen wrench adjustable

### Shock Absorbers

- Full stroking piston rod
- Built-in hard stop
- Position adjustable

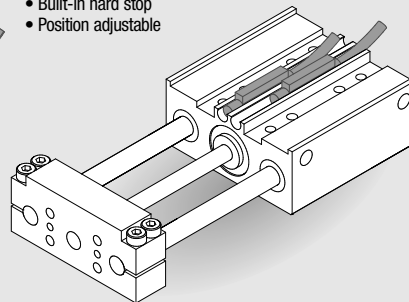


### Inductive Proximity Sensors

- 4 mm diameter
- Threaded quick disconnect with built-in LED output
- PNP and NPN available

### Quick Disconnect Cables

- Quick disconnect 2M cable Length
- Quick disconnect 5M cable Length

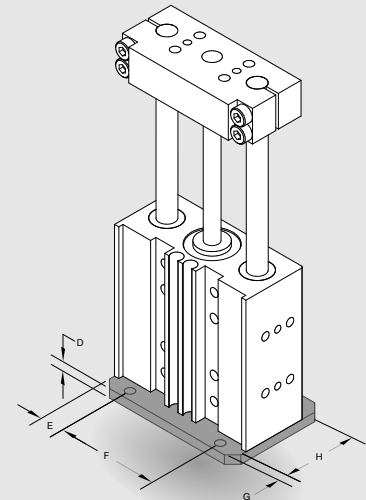


### Magneto Resistive Sensors

- No mounting kit required (slot mounted)
- Built-in LED output
- PNP and NPN available
- Hard wired 2 meter cable length
- Low profile

### Quick Disconnect Cables

- Quick disconnect 2M cable Length
- Quick disconnect 5M cable Length



### Base Flange Kit

- Convert Thruster unit into a Flange mounted Lift Table
- Provides a **DIRECTCONNECT** mounting pattern on the bottom surface

### Flow Controls for Cylinders

- Thumb screw adjust with locking nut for adjusting cylinder speed
- #10-32 or M5 pipe threads

	A	B	C	D	E	F	G	H
DLT-06	.250"	.310	.270	.125	.313	1.376	.125	1.125
DLT-08	.250"	.310	.270	.125	.563	1.376	.125	1.125
DLT-06M	6.4 mm	7.9	6.7	3.2	8.0	35	3.2	28.6
DLT-08M	6.4 mm	7.9	6.7	3.2	14.3	35	3.2	28.6

DLT SERIES

4.35



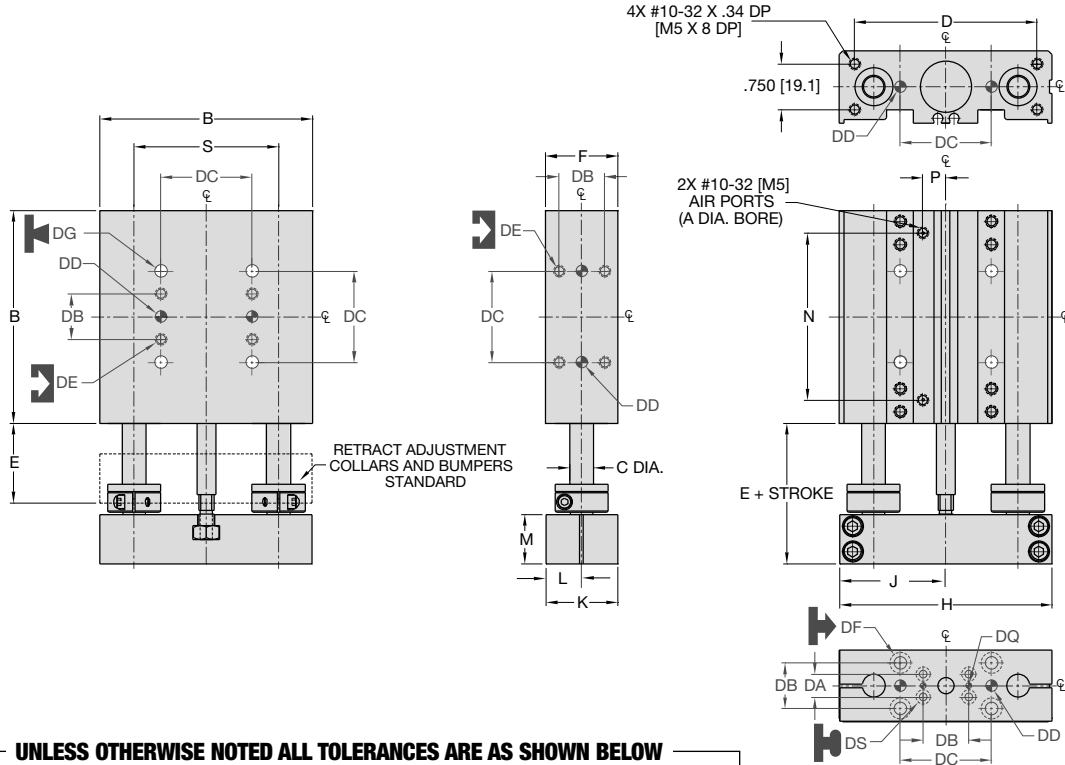


# BLOCK THRUSTER DLT -10M, 12M, 16M -B BUILT-IN REPAIRABLE CYLINDER

DLT SERIES

DLT SERIES

4.36



**UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW**

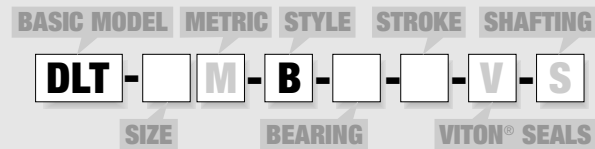
				<b>Imperial in.</b>	<b>Metric [mm]</b>
Dimensions are symmetrical about centerline	Third Angle Projection	All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or [±.013mm]	Metric Threads Course Pitch	0.00 ± .01 0.000 ± .005 0.0000 ± .0005	[0.] = [±.25] [0.0] = [±.13] [0.00] = [±.013]

### DIRECTCONNECT DIMENSIONS STANDARD MOUNTING PATTERN FOR ALL SIZES

	Imperial (inches)	Metric (mm)
DA	.375	9.5
DB	.750	19.1
DC	1.500	38.1
DD	.1880 x .25 DP	5mm H7 x 6 DP
DE	#10-32 x .34 DP	M5 x 8.5 DP
DF	Clearance for #10	Clearance for M5
DG	Clearance for #10	Clearance for M5
DQ	.0940 x .078 DP	3H7 x 2 DP
DS	Clr & C'bore for #4	Clr & C'bore for M3

MODEL #	BORE DIA.		BODY SIZE		SHAFT DIA.									
	A	B	C	D	E	F	H	J	K	L	M	N	P	S
DLT-10	3/4	3.50	.375	3.000	1.313	1.19	3.490	1.740	1.178	.584	.813	2.75	0.37	2.375
DLT-12	1	4.00	.472	3.625	1.313	1.63	3.985	1.985	1.615	.802	.813	3.28	0.37	2.750
DLT-16	1	4.75	.630	4.375	1.375	1.63	4.735	2.360	1.615	.802	.813	4.03	0.37	3.250
DLT-10M	19	88.9	9.5	76.2	33.4	30.2	88.6	44.2	29.9	14.8	20.7	69.7	9.4	60.33
DLT-12M	25	101.6	12.0	92.1	33.4	41.4	101.2	50.4	41.0	20.4	20.7	83.3	9.4	69.85
DLT-16M	25	120.7	16.0	111.1	34.9	41.4	120.3	59.9	41.0	20.4	20.7	102.4	9.4	82.55

### How to Order: Basic Unit



- SIZE** 10, 12, 16
- METRIC** M
- STYLE** B Block thruster with built-in repairable cylinder
- BEARING** B Linear ball bearings  
C Composite bushings
- STROKE** (inches)  
DLT-10 .5-2 @ .5" increments  
DLT-12 .5-2 @ .5" increments  
DLT-16 .5-3 @ .5" increments
- STROKE** (mm)  
DLT-10M 12, 25, 40, 50  
DLT-12M 12, 25, 40, 50  
DLT-16M 12, 25, 40, 50, 65, 75
- VITON®** V Viton® seals
- SHAFTING** S Corrosion resistant shafting

Custom strokes available.  
Please consult factory.

### SAMPLE ORDER: DLT-10-B-C-1.5-V

Ex: Thruster, Size 10, Block Style, Composite Bushings, 1.5 inch Stroke, Viton® Seals

### Accessories: (Order Separately) DLT-10M DLT-12M DLT-16M QTY/THRUSTER

#### SHOCK/STOP ACCESSORIES

Universal Mounting Kit (Shock, Stop or Sensor)	<b>OSAK-055</b>	<b>OSAK-057</b>	<b>OSAK-059</b>	1 or 2
Shock Absorber*	<b>SHOK-028</b>	<b>SHOK-010</b>	<b>SHOK-010</b>	1 or 2
Adjustable Hard Stop*	<b>DLT-1023</b>	<b>DLT-1023</b>	<b>DLT-1023</b>	1 or 2

#### INDUCTIVE SENSOR ACCESSORIES†

Inductive Sensor PNP Qk. Disconnect*	<b>OISP-011</b>	<b>OISP-011</b>	<b>OISP-011</b>	1
Inductive Sensor NPN Qk. Disconnect*	<b>OISN-011</b>	<b>OISN-011</b>	<b>OISN-011</b>	1
Quick Disconnect 2 M Cable Length	<b>CABL-010</b>	<b>CABL-010</b>	<b>CABL-010</b>	1
Quick Disconnect 5 M Cable Length	<b>CABL-013</b>	<b>CABL-013</b>	<b>CABL-013</b>	1
<b>MAGNETIC SENSOR ACCESSORIES**†</b>				
Magneto Resistive Sensor PNP Qk. Disc.†	<b>OHSP-017</b>	<b>OHSP-017</b>	<b>OHSP-017</b>	1 or 2
Magneto Resistive Sensor NPN Qk. Disc.†	<b>OHSN-017</b>	<b>OHSN-017</b>	<b>OHSN-017</b>	1 or 2
Quick Disconnect 2 M Cable Length	<b>CABL-010</b>	<b>CABL-010</b>	<b>CABL-010</b>	1
Quick Disconnect 5 M Cable Length	<b>CABL-013</b>	<b>CABL-013</b>	<b>CABL-013</b>	1

#### PNEUMATIC ACCESSORIES

1/8 NPT Telescopic Airlines (up to 2")	<b>OTAL-037</b>	<b>OTAL-037</b>	<b>OTAL-037</b>	1, 2, 3 or 4
1/8 NPT Telescopic Airlines (up to 3")	<b>OTAL-038</b>	<b>OTAL-038</b>	<b>OTAL-038</b>	1, 2, 3 or 4
#10-32 Adjustable Flow Control	<b>VLVF-007</b>	<b>VLVF-007</b>	<b>VLVF-007</b>	1 or 2
G1/8 Telescopic Airlines (up to 50mm)	<b>OTAL-043</b>	<b>OTAL-043</b>	<b>OTAL-043</b>	1, 2, 3 or 4
G1/8 Telescopic Airlines (up to 80mm)	<b>OTAL-044</b>	<b>OTAL-044</b>	<b>OTAL-044</b>	1, 2, 3 or 4
M5 Adjustable Flow Control	<b>VLVF-008</b>	<b>VLVF-008</b>	<b>VLVF-008</b>	1 or 2
Cylinder Seal Repair Kit	<b>SLKT-100</b>	<b>SLKT-102</b>	<b>SLKT-102</b>	1
Viton® Seal Repair Kit	<b>SLKT-100V</b>	<b>SLKT-102V</b>	<b>SLKT-102V</b>	1

#### MOUNTING ACCESSORIES

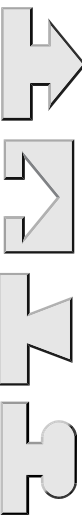
Base Flange Kit (Imperial)	<b>ODLT-005</b>	<b>ODLT-007</b>	<b>ODLT-009</b>	1
Base Flange Kit (Metric)	<b>ODLT-006</b>	<b>ODLT-008</b>	<b>ODLT-010</b>	1

\*Requires Universal Mounting Kit †Sensor and cable sold separately \*\*Piston magnet standard

DIRECTCONNECT™

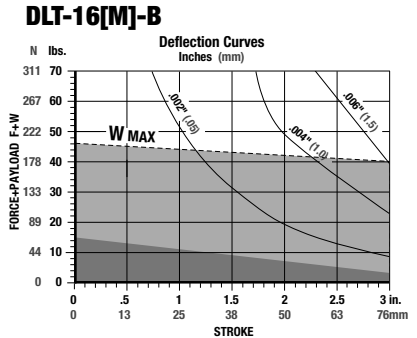
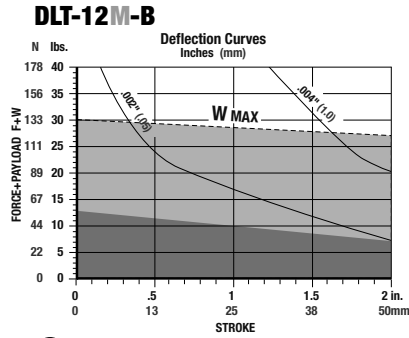
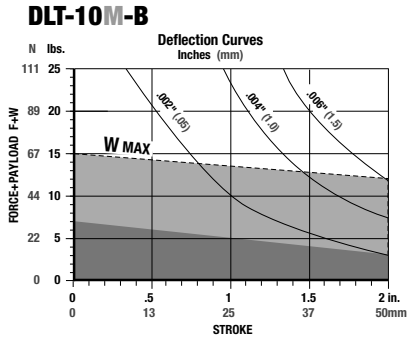


# BLOCK THRUSTER DLT-10M, 12M, 16M -B BUILT-IN REPAIRABLE CYLINDER

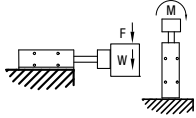


DLT SERIES  
4.37

DIRECTCONNECT™



**F**=Externally applied force (lbs. or N)  
**W**=Weight of payload (lbs. or N)  
**F+W**=Total deflection force (lbs. or N)  
**M**=Maximum moment (in.-lb. or N-m)



**Shock Absorbers and Flow Controls are recommended for nearly all applications**

**(W)** in this range use **Single Shock** in retract direction **(W)** in this range use **Bumpers or Cushioned Cylinder**

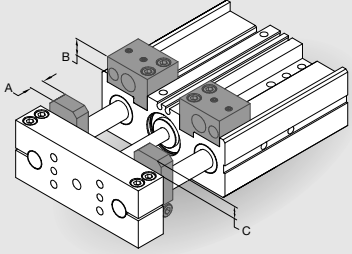
Shaded shock absorption ranges of horizontal payload (W) @ 80psi, flow controls fully open. For vertical applications do not exceed 1/2 of the recommended payload due to the additional acceleration effect of gravity.

Specifications	DLT-10	DLT-10M
Maximum Air Pressure.....	100 psi	6.9 bar
Thrust Force @ 80psi/5.5bar .	35 lbs.	155 N
Weight (Basic Unit) .....	1.81 lbs.	0.82 kg
Cylinder Bore Diameter .....	3/4"	19mm
Shaft Diameter .....	0.375"	9.5mm
Max (M) Vertical Motion .....	25 in-lbs.	2.8N-m

Specifications	DLT-12	DLT-12M
Maximum Air Pressure.....	100 psi	6.9 bar
Thrust Force @ 80psi/5.5bar .	62 lbs.	275 N
Weight (Basic Unit) .....	2.88 lbs.	1.31 kg
Cylinder Bore Diameter .....	1"	25mm
Shaft Diameter .....	0.472"	12mm
Max (M) Vertical Motion .....	50 in-lbs.	5.6N-m

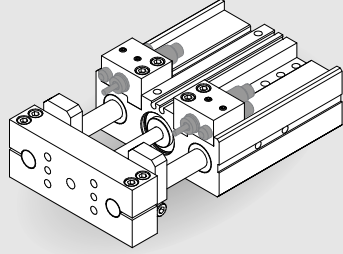
Specifications	DLT-16	DLT-16M
Maximum Air Pressure.....	100 psi	6.9 bar
Thrust Force @ 80psi/5.5bar .	62 lbs.	275 N
Weight (Basic Unit) .....	4.38 lbs.	1.99 kg
Cylinder Bore Diameter .....	1"	25mm
Shaft Diameter .....	0.630"	16mm
Max (M) Vertical Motion .....	100 in-lbs.	11.3N-m

## Accessory Mounting Technical Data



### Universal Mounting Kit

- Kit mounts (1) Shock Absorber and (1) Inductive Proximity Sensor or (1) Shock and (1) Adjustable Hard Stop
- Kit includes (1) Mounting Bracket, (1) Hardened Tool Steel Target and Hardware
- Target allows for unlimited retract stroke adjustment (no extend position adjustment). Fine adjustment is achieved using Adjustable Hard Stop or Shock Absorber
- Mounting Bracket keys into body for secure positioning and excellent rigidity
- Two possible mounting positions

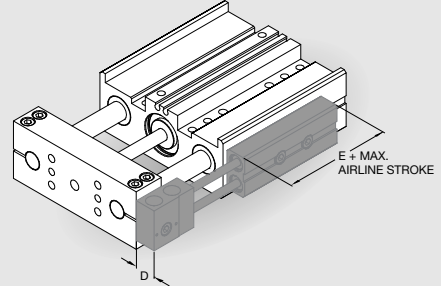


### Adjustable Hard Stops

- For precision (+/- .001") end point positioning of retract position
- Allows for end stop position adjustment independent of shock absorber hard stop
- Allen wrench adjustable

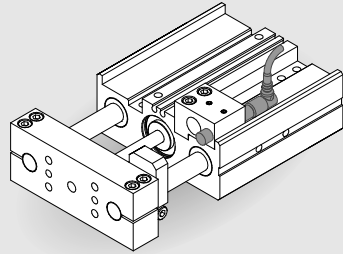
### Shock Absorbers

- Full stroking piston rod
- Built-in hard stop
- Allen wrench adjustable



### Telescoping Air Lines

- Eliminate flexing air lines
- Self aligning air tube design extends useful seal life
- Modular stackable design. Up to (4) modules can be stacked
- 1/8 NPT or G1/8 pipe threads
- (2) user air ports per module

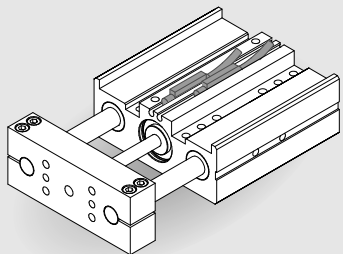


### Inductive Proximity Sensors

- 8mm diameter
- Threaded quick disconnect with built-in LED output
- PNP and NPN available

### Quick Disconnect Cable

- Threaded coupling with knurled head for secure electrical connections
- 2 meter cable length
- 5 meter cable length

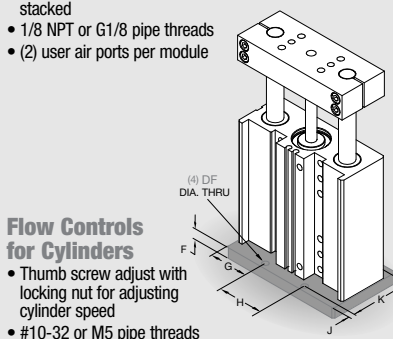


### Magneto Resistive Sensors

- No mounting kit required (slot mounted)
- Threaded quick disconnect with built-in LED output
- PNP and NPN available
- Low profile

### Quick Disconnect Cable

- Threaded coupling with knurled head for secure electrical connections
- 2 meter cable length
- 5 meter cable length



### Flow Controls for Cylinders

- Thumb screw adjust with locking nut for adjusting cylinder speed
- #10-32 or M5 pipe threads

### Base Flange Kit

- Convert Thruster unit into a Flange mounted Lift Table
- Provides a **DIRECTCONNECT** mounting pattern on the bottom surface

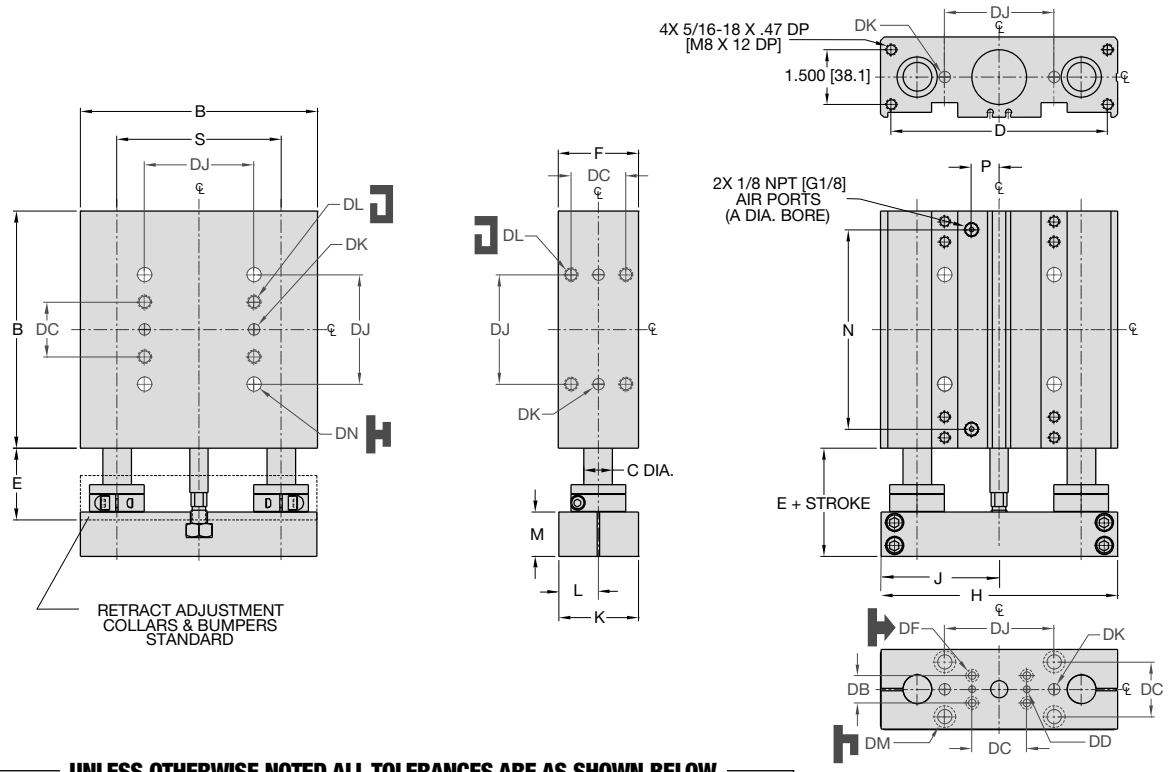
	A	B	C	D	E	F	G	H	J	K
DLT-10	.375"	.480	.320	.577	2.0	.355	1.00	1.500	.188	1.500
DLT-12	.357"	.450	.230	.577	2.0	.355	1.281	1.500	.188	2.000
DLT-16	.437"	.450	.340	.577	2.0	.355	1.656	1.500	.188	2.000
DLT-10M	9.5mm	12.2	8.1	14.7	50.8	9.0	25.4	38.1	4.8	38.1
DLT-12M	9.5mm	11.4	5.8	14.7	50.8	9.0	32.5	38.1	4.8	50.8
DLT-16M	11.1mm	11.4	8.6	14.7	50.8	9.0	42.1	38.1	4.8	50.8

# BLOCK THRUSTER DLT -20M, 25M -B BUILT-IN REPAIRABLE CYLINDER

DIRECTCONNECT

DLT SERIES

4.38



**UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW**

				<b>Imperial in.</b>	<b>Metric [mm]</b>
Dimensions are symmetrical about centerline	Third Angle Projection	All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or (±.013mm)	Metric Threads Course Pitch	0.00 ± .01 0.000 ± .005 0.0000 ± .0005	[.1] = [±.25] [0.0] = [±.13] [0.00] = [±.013]

**DIRECTCONNECT DIMENSIONS**  
STANDARD MOUNTING PATTERN FOR ALL SIZES

	Imperial (inches)	Metric (mm)
DB	.750	19.1
DC	1.500	38.1
DD	.1880 x .25DP	5mm H7 x 6DP
DF	Clearance for #10	Clearance for M5
DJ	3.000	76.2
DK	.3130 x .37 DP	8mm H7 x 9.4 DP
DL	3/8 - 16 x .56 DP	M10 x 14.2 DP
DM	Clearance for 3/8	Clearance for M10
DN	Clearance for 3/8	Clearance for M10

MODEL #	BORE DIA.		BODY SIZE		SHAFT DIA.									
	A	B	C	D	E	F	H	J	K	L	M	N	P	S
DLT-20	1 1/2	6.50	.787	5.938	1.960	2.20	6.480	3.230	2.180	1.080	1.210	5.47	0.77	4.500
DLT-25	1 1/2	7.50	.984	6.938	2.170	2.20	7.480	3.730	2.180	1.080	1.420	6.47	0.77	5.250
DLT-20M	38	165.1	20	150.8	49.8	55.9	164.6	82.0	55.4	27.4	30.7	138.9	19.5	114.30
DLT-25M	38	190.5	25	176.2	55.1	55.9	190.0	94.7	55.4	27.4	36.1	164.3	19.5	133.35

**How to Order: Basic Unit**

**BASIC MODEL** **METRIC** **STYLE** **STROKE** **SHAFTING**

**DLT** - **M** - **B** - **20** - **V** - **S**

**SIZE** **BEARING** **VITON® SEALS**

**SIZE** 20, 25

**METRIC** M

**STYLE** B Block thruster with built-in repairable cylinder

**BEARING** B Linear ball bearings  
C Composite bushings

**STROKE** (inches) Custom strokes available. Please consult factory.  
DLT-20 .5-4 @ .5" increments  
DLT-25 .5-5 @ .5" increments

**STROKE** (mm)  
DLT-20M 12, 25, 40, 50, 65, 75, 85, 100  
DLT-25M 12, 25, 40, 50, 65, 75, 85, 100, 115, 125

**VITON®** V Viton® seals

**SHAFTING** S Corrosion resistant shafting

**SAMPLE ORDER: DLT-20-B-C-2.5-V**

Ex: Thruster, Size 20, Block Style, Composite Bushings, 2.5 Inch Stroke, Viton® Seals

**Accessories:** (Order Separately)

	DLT-20M	DLT-25M	QTY/THRUSTER
<b>SHOCK/STOP ACCESSORIES</b>			
Universal Mounting Kit			
(Shock, Stop or Sensor)	<b>OSAK-061</b>	<b>OSAK-063</b>	1 or 2
Shock Absorber (adjustable dampening)*	<b>SHOK-029</b>	<b>SHOK-029</b>	1 or 2
Adjustable Hard Stop*	<b>DLT-1023</b>	<b>DLT-1023</b>	1 or 2
<b>INDUCTIVE SENSOR ACCESSORIES†</b>			
Inductive Sensor PNP Qk. Disconnect*	<b>OISP-011</b>	<b>OISP-011</b>	1
Inductive Sensor NPN Qk. Disconnect*	<b>OISN-011</b>	<b>OISN-011</b>	1
Quick Disconnect 2 M Cable Length	<b>CABL-010</b>	<b>CABL-010</b>	1
Quick Disconnect 5 M Cable Length	<b>CABL-013</b>	<b>CABL-013</b>	1
<b>MAGNETIC SENSOR ACCESSORIES***</b>			
Magneto Resistive Sensor PNP Qk. Disc.†	<b>OHSP-017</b>	<b>OHSP-017</b>	1 or 2
Magneto Resistive Sensor NPN Qk. Disc.†	<b>OHSN-017</b>	<b>OHSN-017</b>	1 or 2
Quick Disconnect 2 M Cable Length	<b>CABL-010</b>	<b>CABL-010</b>	1
Quick Disconnect 5 M Cable Length	<b>CABL-013</b>	<b>CABL-013</b>	1
<b>PNEUMATIC ACCESSORIES</b>			
1/8 NPT Telescopic Airlines (up to 4")	<b>OTAL-049</b>	<b>OTAL-049</b>	1, 2, 3 or 4
1/8 NPT Telescopic Airlines (up to 5")	<b>OTAL-050</b>	<b>OTAL-050</b>	1, 2, 3 or 4
1/8 NPT Adjustable Flow Control	<b>VLVF-004</b>	<b>VLVF-004</b>	1 or 2
G1/8 Telescopic Airlines (up to 100mm)	<b>OTAL-051</b>	<b>OTAL-051</b>	1, 2, 3 or 4
G1/8 Telescopic Airlines (up to 125mm)	<b>OTAL-052</b>	<b>OTAL-052</b>	1, 2, 3 or 4
G1/8 Adjustable Flow Control	<b>VLVF-005</b>	<b>VLVF-005</b>	1 or 2
Cylinder Seal Repair Kit	<b>SLKT-104</b>	<b>SLKT-104</b>	1
Viton® Cylinder Seal Repair Kit	<b>SLKT-104V</b>	<b>SLKT-104V</b>	1
<b>MOUNTING ACCESSORIES</b>			
Base Flange Kit (Imperial)	<b>ODLT-011</b>	<b>ODLT-013</b>	1
Base Flange Kit (Metric)	<b>ODLT-012</b>	<b>ODLT-014</b>	1

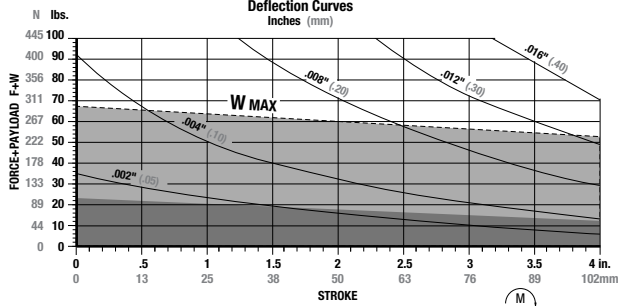
\*Requires Universal Mounting Kit †Sensor and cable sold separately \*\*\*Piston magnet standard



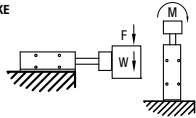
# BLOCK THRUSTER DLT -20M, 25M -B BUILT-IN REPAIRABLE CYLINDER



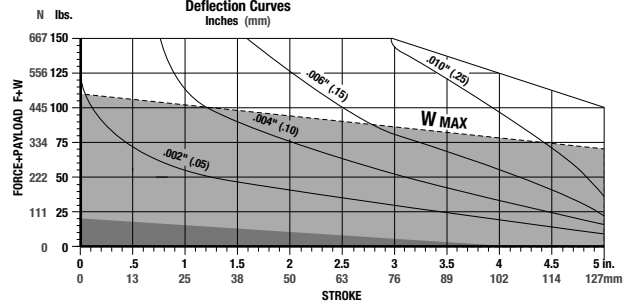
## DLT-20M-B



**F**=Externally applied force (lbs. or N)  
**W**=Weight of payload (lbs. or N)  
**F+W**=Total deflection force (lbs. or N)  
**M**=Maximum moment (in.-lb. or N-m)



## DLT-25M-B



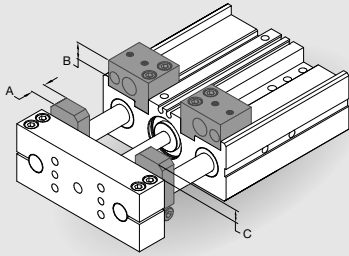
**Shock Absorbers and Flow Controls are recommended for nearly all applications**

**(W)** in this range use **Single Shock** in retract direction **(W)** in this range use **Bumpers or Cushioned Cylinder**  
 Shaded shock absorption ranges of horizontal payload (W) @ 80psi, flow controls fully open. For vertical applications do not exceed 1/2 of the recommended payload due to the additional acceleration effect of gravity.

Specifications	DLT-20	DLT-20M
Maximum Air Pressure	100 psi	6.9 bar
Thrust Force @ 80psi/5.5bar	140 lbs.	622 N
Weight (Basic Unit)	11.2 lbs.	5.1 kg
Cylinder Bore Diameter	1-1/2"	38mm
Shaft Diameter	0.787"	20mm
Max (M) Vertical Motion	250 in.-lbs.	28.2N-m

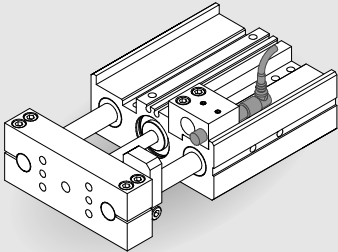
Specifications	DLT-25	DLT-25M
Maximum Air Pressure	100 psi	6.9 bar
Thrust Force @ 80psi/5.5bar	140 lbs.	622 N
Weight (Basic Unit)	15.7 lbs.	7.2 kg
Cylinder Bore Diameter	1-1/2"	38mm
Shaft Diameter	0.984"	25mm
Max (M) Vertical Motion	500 in.-lbs.	56.4N-m

## Accessory Mounting Technical Data



### Universal Mounting Kit

- Kit mounts (1) Shock Absorber and (1) Inductive Proximity Sensor or (1) Shock and (1) Adjustable Hard Stop
- Kit includes (1) Mounting Bracket, (1) Hardened Tool Steel Target and Hardware
- Target allows for unlimited retract stroke adjustment (no extend position adjustment). Fine adjustment is achieved using Adjustable Hard Stop or Shock Absorber
- Mounting Bracket keys into body for secure positioning and excellent rigidity
- Two possible mounting positions

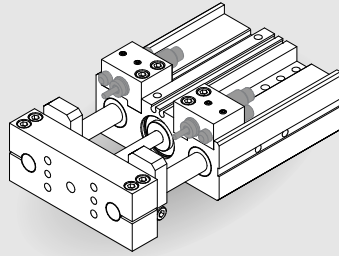


### Inductive Proximity Sensors

- 8mm diameter
- Threaded quick disconnect with built-in LED output
- PNP and NPN available

### Quick Disconnect Cable

- Threaded coupling with knurled head for secure electrical connections
- 2 meter cable length
- 5 meter cable length

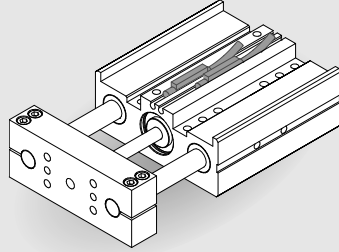


### Adjustable Hard Stops

- For precision (+/- .001") end point positioning of retract position
- Allows for end stop position adjustment independent of shock absorber hard stop
- Allen wrench adjustable

### Shock Absorbers

- Full stroking piston rod
- Built-in hard stop
- Position adjustable
- Adjustable dampening

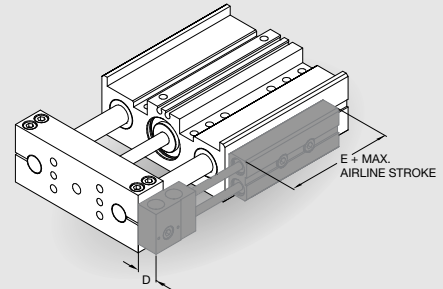


### Magneto Resistive Sensors

- No mounting kit required (slot mounted)
- Threaded quick disconnect with built-in LED output
- PNP and NPN available
- Low profile

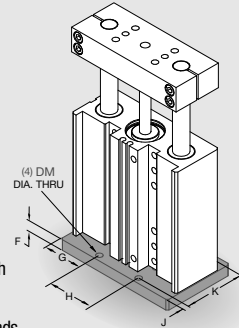
### Quick Disconnect Cable

- Threaded coupling with knurled head for secure electrical connections
- 2 meter cable length
- 5 meter cable length



### Telescoping Airlines

- Eliminate flexing air lines
- Self aligning air tube design extends useful seal life
- Modular stackable design. Up to (4) modules can be stacked
- 1/8 NPT or G1/8 pipe threads
- (2) user air ports per module



### Flow Controls for Cylinders

- Thumb screw adjust with locking nut for adjusting cylinder speed
- #10-32 or M5 pipe threads

### Base Flange Kit

- Convert Thruster unit into a Flange mounted Lift Table
- Provides a **DIRECTCONNECT** mounting pattern on the bottom surface

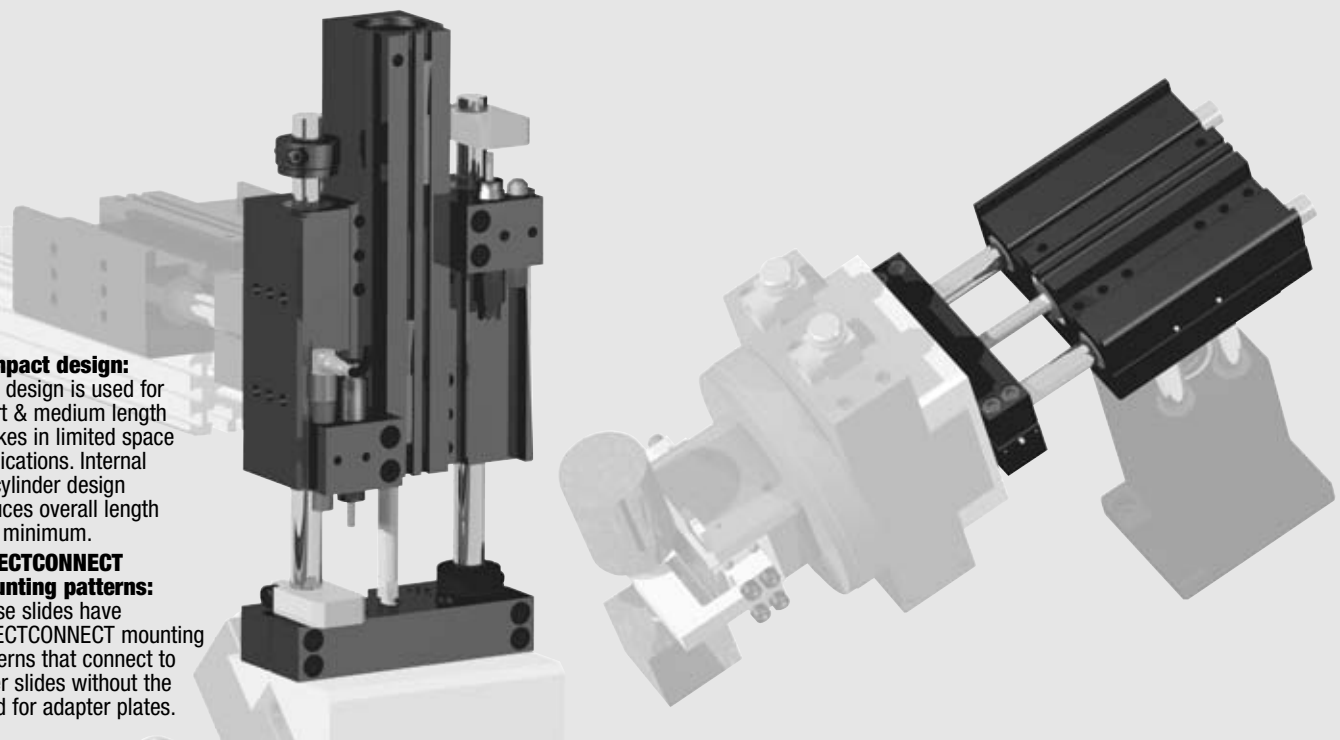
	A	B	C	D	E	F	G	H	J	K
DLT-20	.500"	.92	.67	.577	2.0	.480	1.750	3.000	.375	3.000
DLT-25	.500"	.92	.67	.577	2.0	.480	2.250	3.000	.375	3.000
DLT-20M	12.7mm	23.4	17.0	14.7	50.8	12.2	44.5	76.2	9.5	76.2
DLT-25M	12.7mm	23.4	17.0	14.7	50.8	12.2	57.2	76.2	9.5	76.2

DLT SERIES  
4.39

DIRECTCONNECT™

# Internally Powered Thruster Slide

DLT SERIES  
4.40

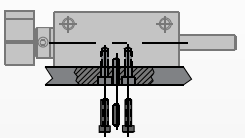


**Compact design:**  
This design is used for short & medium length strokes in limited space applications. Internal air cylinder design reduces overall length to a minimum.

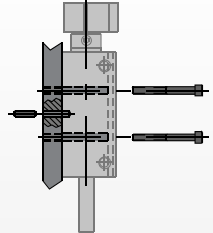
**DIRECTCONNECT mounting patterns:**  
These slides have DIRECTCONNECT mounting patterns that connect to other slides without the need for adapter plates.

## Mounting Information:

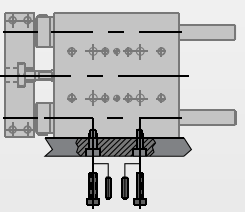
**Mounts and operates in any orientation**



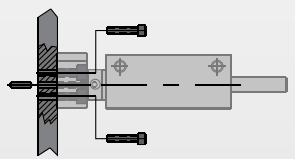
Body can be mounted from the back using the directconnect pattern of threaded mounting and dowel pin holes



Body back mounts with screws from the front using the clearance and counterbored DIRECTCONNECT pattern and located with dowel holes.



Body mounts with screws and locate with slip fit dowel pin holes on side using DIRECTCONNECT mounting patterns.



Payload attaches to tooling plate directconnect mounting pattern with screws and locates using slip fit dowel pin holes.

## Technical Specifications:

<b>Pneumatic Specifications</b>	<b>Imperial</b>	<b>Metric</b>
Pressure Operating Range*	40-100 psi	3-7 bar
Cylinder Type	Double Acting	
Dynamic Seals	Internally Lubricated Buna-N	
Valve Required to Operate	4-way, 2-position	

<b>Air Quality Requirements</b>	
Air Filtration	40 Micron or Better
Air Lubrication	Not Necessary**
Air Humidity	Low Moisture Content (dry)

<b>Temperature Operating Range</b>		
Buna-N Seals (standard)	-30°~180° F	-35°~80° C
Viton® Seals (optional)	-20°~300° F	-30°~150° C

<b>Maintenance Specifications†</b>	
Expected Life	5 million cycles
Normal Application w/ Preventative Maintenance	10+ million cycles†
Field Repairable	Yes
Seal Repair Kits Available	Yes

**Application Restrictions**  
Flow controls, shock absorbers and urethane bumpers recommended for nearly all applications.  
Use composite bushing in dirty or gritty environments.  
Never use silicone based lubricants with composite bushings.

\*Higher pressure possible. Consult factory with application details.  
\*\*Addition of lubrication will greatly increase service life  
† See Maintenance Section



# Product Features

## DIRECTCONNECT Mounting Patterns

Main bodies have tapped and counterbored through holes including slip fit dowel holes on DIRECTCONNECT mounting surface

## Universal Mounting Kit

Contains Mounting Bracket, Hardened Steel Target, and hardware. Allows the mounting of Shocks and adjustable Hard Stops

## Sensor Magnet Standard in piston

## Magneto Resistive Sensors

Slot mounted sensor with threaded quick disconnect.

## Inductive Proximity Sensors

8mm diameter, threaded body with quick disconnect

## Urethane Bumpers & Clamp Collars

## Sensors Grooves

For mounting Magneto Resistive Sensors

## Shock Absorbers

with built-in hard stop. Dual shock capable

## Oil Wick

Supplies constant bearing lubrication

## Misalignment Coupling

Increases service life

## Adjustable Hard Stops

For precision (+/- .001" [0.01]) hard stop end point positioning. Allows for stop adjustment independent of shock absorber hard stop. Dual stop capable

## Bearing Options

Preloaded linear ball bushings or composite bushings

## Modular Telescoping Airlines

Eliminates flexing air lines. Patented self aligning air tube design extends useful seal life. (2) user air ports per module

## Aircraft Quality Aluminum

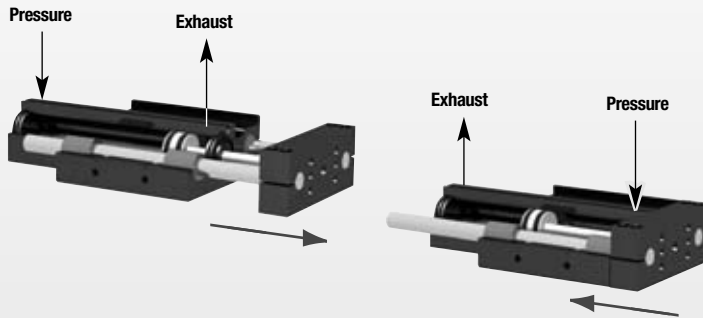
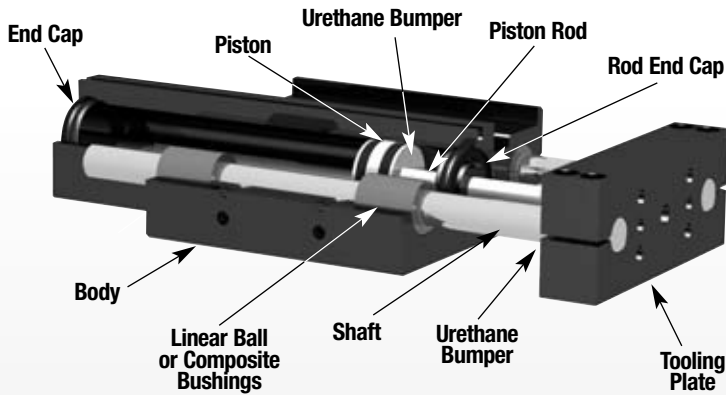
## Seal Option

Viton® or self-lubricating Buna-N dynamic seals

## Precision Ground Shafting

Case hardened to RC60-65. Corrosion resistant optional

# Operating Principle



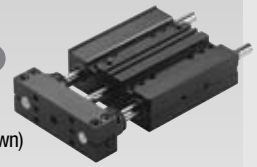
- A double acting internal cylinder located within the body drives a piston rod that connects to the tooling plate with a misalignment coupling.
- The tooling is attached to two hardened steel shafts which are supported by and move in four linear bushings located in the body.

**Designed and manufactured in the USA**

## Style-E Short Body Thruster

Size -06M  
-08M

See Page 4.42



-10M (shown)  
-12M  
-16M

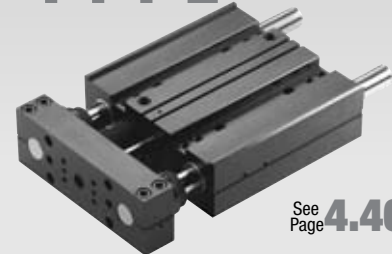
See Page 4.44



## Style-E Short Body Thruster

Size -20M (shown)  
-25M

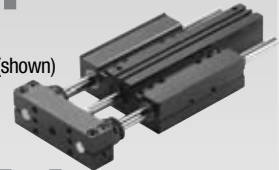
See Page 4.46



## Style-L Long Body Thruster

Size -06M  
-08M

See Page 4.48



-10M (shown)  
-12M  
-16M

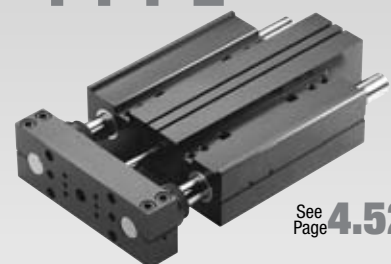
See Page 4.50



## Style-L Long Body Thruster

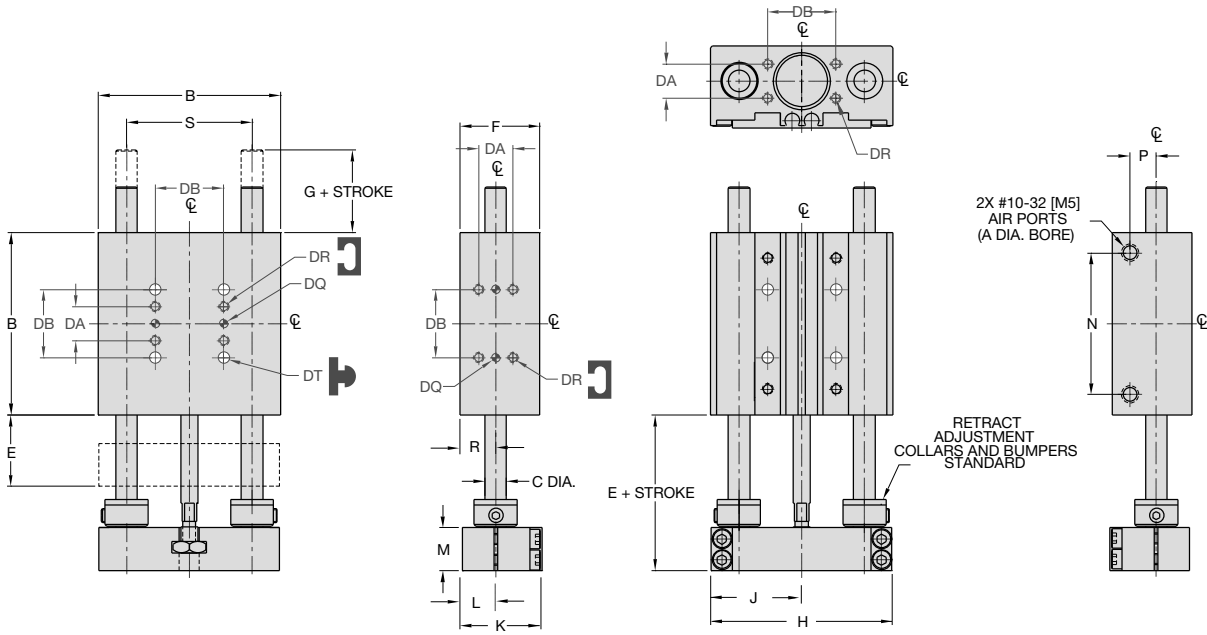
Size -20M (shown)  
-25M

See Page 4.52





# SHORT BODY THRUSTER DLT-06M, 08M -E BUILT-IN REPAIRABLE CYLINDER



**UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW**

	Dimensions are symmetrical about centerline		Third Angle Projection		All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or [±.013mm]
	Metric Threads Course Pitch	<b>Imperial in.</b>	<b>Metric [mm]</b>		
		0.00 = ±.01	[0.] = [±.25]		
		0.000 = ±.005	[0.0] = [±.13]		
		0.0000 = ±.0005	[0.00] = [±.013]		

### DIRECTCONNECT DIMENSIONS STANDARD MOUNTING PATTERN FOR ALL SIZES

	Imperial (inches)	Metric (mm)
DA	.375	9.5
DB	.750	19.1
DQ	.0940 x .078 DP	3H7 x 2 DP
DR	#4-40 x .25 DP	M3 x 6 DP
DS	Clr & C'bore for #4	Clr & C'bore for M3
DT	Clr & C'bore for #4	Clr & C'bore for M3

### BASIC UNIT DIMENSIONS

MODEL #	BORE DIA.		BODY SIZE		SHAFT DIA.										
	A	B	C	E	F	G	H	J	K	L	M	N	P	R	S
DLT-06	0.563	2.00	0.236	0.783	0.88	0.66	1.980	.990	0.875	.365	0.470	1.55	0.29	.390	1.375
DLT-08	0.563	2.50	0.315	0.783	0.88	0.41	2.470	1.235	0.875	.365	0.470	2.05	0.29	.390	1.750
DLT-06M	14	50.8	6.0	19.9	22.4	16.8	50.3	25.1	22.2	9.3	11.9	39.4	7.4	9.9	34.93
DLT-08M	14	63.5	8.0	19.9	22.4	10.4	62.7	31.0	22.2	9.3	11.9	52.1	7.4	9.9	44.95

### How to Order: Basic Unit

BASIC MODEL METRIC STYLE STROKE SHAFTING



SIZE BEARING VITON® SEALS

SIZE **06, 08**

METRIC **M**

STYLE **E** Short body thruster with built-in repairable cylinder

BEARING **C** Composite bushings

STROKE (inches)  
DLT-06 **.25, .5, 1, 1.25**  
DLT-08 **.25, .5, 1, 1.5, 1.75**

Custom strokes available.  
Please consult factory.

STROKE (mm)  
DLT-06M **6, 12, 25, 30**  
DLT-08M **6, 12, 25, 40, 44**

VITON® **V** Viton® seals

SHAFTING **S** Corrosion resistant shafting

### SAMPLE ORDER: DLT-06-E-C-1.5-V

Ex: Thruster, Size 06, Short Body Style, Composite Bushings, 1.5 Inch Stroke, Viton® Seals

### Accessories: (Order Separately)

#### SHOCK/STOP ACCESSORIES

Accessory	DLT-06M	DLT-08M	QTY/THRUSTER
Universal Mounting Kit (Shock or Stop)	<b>OSAK-069</b>	<b>OSAK-070</b>	<b>1, 2, 3, or 4</b>
Shock Absorber (2 Max. on -06)*	<b>SHOK-030</b>	<b>SHOK-030</b>	<b>1, 2, 3, or 4</b>
Adjustable Hard Stop*	<b>DLT-0623</b>	<b>DLT-0623</b>	<b>1, 2, 3, or 4</b>
Urethane Bumper/Stop Collar Kit	<b>OSAK-067</b>	<b>OSAK-068</b>	<b>1</b>

#### INDUCTIVE SENSOR ACCESSORIES†

Accessory	DLT-06M	DLT-08M	QTY/THRUSTER
Inductive Sensor Mounting Kit	<b>OSMK-076</b>	<b>OSMK-077</b>	<b>1 or 2</b>
Inductive Sensor PNP Qk. Disconnect †	<b>OISP-014</b>	<b>OISP-014</b>	<b>1 or 2</b>
Inductive Sensor NPN Qk. Disconnect †	<b>OISN-014</b>	<b>OISN-014</b>	<b>1 or 2</b>
Quick. Disconnect 2M Cable Length †	<b>CABL-010</b>	<b>CABL-010</b>	<b>1 or 2</b>
Quick. Disconnect 5M Cable Length †	<b>CABL-013</b>	<b>CABL-013</b>	<b>1 or 2</b>

#### MAGNETIC SENSOR ACCESSORIES\*\*

Accessory	DLT-06M	DLT-08M	QTY/THRUSTER
Magneto Resistive Sensor PNP Qk. Disc.†	<b>OHSP-017</b>	<b>OHSP-017</b>	<b>1 or 2</b>
Magneto Resistive Sensor NPN Qk. Disc.†	<b>OHSN-017</b>	<b>OHSN-017</b>	<b>1 or 2</b>
Quick. Disconnect 2M Cable Length †	<b>CABL-010</b>	<b>CABL-010</b>	<b>1 or 2</b>
Quick. Disconnect 5M Cable Length †	<b>CABL-013</b>	<b>CABL-013</b>	<b>1 or 2</b>

#### PNEUMATIC ACCESSORIES

Accessory	DLT-06M	DLT-08M	QTY/THRUSTER
#10-32 Adjustable Flow Control (Imperial)	<b>VLVF-007</b>	<b>VLVF-007</b>	<b>1 or 2</b>
M5 Adjustable Flow Control (Metric)	<b>VLVF-008</b>	<b>VLVF-008</b>	<b>1 or 2</b>
Cylinder Seal Repair Kit	<b>SLKT-108</b>	<b>SLKT-108</b>	<b>1</b>
Viton® Cylinder Seal Repair Kit	<b>SLKT-108V</b>	<b>SLKT-108V</b>	<b>1</b>

\*Requires Universal Mounting Kit †Sensor and cable sold separately \*\*Piston magnet standard

DLT SERIES  
4.42

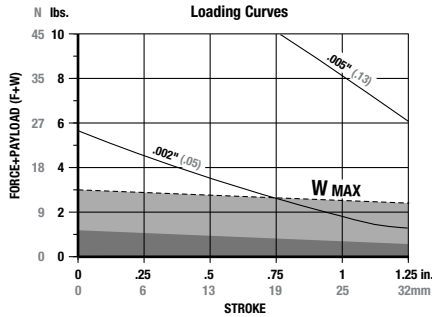
DIRECTCONNECT™



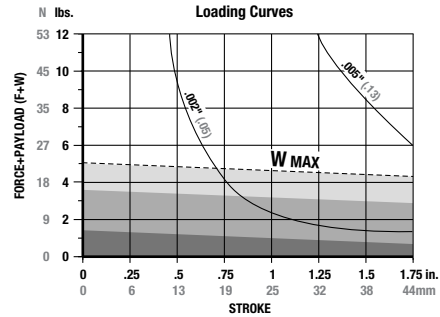
# SHORT BODY THRUSTER DLT -06M, 08M -E BUILT-IN REPAIRABLE CYLINDER



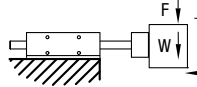
## DLT-06M-E



## DLT-08M-E



**F**=Externally applied force (lbs. or N)  
**W**=Weight of payload (lbs. or N)  
**F+W**=Total deflection force (lbs. or N)  
**M**=Maximum moment (in.-lb. or N-m)



**Shock Absorbers and Flow Controls are recommended for nearly all applications**

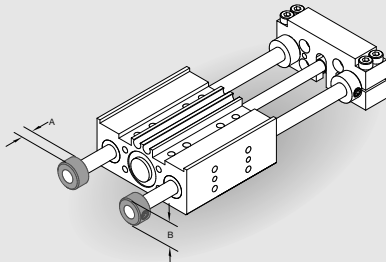
Use **Double Shocks** in both directions    Use **Single Shock** in both directions    Use **Bumpers or Cushioned Cylinder**

Shaded shock absorption ranges of horizontal payload (W) @ 80psi, flow controls fully open. For vertical applications do not exceed 1/2 of the recommended payload due to the additional acceleration effect of gravity.

Specifications	DLT-06	DLT-06M
Maximum Air Pressure .....	100 psi	7 bar
Thrust Force @ 80psi/5.5 bar.....	20 lbs.	84 N
Weight (Basic Unit).....	0.34 lbs.	0.15 kg
Cylinder Bore Diameter.....	0.563"	14.3 mm
Shaft Diameter.....	0.236"	6 mm
Max (M) Vertical Motion.....	5 in.-lbs.	0.6 N-m

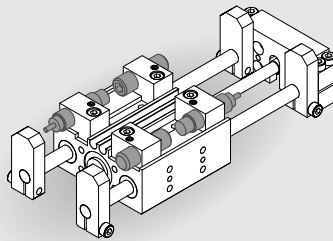
Specifications	DLT-08	DLT-08M
Maximum Air Pressure .....	100 psi	7 bar
Thrust Force @ 80psi/5.5 bar.....	20 lbs.	89 N
Weight (Basic Unit).....	0.65 lbs.	0.30 kg
Cylinder Bore Diameter.....	0.563"	14.3 mm
Shaft Diameter.....	0.315"	8 mm
Max (M) Vertical Motion.....	10 in.-lbs.	1.1 N-m

## Accessory Mounting Technical Data



### Urethane Bumpers & Clamp Collars

- Urethane Bumpers for shock absorption and noise dampening
- Adjustable Clamp Collars for end of stroke position adjustment
- Kit contains (2) Collars and (2) Shock Pads for adjustment of travel in one direction
- (1) Kit required for extend (kit for retract comes standard)

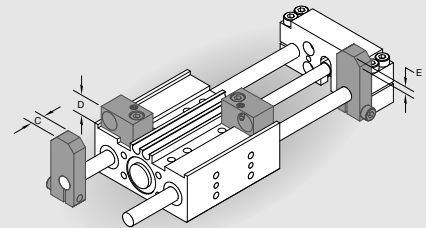


### Adjustable Hard Stops

- For precision (+/- .001") end point positioning of retract position
- Allows for end stop position adjustment independent of shock absorber hard stop
- Allen wrench adjustable

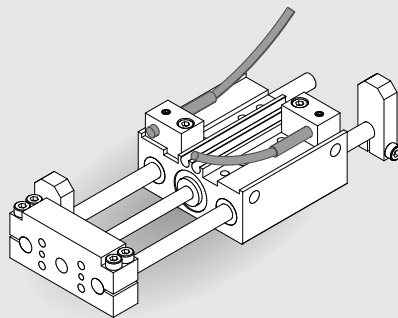
### Shock Absorbers

- Full stroking piston rod
- Built-in hard stop
- Position adjustable



### Universal Mounting Kit

- Kit mounts (1) Shock Absorber or (1) Adjustable Hard Stop
- Kit includes (1) Mounting Bracket, (1) Hardened Tool Steel Target and Hardware
- Target allows for unlimited retract stroke adjustment (no extend position adjustment). Fine adjustment is achieved using Adjustable Hard Stop or Shock Absorber
- Mounting Bracket keys into body for secure positioning and excellent rigidity
- Four possible mounting positions

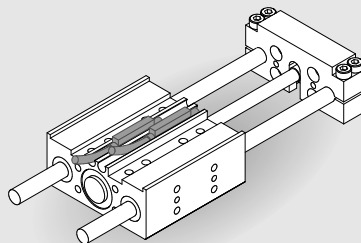


### Inductive Proximity Sensors

- 4 mm diameter
- Threaded quick disconnect with built-in LED output
- PNP and NPN available

### Quick Disconnect Cable

- Threaded coupling with knurled head for secure electrical connections
- 2 meter cable length
- 5 meter cable length



### Magneto Resistive Sensors

- No mounting kit required (slot mounted)
- Threaded quick disconnect with built-in LED output
- PNP and NPN available
- Low profile

### Quick Disconnect Cable

- Threaded coupling with knurled head for secure electrical connections
- 2 meter cable length
- 5 meter cable length

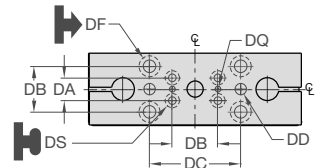
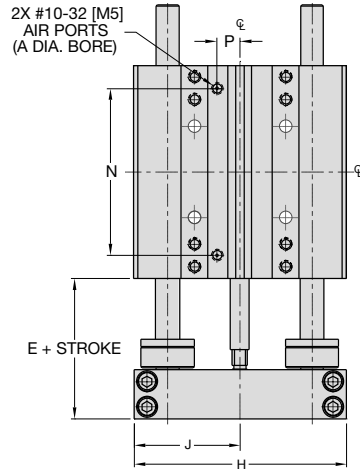
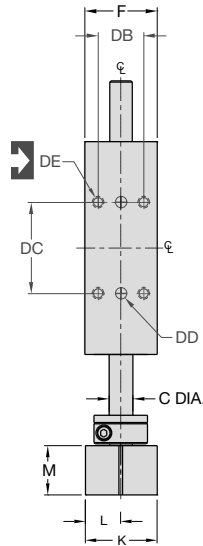
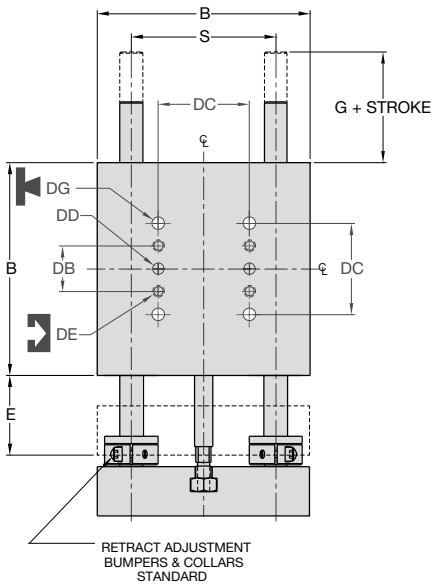
	A	B	C	D	E
DLT-06	.236"	.470	.250	.310	.270
DLT-08	.236"	.630	.250	.310	.270
DLT-06M	6mm	12.0	6.4	7.9	6.9
DLT-08M	6mm	16.0	6.4	7.9	6.9

DLT SERIES

4.43

DIRECTCONNECT™

# SHORT BODY THRUSTER DLT -10M, 12M, 16M -E BUILT-IN REPAIRABLE CYLINDER



### UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

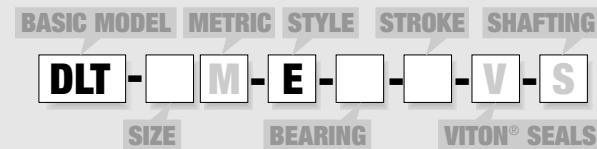
	Dimensions are symmetrical about centerline		Third Angle Projection		All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or (±.013mm)
	Metric Threads Course Pitch	Imperial in.	Metric [mm]		
		0.00 = ±.01	[0.] = [±.25]		
		0.000 = ±.005	[0.0] = [±.13]		
		0.0000 = ±.0005	[0.00] = [±.013]		

### DIRECTCONNECT DIMENSIONS STANDARD MOUNTING PATTERN FOR ALL SIZES

	Imperial (inches)	Metric (mm)
DA	.375	9.5
DB	.750	19.1
DC	1.500	38.1
DD	.1880 x .25 DP	5mm H7 x 6 DP
DE	#10-32 x .34 DP	M5 x 8.5 DP
DF	Clearance for #10	Clearance for M5
DG	Clearance for #10	Clearance for M5
DQ	.0940 x .078 DP	3H7 x 2 DP
DS	Clr & C' bore for #4	Clr & C' bore for M3

MODEL #	BORE DIA.		BODY SIZE		SHAFT SIZE									
	A	B	C	E	F	G	H	J	K	L	M	N	P	S
DLT-10	3/4	3.50	.375	1.313	1.19	.82	3.490	1.740	1.178	.584	.813	2.75	.37	2.375
DLT-12	1	4.00	.472	1.313	1.63	.82	3.985	1.985	1.615	.802	.813	3.28	.37	2.750
DLT-16	1	4.75	.630	1.375	1.63	.76	4.735	2.360	1.615	.802	.813	4.03	.37	3.250
DLT-10M	19	88.9	9.5	33.4	30.2	20.8	88.6	44.2	29.9	14.8	20.7	69.7	9.4	60.33
DLT-12M	25	101.6	12.0	33.4	41.4	20.8	101.2	50.4	41.0	20.4	20.7	83.3	9.4	69.85
DLT-16M	25	120.7	16.0	34.9	41.4	19.3	120.3	59.9	41.0	20.4	20.7	102.4	9.4	82.55

### How to Order: Basic Unit



- SIZE** 10, 12, 16
- METRIC** M
- STYLE** E Short body thruster with built-in repairable cylinder
- BEARING** B Linear ball bearings  
C Composite bushings
- STROKE** (inches)  
DLT-10 1-2 @ 1" increments  
DLT-12 1-2 @ 1" increments  
DLT-16 1-3 @ 1" increments
- STROKE** (mm)  
DLT-10M 25, 50  
DLT-12M 25, 50  
DLT-16M 25, 50, 75
- VITON®** V Viton® seals
- SHAFTING** S Corrosion resistant shafting

Custom strokes available.  
Please consult factory.

### SAMPLE ORDER: DLT-10-E-C-1-V

Ex: Thruster, Size 10, Short Body Style, Composite Bushings, 1 inch Stroke, Viton® Seals

### Accessories: (Order Separately) DLT-10M DLT-12M DLT-16M QTY/THRUSTER

#### SHOCK/STOP ACCESSORIES

Universal Mounting Kit (Shock, Stop or Sensor)	OSAK-055	OSAK-057	OSAK-059	1,2,3 or 4
Urethane Bumper/Clamp Collar Kit	OSAK-056	OSAK-058	OSAK-060	1
Urethane Bumper/Clamp Collar Kit (-10M)	OSAK-065			1
Urethane Bumper/Clamp Collar Kit (-12M)		OSAK-066		1
Shock Absorber*	SHOK-028	SHOK-010	SHOK-010	1,2,3 or 4
Adjustable Hard Stop*	DLT-1023	DLT-1023	DLT-1023	1,2,3 or 4

#### INDUCTIVE SENSOR ACCESSORIES\*

Inductive Sensor PNP Qk. Disconnect*	OISP-011	OISP-011	OISP-011	1 or 2
Inductive Sensor NPN Qk. Disconnect*	OISN-011	OISN-011	OISN-011	1 or 2
Quick. Disconnect 2M Cable Length †	CABL-010	CABL-010	CABL-010	1 or 2
Quick. Disconnect 5M Cable Length †	CABL-013	CABL-013	CABL-013	1 or 2

#### MAGNETIC SENSOR ACCESSORIES\*\*†

Magneto Resistive Sensor PNP Qk. Disc.†	OHSP-017	OHSP-017	OHSP-017	1 or 2
Magneto Resistive Sensor NPN Qk. Disc.†	OHSN-017	OHSN-017	OHSN-017	1 or 2
Quick. Disconnect 2M Cable Length †	CABL-010	CABL-010	CABL-010	1 or 2
Quick. Disconnect 5M Cable Length †	CABL-013	CABL-013	CABL-013	1 or 2

#### PNEUMATIC ACCESSORIES

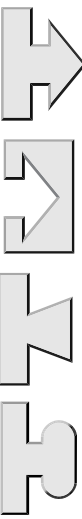
1/8 NPT Telescopic Airlines (up to 2")	OTAL-037	OTAL-037	OTAL-037	1,2,3 or 4
1/8 NPT Telescopic Airlines (up to 3")	OTAL-038	OTAL-038	OTAL-038	1,2,3 or 4
#10-32 Adjustable Flow Control	VLVF-007	VLVF-007	VLVF-007	1 or 2
G1/8 Telescopic Airlines (up to 50mm)	OTAL-043	OTAL-043	OTAL-043	1,2,3 or 4
G1/8 Telescopic Airlines (up to 80mm)	OTAL-044	OTAL-044	OTAL-044	1,2,3 or 4
M5 Adjustable Flow Control	VLVF-008	VLVF-008	VLVF-008	1 or 2
Cylinder Seal Repair Kit	SLKT-100	SLKT-102	SLKT-102	1
Viton® Cylinder Seal Repair Kit	SLKT-100V	SLKT-102V	SLKT-102V	1

\*Requires Universal Mounting Kit †Sensor and cable sold separately \*\*Piston magnet standard

DLT SERIES 4.44 DIRECTCONNECT™



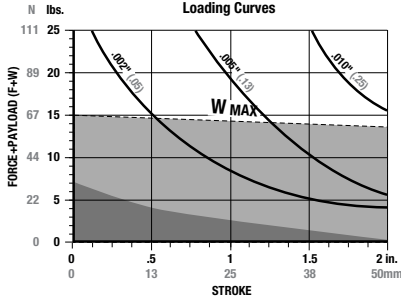
# SHORT BODY THRUSTER DLT-10M, 12M, 16M - BUILT-IN REPAIRABLE CYLINDER



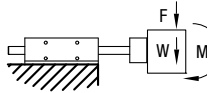
DLT SERIES  
4.45

DIRECTCONNECT™

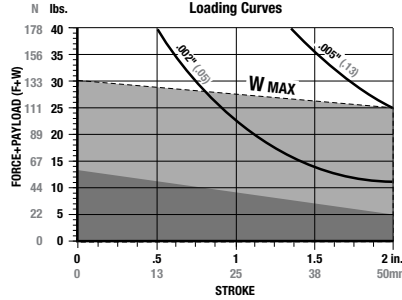
## DLT-10M-E



**F**=Externally applied force (lbs. or N)  
**W**=Weight of payload (lbs. or N)  
**F+W**=Total force (lbs. or N)



## DLT-12M-E



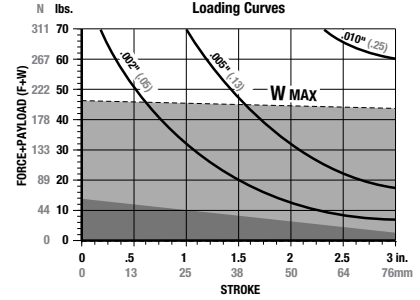
**Shock Absorbers and Flow Controls are recommended for nearly all applications**

**(W)** in this range use **Single Shock** in both directions

**W** in this range use **Urethane Bumpers**

Shaded shock absorption ranges of horizontal payload (W) @ 80psi, flow controls fully open. For vertical applications do not exceed 1/2 of the recommended payload due to the additional acceleration effect of gravity.

## DLT-16M-E

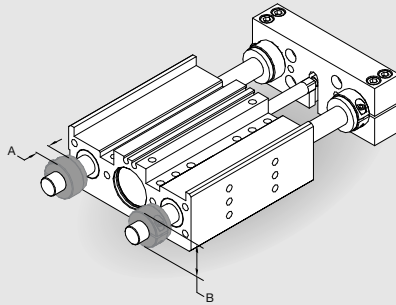


Specifications	DLT-10	DLT-10M
Maximum Air Pressure.....	100 psi	6.9 bar
Thrust Force @ 80psi/5.5bar .	35 lbs.	155 N
Weight (Basic Unit) .....	1.87 lbs.	.84 kg
Additional Weight per Stroke ..	0.08 lbs./in.	1.5g/mm
Cylinder Bore Diameter .....	3/4"	19mm
Shaft Diameter .....	0.375"	9.5mm

Specifications	DLT-12	DLT-12M
Maximum Air Pressure.....	100 psi	6.9 bar
Thrust Force @ 80psi/5.5bar .	62 lbs.	275 N
Weight (Basic Unit) .....	2.98 lbs.	1.35 kg
Additional Weight per Stroke ..	0.12 lbs./in.	2.2g/mm
Cylinder Bore Diameter .....	1"	25mm
Shaft Diameter .....	0.472"	12mm

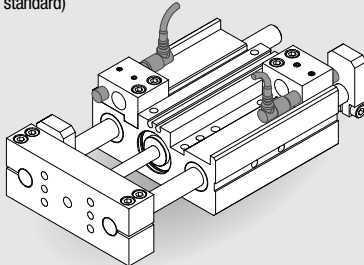
Specifications	DLT-16	DLT-16M
Maximum Air Pressure.....	100 psi	6.9 bar
Thrust Force @ 80psi/5.5bar .	62 lbs.	275 N
Weight (Basic Unit) .....	4.56 lbs.	2.07 kg
Additional Weight per Stroke ..	0.20 lbs./in.	3.5g/mm
Cylinder Bore Diameter .....	1"	25mm
Shaft Diameter .....	0.630"	16mm

## Accessory Mounting Technical Data



### Urethane Bumpers & Clamp Collars

- Urethane Bumpers for shock absorption and noise dampening
- Adjustable Clamp Collars for end of stroke position adjustment
- Kit contains (2) Collars and (2) Shock Pads for adjustment of travel in one direction
- (1) Kit required for extend (kit for retract comes standard)

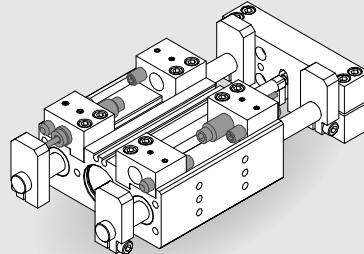


### Inductive Proximity Sensors

- 8mm diameter
- Threaded quick disconnect with built-in LED output
- PNP and NPN available

### Quick Disconnect Cable

- Threaded coupling with knurled head for secure electrical connections
- 2 meter cable length
- 5 meter cable length

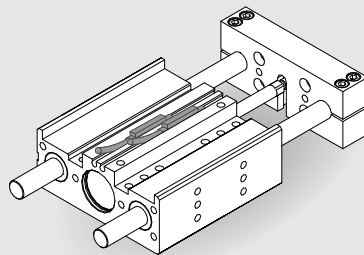


### Adjustable Hard Stops

- For precision (+/- .001") end point positioning
- Allows for end stop position adjustment independent of shock absorber hard stop
- Allen wrench adjustable

### Shock Absorbers

- Full stroking piston rod
- Built-in hard stop
- Allen wrench adjustable

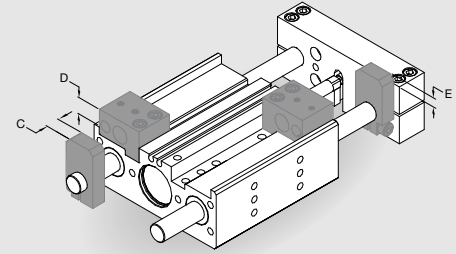


### Magneto Resistive Sensors

- No mounting kit required (slot mounted)
- Threaded quick disconnect with built-in LED output
- PNP and NPN available
- Low profile

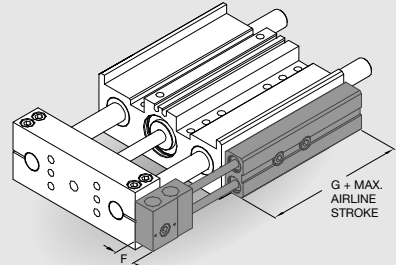
### Quick Disconnect Cable

- Threaded coupling with knurled head for secure electrical connections
- 2 meter cable length
- 5 meter cable length



### Universal Mounting Kit

- Kit mounts (1) Shock Absorber and (1) Inductive Proximity Sensor or (1) Shock and (1) Adjustable Hard Stop
- Kit includes (1) Mounting Bracket, (1) Hardened Tool Steel Target and Hardware
- Target allows for unlimited stroke adjustment. Fine adjustment is achieved using Adjustable Hard Stop or Shock Absorber
- Mounting Bracket keys into body for secure positioning and excellent rigidity
- Four possible mounting positions

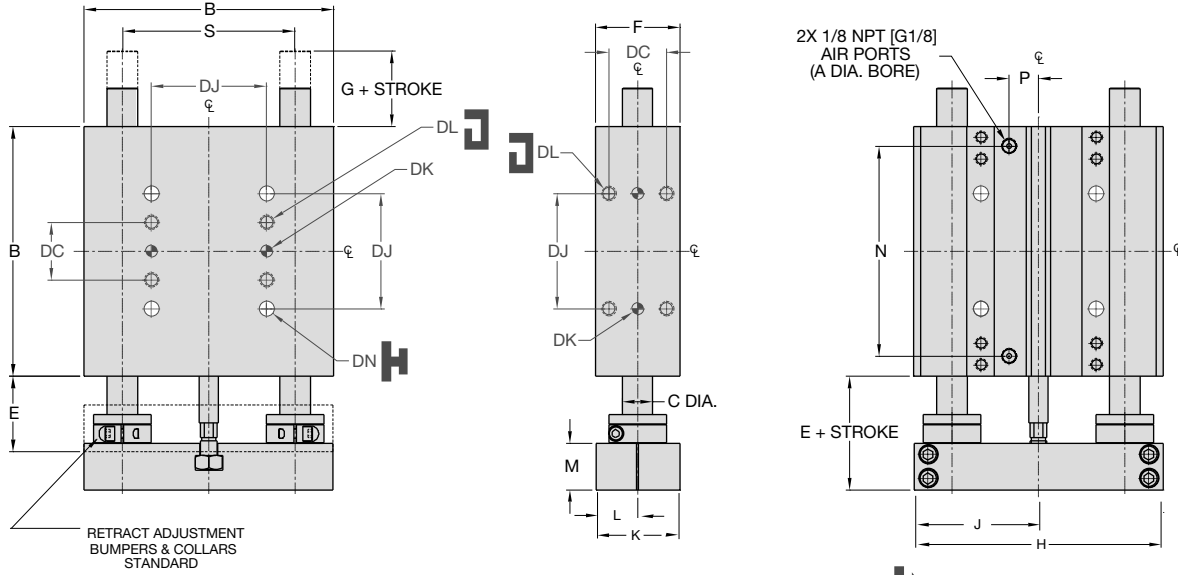


### Telescoping Airlines

- Eliminate flexing air lines
- Self aligning air tube design extends useful seal life
- Modular stackable design. Up to (4) modules can be stacked
- 1/8 NPT or G1/8 pipe threads
- (2) user air ports per module

	A	B	C	D	E	F	G
DLT-10	.343"	.87	.375	.480	.320	.577	3.60
DLT-12	.375"	.94	.375	.450	.230	.577	3.60
DLT-16	.437"	1.31	.437	.450	.340	.577	3.60
DLT-10M	8.7mm	22.1	9.5	12.2	8.1	14.7	91.4
DLT-12M	9.5mm	23.9	9.5	11.4	5.8	14.7	91.4
DLT-16M	11.1mm	33.3	11.1	11.4	8.6	14.7	91.4

# SHORT BODY THRUSTER DLT-20M, 25M -E BUILT-IN REPAIRABLE CYLINDER



RETRACT ADJUSTMENT  
BUMPERS & COLLARS  
STANDARD

### UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

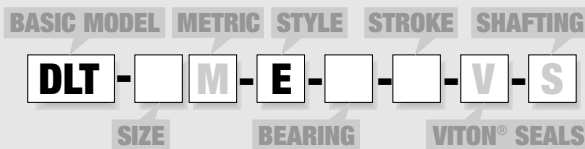
	Dimensions are symmetrical about centerline		Third Angle Projection		All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or (±.013mm)
	Metric Threads Course Pitch	Imperial in.	0.00 = ±.01 0.000 = ±.005 0.0000 = ±.0005	Metric [mm]	[0.] = [±.25] [0.0] = [±.13] [0.00] = [±.013]

### DIRECTCONNECT DIMENSIONS STANDARD MOUNTING PATTERN FOR ALL SIZES

	Imperial (inches)	Metric (mm)
DB	.750	19.1
DC	1.500	38.1
DD	.1880 x .25DP	5mm H7 x 6DP
DF	Clearance for #10	Clearance for M5
DJ	3.000	76.2
DK	.3130 x .37 DP	8mm H7 x 9.4 DP
DL	3/8 -16 x .56 DP	M10 x 14.2 DP
DM	Clearance for 3/8	Clearance for M10
DN	Clearance for 3/8	Clearance for M10

MODEL #	BORE DIA.			BODY SIZE			SHAFT DIA.			BASIC UNIT DIMENSIONS									
	A	B	C	E	F	G	H	J	K	L	M	N	P	S					
DLT-20	1 1/2	6.50	.787	1.960	2.20	.960	6.480	3.230	2.180	1.080	1.210	5.47	.77	4.300					
DLT-25	1 1/2	7.50	.984	2.170	2.20	1.170	7.480	3.730	2.180	1.080	1.420	6.47	.77	5.250					
DLT-20M	38	165.1	20	49.8	55.9	24.4	164.6	82.0	55.4	27.4	30.7	138.9	19.5	114.30					
DLT-25M	38	190.5	25	55.1	55.9	29.7	190.0	94.7	55.4	27.4	36.1	164.3	19.5	133.35					

## How to Order: Basic Unit



- SIZE** 20, 25
- METRIC** M
- STYLE** E Short body thruster with built-in repairable cylinder
- BEARING** B Linear ball bearings  
C Composite bushings
- STROKE** (inches)  
DLT-20 1-4 @ 1" increments  
DLT-25 1-5 @ 1" increments
- STROKE** (mm)  
DLT-20M 25, 50, 75, 100  
DLT-25M 25, 50, 75, 100, 125
- VITON®** V Viton® seals
- SHAFTING** S Corrosion resistant shafting

Custom strokes available.  
Please consult factory.

### SAMPLE ORDER: DLT-20-E-B-4-V

Ex: Thruster, Size 20, Short Body Style, Linear Ball Bushings, 4 Inch Stroke, Viton® Seals

## Accessories: (Order Separately)

### SHOCK/STOP ACCESSORIES

	DLT-20M	DLT-25M	QTY/THRUSTER
Universal Mounting Kit (Shock, Stop or Sensor)	<b>OSAK-061</b>	<b>OSAK-063</b>	1, 2, 3 or 4
Urethane Bumper/Clamp Collar Kit	<b>OSAK-062</b>	<b>OSAK-064</b>	1
Shock Absorber (adjustable dampening)*	<b>SHOK-029</b>	<b>SHOK-029</b>	1, 2, 3 or 4
Adjustable Hard Stop*	<b>DLT-1023</b>	<b>DLT-1023</b>	1, 2, 3 or 4

### INDUCTIVE SENSOR ACCESSORIES†

	DLT-20M	DLT-25M	QTY/THRUSTER
Inductive Sensor PNP Qk. Disconnect*	<b>OISP-011</b>	<b>OISP-011</b>	1 or 2
Inductive Sensor NPN Qk. Disconnect*	<b>OISN-011</b>	<b>OISN-011</b>	1 or 2
Quick. Disconnect 2M Cable Length †	<b>CABL-010</b>	<b>CABL-010</b>	1 or 2
Quick. Disconnect 5M Cable Length †	<b>CABL-013</b>	<b>CABL-013</b>	1 or 2

### MAGNETIC SENSOR ACCESSORIES\*\*†

	DLT-20M	DLT-25M	QTY/THRUSTER
Magneto Resistive Sensor PNP Qk. Disc.†	<b>OHSP-017</b>	<b>OHSP-017</b>	1 or 2
Magneto Resistive Sensor NPN Qk. Disc.†	<b>OHSN-017</b>	<b>OHSN-017</b>	1 or 2
Quick. Disconnect 2M Cable Length †	<b>CABL-010</b>	<b>CABL-010</b>	1 or 2
Quick. Disconnect 5M Cable Length †	<b>CABL-013</b>	<b>CABL-013</b>	1 or 2

### PNEUMATIC ACCESSORIES

	DLT-20M	DLT-25M	QTY/THRUSTER
1/8 NPT Telescopic Airlines (up to 4")	<b>OTAL-049</b>	<b>OTAL-049</b>	1, 2, 3 or 4
1/8 NPT Telescopic Airlines (up to 5")	<b>OTAL-050</b>	<b>OTAL-050</b>	1, 2, 3 or 4
1/8 NPT Adjustable Flow Control	<b>VLVF-004</b>	<b>VLVF-004</b>	1 or 2
G1/8 Telescopic Airlines (up to 100mm)	<b>OTAL-051</b>	<b>OTAL-051</b>	1, 2, 3 or 4
G1/8 Telescopic Airlines (up to 125mm)	<b>OTAL-052</b>	<b>OTAL-052</b>	1, 2, 3 or 4
G1/8 Adjustable Flow Control	<b>VLVF-005</b>	<b>VLVF-005</b>	1 or 2
Cylinder Seal Repair Kit	<b>SLKT-104</b>	<b>SLKT-104</b>	1
Viton® Cylinder Seal Repair Kit	<b>SLKT-104V</b>	<b>SLKT-104V</b>	1

\*Requires Universal Mounting Kit †Sensor and cable sold separately \*\*Piston magnet standard

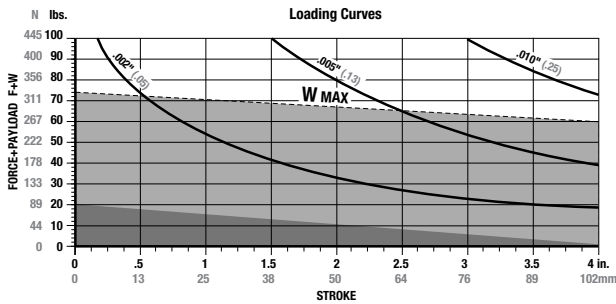




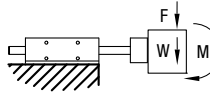
# SHORT BODY THRUSTER DLT-20M, 25M -E BUILT-IN REPAIRABLE CYLINDER



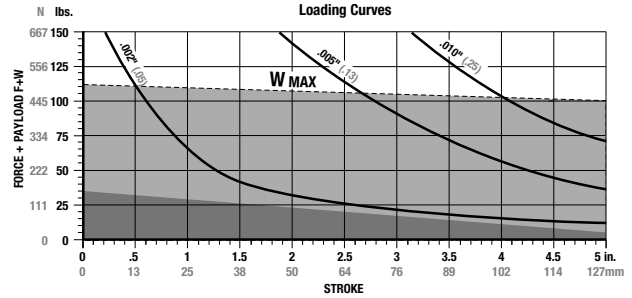
## DLT-20M-E



**F**=Externally applied force (lbs. or N)  
**W**=Weight of payload (lbs. or N)  
**F+W**=Total force (lbs. or N)



## DLT-25M-E



**Shock Absorbers and Flow Controls are recommended for nearly all applications**

**(W)** in this range use **Single Shock** in both directions

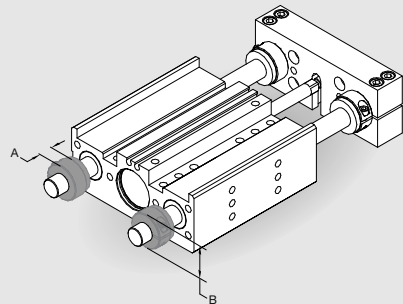
**(W)** in this range use **Urethane Bumpers**

Shaded shock absorption ranges of horizontal payload (W) @ 80psi, flow controls fully open. For vertical applications do not exceed 1/2 of the recommended payload due to the additional acceleration effect of gravity.

Specifications	DLT-20	DLT-20M
Maximum Air Pressure .....	100 psi	6.9 bar
Thrust Force @ 80psi/5.5bar .....	140 lbs.	622 N
Weight (Basic Unit) .....	11.6 lbs.	5.2 kg
Additional Weight per Stroke .....	0.31 lbs./in.	5.5g/mm
Cylinder Bore Diameter .....	1-1/2"	38mm
Shaft Diameter .....	0.787"	20mm

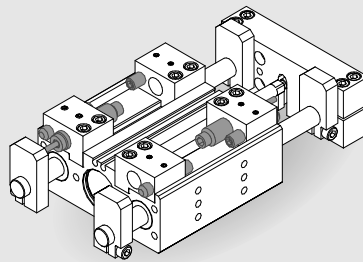
Specifications	DLT-25	DLT-25M
Maximum Air Pressure .....	100 psi	6.9 bar
Thrust Force @ 80psi/5.5bar .....	140 lbs.	622 N
Weight (Basic Unit) .....	16.4 lbs.	7.42 kg
Additional Weight per Stroke .....	0.47 lbs./in.	8.4g/mm
Cylinder Bore Diameter .....	1-1/2"	38mm
Shaft Diameter .....	0.984"	25mm

## Accessory Mounting Technical Data (For detailed information refer to option specification pages at end of catalog)



### Urethane Bumpers & Clamp Collars

- Urethane Bumpers for shock absorption and noise dampening
- Adjustable Clamp Collars for end of stroke position adjustment
- Kit contains (2) Collars and (2) Shock Pads for adjustment of travel in one direction
- (1) Kit required for extend (kit for retract comes standard)

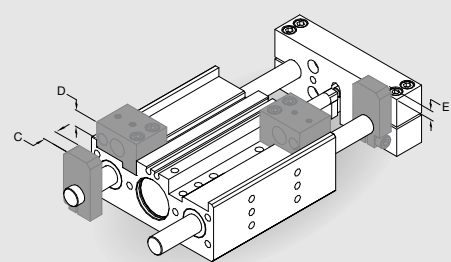


### Adjustable Hard Stops

- For precision (+/- .001") end point positioning
- Allows for end stop position adjustment independent of shock absorber hard stop
- Allen wrench adjustable

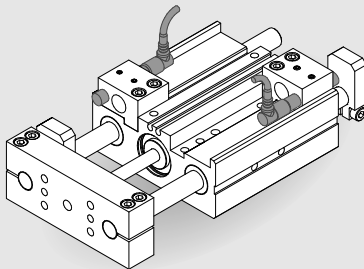
### Shock Absorbers

- Full stroking piston rod
- Built-in hard stop
- Position adjustable
- Adjustable dampening



### Universal Mounting Kit

- Kit mounts (1) Shock Absorber and (1) Inductive Proximity Sensor or (1) Shock and (1) Adjustable Hard Stop
- Kit includes (1) Mounting Bracket, (1) Hardened Tool Steel Target and Hardware
- Target allows for unlimited stroke adjustment. Fine adjustment is achieved using Adjustable Hard Stop or Shock Absorber
- Mounting Bracket keys into body for secure positioning and excellent rigidity
- Four possible mounting positions

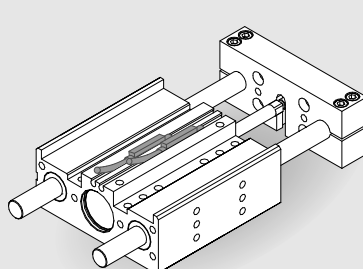


### Inductive Proximity Sensors

- 8mm diameter
- Threaded quick disconnect with built-in LED output
- PNP and NPN available

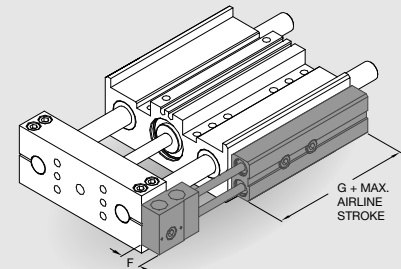
### Quick Disconnect Cable

- Threaded coupling with knurled head for secure electrical connections
- 2 meter cable length



### Magneto Resistive Sensors

- No mounting kit required (slot mounted)
- Built-in LED output
- PNP and NPN available
- Quick disconnect cable
- Low profile



### Telescoping Airlines

- Eliminate flexing air lines
- Self aligning air tube design extends useful seal life
- Modular stackable design. Up to (4) modules can be stacked
- 1/8 NPT or G1/8 pipe threads
- (2) user air ports per module

	A	B	C	D	E	F	G
DLT-20	.500"	1.50	.500	.92	.67	.577	3.60
DLT-25	.500"	1.75	.500	.92	.67	.577	3.60
DLT-20M	12.7mm	38.1	12.7	22.4	17.0	14.7	91.4
DLT-25M	12.7mm	44.5	12.7	22.4	17.0	14.7	91.4

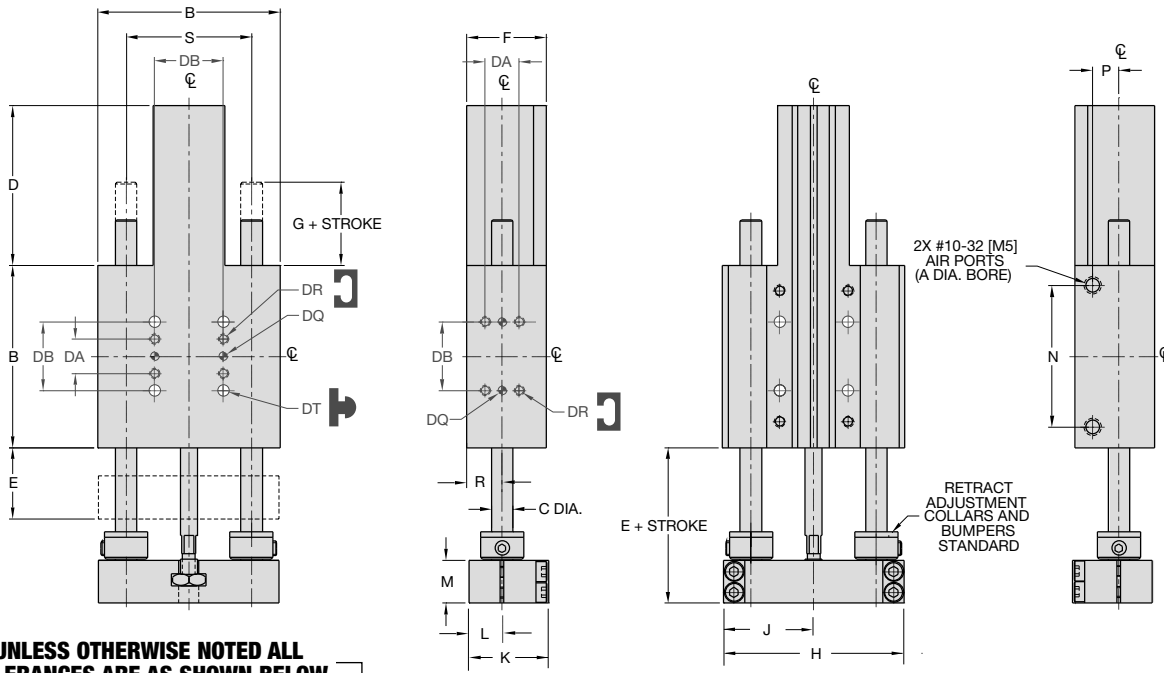
DLT SERIES

4.47

DIRECTCONNECT™



# LONG BODY THRUSTER DLT-06M, 08M -L BUILT-IN REPAIRABLE CYLINDER



**UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW**

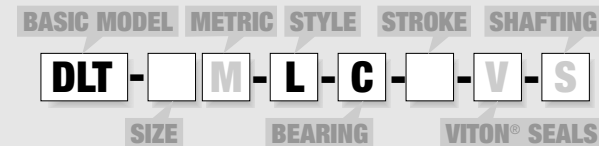
	Dimensions are symmetrical about centerline		Third Angle Projection		All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or [±.013mm]
	Metric Threads Course Pitch	<b>Imperial in.</b>	<b>Metric [mm]</b>		
		0.00 = ±.01	[0.] = [±.25]		
		0.000 = ±.005	[0.0] = [±.13]		
		0.0000 = ±.0005	[0.00] = [±.013]		

## DIRECTCONNECT DIMENSIONS STANDARD MOUNTING PATTERN FOR ALL SIZES

	Imperial (inches)	Metric (mm)
DA	.375	9.5
DB	.750	19.1
DQ	.0940 x .078 DP	3H7 x 2 DP
DR	#4-40 x .25 DP	M3 x 6 DP
DS	Clr & C'bore for #4	Clr & C'bore for M3
DT	Clr & C'bore for #4	Clr & C'bore for M3

MODEL #	BORE DIA.			BODY SIZE										SHAFT DIA.		
	A	B	C	D	E	F	G	H	J	K	L	M	N	P	R	S
DLT-06	0.563	2.00	0.236	1.75	0.783	0.88	0.66	1.980	.990	0.875	.365	0.470	1.55	0.21	.390	1.375
DLT-08	0.563	2.50	0.315	1.75	0.783	0.88	0.41	2.470	1.235	0.875	.365	0.470	2.05	0.21	.390	1.750
DLT-06M	14	50.8	6.0	44.4	19.9	22.4	16.8	50.3	25.1	22.2	9.3	11.9	39.4	5.4	9.9	34.93
DLT-08M	14	63.5	8.0	44.4	19.9	22.4	10.4	62.7	31.0	22.2	9.3	11.9	52.1	5.4	9.9	44.45

## How to Order: Basic Unit



- SIZE** 06, 08
- METRIC** M
- STYLE** L Long body thruster with built-in repairable cylinder
- BEARING** C Composite bushings
- STROKE** (inches)  
DLT-06 **.5, 1, 1.5, 2, 2.5, 3,**  
DLT-08 **.5, 1, 1.5, 2, 2.5, 3, 3.5**
- STROKE** (mm)  
DLT-06M **12, 25, 40, 50, 65, 75**  
DLT-08M **12, 25, 40, 50, 65, 75, 85**
- VITON®** V Viton® seals
- SHAFTING** S Corrosion resistant shafting

Custom strokes available.  
Please consult factory.

### SAMPLE ORDER: DLT-06-M-L-C-50-V

Ex: Thruster, Size 06, Metric, Long Body Style, Composite Bushings, 50mm Stroke, Viton® Seals

## Accessories: (Order Separately)

### SHOCK/STOP ACCESSORIES

	DLT-06M	DLT-08M	QTY/THRUSTER
Universal Mounting Kit (Shock or Stop)	<b>OSAK-069</b>	<b>OSAK-070</b>	<b>1, 2, 3, or 4</b>
Shock Absorber (2 Max. on -06)*	<b>SHOK-030</b>	<b>SHOK-030</b>	<b>1, 2, 3, or 4</b>
Adjustable Hard Stop*	<b>DLT-0623</b>	<b>DLT-0623</b>	<b>1, 2, 3, or 4</b>
Urethane Bumper/Stop Collar Kit	<b>OSAK-067</b>	<b>OSAK-068</b>	<b>1</b>

### INDUCTIVE SENSOR ACCESSORIES†

	DLT-06M	DLT-08M	QTY/THRUSTER
Inductive Sensor Mounting Kit	<b>OSMK-076</b>	<b>OSMK-077</b>	<b>1 or 2</b>
Inductive Sensor PNP Qk. Disconnect*†	<b>OISP-014</b>	<b>OISP-014</b>	<b>1 or 2</b>
Inductive Sensor NPN Qk. Disconnect*†	<b>OISN-014</b>	<b>OISN-014</b>	<b>1 or 2</b>
Quick Disconnect 2M Cable Length †	<b>CABL-010</b>	<b>CABL-010</b>	<b>1 or 2</b>
Quick Disconnect 5M Cable Length †	<b>CABL-013</b>	<b>CABL-013</b>	<b>1 or 2</b>

### MAGNETIC SENSOR ACCESSORIES\*\*†

	DLT-06M	DLT-08M	QTY/THRUSTER
Magneto Resistive Sensor PNP Qk. Disc.†	<b>OHSP-017</b>	<b>OHSP-017</b>	<b>1 or 2</b>
Magneto Resistive Sensor NPN Qk. Disc.†	<b>OHSN-017</b>	<b>OHSN-017</b>	<b>1 or 2</b>
Quick Disconnect 2M Cable Length †	<b>CABL-010</b>	<b>CABL-010</b>	<b>1 or 2</b>
Quick Disconnect 5M Cable Length †	<b>CABL-013</b>	<b>CABL-013</b>	<b>1 or 2</b>

### PNEUMATIC ACCESSORIES

	DLT-06M	DLT-08M	QTY/THRUSTER
#10-32 Adjustable Flow Control (Imperial)	<b>VLVF-007</b>	<b>VLVF-007</b>	<b>1 or 2</b>
M5 Adjustable Flow Control (Metric)	<b>VLVF-008</b>	<b>VLVF-008</b>	<b>1 or 2</b>
Cylinder Seal Repair Kit	<b>SLKT-108</b>	<b>SLKT-108</b>	<b>1</b>
Viton® Cylinder Seal Repair Kit	<b>SLKT-108V</b>	<b>SLKT-108V</b>	<b>1</b>

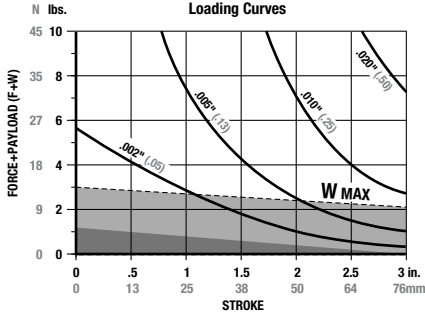
\*Requires Universal Mounting Kit †Sensor and cable sold separately \*\*Piston magnet standard



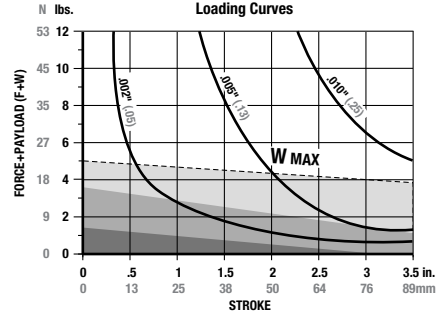
# LONG BODY THRUSTER DLT -06M, 08M -L BUILT-IN REPAIRABLE CYLINDER



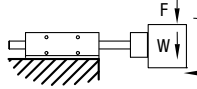
## DLT-06M-L



## DLT-08M-L



**F**=Externally applied force (lbs. or N)  
**W**=Weight of payload (lbs. or N)  
**F+W**=Total deflection force (lbs. or N)  
**M**=Maximum moment (in.-lb. or N-m)



**Shock Absorbers and Flow Controls are recommended for nearly all applications**

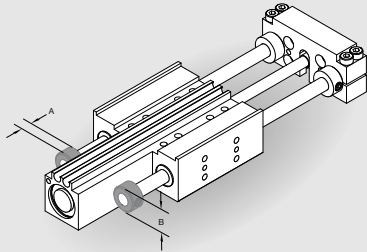
Use **Double Shocks** in both directions    Use **Single Shock** in both directions    Use **Bumpers or Cushioned Cylinder**

Shaded shock absorption ranges of horizontal payload (W) @ 80psi, flow controls fully open. For vertical applications do not exceed 1/2 of the recommended payload due to the additional acceleration effect of gravity.

Specifications	DLT-06	DLT-06M
Maximum Air Pressure .....	100 psi	7 bar
Thrust Force @ 80psi/5.5bar .....	20 lbs.	89 N
Weight (Basic Unit) .....	0.61 lbs.	0.28 kg
Cylinder Bore Diameter .....	0.563"	14.3 mm
Shaft Diameter .....	0.236"	6 mm
Max (M) Vertical Motion .....	5 in.-lbs.	0.6 N-m

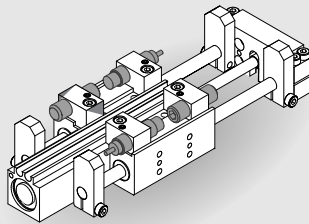
Specifications	DLT-08	DLT-08M
Maximum Air Pressure .....	100 psi	7 bar
Thrust Force @ 80psi/5.5bar .....	20 lbs.	89 N
Weight (Basic Unit) .....	0.96 lbs.	0.44 kg
Cylinder Bore Diameter .....	0.563"	14.3 mm
Shaft Diameter .....	0.315"	8.0 mm
Max (M) Vertical Motion .....	10 in.-lbs.	1.3 N-m

## Accessory Mounting Technical Data



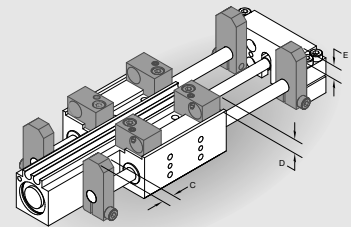
### Urethane Bumpers & Clamp Collars

- Urethane Bumpers for shock absorption and noise dampening
- Adjustable Clamp Collars for end of stroke position adjustment
- Kit contains (2) Collars and (2) Shock Pads for adjustment of travel in one direction
- (1) Kit required for extend (kit for retract comes standard)



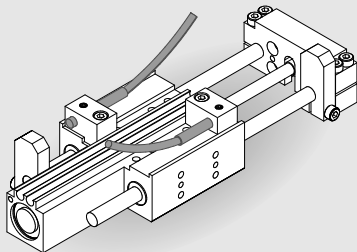
### Adjustable Hard Stops

- For precision (+/- .001") end point positioning of retract position
  - Allows for end stop position adjustment independent of shock absorber hard stop
  - Allen wrench adjustable
- ### Shock Absorbers
- Full stroking piston rod
  - Built-in hard stop
  - Position adjustable
  - Adjustable dampening



### Universal Mounting Kit

- Kit mounts (1) Shock Absorber or (1) Adjustable Hard Stop
- Kit includes (1) Mounting Bracket, (1) Hardened Tool Steel Target and Hardware
- Target allows for unlimited retract stroke adjustment (no extend position adjustment). Fine adjustment is achieved using Adjustable Hard Stop or Shock Absorber
- Mounting Bracket keys into body for secure positioning and excellent rigidity
- Four possible mounting positions

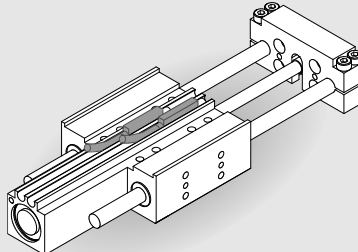


### Inductive Proximity Sensors

- 4mm diameter
- Threaded quick disconnect with built-in LED output
- PNP and NPN available

### Quick Disconnect Cable

- Threaded coupling with knurled head for secure electrical connections
- 2 meter cable length
- 5 meter cable length



### Magneto Resistive Sensors

- No mounting kit required (slot mounted)
- Threaded quick disconnect with built-in LED output
- PNP and NPN available
- Low profile

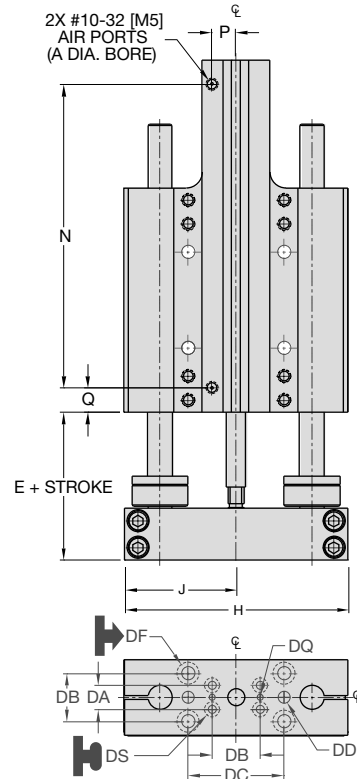
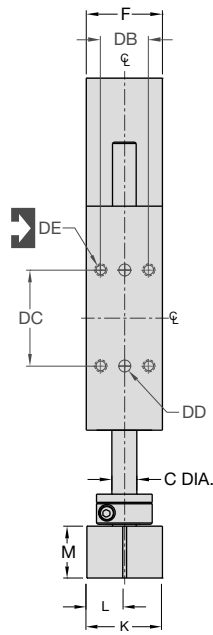
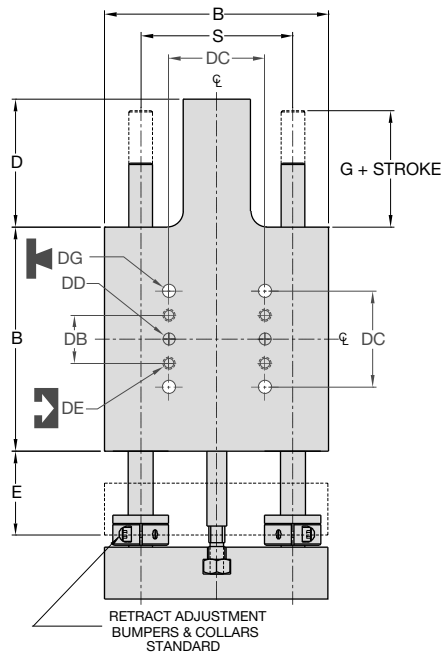
### Quick Disconnect Cable

- Threaded coupling with knurled head for secure electrical connections
- 2 meter cable length
- 5 meter cable length

	A	B	C	D	E
DLT-06	.236"	.47	.250	.31	.27
DLT-08	.236"	.63	.250	.31	.27
DLT-06M	6.0 mm	12.0	6.4	7.9	6.9
DLT-08M	6.0 mm	16.0	6.4	7.9	6.9



# LONG BODY THRUSTER DLT -10M, 12M, 16M -L BUILT-IN REPAIRABLE CYLINDER



**UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW**

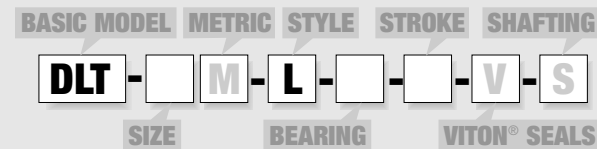
	Dimensions are symmetrical about centerline		Third Angle Projection		All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or [±.013mm]
	Metric Threads Course Pitch	<b>Imperial in.</b>	0.00 = ±.01 0.000 = ±.005 0.0000 = ±.0005	<b>Metric [mm]</b>	[0.] = [±.25] [0.0] = [±.13] [0.00] = [±.013]

## DIRECTCONNECT DIMENSIONS STANDARD MOUNTING PATTERN FOR ALL SIZES

	Imperial (inches)	Metric (mm)
DA	.375	9.5
DB	.750	19.1
DC	1.500	38.1
DD	.1880 x .25 DP	5mm H7 x 6 DP
DE	#10-32 x .34 DP	M5 x 8.5 DP
DF	Clearance for #10	Clearance for M5
DG	Clearance for #10	Clearance for M5
DQ	.0940 x .078 DP	3H7 x 2 DP
DS	Clr & C'bore for #4	Clr & C'bore for M3

MODEL #	BORE DIA.		BODY SIZE		SHAFT DIA.												
	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	S	
DLT-10	.75	3.50	.375	2.00	1.313	1.19	0.82	3.490	1.740	1.178	.584	.813	4.75	0.38	0.38	2.375	
DLT-12	1	4.00	.472	2.50	1.313	1.63	0.82	3.985	1.985	1.615	.802	.813	5.78	0.37	0.36	2.750	
DLT-16	1	4.75	.630	2.75	1.375	1.63	0.76	4.735	2.360	1.615	.802	.813	6.78	0.37	0.36	3.250	
DLT-10M	19	88.9	9.5	50.8	33.4	30.2	20.8	88.6	44.2	29.9	14.8	20.7	120.7	9.6	9.6	60.33	
DLT-12M	25	101.6	12.0	63.5	33.4	41.4	20.8	101.2	50.4	41.0	20.4	20.7	146.8	9.4	9.1	69.85	
DLT-16M	25	120.7	16.0	69.9	34.9	41.4	19.3	120.3	59.9	41.0	20.4	20.7	172.2	9.4	9.1	82.55	

## How to Order: Basic Unit



- SIZE** 10, 12, 16
- METRIC** M
- STYLE** L Long body thruster with built-in repairable cylinder
- BEARING** B Linear ball bearings  
C Composite bushings
- STROKE** (inches)  
DLT-10 1-4 @ 1" increments  
DLT-12 1-5 @ 1" increments  
DLT-16 1-6 @ 1" increments
- STROKE** (mm)  
DLT-10M 25, 50, 80, 100  
DLT-12M 25, 50, 80, 100, 125  
DLT-16M 25, 50, 80, 100, 125, 150
- VITON®** V Viton® seals
- SHAFTING** S Corrosion resistant shafting

Custom strokes available.  
Please consult factory.

### SAMPLE ORDER: DLT-10M-L-C-25-V

Ex Thruster, Size 10 Metric, Long Body Style, Composite Bushings, 25mm Stroke, Viton® Seals

## Accessories: (Order Separately)

### SHOCK/STOP ACCESSORIES

	DLT-10M	DLT-12M	DLT-16M	QTY/THRUSTER
Universal Mounting Kit (Shock, Stop or Sensor)	OSAK-055	OSAK-057	OSAK-059	1, 2, 3 or 4
Urethane Bumper/Clamp Collar Kit	OSAK-056	OSAK-058	OSAK-060	1
Urethane Bumper/Clamp Collar Kit (-10M)	OSAK-065			1
Urethane Bumper/Clamp Collar Kit (-12M)		OSAK-066		1
Shock Absorber*	SHOK-028	SHOK-010	SHOK-010	1, 2, 3 or 4
Adjustable Hard Stop*	DLT-1023	DLT-1023	DLT-1023	1, 2, 3 or 4

### INDUCTIVE SENSOR ACCESSORIES†

	DLT-10M	DLT-12M	DLT-16M	QTY/THRUSTER
Inductive Sensor PNP Qk. Disconnect*	OISP-011	OISP-011	OISP-011	1 or 2
Inductive Sensor NPN Qk. Disconnect*	OISN-011	OISN-011	OISN-011	1 or 2
Quick Disconnect 2M Cable Length †	CABL-010	CABL-010	CABL-010	1 or 2
Quick Disconnect 5M Cable Length †	CABL-013	CABL-013	CABL-013	1 or 2

### MAGNETIC SENSOR ACCESSORIES\*\*

	DLT-10M	DLT-12M	DLT-16M	QTY/THRUSTER
Magneto Resistive Sensor PNP Qk. Disc.†	OHSP-017	OHSP-017	OHSP-017	1 or 2
Magneto Resistive Sensor NPN Qk. Disc.†	OHSN-017	OHSN-017	OHSN-017	1 or 2
Quick Disconnect 2M Cable Length †	CABL-010	CABL-010	CABL-010	1 or 2
Quick Disconnect 5M Cable Length †	CABL-013	CABL-013	CABL-013	1 or 2

### PNEUMATIC ACCESSORIES

	DLT-10M	DLT-12M	DLT-16M	QTY/THRUSTER
1/8 NPT Telescopic Airlines (up to 3")	OTAL-038	OTAL-038	OTAL-038	1, 2, 3 or 4
1/8 NPT Telescopic Airlines (up to 6")	OTAL-039	OTAL-039	OTAL-039	1, 2, 3 or 4
#10-32 Adjustable Flow Control	VLVF-007	VLVF-007	VLVF-007	1 or 2
G1/8 Telescopic Airlines (up to 80mm)	OTAL-044	OTAL-044	OTAL-044	1, 2, 3 or 4
G1/8 Telescopic Airlines (up to 160mm)	OTAL-045	OTAL-045	OTAL-045	1, 2, 3 or 4
M5 Adjustable Flow Control	VLVF-008	VLVF-008	VLVF-008	1 or 2
Cylinder Seal Repair Kit	SLKT-100	SLKT-102	SLKT-102	1
Viton® Cylinder Seal Repair Kit	SLKT-100V	SLKT-102V	SLKT-102V	1

\*Requires Universal Mounting Kit †Sensor and cable sold separately \*\*Piston magnet standard

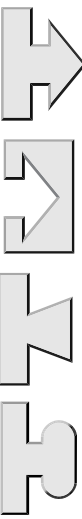
Please see back cover for DE-STA-CO Global Locations. [www.destaco.com](http://www.destaco.com)

[www.comoso.com](http://www.comoso.com)

DLT SERIES 4.50 DIRECTCONNECT™

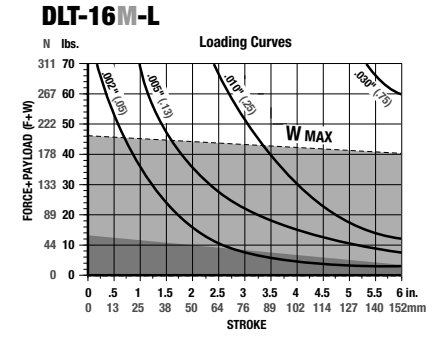
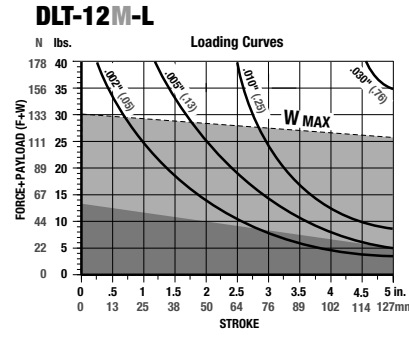
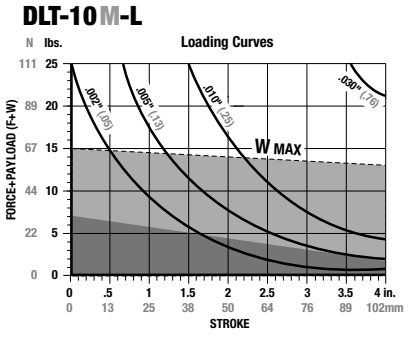


# LONG BODY THRUSTER DLT-10M, 12M, 16M -L BUILT-IN REPAIRABLE CYLINDER

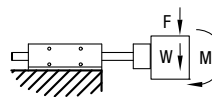


DLT SERIES  
4.51

DIRECTCONNECT™



**F** = Externally applied force (lbs. or N)  
**W** = Weight of payload (lbs. or N)  
**F+W** = Total force (lbs. or N)



**Shock Absorbers and Flow Controls are recommended for nearly all applications**

(W) in this range use **Single Shock** in both directions

(W) in this range use **Urethane Bumpers**

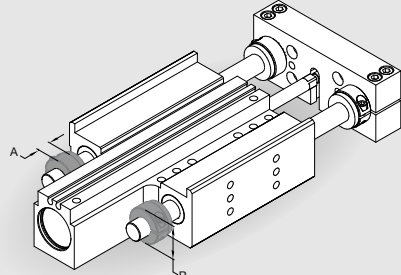
Shaded shock absorption ranges of horizontal payload (W) @ 80psi, flow controls fully open. For vertical applications do not exceed 1/2 of the recommended payload due to the additional acceleration effect of gravity.

Specifications	DLT-10	DLT-10M
Maximum Air Pressure	100 psi	6.9 bar
Thrust Force @ 80psi/5.5bar	35 lbs.	155 N
Weight (Basic Unit)	1.95 lbs.	0.88 kg
Additional Weight per Stroke	0.08 lbs./in. 1.4g/mm	
Cylinder Bore Diameter	3/4"	19mm
Shaft Diameter	0.375"	9.5mm

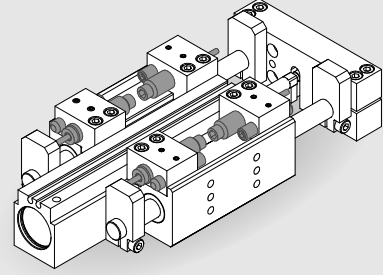
Specifications	DLT-12	DLT-12M
Maximum Air Pressure	100 psi	6.9 bar
Thrust Force @ 80psi/5.5bar	62 lbs.	275 N
Weight (Basic Unit)	3.21 lbs.	1.46 kg
Additional Weight per Stroke	0.12 lbs./in. 2.2g/mm	
Cylinder Bore Diameter	1"	25mm
Shaft Diameter	0.472"	12mm

Specifications	DLT-16	DLT-16M
Maximum Air Pressure	100 psi	6.9 bar
Thrust Force @ 80psi/5.5bar	62 lbs.	275 N
Weight (Basic Unit)	4.81 lbs.	2.03 kg
Additional Weight per Stroke	0.20 lbs./in. 3.5g/mm	
Cylinder Bore Diameter	1"	25mm
Shaft Diameter	0.630"	16mm

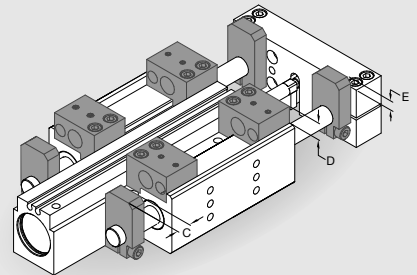
## Accessory Mounting Technical Data



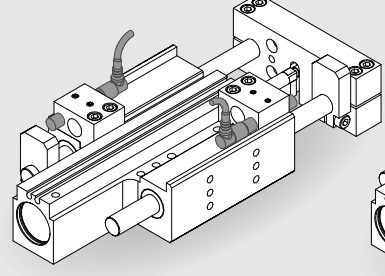
- ### Urethane Bumpers & Clamp Collars
- Urethane Bumpers for shock absorption and noise dampening
  - Adjustable Clamp Collars for end of stroke position adjustment
  - Kit contains (2) Collars and (2) Shock Pads for adjustment of travel in one direction
  - (1) Kit required for extend (kit for retract comes standard)



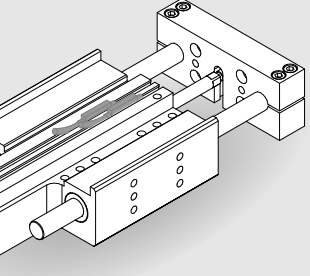
- ### Adjustable Hard Stops
- For precision (+/- .001") end point positioning
  - Allows for end stop position adjustment independent of shock absorber hard stop
  - Allen wrench adjustable
- ### Shock Absorbers
- Full stroking piston rod
  - Built-in hard stop
  - Allen wrench adjustable



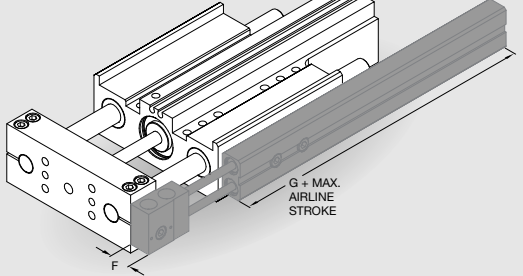
- ### Universal Mounting Kit
- Kit mounts (1) Shock Absorber and (1) Inductive Proximity Sensor or (1) Shock and (1) Adjustable Hard Stop
  - Kit includes (1) Mounting Bracket, (1) Hardened Tool Steel Target and Hardware
  - Target allows for unlimited stroke adjustment. Fine adjustment is achieved using Adjustable Hard Stop or Shock Absorber
  - Mounting Bracket keys into body for secure positioning and excellent rigidity
  - Four possible mounting positions



- ### Inductive Proximity Sensors
- 8mm diameter
  - Threaded quick disconnect with built-in LED output
  - PNP and NPN available



- ### Magneto Resistive Sensors
- No mounting kit required (slot mounted)
  - Threaded quick disconnect with built-in LED output
  - PNP and NPN available
  - Low profile



- ### Telescoping Airlines
- Eliminate flexing air lines
  - Self aligning air tube design extends useful seal life
  - Modular stackable design. Up to (4) modules can be stacked
  - 1/8 NPT or G1/8 pipe threads
  - (2) user air ports per module

- ### Quick Disconnect Cable
- Threaded coupling with knurled head for secure electrical connections
  - 2 meter cable length
  - 5 meter cable length

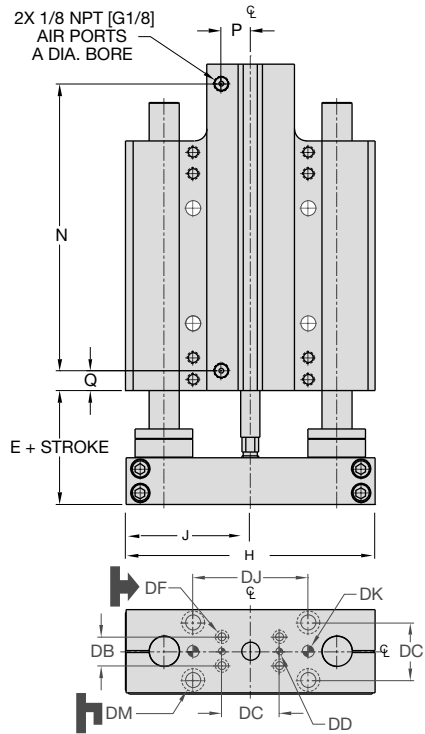
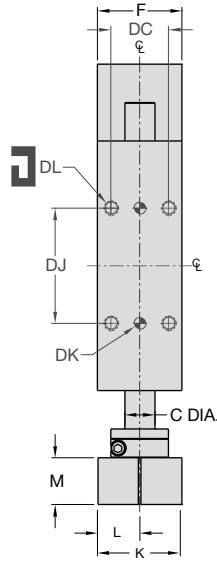
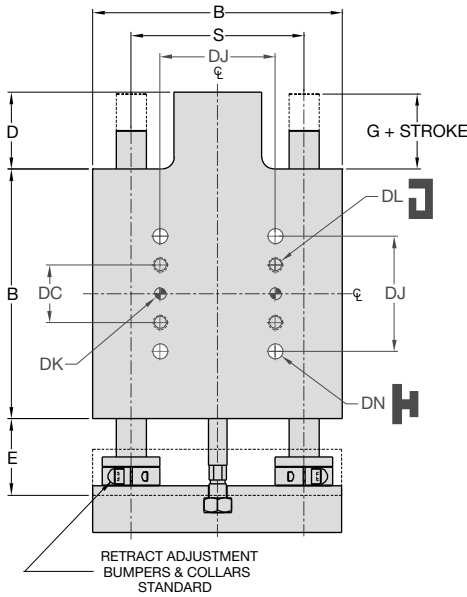
- ### Quick Disconnect Cable
- Threaded coupling with knurled head for secure electrical connections
  - 2 meter cable length
  - 5 meter cable length

	A	B	C	D	E	F	G
DLT-10	.343"	.87	.375	.480	.320	.577	3.60
DLT-12	.375"	.95	.375	.450	.230	.577	3.60
DLT-16	.437"	1.31	.437	.450	.340	.577	3.60
DLT-10M	8.7mm	22.1	9.5	12.2	8.1	14.7	91.4
DLT-12M	9.5mm	23.9	9.5	11.4	5.8	14.7	91.4
DLT-16M	11.1mm	33.3	11.1	11.4	8.6	14.7	91.4

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[www.comoso.com](http://www.comoso.com)

# LONG BODY THRUSTER DLT-20M, 25M -L BUILT-IN REPAIRABLE CYLINDER



**UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW**

	Dimensions are symmetrical about centerline		Third Angle Projection		All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or [±.013mm]
	Metric Threads Course Pitch	<b>Imperial in.</b>	<b>Metric [mm]</b>		
		0.00 = ±.01	[0.] = [±.25]		
		0.000 = ±.005	[0.0] = [±.13]		
		0.0000 = ±.0005	[0.00] = [±.013]		

## DIRECTCONNECT DIMENSIONS STANDARD MOUNTING PATTERN FOR ALL SIZES

	Imperial (inches)	Metric (mm)
DB	.750	19.1
DC	1.500	38.1
DD	.1880 x .25DP	5mm H7 x 6DP
DF	Clearance for #10	Clearance for M5
DJ	3.000	76.2
DK	.3130 x .37 DP	8mm H7 x 9.4 DP
DL	3/8-16 x .56 DP	M10 x 14.2 DP
DM	Clearance for 3/8	Clearance for M10
DN	Clearance for 3/8	Clearance for M10

MODEL #	BORE DIA.		BODY SIZE		SHAFT DIA.												
	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	S	
DLT-20	1 1/2	6.50	.787	2.00	1.960	2.20	.960	6.480	3.230	2.180	1.080	1.210	7.469	.77	.52	4.500	
DLT-25	1 1/2	7.50	.984	2.00	2.170	2.20	1.170	7.480	3.730	2.180	1.080	1.420	8.468	.77	.52	5.250	
DLT-20M	38	165.1	20	50.8	49.8	55.9	24.4	164.6	82.0	55.4	27.4	30.7	189.7	19.4	13.1	114.30	
DLT-25M	38	190.5	25	50.8	55.1	55.9	29.7	190.0	94.7	55.4	27.4	36.1	215.1	19.4	13.1	133.35	

## How to Order: Basic Unit



**SIZE BEARING VITON® SEALS**

**SIZE 20, 25**

**METRIC M**

**STYLE L** Long body thruster with built-in repairable cylinder

**BEARING B** Linear ball bearings  
**C** Composite bushings

**STROKE** (inches)  
DLT-20 **1-6** @ 1" increments  
DLT-25 **1-7** @ 1" increments  
Custom strokes available. Please consult factory.

**STROKE** (mm)  
DLT-20M **25, 50, 75, 100, 125, 160**  
DLT-25M **25, 50, 75, 100, 125, 160, 175**

**VITON® V** Viton® seals

**SHAFTING S** Corrosion resistant shafting

**SAMPLE ORDER: DLT-20-L-B-2-V**

Ex: Thruster, Size 20, Long Body Style, Linear Ball Bushings, 2 Inch Stroke, Viton® Seals

## Accessories: (Order Separately)

### SHOCK/STOP ACCESSORIES

	DLT-20M	DLT-25M	QTY/THRUSTER
Universal Mounting Kit (Shock, Stop or Sensor)	<b>OSAK-061</b>	<b>OSAK-063</b>	1, 2, 3 or 4
Urethane Bumper/Clamp Collar Kit	<b>OSAK-062</b>	<b>OSAK-064</b>	1
Shock Absorber (adjustable dampening)*	<b>SHOK-029</b>	<b>SHOK-029</b>	1, 2, 3 or 4
Adjustable Hard Stop*	<b>DLT-1023</b>	<b>DLT-1023</b>	1, 2, 3 or 4

### INDUCTIVE SENSOR ACCESSORIES\*

	DLT-20M	DLT-25M	QTY/THRUSTER
Inductive Sensor PNP Qk. Disconnect*	<b>OISP-011</b>	<b>OISP-011</b>	1 or 2
Inductive Sensor NPN Qk. Disconnect*	<b>OISN-011</b>	<b>OISN-011</b>	1 or 2
Quick Disconnect 2M Cable Length †	<b>CABL-010</b>	<b>CABL-010</b>	1 or 2
Quick Disconnect 5M Cable Length †	<b>CABL-013</b>	<b>CABL-013</b>	1 or 2

### MAGNETIC SENSOR ACCESSORIES\*\*

	DLT-20M	DLT-25M	QTY/THRUSTER
Magneto Resistive Sensor PNP Qk. Disc.†	<b>OHSP-017</b>	<b>OHSP-017</b>	1 or 2
Magneto Resistive Sensor NPN Qk. Disc.†	<b>OHSN-017</b>	<b>OHSN-017</b>	1 or 2
Quick Disconnect 2M Cable Length †	<b>CABL-010</b>	<b>CABL-010</b>	1 or 2
Quick Disconnect 5M Cable Length †	<b>CABL-013</b>	<b>CABL-013</b>	1 or 2

### PNEUMATIC ACCESSORIES

	DLT-20M	DLT-25M	QTY/THRUSTER
1/8 NPT Telescopic Airlines (up to 6")	<b>OTAL-039</b>	<b>OTAL-039</b>	1, 2, 3 or 4
1/8 NPT Telescopic Airlines (up to 12")	<b>OTAL-040</b>	<b>OTAL-040</b>	1, 2, 3 or 4
1/8 NPT Adjustable Flow Control	<b>VLVF-004</b>	<b>VLVF-004</b>	1 or 2
G1/8 Telescopic Airlines (up to 160mm)	<b>OTAL-045</b>	<b>OTAL-045</b>	1, 2, 3 or 4
G1/8 Telescopic Airlines (up to 300mm)	<b>OTAL-046</b>	<b>OTAL-046</b>	1, 2, 3 or 4
G1/8 Adjustable Flow Control	<b>VLVF-005</b>	<b>VLVF-005</b>	1 or 2
Cylinder Seal Repair Kit	<b>SLKT-104</b>	<b>SLKT-104</b>	1
Viton® Cylinder Seal Repair Kit	<b>SLKT-104V</b>	<b>SLKT-104V</b>	1

\*Requires Universal Mounting Kit †Sensor and cable sold separately \*\*Piston magnet standard

DIRECTCONNECT™

DLT SERIES

4.52

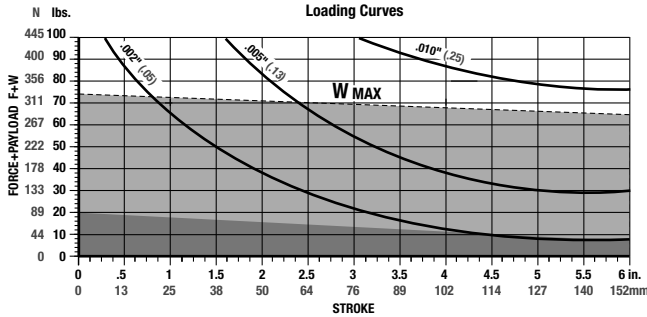




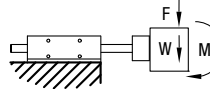
# LONG BODY THRUSTER DLT -20M, 25M -L BUILT-IN REPAIRABLE CYLINDER



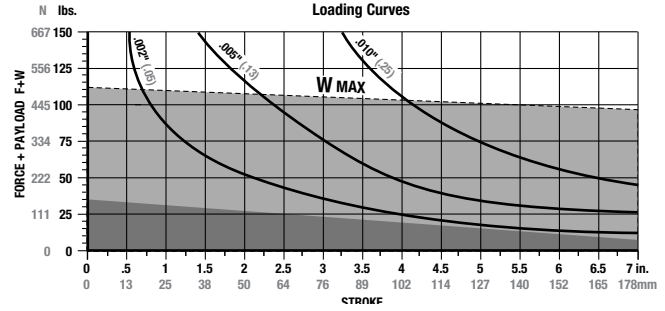
## DLT-20M-L



**F**=Externally applied force (lbs. or N)  
**W**=Weight of payload (lbs. or N)  
**F+W**=Total force (lbs. or N)



## DLT-25M-L



**Shock Absorbers and Flow Controls are recommended for nearly all applications**

(W) in this range use **Single Shock** in both directions

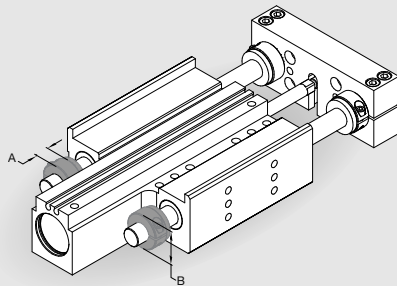
(W) in this range use **Urethane Bumpers**

Shaded shock absorption ranges of horizontal payload (W) @ 80psi, flow controls fully open. For vertical applications do not exceed 1/2 of the recommended payload due to the additional acceleration effect of gravity.

Specifications	DLT-20	DLT-20M
Maximum Air Pressure	100 psi	6.9 bar
Thrust Force @ 80psi/5.5bar	140 lbs.	622 N
Weight (Basic Unit)	12.0 lbs.	5.5 kg
Additional Weight per Stroke	0.31 lbs./in.	5.5g/mm
Cylinder Bore Diameter	1-1/2"	38mm
Shaft Diameter	0.787"	20mm

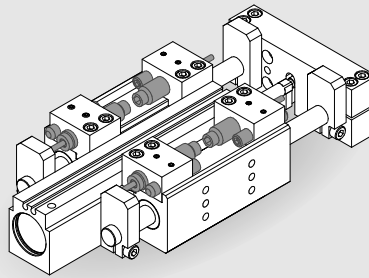
Specifications	DLT-25	DLT-25M
Maximum Air Pressure	100 psi	6.9 bar
Thrust Force @ 80psi/5.5bar	140 lbs.	622 N
Weight (Basic Unit)	17.4 lbs.	7.9 kg
Additional Weight per Stroke	0.47 lbs./in.	8.4g/mm
Cylinder Bore Diameter	1-1/2"	38mm
Shaft Diameter	0.984"	25mm

## Accessory Mounting Technical Data



### Urethane Bumpers & Clamp Collars

- Urethane Bumpers for shock absorption and noise dampening
- Adjustable Clamp Collars for end of stroke position adjustment
- Kit contains (2) Collars and (2) Shock Pads for adjustment of travel in one direction
- (1) Kit required for retract (kit for extend standard)

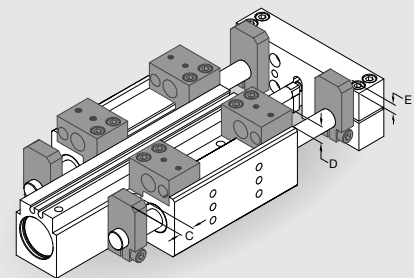


### Adjustable Hard Stops

- For precision (+/- .001") end point positioning
- Allows for end stop position adjustment independent of shock absorber hard stop
- Allen wrench adjustable

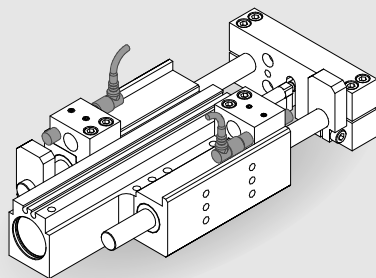
### Shock Absorbers

- Full stroking piston rod
- Built-in hard stop
- Position adjustable
- Adjustable dampening



### Universal Mounting Kit

- Kit mounts (1) Shock Absorber and (1) Inductive Proximity Sensor or (1) Shock and (1) Adjustable Hard Stop
- Kit includes Mounting Bracket, Hardened Tool Steel Target and Hardware
- Target allows for unlimited stroke adjustment. Fine adjustment is achieved using Adjustable Hard Stop or Shock Absorber
- Mounting Bracket keys into body for secure positioning and excellent rigidity
- Four possible mounting positions

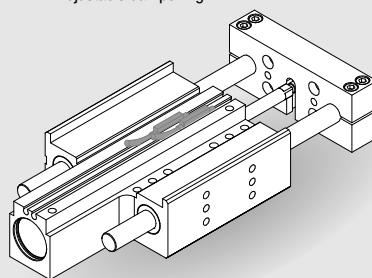


### Inductive Proximity Sensors

- 8mm diameter
- Threaded quick disconnect with built-in LED output
- PNP and NPN available

### Quick Disconnect Cable

- Threaded coupling with knurled head for secure electrical connections
- 2 meter cable length
- 5 meter cable length

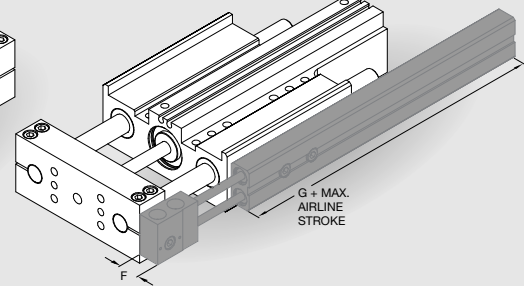


### Magneto Resistive Sensors

- No mounting kit required
- Threaded quick disconnect with built-in LED output
- PNP and NPN available
- Low profile

### Quick Disconnect Cable

- Threaded coupling with knurled head for secure electrical connections
- 2 meter cable length
- 5 meter cable length



### Telescoping Airlines

- Eliminate flexing air lines
- Self aligning air tube design extends useful seal life
- Modular stackable design. Up to (4) modules can be stacked
- 1/8 NPT or G1/8 pipe threads
- (2) user air ports per module

	A	B	C	D	E	F	G
DLT-20	.500"	1.50	.500	.92	.67	.577	3.60
DLT-25	.500"	1.75	.500	.92	.67	.577	3.60
DLT-20M	12.7mm	38.1	12.7	23.4	17.0	14.7	91.4
DLT-25M	12.7mm	44.5	12.7	23.4	17.0	14.7	91.4

DLT SERIES

4.53

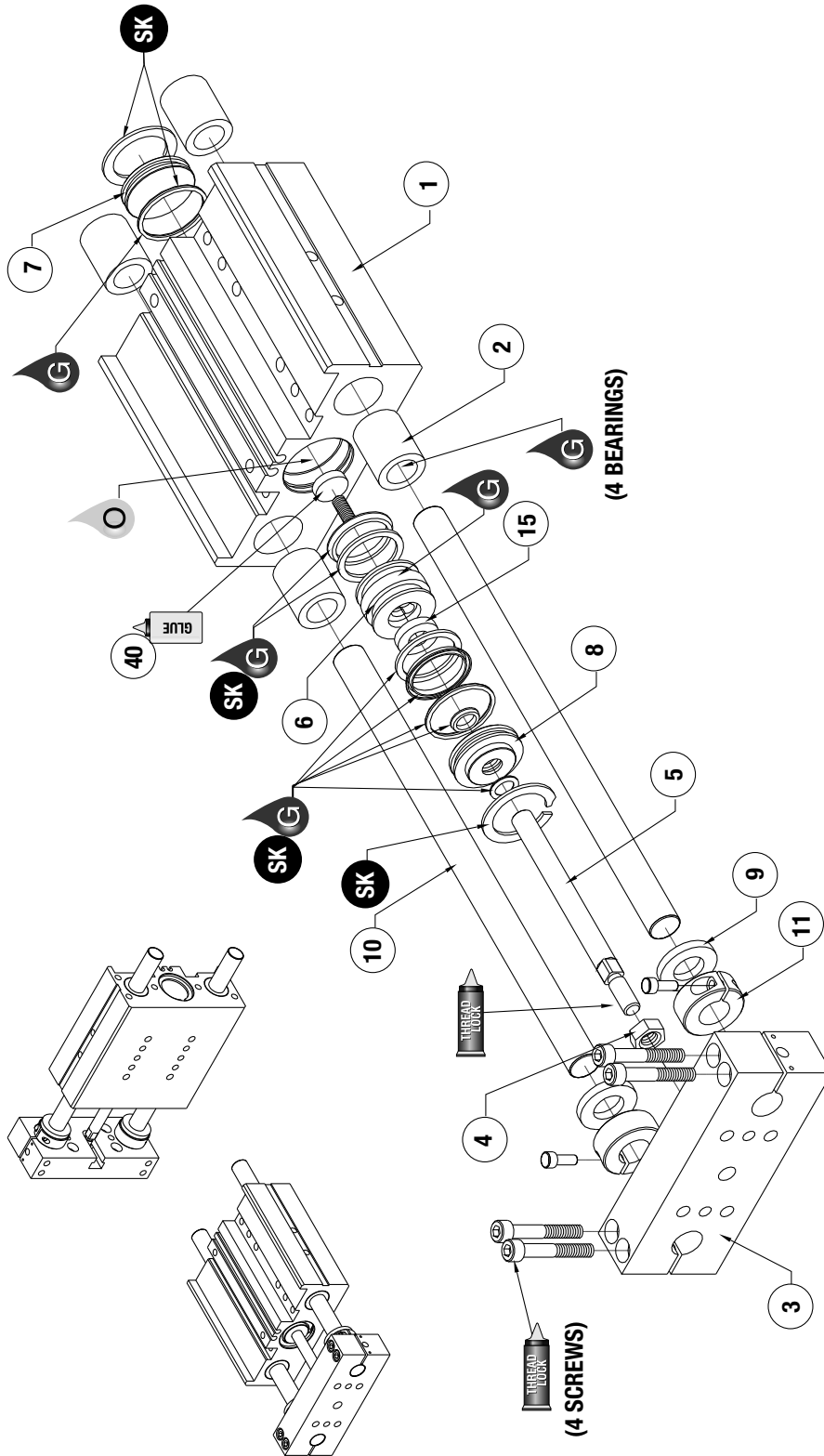
DIRECTCONNECT™



# DLT-B, E, L Series Exploded View



A J ROBEY COMPANY



## Item Qty Name

Item	Qty	Name
01	1	Body
02	4	Bushing
03	1	Tooling Plate
04	1	Nut, Stover
05	1	Piston Rod
06	1	Piston
07	1	Cap, Plug End
08	1	Cap, Rod End
09	2	Shock Pad,Urethane
10	1	Guide Shaft
11	2	Collar, Split
15	1	Shock Pad, Urethane
40	1	Magnet

**NOTE:** Contact the Robohand Sales Department for a complete spare parts list with order numbers and prices.

### Assembly Procedure

- 1) Lubricate and install seals.
- 2) Attach piston to piston shaft.
- 3) Install magnet on piston.
- 4) Install plug endcap and retaining ring into body.
- 5) Attach piston, piston shaft, and rod end cap to body and install retainer ring.
- 6) Install bearings and shafts into body.
- 7) Attach shock pads and clamp collars to rod end of shafts.
- 8) Install tool plate on rod end of shafts, and attach cylinder rod to plate.
- 9) Adjust clamp collars and fasten them in desired position.

**SK Seal Repair Kit Order #'s  
See Product Data Sheets**

DLT-B, E, L  
SERIES  
MAINTENANCE  
4.54



Seal Kit Items



Thread Locker



Krytox™ Lubricant



Lightweight Machine Oil



Teflon® Based Grease



Super Bonder



Third Angle Projection

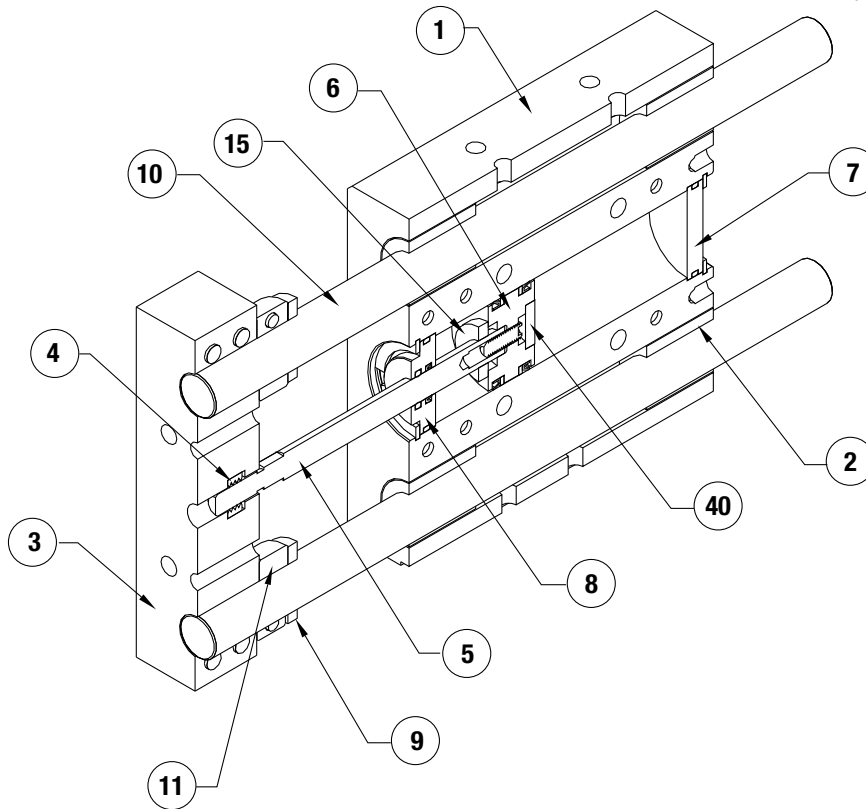
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[www.comoso.com](http://www.comoso.com)

Item	Qty	Name
01	1	Body
02	4	Bushing
03	1	Tooling Plate
04	1	Nut, Stover
05	1	Piston Rod
06	1	Piston
07	1	Cap, Plug End
08	1	Cap, Rod End
09	2	Shock Pad,Urethane
10	1	Guide Shaft
11	2	Collar, Split
15	1	Shock Pad, Urethane
40	1	Magnet

**NOTE:** Contact the Robohand Sales Department for a complete spare parts list with order numbers and prices.

**NOTE:** For accessory mounting, see product data sheets



DLT-B, E, L  
SERIES  
MAINTENANCE  
4.55



Seal Kit Items



Thread Locker



Krytox™ Lubricant



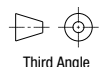
Lightweight Machine Oil



Teflon® Based Grease



Super Bonder



Third Angle Projection

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[www.comoso.com](http://www.comoso.com)

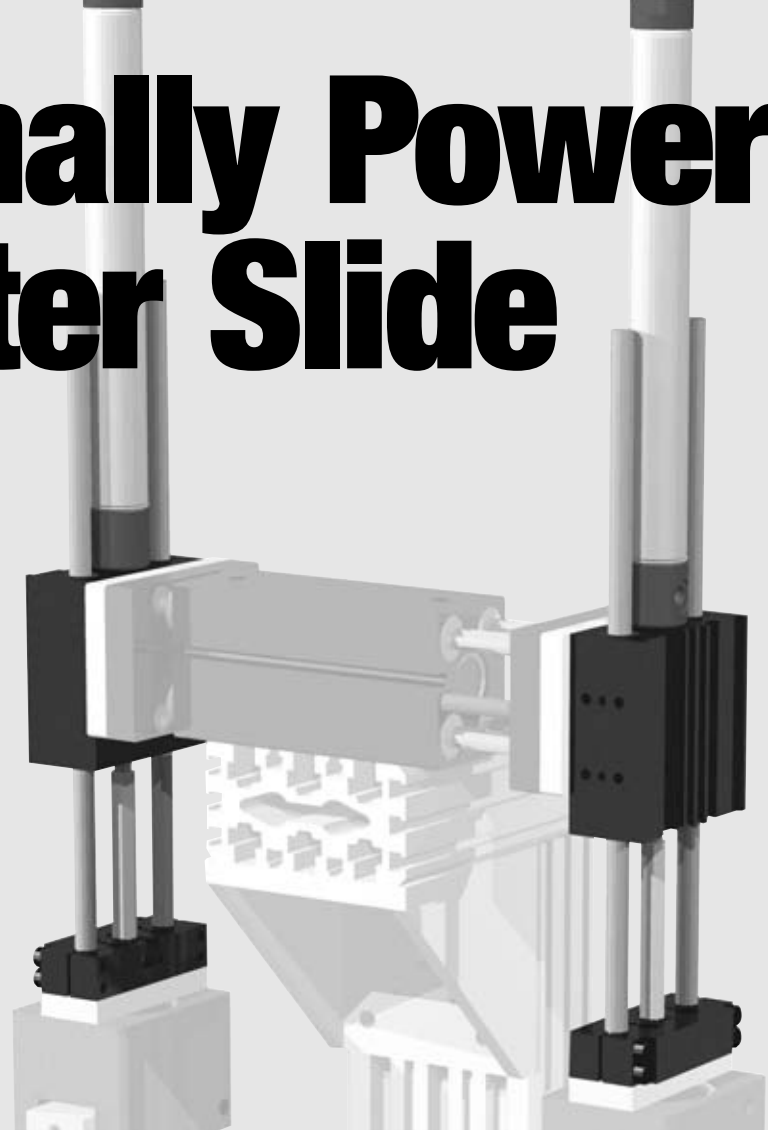
# Externally Powered Thruster Slide

DLT SERIES

4.56



DIRECTCONNECT™



**Cylinder options:**

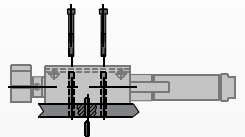
Externally powered thruster slides are available in a wide range of cylinder options. Choose from replaceable/disposable, replaceable with adjustable cushions, NFPA with adjustable cushions, ISO/metric, VDMA, Locking VDMA, or non-powered for customer supplied cylinders.

**DIRECTCONNECT mounting patterns:**

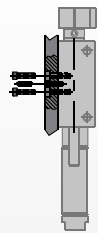
These slides have DIRECTCONNECT mounting patterns that connect to other slides without the need for adapter plates.

**Mounting Information:**

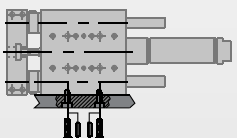
**Mounts and operates in any orientation**



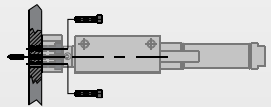
Body can be back mounted with screws from the front using the clearance and counterbored DIRECTCONNECT pattern and located with dowel holes.



Body can be mounted from the back using the DIRECTCONNECT pattern of threaded mounting and dowel pin holes.



Body mounts with screws and locate with slip fit dowel pin holes on side using DIRECTCONNECT mounting patterns.



Payload attaches to tooling plate DIRECTCONNECT mounting pattern with screws and locates using slip fit dowel pin holes.

**Technical Specifications:**

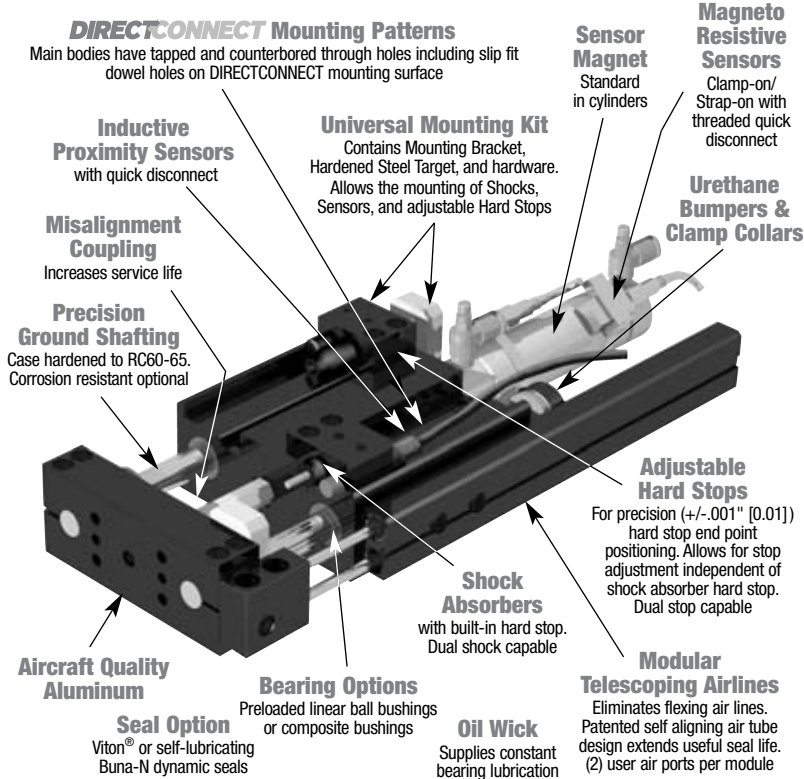
<b>Pneumatic Specifications</b>	<b>Imperial</b>	<b>Metric</b>
Pressure Operating Range*	40-100 psi	3-7 bar
Cylinder Type	Double Acting	
Dynamic Seals	Internally Lubricated Buna-N	
Valve Required to Operate	4-way, 2-position	
<b>Air Quality Requirements</b>		
Air Filtration	40 Micron or Better	
Air Lubrication	Not Necessary**	
Air Humidity	Low Moisture Content (dry)	
<b>Temperature Operating Range</b>		
Buna-N Seals (standard)	-30°~180° F	-35°~80° C
Viton® Seals (optional)	-20°~300° F	-30°~150° C
<b>Maintenance Specifications†</b>		
Expected Life		
Normal Application w/ Preventative Maintenance	5 million cycles	
Field Repairable	10+ million cycles†	
Seal Repair Kits Available	No	No

**Application Restrictions**

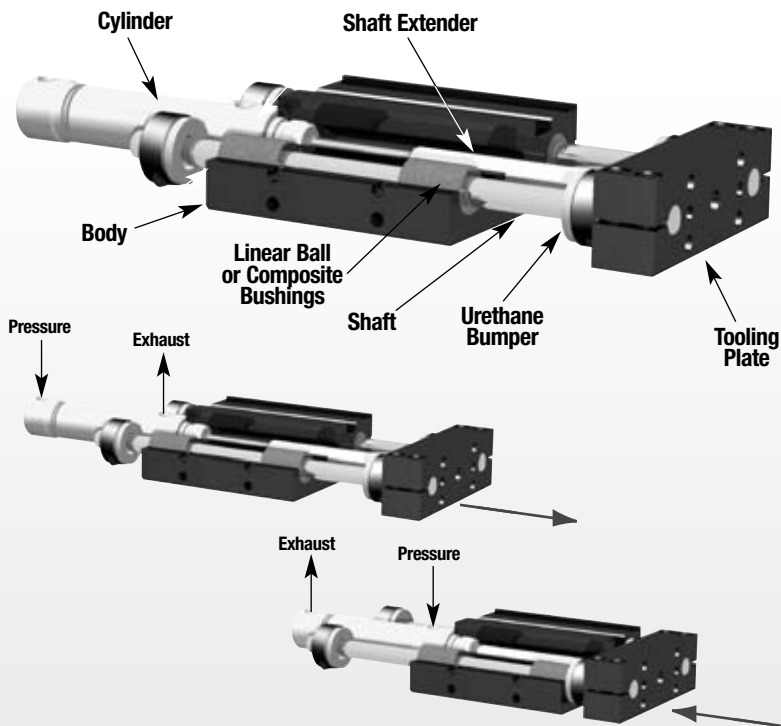
Flow controls, shock absorbers and urethane bumpers recommended for nearly all applications. Use composite bushing in dirty or gritty environments. Never use silicone based lubricants with composite bushings.

\*Higher pressure possible. Consult factory with application details.  
 \*\*Addition of lubrication will greatly increase service life  
 †See Maintenance Section

# Product Features



## Operating Principle



- A double acting cylinder drives a shaft extender that connects to the tooling plate with a misalignment coupling.
- The tooling plate is attached to two hardened steel shafts which are supported by and move in four linear bushings located in the body.

**Designed and manufactured in the USA**

### Style-T, U Replaceable Cyl.

**Size** -06M -T, U only  
-08M -T, U only



See Page **4.58**

### Style-T, A Replaceable Cyl.

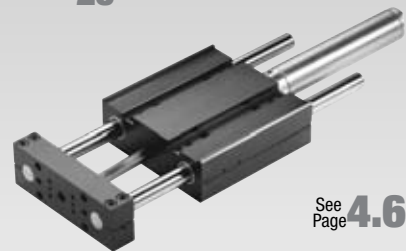
-10M (Metric -A only) (shown)  
-12M (Metric -A only)  
-16M (Metric -A only)



See Page **4.60**

### Style-T, A Replaceable Cyl.

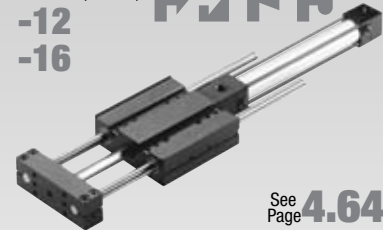
**Size** -20 (shown)  
-25



See Page **4.62**

### Style-N, U Repairable Cyl.

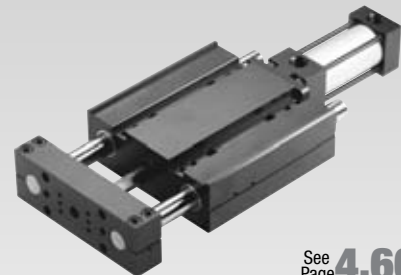
**Size** -10 (shown)  
-12  
-16



See Page **4.64**

### Style-N, R, U Repairable Cyl.

**Size** -20M (shown)  
-25M



See Page **4.66**



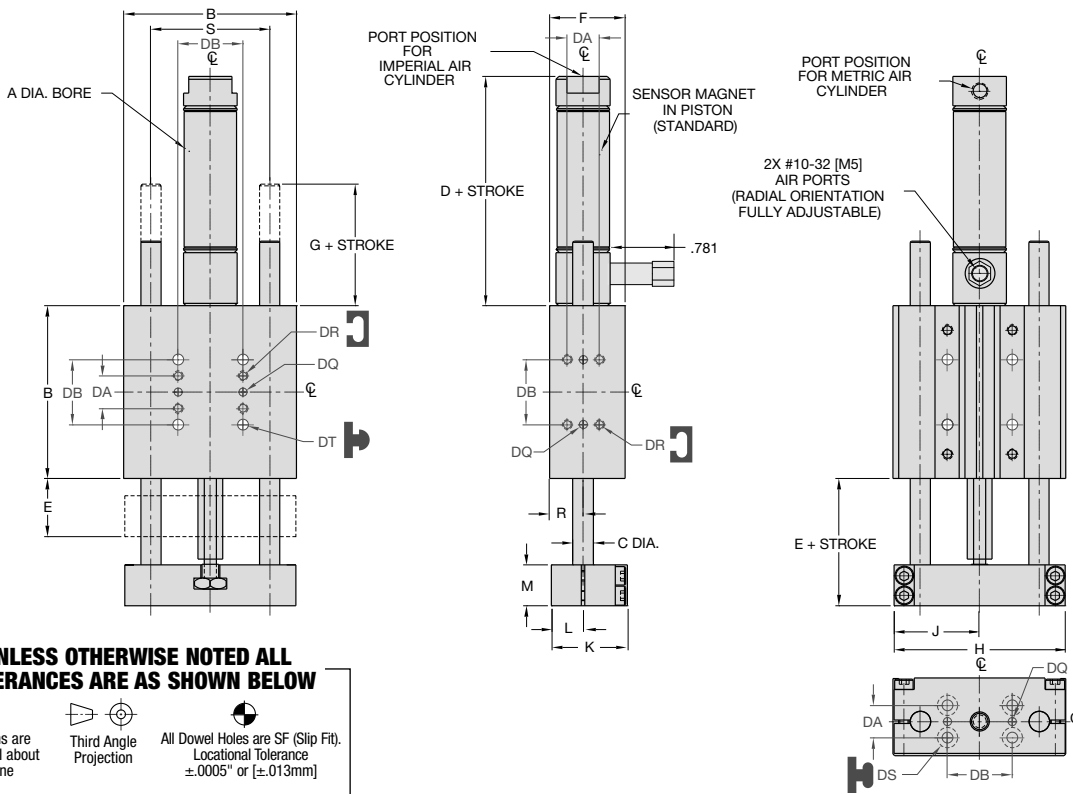
DILT SERIES

4.57



DIRECTCONNECT™

# LINEAR THRUSTER DLT -06M, 08M -T, U REPLACEABLE CYLINDER



**UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW**

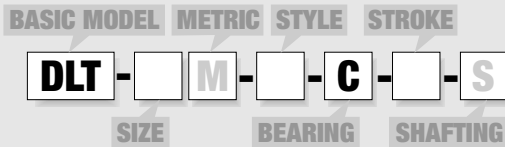
	Dimensions are symmetrical about centerline		Third Angle Projection		All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or [±.013mm]
	Metric Threads Course Pitch	<b>Imperial in.</b>		<b>Metric [mm]</b>	
		0.00 = ±.01		[0.] = [±.25]	
		0.000 = ±.005		[0.0] = [±.13]	
		0.0000 = ±.0005		[0.00] = [±.013]	

## DIRECTCONNECT DIMENSIONS STANDARD MOUNTING PATTERN FOR ALL SIZES

	Imperial (inches)	Metric (mm)
DA	.375	9.5
DB	.750	19.1
DQ	.0940 x .078 DP	3H7 x 2 DP
DR	#4-40 x .25 DP	M3 x 6 DP
DS	Clr & C'bore for #4	Clr & C'bore for M3
DT	Clr & C'bore for #4	Clr & C'bore for M3

MODEL #	BORE DIA.		BODY SIZE	SHAFT DIA.										
	A	B		C	D	E	F	G	H	J	K	L	M	R
DLT-06	0.563	2.00	0.236	2.16	0.783	0.88	0.66	1.980	.990	0.875	.365	0.470	.390	1.375
DLT-08	0.563	2.50	0.315	2.16	0.783	0.88	0.41	2.470	1.235	0.875	.365	0.470	.390	1.750
DLT-06M	16	50.8	6.0	54.9	19.9	22.4	16.7	50.3	25.1	22.2	9.3	11.9	9.9	34.93
DLT-08M	16	64.0	8.0	54.9	19.9	22.4	10.4	62.7	31.4	22.2	9.3	11.9	9.9	44.45

## How to Order: Basic Unit



- SIZE 06, 08**
- METRIC M**
- STYLE T** Replaceable cylinder  
**U** Non-powered unit (Without cylinder. Directly mounts replaceable style cylinders)
- BEARING C** Composite bushings
- STROKE (inches)**  
DLT-06 **.5, 1, 1.5, 2, 2.5, 3, 4, 5, 6**  
DLT-08 **.5, 1, 1.5, 2, 2.5, 3, 4, 5, 6, 7, 8**
- STROKE (mm)**  
DLT-06M **10, 25, 40, 50, 75, 100, 125, 160**  
DLT-08M **10, 25, 40, 50, 75, 100, 125, 160, 175, 200**
- SHAFTING S** Corrosion resistant shafting
- Oversized guide shafts available. Please consult factory.  
Custom strokes available. Please consult factory.

## Accessories: (Order Separately)

### SHOCK/STOP ACCESSORIES

	DLT-06M	DLT-08M	QTY/THRUSTER
Universal Mounting Kit (Shock or Stop)	<b>OSAK-069</b>	<b>OSAK-070</b>	<b>1, 2, 3, or 4</b>
Shock Absorber (2 Max. on -06)*	<b>SHOK-030</b>	<b>SHOK-030</b>	<b>1, 2, 3, or 4</b>
Adjustable Hard Stop*	<b>DLT-0623</b>	<b>DLT-0623</b>	<b>1, 2, 3, or 4</b>
Urethane Bumper/Stop Collar Kit	<b>OSAK-067</b>	<b>OSAK-068</b>	<b>1 or 2</b>

### INDUCTIVE SENSOR ACCESSORIES†

	DLT-06M	DLT-08M	QTY
Inductive Sensor Mounting Kit	<b>OSMK-076</b>	<b>OSMK-077</b>	<b>1</b>
Inductive Sensor PNP Qk. Disconnect †	<b>OISP-014</b>	<b>OISP-014</b>	<b>1</b>
Inductive Sensor NPN Qk. Disconnect †	<b>OISN-014</b>	<b>OISN-014</b>	<b>1</b>
Quick. Disconnect 2M Cable Length †	<b>CABL-010</b>	<b>CABL-010</b>	<b>1</b>
Quick. Disconnect 5M Cable Length †	<b>CABL-013</b>	<b>CABL-013</b>	<b>1</b>

### MAGNETIC SENSOR ACCESSORIES\*\*

	DLT-06M	DLT-08M	QTY
Magneto Resistive Sensor PNP Qk. Disc. †	<b>OHSP-005</b>	<b>OHSP-005</b>	<b>1 or 2</b>
Magneto Resistive Sensor NPN Qk. Disc. †	<b>OHSN-005</b>	<b>OHSN-005</b>	<b>1 or 2</b>
Quick. Disconnect 2M Cable Length †	<b>CABL-010</b>	<b>CABL-010</b>	<b>1 or 2</b>
Quick. Disconnect 5M Cable Length †	<b>CABL-013</b>	<b>CABL-013</b>	<b>1 or 2</b>

### PNEUMATIC ACCESSORIES

	DLT-06M	DLT-08M	QTY
#10-32 Adjustable Flow Control (Imperial)††	<b>VLVF-007</b>	<b>VLVF-007</b>	<b>1 or 2</b>
M5 Adjustable Flow Control (Metric)††	<b>VLVF-008</b>	<b>VLVF-008</b>	<b>1 or 2</b>
#10-32 Retract Port Standoff (Imperial)	<b>PLFT-070</b>	<b>PLFT-070</b>	<b>1</b>
M5 Retract Port Standoff (Metric)	<b>PLFT-071</b>	<b>PLFT-071</b>	<b>1</b>

\*Sensor and cable sold separately \*\*Piston magnet standard ††Requires Port Standoff

## SAMPLE ORDER: DLT-08M-T-B-25

Ex: Thruster, Size 8 Metric, Replaceable Cylinder, Linear Ball Bushings, 25mm Stroke

DLT SERIES  
4.58

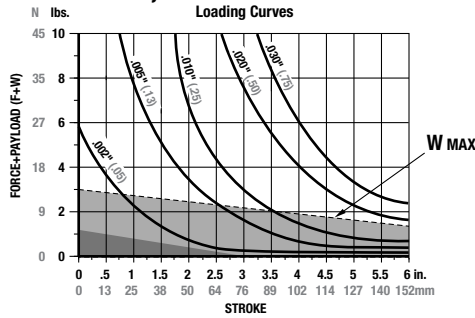
DIRECTCONNECT™



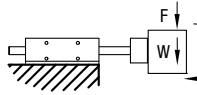


# LINEAR THRUSTER DLT -06M, 08M -T, U REPLACEABLE CYLINDER

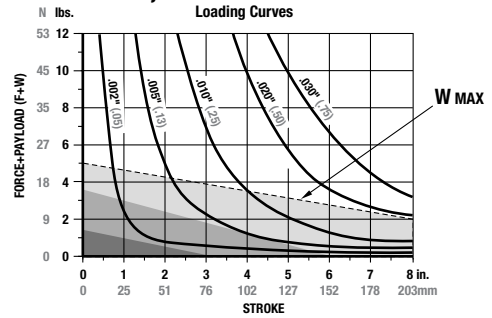
## DLT-06M-T, U



**F**=Externally applied force (lbs. or N)  
**W**=Weight of payload (lbs. or N)  
**F+W**=Total deflection force (lbs. or N)  
**M**=Maximum moment (in.-lb. or N-m)



## DLT-08M-T, U



**Shock Absorbers and Flow Controls are recommended for nearly all applications**

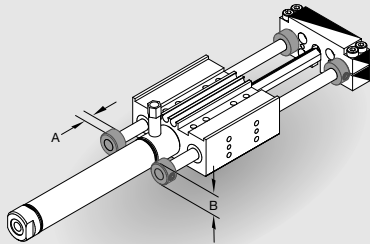
Use **Double Shocks** in both directions    Use **Single Shock** in both directions    Use **Bumpers or Cushioned Cylinder**

Shaded shock absorption ranges of horizontal payload (W) @ 80psi, flow controls fully open. For vertical applications do not exceed 1/2 of the recommended payload due to the additional acceleration effect of gravity.

Specifications	DLT-06	DLT-06M
Maximum Air Pressure	100 psi	7 bar
Thrust Force @ 80psi/5.5 bar	20 lbs.	111 N
Weight (Basic Unit)	0.53 lbs.	0.24 kg
Additional Weight Per Stroke	0.05 lb/in	0.88 g/mm
Cylinder Bore Diameter	0.563"	16 mm
Shaft Diameter	0.236"	6 mm
Max (M) Vertical Motion	5 in.-lbs.	0.6 N-m

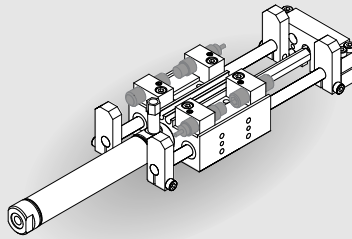
Specifications	DLT-08	DLT-08M
Maximum Air Pressure	100 psi	7 bar
Thrust Force @ 80psi/ 5.5 bar	20 lbs.	89 N
Weight (Basic Unit)	0.88 lbs.	0.40 kg
Additional Weight Per Stroke	0.07 lb/in	1.43 g/mm
Cylinder Bore Diameter	0.563"	16 mm
Shaft Diameter	0.315"	8.0 mm
Max (M) Vertical Motion	10 in.-lbs.	1.3 N-m

## Accessory Mounting Technical Data



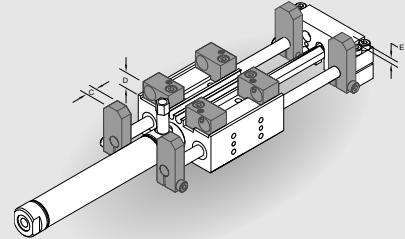
### Urethane Bumpers & Clamp Collars

- Urethane Bumpers for shock absorption and noise dampening
- Adjustable Clamp Collars for end of stroke position adjustment
- Kit contains (2) Collars and (2) Shock Pads for adjustment of travel in one direction



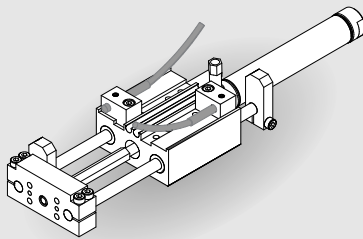
### Adjustable Hard Stops

- For precision (+/- .001") end point positioning of retract position
  - Allows for end stop position adjustment independent of shock absorber hard stop
  - Allen wrench adjustable
- ### Shock Absorbers
- Full stroking piston rod
  - Built-in hard stop
  - Position adjustable



### Universal Mounting Kit

- Kit mounts (1) Shock Absorber or (1) Adjustable Hard Stop
- Kit includes (1) Mounting Bracket, (1) Hardened Tool Steel Target and Hardware
- Target allows for unlimited retract stroke adjustment (no extend position adjustment). Fine adjustment is achieved using Adjustable Hard Stop or Shock Absorber
- Mounting Bracket keys into body for secure positioning and excellent rigidity
- Four possible mounting positions

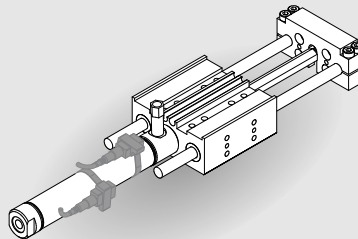


### Inductive Proximity Sensors

- 4mm diameter
- Threaded quick disconnect with built-in LED output
- PNP and NPN available

### Quick Disconnect Cable

- Threaded coupling with knurled head for secure electrical connections
- 2 meter cable length
- 5 meter cable length

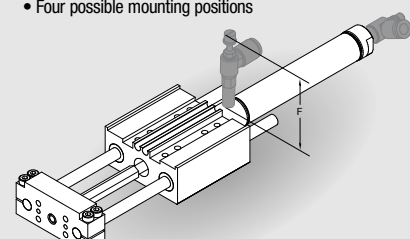


### Magneto Resistive Sensors

- No mounting kit required (slot mounted)
- Threaded quick disconnect with built-in LED output
- PNP and NPN available
- Low profile

### Quick Disconnect Cable

- Threaded coupling with knurled head for secure electrical connections
- 2 meter cable length
- 5 meter cable length



### Flow Controls

- Thumb screw adjust with locking nut for adjusting cylinder speed
- 1/8 NPT or G1/8 pipe threads

	A	B	C	D	E	F
DLT-06	.236"	.47	.250	.31	.27	1.82
DLT-08	.236"	.63	.250	.31	.27	1.82
DLT-06M	6 mm	12.0	6.4	7.9	6.9	46.2
DLT-08M	6 mm	16.0	6.4	7.9	6.9	46.2



DLT SERIES

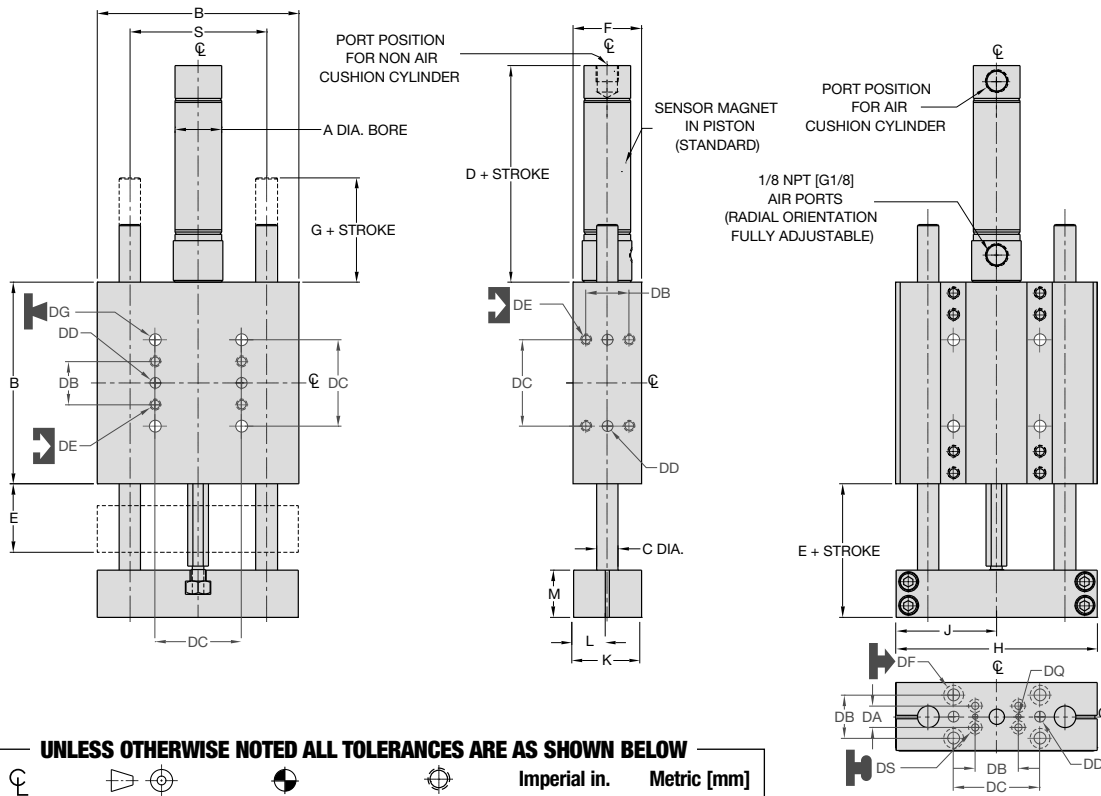
4.59







# LINEAR THRUSTER DLT -10M, 12M, 16M -T, A REPLACEABLE CYLINDER WITH OR W/O ADJ. AIR CUSHIONS



UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

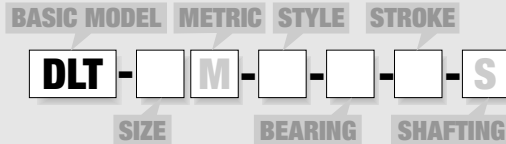
				<b>Imperial in.</b>	<b>Metric [mm]</b>
Dimensions are symmetrical about centerline	Third Angle Projection	All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or [±.013mm]	Metric Threads Course Pitch	0.00 = ±.01 0.000 = ±.005 0.0000 = ±.0005	[0.] = [±.25] [0.] = [±.13] [0.0] = [±.013]

## DIRECTCONNECT DIMENSIONS STANDARD MOUNTING PATTERN FOR ALL SIZES

	Imperial (inches)	Metric (mm)
DA	.375	9.5
DB	.750	19.1
DC	1.500	38.1
DD	.1880 X .25 DP	5 mm H7 X 6 DP
DE	#10-32 X .34 DP	M5 X 8.5 DP
DF	Clr & C'bore for #10	Clr & C'bore for M5
DG	Clr & C'bore for #10	Clr & C'bore for M5
DQ	.0940 x .078 DP	3H7 x 2 DP
DS	Clr & C'bore for #4	Clr & C'bore for M3

MODEL #	BORE DIA.			BODY SIZE			SHAFT DIA.			BASIC UNIT DIMENSIONS						
	A	B	C	D	E	F	G	H	J	K	L	M	S			
DLT-10	3/4	3.50	.375	2.91	1.313	1.19	.82	3.490	1.740	1.178	.584	.813	2.375			
DLT-12	1 1/16	4.00	.472	2.88	1.313	1.63	.82	3.985	1.985	1.615	.802	.813	2.750			
DLT-16	1 1/16	4.75	.630	2.88	1.375	1.63	.76	4.735	2.360	1.615	.802	.813	3.250			
DLT-10M	20	88.9	9.5	88.0	33.4	30.2	20.8	88.6	44.2	29.9	14.8	20.7	60.33			
DLT-12M	25	101.6	12.0	91.5	33.4	41.4	20.8	101.2	50.4	41.0	20.4	20.7	69.85			
DLT-16M	25	120.7	16.0	91.5	34.9	41.4	19.3	120.3	59.9	41.0	20.4	20.7	82.55			

## How to Order: Basic Unit



- SIZE** 10, 12, 16 Oversized guide shafts available. Please consult factory.
- METRIC** M
- STYLE** T Replaceable cylinder w/o adjustable air cushions (Not avail. in metric)  
A Replaceable cylinder with adjustable air cushions
- BEARING** B Linear ball bearings  
C Composite bushings
- STROKE** (inches)  
DLT-10 1-12 @ 1" increments  
DLT-12 1-16 @ 1" increments  
DLT-16 1-20 @ 1" increments Custom strokes available. Please consult factory.
- STROKE** (mm)  
DLT-10M 25, 50, 80, 100, 125, 160, 200, 250, 300  
DLT-12M 25, 50, 80, 100, 125, 160, 200, 250, 300, 320, 360, 400  
DLT-16M 25, 50, 80, 100, 125, 160, 200, 250, 300, 320, 360, 400, 500
- SHAFTING** S Corrosion resistant shafting

### SAMPLE ORDER: DLT-10M-A-B-25

Ex: Thruster, Size 10 Metric, Replaceable Cylinder w/Adjustable Air Cushions, Linear Ball Bushings, 25mm Stroke

## Accessories: (Order Separately) DLT-10M DLT-12M DLT-16M QTY/THRUSTER

### SHOCK/STOP ACCESSORIES

Universal Mounting Kit (Shock, Stop or Sensor)	OSAK-055	OSAK-057	OSAK-059	1, 2, 3 or 4
Urethane Bumper/Clamp Collar Kit	OSAK-056	OSAK-058	OSAK-060	1 or 2
Urethane Bumper/Clamp Collar Kit (-10M)	OSAK-065			1 or 2
Urethane Bumper/Clamp Collar Kit (-12M)		OSAK-066		1 or 2
Shock Absorber*	SHOK-028	SHOK-010	SHOK-010	1, 2, 3 or 4
Adjustable Hard Stop*	DLT-1023	DLT-1023	DLT-1023	1, 2, 3 or 4

### INDUCTIVE SENSOR ACCESSORIES\*

Inductive Sensor PNP Qk. Disconnect*	OISP-011	OISP-011	OISP-011	1 or 2
Inductive Sensor NPN Qk. Disconnect*	OISN-011	OISN-011	OISN-011	1 or 2
Quick. Disconnect 2M Cable Length †	CABL-010	CABL-010	CABL-010	1 or 2
Quick. Disconnect 5M Cable Length †	CABL-013	CABL-013	CABL-013	1 or 2

### MAGNETIC SENSOR ACCESSORIES\*\*

Magneto Resistive Sensor PNP Qk. Disc.†	OHSP-005	OHSP-005	OHSP-005	1 or 2
Magneto Resistive Sensor NPN Qk. Disc.†	OHSN-005	OHSN-005	OHSN-005	1 or 2
Quick. Disconnect 2M Cable Length †	CABL-010	CABL-010	CABL-010	1 or 2
Quick. Disconnect 5M Cable Length †	CABL-013	CABL-013	CABL-013	1 or 2

### PNEUMATIC ACCESSORIES

1/8 NPT Telescopic Airlines (up to 6")	OTAL-039	OTAL-039	OTAL-039	1, 2, 3 or 4
1/8 NPT Telescopic Airlines (up to 12")	OTAL-040	OTAL-040	OTAL-040	1, 2, 3 or 4
1/8 NPT Telescopic Airlines (up to 18")	OTAL-041	OTAL-041	OTAL-041	1, 2, 3 or 4
1/8 NPT Telescopic Airlines (up to 24")	OTAL-042	OTAL-042	OTAL-042	1, 2, 3 or 4
1/8 NPT Adjustable Flow Control	VLVF-004	VLVF-004	VLVF-004	1 or 2
G1/8 Telescopic Airlines (up to 160mm)	OTAL-045	OTAL-045	OTAL-045	1, 2, 3 or 4
G1/8 Telescopic Airlines (up to 300mm)	OTAL-046	OTAL-046	OTAL-046	1, 2, 3 or 4
G1/8 Telescopic Airlines (up to 450mm)	OTAL-047	OTAL-047	OTAL-047	1, 2, 3 or 4
G1/8 Telescopic Airlines (up to 600mm)	OTAL-048	OTAL-048	OTAL-048	1, 2, 3 or 4
G1/8 Adjustable Flow Control	VLVF-005	VLVF-005	VLVF-005	1 or 2

\*Requires Universal Mounting Kit †Sensor and cable sold separately \*\*Piston magnet standard

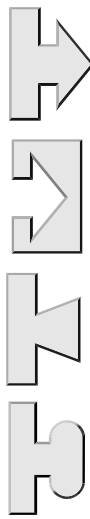
Please see back cover for DE-STA-CO Global Locations. [www.destaco.com](http://www.destaco.com)

[www.comoso.com](http://www.comoso.com)

DLT SERIES 4.60 DIRECTCONNECT™

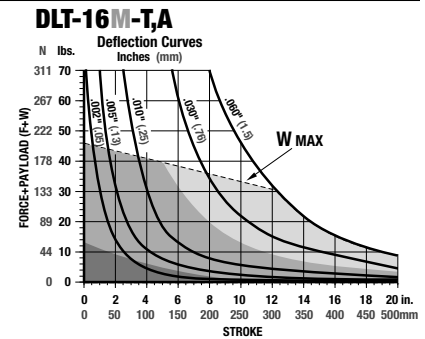
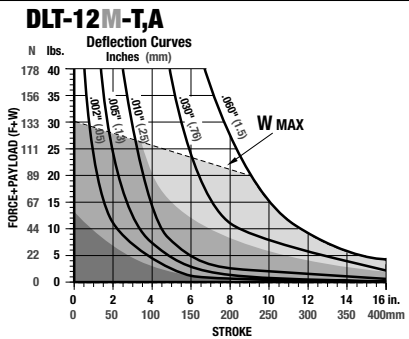
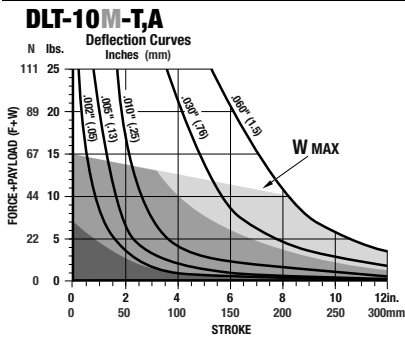


# LINEAR THRUSTER DLT -10M, 12M, 16M -T, A REPLACEABLE CYLINDER WITH OR W/O ADJ. AIR CUSHIONS

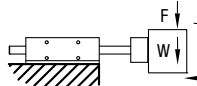


DLT SERIES  
4.61

DIRECTCONNECT™



**F**=Externally applied force (lbs. or N)  
**W**=Weight of payload (lbs. or N)  
**F+W**=Total deflection force (lbs. or N)



**Shock Absorbers and Flow Controls are recommended for nearly all applications**

Use **Double Shocks** in both directions    Use **Single Shock** in both directions    Use **Bumpers or Cushioned Cylinder**

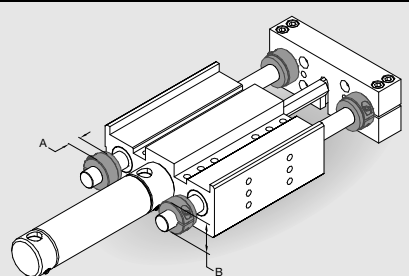
Shaded shock absorption ranges of horizontal payload (W) @ 80psi, flow controls fully open. For vertical applications do not exceed 1/2 of the recommended payload due to the additional acceleration effect of gravity.

Specifications	DLT-10	DLT-10M
Maximum Air Pressure.....	100 psi	6.9 bar
Thrust Force @ 80psi/5.5bar .	35 lbs.	173 N
Weight (Basic Unit -T, -A).....	2.12 lbs.	1.05 kg
Additional Weight per Stroke..	0.09 lbs./in.	1.2g/mm
Cylinder Bore Diameter .....	3/4"	20mm
Shaft Diameter .....	0.375"	9.5mm

Specifications	DLT-12	DLT-12M
Maximum Air Pressure.....	100 psi	6.9 bar
Thrust Force @ 80psi/5.5bar .	70 lbs.	270 N
Weight (Basic Unit -T, -A).....	3.42 lbs.	1.64 kg
Additional Weight per Stroke..	0.15 lbs./in.	2.9g/mm
Cylinder Bore Diameter .....	1-1/16"	25mm
Shaft Diameter .....	0.472"	12mm

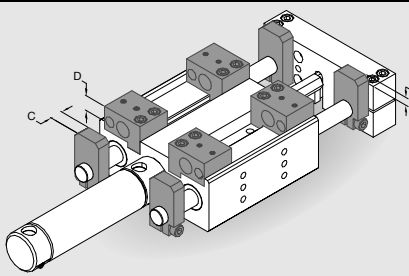
Specifications	DLT-16	DLT-16M
Maximum Air Pressure.....	100 psi	6.9 bar
Thrust Force @ 80psi/5.5bar .	70 lbs.	270 N
Weight (Basic Unit -T, -A).....	4.47 lbs.	2.11 kg
Additional Weight per Stroke..	0.23 lbs./in.	4.2g/mm
Cylinder Bore Diameter .....	1-1/16"	25mm
Shaft Diameter .....	0.630"	16mm

## Accessory Mounting Technical Data



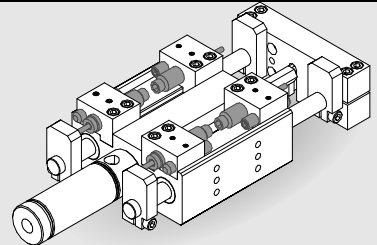
### Urethane Bumpers & Clamp Collars

- Urethane Bumpers for shock absorption and noise dampening
- Adjustable Clamp Collars for end of stroke position adjustment
- Kit contains (2) Collars and (2) Shock Pads for adjustment of travel in one direction



### Universal Mounting Kit

- Kit mounts (1) Shock Absorber and (1) Inductive Proximity Sensor or (1) Shock and (1) Adjustable Hard Stop
- Kit includes (1) Mounting Bracket, (1) Hardened Tool Steel Target and Hardware
- Target allows for unlimited stroke adjustment. Fine adjustment is achieved using Adjustable Hard Stop or Shock Absorber
- Mounting Bracket keys into body for secure positioning and excellent rigidity
- Four possible mounting positions

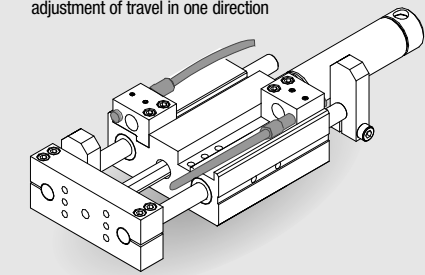


### Adjustable Hard Stops

- For precision (+/- .001") end point positioning
- Allows for end stop position adjustment independent of shock absorber hard stop
- Allen wrench adjustable

### Shock Absorbers

- Full stroking piston rod
- Built-in hard stop
- Allen wrench adjustable

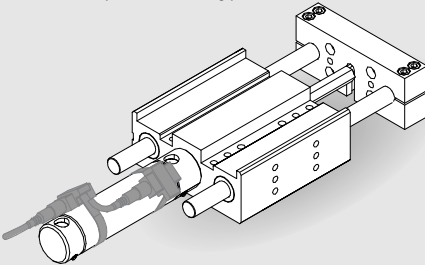


### Inductive Proximity Sensors

- 8mm diameter
- Threaded Quick Disconnect with built-in LED output
- PNP and NPN available

### Quick Disconnect Cable

- Threaded coupling with knurled head for secure electrical connections
- 2 meter cable length
- 5 meter cable length

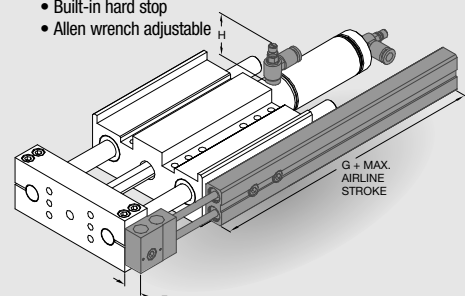


### Magneto Resistive Sensors

- Quick Disconnect with built-in LED output
- Strap-on Mounting Kit included
- PNP and NPN available

### Quick Disconnect Cable

- Threaded coupling with knurled head for secure electrical connections
- 2 meter cable length
- 5 meter cable length



### Telescoping Airlines

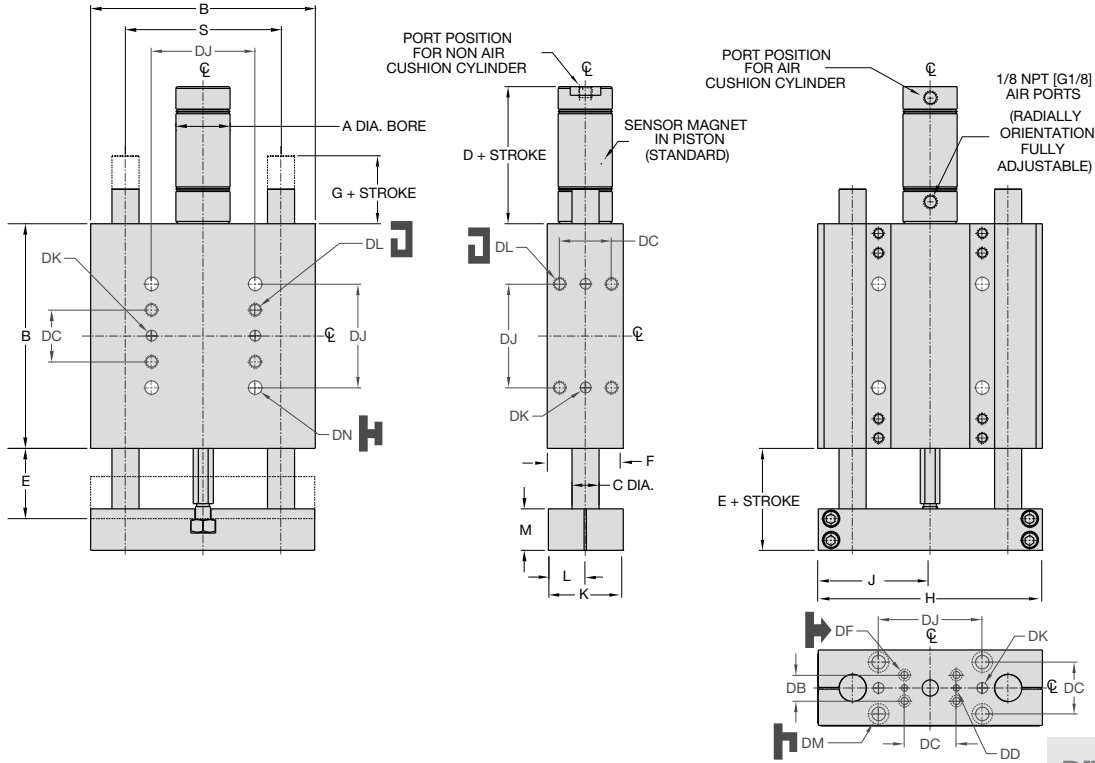
- Eliminate flexing air lines
- Self aligning air tube design extends useful seal life
- Modular stackable design. Up to (4) modules can be stacked
- 1/8 NPT or G1/8 pipe threads
- (2) user air ports per module

### Flow Controls

- Thumb screw adjust with locking nut for adjusting cylinder speed
- 1/8 NPT or G1/8 pipe threads

	A	B	C	D	E	F	G	H
DLT-10	.343"	.87	.375	.480	.320	.577	3.60	1.12
DLT-12	.375"	.95	.375	.450	.230	.577	3.60	1.12
DLT-16	.437"	1.31	.437	.450	.340	.577	3.60	1.12
DLT-10M	8.7mm	22.1	9.5	12.2	8.1	14.7	91.4	28.4
DLT-12M	9.5mm	23.9	9.5	11.4	5.8	14.7	91.4	28.4
DLT-16M	11.1mm	33.3	11.1	11.4	8.6	14.7	91.4	28.4

# LINEAR THRUSTER DLT -20, 25 -T, A REPLACEABLE CYLINDER WITH OR W/O ADJ. AIR CUSHIONS



UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

	Imperial in.	Metric [mm]
Dimensions are symmetrical about centerline	0.00 = ±.01	[0.] = [±.25]
Third Angle Projection	0.000 = ±.005	[0.0] = [±.13]
All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or [±.013mm]	0.0000 = ±.0005	[0.00] = [±.13]
Metric Threads Course Pitch		

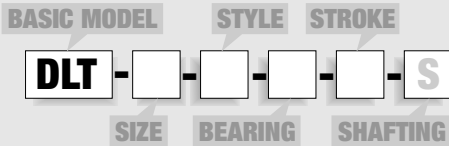
## DIRECTCONNECT

### DIMENSIONS STANDARD MOUNTING PATTERN FOR ALL SIZES

	Imperial (inches)
DB	.750
DC	1.500
DD	.1880 x .25 DP
DF	Clearance for #10
DJ	3.000
DK	.3130 x .37 DP
DL	3/8 -16 x .56 DP
DM	Clearance for 3/8
DN	Clearance for 3/8

MODEL #	BORE DIA.		BODY SIZE		SHAFT DIA.		BASIC UNIT DIMENSIONS								
	A	B	C	D	E	F	G	H	J	K	L	M	S		
DLT-20	1 1/2	6.50	.787	3.00	1.960	2.20	.960	6.480	3.230	2.180	1.080	1.210	4.500		
DLT-25	1 1/2	7.50	.984	3.00	2.170	2.20	1.170	7.480	3.730	2.180	1.080	1.420	5.250		

## How to Order: Basic Unit



SIZE **20, 25**

Oversized guide shafts available. Please consult factory.

STYLE **T** Replaceable cylinder w/o adjustable air cushions  
**A** Replaceable cylinder with adjustable air cushions

BEARING **B** Linear ball bearings  
**C** Composite bushings

Custom strokes available. Please consult factory.

STROKE (inches)  
DLT-20 **1-24** @ 1" increments  
DLT-25 **1-26** @ 1" increments

SHAFTING **S** Corrosion resistant shafting

### SAMPLE ORDER: DLT-20-A-B-8

Ex: Thruster, Size 20, Replaceable Cylinder w/Adjustable Air Cushions, Linear Ball Bushings, 8 inch Stroke

## Accessories: (Order Separately)

### SHOCK/STOP ACCESSORIES

	DLT-20	DLT-25	QTY/THRUSTER
Universal Mounting Kit			
(Shock, Stop or Sensor)	<b>OSAK-061</b>	<b>OSAK-063</b>	<b>1,2,3 or 4</b>
Urethane Bumper/Clamp Collar Kit	<b>OSAK-062</b>	<b>OSAK-064</b>	<b>1 or 2</b>
Shock Absorber (adjustable dampening)*	<b>SHOK-029</b>	<b>SHOK-029</b>	<b>1,2,3 or 4</b>
Adjustable Hard Stop*	<b>DLT-1023</b>	<b>DLT-1023</b>	<b>1,2,3 or 4</b>

### INDUCTIVE SENSOR ACCESSORIES<sup>†</sup>

	DLT-20	DLT-25	QTY/THRUSTER
Inductive Sensor PNP Qk. Disconnect*	<b>OISP-011</b>	<b>OISP-011</b>	<b>1 or 2</b>
Inductive Sensor NPN Qk. Disconnect*	<b>OISN-011</b>	<b>OISN-011</b>	<b>1 or 2</b>
Quick. Disconnect 2M Cable Length <sup>†</sup>	<b>CABL-010</b>	<b>CABL-010</b>	<b>1 or 2</b>
Quick. Disconnect 5M Cable Length <sup>†</sup>	<b>CABL-013</b>	<b>CABL-013</b>	<b>1 or 2</b>

### MAGNETIC SENSOR ACCESSORIES<sup>†</sup> \*\*

	DLT-20	DLT-25	QTY/THRUSTER
Magneto Resistive Sensor PNP Qk. Disc. <sup>†</sup>	<b>OHSP-005</b>	<b>OHSP-005</b>	<b>1 or 2</b>
Magneto Resistive Sensor NPN Qk. Disc. <sup>†</sup>	<b>OHSN-005</b>	<b>OHSN-005</b>	<b>1 or 2</b>
Quick. Disconnect 2M Cable Length <sup>†</sup>	<b>CABL-010</b>	<b>CABL-010</b>	<b>1 or 2</b>
Quick. Disconnect 5M Cable Length <sup>†</sup>	<b>CABL-013</b>	<b>CABL-013</b>	<b>1 or 2</b>

### PNEUMATIC ACCESSORIES

	DLT-20	DLT-25	QTY/THRUSTER
1/8 NPT Telescopic Airlines (up to 6")	<b>OTAL-039</b>	<b>OTAL-039</b>	<b>1,2,3 or 4</b>
1/8 NPT Telescopic Airlines (up to 12")	<b>OTAL-040</b>	<b>OTAL-040</b>	<b>1,2,3 or 4</b>
1/8 NPT Telescopic Airlines (up to 18")	<b>OTAL-041</b>	<b>OTAL-041</b>	<b>1,2,3 or 4</b>
1/8 NPT Telescopic Airlines (up to 24")	<b>OTAL-042</b>	<b>OTAL-042</b>	<b>1,2,3 or 4</b>
1/8 NPT Adjustable Flow Control	<b>VLVF-004</b>	<b>VLVF-004</b>	<b>1 or 2</b>

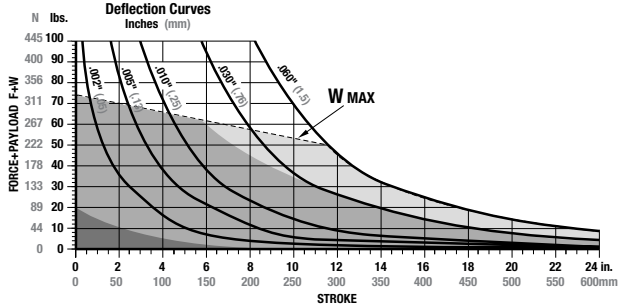
\*Requires Universal Mounting Kit †Sensor and cable sold separately \*\*Piston magnet standard



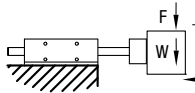
# LINEAR THRUSTER DLT -20, 25 -T, A REPLACEABLE CYLINDER WITH OR W/O ADJ. AIR CUSHIONS



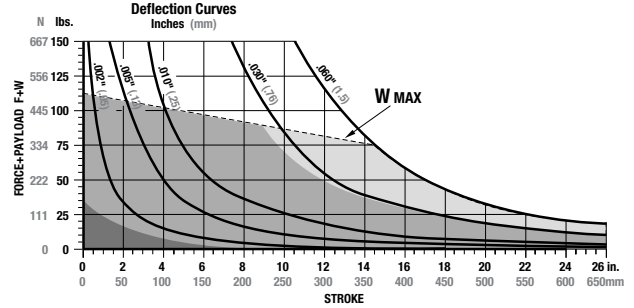
## DLT-20-T, A, U



**F**=Externally applied force (lbs. or N)  
**W**=Weight of payload (lbs. or N)  
**F+W**=Total deflection force (lbs. or N)



## DLT-25-T, A, U



Shock Absorbers and Flow Controls are recommended for nearly all applications

Use **Double Shocks** in both directions    Use **Single Shock** in both directions    Use **Bumpers or Cushioned Cylinder**

Shaded shock absorption ranges of horizontal payload (W) @ 80psi, flow controls fully open. For vertical applications do not exceed 1/2 of the recommended payload due to the additional acceleration effect of gravity.

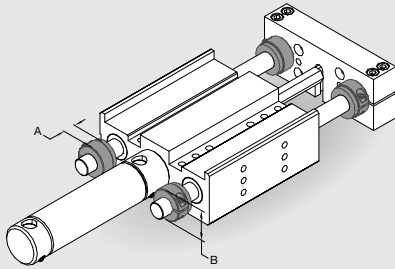
### Specifications

	DLT-20
Maximum Air Pressure .....	100 psi
Thrust Force @ 80psi/5.5bar .....	140 lbs.
Weight (Basic Unit <b>-T, -A</b> ) .....	12.7 lbs.
Additional Weight per Stroke .....	0.38 lbs./in.
Cylinder Bore Diameter .....	1-1/2"
Shaft Diameter .....	0.787"

### Specifications

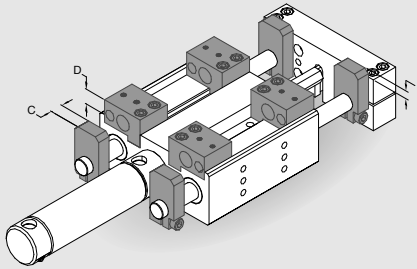
	DLT-25
Maximum Air Pressure .....	100 psi
Thrust Force @ 80psi/5.5bar .....	140 lbs.
Weight (Basic Unit <b>-T, -A</b> ) .....	17.6 lbs.
Additional Weight per Stroke .....	0.53 lbs./in.
Cylinder Bore Diameter .....	1-1/2"
Shaft Diameter .....	0.984"

## Accessory Mounting Technical Data



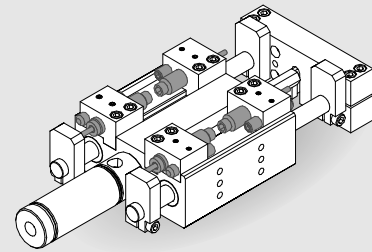
### Urethane Bumpers & Clamp Collars

- Urethane Bumpers for shock absorption and noise dampening
- Adjustable Clamp Collars for end of stroke position adjustment
- Kit contains (2) Collars and (2) Shock Pads for adjustment of travel in one direction



### Universal Mounting Kit

- Kit mounts (1) Shock Absorber and (1) Inductive Proximity Sensor or (1) Shock and (1) Adjustable Hard Stop
- Kit includes Mounting Bracket, Hardened Tool Steel Target and Hardware
- Target allows for unlimited stroke adjustment. Fine adjustment is achieved using Adjustable Hard Stop or Shock Absorber
- Mounting Bracket keys into body for secure positioning and excellent rigidity
- Four possible mounting positions

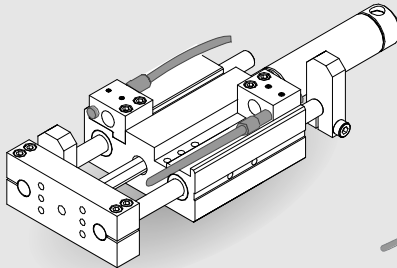


### Adjustable Hard Stops

- For precision (+/- .001") end point positioning
- Allows for end stop position adjustment independent of shock absorber hard stop
- Allen wrench adjustable

### Shock Absorbers

- Full stroking piston rod
- Built-in hard stop
- Position adjustable
- Adjustable dampening

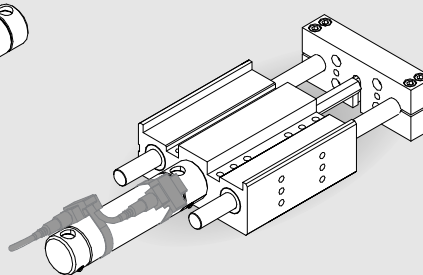


### Inductive Proximity Sensors

- 8mm diameter
- Threaded Quick Disconnect with built-in LED output
- PNP and NPN available

### Quick Disconnect Cable

- Threaded coupling with knurled head for secure electrical connections
- 2 meter cable length
- 5 meter cable length

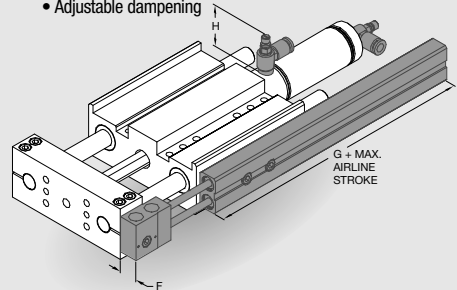


### Magneto Resistive Sensors

- Quick Disconnect with built-in LED output
- Strap-on Mounting Kit included
- PNP and NPN available

### Straight Quick Disconnect Cable

- Threaded coupling with knurled head for secure electrical connections
- 2 meter cable length
- 5 meter cable length



### Telescoping Airlines

- Eliminate flexing air lines
- Self aligning air tube design extends useful seal life
- Modular stackable design. Up to (4) modules can be stacked
- 1/8 NPT or G1/8 pipe threads
- (2) user air ports per module

### Flow Controls

- Thumb screw adjust with locking nut for adjusting cylinder speed
- 1/8 NPT or G1/8 pipe threads

	A	B	C	E	F	G	H
DLT-20	.500"	1.50	.500	.67	.577	3.60	1.12
DLT-25	.500"	1.75	.500	.67	.577	3.60	1.12

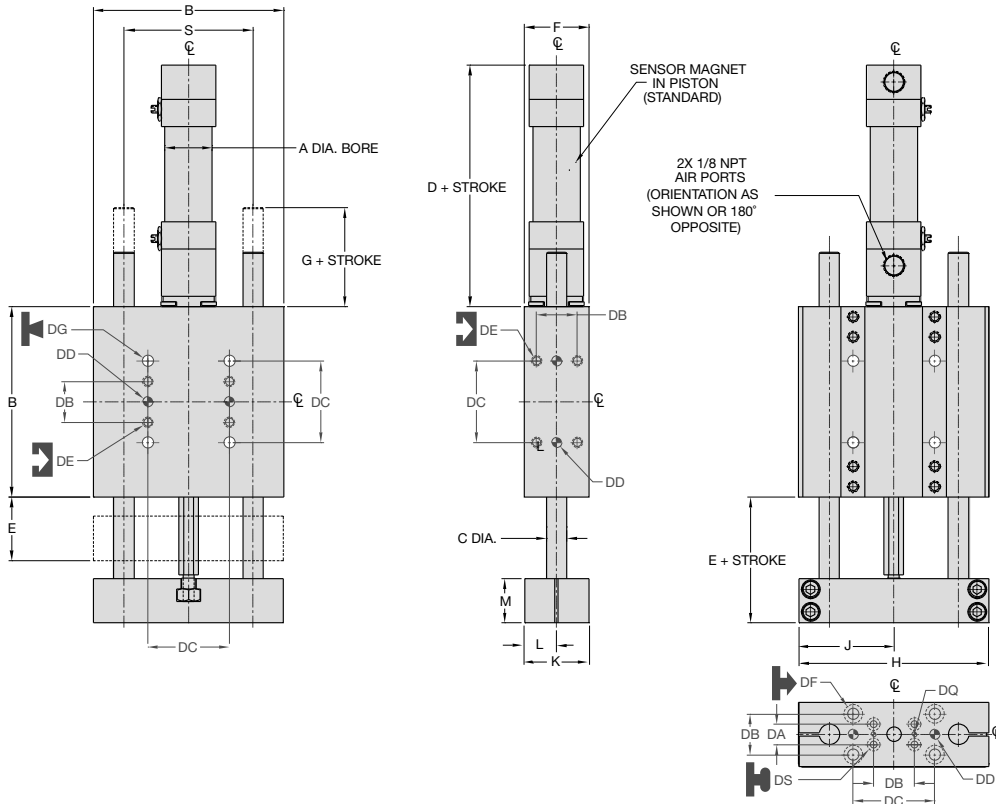
DLT SERIES

4.63

DIRECTCONNECT™



# LINEAR THRUSTER DLT -10M, 12M, 16M -N, U REPAIRABLE (NFPA STYLE) CYLINDER w/FIXED AIR CUSHIONS



UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

Dimensions are symmetrical about centerline	Third Angle Projection	All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or [±.013mm]	Metric Threads Course Pitch	<b>Imperial in.</b> 0.00 = ±.01 0.000 = ±.005 0.0000 = ±.0005	<b>Metric [mm]</b> [0.] = [±.25] [0.0] = [±.13] [0.00] = [±.013]
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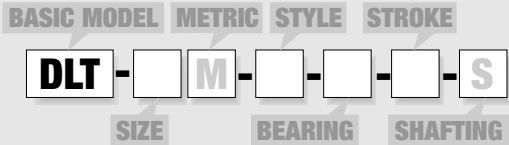
MODEL #	BORE DIA.		BODY SIZE		SHAFT DIA.		BASIC UNIT DIMENSIONS									
	A	B	C	D	E	F	G	H	J	K	L	M	S			
DLT-10	3/4	3.50	.375	3.44	1.313	1.19	.82	3.490	1.740	1.178	.584	.813	2.375			
DLT-12	1 1/8	4.00	.472	3.44	1.313	1.63	.82	3.985	1.985	1.615	.802	.813	2.750			
DLT-16	1 1/8	4.75	.630	3.44	1.375	1.63	.76	4.735	2.360	1.615	.802	.813	3.250			

**DIRECTCONNECT**

**DIMENSIONS**  
STANDARD MOUNTING PATTERN FOR ALL SIZES

	Imperial (inches)
DA	.375
DB	.750
DC	1.500
DD	.1880 x .25 DP
DE	#10-32 x .34 DP
DF	Clearance for #10
DG	Clearance for #10
DQ	.0940 x .078 DP
DS	Clr & C'bore for #4

## How to Order: Basic Unit



SIZE **10, 12, 16**

STYLE **N** Repairable NFPA cylinder w/ fixed air cushions (Not available in Metric)  
**U** Non-powered unit (Without cylinder. NFPA cylinder mounting kits available)

BEARING **B** Linear ball bearings  
**C** Composite bushings

Oversized guide shafts available. Please consult factory.

STROKE (inches)  
DLT-10 **1-12** @ 1" increments  
DLT-12 **1-16** @ 1" increments  
DLT-16 **1-20** @ 1" increments

Custom strokes available. Please consult factory.

STROKE (mm)  
DLT-10M **25, 50, 80, 100, 125, 160, 200, 250, 300**  
DLT-12M **25, 50, 80, 100, 125, 160, 200, 250, 300, 320, 360, 400**  
DLT-16M **25, 50, 80, 100, 125, 160, 200, 250, 300, 320, 360, 400, 500**

SHAFTING **S** Corrosion resistant shafting

### SAMPLE ORDER: DLT-10-N-B-6

Ex: Thruster, Size 10, Repairable Cylinder w/Fixed Air Cushions, Linear Ball Bushings, 6 Inch Stroke

## Accessories: (Order Separately) DLT-10 DLT-12 DLT-16 QTY/THRUSTER

### SHOCK/STOP ACCESSORIES

Universal Mounting Kit (Shock, Stop or Sensor)	<b>OSAK-055</b>	<b>OSAK-057</b>	<b>OSAK-059</b>	<b>1, 2, 3 or 4</b>
Urethane Bumper/Clamp Collar Kit	<b>OSAK-056</b>	<b>OSAK-058</b>	<b>OSAK-060</b>	<b>1 or 2</b>
Urethane Bumper/Clamp Collar Kit (-10M)	<b>OSAK-065</b>			<b>1 or 2</b>
Urethane Bumper/Clamp Collar Kit (-12M)		<b>OSAK-066</b>		<b>1 or 2</b>
Shock Absorber*	<b>SHOK-028</b>	<b>SHOK-010</b>	<b>SHOK-010</b>	<b>1, 2, 3 or 4</b>
Adjustable Hard Stop*	<b>DLT-1023</b>	<b>DLT-1023</b>	<b>DLT-1023</b>	<b>1, 2, 3 or 4</b>

### INDUCTIVE SENSOR ACCESSORIES:

Inductive Sensor PNP Qk. Disconnect*	<b>OISP-011</b>	<b>OISP-011</b>	<b>OISP-011</b>	<b>1 or 2</b>
Inductive Sensor NPN Qk. Disconnect*	<b>OISN-011</b>	<b>OISN-011</b>	<b>OISN-011</b>	<b>1 or 2</b>
Quick. Disconnect 2M Cable Length †	<b>CABL-010</b>	<b>CABL-010</b>	<b>CABL-010</b>	<b>1 or 2</b>
Quick. Disconnect 5M Cable Length †	<b>CABL-013</b>	<b>CABL-013</b>	<b>CABL-013</b>	<b>1 or 2</b>

### MAGNETIC SENSOR ACCESSORIES† \*\*

Magneto Resistive Sensor PNP Qk. Disc.†	<b>OHSP-005</b>	<b>OHSP-005</b>	<b>OHSP-005</b>	<b>1 or 2</b>
Magneto Resistive Sensor NPN Qk. Disc.†	<b>OHSN-005</b>	<b>OHSN-005</b>	<b>OHSN-005</b>	<b>1 or 2</b>
Quick. Disconnect 2M Cable Length †	<b>CABL-010</b>	<b>CABL-010</b>	<b>CABL-010</b>	<b>1 or 2</b>
Quick. Disconnect 5M Cable Length †	<b>CABL-013</b>	<b>CABL-013</b>	<b>CABL-013</b>	<b>1 or 2</b>

### PNEUMATIC ACCESSORIES

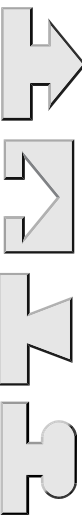
NFPA Cylinder Mounting Kit (-U only)	<b>ODLT-001</b>	<b>ODLT-002</b>	<b>ODLT-002</b>	<b>1</b>
1/8 NPT Telescopic Airlines (up to 6")	<b>OTAL-039</b>	<b>OTAL-039</b>	<b>OTAL-039</b>	<b>1, 2, 3 or 4</b>
1/8 NPT Telescopic Airlines (up to 12")	<b>OTAL-040</b>	<b>OTAL-040</b>	<b>OTAL-040</b>	<b>1, 2, 3 or 4</b>
1/8 NPT Telescopic Airlines (up to 18")	<b>OTAL-041</b>	<b>OTAL-041</b>	<b>OTAL-041</b>	<b>1, 2, 3 or 4</b>
1/8 NPT Telescopic Airlines (up to 24")	<b>OTAL-042</b>	<b>OTAL-042</b>	<b>OTAL-042</b>	<b>1, 2, 3 or 4</b>
1/8 NPT Adjustable Flow Control	<b>VLVF-004</b>	<b>VLVF-004</b>	<b>VLVF-004</b>	<b>1 or 2</b>

\*Requires Universal Mounting Kit †Sensor and cable sold separately \*\*Piston magnet standard

DLT SERIES 4.64 DIRECTCONNECT



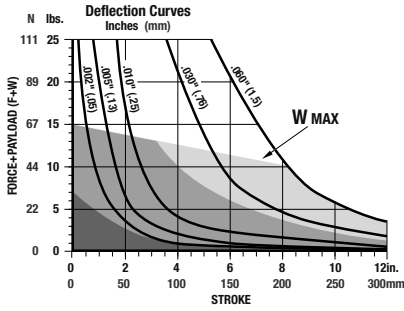
# LINEAR THRUSTER DLT-10, 12, 16 -N, U REPAIRABLE (NFPA STYLE) CYLINDER w/FIXED AIR CUSHIONS



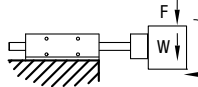
DLT SERIES  
4.65

DIRECTCONNECT™

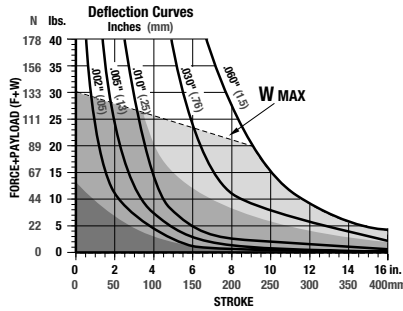
## DLT-10-N, U



**F**=Externally applied force (lbs. or N)  
**W**=Weight of payload (lbs. or N)  
**F+W**=Total deflection force (lbs. or N)



## DLT-12-N, U



**Shock Absorbers and Flow Controls are recommended for nearly all applications**

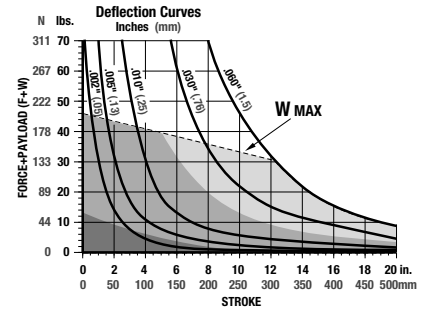
Use **Double Shocks** in both directions

Use **Single Shock** in both directions

Use **Bumpers or Cushioned Cylinder**

Shaded shock absorption ranges of horizontal payload (W) @ 80psi, flow controls fully open. For vertical applications do not exceed 1/2 of the recommended payload due to the additional acceleration effect of gravity.

## DLT-16-N, U

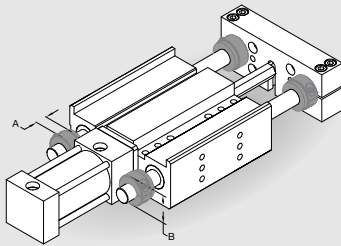


Specifications	DLT-10
Maximum Air Pressure	100 psi
Thrust Force @ 80psi/5.5bar	35 lbs.
Weight (Basic Unit -N)	2.2 lbs.
Additional Weight per Stroke	00.08 lbs./in.
Cylinder Bore Diameter	3/4"
Shaft Diameter	0.375"

Specifications	DLT-12
Maximum Air Pressure	100 psi
Thrust Force @ 80psi/5.5bar	79 lbs.
Weight (Basic Unit -N)	3.5 lbs.
Additional Weight per Stroke	0.16 lbs./in.
Cylinder Bore Diameter	1-1/8"
Shaft Diameter	0.472"

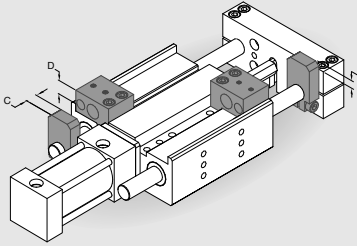
Specifications	DLT-16
Maximum Air Pressure	100 psi
Thrust Force @ 80psi/5.5bar	79 lbs.
Weight (Basic Unit -N)	4.5 lbs.
Additional Weight per Stroke	0.24 lbs./in.
Cylinder Bore Diameter	1-1/8"
Shaft Diameter	0.630"

## Accessory Mounting Technical Data



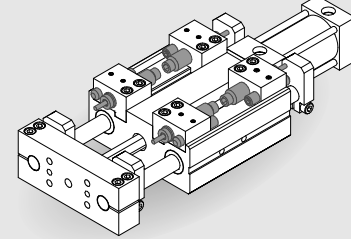
### Urethane Bumpers & Clamp Collars

- Urethane Bumpers for shock absorption and noise dampening
- Adjustable Clamp Collars for end of stroke position adjustment
- Kit contains (2) Collars and (2) Shock Pads for adjustment of travel in one direction



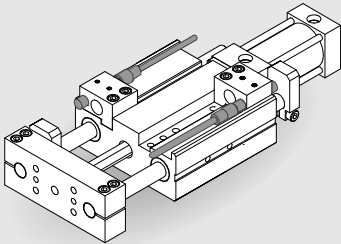
### Universal Mounting Kit

- Kit mounts (1) Shock Absorber and (1) Inductive Proximity Sensor or (1) Shock and (1) Adjustable Hard Stop
- Kit includes (1) Mounting Bracket, (1) Hardened Tool Steel Target and Hardware
- Target allows for unlimited stroke adjustment. Fine adjustment is achieved using Adjustable Hard Stop or Shock Absorber
- Mounting Bracket keys into body for secure positioning and excellent rigidity
- Four possible mounting positions



### Adjustable Hard Stops

- For precision (+/- .001") end point positioning
  - Allows for end stop position adjustment independent of shock absorber hard stop
  - Allen wrench adjustable
- ### Shock Absorbers
- Full stroking piston rod
  - Built-in hard stop
  - Allen wrench adjustable

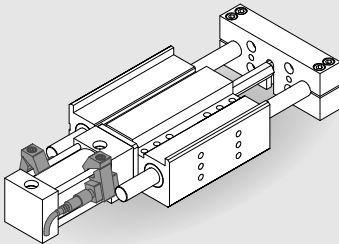
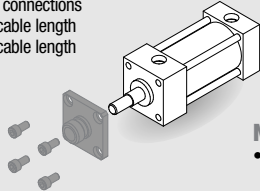


### Inductive Proximity Sensors

- 8mm diameter
- Threaded Quick Disconnect with built-in LED output
- PNP and NPN available

### Quick Disconnect Cable

- Threaded coupling with knurled head for secure electrical connections
- 2 meter cable length
- 5 meter cable length

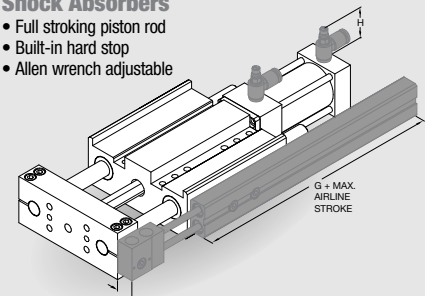


### Magneto Resistive Sensors

- Quick Disconnect with built-in LED output
- Clamp-on Mounting Kit included
- PNP and NPN available

### Straight Quick Disconnect Cable

- Threaded coupling with knurled head for secure electrical connections
- 2 meter cable length
- 5 meter cable length



### Telescoping Airlines

- Eliminate flexing air lines
- Self aligning air tube design extends useful seal life
- Modular stackable design. Up to (4) modules can be stacked.
- 1/8 NPT pipe threads
- (2) user air ports per module

### Flow Controls

- Thumb screw adjust with locking nut for adjusting cylinder speed
- 1/8 NPT pipe threads

	A	B	C	D	E	F	G	H
DLT-10	.343"	.87	.375	.480	.320	.577	3.60	1.12
DLT-12	.375"	.95	.375	.450	.230	.577	3.60	1.12
DLT-16	.437"	1.31	.437	.450	.340	.577	3.60	1.12
DLT-10M	8.7mm	22.1	9.5	12.2	8.1	14.7	91.4	28.4
DLT-12M	9.5mm	23.9	9.5	11.4	5.8	14.7	91.4	28.4
DLT-16M	11.1mm	33.3	11.1	11.4	8.6	14.7	91.4	28.4

### NFPA Cylinder Mounting Kit

- Used to mount standard face mounted NFPA cylinders to non-powered units (-U)

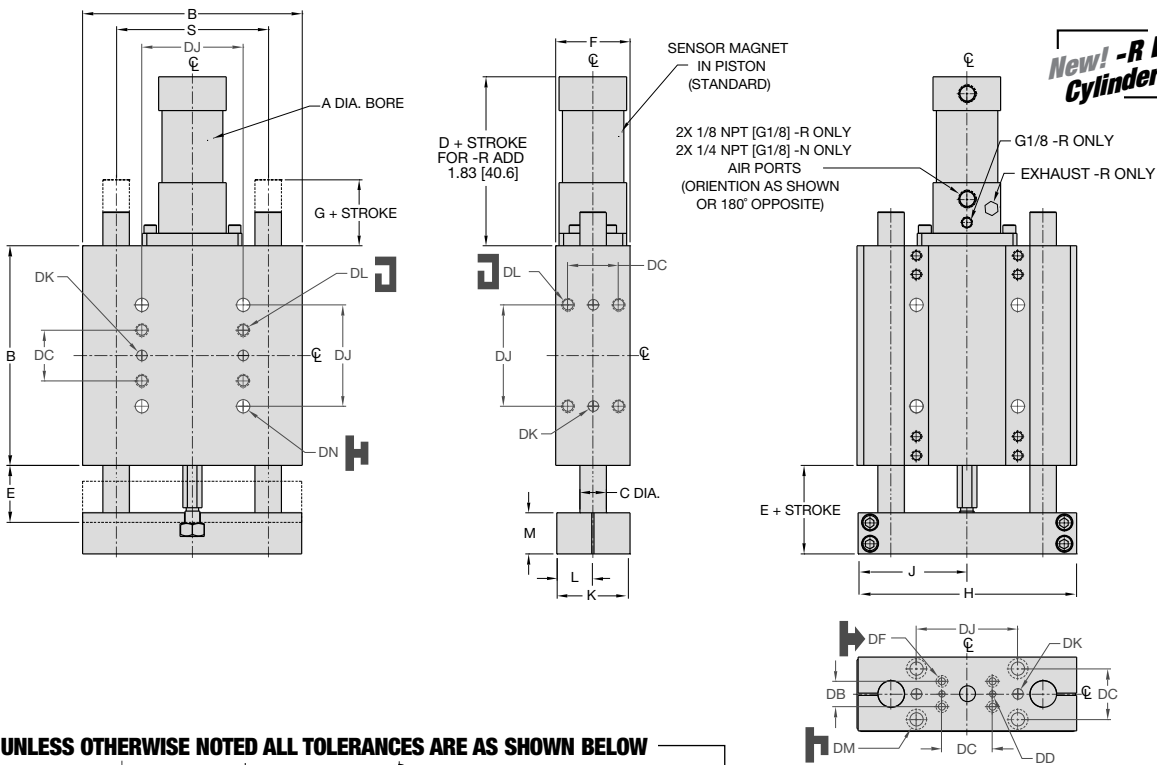
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# LINEAR THRUSTER DLT -20M, 25M -N, R, U REPAIRABLE (NFPA/VDMA) CYLINDER W/ADJ. AIR CUSHIONS



**New! -R Locking  
Cylinder Style**

**UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW**

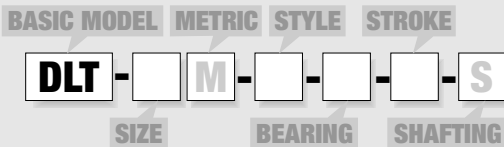
				<b>Imperial in.</b>	<b>Metric [mm]</b>
Dimensions are symmetrical about centerline	Third Angle Projection	All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or [±.013mm]	Metric Threads Course Pitch	0.00 ± .01 0.000 ± .005 0.0000 ± .0005	[0.1 ± .25] [0.0] ± [±.13] [0.00] ± [±.013]

### DIRECTCONNECT DIMENSIONS STANDARD MOUNTING PATTERN FOR ALL SIZES

	Imperial (inches)	Metric (mm)
DB	.750	19.1
DC	1.500	38.1
DD	.1880 x .25DP	5mm H7 x 6DP
DF	Clearance for #10	Clearance for M5
DJ	3.000	76.2
DK	.3130 x .37 DP	8mm H7 x 9.4 DP
DL	3/8 -16 x .56 DP	M10 x 14.2 DP
DM	Clearance for 3/8	Clearance for M10
DN	Clearance for 3/8	Clearance for M10

MODEL #	BORE DIA. -N		BORE DIA. -R		BODY SIZE		SHAFT DIA.		BASIC UNIT DIMENSIONS					
	A	B	C	D	E	F	G	H	J	K	L	M	S	
DLT-20	1 1/2	32mm	6.50	.787	4.01	1.960	2.20	.960	6.480	3.230	2.180	1.210	4.500	
DLT-25	1 1/2	32mm	7.50	.984	4.01	2.170	2.20	1.170	7.480	3.730	2.180	1.080	5.250	
DLT-20M	32	32	165.1	20	107.7	49.8	55.9	24.4	164.6	82.0	55.4	27.4	30.7	114.30
DLT-25M	32	32	190.5	25	107.7	55.1	55.9	29.7	190.0	94.7	55.4	27.4	36.1	133.35

## How to Order: Basic Unit



**SIZE 20, 25**

Oversized guide shafts available. Please consult factory.

**METRIC M**

**STYLE N** Repairable NFPA/VDMA cylinder w/adjustable air cushions  
**R** Repairable locking VDMA cylinder w/adjustable air cushions  
**U** Non-powered unit (Without cylinder. NFPA/VDMA cylinder mounting kits available)

**BEARING B** Linear ball bearings  
**C** Composite bushings

**STROKE (inches)**  
 DLT-20 **1-24** @ 1" increments  
 DLT-25 **1-26** @ 1" increments

Custom strokes available. Please consult factory.

**STROKE (mm)**  
 DLT-20M **25, 50, 80, 100, 125, 160, 200, 250, 300, 320, 360, 400, 500**  
 DLT-25M **25, 50, 80, 100, 125, 160, 200, 250, 300, 320, 360, 400, 500**

**SHAFTING S** Corrosion resistant shafting

### SAMPLE ORDER: DLT-20-N-B-12

Ex: Thruster, Size 20, Repairable NFPA Cylinder w/Adjustable Air Cushions, Linear Ball Bushings, 12 Inch Stroke

## Accessories: (Order Separately)

### SHOCK/STOP ACCESSORIES

	DLT-20M	DLT-25M	QTY/THRUSTER
Universal Mounting Kit (Shock, Stop or Sensor)	<b>OSAK-061</b>	<b>OSAK-063</b>	<b>1, 2, 3 or 4</b>
Urethane Bumper/Clamp Collar Kit	<b>OSAK-062</b>	<b>OSAK-064</b>	<b>1 or 2</b>
Shock Absorber (adjustable dampening)*	<b>SHOK-029</b>	<b>SHOK-029</b>	<b>1, 2, 3 or 4</b>
Adjustable Hard Stop*	<b>DLT-1023</b>	<b>DLT-1023</b>	<b>1, 2, 3 or 4</b>

### INDUCTIVE SENSOR ACCESSORIES:

	DLT-20M	DLT-25M	QTY/THRUSTER
Inductive Sensor PNP Qk. Disconnect*	<b>OISP-011</b>	<b>OISP-011</b>	<b>1 or 2</b>
Inductive Sensor NPN Qk. Disconnect*	<b>OISN-011</b>	<b>OISN-011</b>	<b>1 or 2</b>
Quick. Disconnect 2M Cable Length †	<b>CABL-010</b>	<b>CABL-010</b>	<b>1 or 2</b>
Quick. Disconnect 5M Cable Length †	<b>CABL-013</b>	<b>CABL-013</b>	<b>1 or 2</b>
Cable Extension Cord 1M Length	<b>CABL-015</b>	<b>CABL-015</b>	<b>1 or 2</b>
Cable Extension Cord 2M Length	<b>CABL-016</b>	<b>CABL-016</b>	<b>1 or 2</b>

### MAGNETIC SENSOR ACCESSORIES: \*\*

	DLT-20M	DLT-25M	QTY/THRUSTER
Magneto Resistive Sensor PNP Qk. Disc.†	<b>OHSP-020</b>	<b>OHSP-020</b>	<b>1 or 2</b>
Magneto Resistive Sensor NPN Qk. Disc.†	<b>OHSN-020</b>	<b>OHSN-020</b>	<b>1 or 2</b>
Quick. Disconnect 2M Cable Length †	<b>CABL-010</b>	<b>CABL-010</b>	<b>1 or 2</b>
Quick. Disconnect 5M Cable Length †	<b>CABL-013</b>	<b>CABL-013</b>	<b>1 or 2</b>
Cable Extension Cord 1M Length	<b>CABL-015</b>	<b>CABL-015</b>	<b>1 or 2</b>
Cable Extension Cord 2M Length	<b>CABL-016</b>	<b>CABL-016</b>	<b>1 or 2</b>

### PNEUMATIC ACCESSORIES

	DLT-20M	DLT-25M	QTY/THRUSTER
NFPA Cylinder Mounting Kit (-U only)	<b>ODLT-003</b>	<b>ODLT-003</b>	<b>1</b>
1/8 NPT Telescopic Airlines (up to 6")	<b>OTAL-039</b>	<b>OTAL-039</b>	<b>1, 2, 3 or 4</b>
1/8 NPT Telescopic Airlines (up to 12")	<b>OTAL-040</b>	<b>OTAL-040</b>	<b>1, 2, 3 or 4</b>
1/8 NPT Telescopic Airlines (up to 18")	<b>OTAL-041</b>	<b>OTAL-041</b>	<b>1, 2, 3 or 4</b>
1/8 NPT Telescopic Airlines (up to 24")	<b>OTAL-042</b>	<b>OTAL-042</b>	<b>1, 2, 3 or 4</b>
1/4 NPT Adjustable Flow Control	<b>VLVF-006</b>	<b>VLVF-006</b>	<b>1 or 2</b>
VDMA Cylinder Mounting Kit (-U Metric only)	<b>ODLT-004</b>	<b>ODLT-004</b>	<b>1</b>
G1/8 Telescopic Airlines (up to 160mm)	<b>OTAL-045</b>	<b>OTAL-045</b>	<b>1, 2, 3 or 4</b>
G1/8 Telescopic Airlines (up to 300mm)	<b>OTAL-046</b>	<b>OTAL-046</b>	<b>1, 2, 3 or 4</b>
G1/8 Telescopic Airlines (up to 450mm)	<b>OTAL-047</b>	<b>OTAL-047</b>	<b>1, 2, 3 or 4</b>
G1/8 Telescopic Airlines (up to 600mm)	<b>OTAL-048</b>	<b>OTAL-048</b>	<b>1, 2, 3 or 4</b>
G1/8 Adjustable Flow Control	<b>VLVF-005</b>	<b>VLVF-005</b>	<b>1 or 2</b>
1/8 NPT Adjustable Flow Control	<b>VLVF-004</b>	<b>VLVF-004</b>	<b>1 or 2</b>
G1/8 Male to 1/8 NPT Adapter	<b>PLFT-025</b>	<b>PLFT-025</b>	<b>1 or 2</b>

\*Requires Universal Mounting Kit †Sensor and cable sold separately. \*\*Piston magnet standard

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[www.comoso.com](http://www.comoso.com)

DLT SERIES

4.66

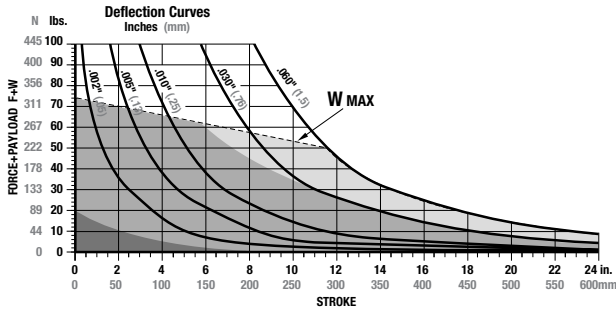
DIRECTCONNECT™



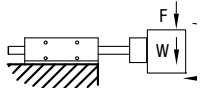
# LINEAR THRUSTER DLT -20M, 25M -N, R, U REPAIRABLE (NFPA/VDMA) CYLINDER W/ADJ. AIR CUSHIONS



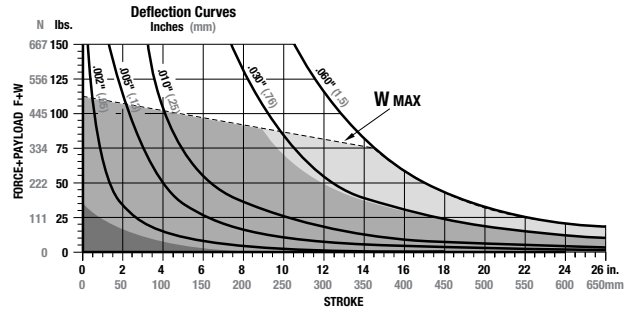
## DLT-20M-N, R, U



**F**—Externally applied force (lbs. or N)  
**W**—Weight of payload (lbs. or N)  
**F+W**—Total deflection force (lbs. or N)



## DLT-25M-N, R, U



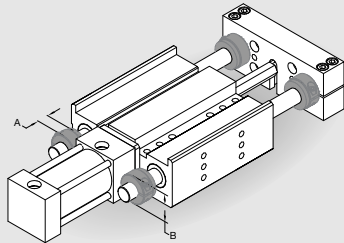
Shock Absorbers and Flow Controls are recommended for nearly all applications

Use **Double Shocks** in both directions    Use **Single Shock** in both directions    Use **Bumpers or Cushioned Cylinder**  
 Shaded shock absorption ranges of horizontal payload (W) @ 80psi, flow controls fully open. For vertical applications do not exceed 1/2 of the recommended payload due to the additional acceleration effect of gravity.

Specifications	DLT-20	DLT-20M
Maximum Air Pressure.....	100 psi	6.9 bar
Thrust Force @ 80psi/5.5bar.....	140 lbs.	443N
Weight (Basic Unit <b>-N, -R</b> ).....	14.3 lbs.	6.3 kg
Additional Weight per Stroke <b>-N, -R</b> .....	0.53 lbs./in.	7.9g/mm
Cylinder Bore Diameter <b>-N</b> .....	1-1/2"	32mm
Cylinder Bore Diameter <b>-R</b> .....	32mm	32mm
Shaft Diameter.....	0.787"	20mm
Min. Air Pressure to Release Cylinder Lock <b>-R</b> .....	60 psi	4 bar
Holding Force of Locking Mechanism <b>-R</b> .....	123 psi	550N

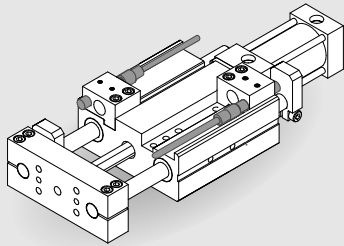
Specifications	DLT-25	DLT-25M
Maximum Air Pressure.....	100 psi	6.9 bar
Thrust Force @ 80psi/5.5bar.....	140 lbs.	443N
Weight (Basic Unit <b>-N, -R</b> ).....	19.2 lbs.	8.5 kg
Additional Weight per Stroke <b>-N, -R</b> .....	0.68 lbs./in.	10.7g/mm
Cylinder Bore Diameter <b>-N</b> .....	1-1/2"	32mm
Cylinder Bore Diameter <b>-R</b> .....	32mm	32mm
Shaft Diameter.....	0.984"	25mm
Min. Air Pressure to Release Cylinder Lock <b>-R</b> .....	60 psi	4 bar
Holding Force of Locking Mechanism <b>-R</b> .....	123 psi	550N

## Accessory Mounting Technical Data



### Urethane Bumpers & Clamp Collars

- Urethane Bumpers for shock absorption and noise dampening
- Adjustable Clamp Collars for end of stroke position adjustment
- Kit contains (2) Collars and (2) Shock Pads for adjustment of travel in one direction

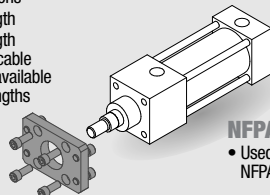


### Inductive Proximity Sensors

- 8mm diameter
- Threaded Quick Disconnect with built-in LED output
- PNP and NPN available

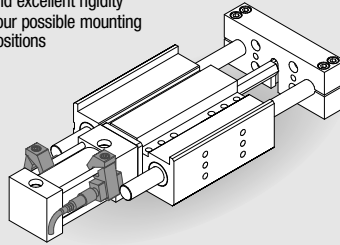
### Quick Disconnect Cable

- Threaded coupling with knurled head for secure electrical connections
- 2 meter cable length
- 5 meter cable length
- Quick disconnect cable extensions cords available in 1 or 2 meter lengths



### Universal Mounting Kit

- Kit mounts (1) Shock Absorber and (1) Inductive Proximity Sensor or (1) Shock and (1) Adjustable Hard Stop
- Kit includes (1) Mounting Bracket, (1) Hardened Tool Steel Target and Hardware
- Target allows for unlimited stroke adjustment. Fine adjustment is achieved using Adjustable Hard Stop or Shock Absorber
- Mounting Bracket keys into body for secure positioning and excellent rigidity
- Four possible mounting positions



### Magneto Resistive Sensors

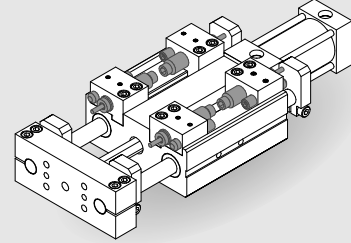
- Quick Disconnect with built-in LED output
- Clamp-on Mounting Kit included
- PNP and NPN available

### Straight Quick Disconnect Cable

- Threaded coupling with knurled head for secure electrical connections
- 2 meter cable length
- 5 meter cable length
- Quick disconnect cable extensions cords available in 1 or 2 meter lengths

### NFPA/VDMA Cylinder Mounting Kit

- Used to mount standard sleeve-nut face mounted NFPA and VDMA cylinders to non-powered units

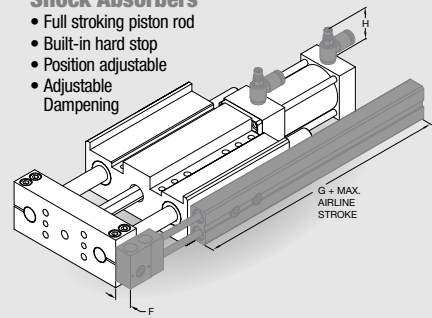


### Adjustable Hard Stops

- For precision (+/- .001") end point positioning
- Allows for end stop position adjustment independent of shock absorber hard stop
- Allen wrench adjustable

### Shock Absorbers

- Full stroking piston rod
- Built-in hard stop
- Position adjustable
- Adjustable Dampening



### Telescoping Airlines

- Eliminate flexing air lines
- Self aligning air tube design extends useful seal life
- Modular stackable design. Up to (4) modules can be stacked
- 1/8 NPT or G1/8 pipe threads
- (2) user air ports per module

### Flow Controls

- Thumb screw adjust with locking nut for adjusting cylinder speed
- 1/4 NPT, G1/8 pipe threads or 1/8 NPT

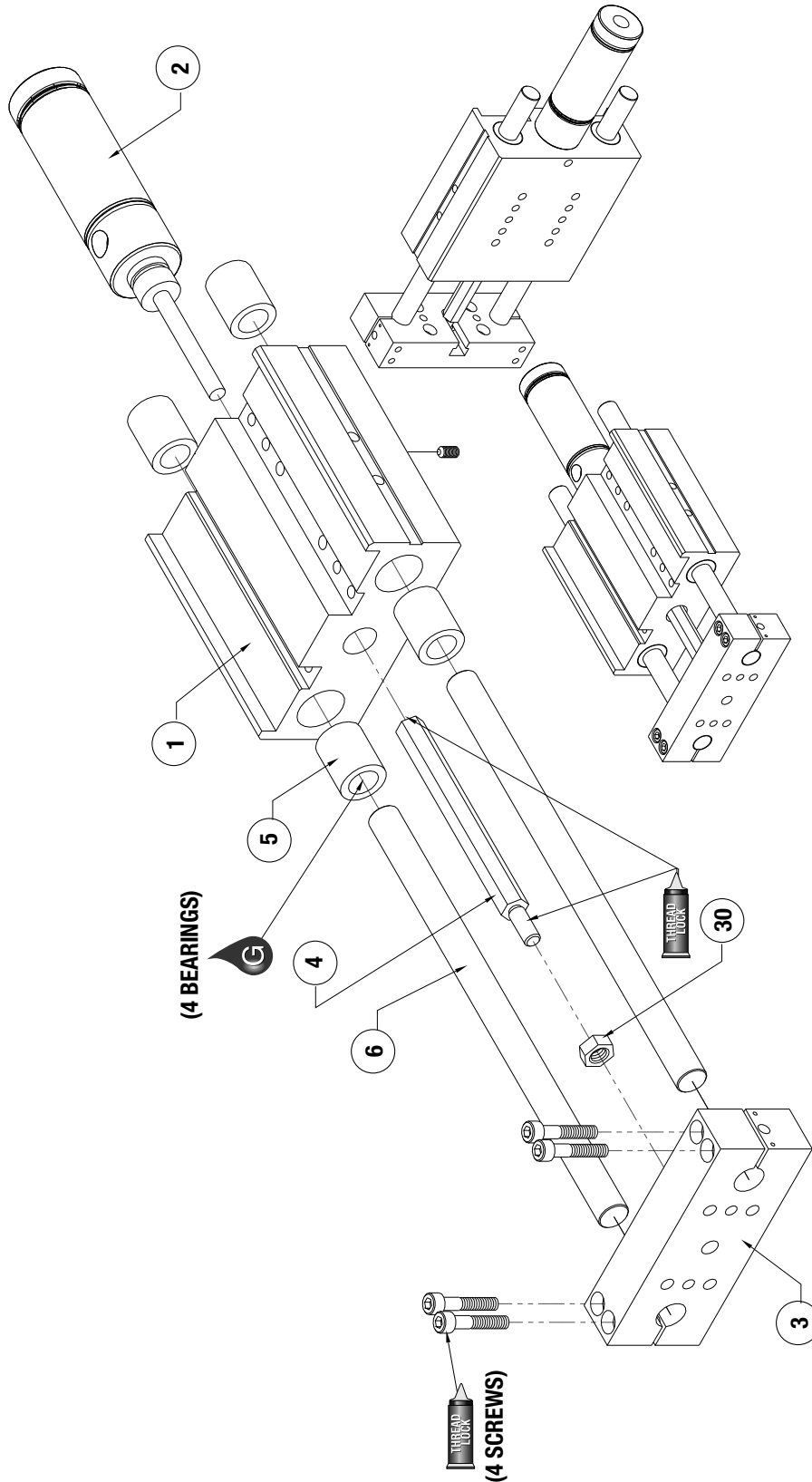
	A	B	C	E	F	G	H
DLT-20	.500"	1.50	.500	.67	.577	3.60	1.38
DLT-25	.500"	1.75	.500	.67	.577	3.60	1.38
DLT-20M	12.7mm	38.1	12.7	17.0	14.7	91.4	35.1
DLT-25M	12.7mm	44.5	12.7	17.0	14.7	91.4	35.1

DLT SERIES

4.67

DIRECTCONNECT™

# DLT-T, A, N, R, U Series Exploded View



Item	Qty	Name
01	1	Body, Externally Powered
02	1	Cylinder
03	1	Tooling Plate
04	1	Shaft, Extender
05	4	Bushing
06	2	Guide Shaft
30	1	Nut, Stover

**NOTE:** Contact the Robohand Sales Department for a complete spare parts list with order numbers and prices.

### Assembly Procedure

- 1) Install bearings and shafts into body.
- 2) Attach shaft extender to cylinder rod and install through body.
- 3) Fasten tool plate to shaft ends.
- 4) Install shaft extender to tool plate.

**SK Seal Repair Kit Order #'s**  
**See Product Data Sheets**

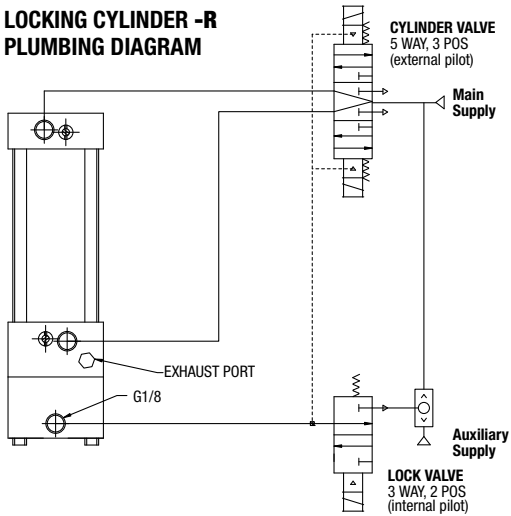
DLT-T, A, N, R, U  
 SERIES  
 MAINTENANCE  
 4.68

SK Seal Kit Items	Thread Locker	KRYTOX™ Lubricant	Lightweight Machine Oil	Teflon® Based Grease	Super Bonder	Third Angle Projection

Please see back cover for DE-STA-CO Global Locations. [www.destaco.com](http://www.destaco.com)

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## LOCKING CYLINDER -R PLUMBING DIAGRAM

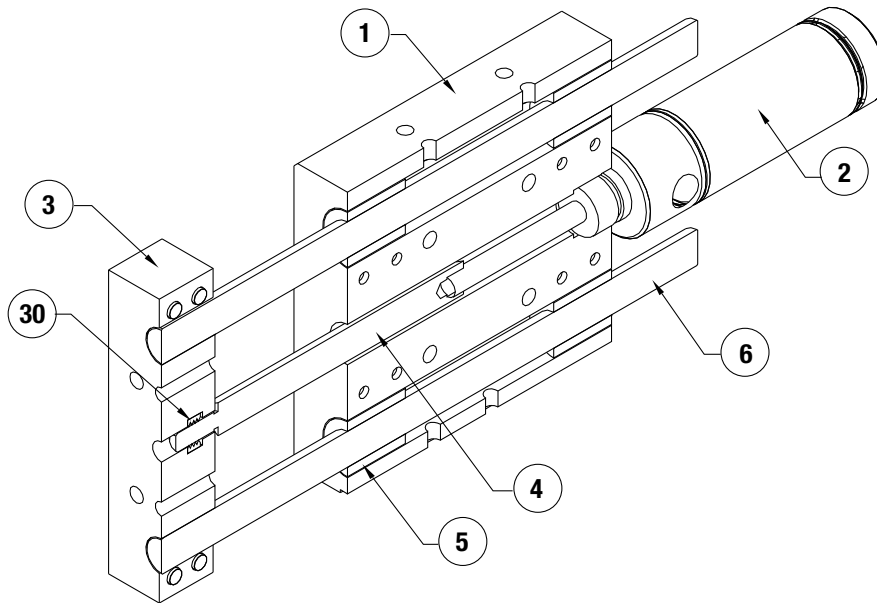


- 1) Lock valve must be maintained energized during cylinder motion, otherwise lock is engaged and cylinder valve shifts to mid position.
- 2) Cylinder valve must be maintained energized during extend or retract. Also, keep energized at end of stroke until change of direction is desired.
- 3) Mid-position of 5/3 cylinder valve may be pressurized outlets if the combination of pressure load on the cylinder and inertia effects of the attached load do not exceed the holding force rating of the locking device, including allowance for wear.
- 4) DO NOT use cylinder lines for any logic functions - pressure levels vary too much.

Item	Qty	Name
01	1	Body, Externally Powered
02	1	Cylinder
03	1	Tooling Plate
04	1	Shaft, Extender
05	4	Bushing
06	2	Guide Shaft
30	1	Nut, Stover

**NOTE:** Contact the Robohand Sales Department for a complete spare parts list with order numbers and prices.

**NOTE:** For accessory mounting, see product data sheets



Seal Kit Items



Thread Locker



Krytox™ Lubricant



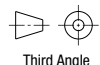
Lightweight Machine Oil



Teflon® Based Grease



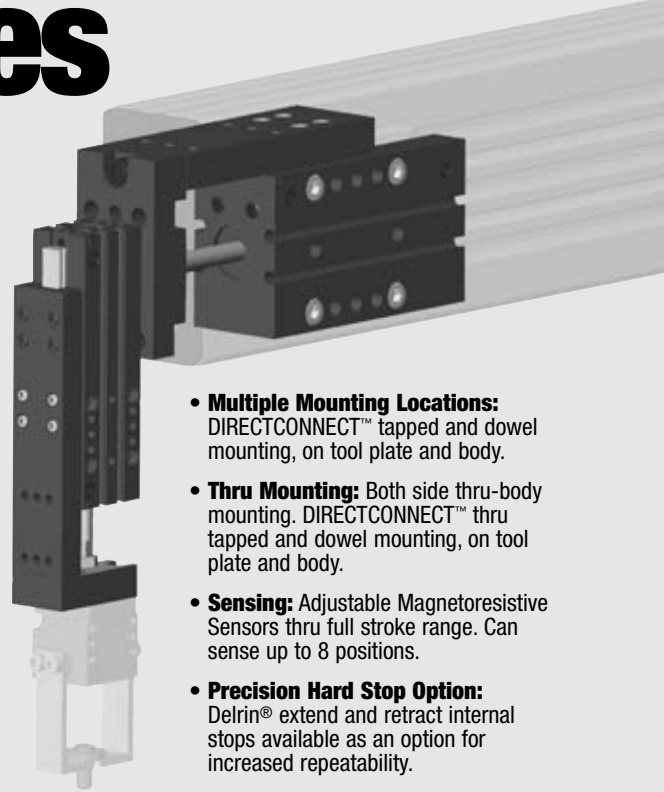
Super Bonder



Third Angle Projection



# Mini Ball Rail Slides- DLM DIRECTCONNECT™ Modular Series



**• Multiple Air Port Positions:**

Tapped air ports on each side, rear and bottom standard.

**• Manifold Air Porting:**

Bottom air ports can be manifold O-ring sealed.

**• Stroke Adjustments:**

Retract and extend adjustments for precise positioning with infinite stroke adjustability.

**• Double Bearing Option:**

Longer strokes available with double bearings for greater load and moment capacity.

**• Multiple Mounting Locations:**

DIRECTCONNECT™ tapped and dowel mounting, on tool plate and body.

**• Thru Mounting:**

Both side thru-body mounting. DIRECTCONNECT™ thru tapped and dowel mounting, on tool plate and body.

**• Sensing:**

Adjustable Magneto-resistive Sensors thru full stroke range. Can sense up to 8 positions.

**• Precision Hard Stop Option:**

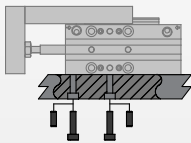
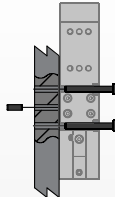
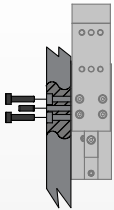
Delrin® extend and retract internal stops available as an option for increased repeatability.

**Note:** The new DLM series replaces our MPS product line. The MPS series information is still available on our website and are available for sale. We encourage you to consider the new DLM design for new projects.

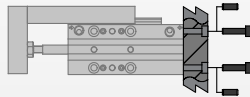
## Mounting Information:

**Slides can be mounted in any orientation**

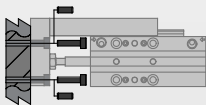
Body can be mounted from either side using the DIRECTCONNECT™ pattern of tapped and dowel holes or thru bolts mounting and dowel holes



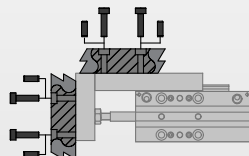
Body can be mounted from the bottom using the DIRECTCONNECT™ pattern of tapped and dowel holes.



Body can be mounted from the back using the DIRECTCONNECT™ pattern of tapped and dowel holes.



Payload attaches to tool plate DIRECTCONNECT™ mounting pattern with screws and locates using slip fit dowel holes.



Payload attaches to tool plate DIRECTCONNECT™ to the front or to the top of the slide with tapped and dowel holes.

## Technical Specifications:

**Pneumatic Specifications**

Pressure Operating Range  
Cylinder Type  
Dynamic Seals  
Valve Required to Operate

**Imperial**  
20-100 psi  
**Metric**  
1.4-7 bar  
**Double Acting**  
**Internally Lubricated Buna-N**  
4-way, 2-position

**Air Quality Requirements**

Air Filtration  
Air Lubrication  
Air Humidity

**40 Micron or Better**  
**Not Necessary\***  
**Low Moisture Content (dry)**

**Temperature Operating Range**

Buna-N Seals (standard)    -30°~180° F    -35°~80° C

**Maintenance Specifications**

Expected Life  
Normal Application  
w/ Preventative Maintenance  
Field Repairable  
Seal Repair Kits Available

**5 million cycles**  
**10+ million cycles\***  
**Yes**  
**Yes**

**Application Restrictions**

- Machining operations generating chips
- Environments with loose particulate

\*Addition of lubrication will greatly increase service life.





## Product Features

**Double Bearing (-D Option)**  
Three longer stroke sizes available with two bearings as an option for greater moment capacity

**DIRECTCONNECT Mounting Patterns**  
Mounting on all six sides (standard)

**Bearing Seals**  
Bearing Blocks are equipped with low friction seals

**Multiple Air Port Locations**  
4 standard airport location (bottom, back, and both sides)

**Recirculating Ball Bearings Rail Slide**  
Preloaded for accuracy, built-in ball retention

**Retract Stroke Adjustment**  
5 mm Adjustment

**Precision Tool Plate Position Adjustment**  
5 mm adjustment

**Dowel Holes Standard**  
Slip fit dowel holes in body and tool plate

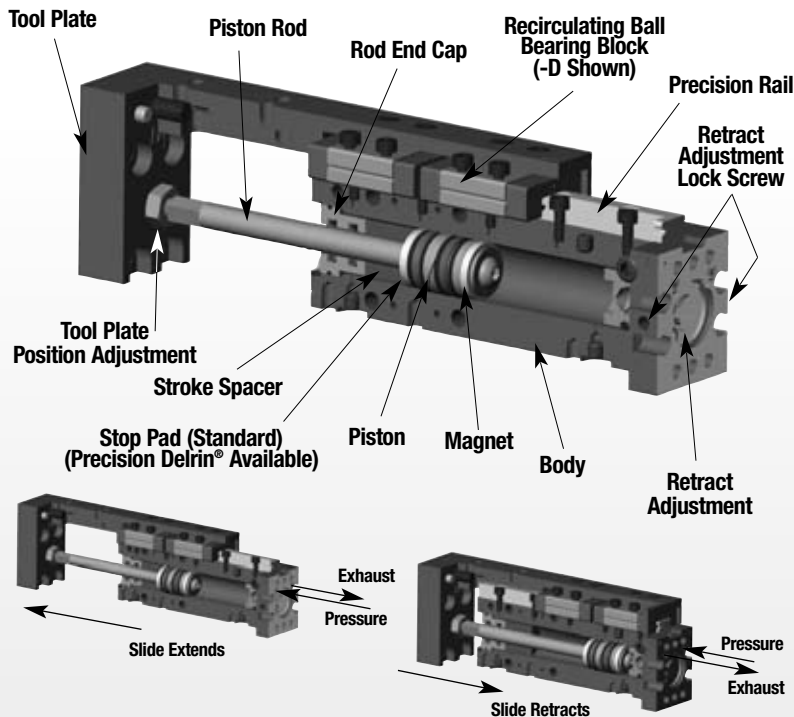
**Thru-Body Mounting**  
C'bored holes for socket head cap screw on both sides

**Manifold Air Ports**  
Bottom air ports are C'bored for O-ring manifold seals

**Magneto Resistive Sensing**  
Mounting slots and magnet are standard for up to eight sensors (Sensors sold separately)

**Precision Stops (-P Option)**  
Delrin® internal stops are available for increased repeatability

## Operating Principle



- A double acting piston slides within the body bore when pressure is applied.
- The piston is coupled to the tool plate with the piston rod.
- The tool plate is connected to the ball rail slide block which is guided by the precision rail.
- The stops are internal and attached to the piston and piston rod.
- Combination of internal spacers and user retract adjustment allow for infinite adjustment within stroke range.

**Designed, manufactured and assembled in the USA**

Please see back cover for DE-STA-CO Global Locations. [www.destaco.com](http://www.destaco.com)

[www.comoso.com](http://www.comoso.com)

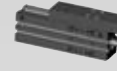
## Style -DLM Mini Ball Rail Slide

### Size -07M-12



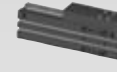
Style:	07M-12	
Max. Stroke:	0.50 in.	12 mm
Weight:	0.28 lbs.	0.13 Kg
Thrust Force:	15 lbs.	66.7 N
Max Payload:	1.0 lb.	0.45 kg

### Size -07M-25



Style:	07M-25	
Max. Stroke:	1.00 in.	25 mm
Weight:	0.35 lbs.	0.16 Kg
Thrust Force:	15 lbs.	66.7 N
Max Payload:	1.0 lb.	0.45 kg

### Size -07M-38



Style:	07M-38	
Max. Stroke:	1.50 in.	38 mm
Weight:	0.43 lbs.	0.20 Kg
Thrust Force:	15 lbs.	66.7 N
Max Payload:	1.0 lb.	0.45 kg

### Size -07M-50



Style:	07M-50	
Max. Stroke:	2.00 in.	50 mm
Weight:	0.50 lbs.	0.23 Kg
Thrust Force:	15 lbs.	66.7 N
Max Payload:	1.0 lb.	0.45 kg



See Pages **4.72-4.79**

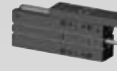
## Style -DLM Mini Ball Rail Slide

### Size -09M-25



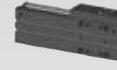
Style:	09M-25	
Max. Stroke:	1.00 in.	25 mm
Weight:	1.08 lbs.	0.49 Kg
Thrust Force:	31 lbs.	138 N
Max Payload:	2.0 lb.	0.91 kg

### Size -09M-50



Style:	09M-50	
Max. Stroke:	2.00 in.	50 mm
Weight:	1.11 lbs.	0.64 Kg
Thrust Force:	31 lbs.	138 N
Max Payload:	2.0 lb.	0.91 kg

### Size -09M-75



Style:	09M-75	
Max. Stroke:	3.00 in.	75 mm
Weight:	1.78 lbs.	0.81 Kg
Thrust Force:	31 lbs.	138 N
Max Payload:	2.0 lb.	0.91 kg

### Size -09M-100



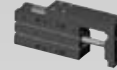
Style:	09M-100	
Max. Stroke:	4.00 in.	100 mm
Weight:	2.13 lbs.	0.97 Kg
Thrust Force:	31 lbs.	138 N
Max Payload:	2.0 lb.	0.91 kg



See Pages **4.80-4.87**

## Style -DLM Mini Ball Rail Slide

### Size -12M-25



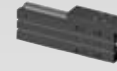
Style:	12M-25	
Max. Stroke:	1.00 in.	25 mm
Weight:	1.18 lbs.	0.54 Kg
Thrust Force:	52 lbs.	231 N
Max Payload:	4.0 lb.	1.81 kg

### Size -12M-50



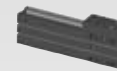
Style:	12M-50	
Max. Stroke:	2.00 in.	50 mm
Weight:	1.43 lbs.	0.65 Kg
Thrust Force:	52 lbs.	231 N
Max Payload:	4.0 lb.	1.81 kg

### Size -12M-75



Style:	12M-75	
Max. Stroke:	3.00 in.	75 mm
Weight:	1.80 lbs.	0.82 Kg
Thrust Force:	52 lbs.	231 N
Max Payload:	4.0 lb.	1.81 kg

### Size -12M-100



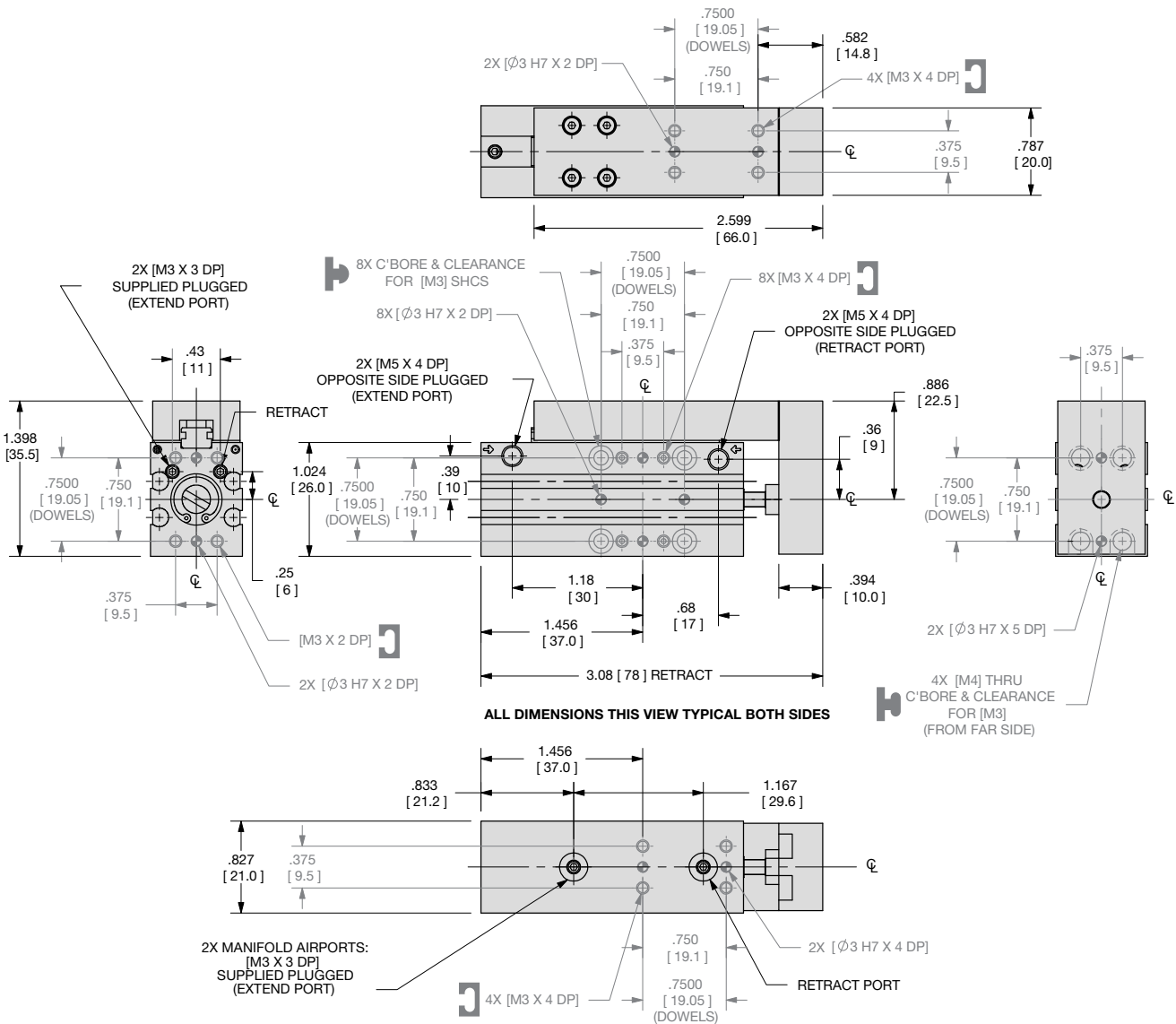
Style:	12M-100	
Max. Stroke:	4.00 in.	100 mm
Weight:	2.25 lbs.	1.02 Kg
Thrust Force:	52 lbs.	231 N
Max Payload:	4.0 lb.	1.81 kg



See Pages **4.88-4.95**



# MINI BALL RAIL SLIDE DLM-07M-12 DIRECTCONNECT MODULAR SERIES



UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

Dimensions are symmetrical about centerline	Third Angle Projection	All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or (±.013mm)	Metric Threads Course Pitch	Imperial in. 0.00 = ±.01 0.000 = ±.005 0.0000 = ±.0005	Metric [mm] [0] = ±.25 [0.0] = ±.13 [0.00] = ±.013
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NOTE: DIRECTCONNECT™ DIMENSIONS ARE SHOWN IN BLUE

## How to Order: (Order Accessories separately from Basic Model)

**BASIC MODEL**    **BODY SIZE**    **PRECISION STOPS**

**DLM-07M** - **12** - **P**

**STROKE**  
(See Below)

**BODY SIZE** 12  
**STROKE** (mm)  
5, 10, 12

**PRECISION STOPS** P

### SENSOR ACCESSORIES

	ORDER #	QTY/UNIT
PNP Magneto Resistive Sensor with Quick Disconnect*	<b>OHSP-017</b>	<b>1-4</b>
NPN Magneto Resistive Sensor with Quick Disconnect*	<b>OHSN-017</b>	<b>1-4</b>
PNP Magneto Resistive Sensor 90° Barrel (with Qk. Disc)*	<b>OHSP-011</b>	<b>1-4</b>
NPN Magneto Resistive Sensor 90° Barrel (with Qk. Disc.)*	<b>OHSN-011</b>	<b>1-4</b>
Quick Disconnect Cable (2 meters long)*	<b>CABL-010</b>	<b>1-4</b>
Quick Disconnect Cable (5 meters long)*	<b>CABL-013</b>	<b>1-4</b>

### PNEUMATIC ACCESSORIES

	ORDER #	QTY/UNIT
Seal Repair Kit	<b>SLKT-236</b>	<b>1</b>
Manifold Seal Kit	<b>SLKT-239</b>	<b>1</b>
Adjustable Flow Control	<b>VLVF-008</b>	<b>1 or 2</b>

\*Sensor and cable sold separately

### SAMPLE ORDER: DLM-07M-12-10-P

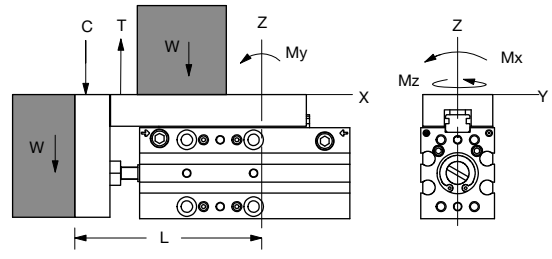
Ex: DLM-07M Mini Ball Rail Slide, -12 Body Size, 10mm Stroke, Precision Stops



# MINI BALL RAIL SLIDE DLM-07M-12 DIRECTCONNECT MODULAR SERIES



Specifications	DLM-07M-12	
Thrust Force <b>F</b> @ 100 psi, 7 bar.....	15 lbs.	66 N
Max. Stroke .....	0.50 in.	12 mm
Stroke Reduction (return) .....	0.19 in.	5 mm
Weight .....	0.28 lbs.	0.13 Kg
Maximum Payload <b>W</b> .....	1.0 lbs.	0.45 Kg
Maximum Payload (-P Option) .....	0.5 lbs.	0.23 Kg
Cylinder Bore $\emptyset$ .....	0.437 in.	11 mm
Temperature Range .....	-30°~180° F	-35°~80° C
Actuation per 25mm of travel .....	0.07 sec.	
Linear accuracy per 25mm of travel.....	±0.0001 in.	±0.005 mm
Repeatability (-P Option) .....	±0.003 in.	±0.08 mm
Pressure Range.....	20-100 psi	1.4-7 bar
Valve required to actuate .....	4-way, 2-position	

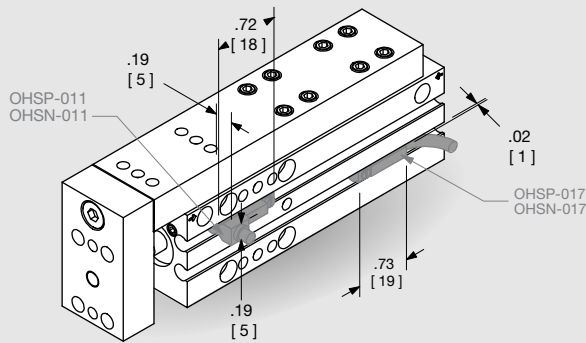


Flow Controls are recommended for nearly all applications

### Loading Capacity

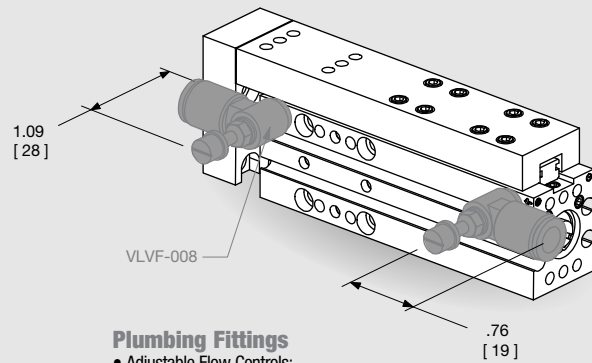
	Static	Dynamic
<b>DLM-07M-12</b>		
Maximum Tensile <b>T</b>	110 lbs. [490 N]	67 lbs. [301 N]
Maximum Compressive <b>C</b>	110 lbs. [490 N]	67 lbs. [301 N]
Maximum Moment <b>M<sub>x</sub></b>	45 in.-lbs. [5.1 Nm]	27 in.-lbs. [3.1 Nm]
Maximum Moment <b>M<sub>y</sub></b>	28 in.-lbs. [3.2 Nm]	16 in.-lbs. [1.9 Nm]
Maximum Moment <b>M<sub>z</sub></b>	28 in.-lbs. [3.2 Nm]	16 in.-lbs. [1.9 Nm]
Distance to Bearing Centerline <b>L</b>	2.10 in. [53 mm]	

## Accessory Mounting Technical Data



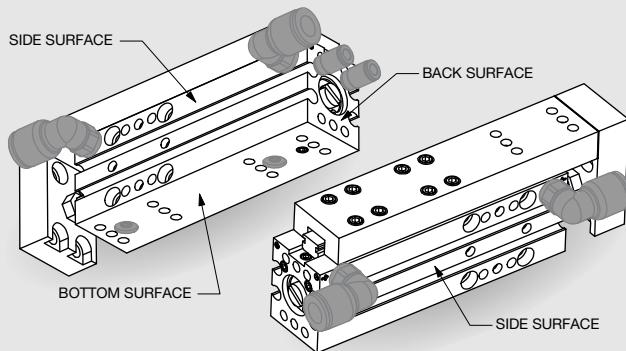
### Sensors

- PNP and NPN Magneto Resistive available
- Sensors are slot mounted, no mounting kits required
- Simple adjustment with slotted screw driver
- Built-in LED for ease of positioning and troubleshooting
- Low profile sensor version or 90° wire exit sensor version
- Available with 2M or 5M Quick Disconnect mating cable (order separately)



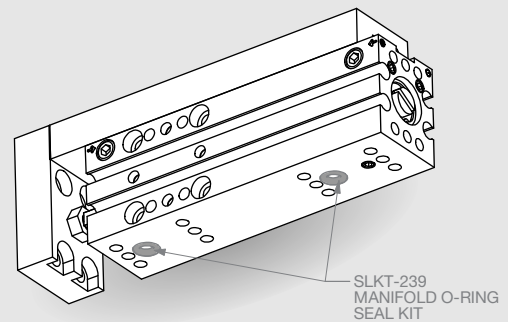
### Plumbing Fittings

- Adjustable Flow Controls:
  - Thumb screw adjust with locking nut for adjusting actuation time
  - Available for 6mm O.D. tubing
- Consult Factory for additional available plumbing fittings



### Multiple Air Port Locations

- 2 standard M5 air port locations (both sides)
- Bottom and Back airports (M3) are plugged as supplied



### Manifold O-ring Seals

- Available in Seal Kit
- Kit is supplied with all seals, plugs & wrenches needed

DLM SERIES

4.73

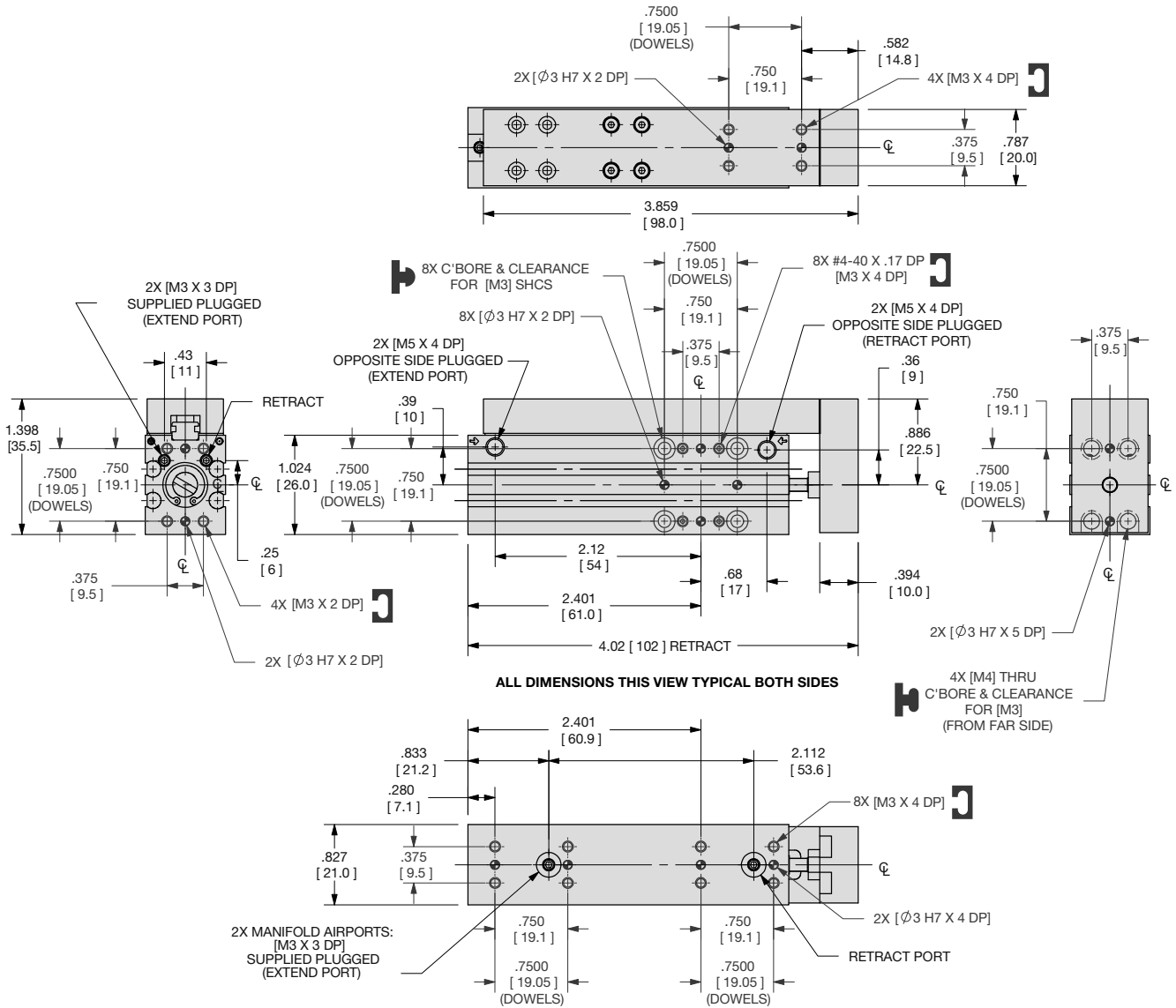
DIRECTCONNECT™

# MINI BALL RAIL SLIDE DLM-07M-25 DIRECTCONNECT MODULAR SERIES

DLM SERIES

DLM SERIES

4.74



NOTE: DIRECTCONNECT™ DIMENSIONS ARE SHOWN IN BLUE

Imperial in.		Metric [mm]	
0.00	± .01	0.0	[± .25]
0.000	± .005	0.0	[± .13]
0.0000	± .0005	0.00	[± .013]

## How to Order: (Order Accessories separately from Basic Model)

**BASIC MODEL**    **BODY SIZE** (See Below)    **PRECISION STOPS**

**DLM-07M - 25 - [ ] - D - P**

**STROKE** (See Below)    **DOUBLE BEARINGS**

**BODY SIZE** 25  
**STROKE** (mm)  
12, 15, 20, 25  
**DOUBLE BEARING** D  
**PRECISION STOPS** P

### SENSOR ACCESSORIES

	ORDER #	QTY/UNIT
PNP Magneto Resistive Sensor with Quick Disconnect*	<b>OHSP-017</b>	<b>1-4</b>
NPN Magneto Resistive Sensor with Quick Disconnect*	<b>OHSN-017</b>	<b>1-4</b>
PNP Magneto Resistive Sensor 90° Barrel (with Qk. Disc)*	<b>OHSP-011</b>	<b>1-4</b>
NPN Magneto Resistive Sensor 90° Barrel (with Qk. Disc)*	<b>OHSN-011</b>	<b>1-4</b>
Quick Disconnect Cable (2 meters long)*	<b>CABL-010</b>	<b>1-4</b>
Quick Disconnect Cable (5 meters long)*	<b>CABL-013</b>	<b>1-4</b>

### PNEUMATIC ACCESSORIES

	ORDER #	QTY/UNIT
Seal Repair Kit	<b>SLKT-236</b>	<b>1</b>
Manifold Seal Kit	<b>SLKT-239</b>	<b>1</b>
Adjustable Flow Control	<b>VLVF-008</b>	<b>1 or 2</b>

\*Sensor and cable sold separately

### SAMPLE ORDER: DLM-07M-25-15-D

Ex: DLM-07M Mini Ball Rail Slide, -25 Body Size, 15mm Stroke, Double Ball Bearings

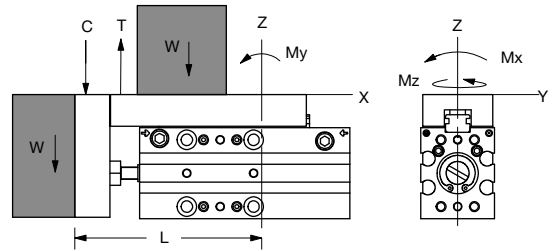
DIRECTCONNECT™



# MINI BALL RAIL SLIDE DLM-07M-25 DIRECTCONNECT MODULAR SERIES

DLM SERIES

Specifications	DLM-07M-25	
Thrust Force <b>F</b> @ 100 psi, 7 bar.....	15 lbs.	66 N
Max. Stroke .....	1.00 in.	25 mm
Stroke Reduction (return) .....	0.19 in.	5 mm
Weight .....	0.35 lbs.	0.16 Kg
Maximum Payload <b>W</b> .....	1.0 lbs.	0.45 Kg
Maximum Payload (-P Option) .....	0.5 lbs.	0.23 Kg
Cylinder Bore $\emptyset$ .....	0.437 in.	11 mm
Temperature Range .....	-30°~180° F	-35°~80° C
Actuation per 25mm of travel .....	0.07 sec.	
Linear accuracy per 25mm of travel.....	±0.0001 in.	±0.005 mm
Repeatability (-P Option) .....	±0.003 in.	±0.08 mm
Pressure Range.....	20-100 psi	1.4-7 bar
Valve required to actuate .....	4-way, 2-position	

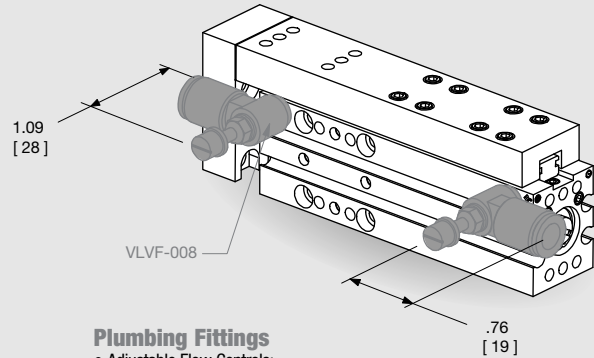
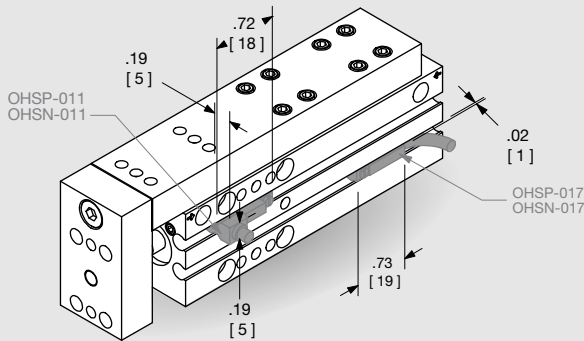


Flow Controls are recommended for nearly all applications

## Loading Capacity

	Static	Dynamic
<b>DLM-07M-25</b>		
Maximum Tensile <b>T</b>	110 lbs. [490 N]	67 lbs. [301 N]
Maximum Compressive <b>C</b>	110 lbs. [490 N]	67 lbs. [301 N]
Maximum Moment <b>M<sub>x</sub></b>	45 in.-lbs. [5.1 Nm]	27 in.-lbs. [3.1 Nm]
Maximum Moment <b>M<sub>y</sub></b>	28 in.-lbs. [3.2 Nm]	16 in.-lbs. [1.9 Nm]
Maximum Moment <b>M<sub>z</sub></b>	28 in.-lbs. [3.2 Nm]	16 in.-lbs. [1.9 Nm]
Distance to Bearing Centerline L	2.39 in. [61 mm]	
<b>DLM-07M-25-D</b>		
Maximum Tensile <b>T</b>	220 lbs. [980 N]	135 lbs. [602 N]
Maximum Compressive <b>C</b>	220 lbs. [980 N]	135 lbs. [602 N]
Maximum Moment <b>M<sub>x</sub></b>	90 in.-lbs. [10.2 Nm]	54 in.-lbs. [6.2 Nm]
Maximum Moment <b>M<sub>y</sub></b>	56 in.-lbs. [6.4 Nm]	33 in.-lbs. [3.8 Nm]
Maximum Moment <b>M<sub>z</sub></b>	56 in.-lbs. [6.4 Nm]	33 in.-lbs. [3.8 Nm]
Distance to Bearing Centerline L	2.87 in. [73 mm]	

## Accessory Mounting Technical Data

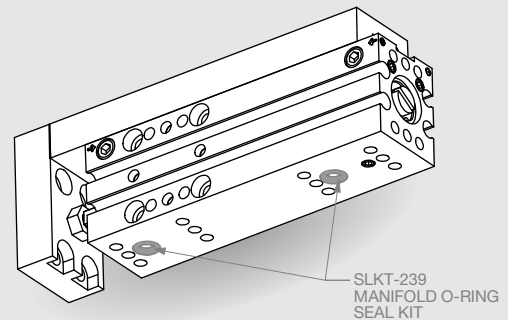
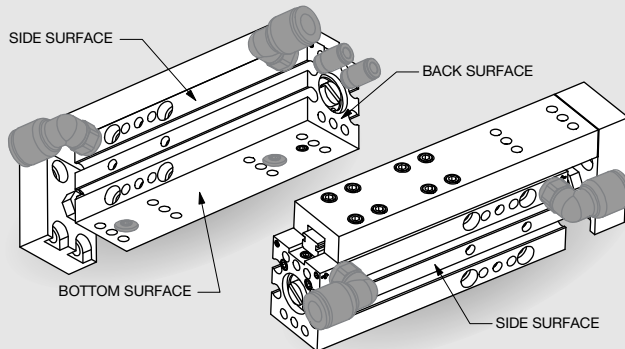


### Sensors

- PNP and NPN Magneto Resistive available
- Sensors are slot mounted, no mounting kits required
- Simple adjustment with slotted screw driver
- Built-in LED for ease of positioning and troubleshooting
- Low profile sensor version or 90° wire exit sensor version
- Available with 2M or 5M Quick Disconnect mating cable (order separately)

### Plumbing Fittings

- Adjustable Flow Controls:
  - Thumb screw adjust with locking nut for adjusting actuation time
  - Available for 6mm O.D. tubing
- Consult Factory for additional available plumbing fittings



### Multiple Air Port Locations

- 2 standard M5 air port locations (both sides)
- Bottom and Back airports (M3) are plugged as supplied

### Manifold O-ring Seals

- Available in Seal Kit
- Kit is supplied with all seals, plugs & wrenches needed

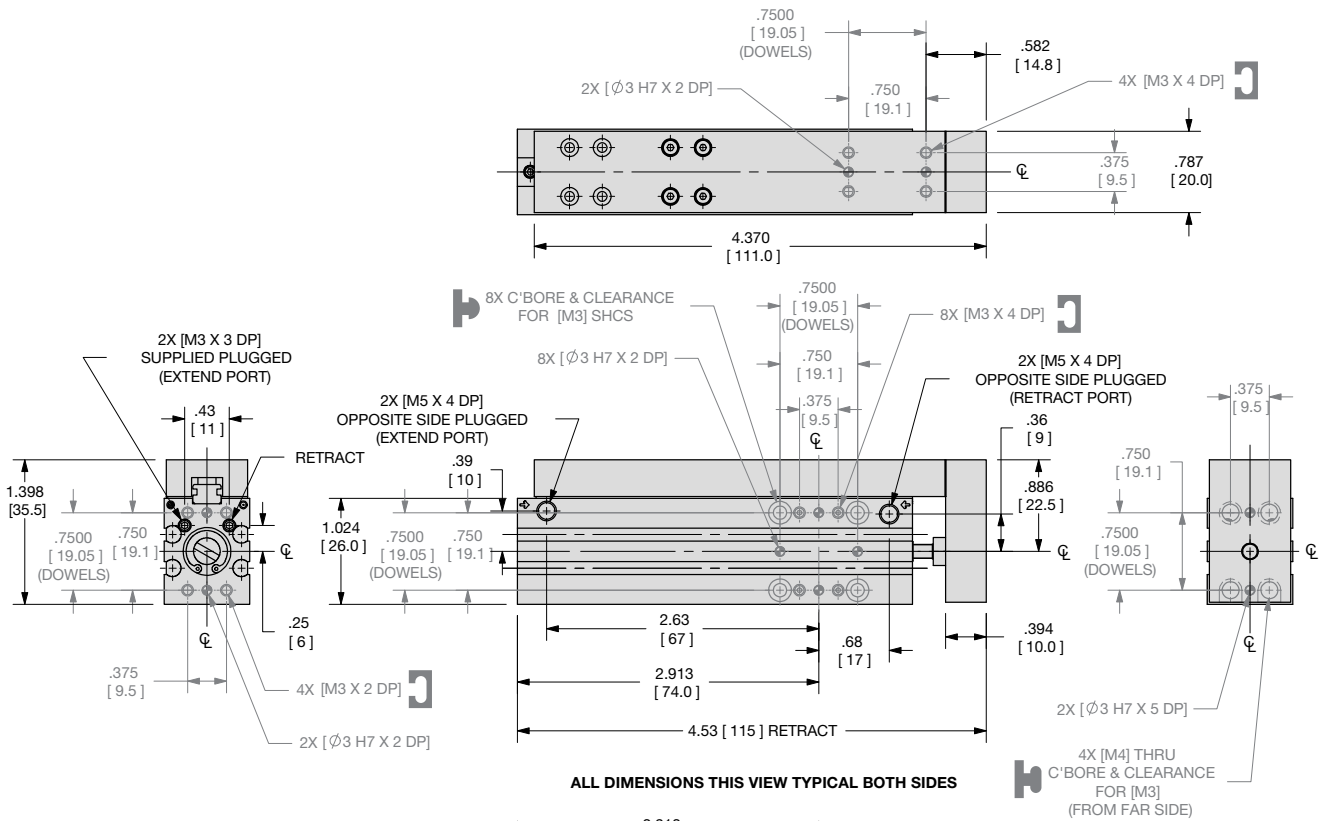
DLM SERIES  
4.75

DIRECTCONNECT™

# MINI BALL RAIL SLIDE DLM-07M-38 DIRECTCONNECT MODULAR SERIES

DLM SERIES

4.76



NOTE: DIRECTCONNECT™ DIMENSIONS ARE SHOWN IN BLUE

UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

Dimensions are symmetrical about centerline	Third Angle Projection	All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or (±.013mm)	Metric Threads Course Pitch	Imperial in. 0.00 = ±.01 0.000 = ±.005 0.0000 = ±.0005	Metric [mm] [0] = ±.25 [0.0] = ±.13 [0.00] = ±.013
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### How to Order: (Order Accessories separately from Basic Model)

BASIC MODEL	BODY SIZE	PRECISION STOPS	SENSOR ACCESSORIES	ORDER #	QTY/UNIT
<b>DLM-07M</b>	<b>38</b>	<b>D - P</b>	PNP Magneto Resistive Sensor with Quick Disconnect*	<b>OHSP-017</b>	<b>1-4</b>
			NPN Magneto Resistive Sensor with Quick Disconnect*	<b>OHSN-017</b>	<b>1-4</b>
			PNP Magneto Resistive Sensor 90° Barrel (with Qk. Disc)*	<b>OHSP-011</b>	<b>1-4</b>
			NPN Magneto Resistive Sensor 90° Barrel (with Qk. Disc.)*	<b>OHSN-011</b>	<b>1-4</b>
			Quick Disconnect Cable (2 meters long)*	<b>CABL-010</b>	<b>1-4</b>
			Quick Disconnect Cable (5 meters long)*	<b>CABL-013</b>	<b>1-4</b>
			<b>PNEUMATIC ACCESSORIES</b>	<b>ORDER #</b>	<b>QTY/UNIT</b>
			Seal Repair Kit	<b>SLKT-236</b>	<b>1</b>
			Manifold Seal Kit	<b>SLKT-239</b>	<b>1</b>
			Adjustable Flow Control	<b>VLVF-008</b>	<b>1 or 2</b>

\*Sensor and cable sold separately

**BASIC MODEL**    **BODY SIZE** (See Below)    **PRECISION STOPS**

**DLM-07M** - **38** - **D - P**

**STROKE** (See Below)    **DOUBLE BEARINGS**

**BODY SIZE** **38**  
**STROKE** (mm) **25, 30, 35, 38**  
**DOUBLE BEARING** **D**  
**PRECISION STOPS** **P**

**SAMPLE ORDER: DLM-07M-38-25-D-P**  
Ex: DLM-07M Mini Ball Rail Slide, -38 Body Size, 25mm Stroke, Double Ball Bearings, Precision Stops

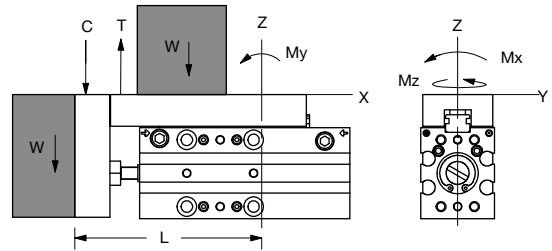
DIRECTCONNECT™



# MINI BALL RAIL SLIDE DLM-07M-38 DIRECTCONNECT MODULAR SERIES

DLM SERIES

Specifications	DLM-07M-38	
Thrust Force <b>F</b> @ 100 psi, 7 bar.....	15 lbs.	66 N
Max. Stroke .....	1.50 in.	38 mm
Stroke Reduction (return) .....	0.19 in.	5 mm
Weight .....	0.43 lbs.	0.20 Kg
Maximum Payload <b>W</b> .....	1.0 lbs.	0.45 Kg
Maximum Payload (-P Option) .....	0.5 lbs.	0.23 Kg
Cylinder Bore $\emptyset$ .....	0.437 in.	11 mm
Temperature Range .....	-30°~180° F	-35°~80° C
Actuation per 25mm of travel .....	0.07 sec.	
Linear accuracy per 25mm of travel.....	±0.0001 in.	±0.005 mm
Repeatability (-P Option) .....	±0.003 in.	±0.08 mm
Pressure Range.....	20-100 psi	1.4-7 bar
Valve required to actuate .....	4-way, 2-position	

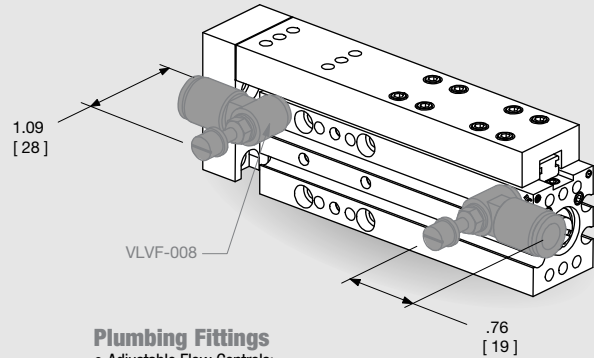
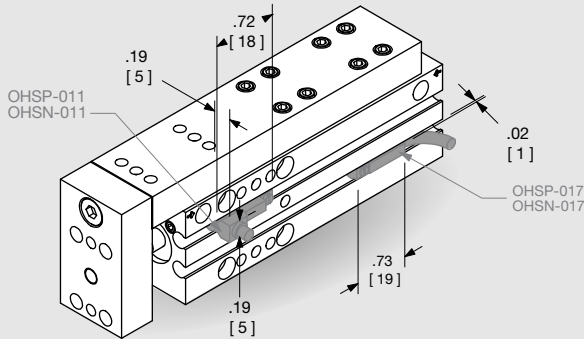


Flow Controls are recommended for nearly all applications

### Loading Capacity

	Static	Dynamic
<b>DLM-07M-38</b>		
Maximum Tensile <b>T</b>	110 lbs. [490 N]	67 lbs. [301 N]
Maximum Compressive <b>C</b>	110 lbs. [490 N]	67 lbs. [301 N]
Maximum Moment <b>M<sub>x</sub></b>	45 in.-lbs. [5.1 Nm]	27 in.-lbs. [3.1 Nm]
Maximum Moment <b>M<sub>y</sub></b>	28 in.-lbs. [3.2 Nm]	16 in.-lbs. [1.9 Nm]
Maximum Moment <b>M<sub>z</sub></b>	28 in.-lbs. [3.2 Nm]	16 in.-lbs. [1.9 Nm]
Distance to Bearing Centerline L	2.90 in. [74 mm]	
<b>DLM-07M-38-D</b>		
Maximum Tensile <b>T</b>	220 lbs. [980 N]	135 lbs. [602 N]
Maximum Compressive <b>C</b>	220 lbs. [980 N]	135 lbs. [602 N]
Maximum Moment <b>M<sub>x</sub></b>	90 in.-lbs. [10.2 Nm]	54 in.-lbs. [6.2 Nm]
Maximum Moment <b>M<sub>y</sub></b>	56 in.-lbs. [6.4 Nm]	33 in.-lbs. [3.8 Nm]
Maximum Moment <b>M<sub>z</sub></b>	56 in.-lbs. [6.4 Nm]	33 in.-lbs. [3.8 Nm]
Distance to Bearing Centerline L	3.38 in. [86 mm]	

## Accessory Mounting Technical Data

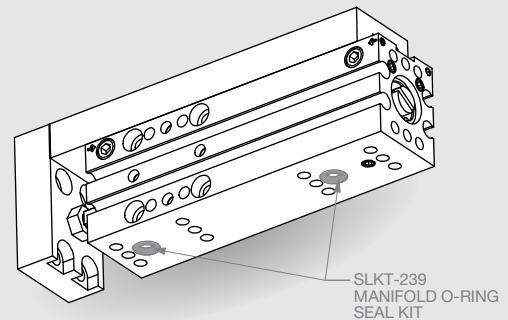
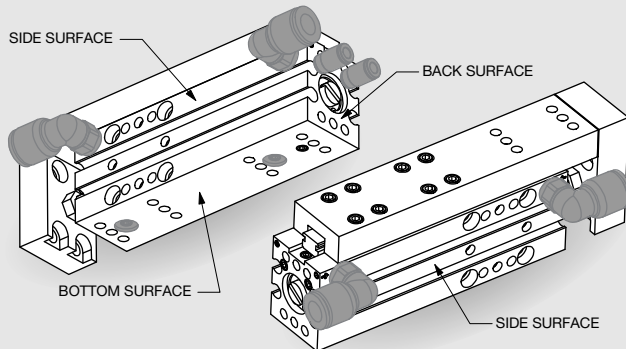


### Sensors

- PNP and NPN Magneto Resistive available
- Sensors are slot mounted, no mounting kits required
- Simple adjustment with slotted screw driver
- Built-in LED for ease of positioning and troubleshooting
- Low profile sensor version or 90° wire exit sensor version
- Available with 2M or 5M Quick Disconnect mating cable (order separately)

### Plumbing Fittings

- Adjustable Flow Controls:
  - Thumb screw adjust with locking nut for adjusting actuation time
  - Available for 6mm O.D. tubing
- Consult Factory for additional available plumbing fittings



### Multiple Air Port Locations

- 2 standard M5 air port locations (both sides)
- Bottom and Back airports (M3) are plugged as supplied

### Manifold O-ring Seals

- Available in Seal Kit
- Kit is supplied with all seals, plugs & wrenches needed

DLM SERIES  
4.77

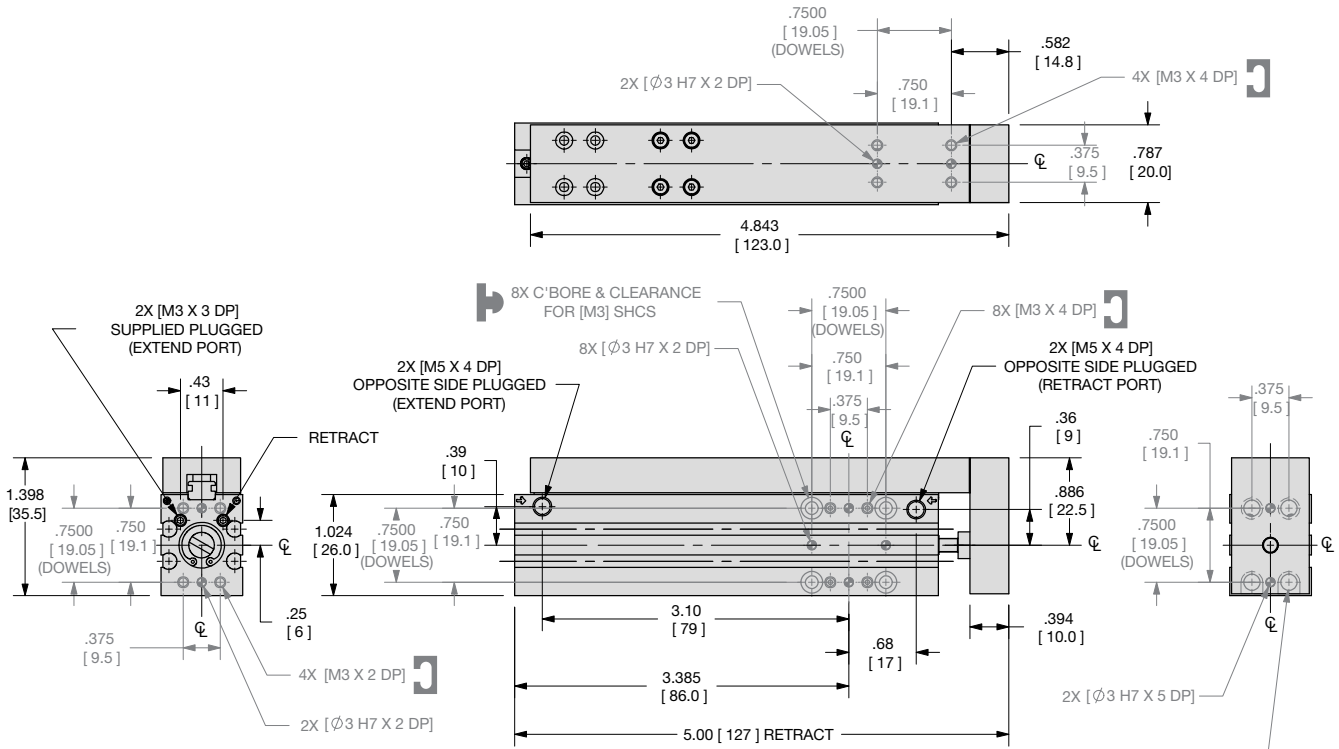
DIRECTCONNECT™



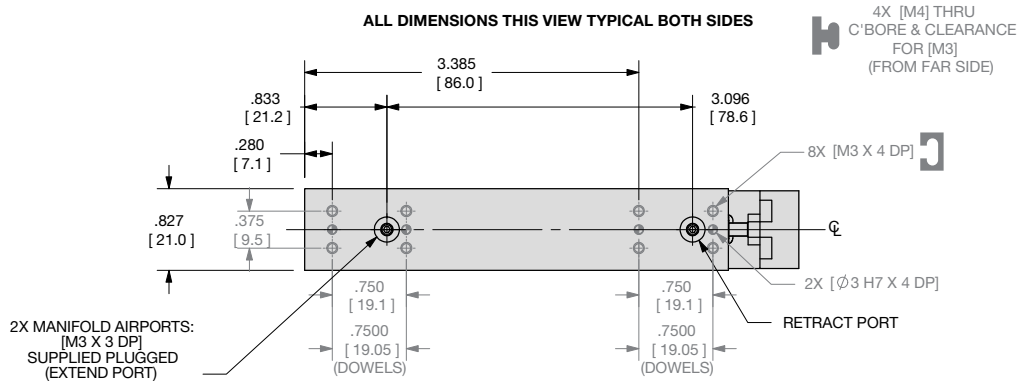
# MINI BALL RAIL SLIDE DLM-07M-50 DIRECTCONNECT MODULAR SERIES

DLM SERIES

4.78



ALL DIMENSIONS THIS VIEW TYPICAL BOTH SIDES



NOTE: DIRECTCONNECT™ DIMENSIONS ARE SHOWN IN BLUE

UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW				Imperial in.	Metric [mm]
	Dimensions are symmetrical about centerline		Third Angle Projection	0.00 = ±.01	[0.] = [±.25]
	All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or [±.013mm]		Metric Threads Course Pitch	0.000 = ±.0005	[0.0] = [±.13]
					[0.00] = [±.013]

## How to Order: (Order Accessories separately from Basic Model)

**BASIC MODEL**    **BODY SIZE**    **PRECISION STOPS**

**DLM-07M - 50 - [ ] - D - P**

**STROKE**    **DOUBLE BEARINGS**

**BODY SIZE** 50  
**STROKE** (mm)  
38, 40, 45, 50

**DOUBLE BEARING** D  
**PRECISION STOPS** P

### SENSOR ACCESSORIES

	ORDER #	QTY/UNIT
PNP Magneto Resistive Sensor with Quick Disconnect*	<b>OHSP-017</b>	<b>1-4</b>
NPN Magneto Resistive Sensor with Quick Disconnect*	<b>OHSN-017</b>	<b>1-4</b>
PNP Magneto Resistive Sensor 90° Barrel (with Qk. Disc)*	<b>OHSP-011</b>	<b>1-4</b>
NPN Magneto Resistive Sensor 90° Barrel (with Qk. Disc)*	<b>OHSN-011</b>	<b>1-4</b>
Quick Disconnect Cable (2 meters long)*	<b>CABL-010</b>	<b>1-4</b>
Quick Disconnect Cable (5 meters long)*	<b>CABL-013</b>	<b>1-4</b>

### PNEUMATIC ACCESSORIES

	ORDER #	QTY/UNIT
Seal Repair Kit	<b>SLKT-236</b>	<b>1</b>
Manifold Seal Kit	<b>SLKT-239</b>	<b>1</b>
Adjustable Flow Control	<b>VLVF-008</b>	<b>1 or 2</b>

\*Sensor and cable sold separately

### SAMPLE ORDER: DLM-07M-50-45-D-P

Ex: DLM-07M Mini Ball Rail Slide, -50 Body Size, 45mm Stroke, Double Ball Bearings, Precision Stops

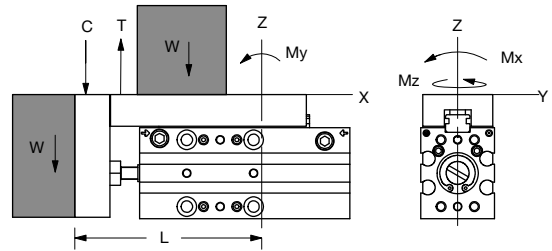
DIRECTCONNECT™



# MINI BALL RAIL SLIDE DLM-07M-50 DIRECTCONNECT MODULAR SERIES

DLM SERIES

Specifications	DLM-07M-50	
Thrust Force <b>F</b> @ 100 psi, 7 bar.....	15 lbs.	66 N
Max. Stroke .....	2.00 in.	50 mm
Stroke Reduction (return) .....	0.19 in.	5 mm
Weight .....	0.50 lbs.	0.23 Kg
Maximum Payload <b>W</b> .....	1.0 lbs.	0.45 Kg
Maximum Payload (-P Option) .....	0.5 lbs.	0.23 Kg
Cylinder Bore $\emptyset$ .....	0.437 in.	11 mm
Temperature Range: .....	-30°~180° F	-35°~80° C
Actuation per 25mm of travel .....	0.07 sec.	
Linear accuracy per 25mm of travel.....	±0.0001 in.	±0.005 mm
Repeatability (-P Option) .....	±0.003 in.	±0.08 mm
Pressure Range.....	20-100 psi	1.4-7 bar
Valve required to actuate .....	4-way, 2-position	



Flow Controls are recommended for nearly all applications

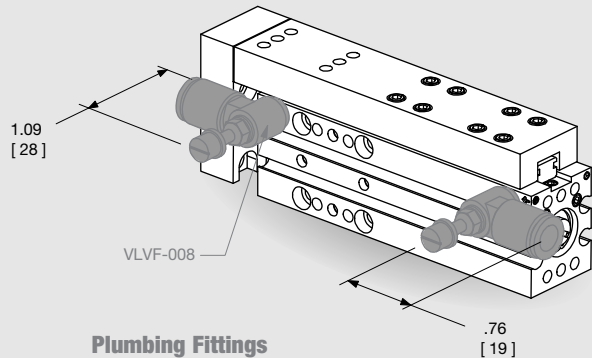
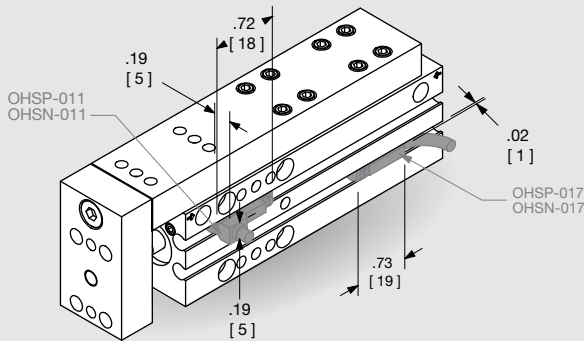
## Loading Capacity

	Static	Dynamic
<b>DLM-07M-50</b>		
Maximum Tensile <b>T</b>	110 lbs. [490 N]	67 lbs. [301 N]
Maximum Compressive <b>C</b>	110 lbs. [490 N]	67 lbs. [301 N]
Maximum Moment <b>M<sub>x</sub></b>	45 in.-lbs. [5.1 Nm]	27 in.-lbs. [3.1 Nm]
Maximum Moment <b>M<sub>y</sub></b>	28 in.-lbs. [3.2 Nm]	16 in.-lbs. [1.9 Nm]
Maximum Moment <b>M<sub>z</sub></b>	28 in.-lbs. [3.2 Nm]	16 in.-lbs. [1.9 Nm]
Distance to Bearing Centerline L	3.37 in. [86 mm]	

## DLM-07M-50-D

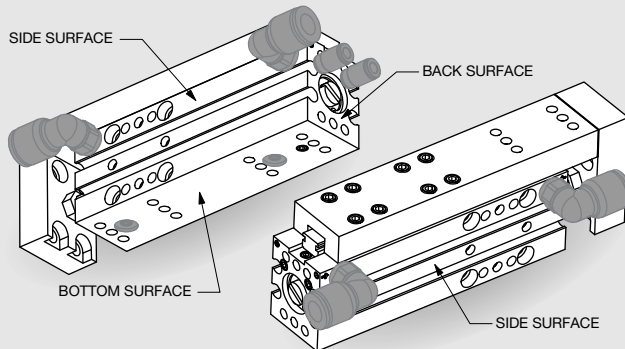
Maximum Tensile <b>T</b>	220 lbs. [980 N]	135 lbs. [602 N]
Maximum Compressive <b>C</b>	220 lbs. [980 N]	135 lbs. [602 N]
Maximum Moment <b>M<sub>x</sub></b>	90 in.-lbs. [10.2 Nm]	54 in.-lbs. [6.2 Nm]
Maximum Moment <b>M<sub>y</sub></b>	56 in.-lbs. [6.4 Nm]	33 in.-lbs. [3.8 Nm]
Maximum Moment <b>M<sub>z</sub></b>	56 in.-lbs. [6.4 Nm]	33 in.-lbs. [3.8 Nm]
Distance to Bearing Centerline L	3.86 in. [98 mm]	

## Accessory Mounting Technical Data



### Sensors

- PNP and NPN Magneto Resistive available
- Sensors are slot mounted, no mounting kits required
- Simple adjustment with slotted screw driver
- Built-in LED for ease of positioning and troubleshooting
- Low profile sensor version or 90° wire exit sensor version
- Available with 2M or 5M Quick Disconnect mating cable (order separately)

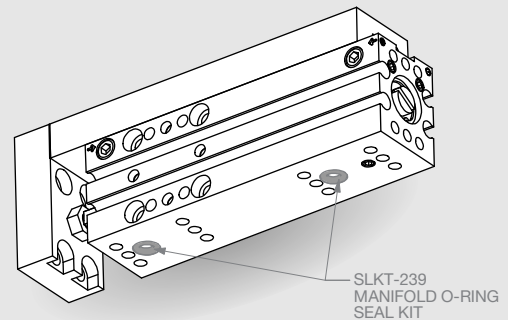


### Multiple Air Port Locations

- 2 standard M5 air port locations (both sides)
- Bottom and Back airports (M3) are plugged as supplied

### Plumbing Fittings

- Adjustable Flow Controls:
  - Thumb screw adjust with locking nut for adjusting actuation time
  - Available for 1/4" O.D. or 6mm O.D. tubing
- Consult Factory for additional available plumbing fittings



### Manifold O-ring Seals

- Available in Seal Kit
- Kit is supplied with all seals, plugs & wrenches needed

DLM SERIES

4.79

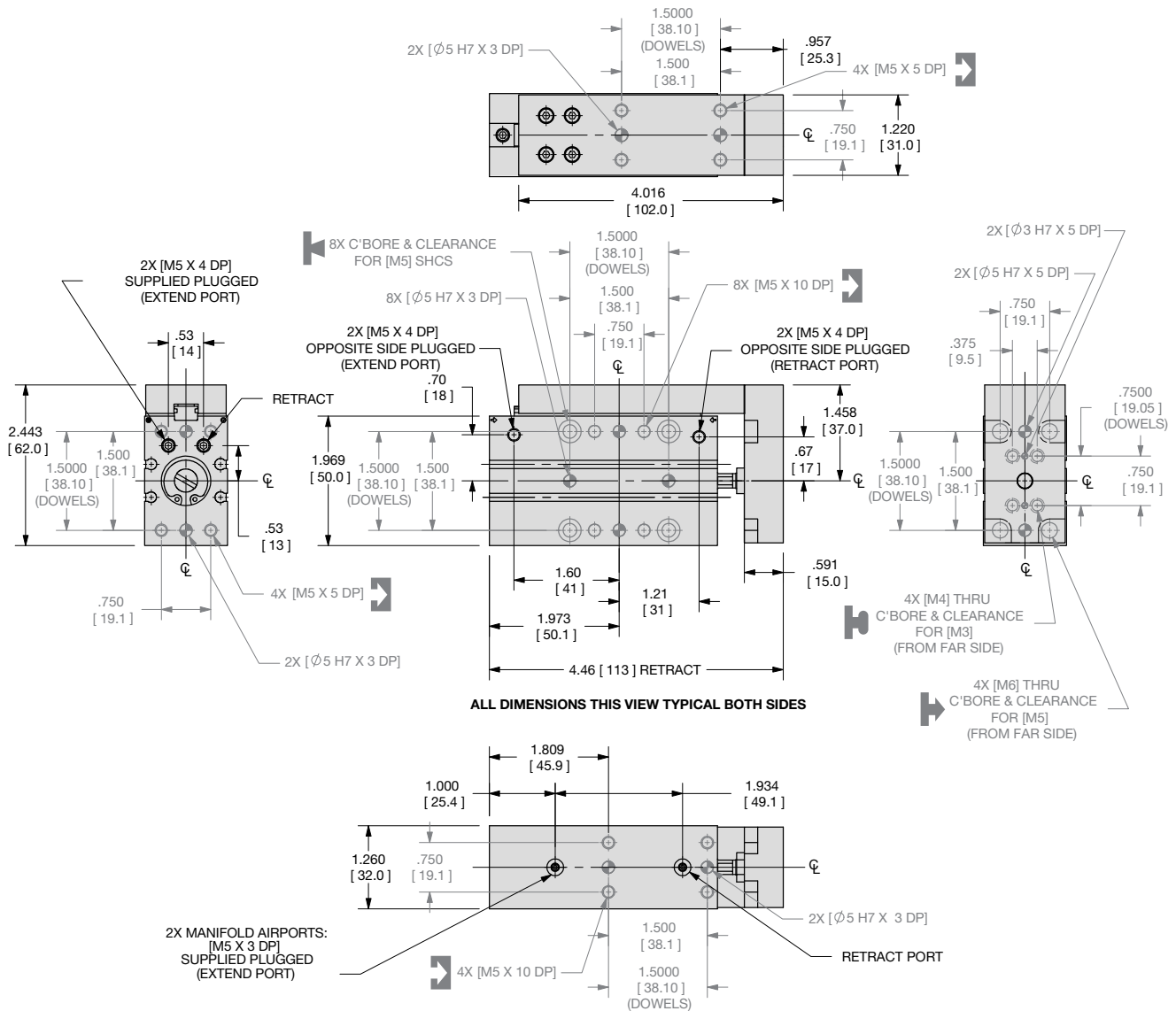
DIRECTCONNECT™

# MINI BALL RAIL SLIDE DLM-09M-25 DIRECTCONNECT MODULAR SERIES

DLM SERIES

DLM SERIES

4.80



ALL DIMENSIONS THIS VIEW TYPICAL BOTH SIDES

**UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW**

Symbol	Imperial in.	Metric [mm]
	0.00 = ± .01	0.00 = [± .25]
	0.000 = ± .005	0.00 = [± .13]
	0.000 = ± .005	0.00 = [± .13]
	0.000 = ± .0005	0.00 = [± .013]

NOTE: DIMENSIONS ARE SYMMETRICAL ABOUT CENTERLINE

NOTE: DIRECTCONNECT™ DIMENSIONS ARE SHOWN IN BLUE

## How to Order: (Order Accessories separately from Basic Model)

**BASIC MODEL**    **BODY SIZE**    **PRECISION STOPS**

**DLM-09M - 25 - P**

**STROKE**  
(See Below)

**BODY SIZE**    25  
**STROKE**    (mm)  
5, 10, 15, 20, 25

**PRECISION STOPS**    P

### SENSOR ACCESSORIES

- PNP Magneto Resistive Sensor with Quick Disconnect\* **OHSP-017**
- NPN Magneto Resistive Sensor with Quick Disconnect\* **OHSN-017**
- PNP Magneto Resistive Sensor 90° Barrel (with Qk. Disc)\* **OHSP-011**
- NPN Magneto Resistive Sensor 90° Barrel (with Qk. Disc.)\* **OHSN-011**
- Quick Disconnect Cable (2 meters long)\* **CABL-010**
- Quick Disconnect Cable (5 meters long)\* **CABL-013**

ORDER #	QTY/UNIT
<b>OHSP-017</b>	<b>1-4</b>
<b>OHSN-017</b>	<b>1-4</b>
<b>OHSP-011</b>	<b>1-4</b>
<b>OHSN-011</b>	<b>1-4</b>
<b>CABL-010</b>	<b>1-4</b>
<b>CABL-013</b>	<b>1-4</b>

### PNEUMATIC ACCESSORIES

- Seal Repair Kit **SLKT-237**
- Manifold Seal Kit **SLKT-240**
- Adjustable Flow Control **VLVF-008**

ORDER #	QTY/UNIT
<b>SLKT-237</b>	<b>1</b>
<b>SLKT-240</b>	<b>1</b>
<b>VLVF-008</b>	<b>1 or 2</b>

\*Sensor and cable sold separately

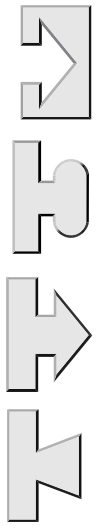
### SAMPLE ORDER: DLM-09M-25-15-P

Ex: DLM-09M Mini Ball Rail Slide, -25 Body Size, 15mm Stroke, Precision Stops

DIRECTCONNECT™



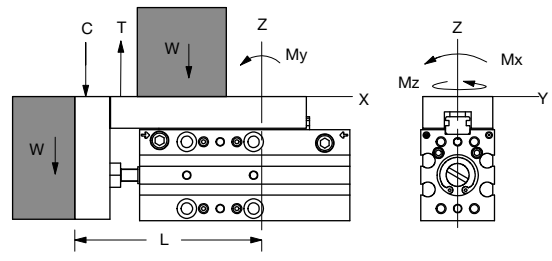
# MINI BALL RAIL SLIDE DLM-09M-25 DIRECTCONNECT MODULAR SERIES



DLM SERIES  
4.81

DIRECTCONNECT™

Specifications	DLM-09M-25	
Thrust Force <b>F</b> @ 100 psi, 7 bar.....	31 lbs.	138 N
Max. Stroke .....	1.00 in.	25 mm
Stroke Reduction (return) .....	0.19 in.	5 mm
Weight .....	1.08 lbs.	0.49 Kg
Maximum Payload <b>W</b> .....	2.0 lbs.	0.90 Kg
Maximum Payload (-P Option) .....	1.0 lbs.	0.45 Kg
Cylinder Bore $\emptyset$ .....	0.630 in.	16 mm
Temperature Range: .....	-30°~180° F	-35°~80° C
Actuation per 25mm of travel .....	0.10 sec.	
Linear accuracy per 25mm of travel.....	±0.0001 in.	±0.005 mm
Repeatability (-P Option) .....	±0.003 in.	±0.08 mm
Pressure Range.....	20-100 psi	1.4-7 bar
Valve required to actuate .....	4-way, 2-position	

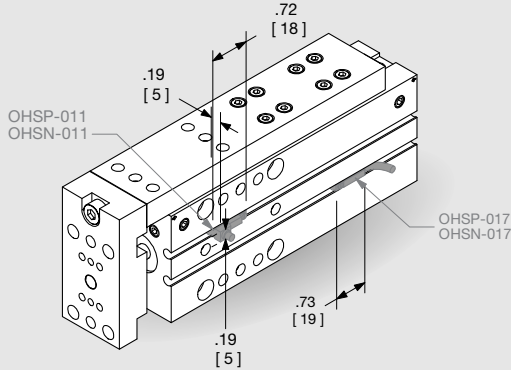


Flow Controls are recommended for nearly all applications

### Loading Capacity

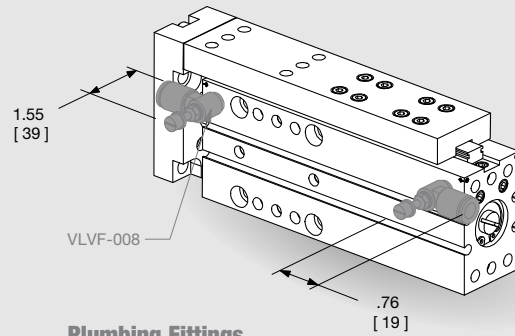
	Static	Dynamic
<b>DLM-09M-25</b>		
Maximum Tensile <b>T</b>	165 lbs. [735 N]	92 lbs. [413 N]
Maximum Compressive <b>C</b>	165 lbs. [735 N]	92 lbs. [413 N]
Maximum Moment <b>M<sub>x</sub></b>	84 in.-lbs. [9.6 Nm]	47 in.-lbs. [5.4 Nm]
Maximum Moment <b>M<sub>y</sub></b>	56 in.-lbs. [6.4 Nm]	31 in.-lbs. [3.6 Nm]
Maximum Moment <b>M<sub>z</sub></b>	56 in.-lbs. [6.4 Nm]	31 in.-lbs. [3.6 Nm]
Distance to Bearing Centerline <b>L</b>	3.40 in. [86 mm]	

## Accessory Mounting Technical Data



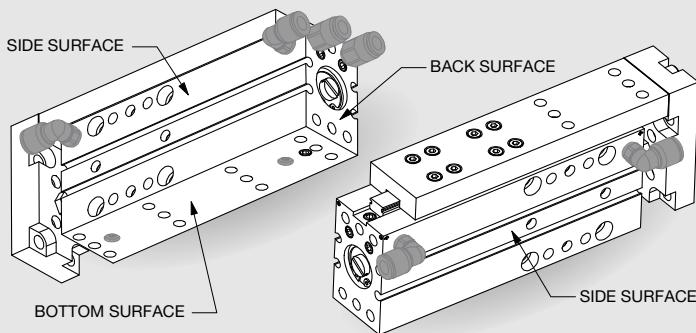
### Sensors

- PNP and NPN Magneto Resistive available
- Sensors are slot mounted, no mounting kits required
- Simple adjustment with slotted screw driver
- Built-in LED for ease of positioning and troubleshooting
- Low profile sensor version or 90° wire exit sensor version
- Available with 2M or 5M Quick Disconnect mating cable (order separately)



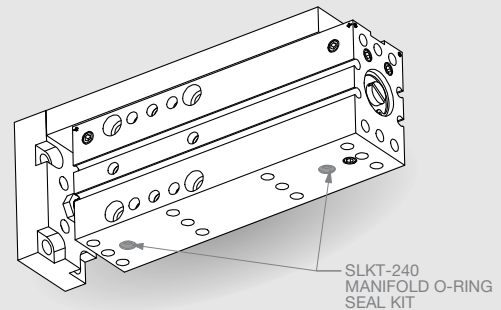
### Plumbing Fittings

- Adjustable Flow Controls:
  - Thumb screw adjust with locking nut for adjusting actuation time
  - Available for 6mm O.D. tubing
- Consult Factory for additional available plumbing fittings



### Multiple Air Port Locations

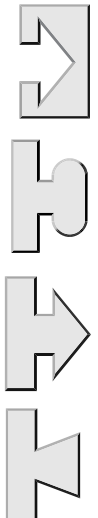
- 2 standard M5 air port locations (both sides)
- Bottom and Back airports (M3) are plugged as supplied



### Manifold O-ring Seals

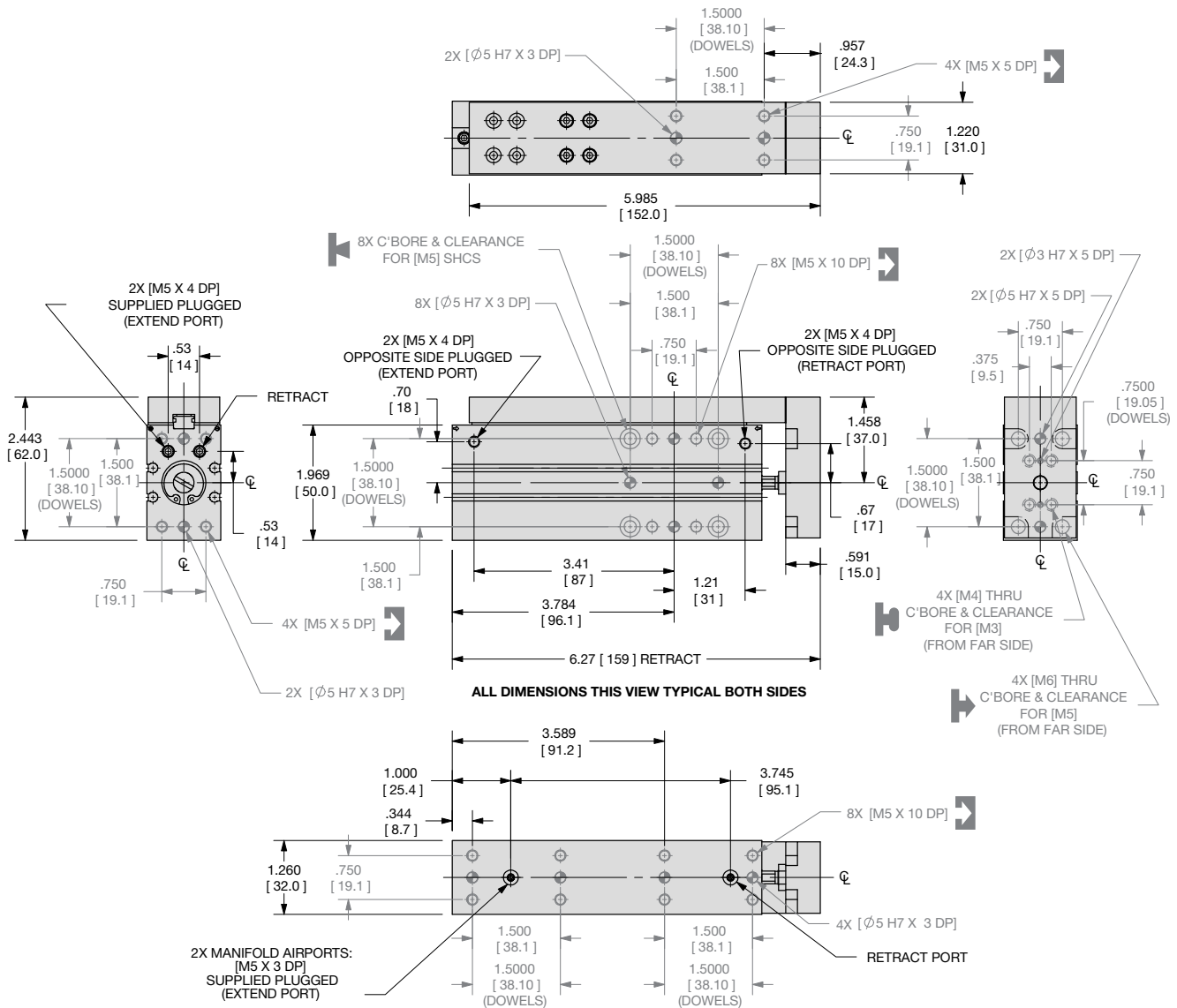
- Available in Seal Kit
- Kit is supplied with all seals, plugs & wrenches needed

# MINI BALL RAIL SLIDE DLM-09M-50 DIRECTCONNECT MODULAR SERIES



DLM SERIES

4.82



UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

Symbol	Imperial in.	Metric [mm]
	0.00 = ±.01	[0.] = ±.25
	0.000 = ±.005	[0.0] = ±.13
	0.0000 = ±.0005	[0.00] = ±.013

Dimensions are symmetrical about centerline  
Third Angle Projection  
All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or ±.013mm  
Metric Threads Course Pitch

NOTE: DIRECTCONNECT™ DIMENSIONS ARE SHOWN IN BLUE

## How to Order: (Order Accessories separately from Basic Model)

BASIC MODEL	BODY SIZE	PRECISION STOPS
<b>DLM-09M</b>	<b>50</b>	<b>D - P</b>

(See Below)

STROKE	DOUBLE BEARINGS
<b>25, 30, 35, 40, 45, 50</b>	<b>D</b>
(See Below)	<b>P</b>

**BODY SIZE 50**  
**STROKE (mm) 25, 30, 35, 40, 45, 50**  
**DOUBLE BEARING D**  
**PRECISION STOPS P**

### SENSOR ACCESSORIES

Accessories	ORDER #	QTY/UNIT
PNP Magneto Resistive Sensor with Quick Disconnect*	<b>OHSP-017</b>	<b>1-4</b>
NPN Magneto Resistive Sensor with Quick Disconnect*	<b>OHSP-011</b>	<b>1-4</b>
PNP Magneto Resistive Sensor 90° Barrel (with Qk. Disc)*	<b>OHSN-017</b>	<b>1-4</b>
NPN Magneto Resistive Sensor 90° Barrel (with Qk. Disc)*	<b>OHSN-011</b>	<b>1-4</b>
Quick Disconnect Cable (2 meters long)*	<b>CABL-010</b>	<b>1-4</b>
Quick Disconnect Cable (5 meters long)*	<b>CABL-013</b>	<b>1-4</b>

### PNEUMATIC ACCESSORIES

Accessories	ORDER #	QTY/UNIT
Seal Repair Kit	<b>SLKT-237</b>	<b>1</b>
Manifold Seal Kit	<b>SLKT-240</b>	<b>1</b>
Adjustable Flow Control	<b>VLVF-008</b>	<b>1 or 2</b>

\*Sensor and cable sold separately

### SAMPLE ORDER: DLM-09M-50-50-D

Ex: DLM-09M Mini Ball Rail Slide, -50 Body Size, 50mm Stroke, Double Ball Bearings





# MINI BALL RAIL SLIDE DLM-09M-50 DIRECTCONNECT MODULAR SERIES

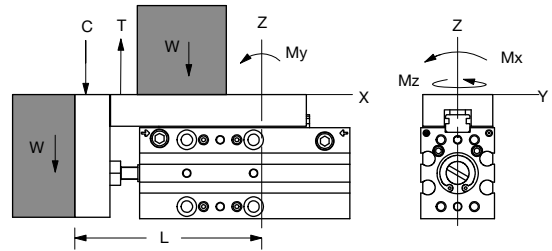


DLM SERIES

4.83

DIRECTCONNECT™

Specifications	DLM-09M-50	
Thrust Force <b>F</b> @ 100 psi, 7 bar.....	31 lbs.	138 N
Max. Stroke .....	2.00 in.	50 mm
Stroke Reduction (return) .....	0.19 in.	5 mm
Weight .....	1.41 lbs.	0.64 Kg
Maximum Payload <b>W</b> .....	2.0 lbs.	0.90 Kg
Maximum Payload (-P Option) .....	1.0 lbs.	0.45 Kg
Cylinder Bore $\emptyset$ .....	0.630 in.	16 mm
Temperature Range .....	-30°~180° F	-35°~80° C
Actuation per 25mm of travel .....	0.10 sec.	
Linear accuracy per 25mm of travel.....	±0.0001 in.	±0.005 mm
Repeatability (-P Option) .....	±0.003 in.	±0.08 mm
Pressure Range.....	20-100 psi	1.4-7 bar
Valve required to actuate .....	4-way, 2-position	



Flow Controls are recommended for nearly all applications

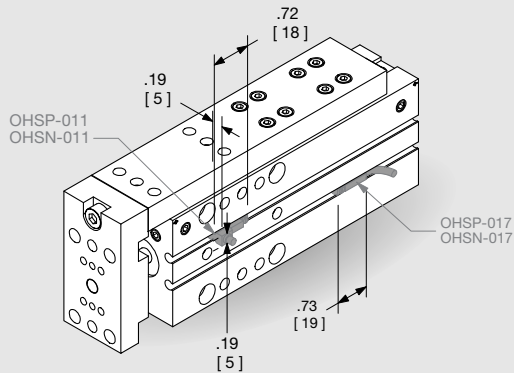
### Loading Capacity

	Static	Dynamic
<b>DLM-09M-50</b>		
Maximum Tensile <b>T</b>	165 lbs. [735 N]	92 lbs. [413 N]
Maximum Compressive <b>C</b>	165 lbs. [735 N]	92 lbs. [413 N]
Maximum Moment <b>M<sub>x</sub></b>	84 in.-lbs. [9.6 Nm]	47 in.-lbs. [5.4 Nm]
Maximum Moment <b>M<sub>y</sub></b>	56 in.-lbs. [6.4 Nm]	31 in.-lbs. [3.6 Nm]
Maximum Moment <b>M<sub>z</sub></b>	56 in.-lbs. [6.4 Nm]	31 in.-lbs. [3.6 Nm]
Distance to Bearing Centerline L	4.13 in. [105 mm]	

### DLM-09M-50-D

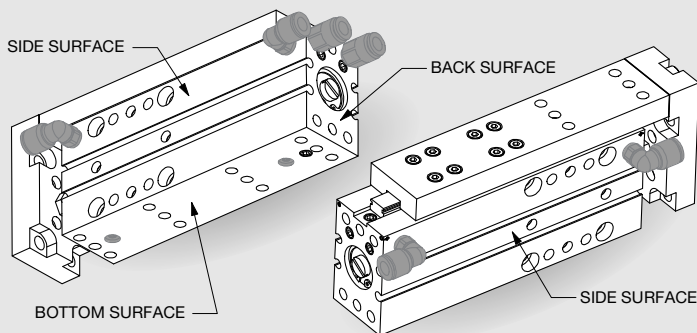
Maximum Tensile <b>T</b>	330 lbs. [1470 N]	185 lbs. [826 N]
Maximum Compressive <b>C</b>	330 lbs. [1470 N]	185 lbs. [826 N]
Maximum Moment <b>M<sub>x</sub></b>	169 in.-lbs. [19.2 Nm]	95 in.-lbs. [10.8 Nm]
Maximum Moment <b>M<sub>y</sub></b>	113 in.-lbs. [12.8 Nm]	63 in.-lbs. [7.2 Nm]
Maximum Moment <b>M<sub>z</sub></b>	113 in.-lbs. [12.8 Nm]	63 in.-lbs. [7.2 Nm]
Distance to Bearing Centerline L	4.75 in. [121 mm]	

## Accessory Mounting Technical Data



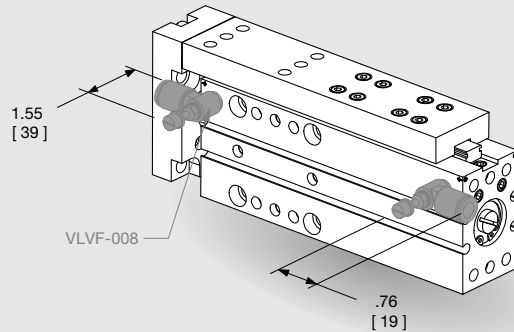
### Sensors

- PNP and NPN Magneto Resistive available
- Sensors are slot mounted, no mounting kits required
- Simple adjustment with slotted screw driver
- Built-in LED for ease of positioning and troubleshooting
- Low profile sensor version or 90° wire exit sensor version
- Available with 2M or 5M Quick Disconnect mating cable (order separately)



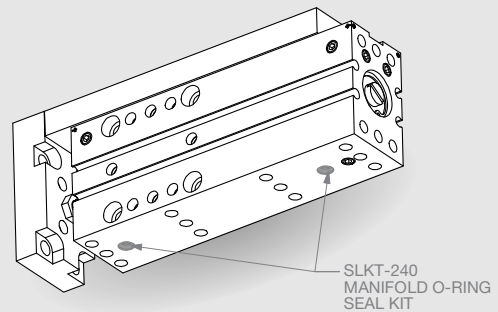
### Multiple Air Port Locations

- 2 standard M5 air port locations (both sides)
- Bottom and Back airports (M3) are plugged as supplied



### Plumbing Fittings

- Adjustable Flow Controls:
  - Thumb screw adjust with locking nut for adjusting actuation time
  - Available 6mm O.D. tubing
- Consult Factory for additional available plumbing fittings



### Manifold O-ring Seals

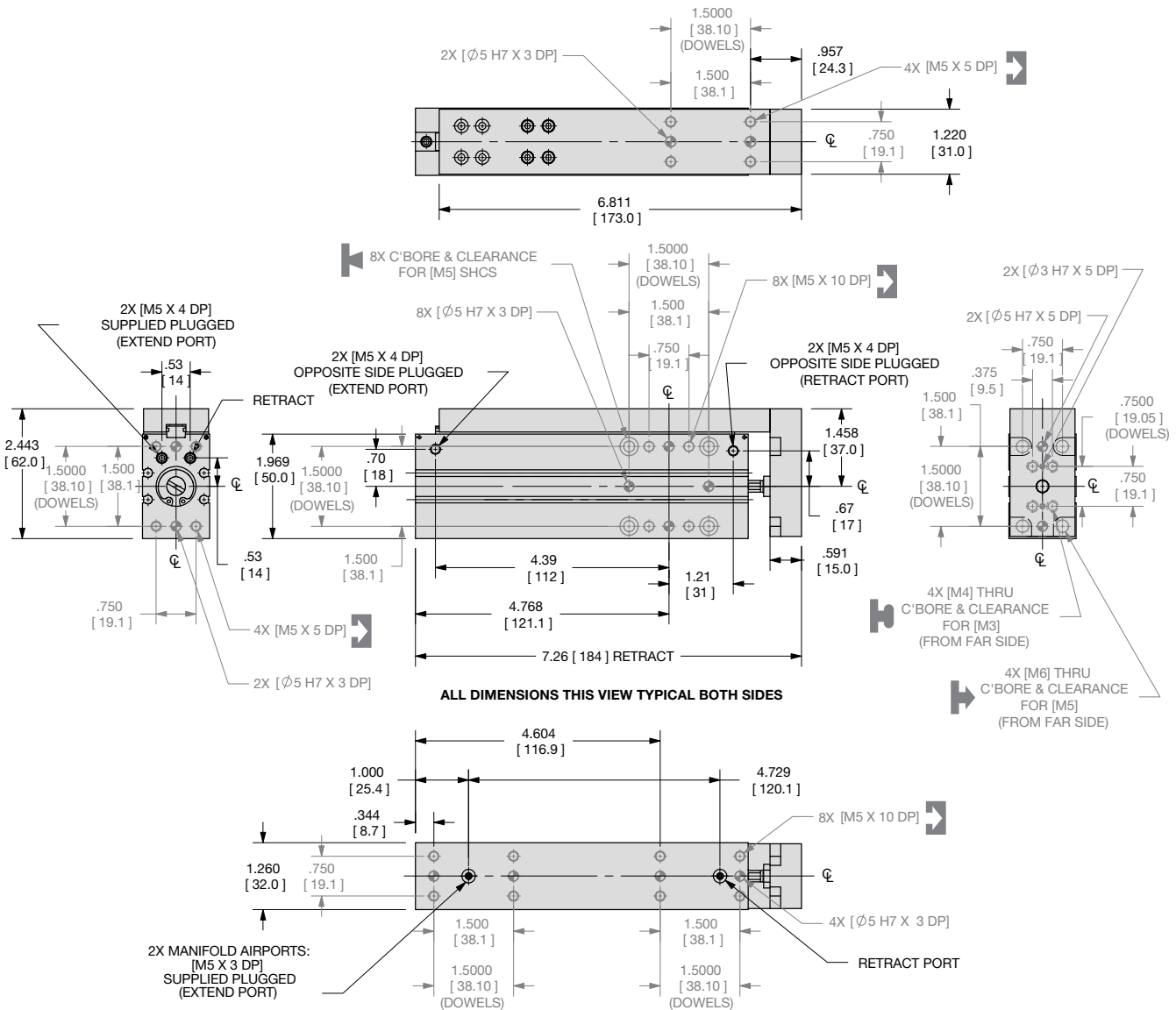
- Available in Seal Kit
- Kit is supplied with all seals, plugs & wrenches needed





# MINI BALL RAIL SLIDE DLM-09M-75 DIRECTCONNECT MODULAR SERIES

DLM SERIES 4.84



ALL DIMENSIONS THIS VIEW TYPICAL BOTH SIDES

UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

Symbol	Imperial in.	Metric [mm]
	0.00 = ±.01	[0.] = [±.25]
	0.000 = ±.005	[0.0] = [±.13]
	0.0000 = ±.0005	[0.00] = [±.013]

Dimensions are symmetrical about centerline  
 All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or [±.013mm]  
 Metric Threads Course Pitch

NOTE: DIRECTCONNECT™ DIMENSIONS ARE SHOWN IN BLUE

## How to Order: (Order Accessories separately from Basic Model)

**BASIC MODEL**    **BODY SIZE** (See Below)    **PRECISION STOPS**  
**DLM-09M - 75 - [ ] - D - P**  
**STROKE** (See Below)    **DOUBLE BEARINGS**

**BODY SIZE** 75  
**STROKE** (mm) 50, 55, 60, 65, 70, 75  
**DOUBLE BEARING** D  
**PRECISION STOPS** P

### SENSOR ACCESSORIES

- PNP Magneto Resistive Sensor with Quick Disconnect\* **OHSP-017 1-4**
- NPN Magneto Resistive Sensor with Quick Disconnect\* **OHSN-017 1-4**
- PNP Magneto Resistive Sensor 90° Barrel (with Qk. Disc)\* **OHSP-011 1-4**
- NPN Magneto Resistive Sensor 90° Barrel (with Qk. Disc.)\* **OHSN-011 1-4**
- Quick Disconnect Cable (2 meters long)\* **CABL-010 1-4**
- Quick Disconnect Cable (5 meters long)\* **CABL-013 1-4**

ORDER # QTY/UNIT

### PNEUMATIC ACCESSORIES

- Seal Repair Kit **SLKT-237 1**
- Manifold Seal Kit **SLKT-240 1**
- Adjustable Flow Control **VLVF-008 1 or 2**

ORDER # QTY/UNIT

\*Sensor and cable sold separately

### SAMPLE ORDER: DLM-09M-75-75-D-P

Ex: DLM-09M Mini Ball Rail Slide, -75 Body Size, 75mm Stroke, Double Ball Bearings, Precision Stops

Please see back cover for DE-STA-CO Global Locations. [www.destaco.com](http://www.destaco.com)

[www.comoso.com](http://www.comoso.com)



# MINI BALL RAIL SLIDE DLM-09M-75 DIRECTCONNECT MODULAR SERIES

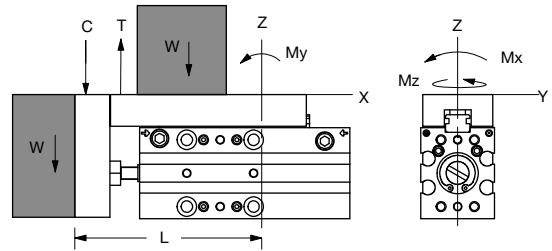


DLM SERIES

4.85

DIRECTCONNECT™

Specifications	DLM-09M-75	
Thrust Force <b>F</b> @ 100 psi, 7 bar.....	31 lbs.	138 N
Max. Stroke .....	3.00 in.	150 mm
Stroke Reduction (return) .....	0.19 in.	5 mm
Weight .....	1.78 lbs.	0.81 Kg
Maximum Payload <b>W</b> .....	2.0 lbs.	0.90 Kg
Maximum Payload (-P Option) .....	1.0 lbs.	0.45 Kg
Cylinder Bore $\emptyset$ .....	0.630 in.	16 mm
Temperature Range .....	-30°~180° F	-35°~80° C
Actuation per 25mm of travel .....	0.10 sec.	
Linear accuracy per 25mm of travel.....	±0.0001 in.	±0.005 mm
Repeatability (-P Option) .....	±0.003 in.	±0.08 mm
Pressure Range.....	20-100 psi	1.4-7 bar
Valve required to actuate .....	4-way, 2-position	



Flow Controls are recommended for nearly all applications

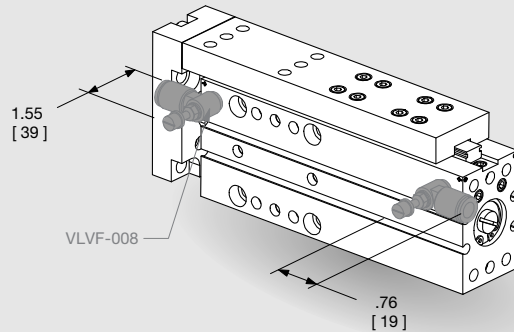
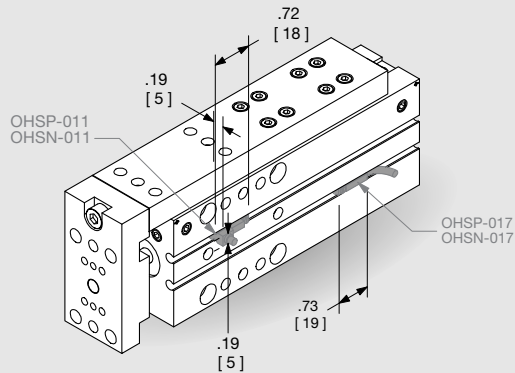
### Loading Capacity

	Static	Dynamic
<b>DLM-09M-75</b>		
Maximum Tensile <b>T</b>	165 lbs. [735 N]	92 lbs. [413 N]
Maximum Compressive <b>C</b>	165 lbs. [735 N]	92 lbs. [413 N]
Maximum Moment <b>M<sub>x</sub></b>	84 in.-lbs. [9.6 Nm]	47 in.-lbs. [5.4 Nm]
Maximum Moment <b>M<sub>y</sub></b>	56 in.-lbs. [6.4 Nm]	31 in.-lbs. [3.6 Nm]
Maximum Moment <b>M<sub>z</sub></b>	56 in.-lbs. [6.4 Nm]	31 in.-lbs. [3.6 Nm]
Distance to Bearing Centerline L	4.95 in. [126 mm]	

### DLM-09M-75-D

Maximum Tensile <b>T</b>	330 lbs. [1470 N]	185 lbs. [826 N]
Maximum Compressive <b>C</b>	330 lbs. [1470 N]	185 lbs. [826 N]
Maximum Moment <b>M<sub>x</sub></b>	169 in.-lbs. [19.2 Nm]	95 in.-lbs. [10.8 Nm]
Maximum Moment <b>M<sub>y</sub></b>	113 in.-lbs. [12.8 Nm]	63 in.-lbs. [7.2 Nm]
Maximum Moment <b>M<sub>z</sub></b>	113 in.-lbs. [12.8 Nm]	63 in.-lbs. [7.2 Nm]
Distance to Bearing Centerline L	5.58 in. [142 mm]	

## Accessory Mounting Technical Data

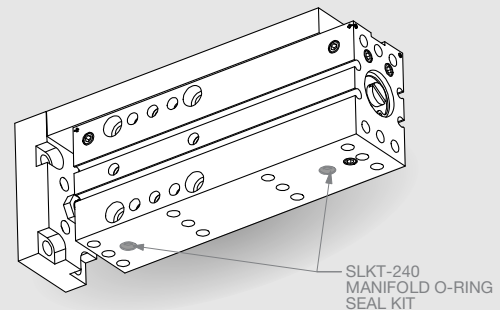
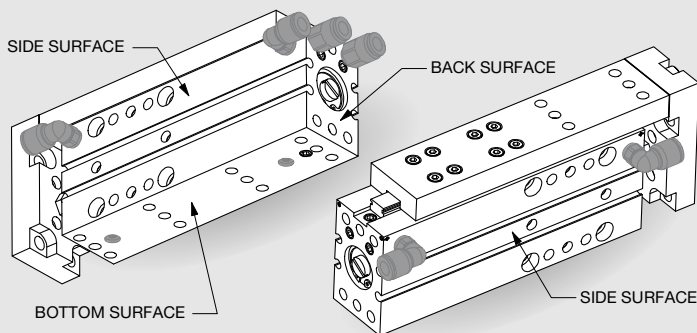


### Sensors

- PNP and NPN Magneto Resistive available
- Sensors are slot mounted, no mounting kits required
- Simple adjustment with slotted screw driver
- Built-in LED for ease of positioning and troubleshooting
- Low profile sensor version or 90° wire exit sensor version
- Available with 2M or 5M Quick Disconnect mating cable (order separately)

### Plumbing Fittings

- Adjustable Flow Controls:
  - Thumb screw adjust with locking nut for adjusting actuation time
  - Available 6mm O.D. tubing
- Consult Factory for additional available plumbing fittings



### Multiple Air Port Locations

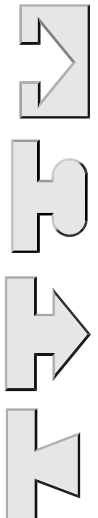
- 2 standard M5 air port locations (both sides)
- Bottom and Back airports (M3) are plugged as supplied

### Manifold O-ring Seals

- Available in Seal Kit
- Kit is supplied with all seals, plugs & wrenches needed

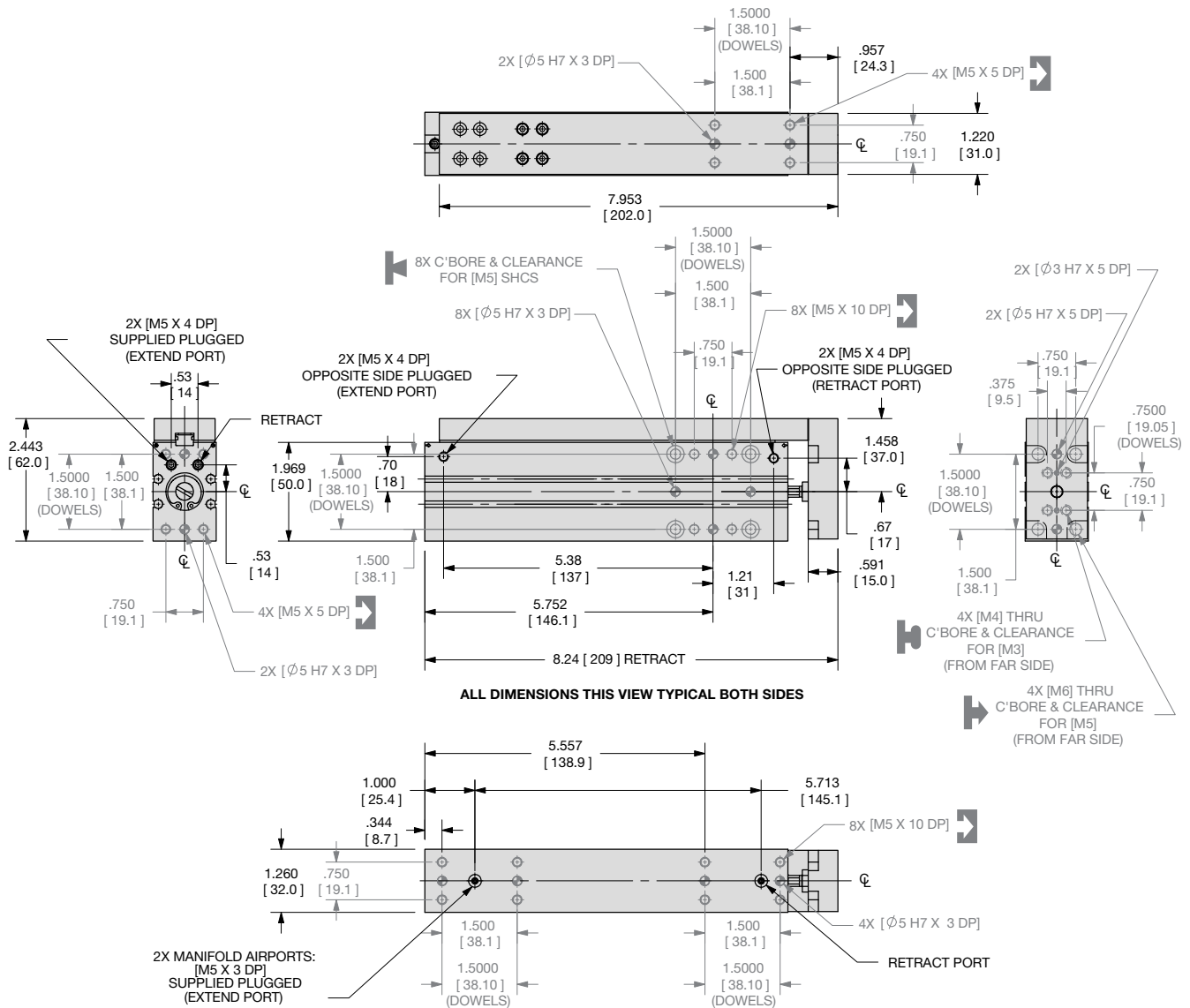


# MINI BALL RAIL SLIDE DLM-09M-100 DIRECTCONNECT MODULAR SERIES



DLM SERIES

4.86



ALL DIMENSIONS THIS VIEW TYPICAL BOTH SIDES

**UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW**

Dimensions are symmetrical about centerline	Third Angle Projection	All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or ±.013mm	Metric Threads Course Pitch	<b>Imperial in.</b> 0.00 = ±.01 0.000 = ±.005 0.0000 = ±.0005	<b>Metric [mm]</b> [0.] = ±.25 [0.0] = ±.13 [0.00] = ±.013
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NOTE: DIRECTCONNECT™ DIMENSIONS ARE SHOWN IN BLUE



## How to Order: (Order Accessories separately from Basic Model)

**BASIC MODEL**    **BODY SIZE** (See Below)    **PRECISION STOPS**

**DLM-09M-100** - **100** - **D** - **P**

**STROKE** (See Below)    **DOUBLE BEARINGS**

**BODY SIZE** 100  
**STROKE** (mm)  
 75, 80, 85, 90, 95, 100

**DOUBLE BEARING** D  
**PRECISION STOPS** P

### SENSOR ACCESSORIES

- PNP Magneto Resistive Sensor with Quick Disconnect\* **OHSP-017** 1-4
- NPN Magneto Resistive Sensor with Quick Disconnect\* **OHSN-017** 1-4
- PNP Magneto Resistive Sensor 90° Barrel (with Qk. Disc)\* **OHSP-011** 1-4
- NPN Magneto Resistive Sensor 90° Barrel (with Qk. Disc)\* **OHSN-011** 1-4
- Quick Disconnect Cable (2 meters long)\* **CABL-010** 1-4
- Quick Disconnect Cable (5 meters long)\* **CABL-013** 1-4

**ORDER #**    **QTY/UNIT**

### PNEUMATIC ACCESSORIES

- Seal Repair Kit **SLKT-237** 1
- Manifold Seal Kit **SLKT-240** 1
- Adjustable Flow Control **VLVF-008** 1 or 2

**ORDER #**    **QTY/UNIT**

\*Sensor and cable sold separately

### SAMPLE ORDER: DLM-09M-100-85-D-P

Ex: DLM-09M Mini Ball Rail Slide, -100 Body Size, 85mm Stroke, Double Ball Bearings, Precision Stops

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[www.comoso.com](http://www.comoso.com)



# MINI BALL RAIL SLIDE DLM-09M-100 DIRECTCONNECT MODULAR SERIES

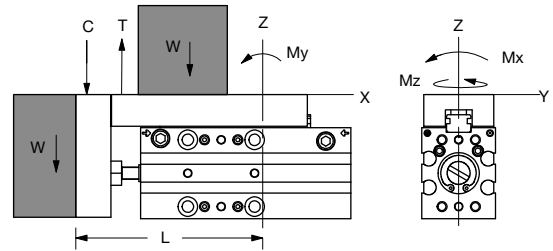


DLM SERIES

4.87

DIRECTCONNECT™

Specifications	DLM-09M-100	
Thrust Force <b>F</b> @ 100 psi, 7 bar.....	31 lbs.	138 N
Max. Stroke .....	4.00 in.	200 mm
Stroke Reduction (return) .....	0.19 in.	5 mm
Weight .....	2.13 lbs.	0.97 Kg
Maximum Payload <b>W</b> .....	2.0 lbs.	0.90 Kg
Maximum Payload (-P Option) .....	1.0 lbs.	0.45 Kg
Cylinder Bore $\emptyset$ .....	0.630 in.	16 mm
Temperature Range: .....	-30°~180° F	-35°~80° C
Actuation per 25mm of travel .....	0.10 sec.	
Linear accuracy per 25mm of travel.....	±0.0001 in.	±0.005 mm
Repeatability (-P Option) .....	±0.003 in.	±0.08 mm
Pressure Range.....	20-100 psi	1.4-7 bar
Valve required to actuate .....	4-way, 2-position	



Flow Controls are recommended for nearly all applications

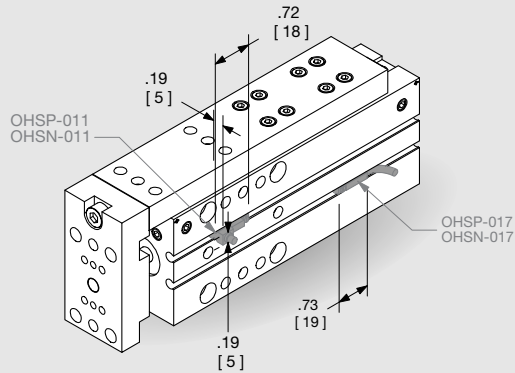
## Loading Capacity

	Static	Dynamic
<b>DLM-09M-100</b>		
Maximum Tensile <b>T</b>	165 lbs. [735 N]	92 lbs. [413 N]
Maximum Compressive <b>C</b>	165 lbs. [735 N]	92 lbs. [413 N]
Maximum Moment <b>M<sub>x</sub></b>	84 in.-lbs. [9.6 Nm]	47 in.-lbs. [5.4 Nm]
Maximum Moment <b>M<sub>y</sub></b>	56 in.-lbs. [6.4 Nm]	31 in.-lbs. [3.6 Nm]
Maximum Moment <b>M<sub>z</sub></b>	56 in.-lbs. [6.4 Nm]	31 in.-lbs. [3.6 Nm]
Distance to Bearing Centerline L	6.10 in. [155 mm]	

## DLM-09M-100-D

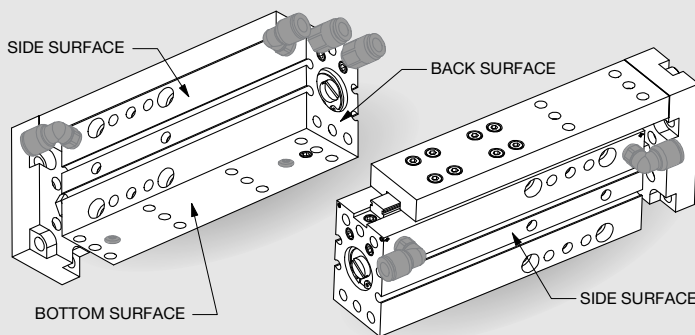
Maximum Tensile <b>T</b>	330 lbs. [1470 N]	185 lbs. [826 N]
Maximum Compressive <b>C</b>	330 lbs. [1470 N]	185 lbs. [826 N]
Maximum Moment <b>M<sub>x</sub></b>	169 in.-lbs. [19.2 Nm]	95 in.-lbs. [10.8 Nm]
Maximum Moment <b>M<sub>y</sub></b>	113 in.-lbs. [12.8 Nm]	63 in.-lbs. [7.2 Nm]
Maximum Moment <b>M<sub>z</sub></b>	113 in.-lbs. [12.8 Nm]	63 in.-lbs. [7.2 Nm]
Distance to Bearing Centerline L	6.72 in. [171 mm]	

## Accessory Mounting Technical Data



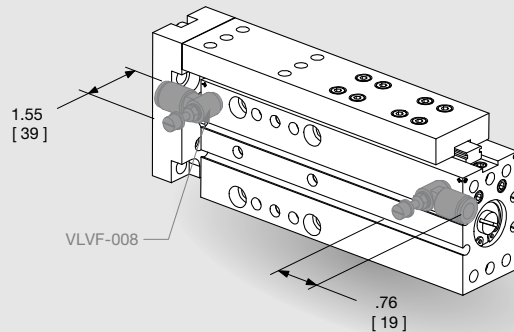
### Sensors

- PNP and NPN Magneto Resistive available
- Sensors are slot mounted, no mounting kits required
- Simple adjustment with slotted screw driver
- Built-in LED for ease of positioning and troubleshooting
- Low profile sensor version or 90° wire exit sensor version
- Available with 2M or 5M Quick Disconnect mating cable (order separately)



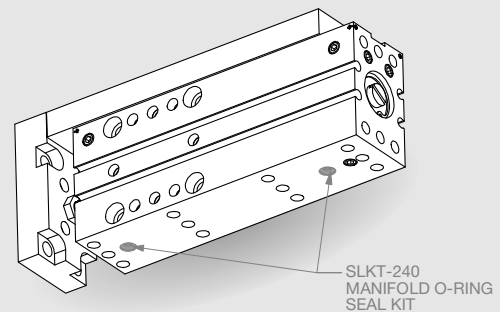
### Multiple Air Port Locations

- 2 standard M5 air port locations (both sides)
- Bottom and Back airports (M3) are plugged as supplied



### Plumbing Fittings

- Adjustable Flow Controls:
  - Thumb screw adjust with locking nut for adjusting actuation time
  - Available for 6mm O.D. tubing
- Consult Factory for additional available plumbing fittings



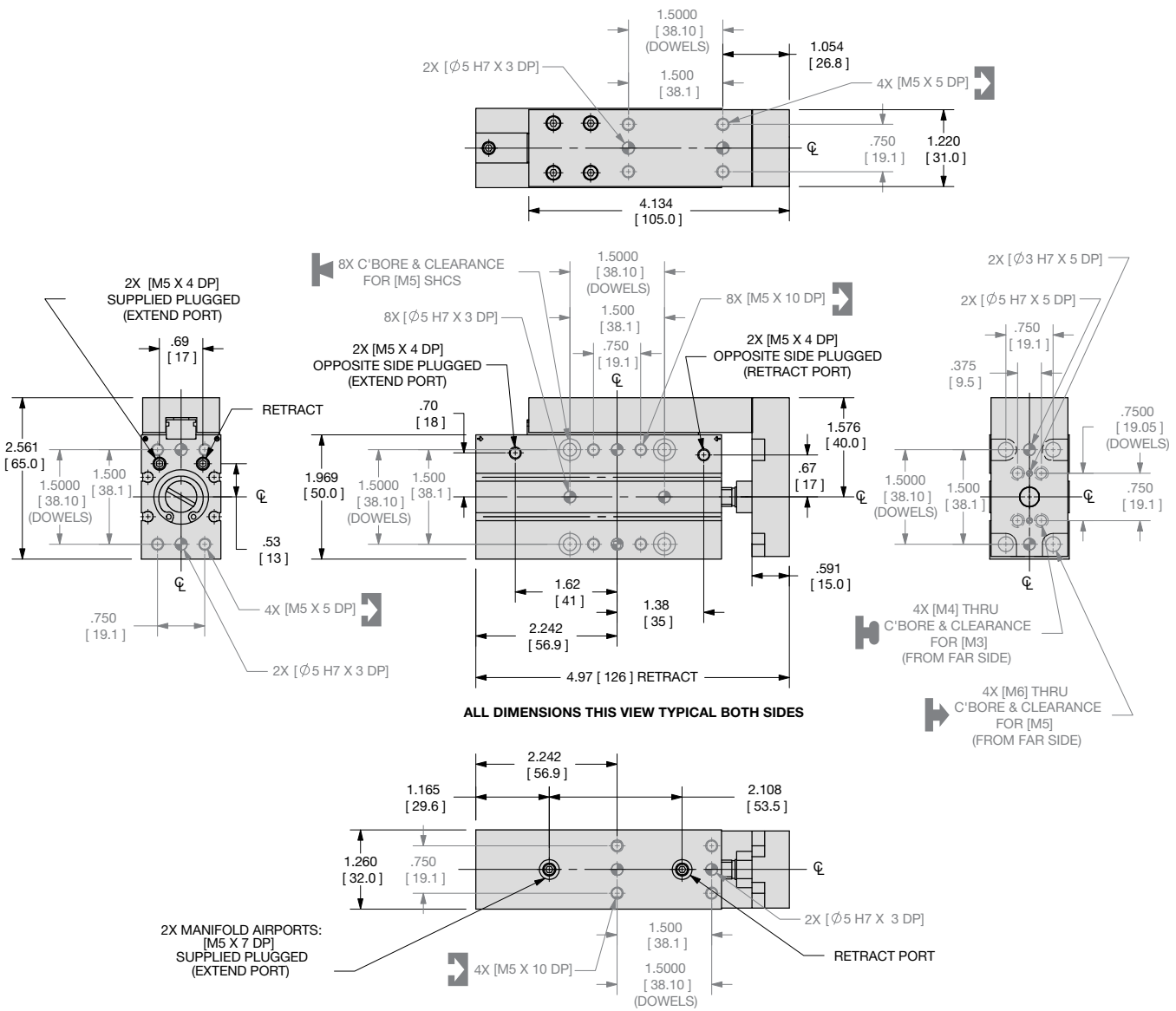
### Manifold O-ring Seals

- Available in Seal Kit
- Kit is supplied with all seals, plugs & wrenches needed

# MINI BALL RAIL SLIDE DLM-012M-25 DIRECTCONNECT MODULAR SERIES

DLM SERIES

4.88



DIRECTCONNECT™

## How to Order: (Order Accessories separately from Basic Model)

**BASIC MODEL**    **BODY SIZE**    **PRECISION STOPS**

**DLM-12M** - **25** - **P**

**STROKE**  
(See Below)

**BODY SIZE**    **25**  
**STROKE**    (mm)  
**5, 10, 15, 20, 25**

**PRECISION STOPS**    **P**

### SENSOR ACCESSORIES

- PNP Magneto Resistive Sensor with Quick Disconnect\* **OHSP-017**    **1-4**
- NPN Magneto Resistive Sensor with Quick Disconnect\* **OHSN-017**    **1-4**
- PNP Magneto Resistive Sensor 90° Barrel (with Qk. Disc)\* **OHSP-011**    **1-4**
- NPN Magneto Resistive Sensor 90° Barrel (with Qk. Disc.)\* **OHSN-011**    **1-4**
- Quick Disconnect Cable (2 meters long)\* **CABL-010**    **1-4**
- Quick Disconnect Cable (5 meters long)\* **CABL-013**    **1-4**

### PNEUMATIC ACCESSORIES

- Seal Repair Kit **SLKT-238**    **1**
- Manifold Seal Kit **SLKT-240**    **1**
- Adjustable Flow Control **VLVF-008**    **1 or 2**

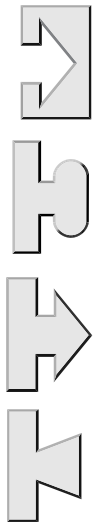
\*Sensor and cable sold separately

### SAMPLE ORDER: DLM-12M-25-20-P

Ex: DLM-12M Mini Ball Rail Slide, -25 Body Size, 20mm Stroke, Precision Stops



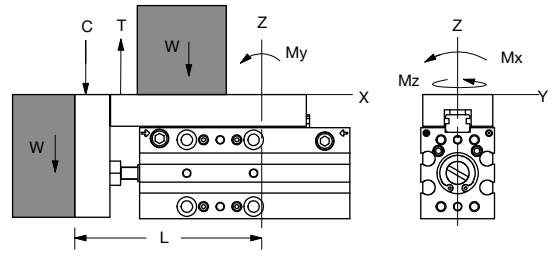
# MINI BALL RAIL SLIDE DLM-12M-25 DIRECTCONNECT MODULAR SERIES



DLM SERIES  
4.89

DIRECTCONNECT™

Specifications	DLM-12M-25	
Thrust Force <b>F</b> @ 100 psi, 7 bar.....	51 lbs.	230 N
Max. Stroke .....	1.00 in.	25 mm
Stroke Reduction (return) .....	0.19 in.	5 mm
Weight .....	1.18 lbs.	0.54 Kg
Maximum Payload <b>W</b> .....	4.0 lbs.	1.81 Kg
Maximum Payload (-P Option) .....	2.0 lbs.	0.90 Kg
Cylinder Bore $\emptyset$ .....	0.813 in.	22 mm
Temperature Range: .....	-30°~180° F	-35°~80° C
Actuation per 25mm of travel .....	0.14 sec.	
Linear accuracy per 25mm of travel.....	±0.0001 in.	±0.005 mm
Repeatability (-P Option) .....	±0.003 in.	±0.08 mm
Pressure Range.....	20-100 psi	1.4-7 bar
Valve required to actuate .....	4-way, 2-position	

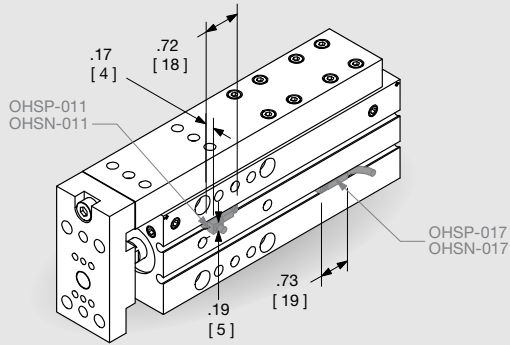


Flow Controls are recommended for nearly all applications

### Loading Capacity

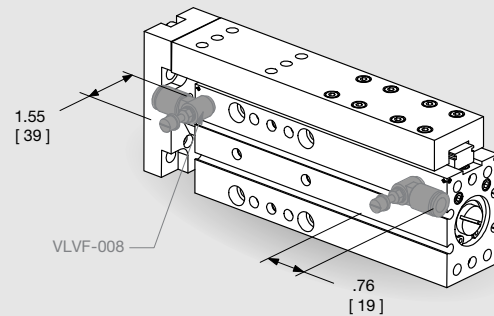
	Static	Dynamic
<b>DLM-12M-25</b>		
Maximum Tensile <b>T</b>	273 lbs. [1214 N]	181 lbs. [808 N]
Maximum Compressive <b>C</b>	273 lbs. [1214 N]	181 lbs. [808 N]
Maximum Moment <b>M<sub>x</sub></b>	182 in.-lbs. [20.6 Nm]	121 in.-lbs. [13.7 Nm]
Maximum Moment <b>M<sub>y</sub></b>	104 in.-lbs. [11.8 Nm]	69 in.-lbs. [7.9 Nm]
Maximum Moment <b>M<sub>z</sub></b>	104 in.-lbs. [11.8 Nm]	69 in.-lbs. [7.9 Nm]
Distance to Bearing Centerline L	3.45 in. [88 mm]	

## Accessory Mounting Technical Data



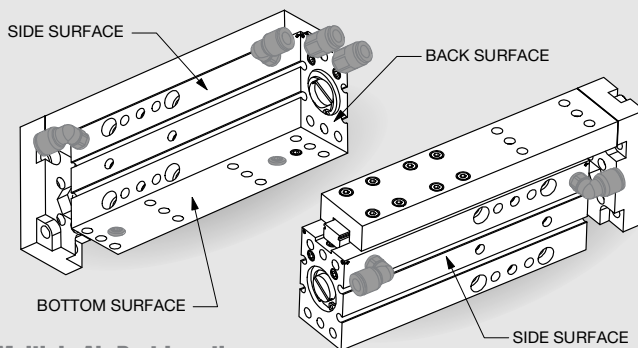
### Sensors

- PNP and NPN Magneto Resistive available
- Sensors are slot mounted, no mounting kits required
- Simple adjustment with slotted screw driver
- Built-in LED for ease of positioning and troubleshooting
- Low profile sensor version or 90° wire exit sensor version
- Available with 2M or 5M Quick Disconnect mating cable (order separately)



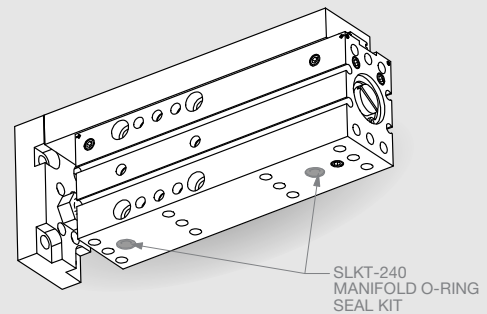
### Plumbing Fittings

- Adjustable Flow Controls:
  - Thumb screw adjust with locking nut for adjusting actuation time
  - Available for 6mm O.D. tubing
- Consult Factory for additional available plumbing fittings



### Multiple Air Port Locations

- 2 standard M5 air port locations (both sides)
- Bottom and Back airports (M3) are plugged as supplied



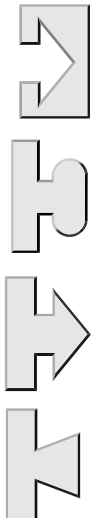
### Manifold O-ring Seals

- Available in Seal Kit
- Kit is supplied with all seals, plugs & wrenches needed

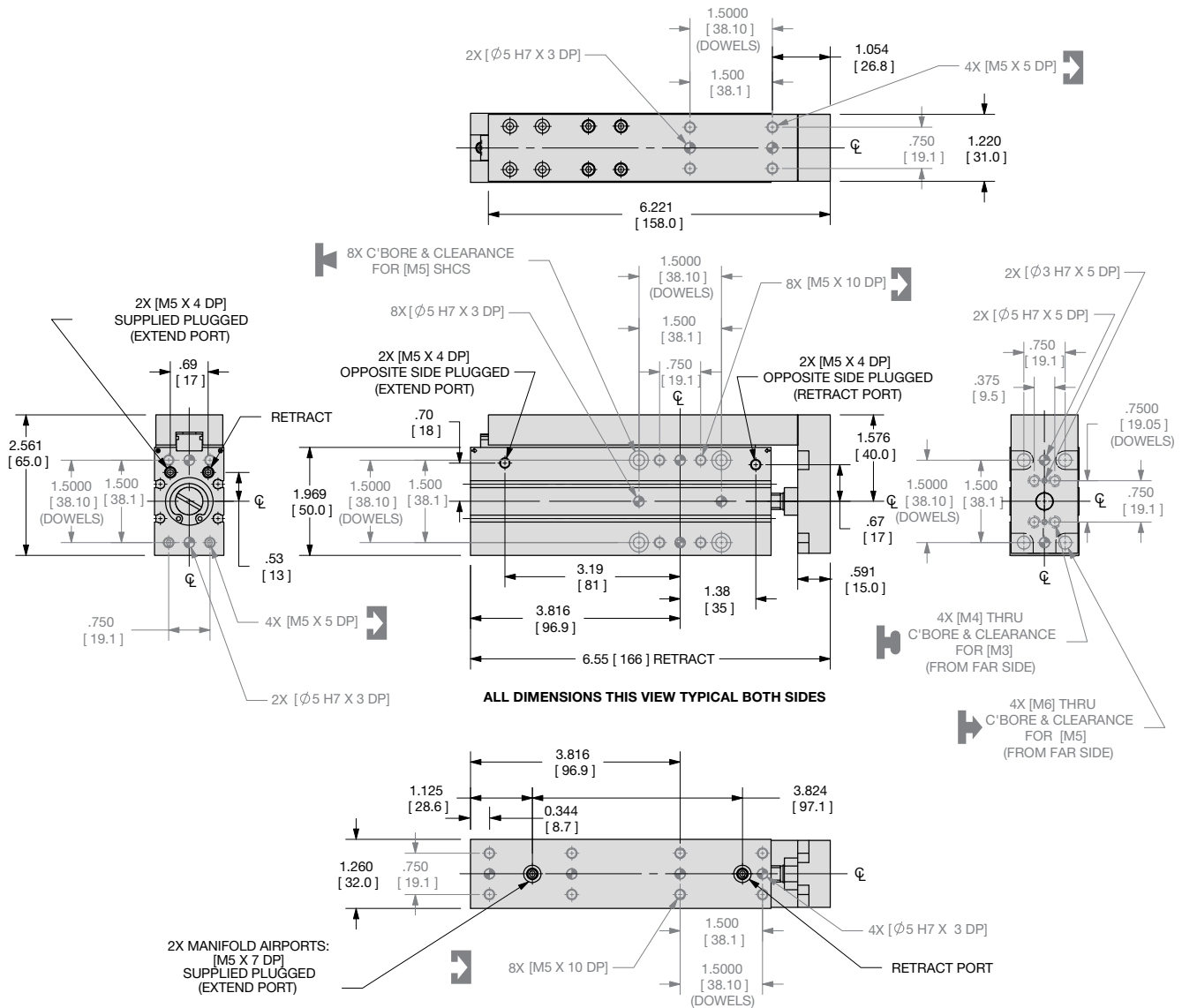




# MINI BALL RAIL SLIDE DLM-12M-50 DIRECTCONNECT MODULAR SERIES



DLM SERIES  
4.90



ALL DIMENSIONS THIS VIEW TYPICAL BOTH SIDES

UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

Symbol	Imperial in.	Metric [mm]
	0.00 = ±.01	[0.] = [±.25]
	0.000 = ±.005	[0.0] = [±.13]
	0.0000 = ±.0005	[0.00] = [±.013]

Dimensions are symmetrical about centerline  
 All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or [±.013mm]  
 Metric Threads Course Pitch

NOTE: DIRECTCONNECT™ DIMENSIONS ARE SHOWN IN BLUE

## How to Order: (Order Accessories separately from Basic Model)

**BASIC MODEL**    **BODY SIZE** (See Below)    **PRECISION STOPS**  
**DLM-12M - 50 - [ ] - D - P**  
**STROKE** (See Below)    **DOUBLE BEARINGS**

**BODY SIZE** 50  
**STROKE** (mm) 25, 30, 35, 40, 45, 50  
**DOUBLE BEARING** D  
**PRECISION STOPS** P

SENSOR ACCESSORIES	ORDER #	QTY/UNIT
PNP Magneto Resistive Sensor with Quick Disconnect*	<b>OHSP-017</b>	<b>1-4</b>
NPN Magneto Resistive Sensor with Quick Disconnect*	<b>OHSN-017</b>	<b>1-4</b>
PNP Magneto Resistive Sensor 90° Barrel (with Qk. Disc)*	<b>OHSP-011</b>	<b>1-4</b>
NPN Magneto Resistive Sensor 90° Barrel (with Qk. Disc)*	<b>OHSN-011</b>	<b>1-4</b>
Quick Disconnect Cable (2 meters long)*	<b>CABL-010</b>	<b>1-4</b>
Quick Disconnect Cable (5 meters long)*	<b>CABL-013</b>	<b>1-4</b>

PNEUMATIC ACCESSORIES	ORDER #	QTY/UNIT
Seal Repair Kit	<b>SLKT-238</b>	<b>1</b>
Manifold Seal Kit	<b>SLKT-240</b>	<b>1</b>
Adjustable Flow Control	<b>VLVF-008</b>	<b>1 or 2</b>

\*Sensor and cable sold separately

**SAMPLE ORDER: DLM-12M-50-45-D-P**  
 Ex: DLM-12M Mini Ball Rail Slide, -50 Body Size, 45mm Stroke, Double Ball Bearings, Precision Stops

Please see back cover for DE-STA-CO Global Locations. [www.destaco.com](http://www.destaco.com)

[www.comoso.com](http://www.comoso.com)





# MINI BALL RAIL SLIDE DLM-12M-50 DIRECTCONNECT MODULAR SERIES

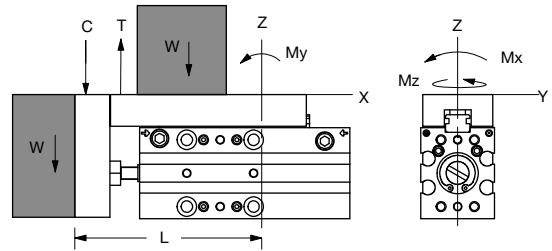


DLM SERIES

4.91

DIRECTCONNECT™

Specifications	DLM-12M-50	
Thrust Force <b>F</b> @ 100 psi, 7 bar.....	51 lbs.	230 N
Max. Stroke .....	2.00 in.	50 mm
Stroke Reduction (return) .....	0.19 in.	5 mm
Weight .....	1.43 lbs.	0.65 Kg
Maximum Payload <b>W</b> .....	4.0 lbs.	1.81 Kg
Maximum Payload (-P Option) .....	2.0 lbs.	0.90 Kg
Cylinder Bore $\emptyset$ .....	0.813 in.	22 mm
Temperature Range: .....	-30°~180° F	-35°~80° C
Actuation per 25mm of travel .....	0.14 sec.	
Linear accuracy per 25mm of travel.....	±0.0001 in.	±0.005 mm
Repeatability (-P Option) .....	±0.003 in.	±0.08 mm
Pressure Range.....	20-100 psi	1.4-7 bar
Valve required to actuate .....	4-way, 2-position	



Flow Controls are recommended for nearly all applications

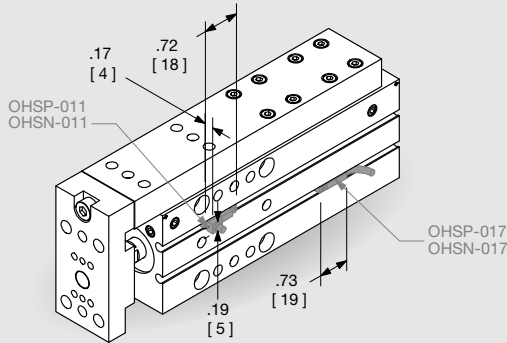
### Loading Capacity

	Static	Dynamic
<b>DLM-12M-50</b>		
Maximum Tensile <b>T</b>	273 lbs. [1214 N]	181 lbs. [808 N]
Maximum Compressive <b>C</b>	273 lbs. [1214 N]	181 lbs. [808 N]
Maximum Moment <b>M<sub>x</sub></b>	182 in.-lbs. [20.6 Nm]	121 in.-lbs. [13.7 Nm]
Maximum Moment <b>M<sub>y</sub></b>	104 in.-lbs. [11.8 Nm]	69 in.-lbs. [7.9 Nm]
Maximum Moment <b>M<sub>z</sub></b>	104 in.-lbs. [11.8 Nm]	69 in.-lbs. [7.9 Nm]
Distance to Bearing Centerline L	4.10 in. [104 mm]	

### DLM-12M-50-D

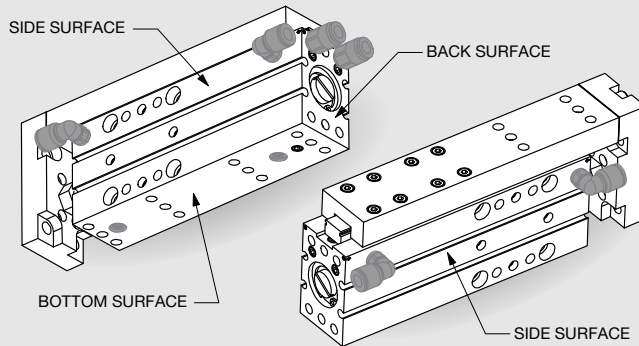
Maximum Tensile <b>T</b>	546 lbs. [2429 N]	363 lbs. [1617 N]
Maximum Compressive <b>C</b>	546 lbs. [2429 N]	363 lbs. [1617 N]
Maximum Moment <b>M<sub>x</sub></b>	364 in.-lbs. [41.2 Nm]	95 in.-lbs. [27.4 Nm]
Maximum Moment <b>M<sub>y</sub></b>	208 in.-lbs. [23.6 Nm]	139 in.-lbs. [15.8 Nm]
Maximum Moment <b>M<sub>z</sub></b>	208 in.-lbs. [23.6 Nm]	139 in.-lbs. [15.8 Nm]
Distance to Bearing Centerline L	4.82 in. [122 mm]	

## Accessory Mounting Technical Data



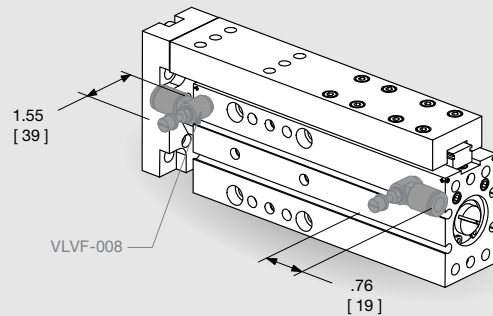
### Sensors

- PNP and NPN Magneto Resistive available
- Sensors are slot mounted, no mounting kits required
- Simple adjustment with slotted screw driver
- Built-in LED for ease of positioning and troubleshooting
- Low profile sensor version or 90° wire exit sensor version
- Available with 2M or 5M Quick Disconnect mating cable (order separately)



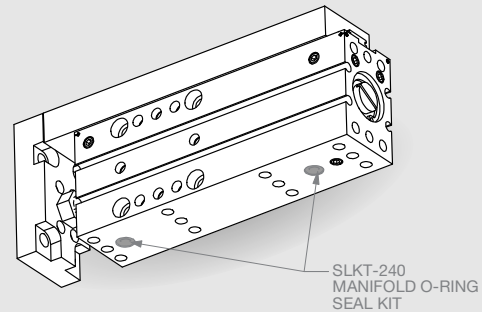
### Multiple Air Port Locations

- 2 standard M5 air port locations (both sides)
- Bottom and Back airports (M3) are plugged as supplied



### Plumbing Fittings

- Adjustable Flow Controls:
  - Thumb screw adjust with locking nut for adjusting actuation time
  - Available for 6mm O.D. tubing
- Consult Factory for additional available plumbing fittings



### Manifold O-ring Seals

- Available in Seal Kit
- Kit is supplied with all seals, plugs & wrenches needed





# MINI BALL RAIL SLIDE DLM-12M-75 DIRECTCONNECT MODULAR SERIES

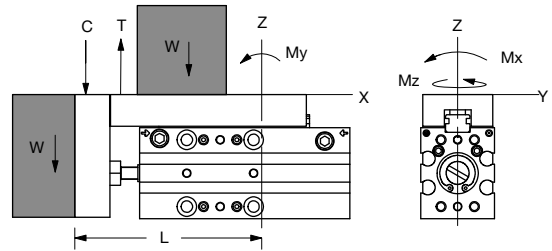


DLM SERIES

4.93

DIRECTCONNECT™

Specifications	DLM-12M-75	
Thrust Force <b>F</b> @ 100 psi, 7 bar.....	51 lbs.	230 N
Max. Stroke .....	3.00 in.	150 mm
Stroke Reduction (return) .....	0.19 in.	5 mm
Weight .....	1.80 lbs.	0.82 Kg
Maximum Payload <b>W</b> .....	4.0 lbs.	1.81 Kg
Maximum Payload (-P Option) .....	2.0 lbs.	0.90 Kg
Cylinder Bore $\emptyset$ .....	0.813 in.	22 mm
Temperature Range .....	-30°~180° F	-35°~80° C
Actuation per 25mm of travel .....	0.14 sec.	
Linear accuracy per 25mm of travel.....	±0.0001 in.	±0.005 mm
Repeatability (-P Option) .....	±0.003 in.	±0.08 mm
Pressure Range.....	20-100 psi	1.4-7 bar
Valve required to actuate .....	4-way, 2-position	



Flow Controls are recommended for nearly all applications

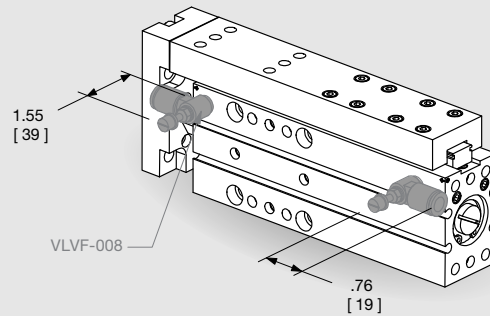
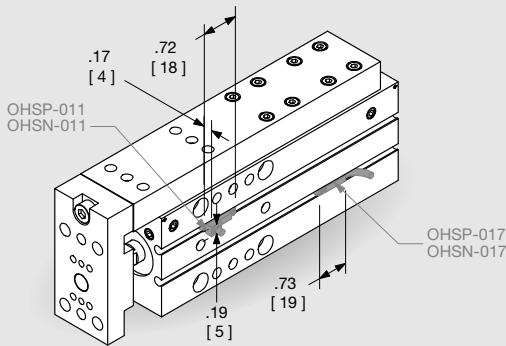
### Loading Capacity

	Static	Dynamic
<b>DLM-12M-75</b>		
Maximum Tensile <b>T</b>	273 lbs. [1214 N]	181 lbs. [808 N]
Maximum Compressive <b>C</b>	273 lbs. [1214 N]	181 lbs. [808 N]
Maximum Moment <b>M<sub>x</sub></b>	182 in.-lbs. [20.6 Nm]	121 in.-lbs. [13.7 Nm]
Maximum Moment <b>M<sub>y</sub></b>	104 in.-lbs. [11.8 Nm]	69 in.-lbs. [7.9 Nm]
Maximum Moment <b>M<sub>z</sub></b>	104 in.-lbs. [11.8 Nm]	69 in.-lbs. [7.9 Nm]
Distance to Bearing Centerline L	5.21 in. [132 mm]	

### DLM-12M-75-D

Maximum Tensile <b>T</b>	546 lbs. [2429 N]	363 lbs. [1617 N]
Maximum Compressive <b>C</b>	546 lbs. [2429 N]	363 lbs. [1617 N]
Maximum Moment <b>M<sub>x</sub></b>	364 in.-lbs. [41.2 Nm]	242 in.-lbs. [27.4 Nm]
Maximum Moment <b>M<sub>y</sub></b>	208 in.-lbs. [23.6 Nm]	139 in.-lbs. [15.8 Nm]
Maximum Moment <b>M<sub>z</sub></b>	208 in.-lbs. [23.6 Nm]	139 in.-lbs. [15.8 Nm]
Distance to Bearing Centerline L	5.92 in. [150 mm]	

## Accessory Mounting Technical Data

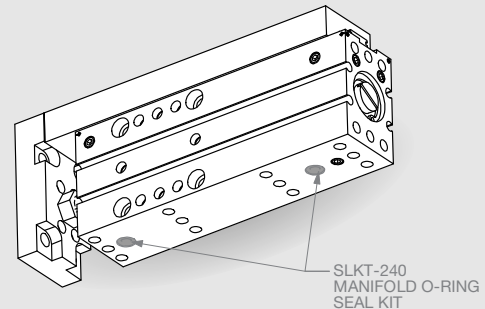
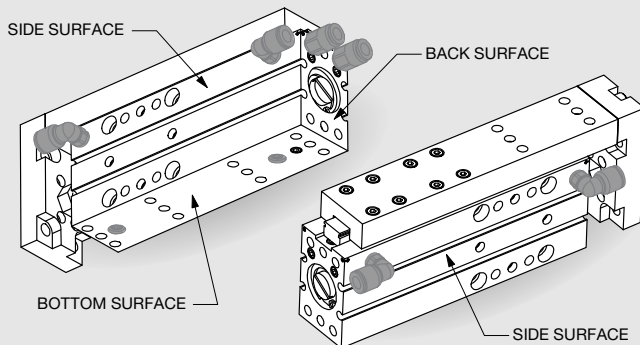


### Sensors

- PNP and NPN Magneto Resistive available
- Sensors are slot mounted, no mounting kits required
- Simple adjustment with slotted screw driver
- Built-in LED for ease of positioning and troubleshooting
- Low profile sensor version or 90° wire exit sensor version
- Available with 2M or 5M Quick Disconnect mating cable (order separately)

### Plumbing Fittings

- Adjustable Flow Controls:
  - Thumb screw adjust with locking nut for adjusting actuation time
  - Available for 6mm O.D. tubing
- Consult Factory for additional available plumbing fittings



### Multiple Air Port Locations

- 2 standard M5 air port locations (both sides)
- Bottom and Back airports (M3) are plugged as supplied

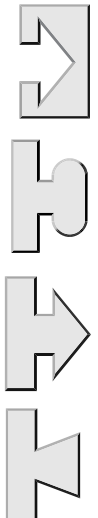
### Manifold O-ring Seals

- Available in Seal Kit
- Kit is supplied with all seals, plugs & wrenches needed



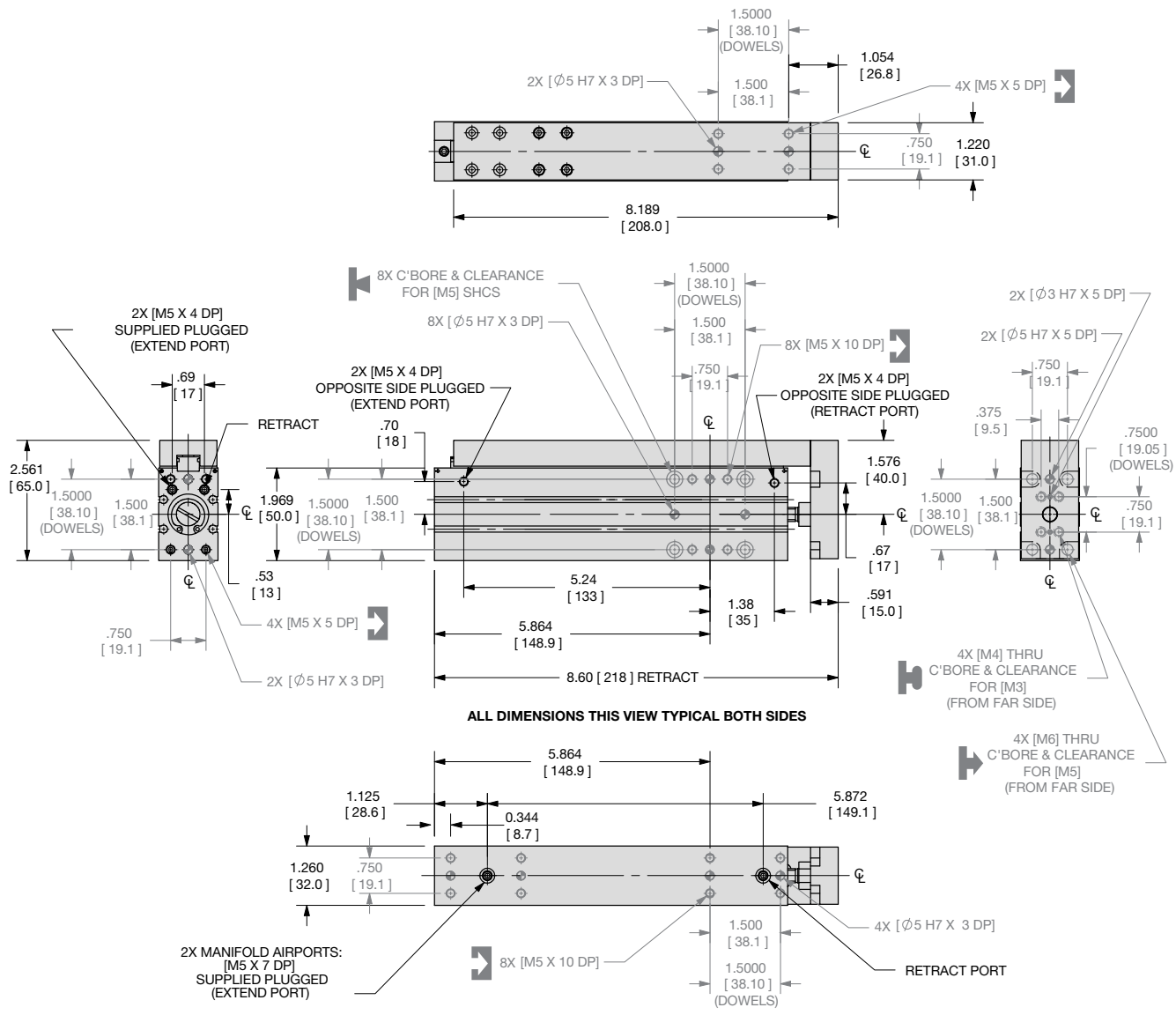
# MINI BALL RAIL SLIDE DLM-12M-100

## DIRECTCONNECT MODULAR SERIES



DLM SERIES

4.94



**UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW**

Symbol	Imperial in.	Metric [mm]
	0.00 = ±.01	[0.] = [±.25]
	0.000 = ±.005	[0.0] = [±.13]
	0.000 = ±.0005	[0.00] = [±.013]

Dimensions are symmetrical about centerline  
 All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or [±.013mm]  
 Metric Threads Course Pitch

NOTE: DIRECTCONNECT™ DIMENSIONS ARE SHOWN IN BLUE



### How to Order: (Order Accessories separately from Basic Model)

**BASIC MODEL**    **BODY SIZE** (See Below)    **PRECISION STOPS**

**DLM-12M - 100 - [ ] - D - P**

**STROKE**    **DOUBLE BEARINGS**

<b>BODY SIZE</b>	<b>100</b>
<b>STROKE</b> (mm)	<b>75, 80, 85, 90, 95, 100</b>
<b>DOUBLE BEARING</b>	<b>D</b>
<b>PRECISION STOPS</b>	<b>P</b>

SENSOR ACCESSORIES	ORDER #	QTY/UNIT
PNP Magneto Resistive Sensor with Quick Disconnect*	<b>OHSP-017</b>	<b>1-4</b>
NPN Magneto Resistive Sensor with Quick Disconnect*	<b>OHSN-017</b>	<b>1-4</b>
PNP Magneto Resistive Sensor 90° Barrel (with Qk. Disc)*	<b>OHSP-011</b>	<b>1-4</b>
NPN Magneto Resistive Sensor 90° Barrel (with Qk. Disc)*	<b>OHSN-011</b>	<b>1-4</b>
Quick Disconnect Cable (2 meters long)*	<b>CABL-010</b>	<b>1-4</b>
Quick Disconnect Cable (5 meters long)*	<b>CABL-013</b>	<b>1-4</b>

PNEUMATIC ACCESSORIES	ORDER #	QTY/UNIT
Seal Repair Kit	<b>SLKT-238</b>	<b>1</b>
Manifold Seal Kit	<b>SLKT-240</b>	<b>1</b>
Adjustable Flow Control	<b>VLVF-008</b>	<b>1 or 2</b>

\*Sensor and cable sold separately

**SAMPLE ORDER: DLM-12M-100-80-D**  
 Ex: DLM-12M Mini Ball Rail Slide, -100 Body Size, 80mm Stroke, Double Ball Bearings

Please see back cover for DE-STA-CO Global Locations. [www.destaco.com](http://www.destaco.com)

[www.comoso.com](http://www.comoso.com)



# MINI BALL RAIL SLIDE DLM-12M-100 DIRECTCONNECT MODULAR SERIES

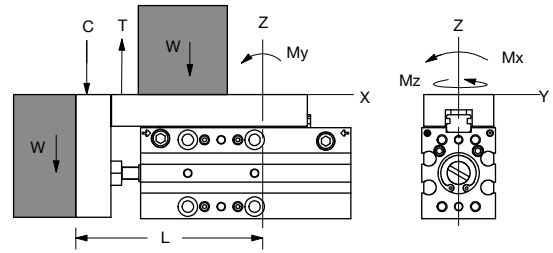


DLM SERIES

4.95

DIRECTCONNECT™

Specifications	DLM-12M-100	
Thrust Force <b>F</b> @ 100 psi, 7 bar.....	51 lbs.	230 N
Max. Stroke .....	4.00 in.	200 mm
Stroke Reduction (return) .....	0.19 in.	5 mm
Weight .....	2.25 lbs.	1.02 Kg
Maximum Payload <b>W</b> .....	4.0 lbs.	1.81 Kg
Maximum Payload (-P Option) .....	2.0 lbs.	0.90 Kg
Cylinder Bore $\emptyset$ .....	0.813 in.	22 mm
Temperature Range: .....	-30°~180° F	-35°~80° C
Actuation per 25mm of travel .....	0.14 sec.	
Linear accuracy per 25mm of travel.....	±0.0001 in.	±0.005 mm
Repeatability (-P Option) .....	±0.003 in.	±0.08 mm
Pressure Range.....	20-100 psi	1.4-7 bar
Valve required to actuate .....	4-way, 2-position	



Flow Controls are recommended for nearly all applications

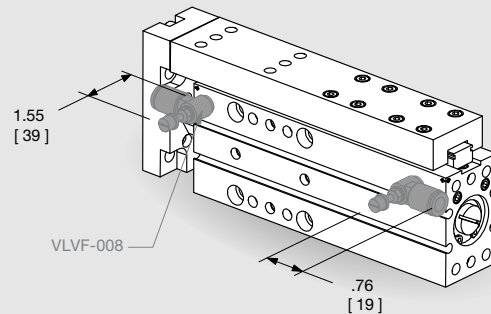
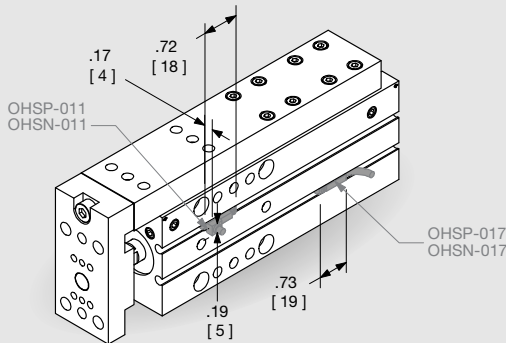
## Loading Capacity

	Static	Dynamic
<b>DLM-12M-100</b>		
Maximum Tensile <b>T</b>	273 lbs. [1214 N]	181 lbs. [808 N]
Maximum Compressive <b>C</b>	273 lbs. [1214 N]	181 lbs. [808 N]
Maximum Moment <b>M<sub>x</sub></b>	182 in.-lbs. [20.6 Nm]	121 in.-lbs. [13.7 Nm]
Maximum Moment <b>M<sub>y</sub></b>	104 in.-lbs. [11.8 Nm]	69 in.-lbs. [7.9 Nm]
Maximum Moment <b>M<sub>z</sub></b>	104 in.-lbs. [11.8 Nm]	69 in.-lbs. [7.9 Nm]
Distance to Bearing Centerline L	6.07 in. [154 mm]	

## DLM-12M-100-D

Maximum Tensile <b>T</b>	546 lbs. [2429 N]	363 lbs. [1617 N]
Maximum Compressive <b>C</b>	546 lbs. [2429 N]	363 lbs. [1617 N]
Maximum Moment <b>M<sub>x</sub></b>	364 in.-lbs. [41.2 Nm]	242 in.-lbs. [27.4 Nm]
Maximum Moment <b>M<sub>y</sub></b>	208 in.-lbs. [23.6 Nm]	139 in.-lbs. [15.8 Nm]
Maximum Moment <b>M<sub>z</sub></b>	208 in.-lbs. [23.6 Nm]	139 in.-lbs. [15.8 Nm]
Distance to Bearing Centerline L	6.79 in. [172 mm]	

## Accessory Mounting Technical Data

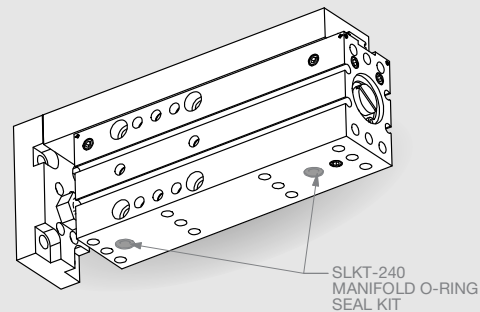
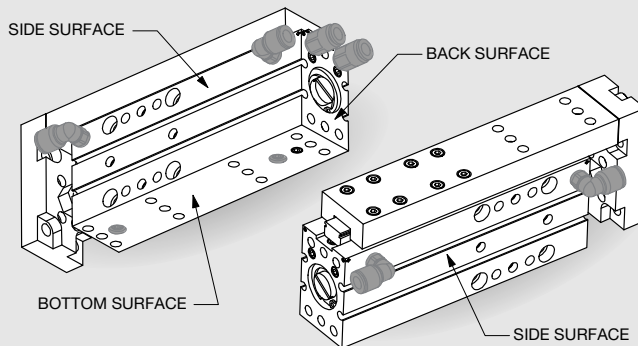


### Sensors

- PNP and NPN Magneto Resistive available
- Sensors are slot mounted, no mounting kits required
- Simple adjustment with slotted screw driver
- Built-in LED for ease of positioning and troubleshooting
- Low profile sensor version or 90° wire exit sensor version
- Available with 2M or 5M Quick Disconnect mating cable (order separately)

### Plumbing Fittings

- Adjustable Flow Controls:
  - Thumb screw adjust with locking nut for adjusting actuation time
  - Available for 6mm O.D. tubing
- Consult Factory for additional available plumbing fittings



### Multiple Air Port Locations

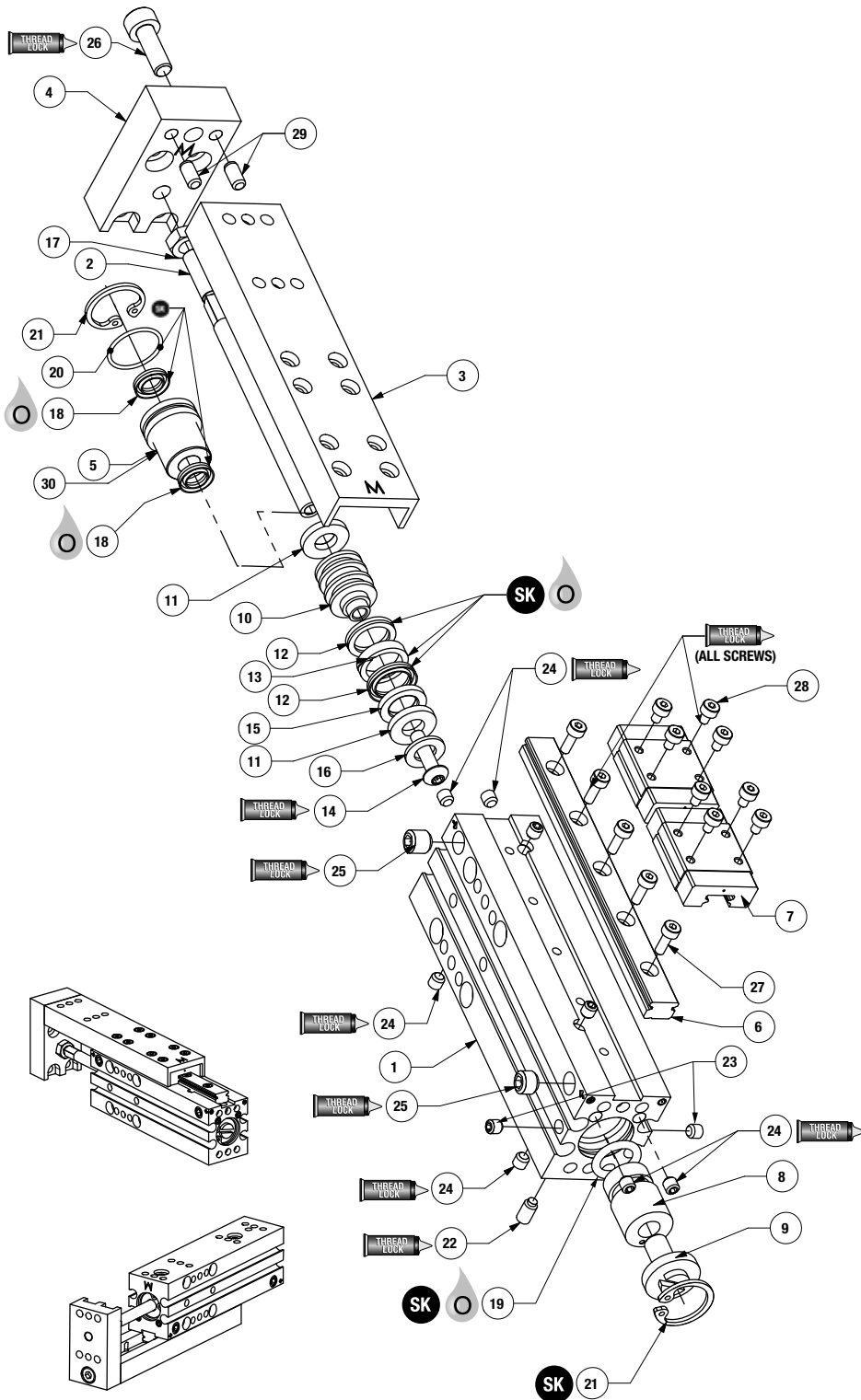
- 2 standard M5 air port locations (both sides)
- Bottom and Back airports (M3) are plugged as supplied

### Manifold O-ring Seals

- Available in Seal Kit
- Kit is supplied with all seals, plugs & wrenches needed



# DLM SERIES EXPLODED VIEW



DLM SERIES  
MAINTENANCE  
4.96

Item	Qty	Name
01	1	Body
02	1	Piston Shaft
03	1	Tool Plate Top
04	1	Tool Plate Face
05	1	Shaft End Cap
06	1	Guide Rail Bearing
07	1 or 2	Bearing Block
08	1	Stop
09	1	Adjustment Stud
10	1	Piston
11	2	Shock Pad
12	2	Piston U-Cup
13	1	Teflon Ring
14	1	Piston Screw
15	1	Magnet
16	1	Piston Washer
17	1	Jam Nut
18	1	End Cap U-Cup
19	2	Stop O-Ring
20	1	Shaft End Cap O-Ring
21	2	Cap Retaining Ring
22	1	Stop Set Screw
23	2	Adjustment Stud Set Screw
24	8	Plug Set Screw
25	2	Port Plug Set Screw
26	1	Tool Plate Screw
27	3-9	Rail Screw
28	4 or 8	Bearing Screw
29	2	Face Plate Dowel
30	1	Piston Spacer

**NOTE:** Contact the Robohand Sales Department for a complete spare parts list with order numbers and prices.

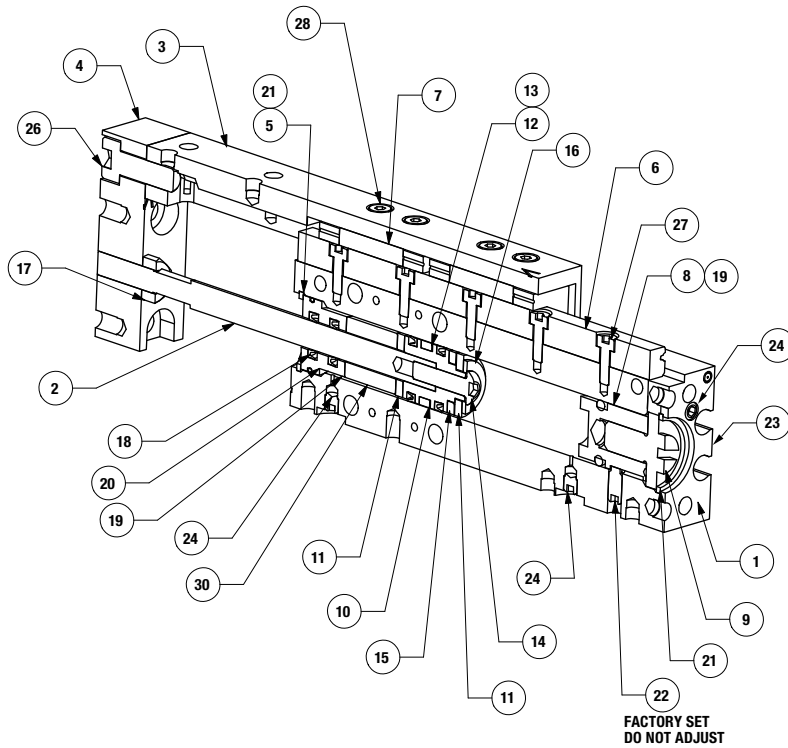
### Assembly Procedure

- 1) Install set screw plugs in appropriate ports in body using thread sealer
- 2) Attach Rail to Body
- 3) Attach Tool Plate Face to Tool Plate Top
- 4) Glue Magnet to Piston
- 5) Lube and install seals in Piston, Stop and End Cap
- 6) Install Stop Pad (retract) and Washer in Piston
- 7) Attach Nut to Shaft
- 8) Attach Piston to Shaft with End Cap, Spacer and Stop Pad (extend)
- 9) Install Stop from front of Body
- 10) Install Dog Point Set Screw
- 11) Install Adjustment Studs
- 12) Install Piston Assembly
- 13) Install Bearing Block
- 14) Install Tool Plate Assembly

SK Seal Kit Items	Thread Locker	Krytox™ Lubricant	Lightweight Machine Oil	Teflon™ Based Grease	Super Bonder	Third Angle Projection
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Please see back cover for DE-STA-CO Global Locations. [www.destaco.com](http://www.destaco.com)

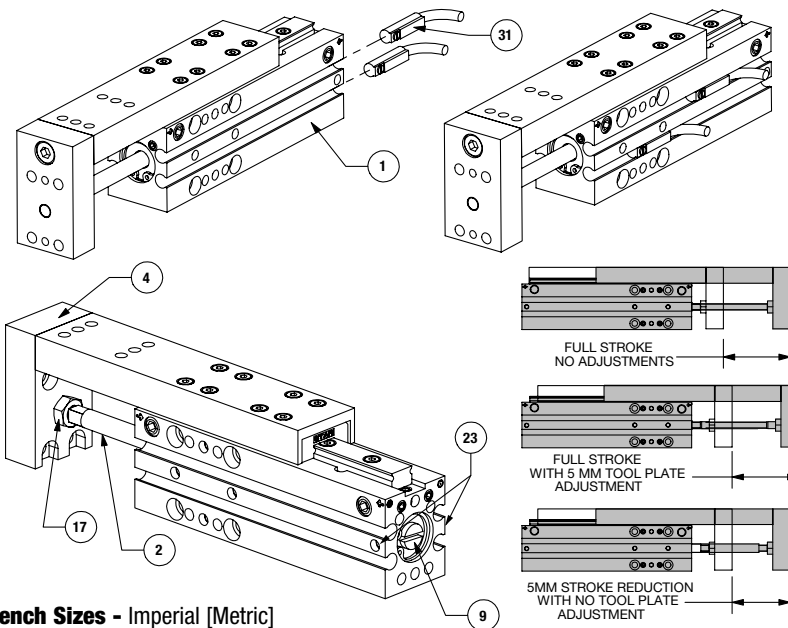
[www.comoso.com](http://www.comoso.com)



Item	Qty	Name
01	1	Body
02	1	Piston Shaft
03	1	Tool Plate Top
04	1	Tool Plate Face
05	1	Shaft End Cap
06	1	Guide Rail Bearing
07	1 or 2	Bearing Block
08	1	Stop
09	1	Adjustment Stud
10	1	Piston
11	2	Shock Pad
12	2	Piston U-Cup
13	1	Teflon Ring
14	1	Piston Screw
15	1	Magnet
16	1	Piston Washer
17	1	Jam Nut
18	1	End Cap U-Cup
19	2	Stop O-Ring
20	1	Shaft End Cap O-Ring
21	2	Cap Retaining Ring
22	1	Stop Set Screw
23	2	Adjustment Stud Set Screw
24	8	Plug Set Screw
25	2	Port Plug Set Screw
26	1	Tool Plate Screw
27	3-9	Rail Screw
28	4 or 8	Bearing Screw
29	2	Face Plate Dowel
30	1	Piston Spacer

**NOTE:** Contact the Robohand Sales Department for a complete spare parts list with order numbers and prices.

## Accessory Installation & Adjustment Instructions



Item	Qty	Name
1	1	Body
31	1-4	Sensor

### Assembly Procedure

- 1) Install sensor in profile slots as shown
- 2) Once adjusted for end stroke, lock in position with integrated set screws

### Stroke and Position Adjustment Procedure

- 1) Tool Plate position can be adjusted up to 5mm by loosening Jam Nut (17) and unthreading Shaft (2) from Tool Plate Face (4).

**Caution. Do not exceed 5mm. Shaft may completely unthread from Tool Plate Face. There is no limit and it is the responsibility of the installer/adjuster not to exceed 5mm from factory settings.**

Retighten Jam Nut upon attaining desired location.

- 2) Retract stroke can be adjusted up to 5mm by loosening Adjustment Stud Set Screws (23) and then turning Adjustment Stud (9). Maximum and minimum limits are integral to this adjustment and cannot be exceeded. Retighten Set Screw upon attaining desired location.

### Wrench Sizes - Imperial [Metric]

Model	Nut	Flats on Shaft
-07	9/32 [7]	1/8 [3]
-09	13/32 [10]	7/32 [6]
-12	9/16 [13]	5/16 [8]



Seal Kit Items



Thread Locker



Krytox™ Lubricant



Lightweight Machine Oil



Teflon™ Based Grease



Super Bonder

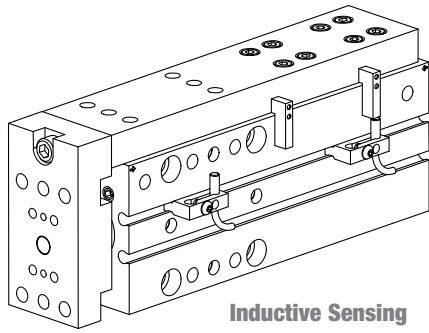


Third Angle Projection

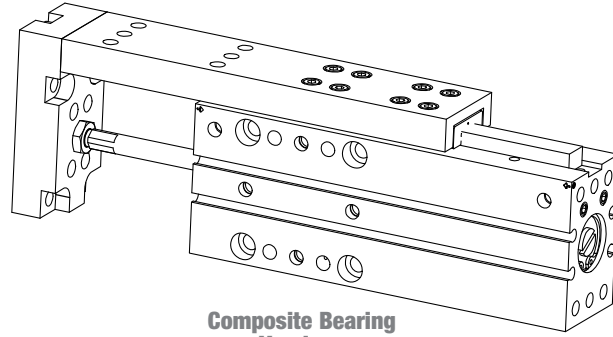
# DLM SERIES SPECIALS

**Inductive Sensing,  
Composite Bearings,  
Opposing Tool Plates,  
Dual Support,  
Spring Retract/Extend  
and more...**

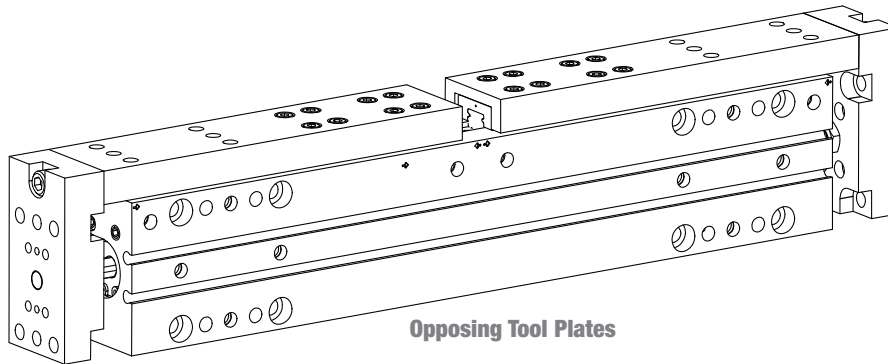
Drawings are for concept only.  
Contact Robohand Tech Support  
with project requirements.



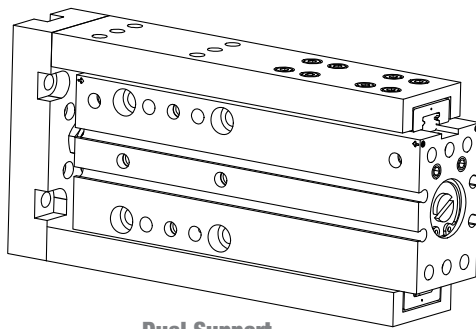
**Inductive Sensing**



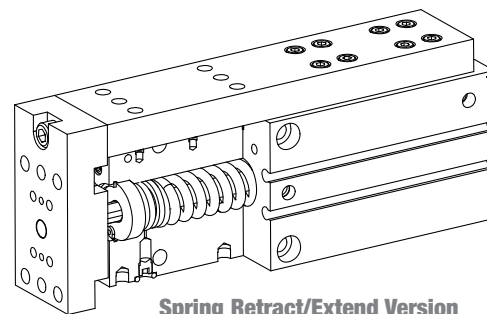
**Composite Bearing  
Versions**



**Opposing Tool Plates**



**Dual Support**



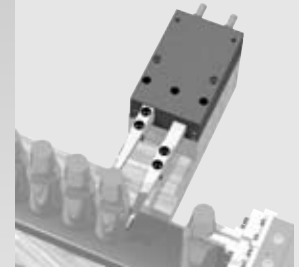
**Spring Retract/Extend Version**

# Feed Escapements

## RFE Series Feed Escapement

- Finger locking mechanism ensures that only one finger can be retracted at one time for proper part feeding
- Square shaft prevents shaft from rotating
- Unit can be mounted using the top, bottom, or face surface

Preferred Market: ● Global



See Page **5.2**

# Feed Escapements

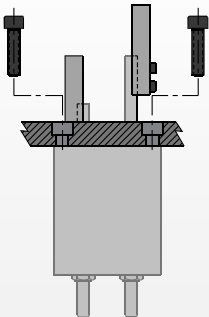
- **Part separation:**  
A feed escapement is the most effective mechanism for separating components fed from a track or conveyor.
- **Failsafe locking fingers:**  
This feature eliminates the premature retraction of the extended finger by utilizing a locking key design. This will minimize part jamming and multiple parts feeding at a time.

RFE SERIES

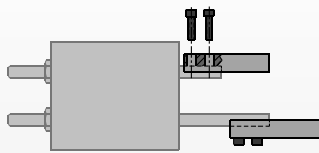
5.2

## Mounting Information:

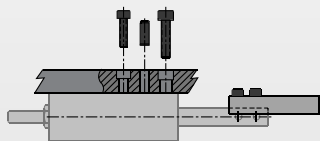
Escapements can be mounted & operated in any orientation



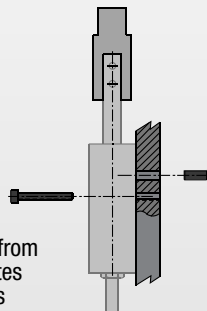
Body face mounts with screws



Fingers attach to shafts with screws and locate by keying



Body mounts with screws from above or below and locates with slip fit dowel holes



## Technical Specifications:

### Pneumatic Specifications

Pressure Operating Range  
Cylinder Type  
Dynamic Seals  
Valve Required to Operate

<b>Imperial</b>	<b>Metric</b>
40-100 psi	3-7 bar
Dual Double Acting	
Internally Lubricated Buna-N	
4-way, 2-position	

### Air Quality Requirements

Air Filtration  
Air Lubrication  
Air Humidity

40 Micron or Better
Not Necessary*
Low Moisture Content (dry)

### Temperature Operating Range

Buna-N Seals (standard)  
Viton® Seals (optional)

-30°~180° F	-35°~80° C
-20°~300° F	-30°~150° C

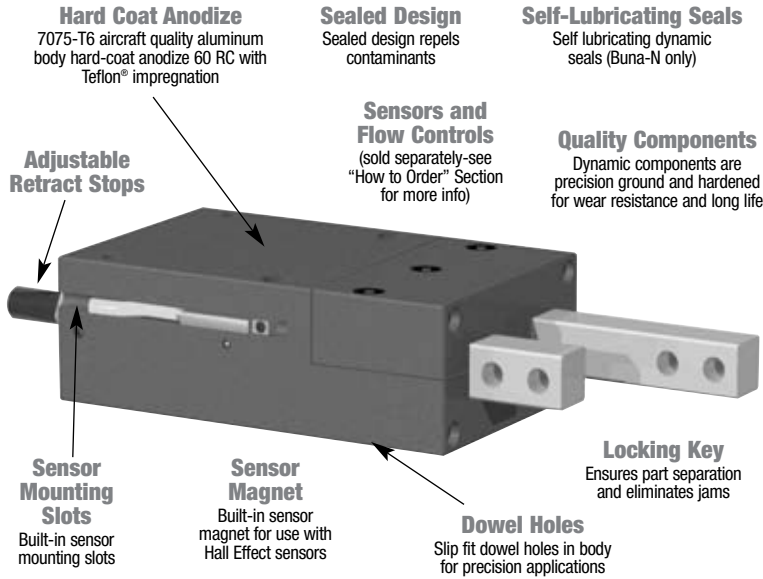
### Maintenance Specifications†

Expected Life  
Normal Application  
w/ Preventative Maintenance  
Field Repairable  
Seal Repair Kits Available

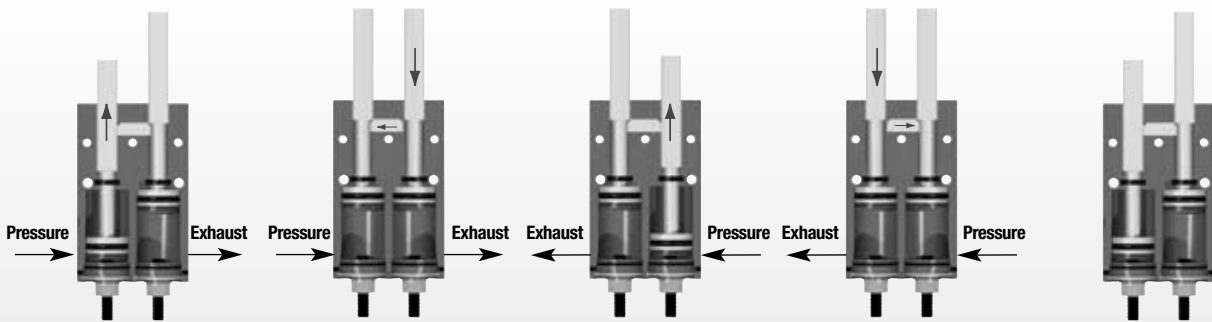
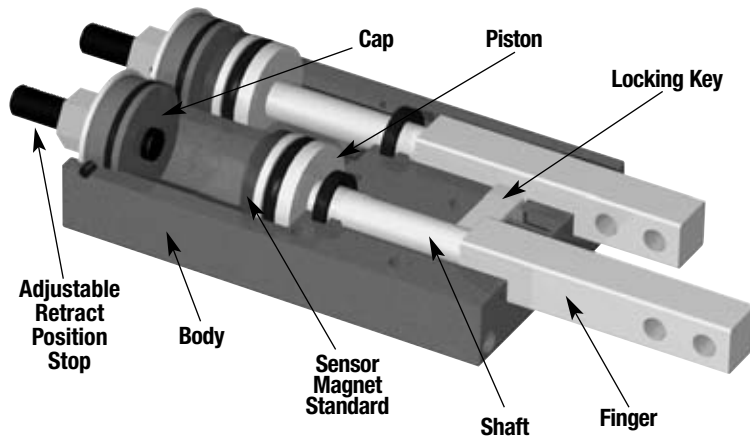
5 million cycles
10+ million cycles*
Yes
Yes

\*Addition of lubrication will greatly increase service life  
†See Maintenance Section

## Product Features



## Operating Principle



- Dual double acting pistons slide in opposite directions within the body through the use of internal porting.
- When pressure is applied, one piston extends and passes a port in it's cylinder wall which is linked to the retract side of the other piston's cylinder.
- The second piston then begins to retract and pushes the locking key aside into the cavity on the side of the first finger.
- Locking Key ensures only 1 finger can be retracted at a time.
- Finger must be allowed to fully extend for proper operation.

**Designed and manufactured in the USA**

## Style-RFE Feed Escapement

### Size -11M

Style:	RFE-11M	
Stroke:	0.625"	15.9mm
Thrust Force:	25 lb	111 N
Weight:	.33 lb	.15 Kg



See Page **5.4**

## Style-RFE Feed Escapement

### Size-12M

Style:	RFE-12M	
Stroke:	1.00"	25.4mm
Thrust Force:	50 lb	222 N
Weight:	.85 lb	.39 Kg



See Page **5.5**

## Style-RFE Feed Escapement

### Size-13M

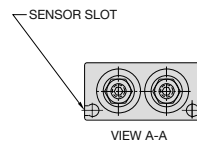
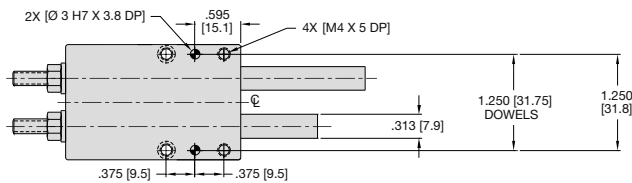
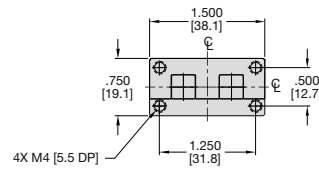
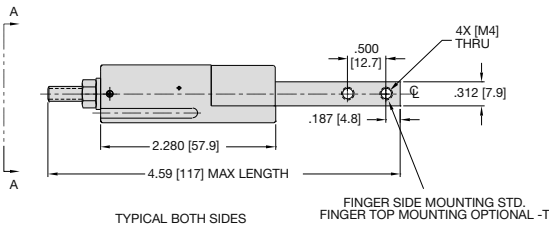
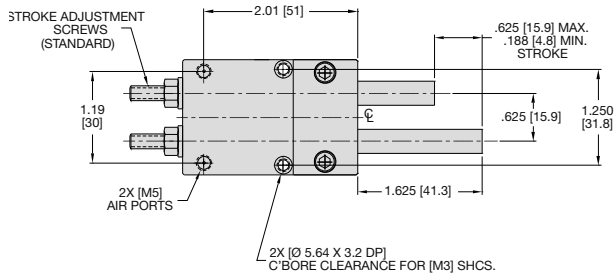
Style:	RFE-13M	
Stroke:	1.25"	31.8mm
Thrust Force:	90 lb	400 N
Weight:	1.84 lb	.83 Kg



See Page **5.6**



# FEED ESCAPEMENTS RFE-11M NON-ROTATING FINGER SERIES



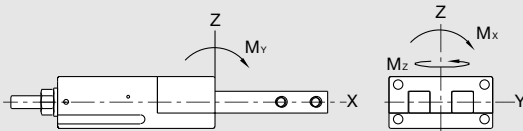
UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

Dimensions are symmetrical about centerline	Third Angle Projection	All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or [±.013mm]	Metric Threads Course Pitch	<b>Imperial in.</b> 0.00 ± .01 0.000 ± .005 0.0000 ± .0005	<b>Metric [mm]</b> [0.] = [±.25] [0.0] = [±.13] [0.00] = [±.013]
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RFE SERIES

5.4

## Loading Information



Loading Capacity	Static	Dynamic
Maximum Moment <b>Mx</b>	50 in.-lbs. [6 Nm]	5.0 in.-lbs. [0.57 Nm]
Maximum Moment <b>My</b>	50 in.-lbs. [6 Nm]	5.0 in.-lbs. [0.57 Nm]
Maximum Moment <b>Mz</b>	50 in.-lbs. [6 Nm]	5.0 in.-lbs. [0.57 Nm]

## Thrust Force of Cylinders

Thrust Force	Extend	Retract
Thrust Force @ 100 PSI	25 lbs. [111 N]	20 lbs. [88 N]
Thrust Force @ 80 PSI	25 lbs. [88 N]	16 lbs. [70 N]
Thrust Force @ 60 PSI	15 lbs. [66 N]	12 lbs. [53 N]
Thrust Force @ 40 PSI	10 lbs. [44 N]	8 lbs. [35 N]
Thrust Force @ 20 PSI	5 lbs. [22 N]	4 lbs. [17 N]

## How to Order: (Order Accessories separately from Basic Model)

BASIC MODEL

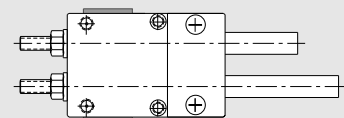
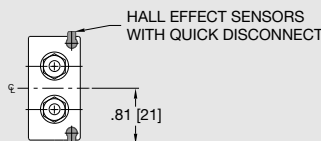
VITON® SEALS

**RFE-11M - T - V**

TOP FINGER MOUNTING

SENSOR ACCESSORIES	Order #	QTY/UNIT
NPN Hall Effect Sensor with Quick Disconnect*	<b>OHSN-017</b>	<b>1 or 2</b>
PNP Hall Effect Sensor with Quick Disconnect*	<b>OHSP-017</b>	<b>1 or 2</b>
Quick Disconnect 2M Cable Length*	<b>CABL-010</b>	<b>1 or 2</b>
Quick Disconnect 5M Cable Length*	<b>CABL-013</b>	<b>1 or 2</b>
PNEUMATIC ACCESSORIES		
M5 Adjustable Flow Control	<b>VLVF-008</b>	<b>1 or 2</b>
Standard Seal Repair Kit	<b>SLKT-110</b>	<b>1</b>
Viton® Seal Repair Kit	<b>SLKT-110V</b>	<b>1</b>

\*Sensor and cable sold separately.



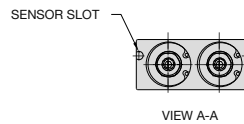
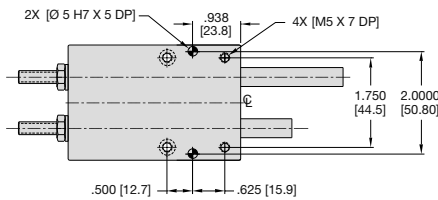
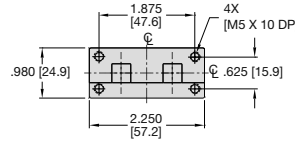
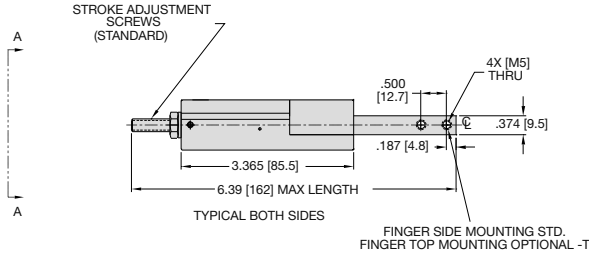
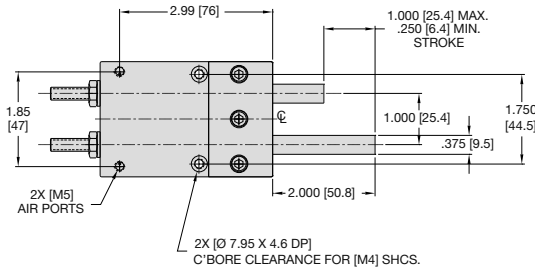


# FEED ESCAPEMENTS RFE-12M NON-ROTATING FINGER SERIES

## Specifications

## RFE-12M

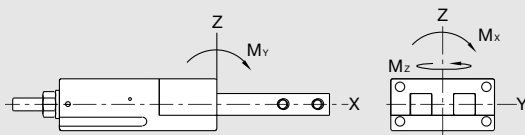
Thrust Force @ Maximum PSI	50 lbs.	222 N
Stroke	1.000 in.	25.40 mm
Stroke Adjustability	0.75 in.	19 mm
Weight	0.85 lbs.	0.39 Kg
Pressure Range	40-100 psi	3-7 bar
Cylinder Bore Ø	0.787 in.	20 mm
Rod Ø	0.313 in.	7.95 mm
Displacement	0.487 in <sup>3</sup>	8.0 cm <sup>3</sup>
Temperature Range		
Standard Seals	-30°~180° F	-35°~80° C
Viton® Seals	-20°~300° F	-30°~150° C
Actuation Time	0.60 sec.	0.60 sec.
Parts Escaped per Minute	100	100
Valve required to actuate		4-way, 2-position



UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

Dimensions are symmetrical about centerline	Third Angle Projection	All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or [±.013mm]	Metric Threads Course Pitch	<b>Imperial in.</b> 0.00 = ±.01 0.000 = ±.005 0.0000 = ±.0005	<b>Metric [mm]</b> [0.] = [±.25] [0.0] = [±.13] [0.00] = [±.013]
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## Loading Information



Loading Capacity	Static	Dynamic
Maximum Moment <b>M<sub>x</sub></b>	150 in.-lbs. [17 Nm]	15.0 in.-lbs. [1.70 Nm]
Maximum Moment <b>M<sub>y</sub></b>	150 in.-lbs. [17 Nm]	15.0 in.-lbs. [1.70 Nm]
Maximum Moment <b>M<sub>z</sub></b>	150 in.-lbs. [17 Nm]	15.0 in.-lbs. [1.70 Nm]

## Thrust Force of Cylinders

Thrust Force	Extend	Retract
Thrust Force @ 100 PSI	50 lbs. [216 N]	40 lbs. [182 N]
Thrust Force @ 80 PSI	40 lbs. [173 N]	32 lbs. [146 N]
Thrust Force @ 60 PSI	30 lbs. [130 N]	25 lbs. [109 N]
Thrust Force @ 40 PSI	20 lbs. [86 N]	16 lbs. [73 N]
Thrust Force @ 20 PSI	10 lbs. [43 N]	8 lbs. [36 N]

## How to Order: (Order Accessories separately from Basic Model)

### BASIC MODEL

### VITON® SEALS

**RFE-12M - T - V**

### TOP FINGER MOUNTING

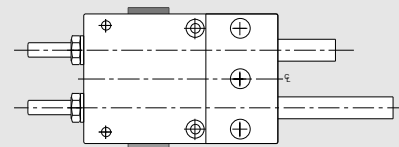
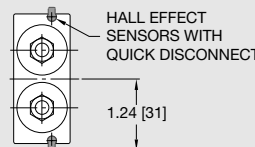
#### SENSOR ACCESSORIES

	Order #	QTY/UNIT
NPN Hall Effect Sensor with Quick Disconnect*	<b>OHSN-017</b>	<b>1 or 2</b>
PNP Hall Effect Sensor with Quick Disconnect*	<b>OHSP-017</b>	<b>1 or 2</b>
Quick Disconnect 2M Cable Length*	<b>CABL-010</b>	<b>1 or 2</b>
Quick Disconnect 5M Cable Length*	<b>CABL-013</b>	<b>1 or 2</b>

#### PNEUMATIC ACCESSORIES

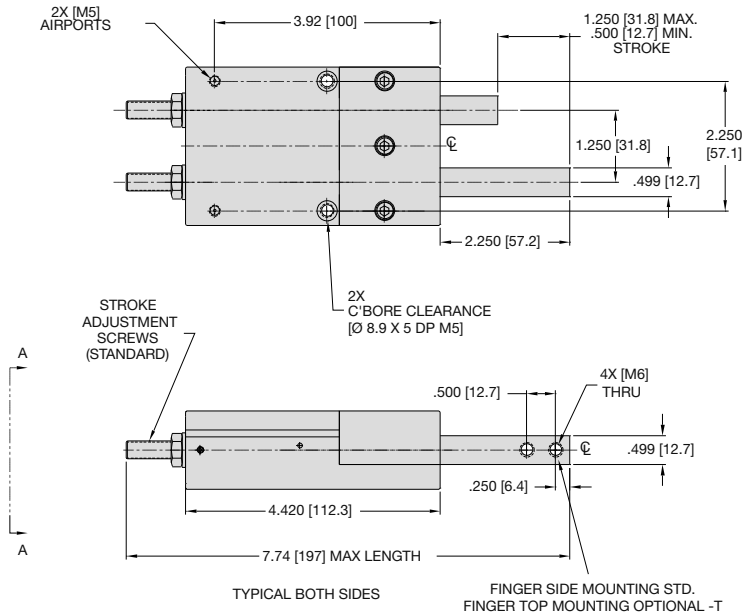
M5 Adjustable Flow Control	<b>VLVF-008</b>	<b>1 or 2</b>
Standard Seal Repair Kit	<b>SLKT-111</b>	<b>1</b>
Viton® Seal Repair Kit	<b>SLKT-111V</b>	<b>1</b>

\*Sensor and cable sold separately.



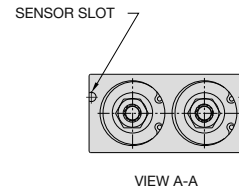
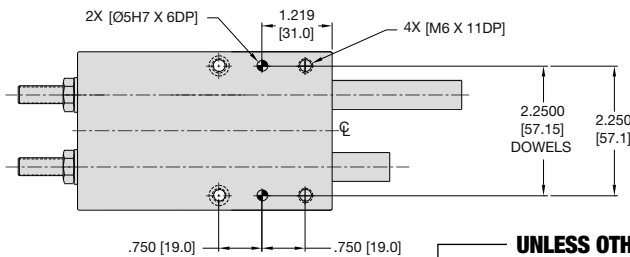
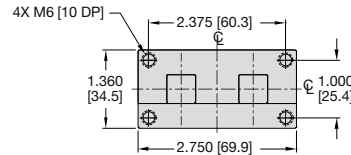


# FEED ESCAPEMENTS RFE-13M NON-ROTATING FINGER SERIES



## Specifications

RFE-13M	
Thrust Force @ Maximum PSI .....	90 lbs. 400 N
Stroke .....	1.250 in. 31.75 mm
Stroke Adjustability .....	0.75 in. 19 mm
Weight .....	1.84 lbs. 0.83 Kg
Pressure Range .....	40-100 psi 3-7 bar
Cylinder Bore Ø .....	1.063 in. 27 mm
Rod Ø .....	0.375 in. 9.52 mm
Displacement .....	1.108 in <sup>3</sup> 18.2 cm <sup>3</sup>
Temperature Range	
Standard Seals .....	-30°~180° F -35°~80° C
Viton® Seals .....	-20°~300° F -30°~150° C
Actuation Time .....	0.70 sec. 0.70 sec.
Parts Escaped per Minute .....	85 85
Valve Required to Actuate .....	4-way, 2-position



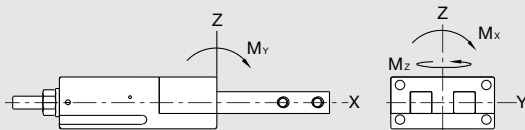
UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

Imperial in.	Metric [mm]
0.00 = ±.01	[0.] = ±.25
0.000 = ±.005	[0.0] = ±.13
0.0000 = ±.0005	[0.00] = ±.013

RFE SERIES

5.6

## Loading Information



Loading Capacity	Static	Dynamic
Maximum Moment <b>M<sub>x</sub></b>	250 in.-lbs. [28 Nm]	25.0 in.-lbs. [2.83 Nm]
Maximum Moment <b>M<sub>y</sub></b>	250 in.-lbs. [28 Nm]	25.0 in.-lbs. [2.83 Nm]
Maximum Moment <b>M<sub>z</sub></b>	250 in.-lbs. [28 Nm]	25.0 in.-lbs. [2.83 Nm]

## Thrust Force of Cylinders

Thrust Force	Extend	Retract
Thrust Force @ 100 PSI	88 lbs. [394 N]	77 lbs. [345 N]
Thrust Force @ 80 PSI	71 lbs. [315 N]	62 lbs. [276 N]
Thrust Force @ 60 PSI	53 lbs. [236 N]	46 lbs. [207 N]
Thrust Force @ 40 PSI	35 lbs. [157 N]	31 lbs. [138 N]
Thrust Force @ 20 PSI	17 lbs. [78 N]	15 lbs. [69 N]

## How to Order: (Order Accessories separately from Basic Model)

BASIC MODEL

VITON® SEALS

**RFE-13M - T - V**

TOP FINGER MOUNTING

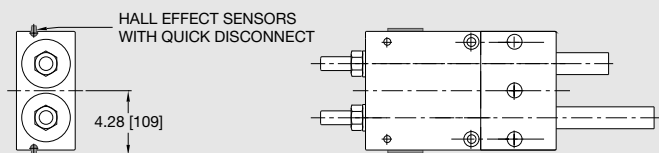
### SENSOR ACCESSORIES

	Order #	QTY/UNIT
NPN Hall Effect Sensor with Quick Disconnect*	<b>OHSN-017</b>	<b>1 or 2</b>
PNP Hall Effect Sensor with Quick Disconnect*	<b>OHSP-017</b>	<b>1 or 2</b>
Quick Disconnect 2M Cable Length*	<b>CABL-010</b>	<b>1 or 2</b>
Quick Disconnect 5M Cable Length*	<b>CABL-013</b>	<b>1 or 2</b>

### PNEUMATIC ACCESSORIES

	Order #	QTY/UNIT
M5 Adjustable Flow Control	<b>VLVF-008</b>	<b>1 or 2</b>
Standard Seal Repair Kit	<b>SLKT-112</b>	<b>1</b>
Viton® Seal Repair Kit	<b>SLKT-112V</b>	<b>1</b>

\*Sensor and cable sold separately.



Please see back cover for DE-STA-CO Global Locations. [www.destaco.com](http://www.destaco.com)

[www.comoso.com](http://www.comoso.com)

Item Qty	Name
01	1 Body
02	2 Finger
03	2 Piston
04	2 Cap
05	1 Cover, Finger
07	1 Shuttle Slug
30	2 Stop_Screw
32	2 Jam Nut
33	2 Dowel Pin
34	2 SSS,Cup Point
40	2 Magnet, Ring

**NOTE:** Contact the Robohand Sales Department for a complete spare parts list with order numbers and prices.

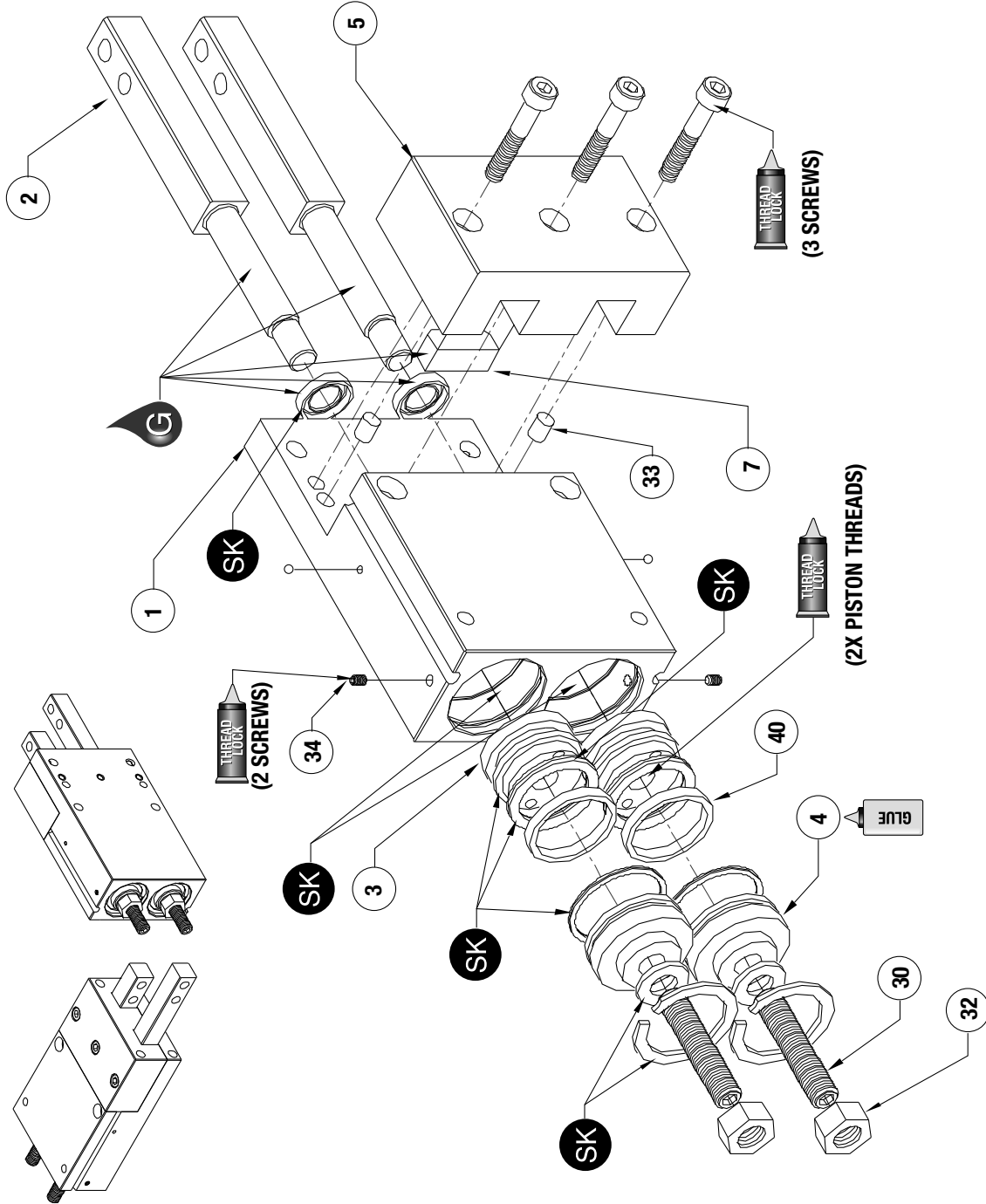
### Assembly Procedure

- 1) Super bond magnet to piston.
- 2) Lubricate u-cup and install into body.
- 3) Orient fingers and slide into body.
- 4) Attach pistons to fingers in bores, using spanner.
- 5) Install caps, o-rings and adjustment screws into body with retainer ring.
- 6) Lock in caps by tightening set screws.
- 7) Press dowel pins in finger cover.
- 8) Place shuttle slug in position.
- 9) Install finger cover.

### Stroke Adjustment Procedure

- 1) The stroke of each finger can be adjusted by its respective set screw (#30).
- 2) To reduce the stroke of the desired finger on retraction, tighten its respective set screw.note: stroke can only be reduced on retraction; (the finger will always extend the same distance away from the body). Stroke cannot be increased more than the value stated in the catalog.

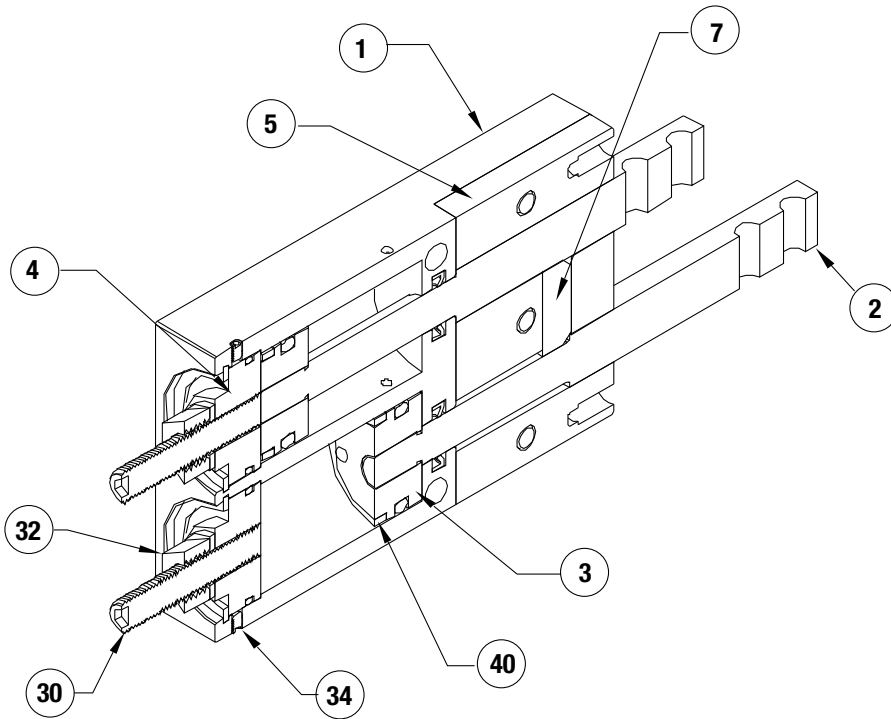
**SK Seal Repair Kit Order #'s**  
See Product Data Sheets



<b>SK</b>	Seal Kit Items
	Thread Locker
	Krytox™ Lubricant
	Lightweight Machine Oil
	Teflon® Based Grease
	Super Bond
	Third Angle Projection

# RFE Series Assembled View

Item	Qty	Name
01	1	Body
02	2	Finger
03	2	Piston
04	2	Cap
05	1	Cover, Finger
07	1	Shuttle Slug
30	2	Stop, Screw
32	2	Jam Nut
33	2	Dowel Pin
34	2	SSS, Cup Point
40	2	Magnet, Ring



**NOTE:** Contact the Robohand Sales Department for a complete spare parts list with order numbers and prices.

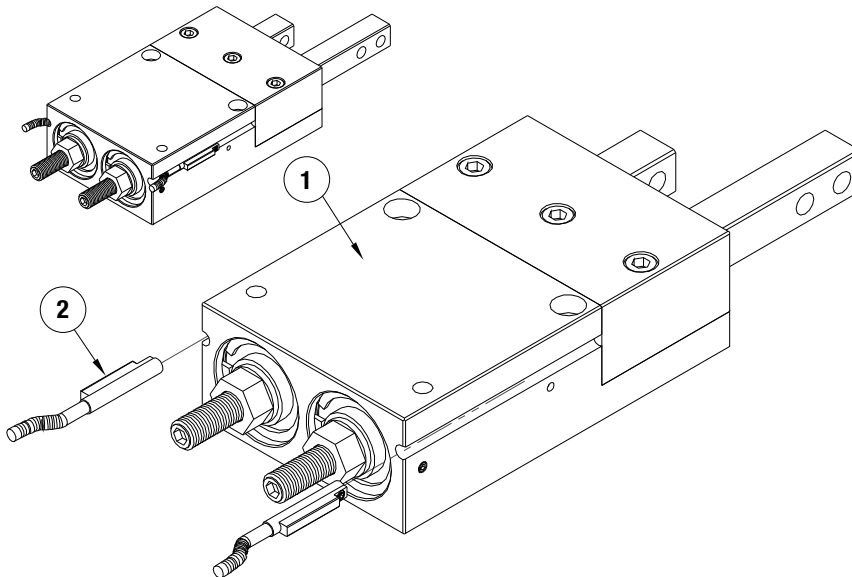
RFE SERIES

5.8

## Accessory Installation & Adjustment Instructions

### Sensor Installation

1. Install sensors (2) in profile slots of escapement body (1) as shown.
2. Set sensors with integrated setscrew.



Seal Kit Items



Thread Locker



Krytox™ Lubricant



Lightweight Machine Oil



Teflon® Based Grease



Super Bonder



Third Angle Projection

Please see back cover for DE-STA-CO Global Locations. [www.destaco.com](http://www.destaco.com)

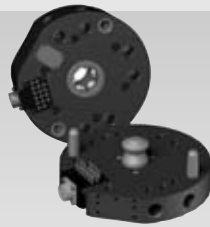
[www.comoso.com](http://www.comoso.com)

# Robotic End Effectors

## QC Robot Tool Changer

- Heavy duty, spring loaded locking mechanism prevents separation in the event of loss of air pressure
- Support for optional pneumatic, fluid or electrical interface modules

Preferred Market: ● Global

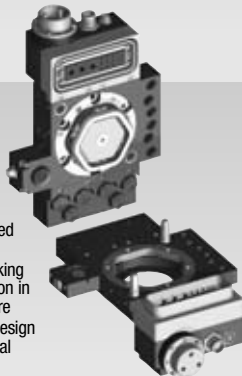


See Page **6.2**

## RQC Modular Tool Changer

- ISO bolt patterns eliminate need for adapter plates
- Heavy duty, spring loaded locking mechanism prevents separation in the event of loss of air pressure
- Highly configurable modular design accommodates up to 4 optional modular interfaces

Preferred Market: ● Global

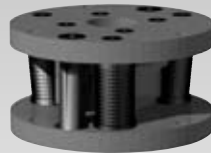


See Page **6.22**

## RCW Lateral & Angular Alignment Series

- Compensate for inaccuracy or misalignment between parts and machine in both lateral and angular axis
- Increases assembly speed while reducing wear and parts jamming
- Improves quality and reduces costs by avoiding damage of parts

Preferred Market: ▲ NA ◆ SA



See Page **6.58**

## KA/CH Series Horizontal Compliance

- Compensate for misalignment relative to the robot axis or handling arm
- Pneumatic or hydraulic operation
- Optional tool re-centering or tool release, sensor probe, adaption interface, and Viton® seals for high temperature operation

KA Preferred Market: ▲ NA ◆ SA  
CH Preferred Market: ● Global



See Page **6.70, 6.80**

## ULS/AU Series Emergency Stop Module

- Detects abnormal forces or shocks and aborts operation
- Provides protection to robot, tooling, and it's surroundings
- Manual re-adjustment is required except for vertical collision

ULS Preferred Market: ▲ NA ◆ SA  
AU Preferred Market: ● Global

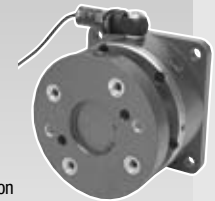


See Page **6.90, 6.100**

## AUR Series Resettable Emergency Stop Module

- Detects abnormal forces or shocks and aborts operation
- Provides protection to robot, tooling, and it's surroundings
- Pneumatically assisted to facilitate repositioning after collision

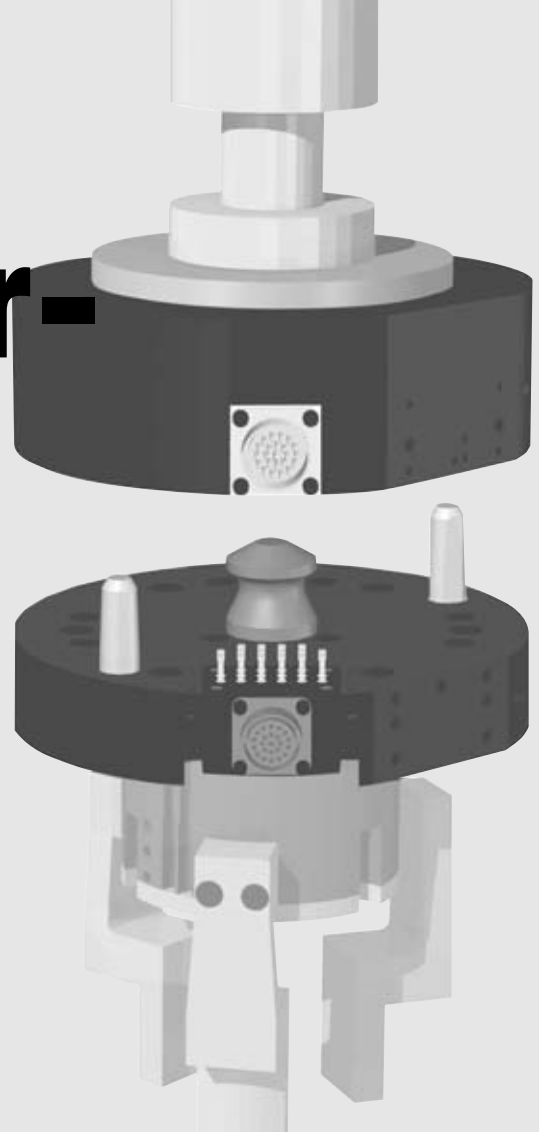
Preferred Market: ▲ NA ◆ SA



See Page **6.110**



# QC Series Tool Changer- Medium Loads



• **Robotic applications:**

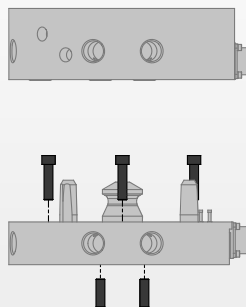
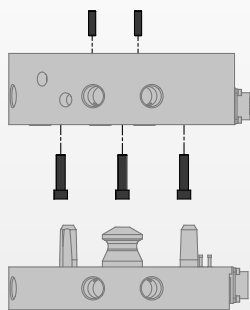
Perfect for those flexible/multiple tooling applications utilizing one Robot. This product was designed with exceptional repeatability, high rigidity & load capacity to make it ideal for any robotic application.

• **Automation applications:**

End effector tooling and interchangeable fixturing can be changed quickly and easily to accommodate many different styles of parts on the same assembly machine or machining center.

## Mounting Information:

Robot side has counterbored holes for mounting and two dowel pins for hole location (size 30 has pilot boss)



Tool side has counterbored holes for mounting and two dowel pins for hole location (size 30 has pilot boss)

## Technical Specifications:

**Pneumatic Specifications**

Pressure Operating Range  
Cylinder Type  
Valve Required to Operate

**Imperial**  
40-100 psi  
**Double Acting, Spring Assist**  
4-way, 2-position  
(except QC-30)

**Metric**

3-7 bar

**Air Quality Requirements**

Air Filtration  
Air Lubrication  
Air Humidity

40 Micron or Better  
Not Necessary\*  
Low Moisture Content (dry)

**Temperature Operating Range**

Buna-N Seals (standard)    -30°~180° F    -35°~80° C

**Maintenance Specifications†**

Expected Life	
Normal Application	5 million cycles
w/ Preventative Maintenance	10+ million cycles*†
Field Repairable	Yes
Seal Repair Kits Available	Yes

† See Maintenance Section.

\*Addition of lubrication will greatly increase service life

**Application Restrictions**

- Dirty or gritty environments
- Machining operations generating chips
- Environments with loose particulate

**See Maintenance Section for:**

Exploded views and spare parts list.....	6.18
Drawing sections and assembly procedures .....	6.19
QC Series cross-reference .....	6.20
Tool Changer terminology .....	6.56

# Product Features

### Failsafe Operation

Failsafe locking spring keeps units coupled in the event of pressure loss

### Durable Components

Locking components are made from hardened bearing & tool steels

### Heavy Duty Locking Mechanism

Improved rigidity for heavy-duty and in-process changing

### Self Lubricating Seals

Self lubricating dynamic seals

### Offboard I/O Block

with heavy-duty pins offer reliable contact points

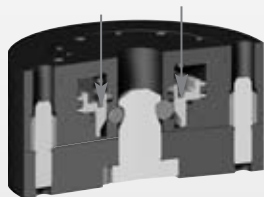
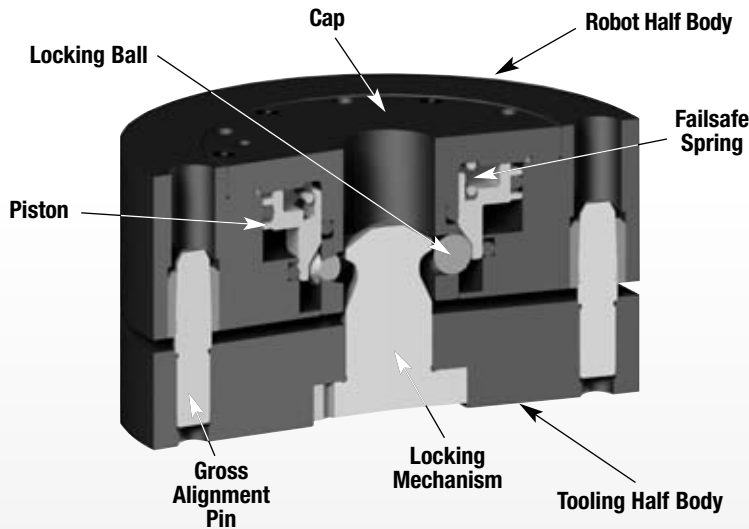
### Switches for Couple/Uncouple/Ready-to-Couple

Switch for latch (size 150 only)

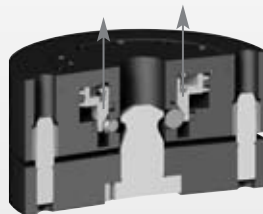
### Module Mounting Surface

Flat for optional pneumatic, fluid or electric module

# Operating Principle



Locked Position



Unlocked Position

- The tool half is inserted into the robot half.
- The robot half has a spring assisted double acting piston (QC-30 single acting only). When the piston is actuated the locking balls are driven under the locking mechanism. Thus locking the halves together.
- The fail-safe spring maintains the piston position in the event of pressure loss and the connected units must receive air pressure to de-couple.

## Style-QC Robot Half

### Size-30

Style:	QC-30	
Max. Payload:	30 lbs.	13.6 Kg
Max. Moment:	200 in-lbs.	22.6 Nm
Weight:	0.50 lbs.	0.23 Kg



See Page **6.4**

## Style-TP Tool Half

### Size-30

Style:	TP-30	
Max. Payload:	30 lbs.	13.6 Kg
Max. Moment:	200 in-lbs.	22.6 Nm
Weight:	0.25 lbs.	0.11 Kg



See Page **6.5**

## Style-QC Robot Half

### Size-60

Style:	QC-60	
Max. Payload:	60 lbs.	27 Kg
Max. Moment:	780 in-lbs.	88.1 Nm
Weight:	1.9 lbs.	0.86 Kg



See Page **6.6**

## Style-TP Tool Half

### Size-60

Style:	TP-60	
Max. Payload:	60 lbs.	27 Kg
Max. Moment:	780 in-lbs.	88.1 Nm
Weight:	0.90 lbs.	0.41 Kg



See Page **6.7**

## Style-QC Robot Half

### Size-60 10-Port

Style:	QC-60 10-Port	
Max. Payload:	60 lbs.	27 Kg
Max. Moment:	780 in-lbs.	88.1 Nm
Weight:	1.9 lbs.	0.86 Kg



See Page **6.8**

## Style-TP Tool Half

### Size-60 10-Port

Style:	TP-60 10-Port	
Max. Payload:	60 lbs.	27 Kg
Max. Moment:	780 in-lbs.	88.1 Nm
Weight:	0.90 lbs.	0.41 Kg



See Page **6.9**

## Style-QC Robot Half

### Size-150

Style:	QC-150	
Max. Payload:	150 lbs.	68 Kg
Max. Moment:	1900 in-lbs.	215 Nm
Weight:	4.8 lbs.	2.2 Kg



See Page **6.10**

## Style-TP Tool Half

### Size-150

Style:	TP-150	
Max. Payload:	150 lbs.	68 Kg
Max. Moment:	1900 in-lbs.	215 Nm
Weight:	2.3 lbs.	1.0 Kg

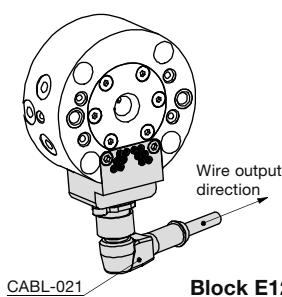
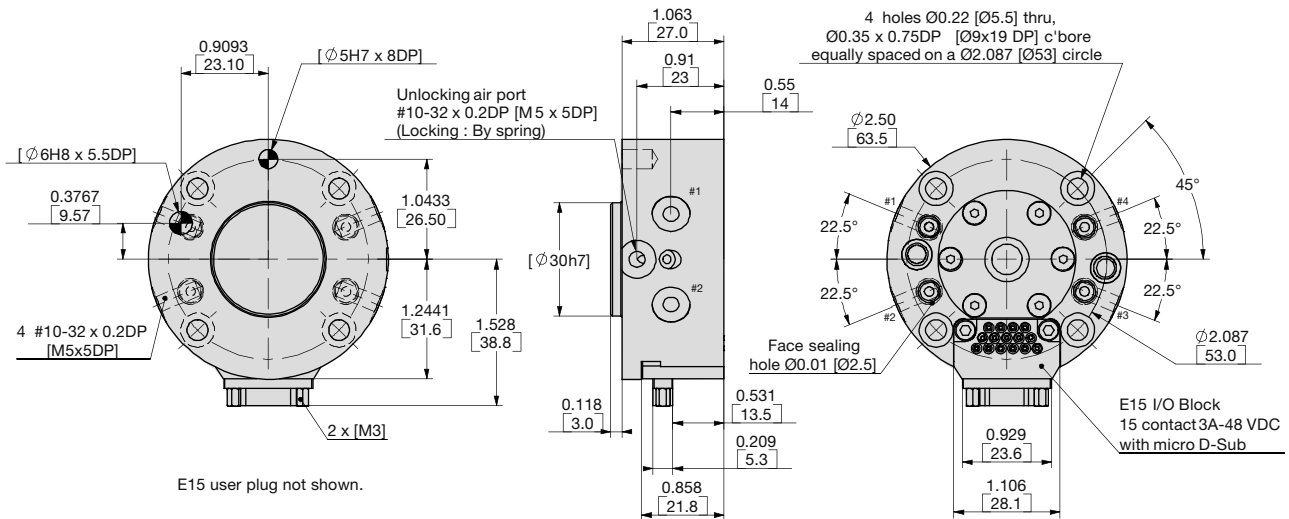


See Page **6.11**

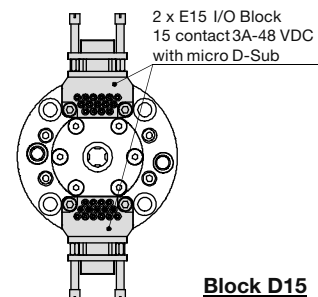
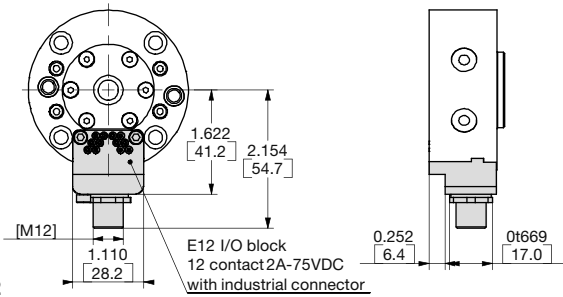
## Options and Accessories

See Page **6.12**

# TOOL CHANGER QC-30 ROBOT ADAPTER MODULE



**Block E12**



**Block D15**

## Specifications

## QC-30

Maximum Payload	30 lbs	13.6 Kg
Maximum Moment Rating	200 in.-lbs	22.6 Nm
Weight of QC Unit only	0.50 lbs	0.23 Kg
Weight of Coupled Units	0.75 lbs	0.34 Kg
Pressure Range (locked cylinder) ...	40-100 psi	3-7 bar
Bore Ø	1.00 in	25.4 mm
Displacement	0.24 in <sup>3</sup>	3.9 cm <sup>3</sup>
Temperature Range	-30°~180° F	-35°~80° C
Repeatability	± 0.001 in.	± 0.025 mm
Valve required to actuate	3-way, 2-position	

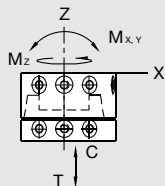
## UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

Dimensions are symmetrical about centerline	Third Angle Projection	All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or [±.013mm]	Metric Threads Course Pitch	<b>Imperial in.</b> 0.00 = ±.01 0.000 = ±.005 0.0000 = ±.0005	<b>Metric [mm]</b> [0.] = [±.25] [0.0] = [±.13] [0.00] = [±.013]
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QC SERIES

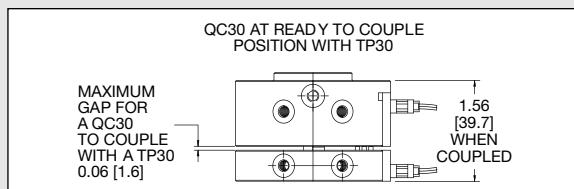
6.4

## Loading Information

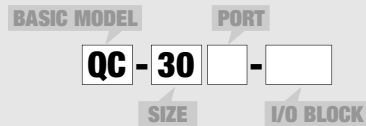


### Loading Capacity

	Imperial	Metric
Maximum Tensile <b>T</b>	70 lbs.	311 N
Maximum Compressive <b>C</b>	100 lbs.	445 N
Maximum Moment <b>M<sub>x</sub></b>	200 in.-lbs.	22.6 Nm
Maximum Moment <b>M<sub>y</sub></b>	200 in.-lbs.	22.6 Nm
Maximum Moment <b>M<sub>z</sub></b>	200 in.-lbs.	22.6 Nm



## How to Order: (Order Accessories separately from Basic Model)



PORT	BLANK M	Imperial Metric
<b>I/O BLOCK</b>	<b>E15</b>	15 Pin I/O Block with Micro D-Sub Connector, w/1.2M Cordset
	<b>D15</b>	2X 15 Pin I/O Block with Micro D-Sub Conn, w/1.2M Cordset
	<b>E12</b>	12 Pin I/O Block with Turck M12 Connector, w/o Cordset
	<b>0</b>	without I/O Block

### REPLACEMENT I/O MODULE ACCESSORIES

	ORDER #	QTY/UNIT
15 Pin I/O Block with Micro D-Sub Connector, w/1.2M Cordset	<b>KE15-QC30</b>	<b>1</b>
12 Pin I/O Block with Turck M12 Connector, w/o Cordset	<b>KE12-QC30</b>	<b>1</b>
Straight Male Cordset 1.2M for E15	<b>CABL-024</b>	<b>1</b>
90° Female Cordset 4M for E12	<b>CABL-021</b>	<b>1</b>

### ADAPTER PLATES

Consult Factory

### PNEUMATIC ACCESSORIES

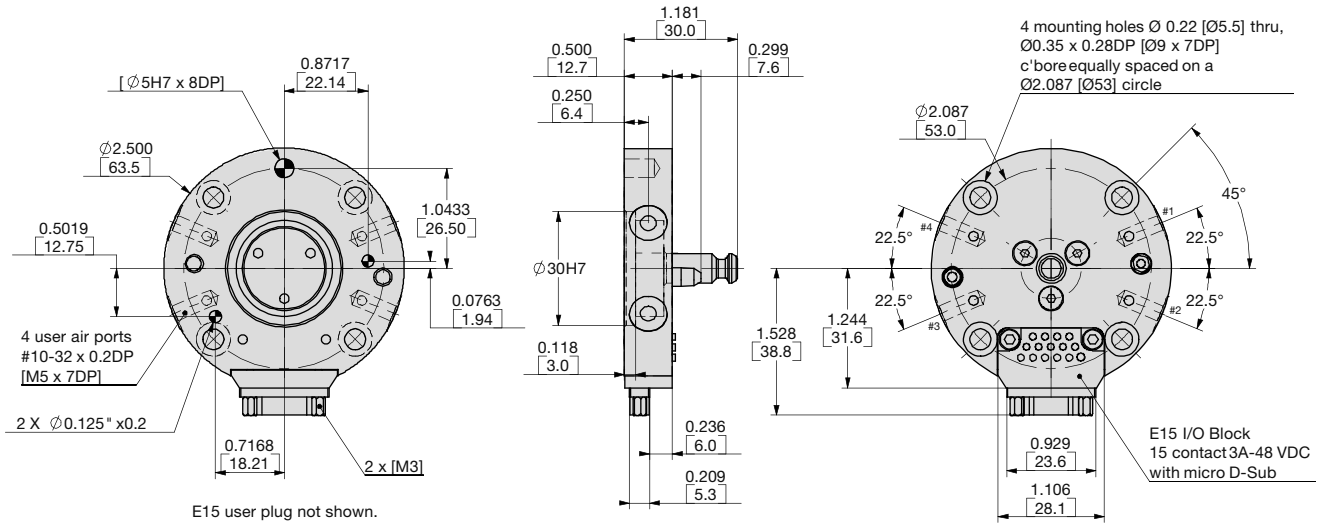
Seal Repair Kit	<b>SLKT-387</b>	<b>1</b>
Face Seal Repair Kit	<b>SLKT-388</b>	<b>1</b>

Please see back cover for DE-STA-CO Global Locations. [www.destaco.com](http://www.destaco.com)

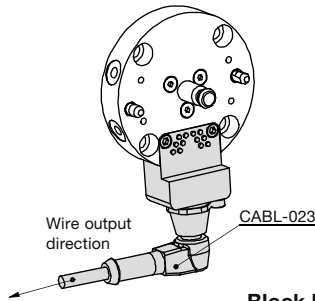
[www.comoso.com](http://www.comoso.com)



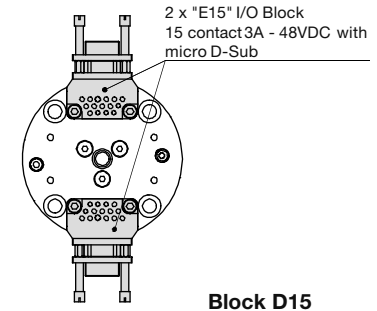
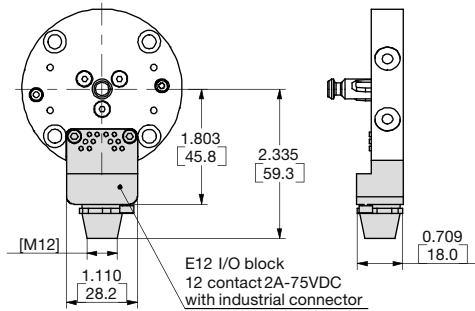
# TOOL CHANGER TP-30 TOOLING ADAPTER MODULE



E15 user plug not shown.



**Block E12**



**Block D15**

## Specifications

## TP-30

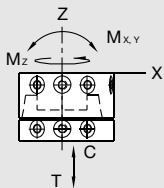
Maximum Payload	30 lbs	13.6 Kg
Maximum Moment Rating	200 in.-lbs	22.6 Nm
Weight of TP Unit only	0.25 lbs	0.11 Kg
Weight of Coupled Units	0.75 lbs	0.34 Kg
Temperature Range	-30°~180° F	-35°~80° C
Repeatability	± 0.001 in.	±0.025 mm

## UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

Dimensions are symmetrical about centerline	Third Angle Projection	All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or [±.013mm]	Metric Threads Course Pitch	<b>Imperial in.</b> 0.00 = ±.01 0.000 = ±.005 0.0000 = ±.0005	<b>Metric [mm]</b> [0.] = [±.25] [0.0] = [±.13] [0.00] = [±.013]
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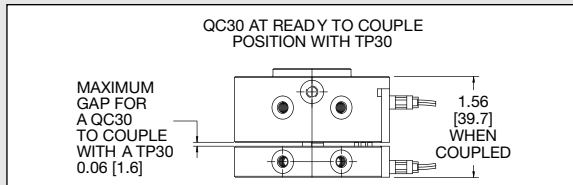
## Loading Information

## How to Order: (Order Accessories separately from Basic Model)



### Loading Capacity

	Imperial	Metric
Maximum Tensile <b>T</b>	70 lbs.	311 N
Maximum Compressive <b>C</b>	100 lbs.	445 N
Maximum Moment <b>M<sub>x</sub></b>	200 in.-lbs.	22.6 Nm
Maximum Moment <b>M<sub>y</sub></b>	200 in.-lbs.	22.6 Nm
Maximum Moment <b>M<sub>z</sub></b>	200 in.-lbs.	22.6 Nm



### BASIC MODEL

### PORT

**TP - 30** - [ ] - [ ]

### SIZE

### I/O BLOCK

### PORT

### BLANK

### Imperial

### M

### Metric

### I/O BLOCK

### E15

### D15

### E12

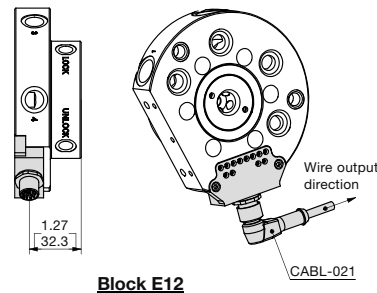
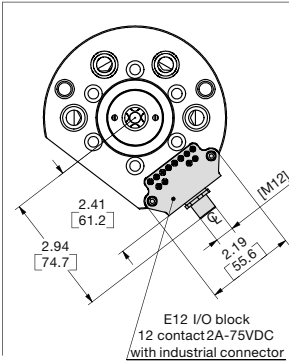
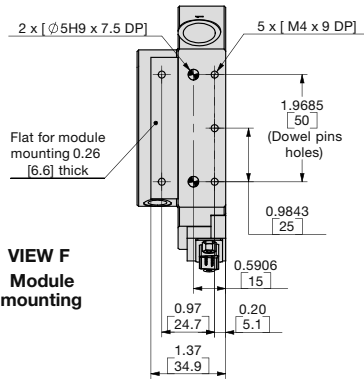
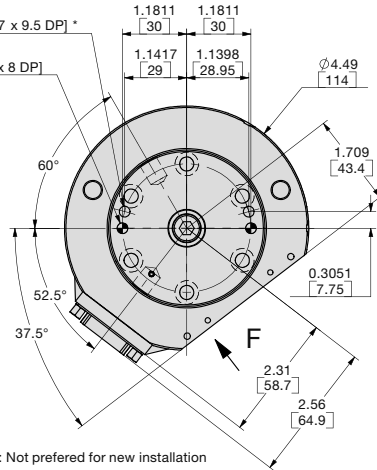
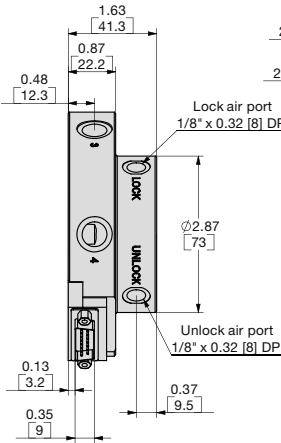
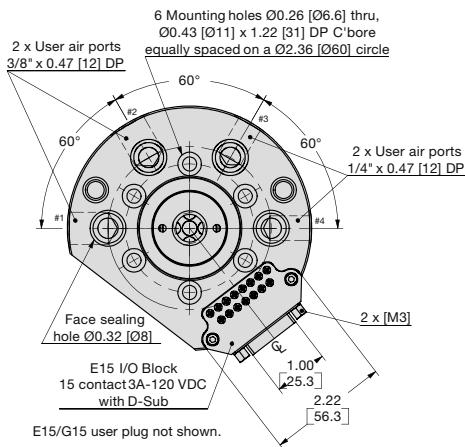
### 0

15 Pin I/O Block with Micro D-Sub Connector, w/1.2M Cordset  
2X 15 Pin I/O Block with Micro D-Sub Conn, w/1.2M Cordset  
12 Pin I/O Block with Turck M12 Connector, w/o Cordset  
without I/O Block

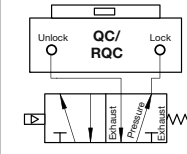
### REPLACEMENT I/O MODULE ACCESSORIES

	ORDER #	QTY/UNIT
15 Pin I/O Block with Micro D-Sub Connector, w/1.2M Cordset	<b>KE15-TP30</b>	<b>1</b>
12 Pin I/O Block with Turck M12 Connector, w/o Cordset	<b>KE12-TP30</b>	<b>1</b>
Straight Male Cordset 1.2M for E15	<b>CABL-024</b>	<b>1</b>
90° Male Cordset 2M for E12	<b>CABL-023</b>	<b>1</b>

# TOOL CHANGER QC-60 ROBOT ADAPTER MODULE



**Failsafe operation:**  
4-way valves with a spring return are recommended to maintain air pressure to the lock port during emergency stop conditions.



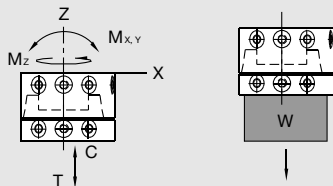
## Specifications

	QC-60
Maximum Payload	60 lbs 27 Kg
Maximum Moment Rating	780 in.-lbs 88.1 Nm
Weight of QC Unit only	1.9 lb 0.86 Kg
Weight of Coupled Units	2.8 lbs 1.27 Kg
Pressure Range (locked cylinder)	40-100 psi 3-7 bar
Bore Ø	1.75 in. 44.5 mm
Displacement	0.56 in. <sup>3</sup> 9.2 cm <sup>3</sup>
Temperature Range	-30°~180° F -35°~80° C
Repeatability	± 0.001 in. ±0.025 mm
Valve required to actuate	4-way, 2-position

## UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

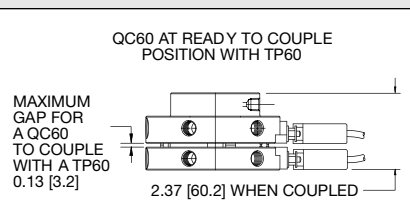
	Imperial in.	Metric [mm]
Dimensions are symmetrical about centerline	0.00 ± .01	[0.] = [±.25]
Third Angle Projection	0.000 ± .005	[0.0] = [±.13]
All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or [±.013mm]	0.0000 ± .0005	[0.00] = [±.013]
Metric Threads Course Pitch		

## Loading Information



### Loading Capacity

	Imperial	Metric
Maximum Tensile <b>T</b>	100 lbs.	445 N
Maximum Compressive <b>C</b>	120 lbs.	534 N
Maximum Moment <b>M<sub>x</sub></b>	780 in.-lbs.	88.1 Nm
Maximum Moment <b>M<sub>y</sub></b>	780 in.-lbs.	88.1 Nm
Maximum Moment <b>M<sub>z</sub></b>	780 in.-lbs.	88.1 Nm



## How to Order: (Order Accessories separately from Basic Model)

BASIC MODEL PORT MODULE

QC - 60 - - -

SIZE I/O BLOCK

### PORT:

- Blank** NPT port
- M** BSPP ports
- A** BSPT ports

### I/O BLOCK

- E15** 15 Pin I/O Block with D-Sub Connector and User Plug, without Cable
- G15\*** 15 Pin I/O Block Non-Recessed, with D-Sub Connector and User Plug, without Cable
- E12** 12 Pin I/O Block w/Turck M12 Conn, w/o Cordset
- O** without I/O Block

\*For previous installations only. New Installations use E15.

### REPLACEMENT I/O MODULE ACCESSORIES

- 15 Pin I/O Block with D-Sub Connector and User Plug, w/o Cable
- 15 Pin I/O Block Non-Recessed, with D-Sub Connector and User Plug, w/o Cable
- 12 Pin I/O Block with Turck M12 Connector, w/o Cordset
- Straight Female D-Sub User Plug, w/o Cable, Solder Type for E15/G15
- 90° Female Cordset 4M for E12

### ADAPTER PLATES

Consult Factory

### PNEUMATIC ACCESSORIES

- Seal Repair Kit
- Face Seal Repair Kit

### MODULE:

- E26** 26 pin, 5A Module w/Ind. User Connector
- E19** 19 pin, 5A Module w/Ind. User Connector
- E10** 10 pin, 13A Module w/Ind. User Connector
- PN18** 4X 1/8" NPT Pneumatic Ports, 10 bar
- PP18** 4X 1/8" BSPP Pneumatic Ports, 10 bar
- PT18** 4X 1/8" BSPT Pneumatic Ports, 10 bar
- PN14** 2X 1/4" NPT Pneumatic Ports, 10 bar
- PP14** 2X 1/4" BSPP Pneumatic Ports, 10 bar
- PT14** 2X 1/4" BSPT Pneumatic Ports, 10 bar
- HN38** 2X 3/8" NPT Fluid Ports, 100 bar

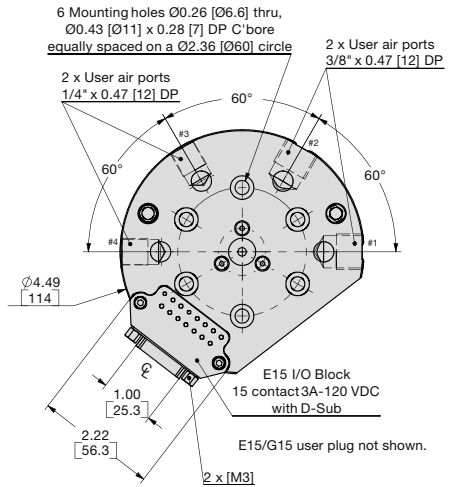
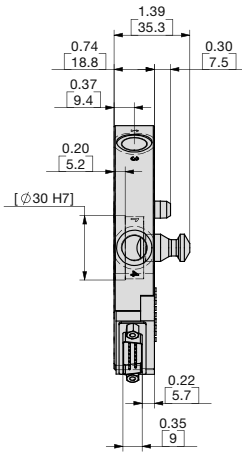
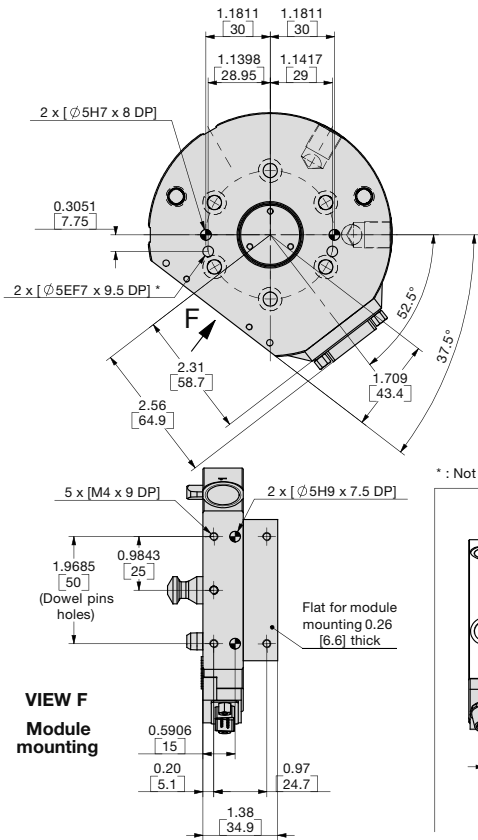
ORDER #	QTY/UNIT
<b>KE15-QC60</b>	<b>1</b>
<b>KG15-QC60</b>	<b>1</b>
<b>KE12-QC60</b>	<b>1</b>
<b>ELCT-047</b>	<b>1</b>
<b>CABL-021</b>	<b>1</b>

<b>SLKT-389</b>	<b>1</b>
<b>SLKT-390</b>	<b>1</b>

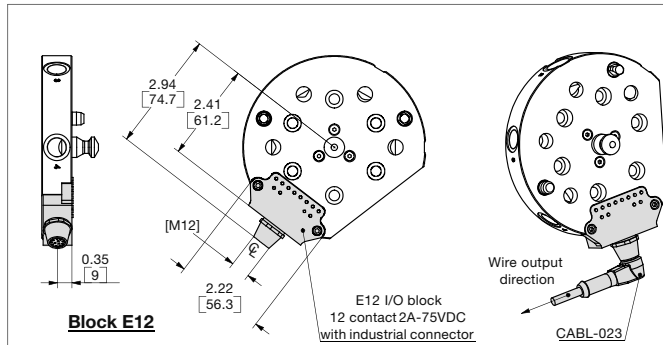




# TOOL CHANGER TP-60 TOOLING ADAPTER MODULE



\* : Not preferred for new installation



## Specifications

## TP-60

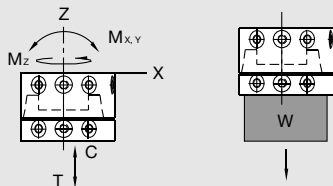
Maximum Payload	60 lbs	27 Kg
Maximum Moment Rating	780 in.-lbs	88 Nm
Weight of TP Unit only	0.90 lb	0.41 Kg
Weight of Coupled Units	2.8 lbs	1.27 Kg
Temperature Range	-30°~180° F	-35°~80° C
Repeatability	± 0.001 in.	± 0.025 mm

## UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

Dimensions are symmetrical about centerline	Third Angle Projection	All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or [±.013mm]	Metric Threads Course Pitch	<b>Imperial in.</b> 0.00 = ±.01 0.000 = ±.005 0.0000 = ±.0005	<b>Metric [mm]</b> [0.] = [±.25] [0.0] = [±.13] [0.00] = [±.013]
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## Loading Information

## How to Order: (Order Accessories separately from Basic Model)



### Loading Capacity

	Imperial	Metric
Maximum Tensile <b>T</b>	100 lbs.	445 N
Maximum Compressive <b>C</b>	120 lbs.	534 N
Maximum Moment <b>M<sub>x</sub></b>	780 in.-lbs.	88.1 Nm
Maximum Moment <b>M<sub>y</sub></b>	780 in.-lbs.	88.1 Nm
Maximum Moment <b>M<sub>z</sub></b>	780 in.-lbs.	88.1 Nm

### BASIC MODEL PORT MODULE

TP - 60 - - -

SIZE I/O BLOCK

### PORT:

- Blank** NPT port
- M** BSPP ports
- A** BSPT ports

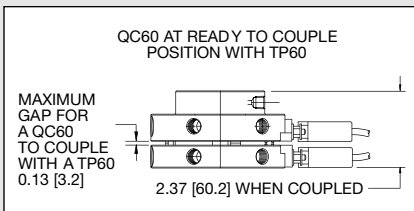
### I/O BLOCK

- E15** 15 Pin I/O Block with D-Sub Connector and User Plug, without Cable
- G15\*** 15 Pin I/O Block Non-Recessed, with D-Sub Connector and User Plug, without Cable
- E12** 12 Pin I/O Block w/Turck M12 Conn, w/o Cordset
- O** without I/O Block

\*For previous installations only. New Installations use E15.

### MODULE:

- E26** 26 pin, 5A Module w/Ind. User Connector
- E19** 19 pin, 5A Module w/Ind. User Connector
- E10** 10 pin, 13A Module w/Ind. User Connector
- PN18** 4X 1/8" NPT Pneumatic Ports, 10 bar
- PP18** 4X 1/8" BSPP Pneumatic Ports, 10 bar
- PT18** 4X 1/8" BSPT Pneumatic Ports, 10 bar
- PN14** 2X 1/4" NPT Pneumatic Ports, 10 bar
- PP14** 2X 1/4" BSPP Pneumatic Ports, 10 bar
- PT14** 2X 1/4" BSPT Pneumatic Ports, 10 bar
- HN38** 2X 3/8" NPT Fluid Ports, 100 bar



### REPLACEMENT I/O MODULE ACCESSORIES

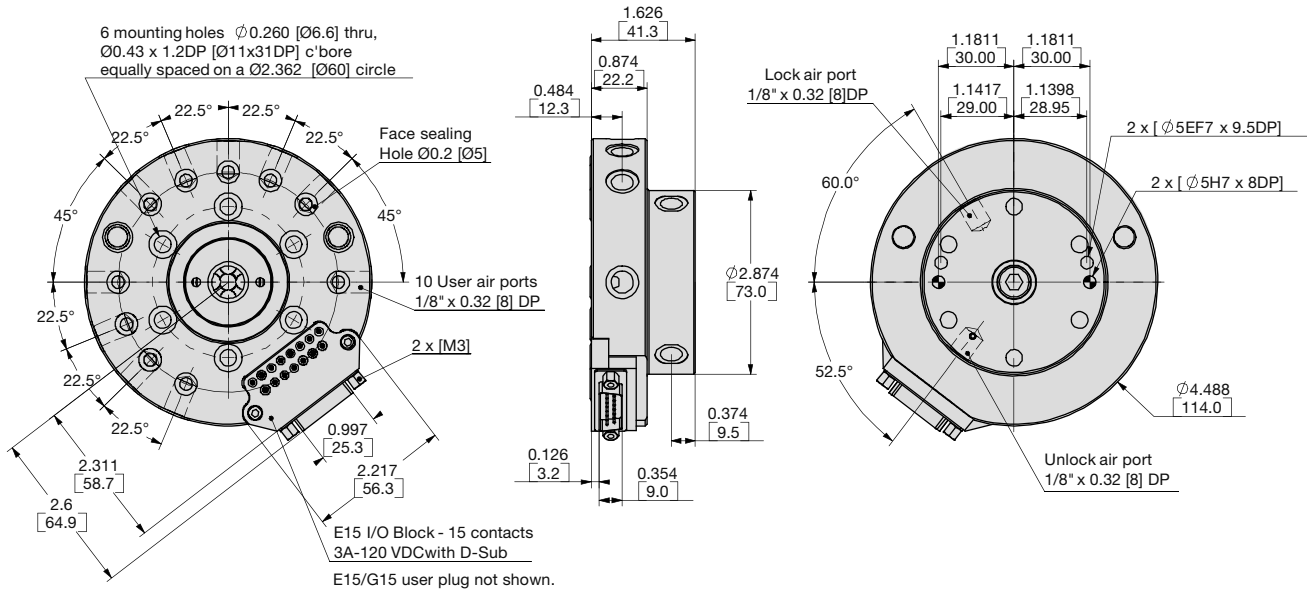
- 15 Pin I/O Block with D-Sub Connector and User Plug, w/o Cable
- 15 Pin I/O Block Non-Recessed, with D-Sub Connector and User Plug, w/o Cable
- 12 Pin I/O Block with Turck M12 Connector, w/o Cordset
- Straight Female D-Sub User Plug, w/o Cable, Solder Type for E15/G15
- 90° Male Cordset 2M for E12

### ORDER # QTY/UNIT

<b>KE15-TP60</b>	<b>1</b>
<b>KG15-TP60</b>	<b>1</b>
<b>KE12-TP60</b>	<b>1</b>
<b>ELCT-047</b>	<b>1</b>
<b>CABL-023</b>	<b>1</b>

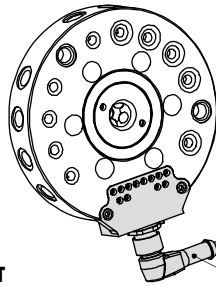
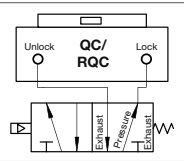


# TOOL CHANGER QC-60 10-PORT ROBOT ADAPTER MODULE



### Failsafe operation:

4-way valves with a spring return are recommended to maintain air pressure to the lock port during emergency stop conditions.



Wire output direction  
CABL-021

E12 I/O block  
12 contact 3A-75VDC  
with industrial connector

Block E12

### Specifications

### QC-60 10-PORT

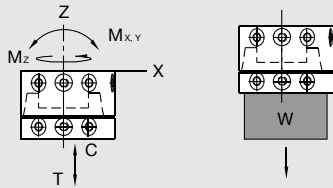
Maximum Payload .....	60 lbs	27 Kg
Maximum Moment Rating .....	780 in.-lbs	88.1 Nm
Weight of QC Unit only .....	1.9 lb	0.86 Kg
Weight of Coupled Units .....	2.8 lbs	1.27 Kg
Pressure Range (locked cylinder) ...	40-100 psi	3-7 bar
Bore Ø .....	1.75 in.	44.5 mm
Displacement .....	0.56 in <sup>3</sup>	9.2 cm <sup>3</sup>
Temperature Range .....	-30°~180° F	-35°~80° C
Repeatability .....	± 0.001 in.	±0.025 mm
Valve required to actuate .....	4-way, 2-position	

### UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

Dimensions are symmetrical about centerline	Third Angle Projection	All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or [±.013mm]	Metric Threads Course Pitch	<b>Imperial in.</b> 0.00 = ±.01 0.000 = ±.005 0.0000 = ±.0005	<b>Metric [mm]</b> [0.] = [±.25] [0.0] = [±.13] [0.00] = [±.013]
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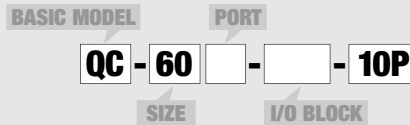
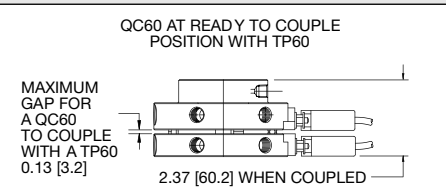
## Loading Information

## How to Order: (Order Accessories separately from Basic Model)



### Loading Capacity

	Imperial	Metric
Maximum Tensile <b>T</b>	100 lbs.	445 N
Maximum Compressive <b>C</b>	120 lbs.	534 N
Maximum Moment <b>M<sub>x</sub></b>	780 in.-lbs.	88.1 Nm
Maximum Moment <b>M<sub>y</sub></b>	780 in.-lbs.	88.1 Nm
Maximum Moment <b>M<sub>z</sub></b>	780 in.-lbs.	88.1 Nm



### PORT:

- Blank** NPT port
- M** BSPP ports
- A** BSPT ports

### I/O BLOCK

- E15** 15 Pin I/O Block with D-Sub Connector and User Plug, w/o Cable
- G15\*** 15 Pin I/O Block Non-Recessed, w/D-Sub Connector and User Plug, w/o Cable
- E12** 12 Pin I/O Block w/Turk M12 Connector, w/o Cordset
- 0** without I/O Block

\*For previous installations only. New Installations use E15.

### REPLACEMENT I/O MODULE ACCESSORIES

	ORDER #	QTY/UNIT
15 Pin I/O Block with D-Sub Connector and User Plug, w/o Cable	<b>KE15-QC60</b>	<b>1</b>
15 Pin I/O Block Non-Recessed, w/D-Sub Connector, User Plug, w/o Cable	<b>KG15-QC60</b>	<b>1</b>
12 Pin I/O Block with Turk M12 Connector, w/o Cordset	<b>KE12-QC60</b>	<b>1</b>
Straight Female D-Sub User Plug, w/o Cable, Solder Type for E15/G15	<b>ELCT-047</b>	<b>1</b>
90° Female Cordset 4M for E12	<b>CABL-021</b>	

### ADAPTER PLATES

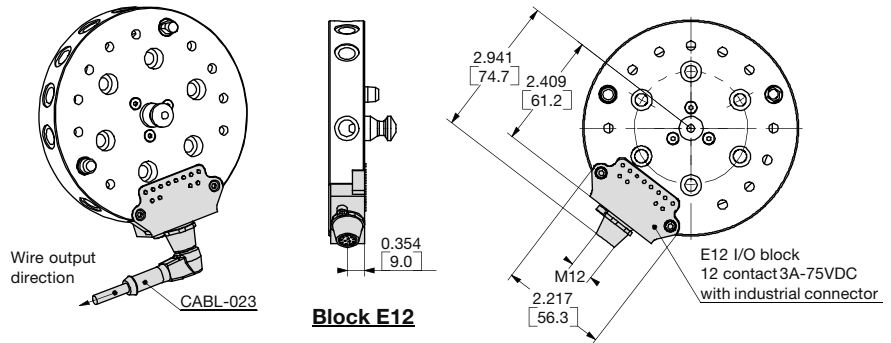
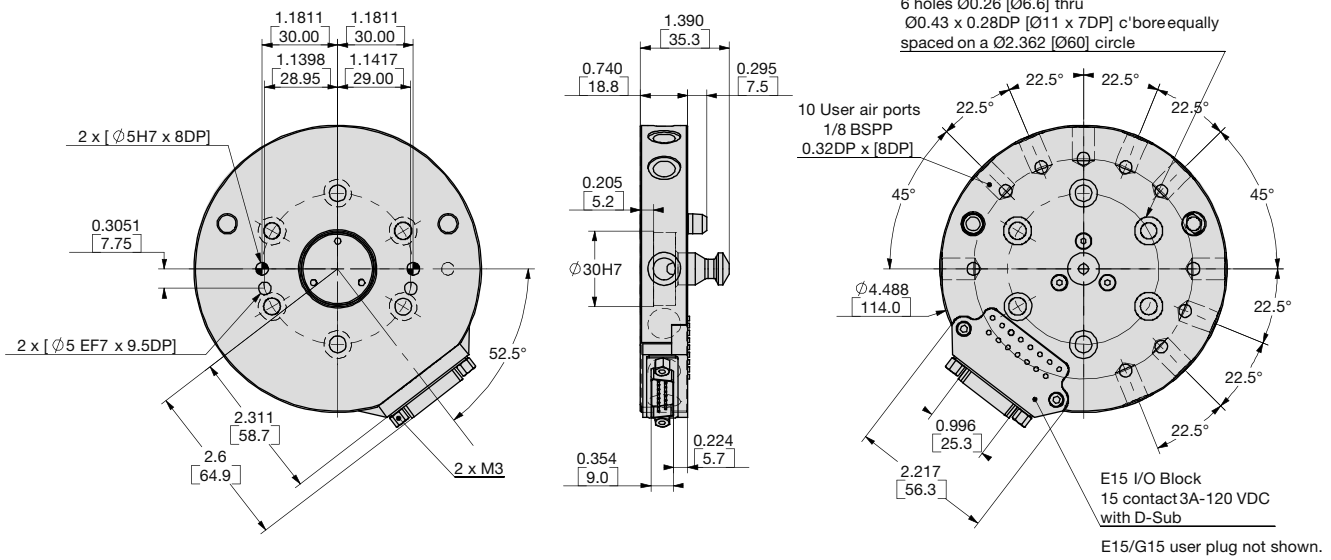
Consult Factory

### PNEUMATIC ACCESSORIES

Seal Repair Kit	<b>SLKT-389</b>	<b>1</b>
Face Seal Repair Kit	<b>SLKT-392</b>	<b>1</b>



# TOOL CHANGER TP-60 10-PORT TOOLING ADAPTER MODULE



## Specifications

### TP-60 10-PORT

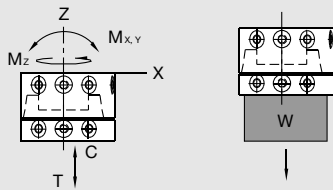
Maximum Payload	60 lbs	27 Kg
Maximum Moment Rating	780 in.-lbs	88 Nm
Weight of TP Unit only	0.90 lb	0.41 Kg
Weight of Coupled Units	2.8 lbs	1.27 Kg
Temperature Range	-30°~180° F	-35°~80° C
Repeatability	± 0.001 in.	±0.025 mm

## UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

Dimensions are symmetrical about centerline	Third Angle Projection	All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or [±.013mm]	Metric Threads Course Pitch	<b>Imperial in.</b> 0.00 = ±.01 0.000 = ±.005 0.0000 = ±.0005	<b>Metric [mm]</b> [0.] = [±.25] [0.0] = [±.13] [0.00] = [±.013]
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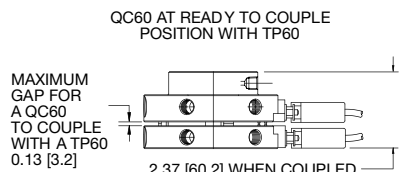
## Loading Information

## How to Order: (Order Accessories separately from Basic Model)



### Loading Capacity

	Imperial	Metric
Maximum Tensile <b>T</b>	100 lbs.	445 N
Maximum Compressive <b>C</b>	120 lbs.	534 N
Maximum Moment <b>M<sub>x</sub></b>	780 in.-lbs.	88.1 Nm
Maximum Moment <b>M<sub>y</sub></b>	780 in.-lbs.	88.1 Nm
Maximum Moment <b>M<sub>z</sub></b>	780 in.-lbs.	88.1 Nm



### PORT:

- Blank** NPT port
- M** BSPP ports
- A** BSPT ports

### I/O BLOCK

- E15** 15 Pin I/O Block with D-Sub Connector and User Plug, w/o Cable
- G15\*** 15 Pin I/O Block Non-Recessed, w/D-Sub Connector and User Plug, w/o Cable
- E12** 12 Pin I/O Block w/Turk M12 Connector, w/o Cordset
- 0** without I/O Block

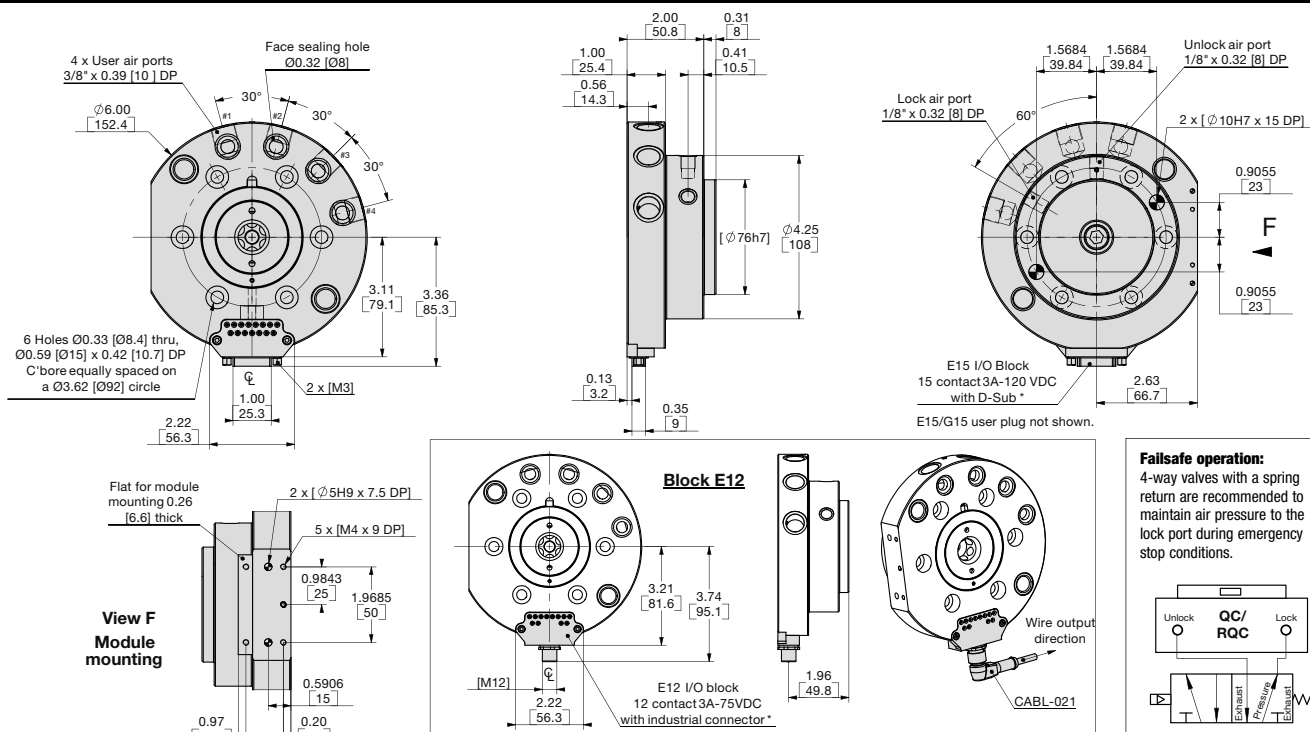
\*For previous installations only. New Installations use E15.

### REPLACEMENT I/O MODULE ACCESSORIES

	ORDER #	QTY/UNIT
15 Pin I/O Block with D-Sub Connector and User Plug, w/o Cable	<b>KE15-TP60</b>	<b>1</b>
15 Pin I/O Block Non-Recessed, w/D-Sub Connector, User Plug, w/o Cable	<b>KG15-TP60</b>	<b>1</b>
12 Pin I/O Block with Turk M12 Connector, w/o Cordset	<b>KE12-TP60</b>	<b>1</b>
Straight Female D-Sub User Plug, w/o Cable, Solder Type for E15/G15	<b>ELCT-047</b>	<b>1</b>
90° Male Cordset 2M for E12	<b>CABL-023</b>	<b>1</b>



# TOOL CHANGER QC-150 ROBOT ADAPTER MODULE



## Specifications

	QC-150	
Maximum Payload .....	150 lbs	68 Kg
Maximum Moment Rating .....	1900 in.-lbs	215 Nm
Weight of QC Unit only .....	4.8 lb	2.2 Kg
Weight of Coupled Units .....	7.1 lbs	3.2 Kg
Pressure Range (locked cylinder) ...	40-100 psi	3-7 bar
Bore Ø .....	2.63 in.	66.8 mm
Displacement .....	1.55 in <sup>3</sup>	25.4 cm <sup>3</sup>
Temperature Range .....	-30°~180° F	-35°~80° C
Repeatability .....	± 0.001 in.	± 0.025 mm
Valve required to actuate .....	4-way, 2-position	

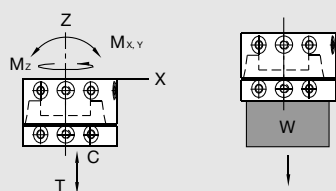
**UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW**

	Imperial in.	Metric [mm]
Dimensions are symmetrical about centerline	0.00 = ± 0.01	[0.] = [±.25]
Third Angle Projection	0.000 = ± 0.005	[0.0] = [±.13]
All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or [±.013mm]	0.0000 = ± 0.0005	[0.00] = [±.013]
Metric Threads Course Pitch		

QC SERIES

6.10

## Loading Information



### Loading Capacity

	Imperial	Metric
Maximum Tensile <b>T</b>	200 lbs.	890 N
Maximum Compressive <b>C</b>	300 lbs.	1334 N
Maximum Moment <b>M<sub>x</sub></b>	1900 in.-lbs.	214 Nm
Maximum Moment <b>M<sub>y</sub></b>	1900 in.-lbs.	214 Nm
Maximum Moment <b>M<sub>z</sub></b>	1900 in.-lbs.	214 Nm

## How to Order:

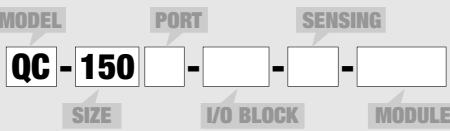
(Order Accessories separately from Basic Model)

**PORT:**  
**Blank** NPT port  
**M** BSPP ports  
**A** BSPT ports

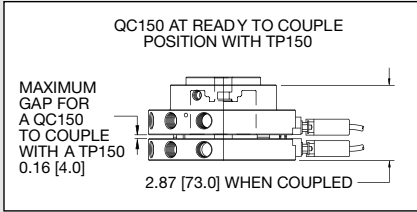
**I/O BLOCK**  
**E15** 15 Pin I/O Block with D-Sub Connector and User Plug, without Cable  
**G15\*** 15 Pin I/O Block Non-Recessed, with D-Sub Connector and User Plug, without Cable  
**E12** 12 Pin I/O Block w/Turck M12 Conn, w/o Cordset  
**0** without I/O Block

**SENSING:**  
**LP** PNP Inductive Latch Sensor  
**LN** NPN Inductive Latch Sensor  
**0** without Sensing

**REPLACEMENT I/O MODULE ACCESSORIES**



	ORDER #	QTY/UNIT
15 Pin I/O Block with D-Sub Connector and User Plug, w/o Cable	<b>KE15-QC150</b>	<b>1</b>
15 Pin I/O Block Non-Recessed, w/D-Sub Connector, User Plug, w/o Cable	<b>KG15-QC150</b>	<b>1</b>
12 Pin I/O Block with Turck M12 Connector, w/o Cordset	<b>KE12-QC150</b>	<b>1</b>
Straight Female D-Sub User Plug, w/o Cable, Solder Type for E15/G15	<b>ELCT-047</b>	<b>1</b>
90° Female Cordset 4M for E12	<b>CABL-021</b>	<b>1</b>
NPN Inductive Sensor Repair Kit	<b>OSRK-009</b>	<b>1</b>
PNP Inductive Sensor Repair Kit	<b>OSRK-010</b>	<b>1</b>
<b>ADAPTER PLATES</b>		
Consult Factory		
<b>PNEUMATIC ACCESSORIES</b>		
Seal Repair Kit	<b>SLKT-393</b>	<b>1</b>
Face Seal Repair Kit	<b>SLKT-390</b>	<b>1</b>

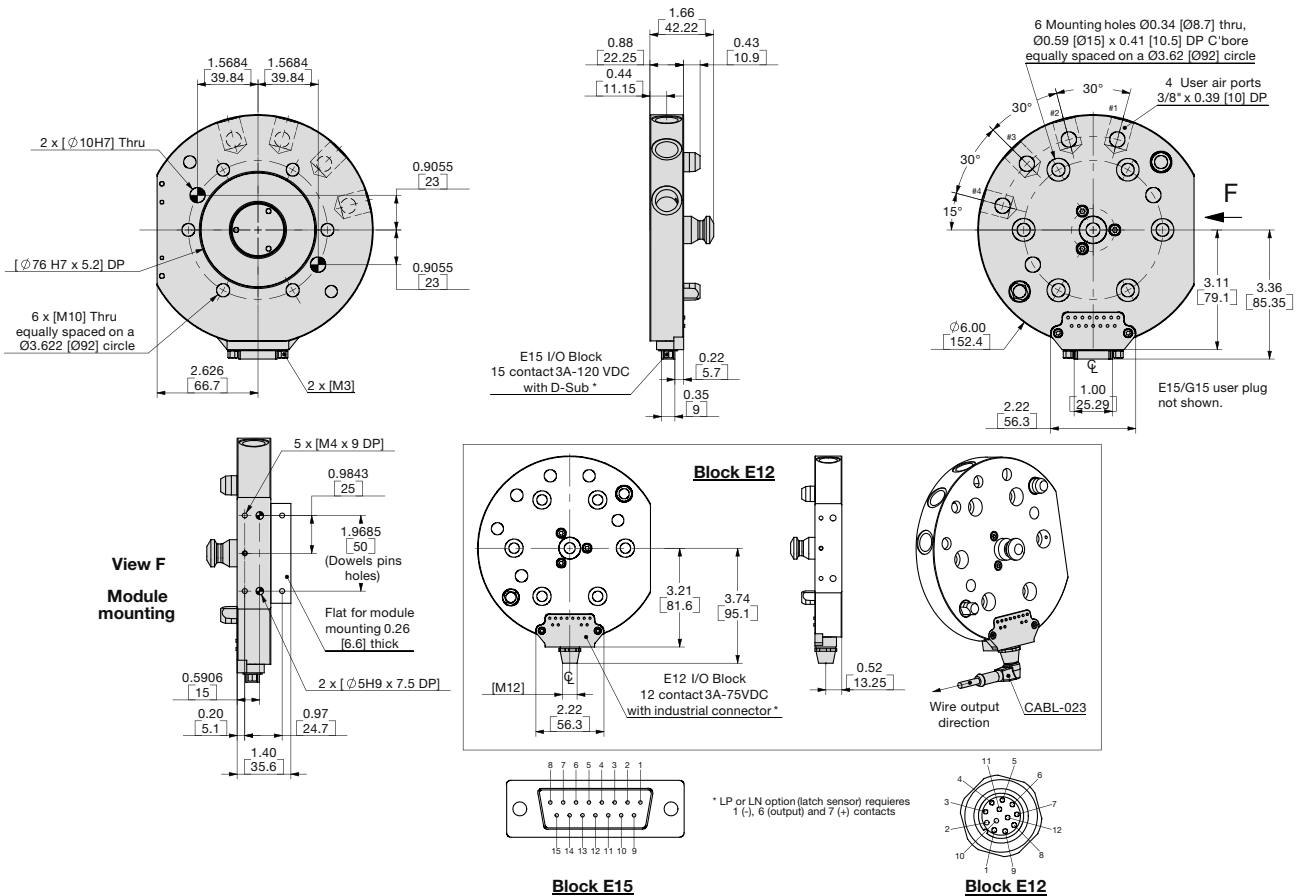


Please see back cover for DE-STA-CO Global Locations. [www.destaco.com](http://www.destaco.com)

[www.comoso.com](http://www.comoso.com)



# TOOL CHANGER TP-150 TOOLING ADAPTER MODULE



## Specifications

## TP-150

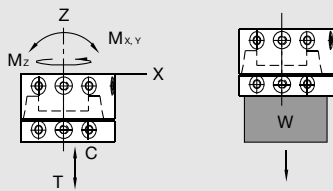
Maximum Payload .....	150 lbs	68 Kg
Maximum Moment Rating .....	1900 in.-lbs	215 Nm
Weight of TP Unit only .....	2.3 lb	1.0 Kg
Weight of Coupled Units .....	7.1 lbs	3.2 Kg
Temperature Range .....	-30°~180° F	-35°~80° C
Repeatability .....	± 0.001 in.	±0.025 mm

## UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

Dimensions are symmetrical about centerline	Third Angle Projection	All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or [±.013mm]	Metric Threads Course Pitch	<b>Imperial in.</b> 0.00 = ±.01 0.000 = ±.005 0.0000 = ±.0005	<b>Metric [mm]</b> [0.] = [±.25] [0.0] = [±.13] [0.00] = [±.013]
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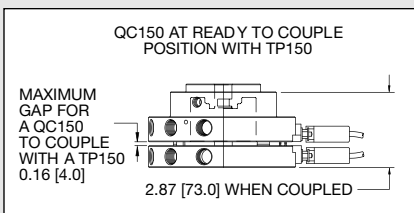
## Loading Information

## How to Order: (Order Accessories separately from Basic Model)



### Loading Capacity

	Imperial	Metric
Maximum Tensile <b>T</b>	200 lbs.	890 N
Maximum Compressive <b>C</b>	300 lbs.	1334 N
Maximum Moment <b>M<sub>x</sub></b>	1900 in.-lbs.	214 Nm
Maximum Moment <b>M<sub>y</sub></b>	1900 in.-lbs.	214 Nm
Maximum Moment <b>M<sub>z</sub></b>	1900 in.-lbs.	214 Nm



### BASIC MODEL PORT MODULE

**TP-150** - [ ] - [ ] - [ ]

SIZE I/O BLOCK

### PORT:

- Blank** NPT port
- M** BSPP ports
- A** BSPT ports

### I/O BLOCK

- E15** 15 Pin I/O Block with D-Sub Connector and User Plug, without Cable
- G15\*** 15 Pin I/O Block Non-Recessed, with D-Sub Connector and User Plug, without Cable
- E12** 12 Pin I/O Block w/Turck M12 Conn, w/o Cordset
- 0** without I/O Block

\*For previous installations only. New Installations use E15.

### REPLACEMENT I/O MODULE ACCESSORIES

- 15 Pin I/O Block with D-Sub Connector and User Plug, w/o Cable
- 15 Pin I/O Block Non-Recessed, w/D-Sub Connector, User Plug, w/o Cable
- 12 Pin I/O Block with Turck M12 Connector, w/o Cordset
- Straight Female D-Sub User Plug, w/o Cable, Solder Type for E15/G15
- 90° Male Cordset 2M for E12

### MODULE:

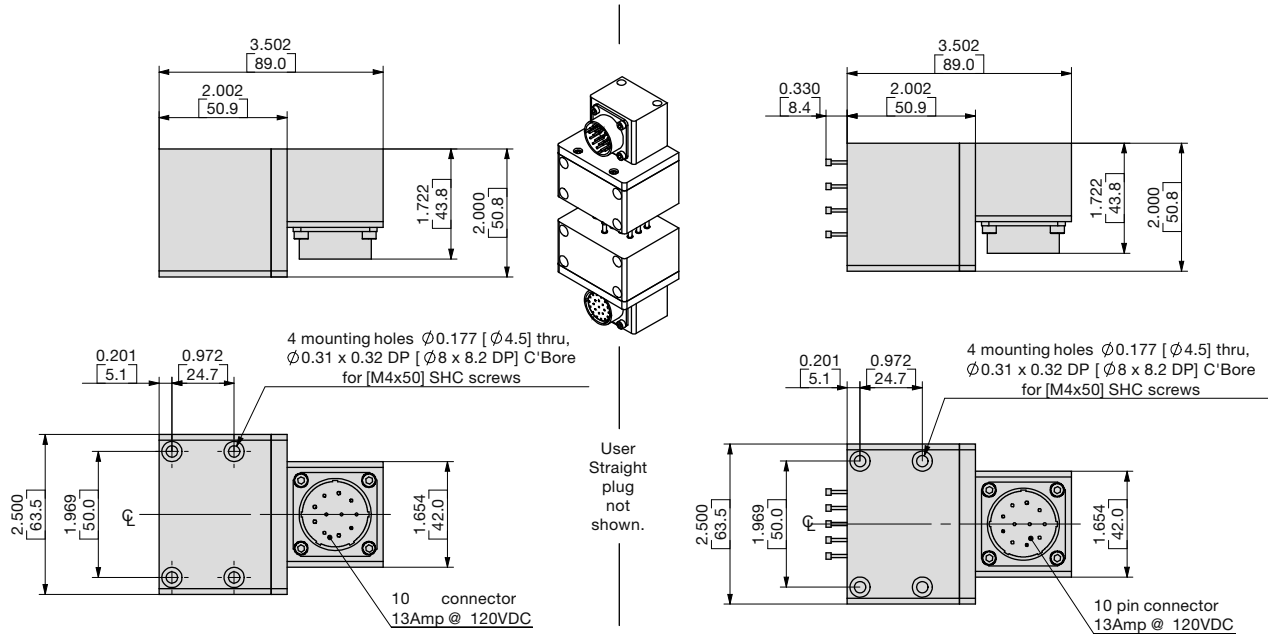
- E26** 26 pin, 5A Module w/Ind. User Connector
- E19** 19 pin, 5A Module w/Ind. User Connector
- E10** 10 pin, 13A Module w/Ind. User Connector
- PN18** 4X 1/8" NPT Pneumatic Ports, 10 bar
- PP18** 4X 1/8" BSPP Pneumatic Ports, 10 bar
- PT18** 4X 1/8" BSPT Pneumatic Ports, 10 bar
- PN14** 2X 1/4" NPT Pneumatic Ports, 10 bar
- PP14** 2X 1/4" BSPP Pneumatic Ports, 10 bar
- PT14** 2X 1/4" BSPT Pneumatic Ports, 10 bar
- HN38** 2X 3/8" NPT Fluid Ports, 100 bar

### ORDER # QTY/UNIT

ORDER #	QTY/UNIT
<b>KE15-TP60</b>	<b>1</b>
<b>KG15-TP60</b>	<b>1</b>
<b>KE12-TP60</b>	<b>1</b>
<b>ELCT-047</b>	<b>1</b>
<b>CABL-023</b>	<b>1</b>

# OPTIONAL ELECTRIC MODULE

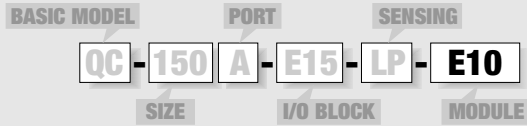
## 10 Pin Module 13Amp @ 120VDC (E10) For QC/TP-60 & QC/TP-150



Flat for module mounting not shown: See QC or TP drawings.

### ROBOT HALF MODULES:

#### How to Order Modules:



#### MODULE FOR QC-60

##### PREMOUNTED SEPARATE

**E10 KE10-QC60** 10 pin 13A Module with Industrial User Connector, without Cable

#### MODULE FOR QC-150

##### PREMOUNTED SEPARATE

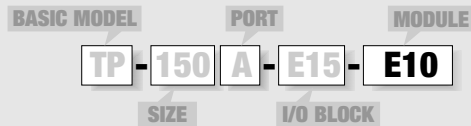
**E10 KE10-QC150** 10 pin 13A Module with Industrial User Connector, without Cable

#### ACCESSORIES:

**ELCT-041** Straight female plug (w/o cable), solder type, cable clamp

### TOOL HALF MODULES:

#### How to Order Modules:



#### MODULE FOR TP-60

##### PREMOUNTED SEPARATE

**E10 KE10-TP60** 10 pin 13A Module with Industrial User Connector, without Cable

#### MODULE FOR TP-150

##### PREMOUNTED SEPARATE

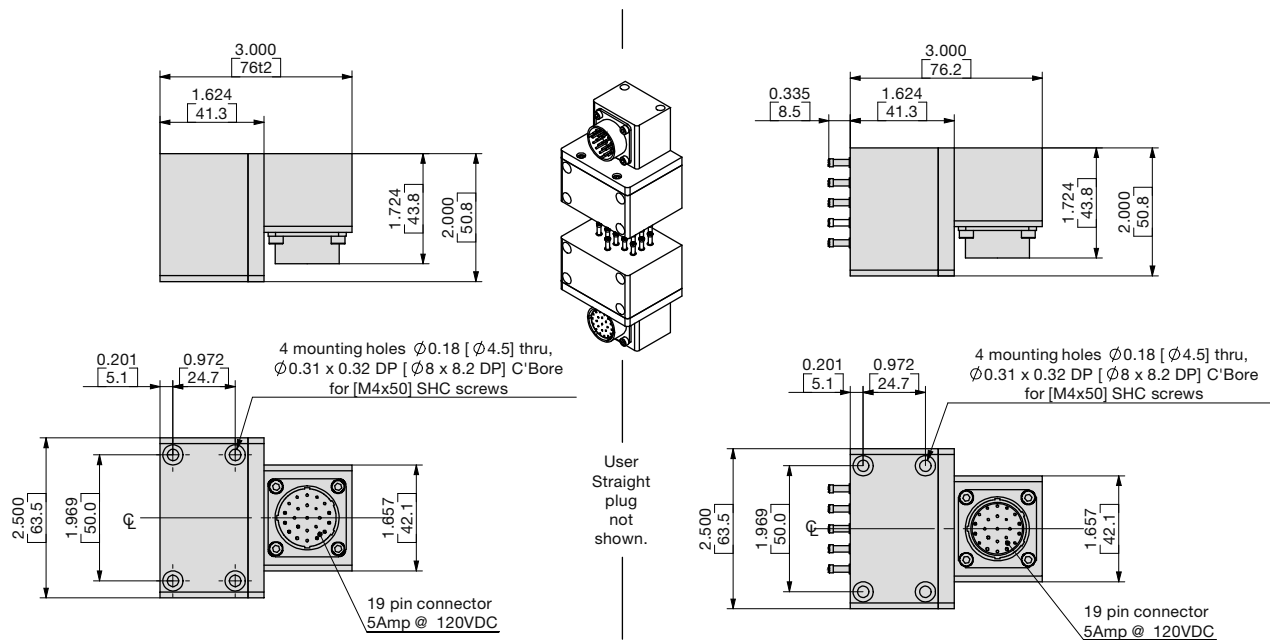
**E10 KE10-TP150** 10 pin 13A Module with Industrial User Connector, without Cable

#### ACCESSORIES:

**ELCT-042** Straight male plug (w/o cable), solder type, cable clamp

**Module kits above include:** Flat for module mounting, straight plug (without cable), locating pins and hardware.

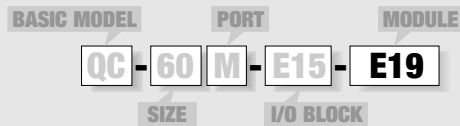
## 19 Pin Module 5Amp @ 120VDC (E19) For QC/TP-60 & QC/TP-150



Flat for module mounting not shown: See QC or TP drawings.

### ROBOT HALF MODULES:

#### How to Order Modules:



#### MODULE FOR QC-60

##### PREMOUNTED SEPARATE

**E19 KE19-QC60** 19 pin 5A Module with Industrial User Connector, without Cable

#### MODULE FOR QC-150

##### PREMOUNTED SEPARATE

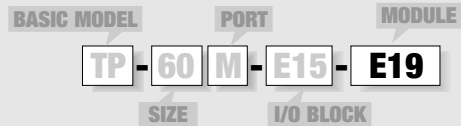
**E19 KE19-QC150** 19 pin 5A Module with Industrial User Connector, without Cable

#### ACCESSORIES:

**ELCT-043** Straight female plug (w/o cable), solder type, cable clamp

### TOOL HALF MODULES:

#### How to Order Modules:



#### MODULE FOR TP-60

##### PREMOUNTED SEPARATE

**E19 KE19-TP60** 19 pin 5A Module with Industrial User Connector, without Cable

#### MODULE FOR TP-150

##### PREMOUNTED SEPARATE

**E19 KE19-TP150** 19 pin 5A Module with Industrial User Connector, without Cable

#### ACCESSORIES:

**ELCT-044** Straight male plug (w/o cable), solder type, cable clamp

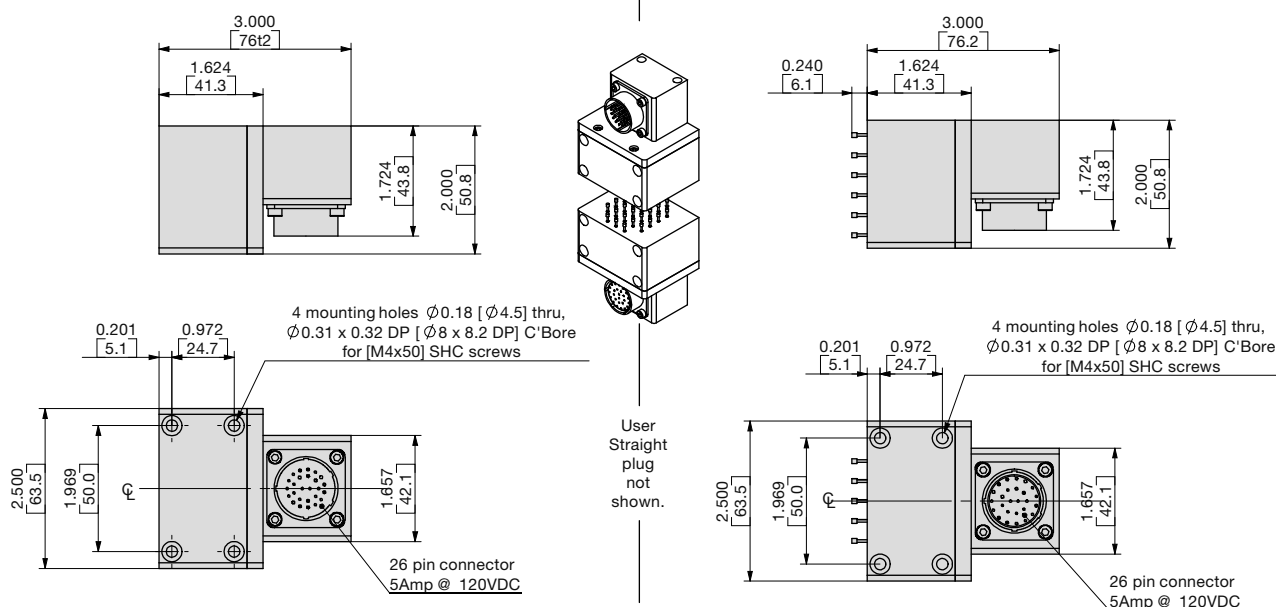
**Module kits above include:** Flat for module mounting, straight plug (without cable), locating pins and hardware.



# OPTIONAL ELECTRIC MODULE

## 26 Pin Module 5Amp @ 120VDC (E26)

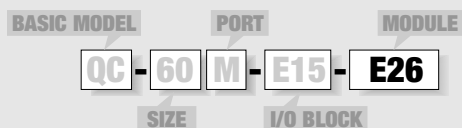
For QC/TP-60 & QC/TP-150



Flat for module mounting not shown: See QC or TP drawings.

### ROBOT HALF MODULES:

#### How to Order Modules:



#### MODULE FOR QC-60

##### PREMOUNTED SEPARATE

**E26 KE26-QC60** 26 pin 5A Module with Industrial User Connector, without Cable

#### MODULE FOR QC-150

##### PREMOUNTED SEPARATE

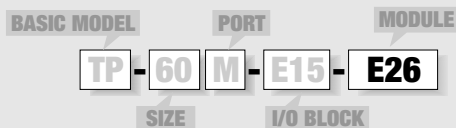
**E26 KE26-QC150** 26 pin 5A Module with Industrial User Connector, without Cable

#### ACCESSORIES:

**ELCT-045** Straight female plug (w/o cable), solder type, cable clamp

### TOOL HALF MODULES:

#### How to Order Modules:



#### MODULE FOR TP-60

##### PREMOUNTED SEPARATE

**E26 KE26-TP60** 26 pin 5A Module with Industrial User Connector, without Cable

#### MODULE FOR TP-150

##### PREMOUNTED SEPARATE

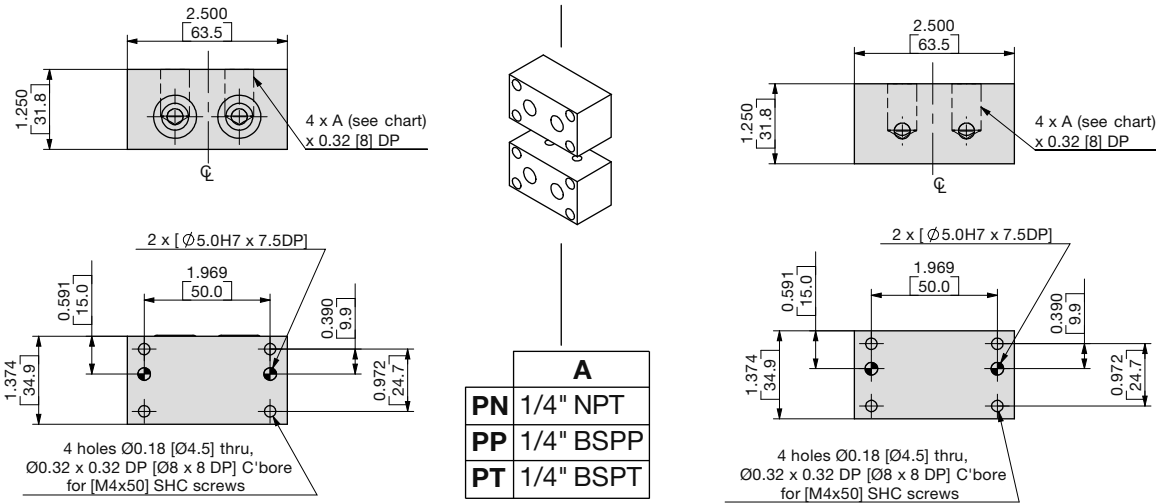
**E26 KE26-TP150** 26 pin 5A Module with Industrial User Connector, without Cable

#### ACCESSORIES:

**ELCT-046** Straight male plug (w/o cable), solder type, cable clamp

**Module kits above include:** Flat for module mounting, straight plug (without cable), locating pins and hardware.

## 2 X 1/4" Air ports Module, Face Seal (PN14, PP14, PT14) For QC/TP-60 & QC/TP-150

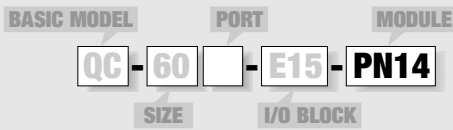


Maximum Working Pressure: 10 bar

Flat for module mounting not shown: See QC or TP drawings.

### ROBOT HALF MODULES:

#### How to Order Modules:



#### MODULES FOR QC-60

	PREMOUNTED	SEPARATE	
PN14	KPN14-QC60	2 x 1/4" NPT Pneumatic Ports, 10 bar	
PP14	KPP14-QC60	2 x 1/4" BSPP Pneumatic Ports, 10 bar	
PT14	KPT14-QC60	2 x 1/4" BSPT Pneumatic Ports, 10 bar	

#### MODULES FOR QC-150

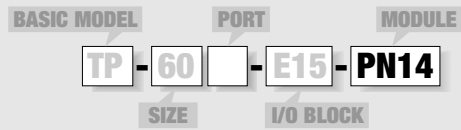
	PREMOUNTED	SEPARATE	
PN14	KPN14-QC150	2 x 1/4" NPT Pneumatic Ports, 10 bar	
PP14	KPP14-QC150	2 x 1/4" BSPP Pneumatic Ports, 10 bar	
PT14	KPT14-QC150	2 x 1/4" BSPT Pneumatic Ports, 10 bar	

#### ACCESSORIES:

**SLKT-395** Seal Repair Kit

### TOOL HALF MODULES:

#### How to Order Modules:



#### MODULES FOR TP-60

	PREMOUNTED	SEPARATE	
PN14	KPN14-TP60	2 x 1/4" NPT Pneumatic Ports, 10 bar	
PP14	KPP14-TP60	2 x 1/4" BSPP Pneumatic Ports, 10 bar	
PT14	KPT14-TP60	2 x 1/4" BSPT Pneumatic Ports, 10 bar	

#### MODULES FOR TP-150

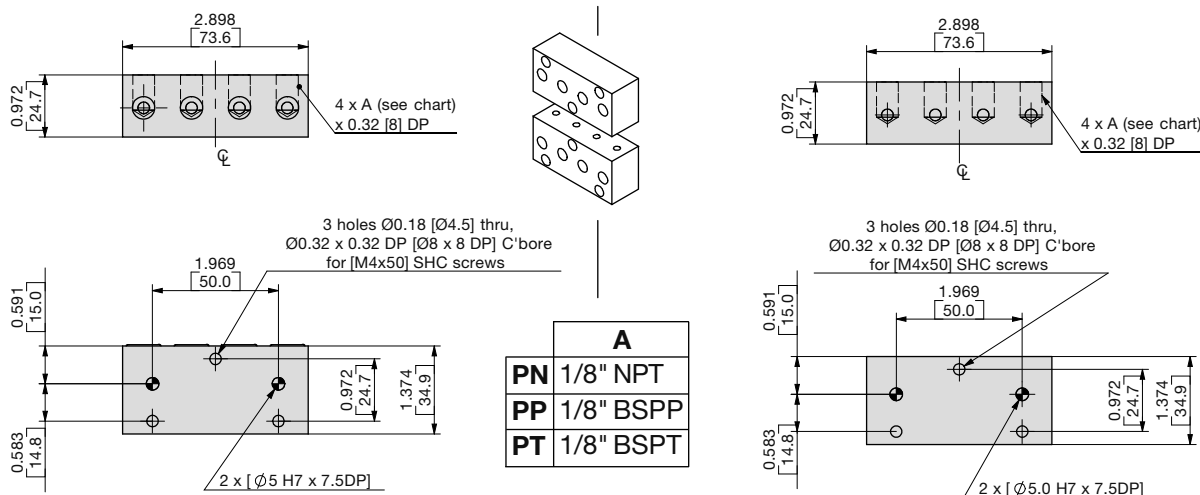
	PREMOUNTED	SEPARATE	
PN14	KPN14-TP150	2 x 1/4" NPT Pneumatic Ports, 10 bar	
PP14	KPP14-TP150	2 x 1/4" BSPP Pneumatic Ports, 10 bar	
PT14	KPT14-TP150	2 x 1/4" BSPT Pneumatic Ports, 10 bar	

Module kits above include: Flat for module mounting, seals, locating pins and hardware.

# OPTIONAL PNEUMATIC MODULE

## 4 X 1/8" Air ports Module, Face Seal (PN18, PP18, PT18)

For QC/TP-60 & QC/TP-150

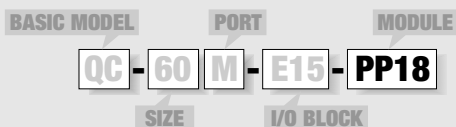


Flat for module mounting not shown: See QC or TP drawings.

Maximum Working Pressure: 10 bar

### ROBOT HALF MODULES:

#### How to Order Modules:



#### MODULES FOR QC-60

PREMOUNTED	SEPARATE	
PN18	KPN18-QC60	4 x 1/8" NPT Pneumatic Ports, 10 bar
PP18	KPP18-QC60	4 x 1/8" BSPP Pneumatic Ports, 10 bar
PT18	KPT18-QC60	4 x 1/8" BSPT Pneumatic Ports, 10 bar

#### MODULES FOR QC-150

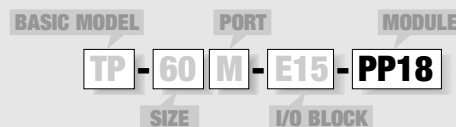
PREMOUNTED	SEPARATE	
PN18	KPN18-QC150	4 x 1/8" NPT Pneumatic Ports, 10 bar
PP18	KPP18-QC150	4 x 1/8" BSPP Pneumatic Ports, 10 bar
PT18	KPT18-QC150	4 x 1/8" BSPT Pneumatic Ports, 10 bar

#### ACCESSORIES:

SLKT-391 Seal Repair Kit

### TOOL HALF MODULES:

#### How to Order Modules:



#### MODULES FOR TP-60

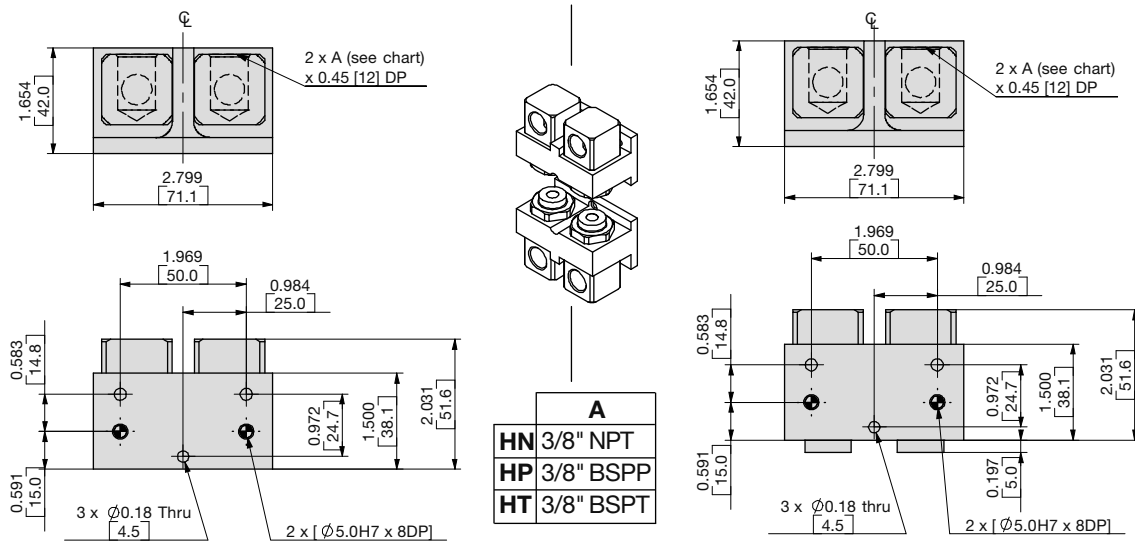
PREMOUNTED	SEPARATE	
PN18	KPN18-TP60	4 x 1/8" NPT Pneumatic Ports, 10 bar
PP18	KPP18-TP60	4 x 1/8" BSPP Pneumatic Ports, 10 bar
PT18	KPT18-TP60	4 x 1/8" BSPT Pneumatic Ports, 10 bar

#### MODULES FOR TP-150

PREMOUNTED	SEPARATE	
PN18	KPN18-TP150	4 x 1/8" NPT Pneumatic Ports, 10 bar
PP18	KPP18-TP150	4 x 1/8" BSPP Pneumatic Ports, 10 bar
PT18	KPT18-TP150	4 x 1/8" BSPT Pneumatic Ports, 10 bar

Module kits above include: Flat for module mounting, seals, locating pins and hardware.

## 2 x 3/8" Fluid Ports Module, Non Spilling, Double Shut-Off (HP38, HN38, HT38) For QC/TP-60 & QC/TP-150

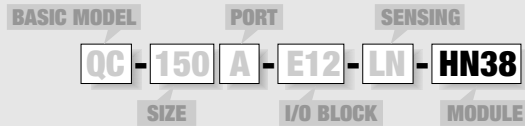


Flat for module mounting not shown: See QC or TP drawings.

Maximum Working Pressure: 100 bar

### ROBOT HALF MODULES:

#### How to Order Modules:



#### MODULE FOR QC-60

PREMOUNTED SEPARATE

**HN38 KHN38-QC60** 2 x 3/8" NPT Fluid Ports Module, 100 bar

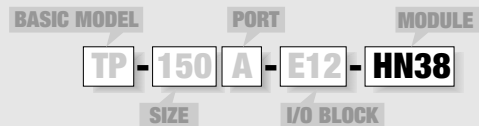
#### MODULE FOR QC-150

PREMOUNTED SEPARATE

**HN38 KHN38-QC150** 2 x 3/8" NPT Fluid Ports Module, 100 bar

### TOOL HALF MODULES:

#### How to Order Modules:



#### MODULE FOR TP-60

PREMOUNTED SEPARATE

**HN38 KHN38-TP60** 2 x 3/8" NPT Fluid Ports Module, 100 bar

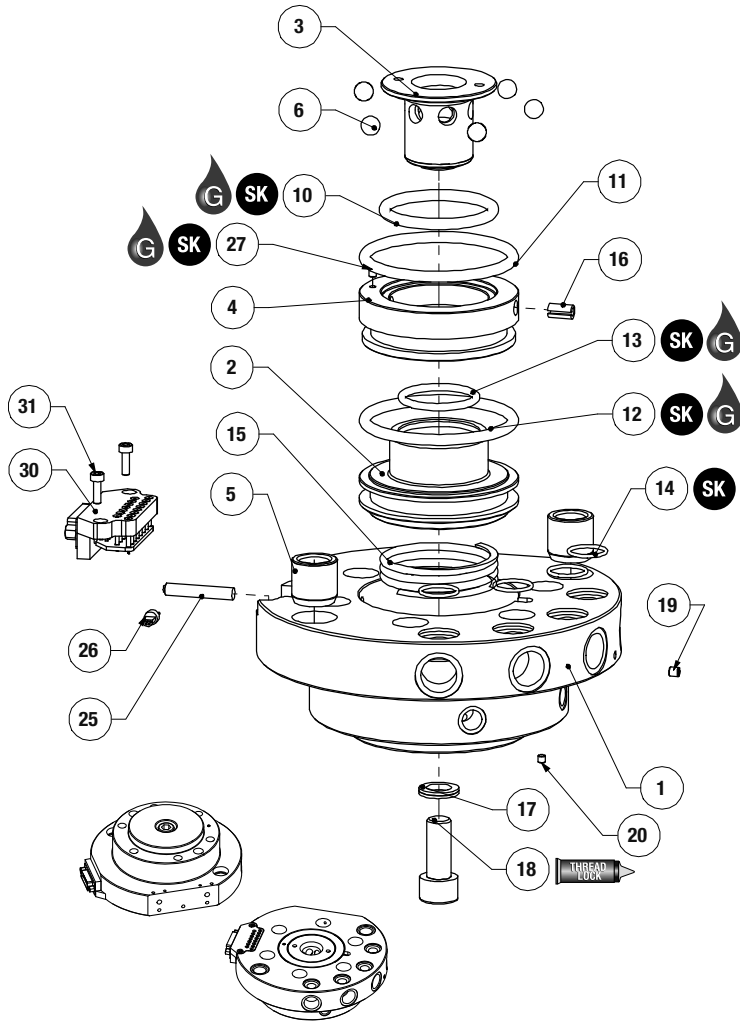
#### MODULE FOR TP-150

PREMOUNTED SEPARATE

**HN38 KHN38-TP150** 2 x 3/8" NPT Fluid Ports Module, 100 bar

Module kits above include: Flat for module mounting, couplings, locating pins and hardware.

## Robot Half



Item	Qty	Name
------	-----	------

### Robot Side

1	1	Body
2	1	Piston
3	1	Ball retainer
4	1	Ring
5	2	Bushing
6	4 to 6	Ball
10	1	Ring, O-Ring
11	1	Ring, O-Ring
12	1	Piston, O-Ring
13	1	Piston, O-ring
14	4	Body, O-Ring
15	1	Spring
16	1	Ring, Pin (QC-150 only)
17	1	Retainer, O-Ring
18	1	Retainer, Washer
19	1	Body, SHC screw
20	1	Body, SHC screw
25	1	Sensor, (QC-150 only - optional)
26	1	Sensor Connector, (QC-150 only - optional)
27	1	Sensor, SS screw (QC-150 only)
30	1	I/O Module
31	2	Module, SHC Screw

### Tool Side

101	1	Body
102	1	Locking Pin
103	1	Centering Pin
104	1	Diamond Pin
105	3	Pin, Screw
106	1	I/O Module
107	2	Module, SHC screw

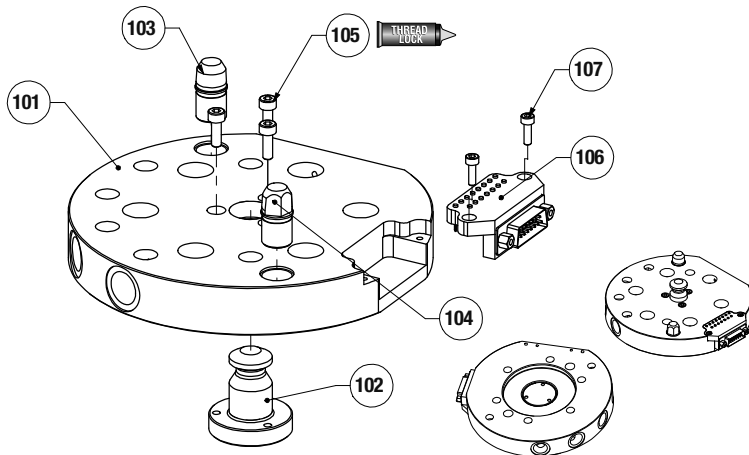
**NOTE:** Contact the Robohand Sales Department for a complete spare parts list with order numbers and prices.

**SK Seal Repair Kit Order #'s See Product Data Sheets**

QC SERIES

6.18

## Tool Half



Seal Kit Items



Thread Locker



Krytox™ Lubricant



Lightweight Machine Oil



Teflon® Based Grease

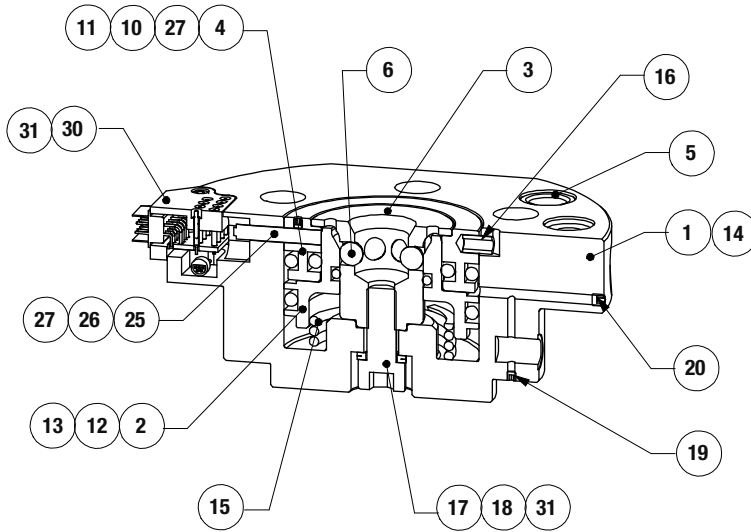


Super Bonder

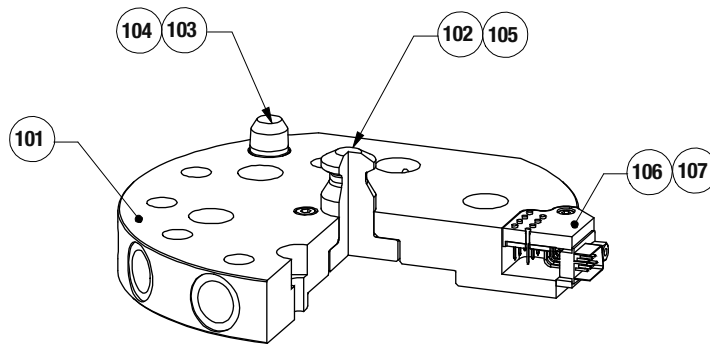


Third Angle Projection

## Robot Half



## Tool Half



Item	Qty	Name
------	-----	------

### Robot Side

1	1	Body
2	1	Piston
3	1	Ball retainer
4	1	Ring
5	2	Bushing
6	4 to 6	Ball
10	1	Ring, O-Ring
11	1	Ring, O-Ring
12	1	Piston, O-ring
13	1	Piston, O-ring
14	4	Body, O-Ring
15	1	Spring
16	1	Ring, Pin (QC-150 only)
17	1	Retainer, O-Ring
18	1	Retainer, Washer
19	1	Body, SHC screw
20	1	Body, SHC screw
25	1	Sensor, (QC-150 only - optional)
26	1	Sensor Connector, (QC-150 only - optional)
27	1	Sensor, SS screw (QC-150 only)
30	1	I/O Module
31	2	Module, SHC Screw

### Tool Side

101	1	Body
102	1	Locking Pin
103	1	Centering Pin
104	1	Diamond Pin
105	3	Pin, Screw
106	1	I/O Module
107	2	Module, SHC screw

**NOTE:** Contact the Robohand Sales Department for a complete spare parts list with order numbers and prices.

### Assembly Procedure - Robot Side

- 1) Install the air port plugs (#19) and (#20) with thread-locker into the body (#1)
- 2) Lubricate and install seals (#12) and (#13) into the piston (#2)
- 3) Insert the springs (#15) into the body
- 4) Insert the piston sub-assembly into the body
- 5) Lubricate and install seals (#10) and (#11) into the ring (#4)
- 6) Insert the pin (#16) into the ring (#4)
- 7) Insert the ring sub-assembly into the body
- 8) Insert the balls (#6) into the ball retainer (#3)
- 9) Insert the ball and retainer sub-assembly into the body
- 10) Fasten the ball retainer with washer (#17) and screws (#18) with thread-locker
- 11) Press in the bushings (#5) into the body
- 12) Mount the O-Ring (#14) into the body
- 13) For QC150 with latch sensor only, fully insert the sensor (#25) into the body and slightly pull it back (0.5 to 1 mm). Fasten the sensor (#25) with screw (#27). Plug in male connector (#25) with the female connector of the I/O block (#30)
- 14) Mount the I/O block (#30) into the body and fasten with screw (#31)

### Assembly Procedure - Tool Side

- 1) Insert the locking pin (#102) into the body #101 and fasten with screws (#105) with thread-locker
- 2) Press in the diamond pin (#104) into the body
- 3) Press in the pin (#103) into the body
- 4) Mount the I/O block (#106) into the body and fasten with screw (#107)





# QC Series Cross Reference

New Product #	Old Product #	Description
<b>Robot Half Size 30</b>		
QC-30-E15	QC2336-0-0-0	Robot Half, Imperial, 15 Pin I/O Module
QC-30-D15	QC1862-0-0-0	Robot Half, Imperial, Double 15 Pin I/O Module
QC-30M-E15	QC1956-0-0-0	Robot Half, Metric, 15 Pin I/O Module
QC-30M-E12	QC7499-0-0-0	Robot Half, Metric, 12 Pin I/O Module
<b>Tool Half Size 30</b>		
TP-30-E15	TP2337-0-0	Tool Half, Imperial, 15 Pin I/O Module
TP-30-D15	TP1506-0-0	Tool Half, Imperial, Double 15 Pin I/O Module
TP-30M-E15	TP1957-0-0	Tool Half, Metric, 15 Pin I/O Module
TP-30M-E12	TP7500-0-0	Tool Half, Metric, 12 Pin I/O Module
<b>Accessories Size 30</b>		
E15-QC30	502678	15 Pin I/O Block with Micro D-Sub Connector
E12-QC30	507494	12 Pin I/O Block with Turck M12 Connector
E15-TP30	502679	15 Pin I/O Block with Micro D-Sub Connector
E12-TP30	507495	12 Pin I/O Block with Turck M12 Connector
CABL-024	903319	Straight Male Cordset 1.2M for E15
SLKT-387	KQC30-OR	Seal Repair Kit, QC30
SLKT-388	KQC30-HW	Face Sealing Repair Kit, QC30
<b>Robot Half Size 60</b>		
QC-60-E15	QC6675-0-0-0	Robot Half, NPT, 15 Pin I/O Module
QC-60-G15	QC2166-0-0-0	Robot Half, NPT, 15 Pin Non-Recessed I/O Module
QC-60M-E15	QC6704-0-0-0	Robot Half, Metric, 15 Pin I/O Module
QC-60M-E12	QC7592-0-0-0	Robot Half, Metric, 12 Pin I/O Module
QC-60M-G15	QC4588-0-0-0	Robot Half, Metric, 15 Pin Non-Recessed I/O Module
QC-60A-E15	QC6708-0-0-0	Robot Half, BSPT, 15 Pin I/O Module
QC-60A-G15	QC1980-0-0-0	Robot Half, BSPT, 15 Pin Non-Recessed I/O Module
QC-60-E15-10P	QC6923-0-0-0	Robot Half, NPT, 15 Pin I/O Module, 10 Ports
QC-60M-E15-10P	QC7079-0-0-0	Robot Half, Metric, 15 Pin I/O Module, 10 Ports
QC-60A-E15-10P	QC7078-0-0-0	Robot Half, BSPT, 15 Pin I/O Module, 10 Ports
<b>Tool Half Size 60</b>		
TP-60-E15	TP6676-0-0-0	Tool Half, NPT, 15 Pin I/O Module
TP-60-G15	TP2093-0-0-0	Tool Half, NPT, 15 Pin Non-Recessed I/O Module
TP-60M-E15	TP6705-0-0-0	Tool Half, Metric, 15 Pin I/O Module
TP-60M-E12	TP7593-0-0-0	Tool Half, Metric, 12 Pin I/O Module
TP-60M-G15	TP4591-0-0-0	Tool Half, Metric, 15 Pin Non-Recessed I/O Module
TP-60A-E15	TP6709-0-0-0	Tool Half, BSPT, 15 Pin I/O Module
TP-60A-G15	TP1981-0-0-0	Tool Half, BSPT, 15 Pin Non-Recessed I/O Module
TP-60-E15-10P	TP6924-0-0-0	Tool Half, NPT, 15 Pin I/O Module, 10 Ports
TP-60M-E15-10P	TP7081-0-0-0	Tool Half, Metric, 15 Pin I/O Module, 10 Ports
TP-60A-E15-10P	TP7080-0-0-0	Tool Half, BSPT, 15 Pin I/O Module, 10 Ports
<b>Accessories Size 60</b>		
SLKT-389	KQC60-OR	Seal Repair Kit, QC60
<b>Robot Half Size 150</b>		
QC-150-E15	QC6677-0-0-0	Robot Half, NPT, 15 Pin I/O Module
QC-150-G15	QC2292-0-0-0	Robot Half, NPT, 15 Pin Non-Recessed I/O Module
QC-150-E15-LP	QC6677-052-0-0	Robot Half, NPT, 15 Pin I/O Module, PNP Latch sensor
QC-150-G15-LP	QC2292-052-0-0	Robot Half, NPT, 15 Pin Non-Recessed I/O Module, PNP Latch sensor
QC-150-E15-LN	QC6677-050-0-0	Robot Half, NPT, 15 Pin I/O Module, NPN Latch sensor
QC-150-G15-LN	QC2292-050-0-0	Robot Half, NPT, 15 Pin Non-Recessed I/O Module, NPN Latch sensor
QC-150M-E15	QC6706-0-0-0	Robot Half, Metric, 15 Pin I/O Module
QC-150M-G15	QC4593-0-0-0	Robot Half, Metric, 15 Pin Non-Recessed I/O Module
QC-150M-E15-LP	QC6706-052-0-0	Robot Half, Metric, 15 Pin I/O Module, PNP Latch sensor
QC-150M-G15-LP	QC4593-052-0-0	Robot Half, Metric, 15 Pin Non-Recessed I/O Module, PNP Latch sensor
QC-150M-E15-LN	QC6706-050-0-0	Robot Half, Metric, 15 Pin I/O Module, NPN Latch sensor
QC-150M-G15-LN	QC4593-050-0-0	Robot Half, Metric, 15 Pin Non-Recessed I/O Module, NPN Latch sensor
QC-150A-E15	QC6710-0-0-0	Robot Half, BSPT, 15 Pin I/O Module
QC-150A-G15	QC3066-0-0-0	Robot Half, BSPT, 15 Pin Non-Recessed I/O Module
QC-150A-E15-LP	QC6710-052-0-0	Robot Half, BSPT, 15 Pin I/O Module, PNP Latch sensor
QC-150A-G15-LP	QC3066-052-0-0	Robot Half, BSPT, 15 Pin Non-Recessed I/O Module, PNP Latch sensor
QC-150A-E15-LN	QC6710-050-0-0	Robot Half, BSPT, 15 Pin I/O Module, NPN Latch sensor
QC-150A-G15-LN	QC3066-050-0-0	Robot Half, BSPT, 15 Pin Non-Recessed I/O Module, NPN Latch sensor

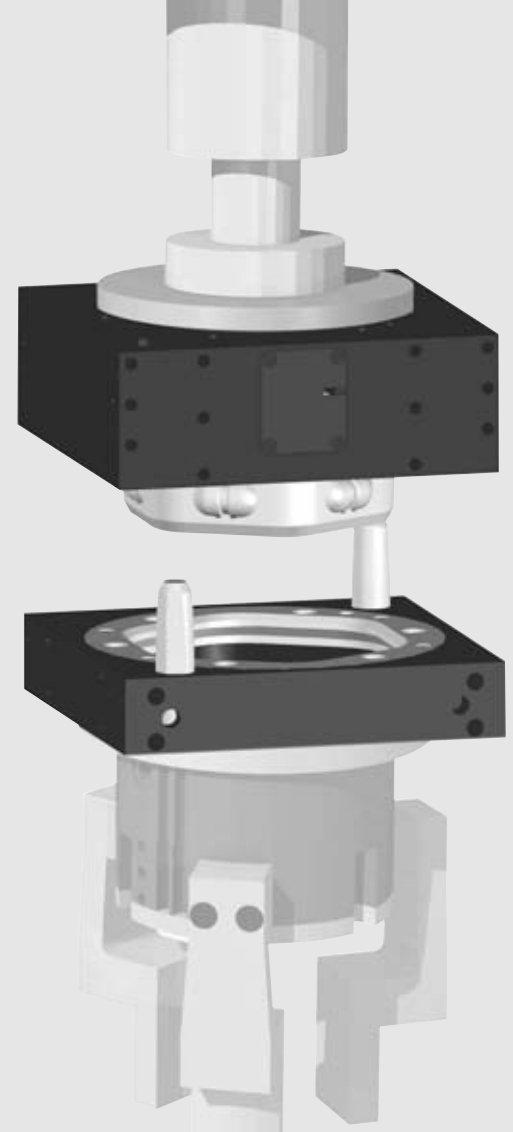
QC SERIES

6.20



New Product #	Old Product #	Description
<b>Tool Half Size 150</b>		
TP-150-E15	TP6678-0-0-0	Tool Half, NPT, 15 Pin I/O Module
TP-150-G15	TP2293-0-0-0	Tool Half, NPT, 15 Pin Non-Recessed I/O Module
TP-150M-E15	TP6707-0-0-0	Tool Half, Metric, 15 Pin I/O Module
TP-150M-G15	TP4595-0-0-0	Tool Half, Metric, 15 Pin Non-Recessed I/O Module
TP-150A-E15	TP6711-0-0-0	Tool Half, BSPT, 15 Pin I/O Module
TP-150A-G15	TP2259-0-0-0	Tool Half, BSPT, 15 Pin Non-Recessed I/O Module
<b>Modules Size 60 and 150</b>		
KG15-QC60	502675	15 Pin I/O Block (Non-Recessed) with D-Sub Connector - QC side
KE15-QC60	506671	15 Pin I/O Block with D-Sub Connector - QC side
KG15-TP60	502676	15 Pin I/O Block (Non-Recessed) with D-Sub Connector - TP side
KE15-TP60	506673	15 Pin I/O Block with D-Sub Connector - TP side
KE26-QC60	QE26	26 pin 5A Module with Industrial Connector - QC side
KE26-TP60	TE26	26 pin 5A Module with Industrial Connector - TP side
KE19-QC60	QE19	19 pin 5A Module with Industrial Connector - QC side
KE19-TP60	TE19	19 pin 5A Module with Industrial Connector - TP side
KE10-QC60	QE10	10 pin 13A Module with Industrial Connector - QC side
KE10-TP60	TE10	10 pin 13A Module with Industrial Connector - TP side
KG15-QC150	502675	15 Pin I/O Block (Non-Recessed) with D-Sub Connector - QC side
KE15-QC150	506673	15 Pin I/O Block with D-Sub Connector - QC side
KE26-QC150	QE26	26 pin 5A Module with Industrial Connector - QC side
KE26-TP150	TE26	26 pin 5A Module with Industrial Connector - TP side
KE19-QC150	QE19	19 pin 5A Module with Industrial Connector - QC side
KE19-TP150	TE19	19 pin 5A Module with Industrial Connector - TP side
KE10-QC150	QE10	10 pin 13A Module with Industrial Connector - QC side
KE10-TP150	TE10	10 pin 13A Module with Industrial Connector - TP side
KPN18-QC60	QNPT18	4 x 1/8 NPT Pneumatic Ports Module - QC side
KPP18-QC60	QBSPP18	4 x 1/8 BSPP Pneumatic Ports Module - QC side
KPT18-QC60	QBSPT18	4 x 1/8 BSPT Pneumatic Ports Module - QC side
KPN18-TP60	TNPT18	4 x 1/8 NPT Pneumatic Ports Module - TP side
KPP18-TP60	TBSPP18	4 x 1/8 BSPP Pneumatic Ports Module - TP side
KPT18-TP60	TBSPT18	4 x 1/8 BSPT Pneumatic Ports Module - TP side
KPN14-QC60	QNPT14	2 x 1/4 NPT Pneumatic Ports Module - QC side
KPP14-QC60	QBSPP14	2 x 1/4 BSPP Pneumatic Ports Module - QC side
KPT14-QC60	QBSPT14	2 x 1/4 BSPT Pneumatic Ports Module - QC side
KPN14-TP60	TNPT14	2 x 1/4 NPT Pneumatic Ports Module - TP side
KPP14-TP60	TBSPP14	2 x 1/4 BSPP Pneumatic Ports Module - TP side
KPT14-TP60	TBSPT14	2 x 1/4 BSPT Pneumatic Ports Module - TP side
KPN18-QC150	QNPT18	4 x 1/8 NPT Pneumatic Ports Module - QC side
KPP18-QC150	QBSPP18	4 x 1/8 BSPP Pneumatic Ports Module - QC side
KPT18-QC150	QBSPT18	4 x 1/8 BSPT Pneumatic Ports Module - QC side
KPN18-TP150	TNPT18	4 x 1/8 NPT Pneumatic Ports Module - TP side
KPP18-TP150	TBSPP18	4 x 1/8 BSPP Pneumatic Ports Module - TP side
KPT18-TP150	TBSPT18	4 x 1/8 BSPT Pneumatic Ports Module - TP side
KPN14-QC150	QNPT14	2 x 1/4 NPT Pneumatic Ports Module - QC side
KPP14-QC150	QBSPP14	2 x 1/4 BSPP Pneumatic Ports Module - QC side
KPT14-QC150	QBSPT14	2 x 1/4 BSPT Pneumatic Ports Module - QC side
KPN14-TP150	TNPT14	2 x 1/4 NPT Pneumatic Ports Module - TP side
KPP14-TP150	TBSPP14	2 x 1/4 BSPP Pneumatic Ports Module - TP side
KPT14-TP150	TBSPT14	2 x 1/4 BSPT Pneumatic Ports Module - TP side
KHN38-QC60	QQD38	2 x 3/8 NPT Fluid Ports Module - QC side
KHN38-TP60	TQD38	2 x 3/8 NPT Fluid Ports Module - TP side
KHN38-QC150	QQD38	2 x 3/8 NPT Fluid Ports Module - QC side
KHN38-TP150	TQD38	2 x 3/8 NPT Fluid Ports Module - TP side
ELCT-047	502363	Straight Female D-Sub User Plug (w/o cable) Solder Type for E15/G15 (QC-60/150 & TP-60/150)
ELCT-041	904831	Straight Female Plug (w/o cable) for E10-QC60/150
ELCT-042	904834	Straight Male Plug (w/o cable) for E10-TP60/150
ELCT-043	902484	Straight Female Plug (w/o cable) for E19-QC60/150
ELCT-044	902486	Straight Male Plug (w/o cable) for E19-TP60/150
ELCT-045	904837	Straight Female Plug (w/o cable) for E26-QC60/150
ELCT-046	904833	Straight Male Plug (w/o cable) for E26-TP60/150

# RQC Series Modular Tool Changer- High Loads



**• Robotic applications:**

Perfect for those flexible/multiple tooling applications utilizing one Robot. This product was designed with exceptional repeatability, high rigidity & load capacity to make it ideal for any robotic application.

**• Automation applications:**

End effector tooling and interchangeable fixturing can be changed quickly and easily to accommodate many different styles of parts on the same assembly machine or machining center.

**• Highly configurable, modular design:**

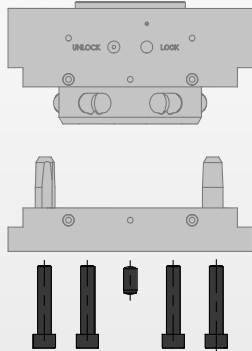
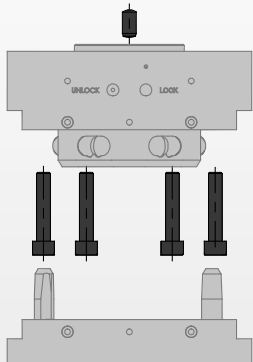
The Modular RQC series easily accommodates up to 4 optional modular interfaces offering a high level of flexibility.

MODULAR RQC  
SERIES

6.22

### Mounting Information:

Robot half has counterbored holes for mounting with a dowel pin hole, a raised boss for location, and features a ISO9409-1 mounting pattern



Tool half has tapped holes, two dowel pin holes for accurate location of payload, and features a ISO9409-1 mounting pattern

### Technical Specifications:

**Pneumatic Specifications**

Pressure Operating Range  
Cylinder Type  
Valve Required to Operate

**Imperial**

60-100 psi  
Double Acting, Spring Assist  
4-way, 2-position

**Metric**

4-7 bar

**Air Quality Requirements**

Air Filtration  
Air Lubrication  
Air Humidity

40 Micron or Better  
Not Necessary\*  
Low Moisture Content (dry)

**Temperature Operating Range**

Buna-N Seals (standard)    -30°~180° F    -35°~80° C

**Maintenance Specifications<sup>†</sup>**

Expected Life  
Normal Application  
w/ Preventative Maintenance  
Field Repairable  
Seal Repair Kits Available

5 million cycles  
10+ million cycles\*<sup>†</sup>  
Yes  
Yes

<sup>†</sup> See Maintenance Section.

\*Addition of lubrication will greatly increase service life

**Application Restrictions**

- Dirty or gritty environments
- Machining operations generating chips
- Environments with loose particulate

**See Maintenance Section for:**

Exploded views and spare parts list.....	6.54
Drawing Sections and assembly procedures.....	6.55
Tool Changer terminology .....	6.56

## Product Features

**Optional Weld Gun Power Module**  
Size 800 & 1200 only

**Latch/Unlatch Switch**  
RQC's are pre-equipped for latch, unlatch (all sizes) and part presence sensing (sizes 800 & 1200 only). Dry contact or inductive sensors with or w/o connectors are available.

**Optional 19 Pin I/O Module**

- Spring loaded contacts are recessed for a better protection
- V-Seal provides moisture resistance

**Other Modules Available:**

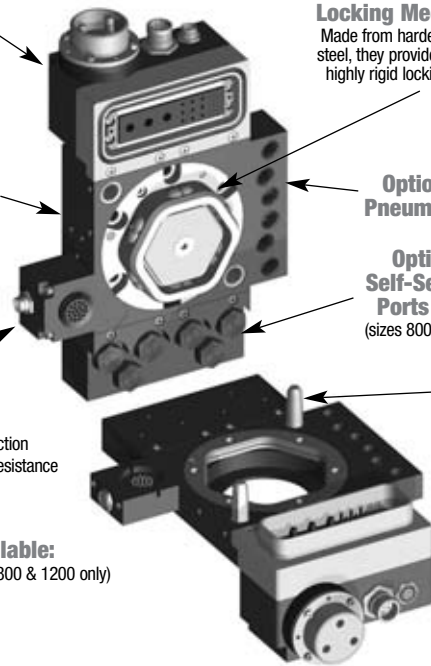
- 4 Port Fluid Module (sizes 800 & 1200 only)
- 2 Port Vacuum Module
- Servo Gun Module

**Locking Mechanisms**  
Made from hardened stainless steel, they provide a low stress, highly rigid locking capability

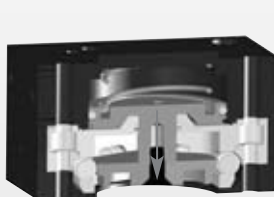
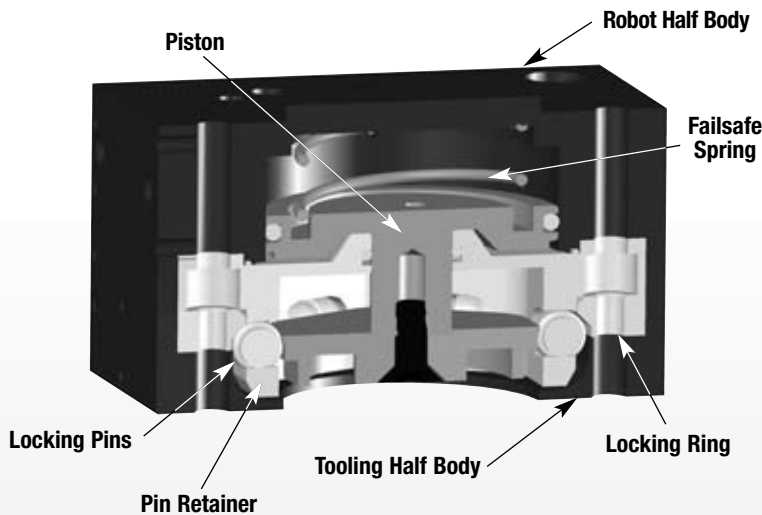
**Optional 6 Port Pneumatic Module**

**Optional 6 Self-Sealing Air Ports Module**  
(sizes 800 & 1200 only)

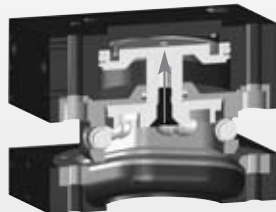
**Locating Pins**



## Operating Principle



Locked Position



Unlocked Position

- The tool half is inserted into the robot half.
- The robot half has a spring assisted double acting piston. When the piston is actuated the locking pins are driven under the locking ring. Thus locking the halves together.
- The fail-safe spring maintains the piston position in the event of pressure loss and the connected units must receive air pressure to de-couple.

### Style-RQC Robot Half

**Size-200**

Style:	RQC-200	
Max. Payload:	200 lbs.	90 Kg
Max. Moment:	7200 in.-lbs.	810 Nm
Weight:	4.7 lbs.	2.1 Kg



See Page **6.24**

### Style-RTP Tool Half

**Size-200**

Style:	RTP-200	
Max. Payload:	200 lbs.	90 Kg
Max. Moment:	7200 in.-lbs.	810 Nm
Weight:	2 lbs.	0.9 Kg

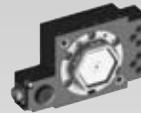


See Page **6.26**

### Style-RQC Robot Half

**Size-400**

Style:	RQC-400	
Max. Payload:	400 lbs.	180 Kg
Max. Moment:	14000 in.-lbs.	1580 Nm
Weight:	8 lbs.	3.6 Kg



See Page **6.28**

### Style-RTP Tool Half

**Size-400**

Style:	RTP-400	
Max. Payload:	400 lbs.	180 Kg
Max. Moment:	14000 in.-lbs.	1580 Nm
Weight:	2.4 lbs.	1.1 Kg

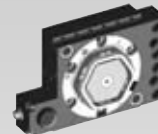


See Page **6.30**

### Style-RQC Robot Half

**Size-800**

Style:	RQC-800	
Max. Payload:	800 lbs.	360 Kg
Max. Moment:	22000 in.-lbs.	2490 Nm
Weight:	11.8 lbs.	5.3 Kg



See Page **6.32**

### Style-RTP Tool Half

**Size-800**

Style:	RTP-800	
Max. Payload:	800 lbs.	360 Kg
Max. Moment:	22000 in.-lbs.	2490 Nm
Weight:	4 lbs.	1.8 Kg

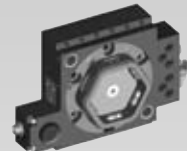


See Page **6.34**

### Style-RQC Robot Half

**Size-1200**

Style:	RQC-1200	
Max. Payload:	1200 lbs.	550 Kg
Max. Moment:	30000 in.-lbs.	3390 Nm
Weight:	14.1 lbs.	6.4 Kg



See Page **6.36**

### Style-RTP Tool Half

**Size-1200**

Style:	RTP-1200	
Max. Payload:	1200 lbs.	550 Kg
Max. Moment:	30000 in.-lbs.	3390 Nm
Weight:	4.3 lbs.	1.9 Kg



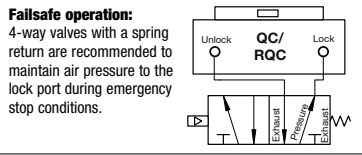
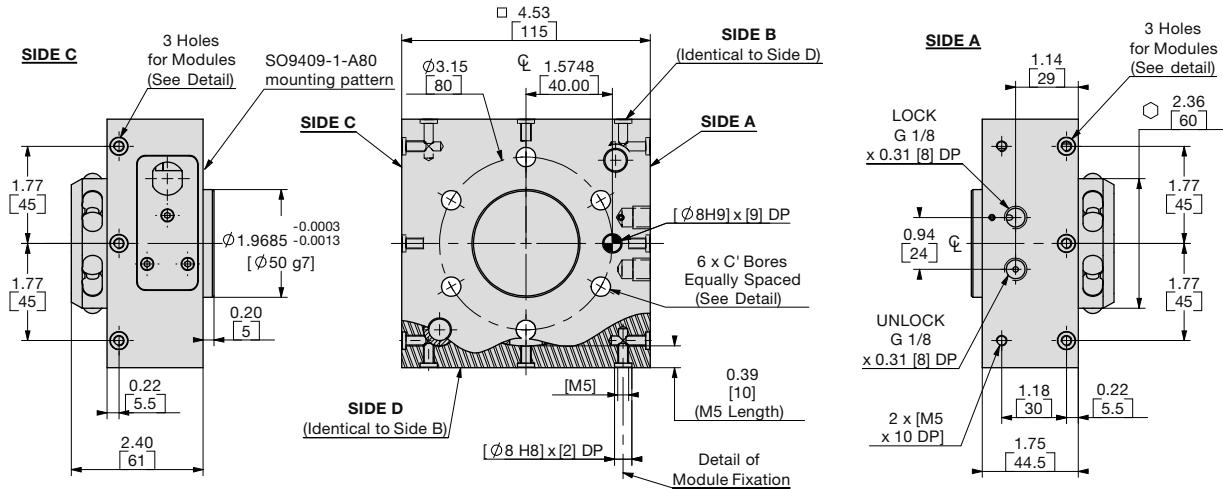
See Page **6.38**

### Options and Accessories

See Page **6.40**

# TOOL CHANGER RQC-200 ROBOT ADAPTER MODULE

Specifications	RQC-200	
Maximum Payload .....	200 lbs	90 Kg
Maximum Moment .....	7,200 in.-lbs	810 Nm
Weight of RQC Unit only .....	4.7 lb	2.1 Kg
Weight of Coupled Units .....	6.7 lbs	3 Kg
Pressure Range (locked cylinder) ..	60~100 psi	4~7 bar
Bore Ø .....	2.09 in.	53 mm
Displacement.....	2.52 in <sup>3</sup>	41.3 cm <sup>3</sup>
Temperature Range.....	-30°~180° F	-35°~80° C
Repeatability .....	± 0.001 in.	±0.025 mm
Valve required to actuate.....	4-way, 2-position	



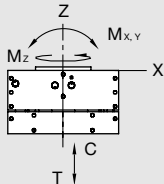
MODULAR RQC SERIES  
6.24

**UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW**

Imperial in.	Metric [mm]
0.00 ± 0.01	[0.] = [±.25]
0.000 ± 0.005	[0.0] = [±.13]
0.0000 ± 0.0005	[0.00] = [±.013]

Dimensions are symmetrical about centerline  
 All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or [±.013mm]  
 Metric Threads Course Pitch

## Loading Information

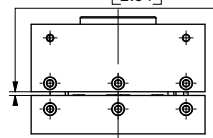


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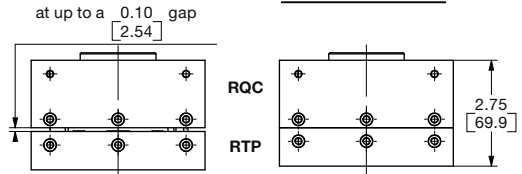
	Imperial	Metric
Maximum Tensile <b>T</b>	300 lbs.	1330 N
Maximum Compressive <b>C</b>	400 lbs.	1780 N
Maximum Moment <b>M<sub>x</sub></b>	7200 in.-lbs.	810 Nm
Maximum Moment <b>M<sub>y</sub></b>	7200 in.-lbs.	810 Nm
Maximum Moment <b>M<sub>z</sub></b>	7200 in.-lbs.	810 Nm

### READY TO COUPLE POSITION

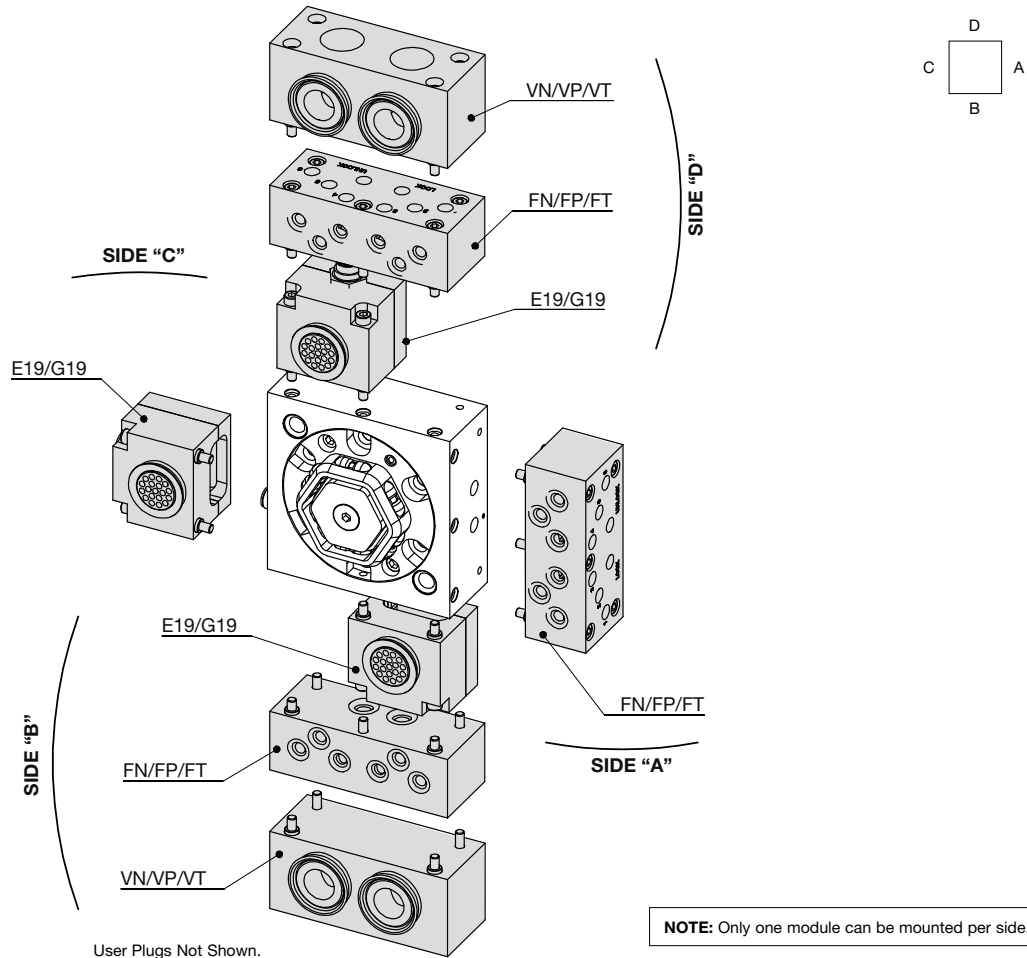
RQC can couple to RTP at up to a 0.10 gap [2.54]



### COUPLED POSITION

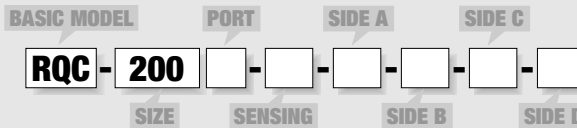






## How to Order: (Order Accessories separately from Basic Model)

For detailed sensing and module information see pages 8.40 - 8.51



### PORT:

- N** NPT port
- M** BSPP ports
- A** BSPT ports

### SENSING (FOR LATCH AND UNLATCH):

- LO** No sensing
- LP\*** PNP Inductive sensor
- CP\*** PNP Inductive sensor with M12 connector
- LN\*** NPN Inductive sensor
- CN\*** NPN Inductive sensor with M12 connector
- LD\*** Dry contact sensor
- CD\*** Dry contact sensor with M12 connector

\*Requires E19 module or G19 module mounted on side C. <sup>1</sup>Cables are sold separately.

### SIDE A:

- 0** No optional module
- FN** 6 x 1/8" NPT air ports module, face seal, 10 bar
- FP** 6 x 1/8" BSPP air ports module, face seal, 10 bar
- FT** 6 x 1/8" BSPT air ports module, face seal, 10 bar

### SIDE B AND/OR D:

- 0** No optional module
- E19<sup>1</sup>** 19 pin, 3 Amp, 48 VDC Module w/Turck M12 connector, w/o Cordset
- G19** 19 pin, 5 Amp, 120 VDC Module w/Industrial User Connector, w/o Cable
- FN** 6 x 1/8" NPT air ports module, face seal, 10 bar
- FP** 6 x 1/8" BSPP air ports module, face seal, 10 bar
- FT** 6 x 1/8" BSPT air ports module, face seal, 10 bar
- VN** 2 x 3/4" NPT vacuum ports module, face seal
- VP** 2 x 3/4" BSPP vacuum ports module, face seal
- VT** 2 x 3/4" BSPT vacuum ports module, face seal

<sup>1</sup>Cordset or plug are sold separately.

### SIDE C:

- 0** No optional module
  - E19<sup>1</sup>\*\*** 19 pin, 3 Amp, 48 VDC Module w/Turck M12 connector, w/o Cordset
  - G19<sup>1</sup>\*\*** 19 pin, 5 Amp, 120 VDC Module w/Industrial User Connector, w/o Cable
- <sup>1</sup>Cordset or plug are sold separately. \*\*Not compatible with CD, CP or CN sensing option.

### PNEUMATIC ACCESSORIES:

- SLKT-401** RQC-200 Standard Seal Repair Kit

### ELECTRICAL ACCESSORIES:

- ELCT-048** 90° Female Plug, w/o Cable, Solder Type, Cable Clamp for G19
- CABL-028** 90° Female M12 Cordset with 2M Cable for CP, CN, and CD
- CABL-029** 90° Female Cordset with 4M Cable for E19
- OSRK-001** PNP Inductive Sensor Repair Kit
- OSRK-002** NPN Inductive Sensor Repair Kit
- OSRK-003** Dry Contact Sensor Repair Kit



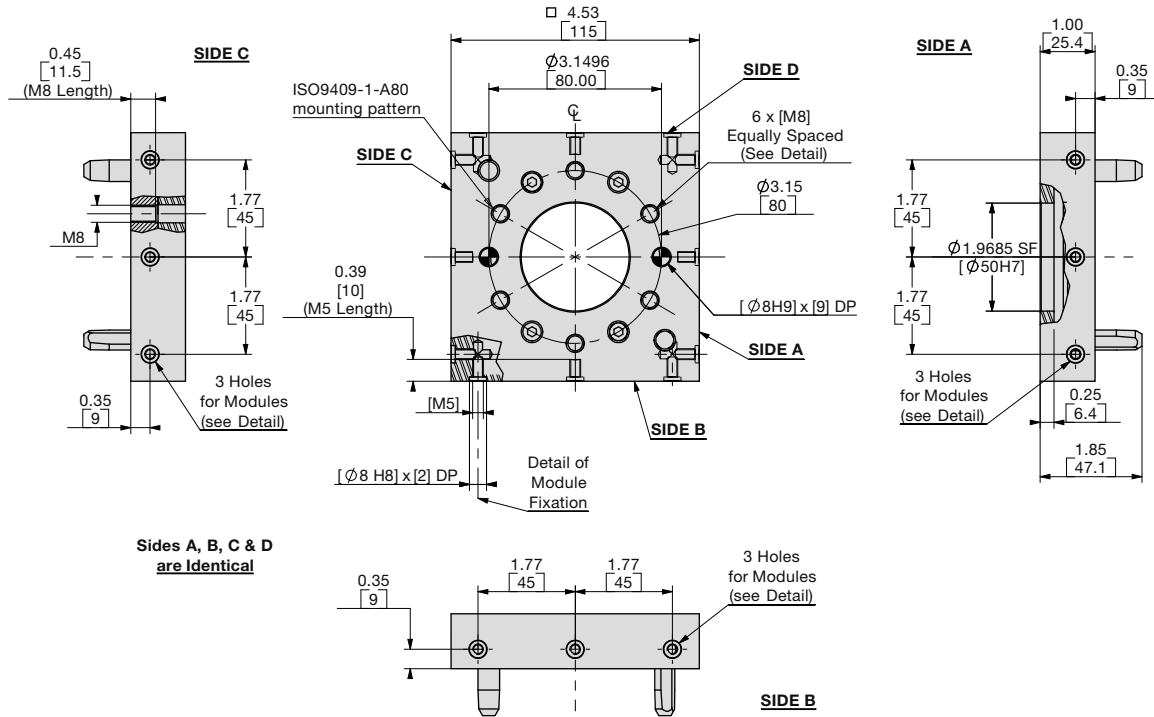
# TOOL CHANGER RTP-200 TOOL ADAPTER MODULE



## Specifications

## RTP-200

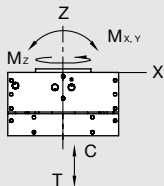
Maximum Payload .....	200 lbs	90 Kg
Maximum Moment .....	7,200 in.-lbs	810 Nm
Weight of RTP Unit only .....	2 lb	0.9 Kg
Weight of Coupled Units .....	6.7 lbs	3 Kg
Temperature Range .....	-30°~180° F	-35°~80° C
Repeatability .....	± 0.001 in.	±0.025 mm



**UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW**

				<b>Imperial in.</b>	<b>Metric [mm]</b>
Dimensions are symmetrical about centerline	Third Angle Projection	All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or [±.013mm]	Metric Threads Course Pitch	0.00 ± .01 0.000 ± .005 0.0000 ± .0005	[0.] = [±.25] [0.0] = [±.13] [0.00] = [±.013]

## Loading Information



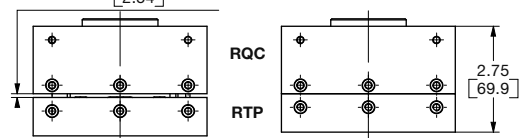
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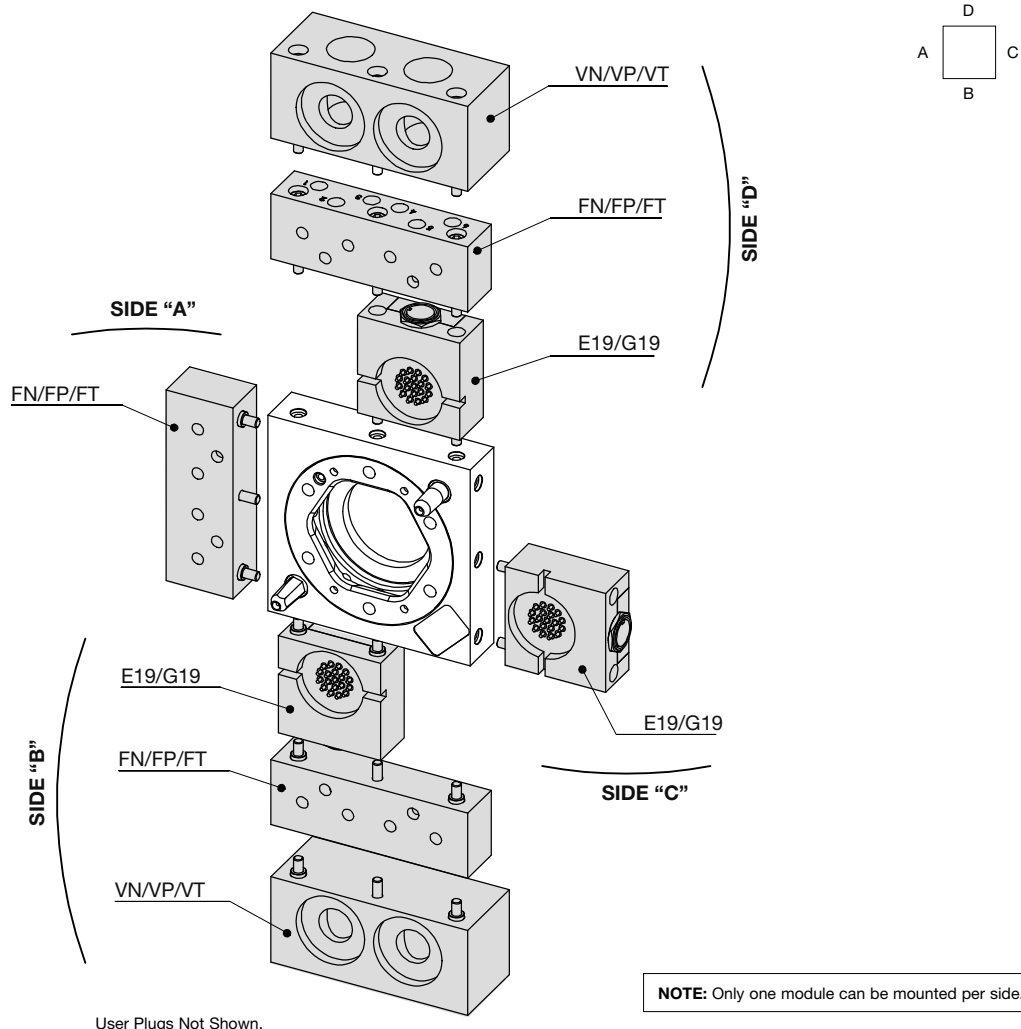
	Imperial	Metric
Maximum Tensile <b>T</b>	300 lbs.	1330 N
Maximum Compressive <b>C</b>	400 lbs.	1780 N
Maximum Moment <b>M<sub>x</sub></b>	7200 in.-lbs.	810 Nm
Maximum Moment <b>M<sub>y</sub></b>	7200 in.-lbs.	810 Nm
Maximum Moment <b>M<sub>z</sub></b>	7200 in.-lbs.	810 Nm

### READY TO COUPLE POSITION

RQC can couple to RTP  
at up to a 0.10 gap  
[2.54]

### COUPLED POSITION

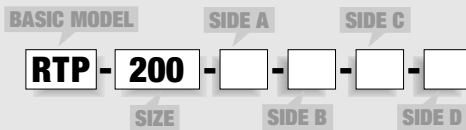




User Plugs Not Shown.

### How to Order: (Order Accessories separately from Basic Model)

For detailed sensing and module information see pages 8.40 - 8.51



#### SIDE A:

- 0** No optional module
- FN** 6 x 1/8" NPT air ports module, face seal, 10 bar
- FP** 6 x 1/8" BSPP air ports module, face seal, 10 bar
- FT** 6 x 1/8" BSPT air ports module, face seal, 10 bar

#### SIDE B AND/OR D:

- 0** No optional module
- E19<sup>†</sup>** 19 pin, 3 Amp, 48 VDC Module w/Turck M12 connector, w/o Cordset
- G19** 19 pin, 5 Amp, 120 VDC Module w/Industrial User Conn., w/o Cable
- FN** 6 x 1/8" NPT air ports module, face seal, 10 bar
- FP** 6 x 1/8" BSPP air ports module, face seal, 10 bar
- FT** 6 x 1/8" BSPT air ports module, face seal, 10 bar
- VN** 2 x 3/4" NPT vacuum ports module, face seal
- VP** 2 x 3/4" BSPP vacuum ports module, face seal
- VT** 2 x 3/4" BSPT vacuum ports module, face seal

<sup>†</sup>Cordset or plug are sold separately.

#### SIDE C:

- 0** No optional module
- E19<sup>†</sup>** 19 pin, 3 Amp, 48 VDC Module w/Turck M12 connector, w/o Cordset
- G19** 19 pin, 5 Amp, 120 VDC Module w/Industrial User Conn., w/o Cable

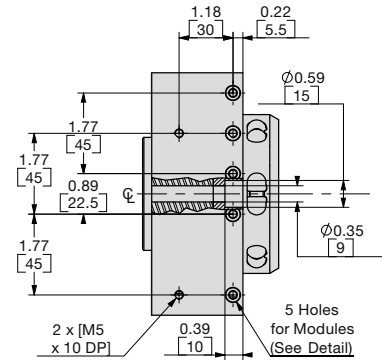
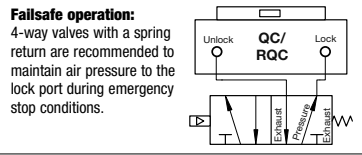
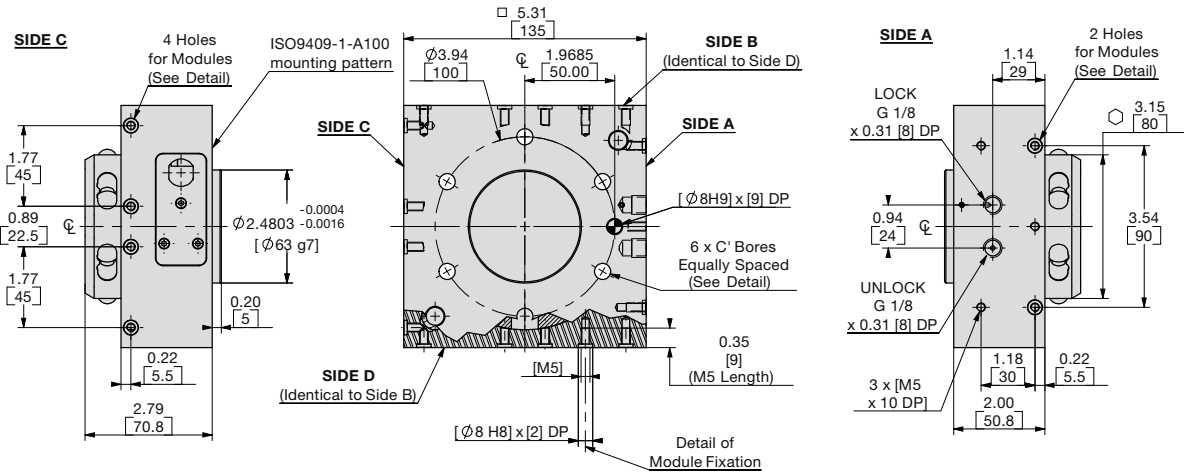
<sup>†</sup>Cordset or plug are sold separately. \*\*Not compatible with CD, CP or CN sensing option.

#### ELECTRICAL ACCESSORIES:

- ELCT-049** 90° Male Plug, w/o Cable, Solder Type, Cable Clamp for G19
- CABL-031** 90° Male Cordset with 2M Cable for E19

# TOOL CHANGER RQC-400 ROBOT ADAPTER MODULE

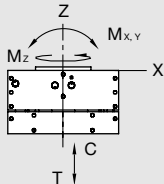
Specifications	RQC-400	
Maximum Payload .....	400 lbs	180 Kg
Maximum Moment .....	14,000 in.-lbs	1580 Nm
Weight of RQC Unit only .....	8 lb	3.6 Kg
Weight of Coupled Units .....	10.4 lbs	4.7 Kg
Pressure Range (locked cylinder) ..	60~100 psi	4~7 bar
Bore Ø .....	2.87 in.	73 mm
Displacement.....	4.93 in <sup>3</sup>	80.9 cm <sup>3</sup>
Temperature Range.....	-30°~180° F	-35°~80° C
Repeatability .....	± 0.001 in.	±0.025 mm
Valve required to actuate.....	4-way, 2-position	



UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

				<b>Imperial in.</b>	<b>Metric [mm]</b>
Dimensions are symmetrical about centerline	Third Angle Projection	All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or [±.013mm]	Metric Threads Course Pitch	0.00 ± .01 0.000 ± .005 0.0000 ± .0005	[0.] = [±.25] [0.0] = [±.13] [0.00] = [±.013]

## Loading Information



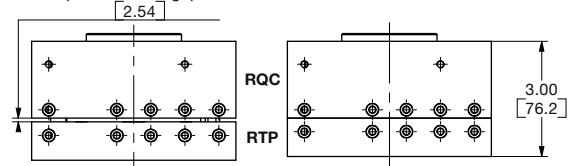
### Loading Capacity

	Imperial	Metric
Maximum Tensile <b>T</b>	600 lbs.	2670 N
Maximum Compressive <b>C</b>	800 lbs.	3560 N
Maximum Moment <b>M<sub>x</sub></b>	14000 in.-lbs.	1580 Nm
Maximum Moment <b>M<sub>y</sub></b>	14000 in.-lbs.	1580 Nm
Maximum Moment <b>M<sub>z</sub></b>	14000 in.-lbs.	1580 Nm

### READY TO COUPLE POSITION

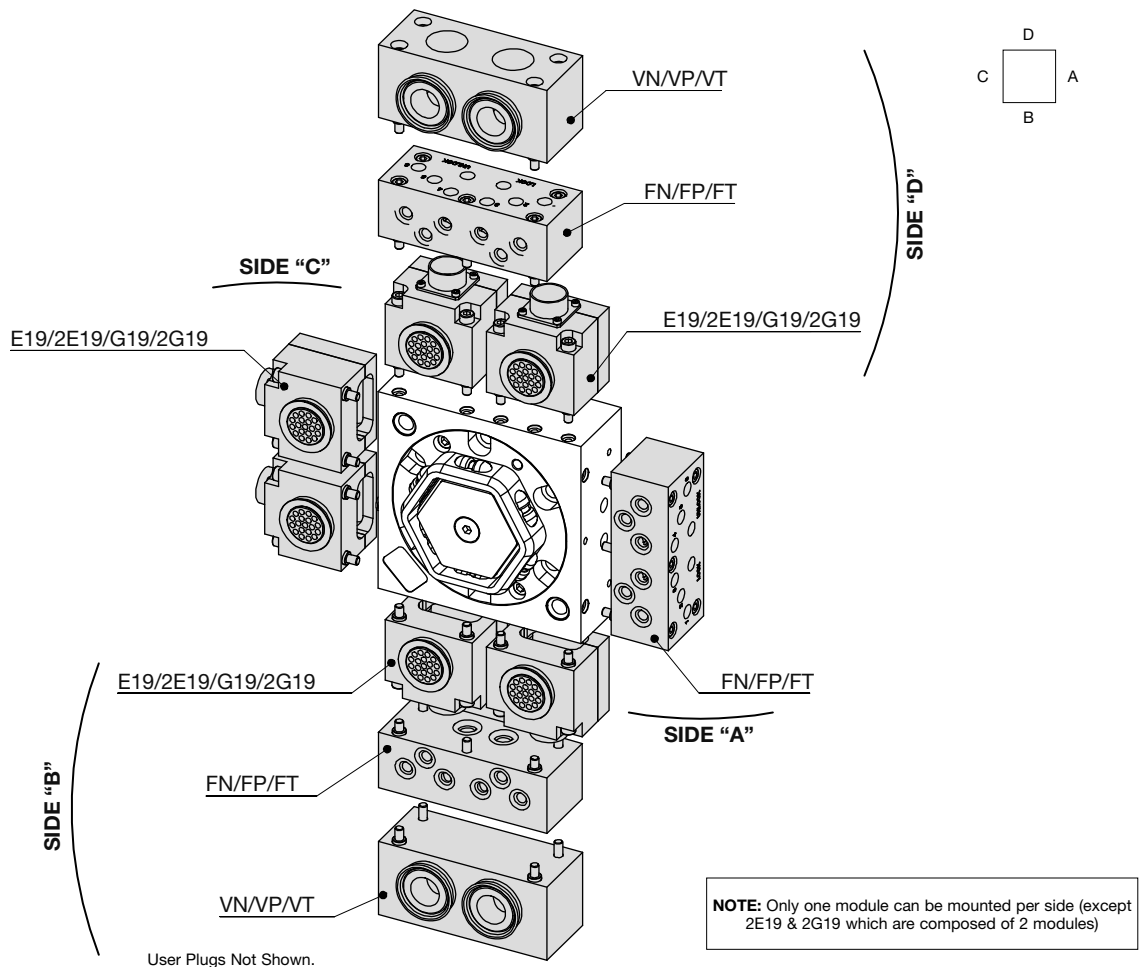
RQC can couple to RTP at up to a 0.10 gap

### COUPLED POSITION



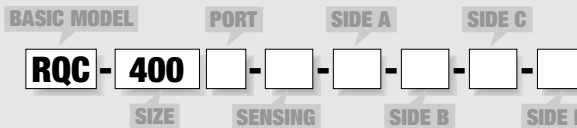


# TOOL CHANGER RQC-400 OPTIONAL MODULES FOR ROBOT ADAPTER



## How to Order: (Order Accessories separately from Basic Model)

For detailed sensing and module information see pages 8.40 - 8.51



### PORT:

- N** NPT port
- M** BSPP ports
- A** BSPT ports

### SENSING (FOR LATCH AND UNLATCH):

- LO** No sensing
- LP\*** PNP Inductive sensor
- CP\*** PNP Inductive sensor with M12 connector
- LN\*** NPN Inductive sensor
- CN\*** NPN Inductive sensor with M12 connector
- LD\*** Dry contact sensor
- CD\*** Dry contact sensor with M12 connector

\*Requires E19 module or G19 module mounted on side C. †Cordset or plug are sold separately.

### ELECTRICAL ACCESSORIES:

- ELCT-048** 90° Female Plug, w/o Cable, Solder Type, Cable Clamp for G19
- CABL-028** 90° Female M12 Cordset with 2M Cable for CP, CN, and CD
- CABL-029** 90° Female Cordset with 4M Cable for E19
- OSRK-001** PNP Inductive Sensor Repair Kit
- OSRK-002** NPN Inductive Sensor Repair Kit
- OSRK-003** Dry Contact Sensor Repair Kit

### SIDE A:

- 0** No optional module
- FN** 6 x 1/8" NPT air ports module, face seal, 10 bar
- FP** 6 x 1/8" BSPP air ports module, face seal, 10 bar
- FT** 6 x 1/8" BSPT air ports module, face seal, 10 bar

### SIDE C:

- 0** No optional module
- E19†** 19 pin, 3 Amp, 48 VDC Module w/Turck M12 connector, w/o Cordset
- 2E19†\*\*** 2x 19 pin, 3 Amp, 48 VDC Module w/Turck M12 connector, w/o Cordset
- G19** 19 pin, 5 Amp, 120 VDC Module w/Industrial User Conn., w/o Cable
- 2G19\*\*** 2x 19 pin, 5 Amp, 120 VDC Module w/Industrial User Conn., w/o Cable

†Cordset or plug are sold separately. \*\*Not compatible with CD, CP or CN sensing option.

### SIDE B AND/OR D:

- 0** No optional module
- E19†** 19 pin, 3 Amp, 48 VDC Module w/Turck M12 connector, w/o Cordset
- 2E19†** 2x 19 pin, 3 Amp, 48 VDC Module w/Turck M12 connector, w/o Cordset
- G19** 19 pin, 5 Amp, 120 VDC Module w/Industrial User Conn., w/o Cable
- 2G19** 2x 19 pin, 5 Amp, 120 VDC Module w/Industrial User Conn., w/o Cable
- FN** 6 x 1/8" NPT air ports module, face seal, 10 bar
- FP** 6 x 1/8" BSPP air ports module, face seal, 10 bar
- FT** 6 x 1/8" BSPT air ports module, face seal, 10 bar
- VN** 2 x 3/4" NPT vacuum ports module, face seal
- VP** 2 x 3/4" BSPP vacuum ports module, face seal
- VT** 2 x 3/4" BSPT vacuum ports module, face seal

†Cordset or plug are sold separately.

### PNEUMATIC ACCESSORIES:

- SLKT-402** RQC-400 Standard Seal Repair Kit

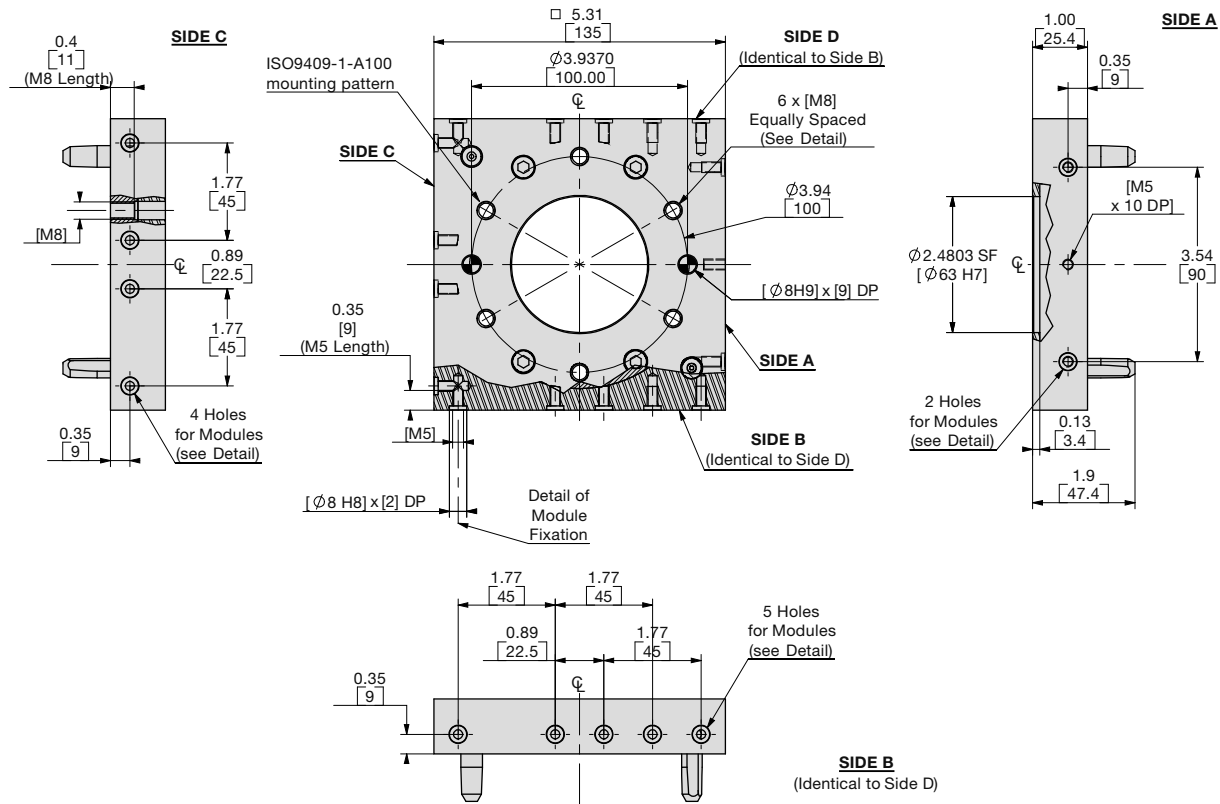
# TOOL CHANGER RTP-400 TOOL ADAPTER MODULE



## Specifications

### RTP-400

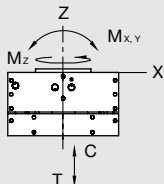
Maximum Payload .....	400 lbs	180 Kg
Maximum Moment .....	14,000 in.-lbs	1580 Nm
Weight of RTP Unit only .....	2.4 lb	1.1 Kg
Weight of Coupled Units .....	10.4 lbs	4.7 Kg
Temperature Range .....	-30°~180° F	-35°~80° C
Repeatability .....	± 0.001 in.	±0.025 mm



**UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW**

				<b>Imperial in.</b>	<b>Metric [mm]</b>
Dimensions are symmetrical about centerline	Third Angle Projection	All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or [±.013mm]	Metric Threads Course Pitch	0.00 = ±.01 0.000 = ±.005 0.0000 = ±.0005	[0.] = [±.25] [0.0] = [±.13] [0.00] = [±.013]

## Loading Information

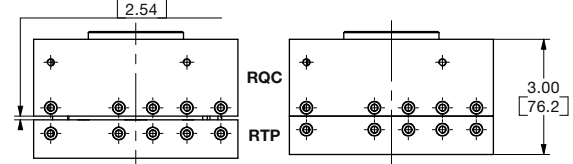


### Loading Capacity

	Imperial	Metric
Maximum Tensile <b>T</b>	600 lbs.	2670 N
Maximum Compressive <b>C</b>	800 lbs.	3560 N
Maximum Moment <b>M<sub>x</sub></b>	14000 in.-lbs.	1580 Nm
Maximum Moment <b>M<sub>y</sub></b>	14000 in.-lbs.	1580 Nm
Maximum Moment <b>M<sub>z</sub></b>	14000 in.-lbs.	1580 Nm

### READY TO COUPLE POSITION

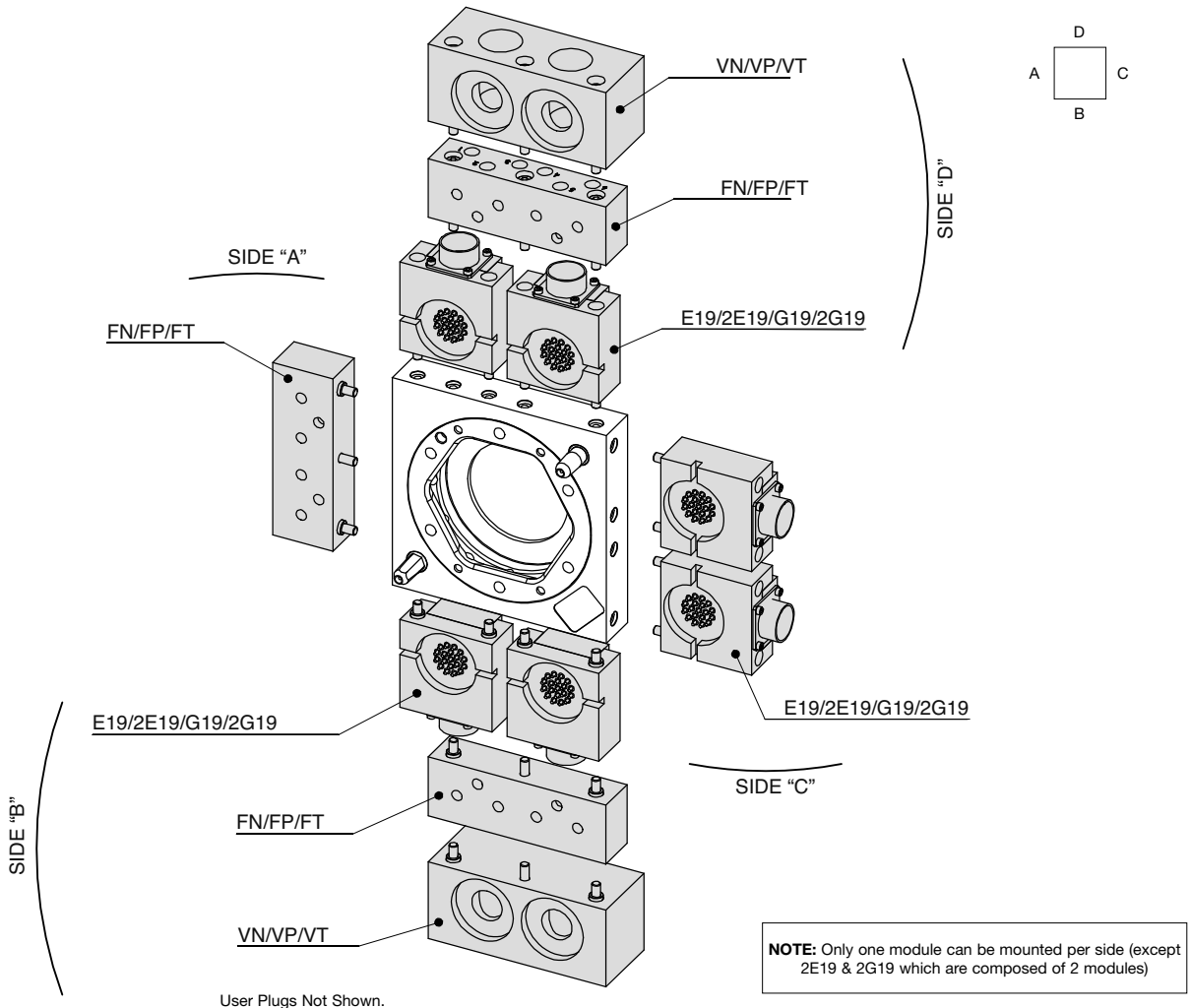
RQC can couple to RTP  
at up to a 0.10 gap



### COUPLED POSITION

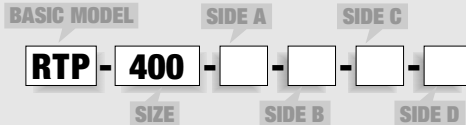
Please see back cover for DE-STA-CO Global Locations. [www.destaco.com](http://www.destaco.com)

[www.comoso.com](http://www.comoso.com)



### How to Order: (Order Accessories separately from Basic Model)

For detailed sensing and module information see pages 8.40 - 8.51



#### SIDE A:

- 0** No optional module
- FN** 6 x 1/8" NPT air ports module, face seal, 10 bar
- FP** 6 x 1/8" BSPP air ports module, face seal, 10 bar
- FT** 6 x 1/8" BSPT air ports module, face seal, 10 bar

#### SIDE B AND/OR D:

- 0** No optional module
- E19<sup>†</sup>** 19 pin, 3 Amp, 48 VDC Module w/Turck M12 connector, w/o Cordset
- 2E19<sup>\*\*</sup>** 2x 19 pin, 3 Amp, 48 VDC Module w/Turck M12 connector, w/o Cordset
- G19** 19 pin, 5 Amp, 120 VDC Module w/Industrial User Conn., w/o Cable
- 2G19<sup>\*\*</sup>** 2x 19 pin, 5 Amp, 120 VDC Module w/Industrial User Conn., w/o Cable
- FN** 6 x 1/8" NPT air ports module, face seal, 10 bar
- FP** 6 x 1/8" BSPP air ports module, face seal, 10 bar
- FT** 6 x 1/8" BSPT air ports module, face seal, 10 bar
- VN** 2 x 3/4" NPT vacuum ports module, face seal
- VP** 2 x 3/4" BSPP vacuum ports module, face seal
- VT** 2 x 3/4" BSPT vacuum ports module, face seal

<sup>†</sup>Cordset or plug are sold separately.

#### SIDE C:

- 0** No optional module
- E19<sup>†</sup>** 19 pin, 3 Amp, 48 VDC Module w/Turck M12 connector, w/o Cordset
- 2E19<sup>\*\*</sup>** 2x 19 pin, 3 Amp, 48 VDC Module w/Turck M12 connector, w/o Cordset
- G19** 19 pin, 5 Amp, 120 VDC Module w/Industrial User Conn., w/o Cable
- 2G19<sup>\*\*</sup>** 2x 19 pin, 5 Amp, 120 VDC Module w/Industrial User Conn., w/o Cable

<sup>†</sup>Cordset or plug are sold separately. <sup>\*\*</sup>Not compatible with CD, CP or CN sensing option.

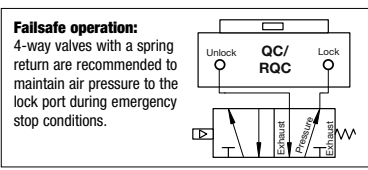
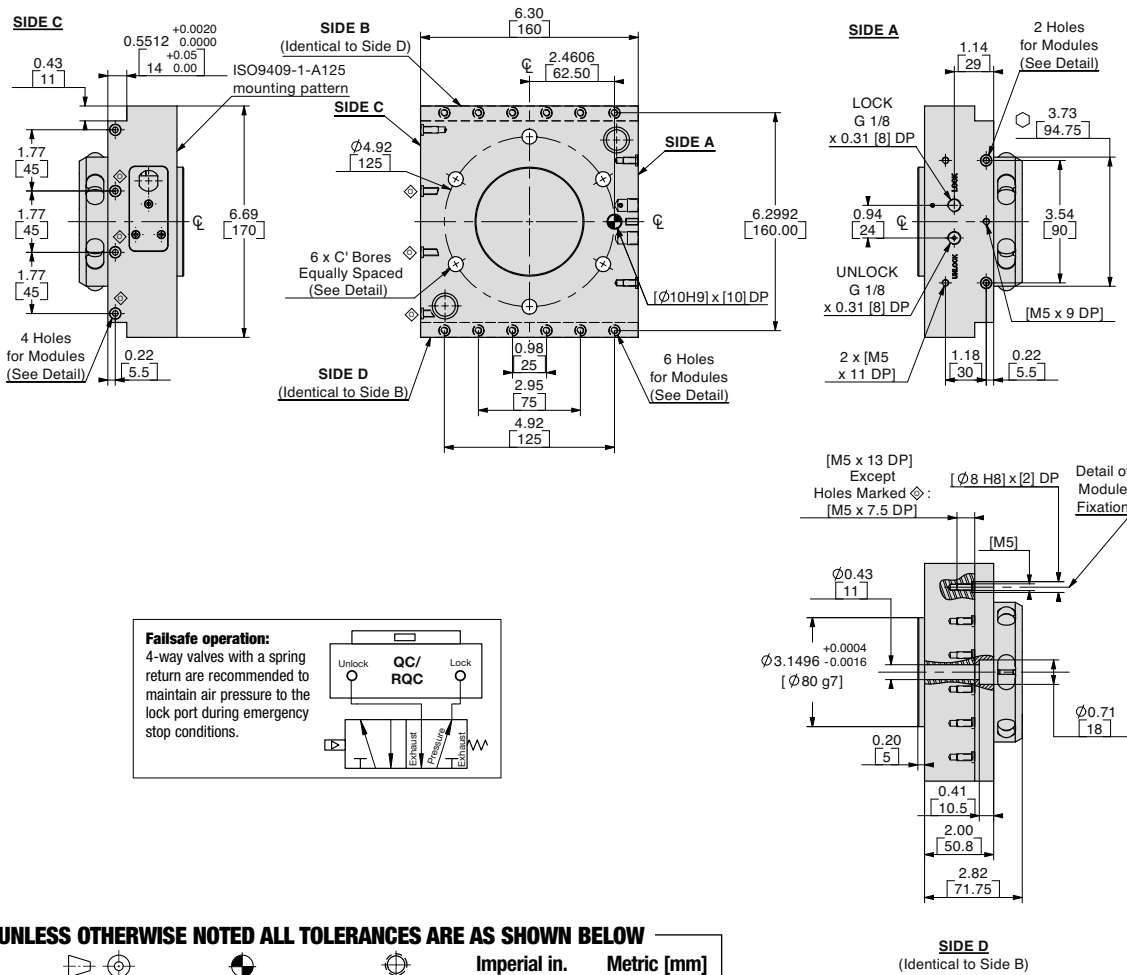
#### ELECTRICAL ACCESSORIES:

- ELCT-049** 90° Male Plug, w/o Cable, Solder Type, Cable Clamp for G19
- CABL-031** 90° Male Cordset with 2M Cable for E19



# TOOL CHANGER RQC-800 ROBOT ADAPTER MODULE

Specifications	RQC-800	
Maximum Payload .....	800 lbs	360 Kg
Maximum Moment .....	22,000 in.-lbs	2490 Nm
Weight of RQC Unit only .....	11.8 lb	5.3 Kg
Weight of Coupled Units .....	15.8 lbs	7.1 Kg
Pressure Range (locked cylinder) ..	60~100 psi	4~7 bar
Bore Ø .....	3.15 in.	80 mm
Displacement.....	5.83 in <sup>3</sup>	95.6 cm <sup>3</sup>
Temperature Range.....	-30°~180° F	-35°~80° C
Repeatability .....	± 0.001 in.	±0.025 mm
Valve required to actuate.....	4-way, 2-position	

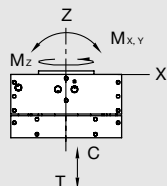


UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

Symbol	Imperial in.	Metric [mm]
	0.00 ± .01	[0.] = [±.25]
	0.000 ± .005	[0.0] = [±.13]
	0.0000 ± .0005	[0.00] = [±.013]

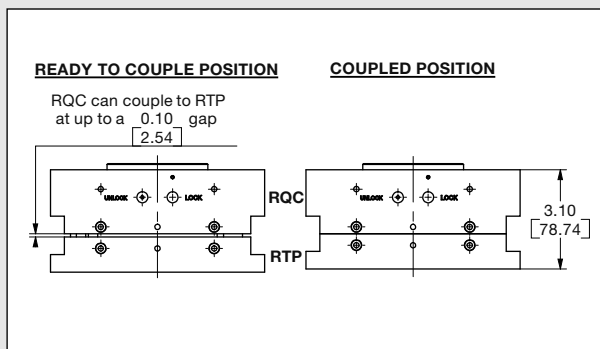
Dimensions are symmetrical about centerline  
 Third Angle Projection  
 All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or [±.013mm]  
 Metric Threads Course Pitch

## Loading Information



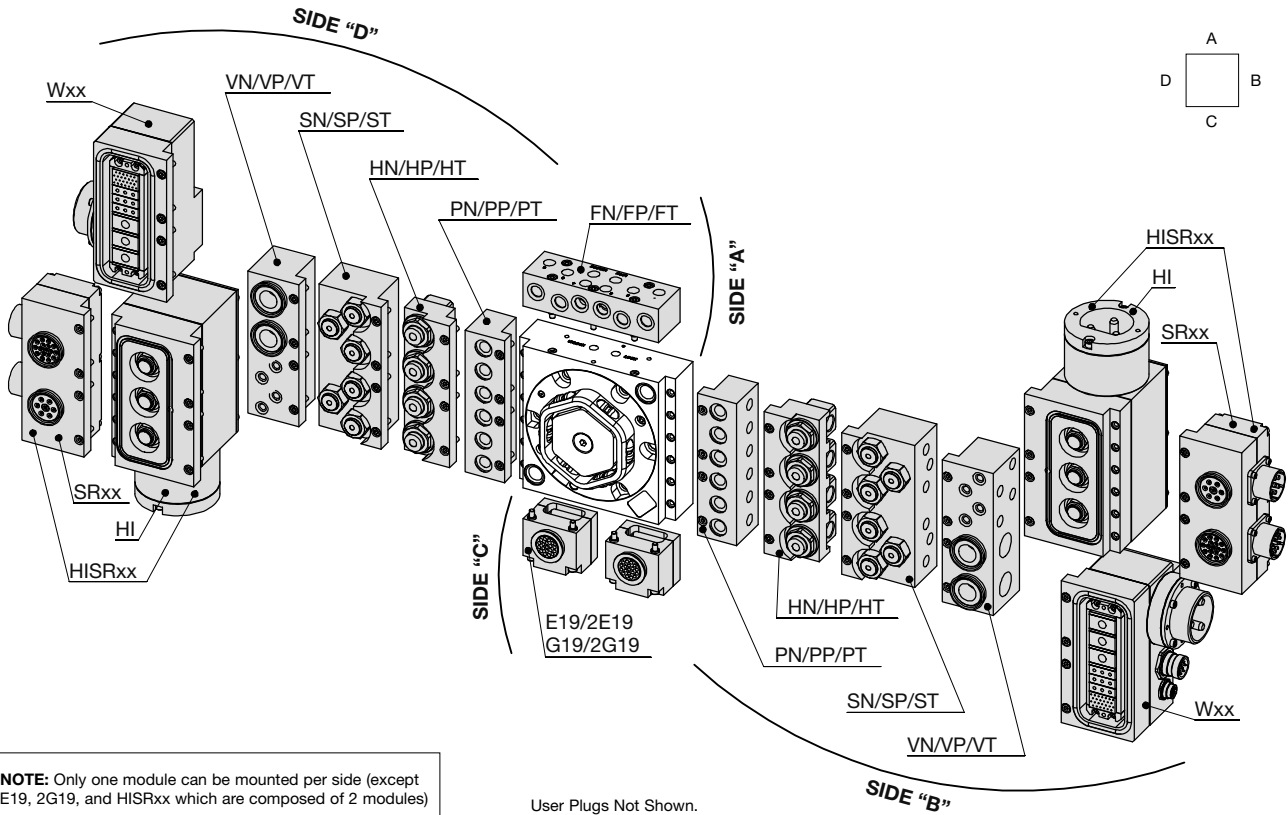
### Loading Capacity

	Imperial	Metric
Maximum Tensile <b>T</b>	1200 lbs.	5340 N
Maximum Compressive <b>C</b>	1600 lbs.	7120 N
Maximum Moment <b>M<sub>x</sub></b>	22000 in.-lbs.	2490 Nm
Maximum Moment <b>M<sub>y</sub></b>	22000 in.-lbs.	2490 Nm
Maximum Moment <b>M<sub>z</sub></b>	22000 in.-lbs.	2490 Nm





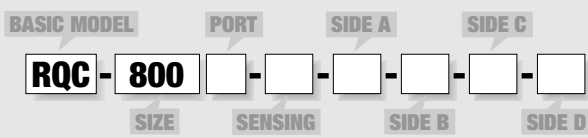
# TOOL CHANGER RQC-800 OPTIONAL MODULES FOR ROBOT ADAPTER



**NOTE:** Only one module can be mounted per side (except 2E19, 2G19, and HISRxx which are composed of 2 modules)

User Plugs Not Shown.

## How to Order: (Order Accessories separately from Basic Model) For detailed sensing and module information see pages 8.40 - 8.51



**PORT:**

<b>N</b>	NPT port
<b>M</b>	BSPP ports
<b>A</b>	BSPT ports

**SENSING (FOR LATCH, UNLATCH AND READY-TO-COUPLE):**

<b>LO</b>	No sensing
<b>LP*</b>	PNP Inductive sensor
<b>CP*</b>	PNP Inductive sensor with M12 connector
<b>LN*</b>	NPN Inductive sensor
<b>CN*</b>	NPN Inductive sensor with M12 connector
<b>LD*</b>	Dry contact sensor
<b>CD*</b>	Dry contact sensor with M12 connector

\*Requires E19 module or G19 module mounted on side C. †Cordset or plug are sold separately.

**ELECTRICAL ACCESSORIES:**

<b>ELCT-048</b>	90° Female Plug, w/o Cable, Solder Type, Cable Clamp for G19
<b>CABL-028</b>	90° Female M12 Cordset with 2M Cable for CP, CN, and CD
<b>CABL-029</b>	90° Female Cordset with 4M Cable for E19
<b>OSRK-004</b>	PNP Inductive Sensor Repair Kit
<b>OSRK-005</b>	NPN Inductive Sensor Repair Kit
<b>OSRK-006</b>	Dry Contact Sensor Repair Kit

**SIDE A:**

<b>0</b>	No optional module
<b>FN</b>	6 x 1/4" NPT air ports module, face seal, 10 bar
<b>FP</b>	6 x 1/4" BSPP air ports module, face seal, 10 bar
<b>FT</b>	6 x 1/4" BSPT air ports module, face seal, 10 bar

**SIDE B AND/OR D:**

<b>0</b>	No optional module
<b>PN</b>	6 x 1/4" NPT air ports module, face seal, 10 bar
<b>PP</b>	6 x 1/4" BSPP air ports module, face seal, 10 bar
<b>PT</b>	6 x 1/4" BSPT air ports module, face seal, 10 bar
<b>HN</b>	4 x 3/8" NPT fluid ports module, 100 bar
<b>HP</b>	4 x 3/8" BSPP fluid ports module, 100 bar
<b>HT</b>	4 x 3/8" BSPT fluid ports module, 100 bar
<b>SN</b>	6 x 1/4" NPT air ports module, self sealing, 10 bar
<b>SP</b>	6 x 1/4" BSPP air ports module, self sealing, 10 bar
<b>ST</b>	6 x 1/4" BSPT air ports module, self sealing, 10 bar
<b>VN</b>	2 x 3/4" vacuum + 4 x 1/4" air NPT ports module, face sealing
<b>VP</b>	2 x 3/4" vacuum + 4 x 1/4" air BSPP ports module, face sealing
<b>VT</b>	2 x 3/4" vacuum + 4 x 1/4" air BSPT ports module, face sealing
<b>Wxx**</b>	Servo Gun and Welding Gun Module (Pin and Socket) - Consult factory
<b>HI</b>	Welding Gun module (3 x 180 Amp spring loaded pins)
<b>SRxx**</b>	Servo Gun Module (with spring loaded pins)
<b>HISRxx****</b>	Servo Gun and Welding Gun module (with spring loaded pins)

\*\* xx are attributed according to the customer wiring diagram. Consult factory.  
\*\* SRxx module can be mounted on the HI module to use with electric welding gun.

**SIDE C:**

<b>0</b>	No optional module
<b>E19†</b>	19 pin, 3 Amp, 48 VDC Module w/Turck M12 connector, w/o Cordset
<b>2E19****</b>	2x 19 pin, 3 Amp, 48 VDC Module w/Turck M12 connector, w/o Cordset
<b>G19</b>	19 pin, 5 Amp, 120 VDC Module w/Industrial User Conn., w/o Cable
<b>2G19****</b>	2x 19 pin, 5 Amp, 120 VDC Module w/Industrial User Conn., w/o Cable

**PNEUMATIC ACCESSORIES:**

<b>SLKT-403</b>	RQC-800 Standard Seal Repair Kit
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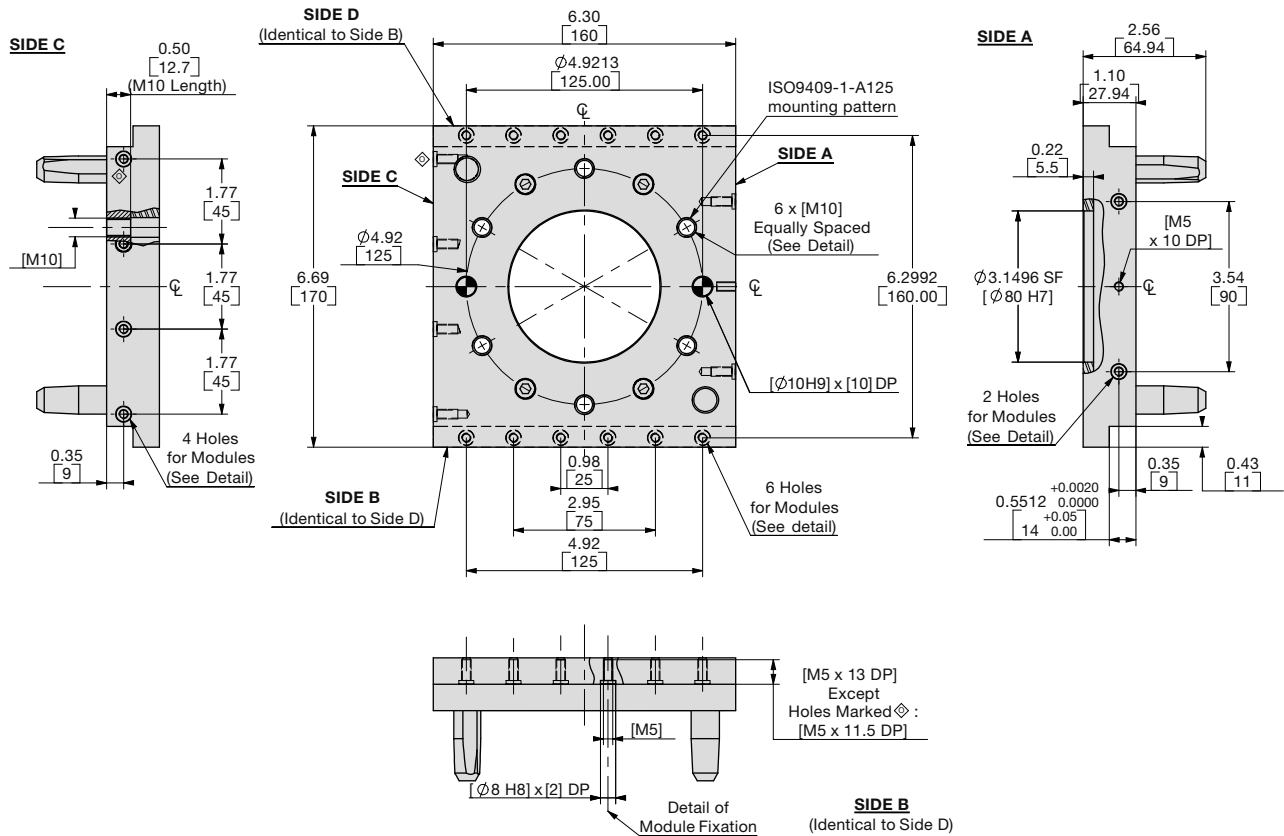
MODULAR RQC SERIES  
6.33

# TOOL CHANGER RTP-800 TOOL ADAPTER MODULE

## Specifications

### RTP-800

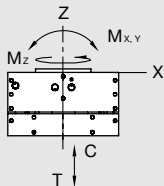
Maximum Payload .....	800 lbs	360 Kg
Maximum Moment .....	22,000 in.-lbs	2490 Nm
Weight of RTP Unit only .....	4 lb	1.8 Kg
Weight of Coupled Units .....	15.8 lbs	7.1 Kg
Temperature Range .....	-30°~180° F	-35°~80° C
Repeatability .....	± 0.001 in.	±0.025 mm



### UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

				<b>Imperial in.</b>	<b>Metric [mm]</b>
Dimensions are symmetrical about centerline	Third Angle Projection	All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or [±.013mm]	Metric Threads Course Pitch	0.00 ± .01 0.000 ± .005 0.0000 ± .0005	[0.] = [±.25] [0.0] = [±.13] [0.00] = [±.013]

## Loading Information



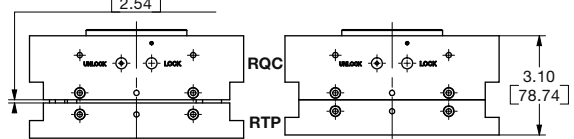
### Loading Capacity

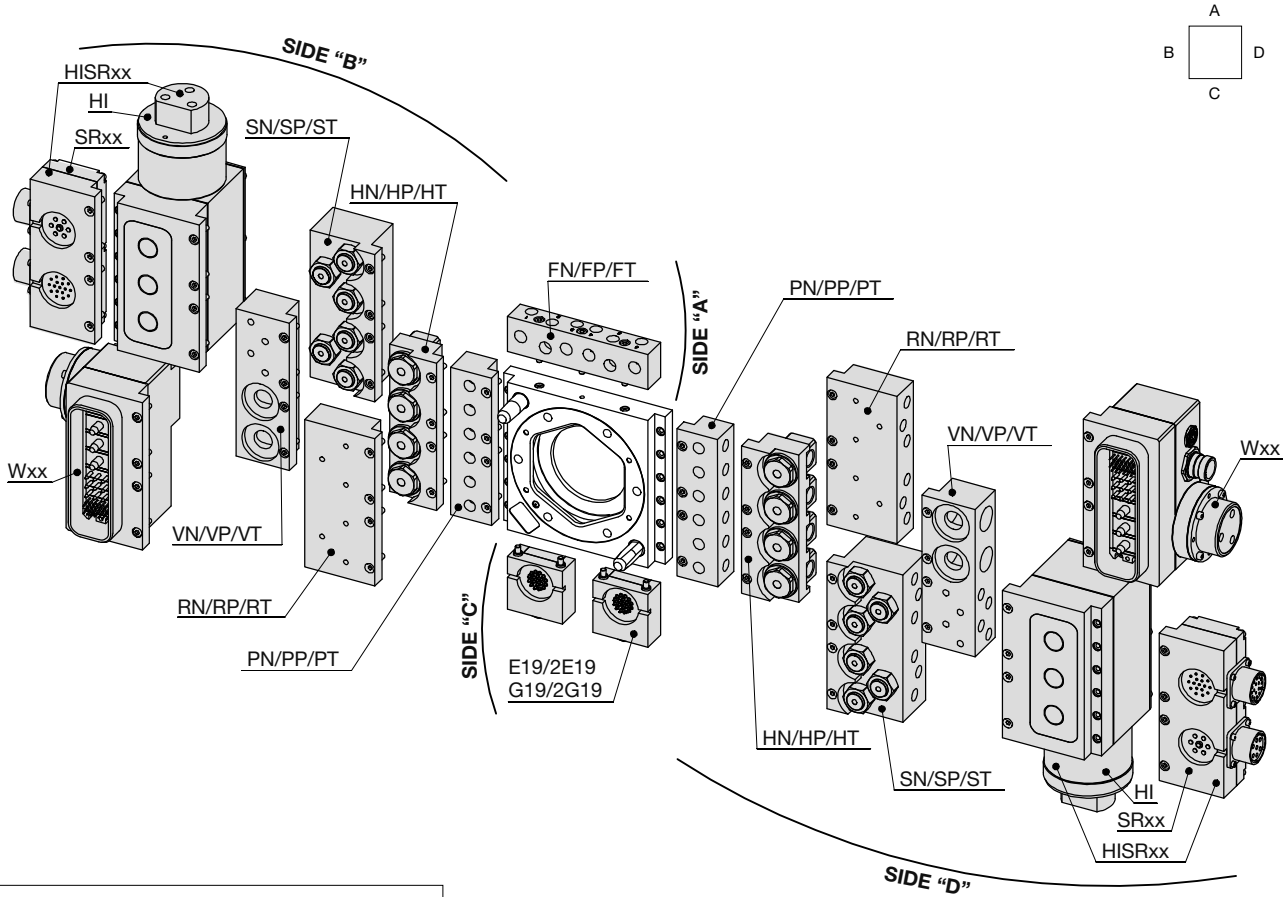
	Imperial	Metric
Maximum Tensile <b>T</b>	1200 lbs.	5340 N
Maximum Compressive <b>C</b>	1600 lbs.	7120 N
Maximum Moment <b>M<sub>x</sub></b>	22000 in.-lbs.	2490 Nm
Maximum Moment <b>M<sub>y</sub></b>	22000 in.-lbs.	2490 Nm
Maximum Moment <b>M<sub>z</sub></b>	22000 in.-lbs.	2490 Nm

### READY TO COUPLE POSITION

### COUPLED POSITION

RQC can couple to RTP at up to a 2.54 gap



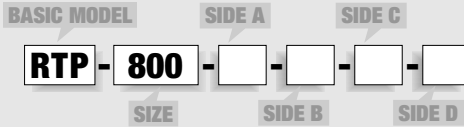


**NOTE:** Only one module can be mounted per side (except 2E19, 2G19, and HISRxx which are composed of 2 modules)

User Plugs Not Shown.

### How to Order: (Order Accessories separately from Basic Model)

For detailed sensing and module information see pages 8.40 - 8.51



#### SIDE A:

<b>0</b>	No optional module
<b>FN</b>	6 x 1/4" NPT air ports module, face seal, 10 bar
<b>FP</b>	6 x 1/4" BSPP air ports module, face seal, 10 bar
<b>FT</b>	6 x 1/4" BSPT air ports module, face seal, 10 bar

#### SIDE C:

<b>0</b>	No optional module
<b>E19<sup>†</sup></b>	19 pin, 3 Amp, 48 VDC Module w/Turck M12 connector, w/o Cordset
<b>2E19<sup>***</sup></b>	2x 19 pin, 3 Amp, 48 VDC Module w/Turck M12 connector, w/o Cordset
<b>G19</b>	19 pin, 5 Amp, 120 VDC Module w/Industrial User Conn., w/o Cable
<b>2G19<sup>***</sup></b>	2x 19 pin, 5 Amp, 120 VDC Module w/Industrial User Conn., w/o Cable

<sup>†</sup>Cordset or plug are sold separately. <sup>\*\*\*</sup>Not compatible with CD, CP or CN sensing option.

#### ELECTRICAL ACCESSORIES:

<b>ELCT-049</b>	90° Male Plug, w/o Cable, Solder Type, Cable Clamp for G19
<b>CABL-031</b>	90° Male Cordset with 2M Cable for E19

#### SIDE B AND/OR D:

<b>0</b>	No optional module
<b>PN</b>	6 x 1/4" NPT air ports module, face seal, 10 bar
<b>PP</b>	6 x 1/4" BSPP air ports module, face seal, 10 bar
<b>PT</b>	6 x 1/4" BSPT air ports module, face seal, 10 bar
<b>HN</b>	4 x 3/8" NPT fluid ports module, 100 bar
<b>HP</b>	4 x 3/8" BSPP fluid ports module, 100 bar
<b>HT</b>	4 x 3/8" BSPT fluid ports module, 100 bar
<b>RN*</b>	6 x 1/4" NPT air ports module, single shut-off flat face, 10 bar
<b>RP*</b>	6 x 1/4" BSPP air ports module, single shut-off flat face, 10 bar
<b>RT*</b>	6 x 1/4" BSPT air ports module, single shut-off flat face, 10 bar
<b>SN</b>	6 x 1/4" NPT air ports module, double shut-off flat face, 10 bar
<b>SP</b>	6 x 1/4" BSPP air ports module, double shut-off flat face, 10 bar
<b>ST</b>	6 x 1/4" BSPT air ports module, double shut-off flat face, 10 bar
<b>VN</b>	2 x 3/4" vacuum + 4 x 1/4" air NPT ports module, face sealing
<b>VP</b>	2 x 3/4" vacuum + 4 x 1/4" air BSPP ports module, face sealing
<b>VT</b>	2 x 3/4" vacuum + 4 x 1/4" air BSPT ports module, face sealing
<b>Wxx**</b>	Servo Gun and Welding Gun Module (Pin and Socket) - Consult factory
<b>HI</b>	Welding Gun module (3 x 180 Amp spring loaded pins)
<b>SRxx**</b>	Servo Gun Module (with spring loaded pins)
<b>HISRxx****</b>	Servo Gun and Welding Gun module (with spring loaded pins)

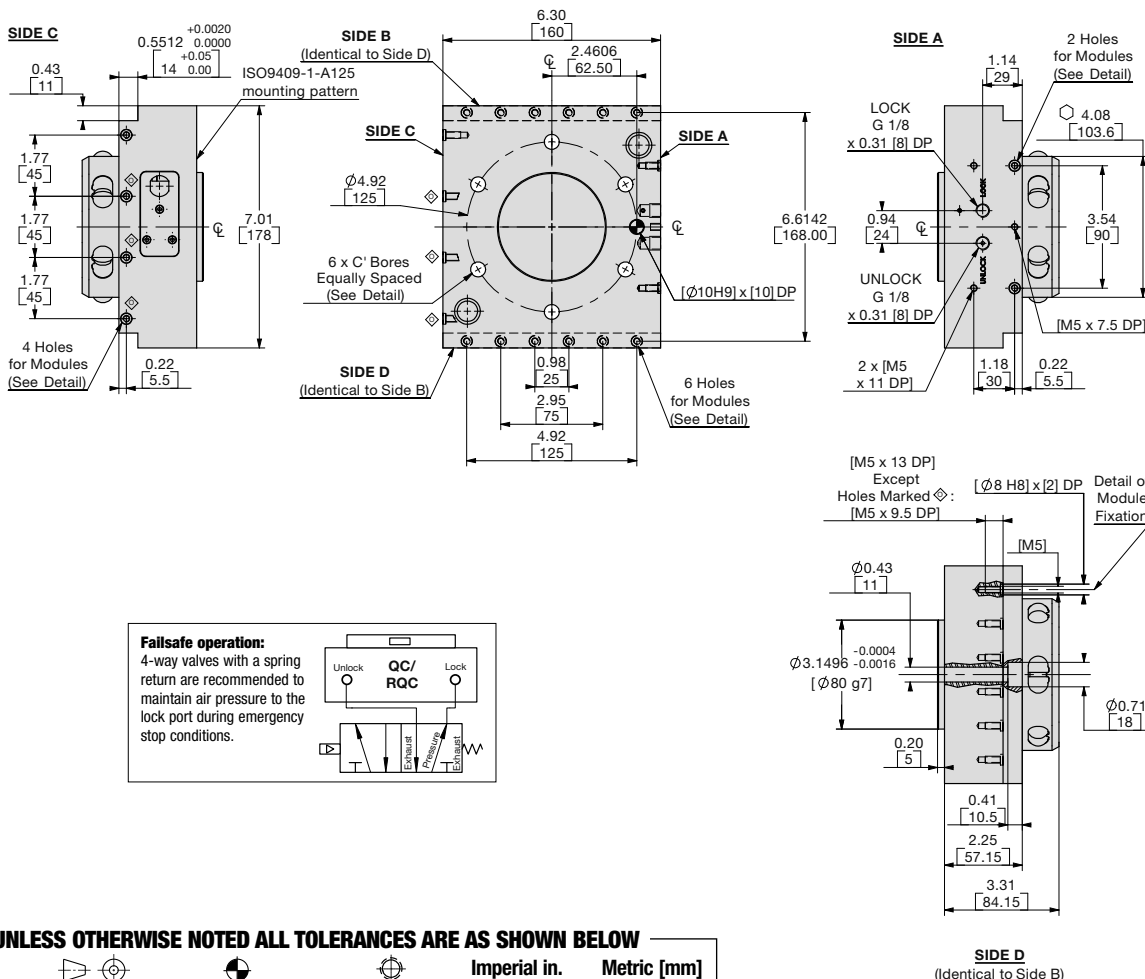
\* Used with SN, SP, or ST modules on robot half.

\*\* xx are attributed according to the customer wiring diagram. Consult factory.

†† SRxx module can be mounted on the HI module to use with electric welding gun.

# TOOL CHANGER RQC-1200 ROBOT ADAPTER MODULE

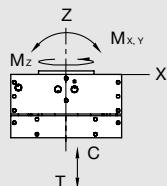
Specifications	RQC-1200	
Maximum Payload	1200 lbs	550 Kg
Maximum Moment	30,000 in.-lbs	3390 Nm
Weight of RQC Unit only	14.1 lb	6.4 Kg
Weight of Coupled Units	18.4 lbs	8.3 Kg
Pressure Range (locked cylinder)	60~100 psi	4~7 bar
Bore Ø	3.74 in.	95 mm
Displacement	9.38 in <sup>3</sup>	153.7 cm <sup>3</sup>
Temperature Range	-30°~180° F	-35°~80° C
Repeatability	± 0.001 in.	±0.025 mm
Valve required to actuate	4-way, 2-position	



MODULAR RQC SERIES

6.36

## Loading Information

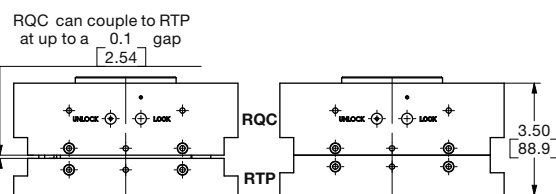


### Loading Capacity

	Imperial	Metric
Maximum Tensile <b>T</b>	1800 lbs.	8000 N
Maximum Compressive <b>C</b>	2400 lbs.	10700 N
Maximum Moment <b>M<sub>x</sub></b>	30000 in.-lbs.	3390 Nm
Maximum Moment <b>M<sub>y</sub></b>	30000 in.-lbs.	3390 Nm
Maximum Moment <b>M<sub>z</sub></b>	30000 in.-lbs.	3390 Nm

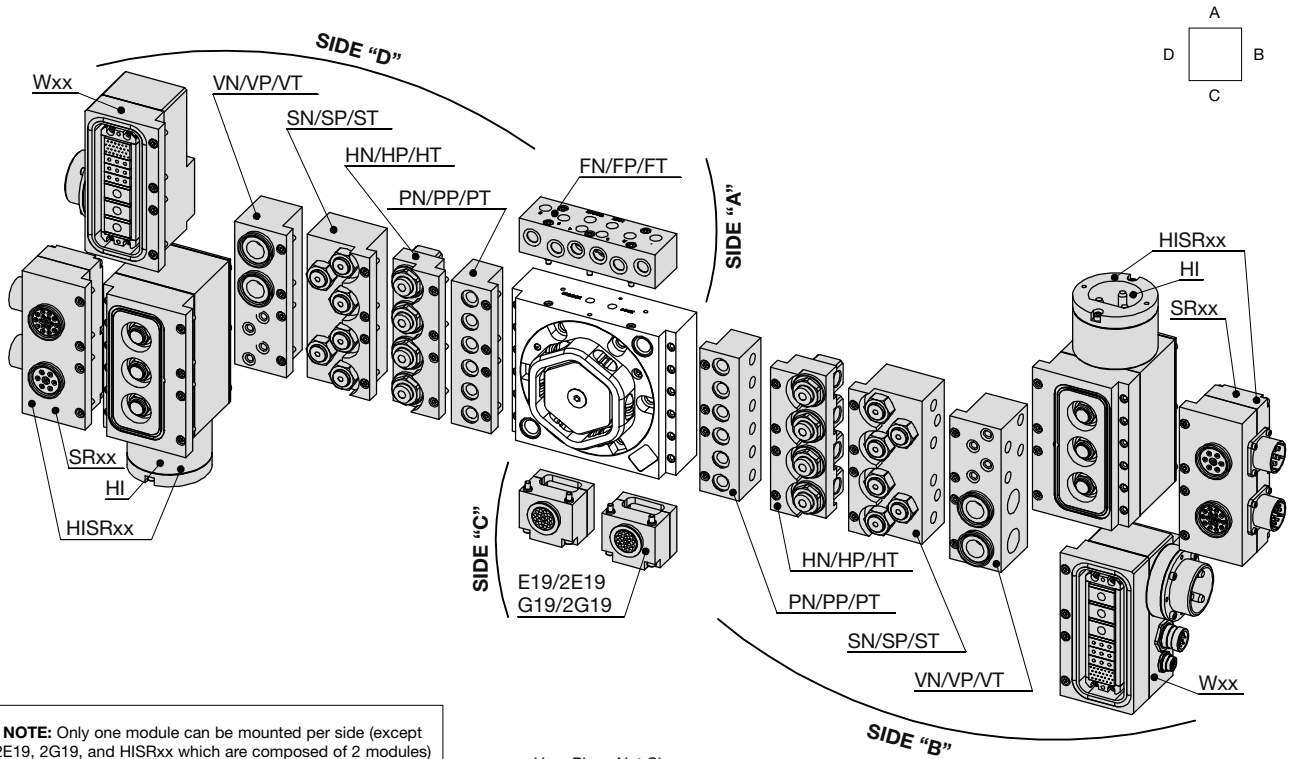
### READY TO COUPLE POSITION

### COUPLED POSITION





# TOOL CHANGER RQC-1200 OPTIONAL MODULES FOR ROBOT ADAPTER

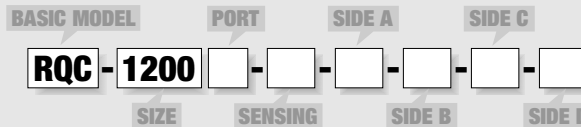


**NOTE:** Only one module can be mounted per side (except 2E19, 2G19, and HISRxx which are composed of 2 modules)

User Plugs Not Shown.

## How to Order: (Order Accessories separately from Basic Model)

For detailed sensing and module information see pages 8.40 - 8.51



### PORT:

- N** NPT port
- M** BSPP ports
- A** BSPT ports

### SENSING (FOR LATCH, UNLATCH AND READY-TO-COUPLE):

- LO** No sensing
- LP\*** PNP Inductive sensor
- CP\*** PNP Inductive sensor with M12 connector
- LN\*** NPN Inductive sensor
- CN\*** NPN Inductive sensor with M12 connector
- LD\*** Dry contact sensor
- CD\*** Dry contact sensor with M12 connector

\*Requires E19 module or G19 module mounted on side C. †Cordset or plug are sold separately.

### ELECTRICAL ACCESSORIES:

- ELCT-048** 90° Female Plug, w/o Cable, Solder Type, Cable Clamp for G19
- CABL-028** 90° Female M12 Cordset with 2M Cable for CP, CN, and CD
- CABL-029** 90° Female Cordset with 4M Cable for E19
- OSRK-004** PNP Inductive Sensor Repair Kit
- OSRK-005** NPN Inductive Sensor Repair Kit
- OSRK-006** Dry Contact Sensor Repair Kit

### SIDE A:

- 0** No optional module
- FN** 6 x 1/4" NPT air ports module, face seal, 10 bar
- FP** 6 x 1/4" BSPP air ports module, face seal, 10 bar
- FT** 6 x 1/4" BSPT air ports module, face seal, 10 bar

### SIDE B AND/OR D:

- 0** No optional module
- PN** 6 x 1/4" NPT air ports module, face seal, 10 bar
- PP** 6 x 1/4" BSPP air ports module, face seal, 10 bar
- PT** 6 x 1/4" BSPT air ports module, face seal, 10 bar
- HN** 4 x 3/8" NPT fluid ports module, 100 bar
- HP** 4 x 3/8" BSPP fluid ports module, 100 bar
- HT** 4 x 3/8" BSPT fluid ports module, 100 bar
- SN** 6 x 1/4" NPT air ports module, self sealing, 10 bar
- SP** 6 x 1/4" BSPP air ports module, self sealing, 10 bar
- ST** 6 x 1/4" BSPT air ports module, self sealing, 10 bar
- VN** 2 x 3/4" vacuum + 4 x 1/4" air NPT ports module, face sealing
- VP** 2 x 3/4" vacuum + 4 x 1/4" air BSPP ports module, face sealing
- VT** 2 x 3/4" vacuum + 4 x 1/4" air BSPT ports module, face sealing
- Wxx\*\*** Servo Gun and Welding Gun Module (Pin and Socket) - Consult factory
- HI** Welding Gun module (3 x 180 Amp spring loaded pins)
- SRxx\*\*** Servo Gun Module (with spring loaded pins)
- HISRxx\*\*\*** Servo Gun and Welding Gun module (with spring loaded pins)

\*\* xx are attributed according to the customer wiring diagram. Consult us.

†† SRxx module can be mounted on the HI module to use with electric welding gun.

### SIDE C:

- 0** No optional module
- E19†** 19 pin, 3 Amp, 48 VDC Module w/Turck M12 connector, w/o Cordset
- 2E19†\*\*\*** 2x 19 pin, 3 Amp, 48 VDC Module w/Turck M12 connector, w/o Cordset
- G19** 19 pin, 5 Amp, 120 VDC Module w/Industrial User Conn., w/o Cable
- 2G19†\*\*\*** 2x 19 pin, 5 Amp, 120 VDC Module w/Industrial User Conn., w/o Cable

†Cordset or plug are sold separately. \*\*\*Not compatible with CD, CP or CN sensing option.

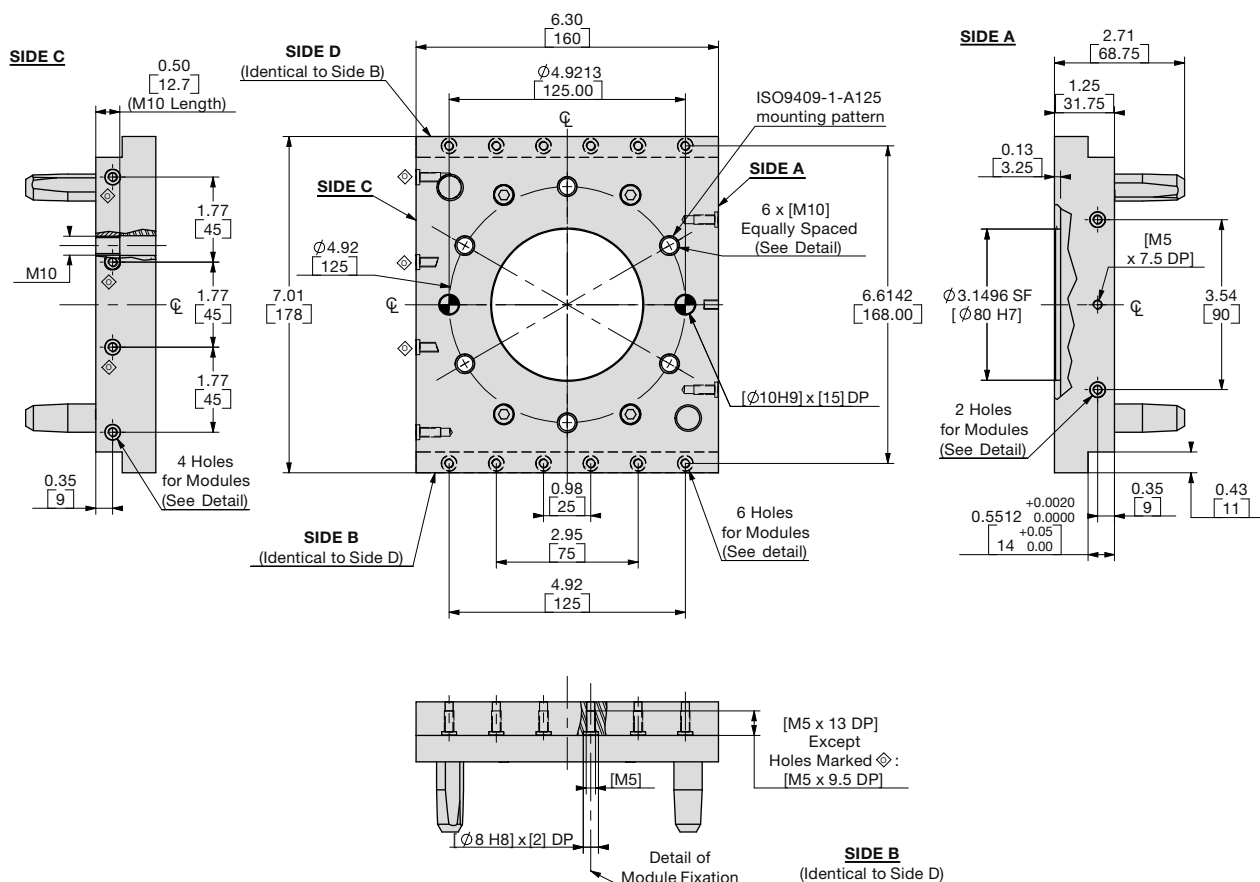
### PNEUMATIC ACCESSORIES:

- SLKT-404** RQC-1200 Standard Seal Repair Kit



# TOOL CHANGER RTP-1200 TOOL ADAPTER MODULE

Specifications	RTP-1200	
Maximum Payload	1200 lbs	550 Kg
Maximum Moment	30,000 in.-lbs	3390 Nm
Weight of RTP Unit only	4.3 lb	1.9 Kg
Weight of Coupled Units	18.4 lbs	8.3 Kg
Temperature Range	-30°~180° F	-35°~80° C
Repeatability	± 0.001 in.	±0.025 mm



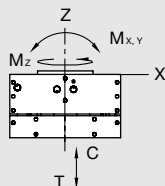
MODULAR RQC SERIES

6.38

UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

Dimensions are symmetrical about centerline	Third Angle Projection	All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or [±.013mm]	Metric Threads Course Pitch	<b>Imperial in.</b> 0.00 ± .01 0.000 ± .005 0.0000 ± .0005	<b>Metric [mm]</b> [0.] = [±.25] [0.0] = [±.13] [0.00] = [±.013]
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## Loading Information

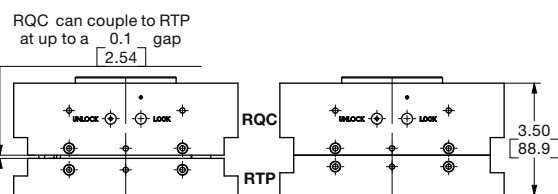


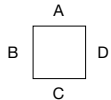
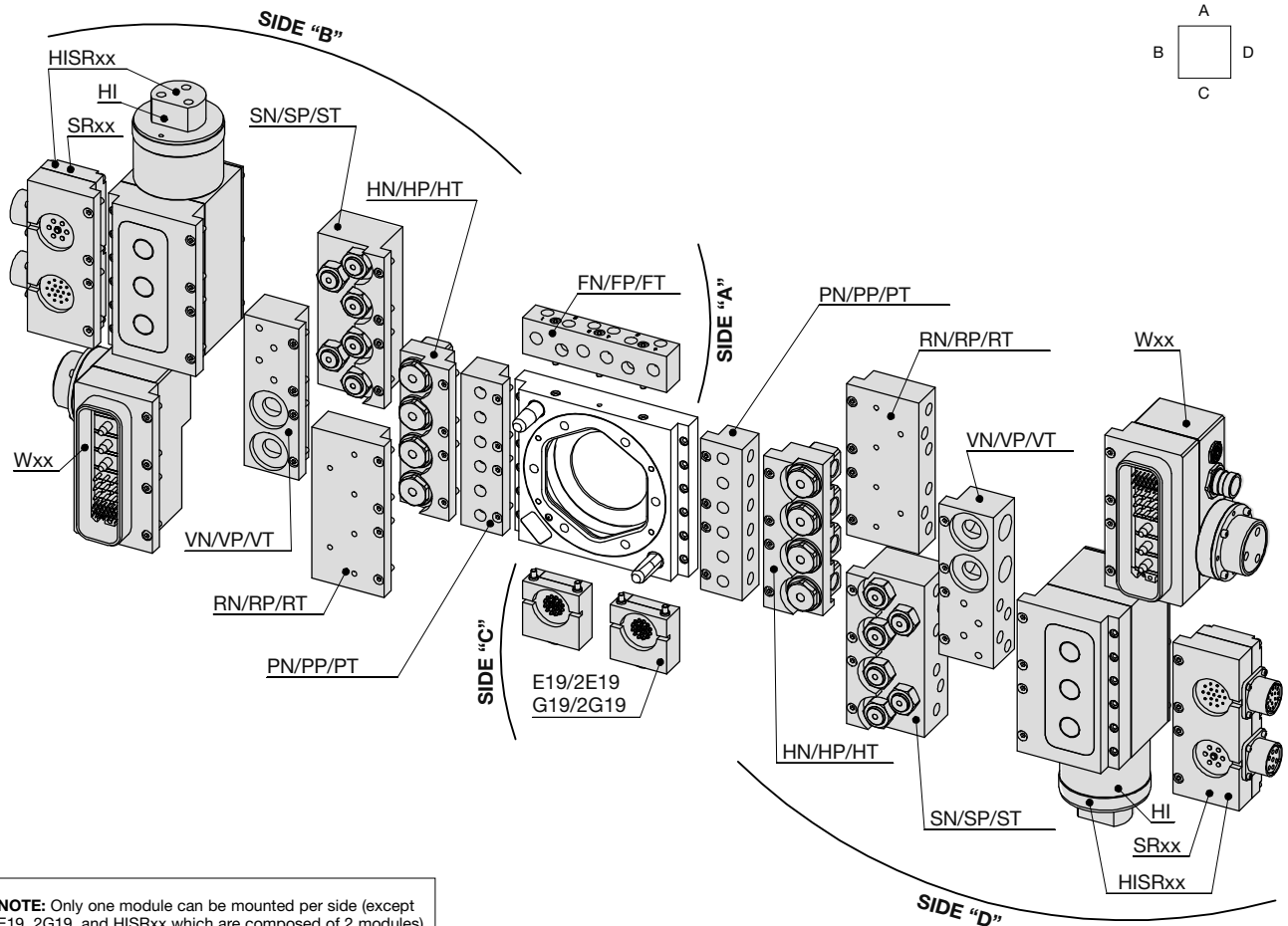
### Loading Capacity

	Imperial	Metric
Maximum Tensile <b>T</b>	1800 lbs.	8000 N
Maximum Compressive <b>C</b>	2400 lbs.	10700 N
Maximum Moment <b>M<sub>x</sub></b>	30000 in.-lbs.	3390 Nm
Maximum Moment <b>M<sub>y</sub></b>	30000 in.-lbs.	3390 Nm
Maximum Moment <b>M<sub>z</sub></b>	30000 in.-lbs.	3390 Nm

### READY TO COUPLE POSITION

### COUPLED POSITION

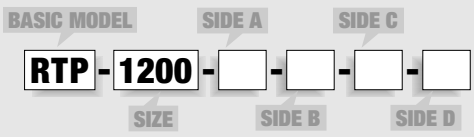




**NOTE:** Only one module can be mounted per side (except 2E19, 2G19, and HISRxx which are composed of 2 modules)

User Plugs Not Shown.

### How to Order: (Order Accessories separately from Basic Model) For detailed sensing and module information see pages 8.40 - 8.51



- SIDE A:**
- 0** No optional module
  - FN** 6 x 1/4" NPT air ports module, face seal, 10 bar
  - FP** 6 x 1/4" BSPP air ports module, face seal, 10 bar
  - FT** 6 x 1/4" BSPT air ports module, face seal, 10 bar

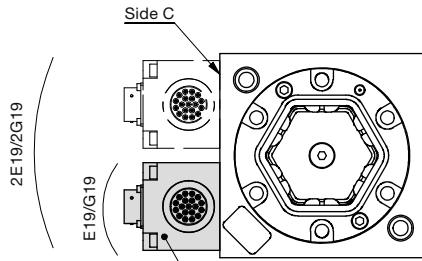
- SIDE C:**
- 0** No optional module
  - E19<sup>†</sup>** 19 pin, 3 Amp, 48 VDC Module w/Turck M12 connector, w/o Cordset
  - 2E19<sup>\*\*\*</sup>** 2x 19 pin, 3 Amp, 48 VDC Module w/Turck M12 connector, w/o Cordset
  - G19** 19 pin, 5 Amp, 120 VDC Module w/Industrial User Conn., w/o Cable
  - 2G19<sup>\*\*\*</sup>** 2x 19 pin, 5 Amp, 120 VDC Module w/Industrial User Conn., w/o Cable
- <sup>†</sup>Cordset or plug are sold separately. <sup>\*\*\*</sup>Not compatible with CD, CP or CN sensing option.

- ELECTRICAL ACCESSORIES:**
- ELCT-049** 90° Male Plug, w/o Cable, Solder Type, Cable Clamp for G19
  - CABL-031** 90° Male Cordset with 2M Cable for E19

- SIDE B AND/OR D:**
- 0** No optional module
  - PN** 6 x 1/4" NPT air ports module, face seal, 10 bar
  - PP** 6 x 1/4" BSPP air ports module, face seal, 10 bar
  - PT** 6 x 1/4" BSPT air ports module, face seal, 10 bar
  - HN** 4 x 3/8" NPT fluid ports module, 100 bar
  - HP** 4 x 3/8" BSPP fluid ports module, 100 bar
  - HT** 4 x 3/8" BSPT fluid ports module, 100 bar
  - RN<sup>\*</sup>** 6 x 1/4" NPT air ports module, single shut-off flat face, 10 bar
  - RP<sup>\*</sup>** 6 x 1/4" BSPP air ports module, single shut-off flat face, 10 bar
  - RT<sup>\*</sup>** 6 x 1/4" BSPT air ports module, single shut-off flat face, 10 bar
  - SN** 6 x 1/4" NPT air ports module, double shut-off flat face, 10 bar
  - SP** 6 x 1/4" BSPP air ports module, double shut-off flat face, 10 bar
  - ST** 6 x 1/4" BSPT air ports module, double shut-off flat face, 10 bar
  - VN** 2 x 3/4" vacuum + 4 x 1/4" air NPT ports module, face sealing
  - VP** 2 x 3/4" vacuum + 4 x 1/4" air BSPP ports module, face sealing
  - VT** 2 x 3/4" vacuum + 4 x 1/4" air BSPT ports module, face sealing
  - Wxx<sup>\*\*</sup>** Servo Gun and Welding Gun Module (Pin and Socket) - Consult factory
  - HI** Welding Gun module (3 x 180 Amp spring loaded pins)
  - SRxx<sup>\*\*</sup>** Servo Gun Module (with spring loaded pins)
  - HISRxx<sup>\*\*\*††</sup>** Servo Gun and Welding Gun module (with spring loaded pins)

\* Used with SN, SP, or ST modules on robot half.  
 \*\* xx are attributed according to the customer wiring diagram. Consult factory.  
 †† SRxx module can be mounted on the HI module to use with electric welding gun.

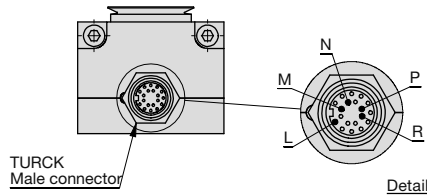
## E19/G19 Modules connecting with latch/unlatch sensors



When LP, LN, or LD option is ordered, 3, 4 or 5 wires are reserved on the E19 or G19 module. See chart

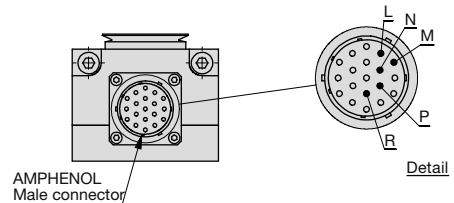
RESERVED PINS NUMBERS ON E19 / G19		
	RQC 200 & 400	RQC 800 & 1200
<b>LP or LN (Inductive)</b>	R: + 10-30 VDC L: Common M: Lock N: Unlock	R: + 10-30 VDC L: Common M: Lock N: Unlock P: Ready to Couple
<b>LD (Dry contact)</b>	L: Common M: Lock N: Unlock	L: Common M: Lock N: Unlock P: Ready to Couple

### E19 Pins numbering



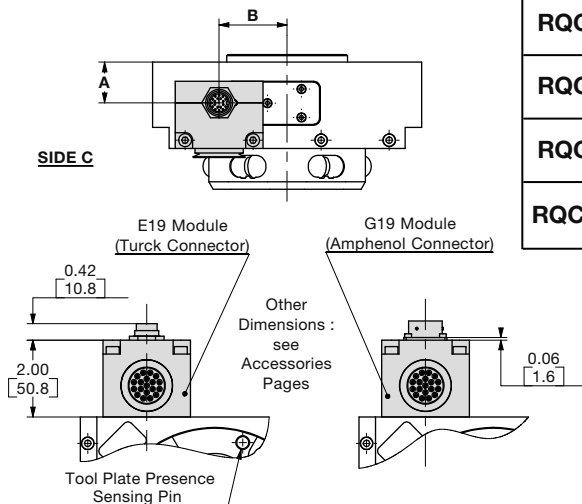
Wire color on CABL-029 cordset	
Contact #	Wire Color
R	Red
L	Brown
M	Orange
N	Grey / Brown
P	White

### G19 Pins numbering



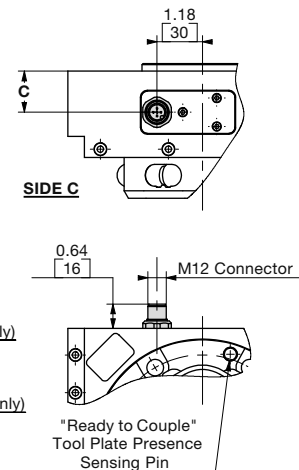
## LOCK / UNLOCK & TOOL PLATE PRESENCE SENSING OPTIONS (with Inductive Sensors or Dry Contact Switches)

Sensing Accessories LP, LN or LD using 19 Pins Module E19 or G19  
(Require 3, 4 or 5 of the 19 Pins : see on this page)



	A	B	C
RQC-200	0.563 [14.3]	0.886 [22.5]	0.652 [16.55]
RQC-400	0.811 [20.6]	1.329 [33.75]	0.685 [17.4]
RQC-800	0.811 [20.6]	1.772 [45]	0.821 [20.85]
RQC-1200	1.061 [26.95]	1.772 [45]	1.071 [27.2]

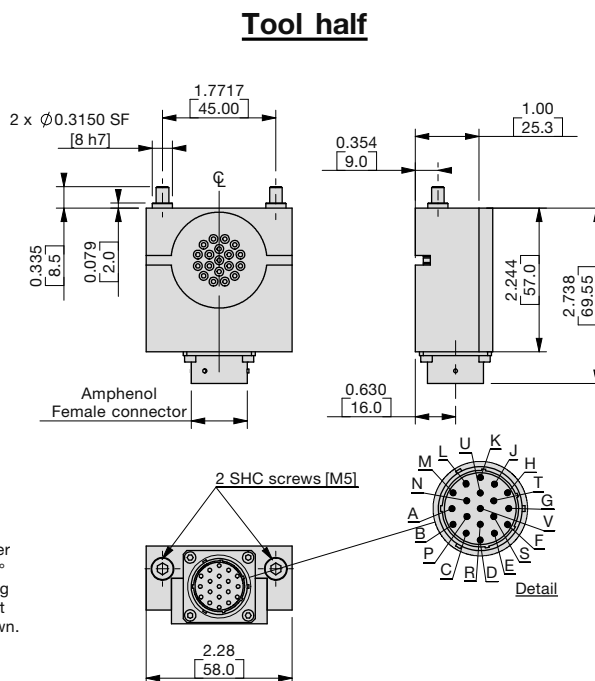
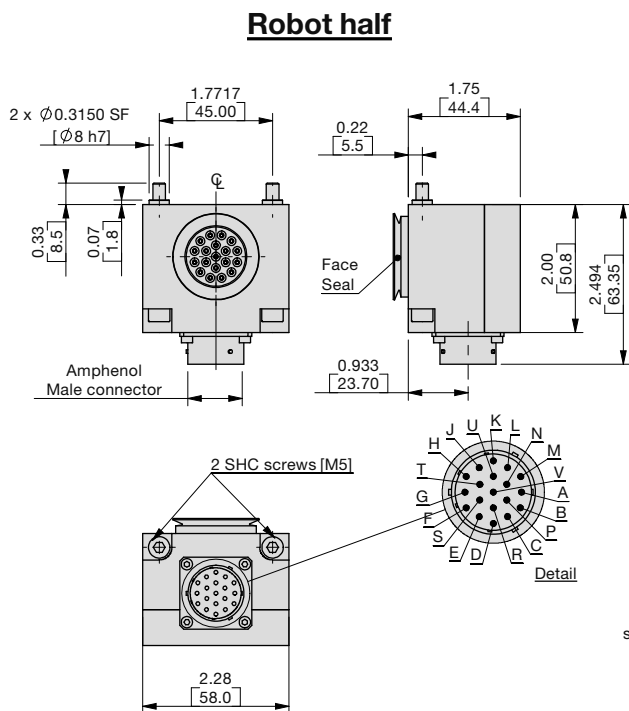
Sensing Accessories CP, CN or CD by M12 Connector  
(3, 4 or 5 Pins : see below)





# OPTIONAL ELECTRIC MODULES

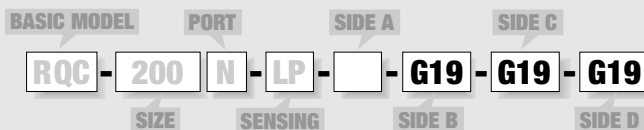
## 19 Pin Module 5 Amp - 120 VDC (G19) For RQC/RTP- 200/400/800/1200



User 90° plug not shown.

#### ROBOT HALF MODULES:

### How to Order Modules: RQC-200/400



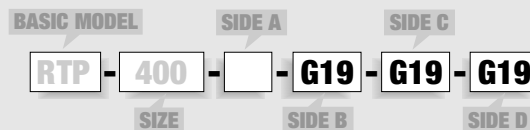
PREMOUNTED	SEPARATE	
G19	KG19-RQC	19 Pin, 5 Amp Module with Industrial User Connector, without Cable

**ACCESSORIES:**

ELCT-048	90° Female Plug, without Cable, Solder Type, Cable Clamp
----------	--

#### TOOL HALF MODULES:

### How to Order Modules: RTP-200/400

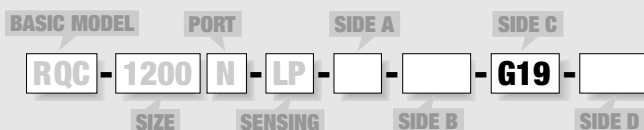


PREMOUNTED	SEPARATE	
G19	KG19-RTP	19 Pin, 5 Amp Module with Industrial User Connector, without Cable

**ACCESSORIES:**

ELCT-049	90° Male Plug, without Cable, Solder Type, Cable Clamp
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### How to Order Modules: RQC-800/1200

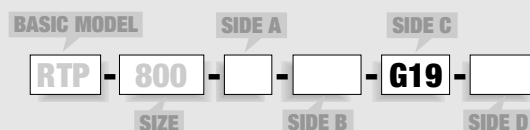


PREMOUNTED	SEPARATE	
G19	KG19-RQC	19 Pin, 5 Amp Module with Industrial User Connector, without Cable

**ACCESSORIES:**

ELCT-048	90° Female Plug, without Cable, Solder Type, Cable Clamp
----------	--

### How to Order Modules: RTP-800/1200



PREMOUNTED	SEPARATE	
G19	KG19-RTP	19 Pin, 5 Amp Module with Industrial User Connector, without Cable

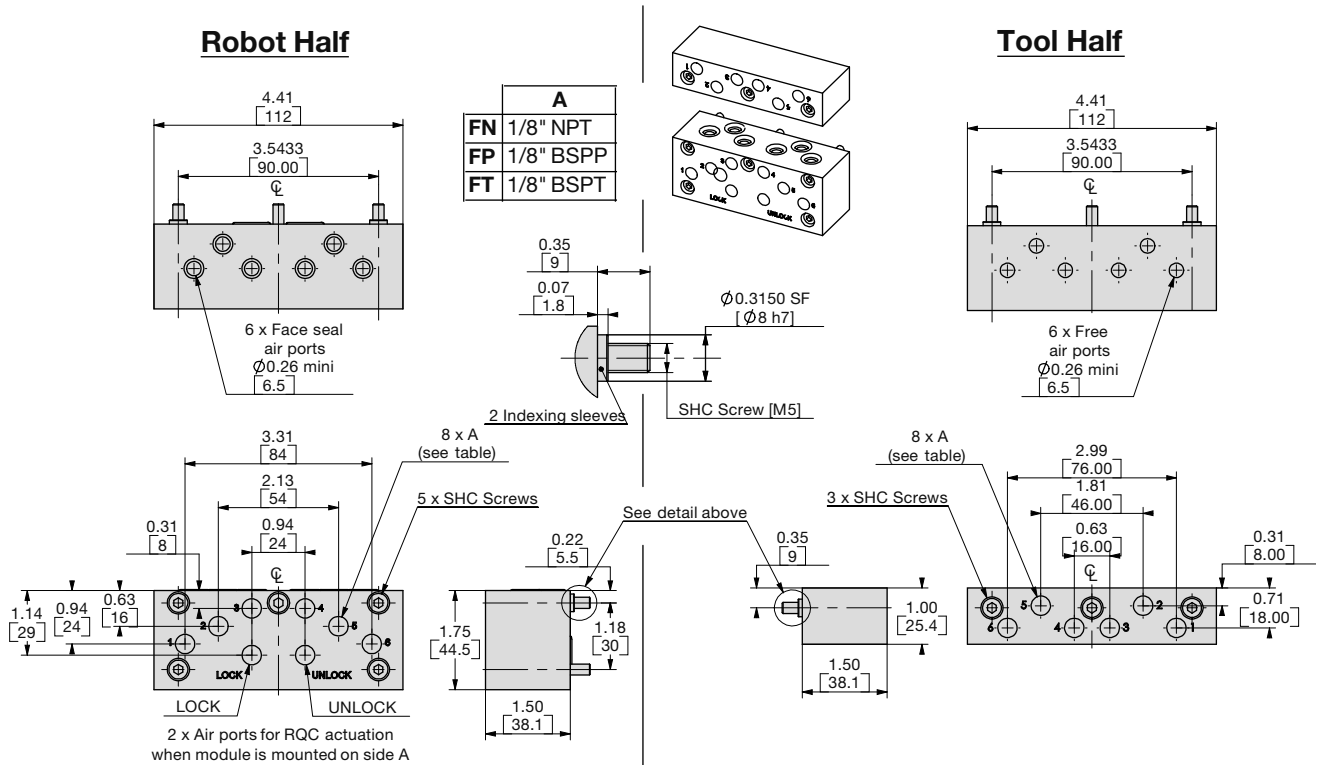
**ACCESSORIES:**

ELCT-049	90° Male Plug, without Cable, Solder Type, Cable Clamp
----------	--

Module kits above include: 90° plug (without cable), indexing sleeves and hardware.

## 6 x 1/8" Air Ports Module, Face Seal (FN, FP or FT)

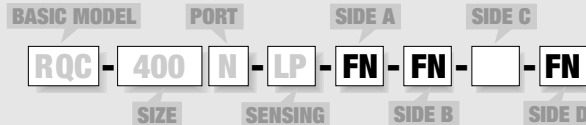
For RQC/RTP-200 & RQC/RTP-400



Maximum working pressure: 10 bar

**TOOL HALF MODULES:**

### How to Order Modules: RQC-200/400



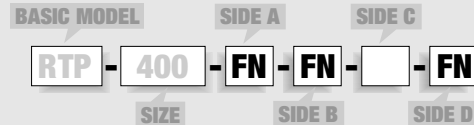
#### MODULES FOR RQC-200/400 PREMOUNTED SEPARATE

FN	KFN-RQC200	6 x 1/8" NPT Air Ports, Face Sealing, 10 bar
FP	KFP-RQC200	6 x 1/8" BSPP Air Ports, Face Sealing, 10 bar
FT	KFT-RQC200	6 x 1/8" BSPT Air Ports, Face Sealing, 10 bar

#### ACCESSORIES:

SLKT-406	6 x 1/8" Air Module Seal Repair Kit
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### How to Order Modules: RTP-200/400



#### MODULE FOR RTP-200/400 PREMOUNTED SEPARATE

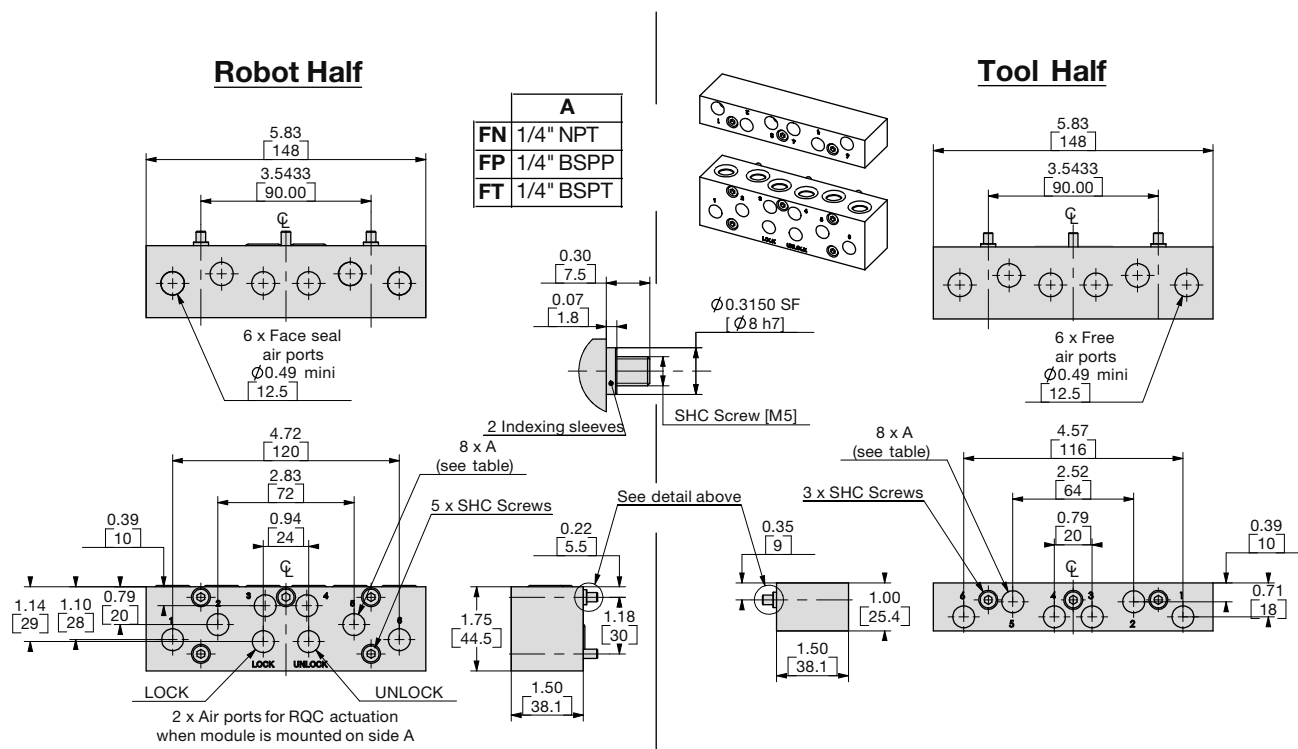
FN	KFN-RTP200	6 x 1/8" NPT Air Ports, Face Sealing, 10 bar
FP	KFP-RTP200	6 x 1/8" BSPP Air Ports, Face Sealing, 10 bar
FT	KFT-RTP200	6 x 1/8" BSPT Air Ports, Face Sealing, 10 bar

Module kits above include: Seals, indexing sleeves and hardware.



# OPTIONAL AIR MODULES

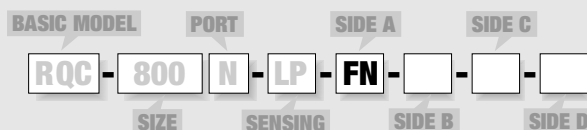
## 6 x 1/4" Air Ports Module, Face Seal (FN, FP or FT) For RQC/RTP-800 & RQC/RTP-1200



Maximum working pressure: 10 bar

### ROBOT HALF MODULES:

#### How to Order Modules: RQC-800/1200



#### PREMOUNTED SEPARATE

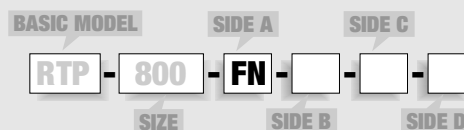
PREMOUNTED	SEPARATE	Description
FN	KFN-RQC800	6 x 1/4" NPT Air Ports, Face Sealing, 10 bar
FP	KFP-RQC800	6 x 1/4" BSPP Air Ports, Face Sealing, 10 bar
FT	KFT-RQC800	6 x 1/4" BSPT Air Ports, Face Sealing, 10 bar

#### ACCESSORIES:

SLKT-410	6 x 1/4" Air Module Seal Repair Kit
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### TOOL HALF MODULES:

#### How to Order Modules: RTP-800/1200



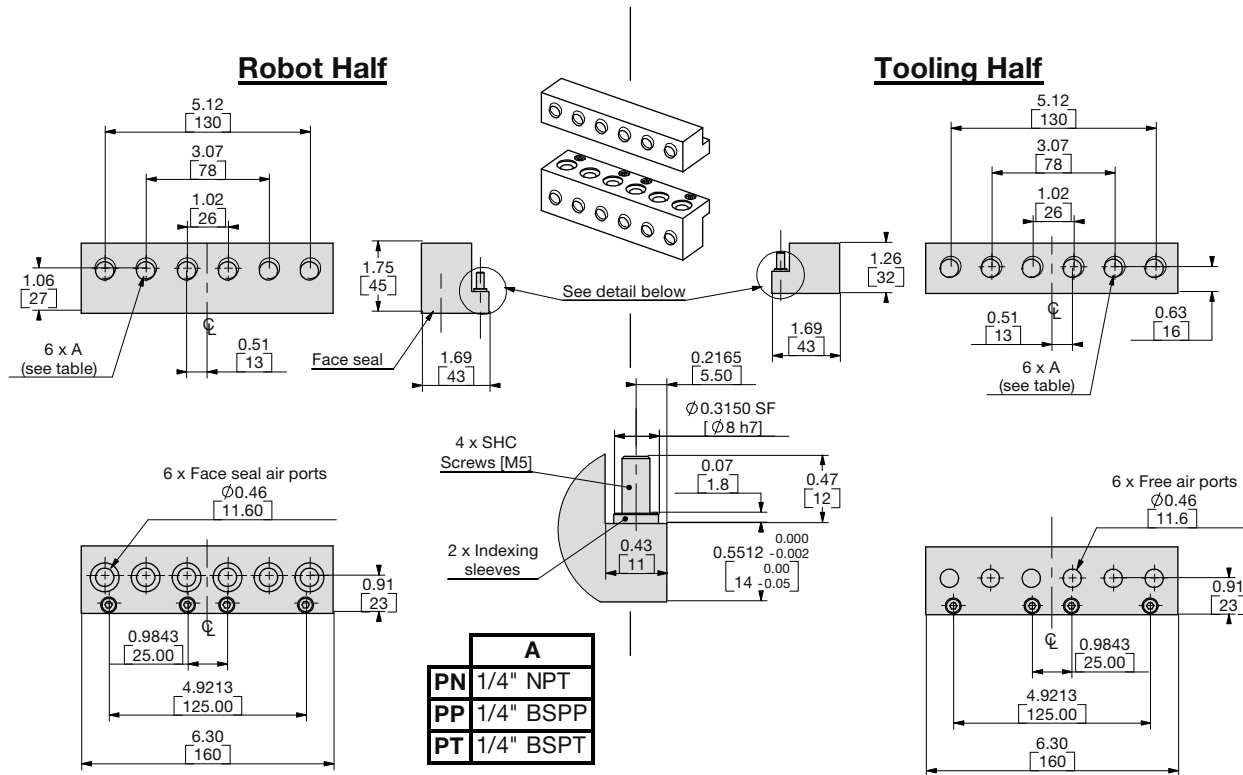
#### PREMOUNTED SEPARATE

PREMOUNTED	SEPARATE	Description
FN	KFN-RTP800	6 x 1/4" NPT Air Ports, Face Sealing, 10 bar
FP	KFP-RTP800	6 x 1/4" BSPP Air Ports, Face Sealing, 10 bar
FT	KFT-RTP800	6 x 1/4" BSPT Air Ports, Face Sealing, 10 bar

Module kits above include: Seals, indexing sleeves and hardware.

## 6 x 1/4" Air Ports Module, Face Seal ( PN, PP or PT )

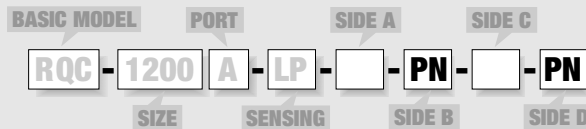
For RQC/RTP-800 & RQC/RTP-1200



Maximum working pressure: 10 bar

### ROBOT HALF MODULES:

#### How to Order Modules: RQC-800/1200



#### PREMOUNTED SEPARATE

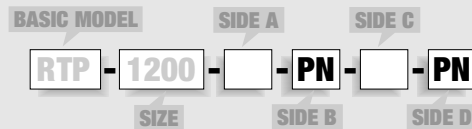
PREMOUNTED	SEPARATE	Description
PN	KPN-RQC800	6 x 1/4" NPT Air Ports, Self Sealing, 10 bar
PP	KPP-RQC800	6 x 1/4" BSPP Air Ports, Self Sealing, 10 bar
PT	KPT-RQC800	6 x 1/4" BSPT Air Ports, Self Sealing, 10 bar

#### ACCESSORIES:

SLKT-410	6 x 1/4" Air Module Module Seal Repair Kit
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### TOOL HALF MODULES:

#### How to Order Modules: RTP-800/1200



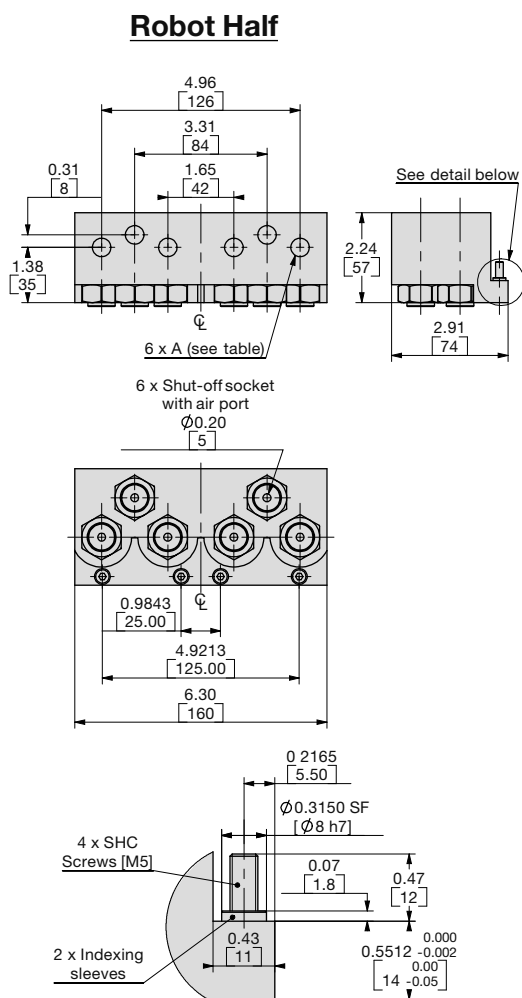
#### PREMOUNTED SEPARATE

PREMOUNTED	SEPARATE	Description
PN	KPN-RTP800	6 x 1/4" NPT Air Ports, Self Sealing, 10 bar
PP	KPP-RTP800	6 x 1/4" BSPP Air Ports, Self Sealing, 10 bar
PT	KPT-RTP800	6 x 1/4" BSPT Air Ports, Self Sealing, 10 bar

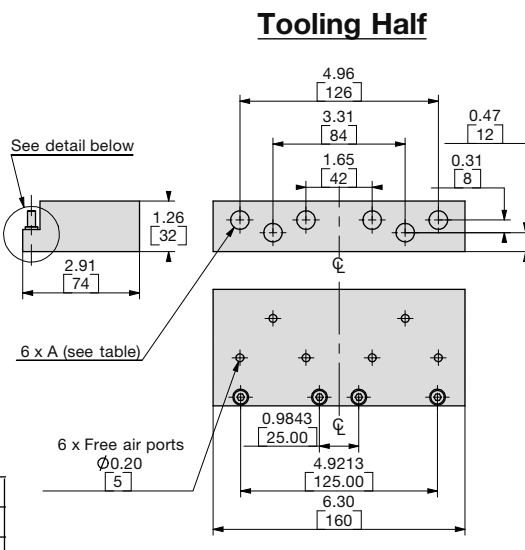
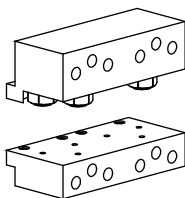
Module kits above include: Couplings, indexing sleeves and hardware.

# OPTIONAL AIR MODULES

## 6 x 1/4" Air Ports Module, Single Shut-Off Flat Face (RN, RP or RT) or Double Shut-Off Flat Face (SN, SP or ST) For RQC/RTP-800 & RQC/RTP-1200



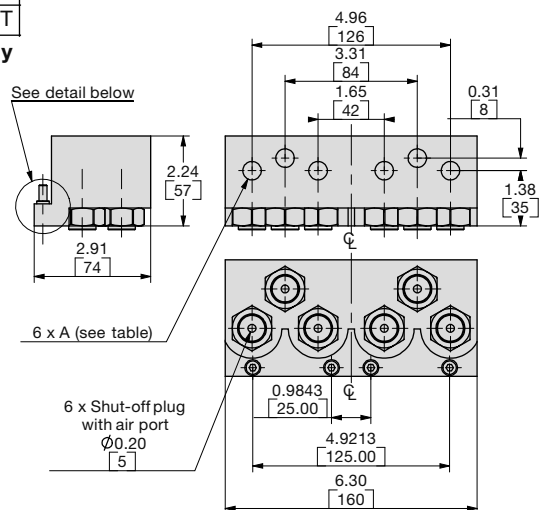
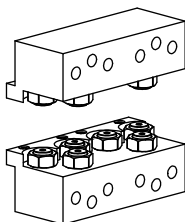
### Single Shut-off



		A
RN*	SN	1/4" NPT
RP*	SP	1/4" BSPP
RT*	ST	1/4" BSPT

\* Tooling half only

### Double Shut-off



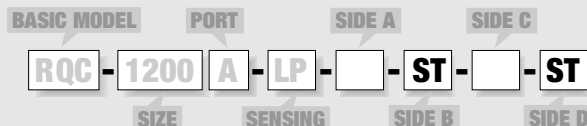
MODULAR RQC SERIES

6.46

Maximum working pressure: 10 bar

#### ROBOT HALF MODULES:

### How to Order Modules: RQC-800/1200

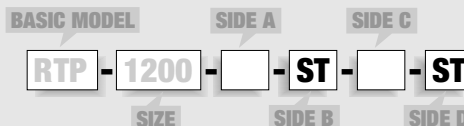


#### PREMOUNTED SEPARATE

PREMOUNTED	SEPARATE	
SN	KSN-RQC800	6 x 1/4" NPT Air Ports, Self Sealing, 10 bar
SP	KSP-RQC800	6 x 1/4" BSPP Air Ports, Self Sealing, 10 bar
ST	KST-RQC800	6 x 1/4" BSPT Air Ports, Self Sealing, 10 bar

#### TOOL HALF MODULES:

### How to Order Modules: RTP-800/1200

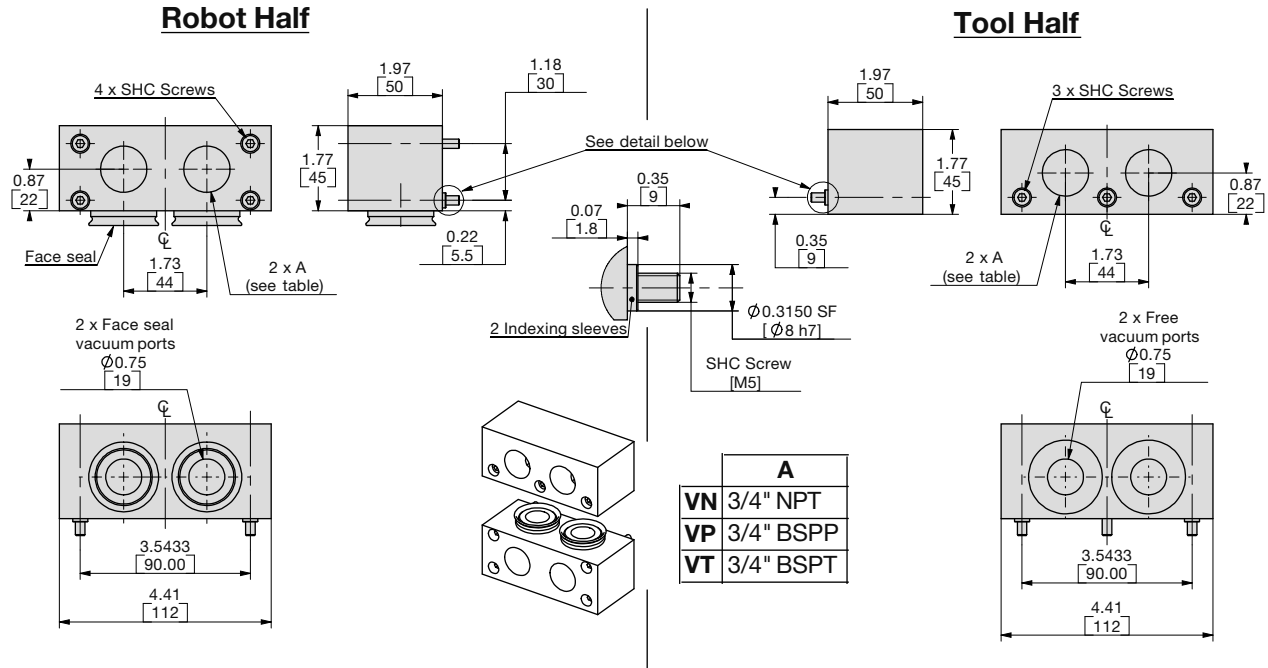


#### PREMOUNTED SEPARATE

PREMOUNTED	SEPARATE	
SN	KSN-RTP800	6 x 1/4" NPT Air Ports, Self Sealing, 10 bar
SP	KSP-RTP800	6 x 1/4" BSPP Air Ports, Self Sealing, 10 bar
ST	KST-RTP800	6 x 1/4" BSPT Air Ports, Self Sealing, 10 bar
RN	KRN-RTP800	6 x 1/4" NPT Air Ports, w/o Self Sealing, 10 bar
RP	KRP-RTP800	6 x 1/4" BSPP Air Ports, w/o Self Sealing, 10 bar
RT	KRT-RTP800	6 x 1/4" BSPT Air Ports, w/o Self Sealing, 10 bar

Module kits above include: Couplings, indexing sleeves and hardware.

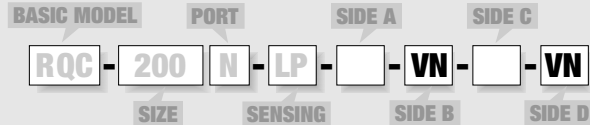
## 2 x 3/4" Vacuum Ports Module, Face Seal (VN, VP or VT) For RQC/RTP-200 & RQC/RTP-400



### ROBOT HALF MODULES:

### TOOL HALF MODULES:

### How to Order Modules: RQC-200/400

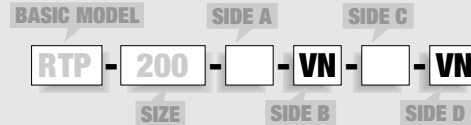


PREMOUNTED	SEPARATE	
VN	KVN-RQC200	2 x 3/4" NPT Vacuum Ports, Face Sealing
VP	KVP-RQC200	2 x 3/4" BSPP Vacuum Ports, Face Sealing
VT	KVT-RQC200	2 x 3/4" BSPT Vacuum Ports, Face Sealing

#### ACCESSORIES:

**SLKT-405** 2 x 3/4" Vacuum Module Seal Repair Kit

### How to Order Modules: RTP-200/400



PREMOUNTED	SEPARATE	
VN	KVN-RTP200	2 x 3/4" NPT Vacuum Ports, Face Sealing
VP	KVP-RTP200	2 x 3/4" BSPP Vacuum Ports, Face Sealing
VT	KVT-RTP200	2 x 3/4" BSPT Vacuum Ports, Face Sealing

Module kits above include: Seals, indexing sleeves and hardware.

# OPTIONAL AIR MODULES

## ARV Robot Half/Tool Half 4-Port Vacuum Module for RQC/RTP- 800



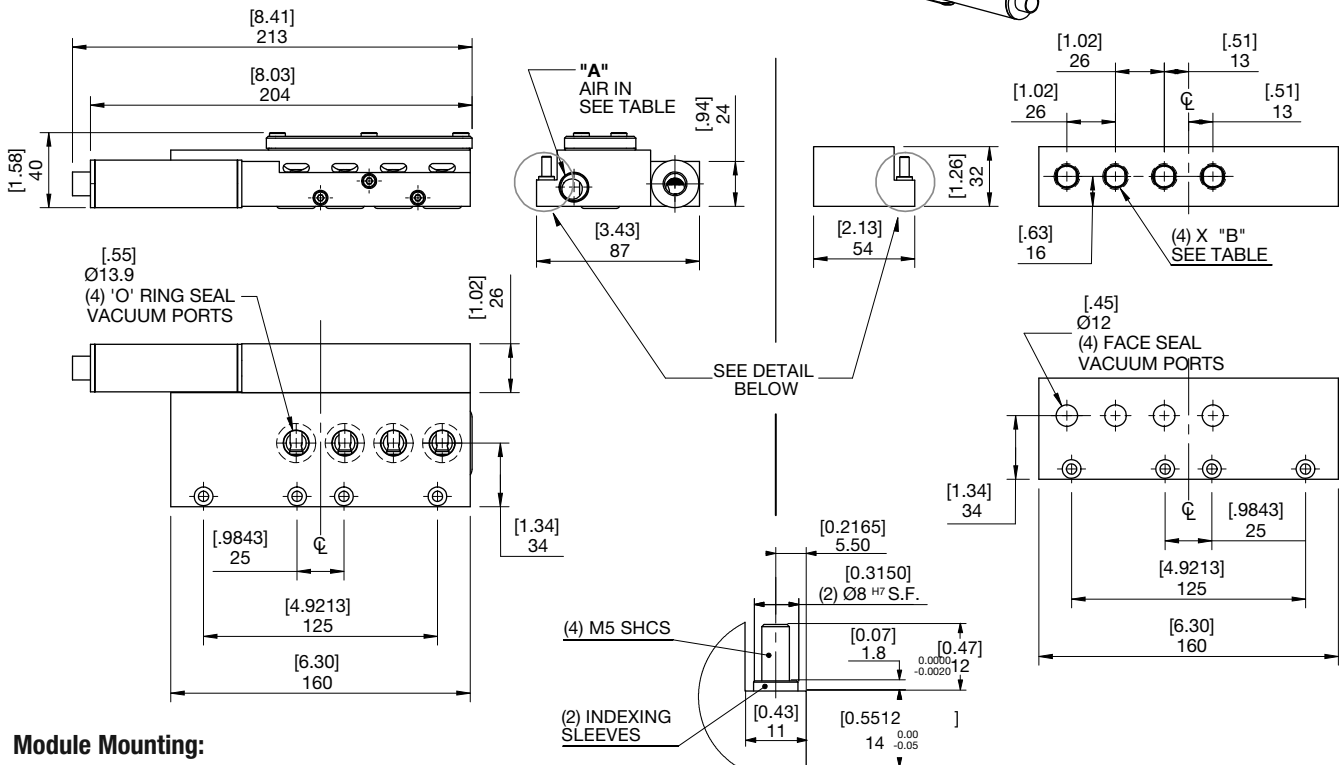
See page 6.53 for ARV  
Features and Benefits



"A"		"B"	
AN	3/8" NPT	AN	1/4" NPT
AP	3/8" BSPP	AP	1/4" BSPP
AT	3/8" BSPT	AT	1/4" BSPT

ROBOT HALF

TOOL HALF



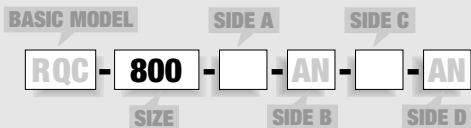
Module Mounting:  
SIDE "B" ■ and/or SIDE "D" ■

MODULAR RQC  
SERIES

6.48

### ROBOT HALF MODULES:

#### How to Order Modules: RQC-800

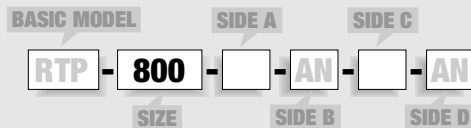


#### PREMOUNTED SEPARATE

AN	KAN-RQC800	4 x 3/8" NPT Air Ports, Self Sealing
AP	KAP-RQC800	4 x 3/8" BSPP Air Ports, Self Sealing
AT	KAT-RQC800	4 x 3/8" BSPT Air Ports, Self Sealing

### TOOL HALF MODULES:

#### How to Order Modules: RTP-800



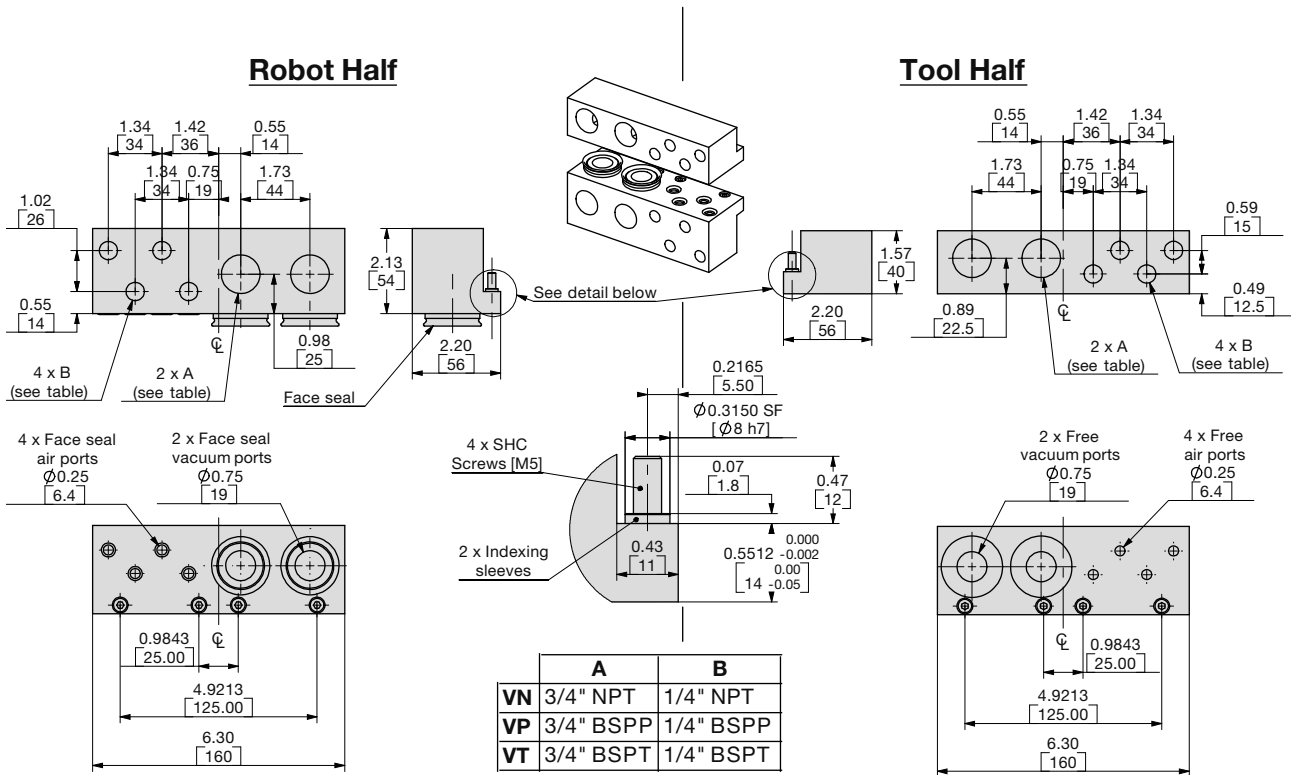
#### PREMOUNTED SEPARATE

AN	KAN-RTP800	4 x 1/4" NPT Air Ports, Self Sealing
AP	KAP-RTP800	4 x 1/4" BSPP Air Ports, Self Sealing
AT	KAT-RTP800	4 x 1/4" BSPT Air Ports, Self Sealing

Module kits above include: Couplings, indexing sleeves and hardware.

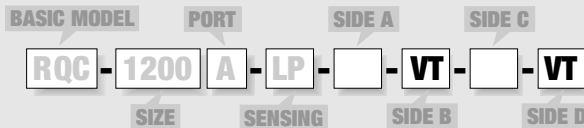
## 2 x 3/4" Vacuum Ports Module, Face Seal (VN, VP or VT)

For RQC/RTP-800 & RQC/RTP-1200



### ROBOT HALF MODULES:

#### How to Order Modules: RQC-800/1200



#### PREMOUNTED

#### SEPARATE

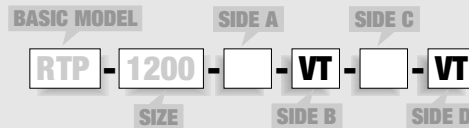
<b>VN</b>	<b>KVN-RQC800</b>	2 x 3/4" Vacuum and 4 x 1/4" Air NPT Ports, Face Sealing
<b>VP</b>	<b>KVP-RQC800</b>	2 x 3/4" Vacuum and 4 x 1/4" Air BSPP Ports, Face Sealing
<b>VT</b>	<b>KVT-RQC800</b>	2 x 3/4" Vacuum and 4 x 1/4" Air BSPT Ports, Face Sealing

#### ACCESSORIES:

<b>SLKT-409</b>	2 x 3/4" Vacuum and 4 x 1/4" Air Module Seal Repair Kit
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### TOOL HALF MODULES:

#### How to Order Modules: RTP-800/1200



#### PREMOUNTED

#### SEPARATE

<b>VN</b>	<b>KVN-RTP800</b>	2 x 3/4" Vacuum and 4 x 1/4" Air NPT Ports, Face Sealing
<b>VP</b>	<b>KVP-RTP800</b>	2 x 3/4" Vacuum and 4 x 1/4" Air BSPP Ports, Face Sealing
<b>VT</b>	<b>KVT-RTP800</b>	2 x 3/4" Vacuum and 4 x 1/4" Air BSPT Ports, Face Sealing

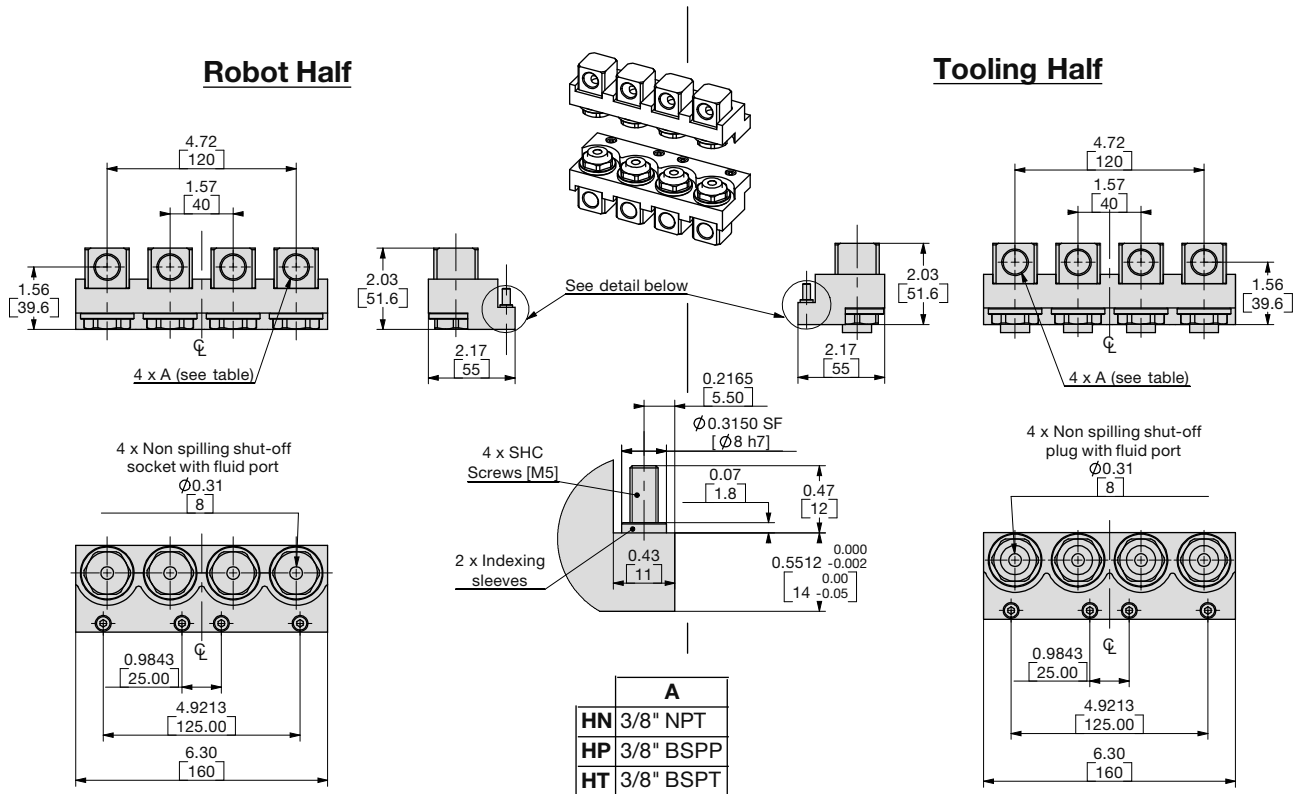
Module kits above include: Seals, indexing sleeves and hardware.



# OPTIONAL AIR MODULES

## 4 x 3/8" Fluid Ports Module, Non Spilling Double Shut-Off (HN, HP or HT)

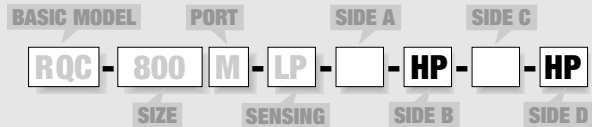
For RQC/RTP-800 & RQC/RTP-1200



Maximum working pressure: 100 bar

### ROBOT HALF MODULES:

#### How to Order Modules: RQC-800/1200

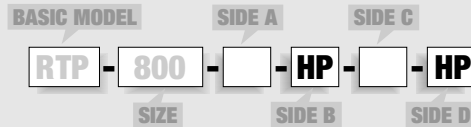


#### PREMOUNTED SEPARATE

HN	KHN-RQC800	4 x 3/8" NPT Fluid Ports, 100 bar
HP	KHP-RQC800	4 x 3/8" BSPP Fluid Ports, 100 bar
HT	KHT-RQC800	4 x 3/8" BSPT Fluid Ports, 100 bar

### TOOL HALF MODULES:

#### How to Order Modules: RTP-800/1200

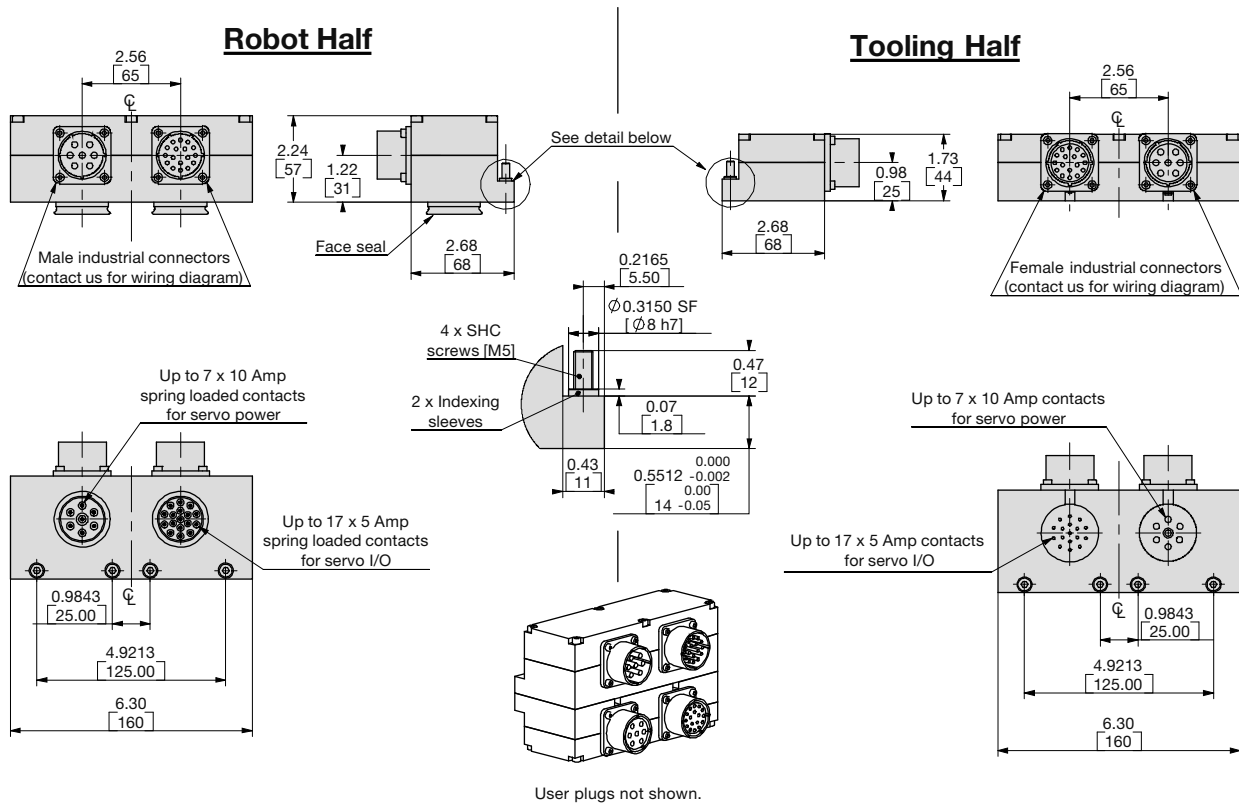


#### PREMOUNTED SEPARATE

HN	KHN-RTP800	4 x 3/8" NPT Fluid Ports, 100 bar
HP	KHP-RTP800	4 x 3/8" BSPP Fluid Ports, 100 bar
HT	KHT-RTP800	4 x 3/8" BSPT Fluid Ports, 100 bar

Module kits above include: Couplings, indexing sleeves and hardware.

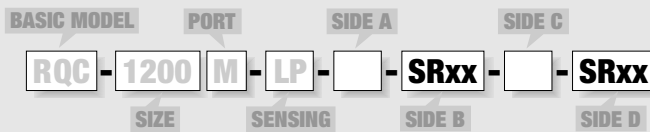
## Servo Module (SRxx) For RQC/RTP-800 & RQC/RTP-1200



User plugs not shown.

### ROBOT HALF MODULES:

#### How to Order Modules: RQC-800/1200



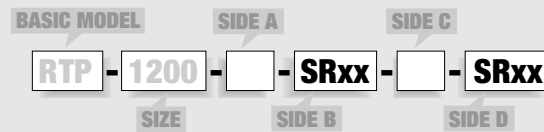
**SRxx**<sup>†</sup> **KSRxx-RQC800**<sup>†</sup> Servo Gun Module (with spring loaded pins)

<sup>†</sup>The xx is replaced by two digits depending on wiring request. Wiring may depend on robot and welding gun specifications. Please consult factory

\*SRxx module can be mounted on the HI module to use with electric welding gun. Order HISRxx.

### TOOL HALF MODULES:

#### How to Order Modules: RTP-800/1200



**PREMOUNTED SEPARATE**

**SRxx**<sup>†</sup> **KSRxx-RTP800**<sup>†</sup> Servo Gun Module (with spring loaded pins)

<sup>†</sup>The xx is replaced by two digits depending on wiring request. Wiring may depend on robot and welding gun specifications. Please consult factory

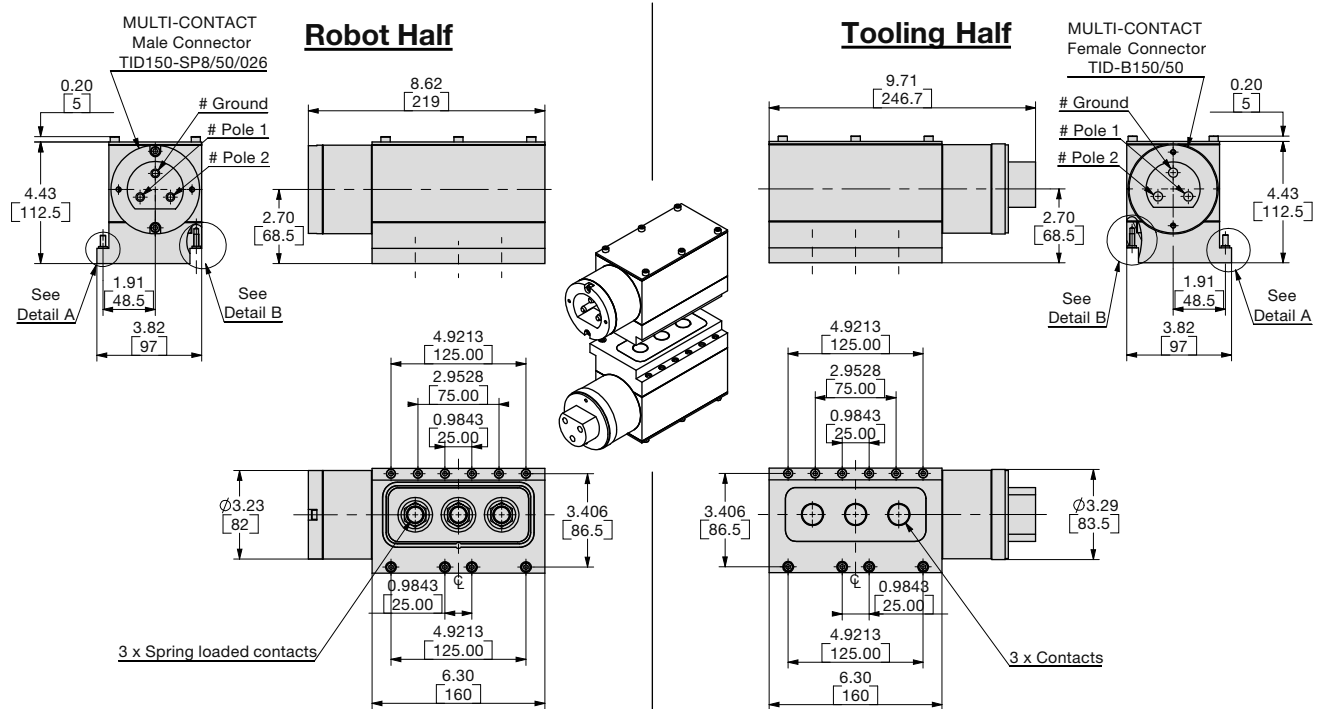
\*SRxx module can be mounted on the HI module to use with electric welding gun. Order HISRxx.

Module kits above include: Plugs, seals, indexing sleeves and hardware.

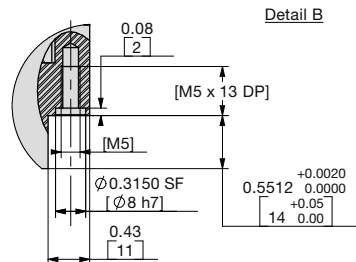
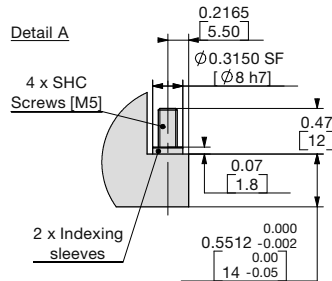
# OPTIONAL WELD GUN MODULE

## 3 Contacts Module 180 Amp - 630 VAC (HI)

For RQC/RTP-800 & RQC/RTP-1200



User straight plug not shown.

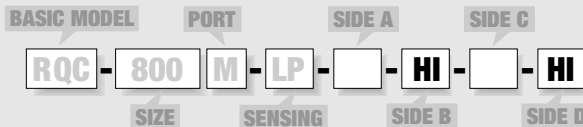


MODULAR RQC SERIES

6.52

### ROBOT HALF MODULES:

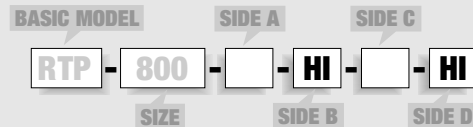
#### How to Order Modules: RQC-800/1200



PREMOUNTED HI	SEPARATE KHI-RQC800	Welding Gun module (3 x 180 Amp spring loaded pin)

### TOOL HALF MODULES:

#### How to Order Modules: RTP-800/1200



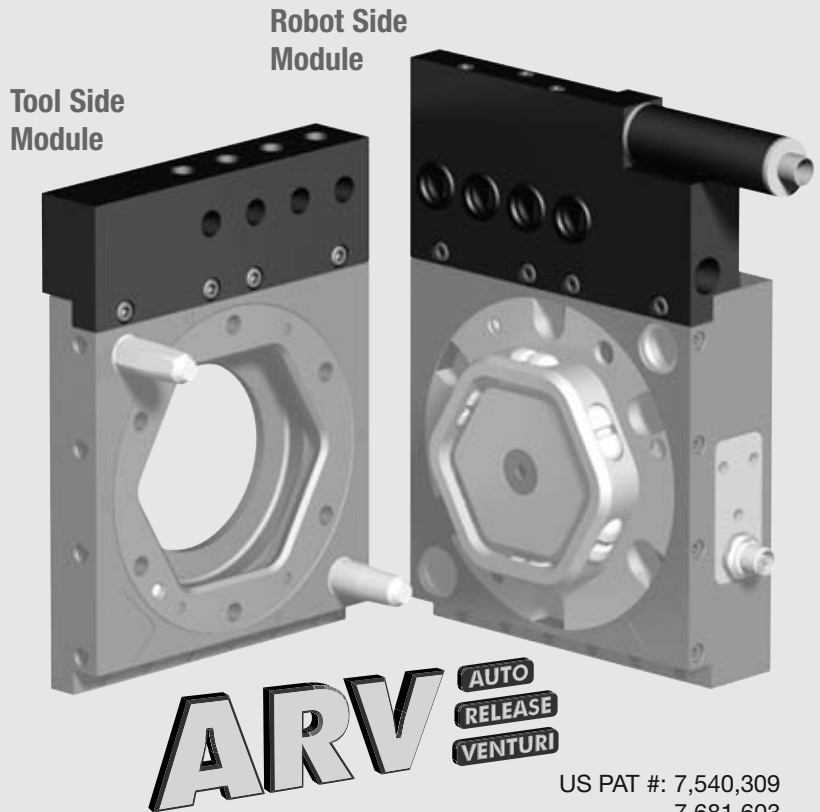
PREMOUNTED HI	SEPARATE KHI-RTP800	Welding Gun module (3 x 180 Amp spring loaded pin)

Module kits above include: Straight plug (without cable, crimp contacts), seals, indexing sleeves and hardware.

# ARV-Auto Release Venturi Vacuum Module

- Providing a quick change in vacuum technology**  
 The ARV vacuum module generates vacuum at the tool changer level, which is distributed across (4) ports, then piped independently to end effector vacuum cups.
- Key Features**  
 Single "line-in" air connection  
 Standard Built-in Silencer (Decibel Level: 72 dBA @ 3 feet)  
 Eliminates the need for individual venturis on each vacuum port  
 Multiple tools can be supplied vacuum by one ARV vacuum module  
 Will supply vacuum for up to 5 cups per vacuum channel  
**Lifetime warranty on venturis**

See page 6.48 for dimensions and ordering information



US PAT #: 7,540,309  
7,681,603

## Also Available for Clean Room Applications:

### ARV Stainless Steel Class 10 Clean Room Approved

- 1-2 particles per cubic meter of air (M3)
- Autoblow-off does not allow contamination
- 60% less air consumption
- Faster production speeds
- 150 plus cycles per minute



**ARV** AUTO RELEASE VENTURI  
STAINLESS STEEL



RPE Electric Gripper



Med-Redi Indexers



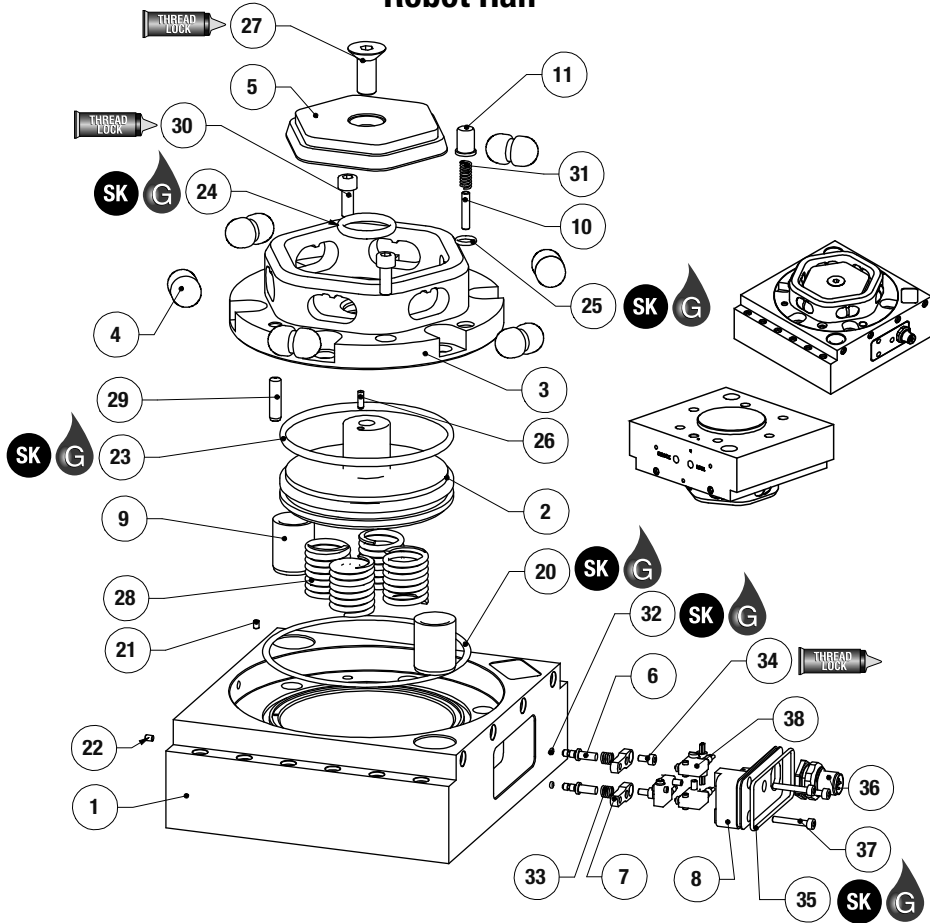
Parts Handlers



Med-Redi Conveyors

# RQC Series Exploded View

## Robot Half



Item	Qty	Name
------	-----	------

### Robot Half

01	1	Body
02	1	Piston
03	1	Pin Retainer
04	6	Pin
05	1	Ram
06	2	Sensing Pin
07	2	Stop
08	1	Bracket
09	2	Bushing
10	1	Pin
11	1	Target
20	1	Body, O-Ring
21	1	Body, Plug
22	1	Body, Plug
23	1	Piston, O-Ring
24	1	Retainer, O-Ring
25	1	Retainer, O-Ring
26	1	Piston, Pin
27	1	Piston, Screw
28	2 to 5	Body, Spring
29	1	Body, Pin
30	2	Retainer, SHC Screw
31	1	Target, Spring
32	2	Pin, O-Ring
33	2	Stop, Spring
34	2	Stop, SHC Screw
35	1	Bracket, O-Ring
36	1	Bracket, M12 Plug (optional)
37	3	Bracket, SHC Screw
38	1	Sensor Kit (optional)

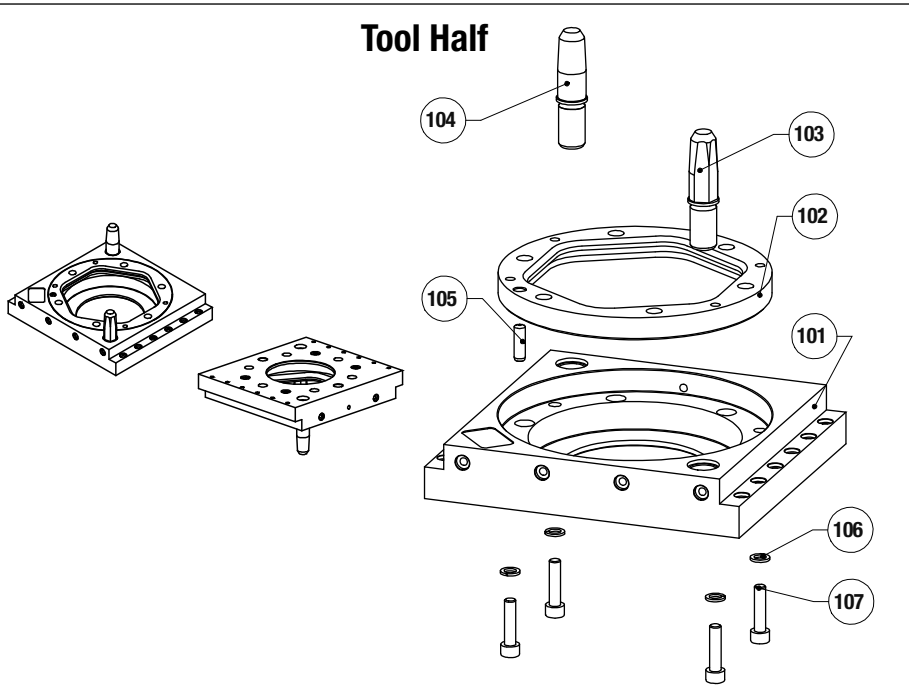
### Tool Half

101	1	Body
102	1	Ring
103	1	Diamond Pin
104	1	Centering Pin
105	1	Pin
106	4	Lock Washer
107	4	SHC Screw

**NOTE:** Contact the Robohand Sales Department for a complete spare parts list with order numbers and prices.

**SK Seal Repair Kit Order #'s**  
**See Product Data Sheets**

## Tool Half



Seal Kit  
Items



Thread  
Locker



Krytox™  
Lubricant



Lightweight  
Machine Oil



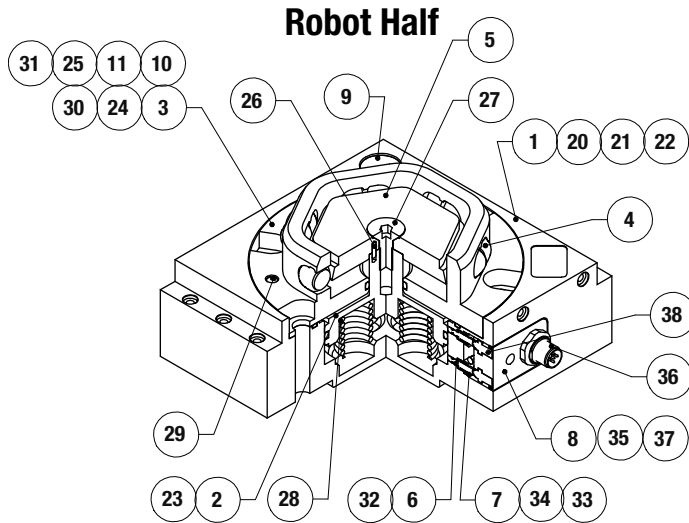
Teflon® Based  
Grease



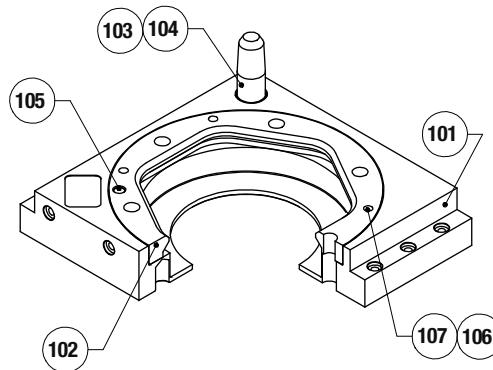
Super  
Bonder



Third Angle  
Projection



## Tool Half



Item	Qty	Name
------	-----	------

### Robot Half

01	1	Body
02	1	Piston
03	1	Pin Retainer
04	6	Pin
05	1	Ram
06	2	Sensing Pin
07	2	Stop
08	1	Bracket
09	2	Bushing
10	1	Pin
11	1	Target
20	1	Body, O-Ring
21	1	Body, Plug
22	1	Body, Plug
23	1	Piston, O-Ring
24	1	Retainer, O-Ring
25	1	Retainer, O-Ring
26	1	Piston, Pin
27	1	Piston, Screw
28	2 to 5	Body, Spring
29	1	Body, Pin
30	2	Retainer, SHC Screw
31	1	Target, Spring
32	2	Pin, O-Ring
33	2	Stop, Spring
34	2	Stop, SHC Screw
35	1	Bracket, O-Ring
36	1	Bracket, M12 Plug (optional)
37	3	Bracket, SHC Screw
38	1	Sensor Kit (optional)

### Tool Half

101	1	Body
102	1	Ring
103	1	Diamond Pin
104	1	Centering Pin
105	1	Pin
106	4	Lock Washer
107	4	SHC Screw

### Assembly Procedure - Robot Half

- Lubricate and install seal (#20) into the body #1
- Install the air port plugs (#21) and (#22) with thread-locker into the body (#1)
- Press in the bushings (#9) into the body
- Lubricate and install seals (#24) and (#25) - sizes 800 and 1200 only into the pin retainer (#3)
- Insert the pins (#4) into the pin retainer (#3)
- Lubricate and install seal (#23) onto the piston #2
- Press in the pin (#26) into the piston
- Completely insert the piston (#2) into the pin retainer (#3)
- Sizes 800 and 1200 only: press in the pin (#10) into target (#11) and install the spring (#31) and insert this sub assembly into the pin retainer
- Locate and insert the ram (#5) into the piston and fasten with screw (#27) with thread-locker
- Insert the springs (#28) into the body
- Press in the pin (#29) into the body
- Locate and insert the pin, pin retainer and piston sub-assembly into the body and fasten with screws (#30) with thread-locker
- Lubricate and install seals (#32) into the sensing pins (#6)
- Insert the sensing pins into the body
- Install the springs (#33) on the sensing pins
- Mount stops (#7) with screws (#34) with thread-locker
- Lubricate and install seal (#35) onto the bracket (#8)
- Mount the optional sensor kit (#38) to the bracket
- Mount the optional M12 plug (#36) to the bracket (#8) and connect its connector to the sensor kit connector (#38)
- Insert the sensor, plug and bracket sub assembly into the body and fasten with screws (#37)

### Assembly Procedure - Tool Half

- Insert the ring (#102) with pressed-in pin #105 into the body (#101) and fasten with lock washer (#106) and screws (#107) with thread-locker
- Press in the diamond pin (#103) into the body
- Press in the pin (#104) into the body

**NOTE:** Contact the Robohand Sales Department for a complete spare parts list with order numbers and prices



## TOOL CHANGER TERMINOLOGY

**Accuracy** – The actual positional differential of the locating dowels between two different Robot Halves or Tool Halves.

**Air Module** – Also called pneumatic ports. It refers to the component of the Tool Changer system that passes air through the QuickChange and Tool Plate to the End Effector. The air module is available in face-seal ports and is available with self-sealing or checked valves so that when the QuickChange uncouples, air does not leak and no extra valve is required to shut the air off.

**Alignment Pins** - Pins located on the tool plate that are used to align the Tool Changer to the Tool Plate during the coupling process. DE-STA-CO uses 2 alignment pins – one diamond shaped and one round. Alignment pins also limit moment about the Z axis.

**Checked Valves** – Valves designed for either fluid or pneumatic medium that have a self-sealing mechanism that automatically check the fluid when uncoupled. When a checked valve is used an additional valve is not required to shut-off the fluid or air upon disconnection.

**Deflection** – Defines the amount of movement (slop) expected under a given moment load. This measurement indicates the rigidity of the coupling mechanism.

**DeviceNet** – A communication protocol common to the North American automotive industry. A DeviceNet system communicates over a serial link (daisy chain) to each component on the system. A component can be anything from a proximity switch to a water saver to a robot controller. Each component has a specific address and can be polled for status by the system. A “communication bus” system like this eliminates the need for thousands of I/O wiring points because all the communication is done over a 5-wire (CAN HIGH, CAN LOW, V+, V-, and DRAIN) cable.

**Electrical Module** – Also called an I/O Block or I/O Module, it is a component within the QuickChange system. Electrical I/O (Input/Output) communication is done through this module. Also, internal switches for Couple/Uncouple/Ready-to-Couple may be wired to this module.

**Face-Seal Ports** – Refers to ports used to pass air or vacuum through the Tool Changer such as air for operating the retract feature of a spot weld gun or air to operate a venture vacuum pump on a material handling End Effector. The face-seal ports do not stop air or vacuum flow when the Tool Changer uncouples. They require an additional air valve to shut the air or vacuum off before uncoupling. Face-seal ports only have an O-ring to prevent air or vacuum loss when the Tool Changer is coupled.

**Locking Mechanism** – The mechanism that locks the Tool Changer to the Tool Plate. It consists of a piston, ram and rollers (rolling pins).

**Manual Tool Changer** – A Tool Changer that requires manual intervention to couple or uncouple.

**Maximum Compression** – Refers to the maximum force that can be applied to the Tool Changer in a –Z direction. Not very important for most applications.

**Maximum Moment (Mx, My, Mz)** – A very important sizing rating because it takes into account the dynamic loads created by the motion of the robot. Mx, My and Mz are the moment created when rotating about the X, Y and Z axis respectively.

**Maximum Payload** – The maximum amount of weight the Tool Changer can handle. A payload rating is used to give the design engineer a general reference for the size of Tool Changer that should be used for an application.

**Maximum Tensile** – The maximum amount of pull away (something in tension) that the QuickChange can tolerate before failure.

**Moment Rating (N-M, In-Lbs)** – The rating given to a QuickChange to describe the maximum amount of moment that the unit can handle and still maintain the published repeatability and performance specifications.

**Offset** – Refers to total Coupled Height of the Tool Changer and Tool Plate. It is important in calculation of moment as a function of Robot Acceleration. The more offset you have, the more moment that will be created as the Robot accelerates. Offset may limit maximum Payload allowed.

**Payload** – Refers to the weight of the Tool Changer and/or End Effector and part to be handled by the robot.

**Payload Rating (Lbs, Kg)** – Refers to the maximum weight that the robot or Tool Changer can carry safely. Maximum Payload Rating is limited by and needs to consider Offset, weight and envelope size of the End Effector and part to be handled as well as robot acceleration in order to calculate proper moment load.

**Ready-To-Couple** – A switch that indicates the QuickChange is in the proper orientation to couple with the Tool Plate. It indicates that the Tool Changer is close enough to the Tool Plate to activate the Locking Mechanism. It is important for the robot controller to make decisions such as drop-off End Effector, Couple tool, Uncouple tool. Also refers to a switch that reads if the Tool Changer is in a Ready-to-couple position, that is, in close proximity to the Tool Plate (0.100 inch).

**Repeatability** – The ability to go back to a pre-programmed point. In the context of a Tool Changer this indicates the ability to couple with precision so that additional misalignment is not introduced into the tooling.

**Robot Acceleration** – Refers to the rate of increase in speed at which the robot will operate. Important for calculating maximum moment rating or maximum payload rating when considering offset, envelope size, weight of end effector and weight of part.

**Self-Sealing** – A port that seals itself when it uncouples from its mating half. Conversely, the port automatically opens when it couples with its mating half.

**Servo Module** – Refers to a component within the QuickChange system for special applications using a servo-powered spot weld gun or servo-powered slide/cylinder. Electrical I/O (Input/Output) communication is also done through this module. Bolts on to the tool changer where the Electrical Module would normally mount.

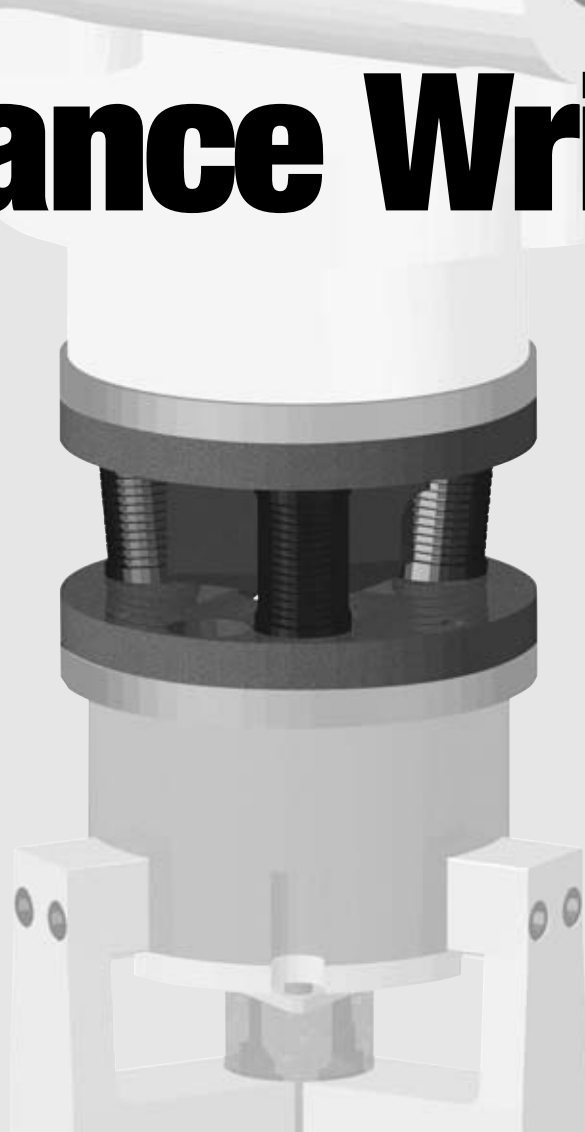
**Water Module** – Refers to the component of the Gun Changer system that passes cooling water through the QuickChange and Tool Plate to and from the spot weld gun, transformer, kickless cables and shunts. The water module has self-sealing or checked ports so that when the QuickChange uncouples, water does not leak and no extra valve is required to shut the water off.

**Weld Module** – Also called a 200 Amp Module, it is a component within the Gun Changer system. Weld Current is passed from the Weld Controller to the transformer for use by the spot weld gun. The DE-STA-CO Weld Module is rated for the maximum current rating of 200 Amps at 100% duty cycle (constant power on).

**Vacuum Module** – Refers to the component of the Tool Changer system that passes vacuum and air through the QuickChange and Tool Plate to the End Effector. The vacuum module comes standard with face-seal ports. An extra valve is required to shut the vacuum and air off.

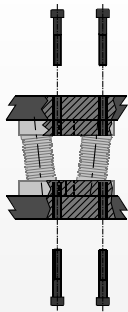


# Compliance Wrist

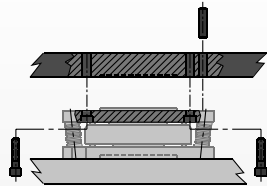


- Robotic applications:**  
 Excellent for inserting components that may be mis-aligned or skewed with respect to mating components. Reduces part jamming which could transmit excessive forces back to the robot .
- Automation applications:**  
 For insertion applications where part positioning may be less than precise. Compliance in torsion, bending and lateral directions allow this device to compensate for part placing inaccuracies.

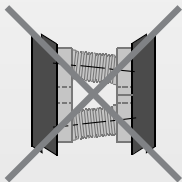
## Mounting Information:



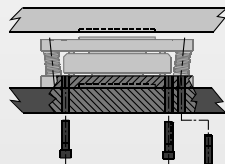
On size 50-80, robot side has tapped holes for mounting



On size 125-300, robot side has counter bored holes for mounting with a dowel hole and raised boss for location



**Not recommended** in horizontal axis applications where the weight attached to the tool side can deflect the device



On all sizes tool side has tapped holes for mounting. Sizes 125-300 have pilot hole and dowel hole for positioning

## Technical Specifications:

<b>Pneumatic Specifications</b>	<b>Imperial</b>	<b>Metric</b>
Pressure Operating Range	40-100 psi	3-7 bar
Cylinder Type	Double Acting	
Dynamic Seals	Internally Lubricated Buna-N	
Valve Required to Operate	4-way, 2-position	

<b>Air Quality Requirements</b>	
Air Filtration	40 Micron or Better
Air Lubrication	Not Necessary*
Air Humidity	Low Moisture Content (dry)

<b>Temperature Operating Range</b>		
Buna-N Seals (standard)	-20°~180° F	-30°~80° C

<b>Maintenance Specifications†</b>	
Expected Life	
Normal Application	5 million cycles
w/ Preventative Maintenance	10+ million cycles*
Field Repairable	Yes
Seal Repair Kits Available	Yes

\*Addition of lubrication will greatly increase service life  
 † See Maintenance Section

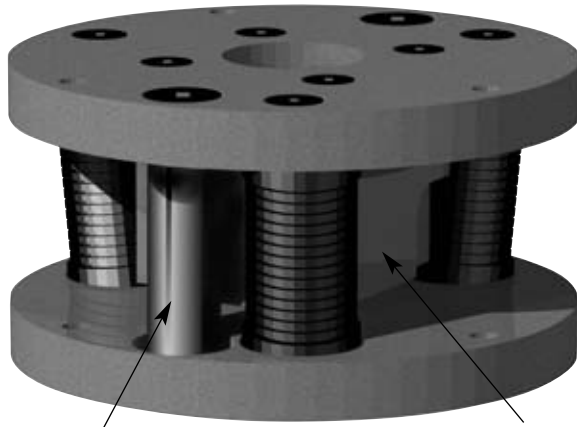
## Product Features

### Quality Components

Anodized aluminum components  
Elements are cutting fluid and coolant resistant

### Lifetime Lubrication

Life time cylinder and locking mechanism lubrication



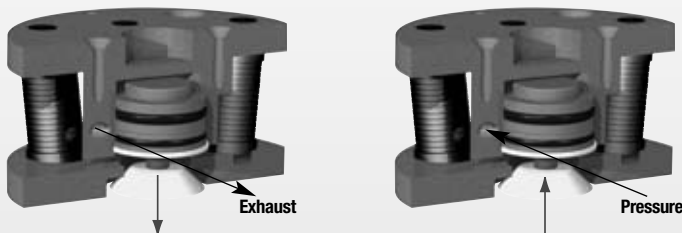
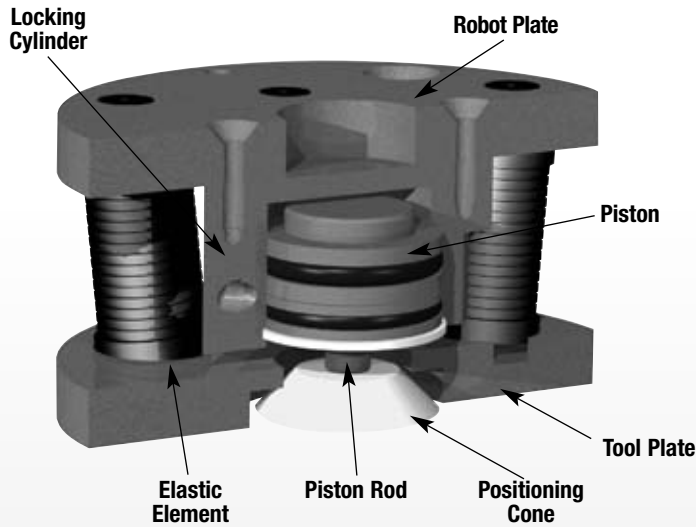
### Overload Pins

Overload pins (sizes 80, 100 and 300)  
and anti-rotation device (sizes 160 and larger)

### Locking Cylinder

Locking cylinder (standard on 125 and larger)  
creates a rigid coupling between the robot and tool plates

## Operating Principle



- Two aluminum plates are connected by elastomeric elements which allow lateral, angular, and rotational movement between them.
- Larger units with locking cylinder allow the two plates to be rigidly connected to one another during acceleration or deceleration of the payload.

## Style-RCW Compliance Wrist

### Size-50

<b>Style:</b>	RCW-50-3
<b>Max. Payload:</b>	2.4 lbs. 1.0 Kg
<b>Lateral Comp. (X/Y):</b>	0.118 in. 3 mm
<b>Weight:</b>	0.57 lbs. 0.26 Kg



See Page **6.60**

## Style-RCW Compliance Wrist

### Size-80

<b>Style:</b>	RCW-80-3
<b>Max. Payload:</b>	5 lbs. 2.4 Kg
<b>Lateral Comp. (X/Y):</b>	0.118 in. 3 mm
<b>Weight:</b>	0.57 lbs. 0.26 Kg



See Page **6.61**

## Style-RCW Compliance Wrist

### Size-100

<b>Style:</b>	RCW-100-4,-6
<b>Max. Payload:</b>	8 lbs. 3.5 Kg
<b>Lateral Comp. (X/Y):</b>	0.118 in. 3 mm
<b>Weight:</b>	1.0 lbs. 0.4 Kg



See Pages **6.62 & 6.63**

## Style-RCW Compliance Wrist

### Size-125

<b>Style:</b>	RCW-125-6
<b>Max. Payload:</b>	15 lbs. 7 Kg
<b>Lateral Comp. (X/Y):</b>	0.079 in. 2 mm
<b>Weight:</b>	2.6 lbs. 1.2 Kg



See Page **6.64**

## Style-RCW Compliance Wrist

### Size-160

<b>Style:</b>	RCW-160-6,-8
<b>Max. Payload:</b>	40 lbs. 18 Kg
<b>Lateral Comp. (X/Y):</b>	0.079 in. 2 mm
<b>Weight:</b>	3.7 lbs. 1.7 Kg



See Pages **6.65 & 6.66**

## Style-RCW Compliance Wrist

### Size-200

<b>Style:</b>	RCW-200-12
<b>Max. Payload:</b>	115 lbs. 52 Kg
<b>Lateral Comp. (X/Y):</b>	0.118 in. 3 mm
<b>Weight:</b>	18.3 lbs. 8.3 Kg

See Pages **6.67**

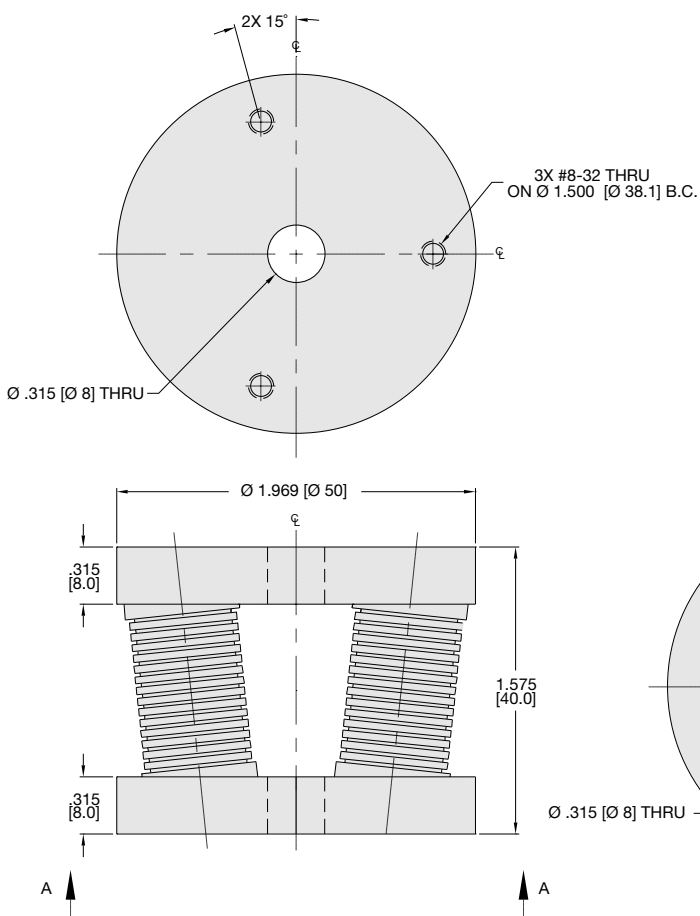
## Style-RCW Compliance Wrist

### Size-300

<b>Style:</b>	RCW-300-12
<b>Max. Payload:</b>	330 lbs. 150 Kg
<b>Lateral Comp. (X/Y):</b>	0.098 in. 2 mm
<b>Weight:</b>	12.8 lbs. 5.8 Kg

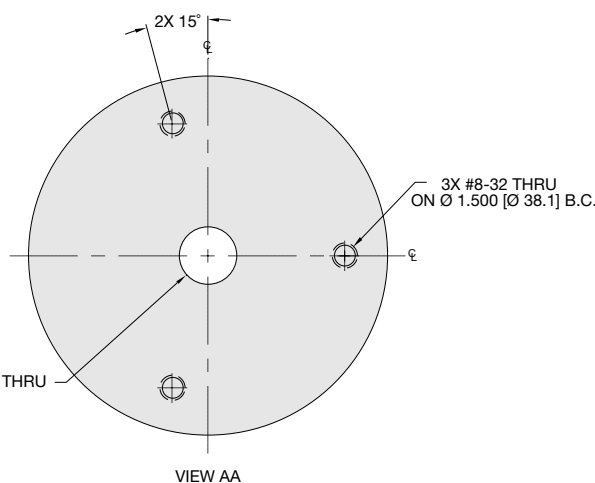
See Page **6.68**

# COMPLIANCE WRIST RCW-50-3



## Specifications

	RCW-50-3	
Maximum Payload.....	2.4 lbs	1.1 Kg
Misalignment Capability .....	±0.08 in.	±2 mm
Maximum Rotation .....	±2°	±2°
Weight .....	0.57 lbs.	0.26 Kg
Temperature Range.....	-20°~180° F	-30°~80° C



UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

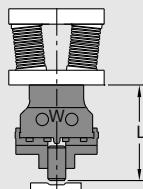
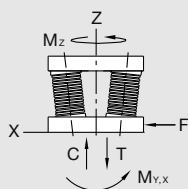
Symbol	Imperial in.	Metric [mm]
	0.00 = ±.01	[0.] = [±.25]
	0.000 = ±.005	[0.0] = [±.13]
	0.0000 = ±.0005	[0.00] = [±.013]

RCW SERIES

6.60

## Loading Information

## How to Order:



BASIC MODEL

**RCW-50-3**

### Loading Capacity

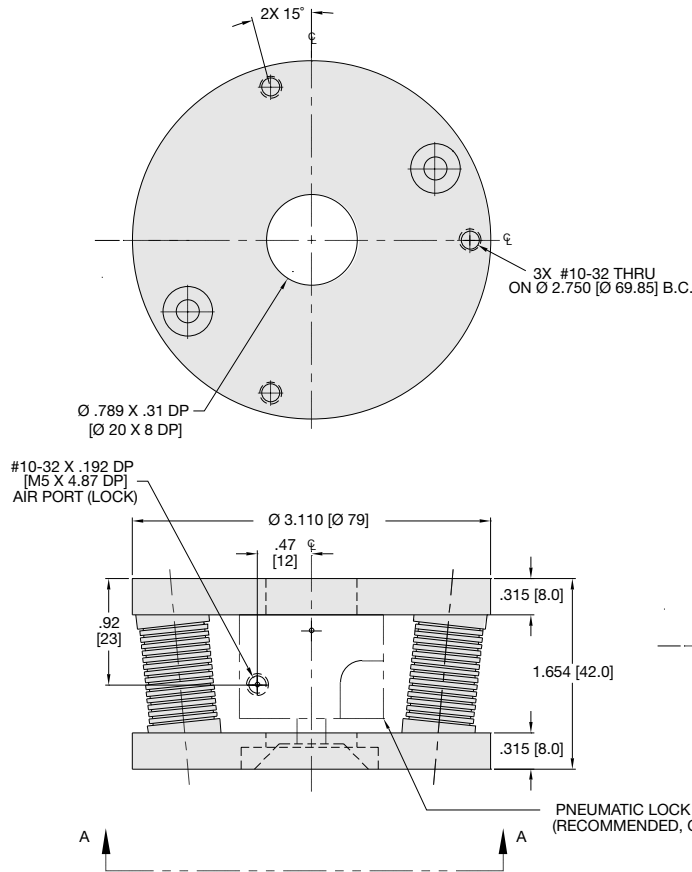
	Imperial	Metric
Maximum Force <b>F</b>	18 lbs.	80 N
Maximum Tension <b>T</b>	90 lbs.	400 N
Maximum Compressive <b>C</b>	90 lbs.	400 N
Maximum Moment <b>M<sub>x</sub></b>	177 in.-lbs.	20 Nm
Maximum Moment <b>M<sub>y</sub></b>	177 in.-lbs.	20 Nm
Maximum Moment <b>M<sub>z</sub></b>	177 in.-lbs.	20 Nm
Maximum Payload <b>W</b>	2.4 lbs.	1.1 Kg

### Stiffness Information

	Imperial	Metric
Torsional Stiffness about <b>Z</b> axis	157 in-lbs/deg	17 N-m/deg
Lateral Stiffness ( <b>X</b> and <b>Y</b> axis)	228 lbf/in	40 N/mm
Axial Stiffness (compression <b>Z</b> axis)	9136 lbf/in	1600 N/mm
Insertion Point <b>L Max</b>	2 in.	50 mm



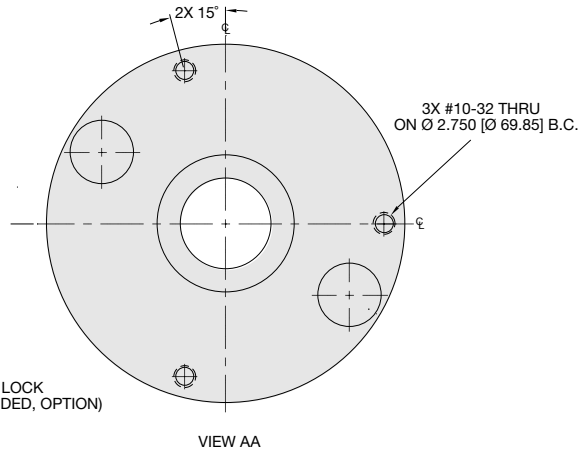
# COMPLIANCE WRIST RCW-80-3



## Specifications

## RCW-80-3

Maximum Payload	5 lbs	2.4 Kg
Misalignment Capability	±0.118 in.	±3 mm
Maximum Rotation	±2°	±2°
Weight	0.57 lbs.	0.26 Kg
Pressure Range (locked cylinder)	40-100 psi	3-7 bar
Temperature Range	-20°~180° F	-30°~80° C
Locking Force @ 80 PSI [5.5 bar]	50 lbs	222 N
Valve required to actuate		4-way, 2-position

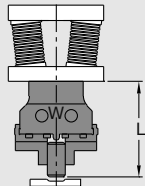
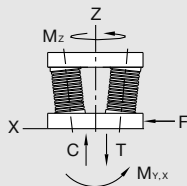


### UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

Dimensions are symmetrical about centerline	Third Angle Projection	All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or [±.013mm]	Metric Threads Course Pitch	<b>Imperial in.</b> 0.00 = ±.01 0.000 = ±.005 0.0000 = ±.0005	<b>Metric [mm]</b> [0.] = [±.25] [0.0] = [±.13] [0.00] = [±.013]
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## Loading Information

## How to Order:



**BASIC MODEL**      **PNEUMATIC LOCKING**

**RCW-80-3 - OV - L**

**OVERLOAD PINS**

### Loading Capacity<sup>1</sup>

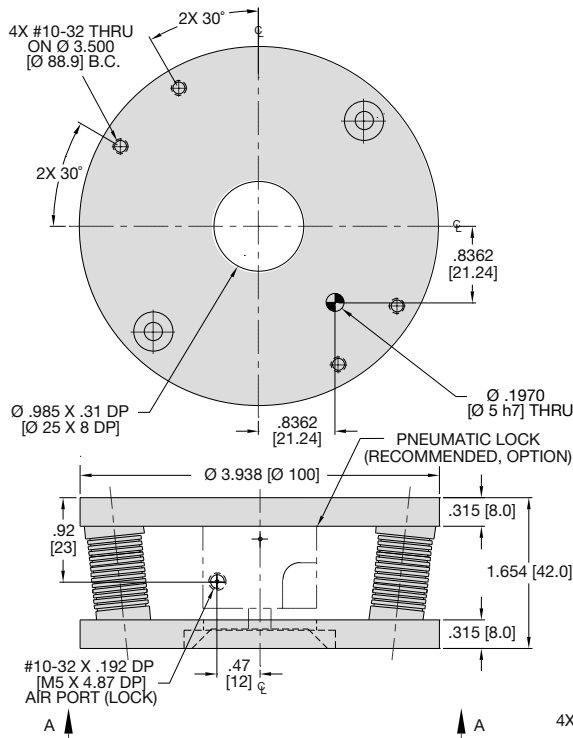
	Imperial	Metric
Maximum Force <b>F</b>	18 lbs.	80 N
Maximum Tension <b>T</b>	90 lbs.	400 N
Maximum Compressive <b>C</b>	90 lbs.	400 N
Maximum Moment <b>M<sub>x</sub></b>	177 in.-lbs.	20 Nm
Maximum Moment <b>M<sub>y</sub></b>	177 in.-lbs.	20 Nm
Maximum Moment <b>M<sub>z</sub></b>	177 in.-lbs.	20 Nm
Maximum Payload <b>W</b>	5 lbs.	2.4 Kg

### Stiffness Information

	Imperial	Metric
Torsional Stiffness about <b>Z</b> axis	248 in.-lbs/deg	28 N-m/deg
Lateral Stiffness ( <b>X</b> and <b>Y</b> axis)	228 lbf/in	40 N/mm
Axial Stiffness (compression <b>Z</b> axis)	9136 lbf/in	1600 N/mm
Insertion Point <b>L Max</b>	4 in.	100 mm



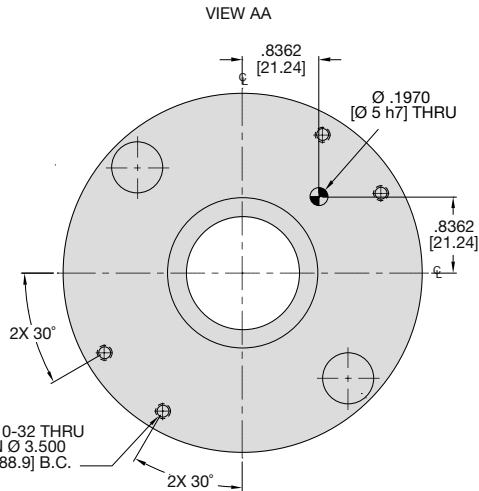
# COMPLIANCE WRIST RCW-100-4



## Specifications

## RCW-100-4

Maximum Payload	8 lbs	3.5 Kg
Misalignment Capability	$\pm 0.118$ in.	$\pm 3$ mm
Maximum Rotation	$\pm 2^\circ$	$\pm 2^\circ$
Weight	1.0 lbs.	0.4 Kg
Pressure Range (locked cylinder)	40-100 psi	3-7 bar
Temperature Range	$-20^\circ \sim 180^\circ$ F	$-30^\circ \sim 80^\circ$ C
Locking Force @ 80 PSI [5.5 bar]	80 lbs	355 N
Valve required to actuate	4-way, 2-position	



UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

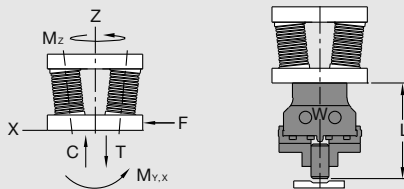
Dimensions are symmetrical about centerline	Third Angle Projection	All Dowel Holes are SF (Slip Fit). Locational Tolerance $\pm 0.0005$ " or [ $\pm 0.013$ mm]	Metric Threads Course Pitch	<b>Imperial in.</b> 0.00 = $\pm .01$ 0.000 = $\pm .005$ 0.0000 = $\pm .0005$	<b>Metric [mm]</b> [0.] = [ $\pm .25$ ] [0.0] = [ $\pm .13$ ] [0.00] = [ $\pm .013$ ]
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RCW SERIES

6.62

## Loading Information

## How to Order:



BASIC MODEL

PNEUMATIC LOCKING

**RCW-100-4 -OV -L**

OVERLOAD PINS

### Loading Capacity<sup>1</sup>

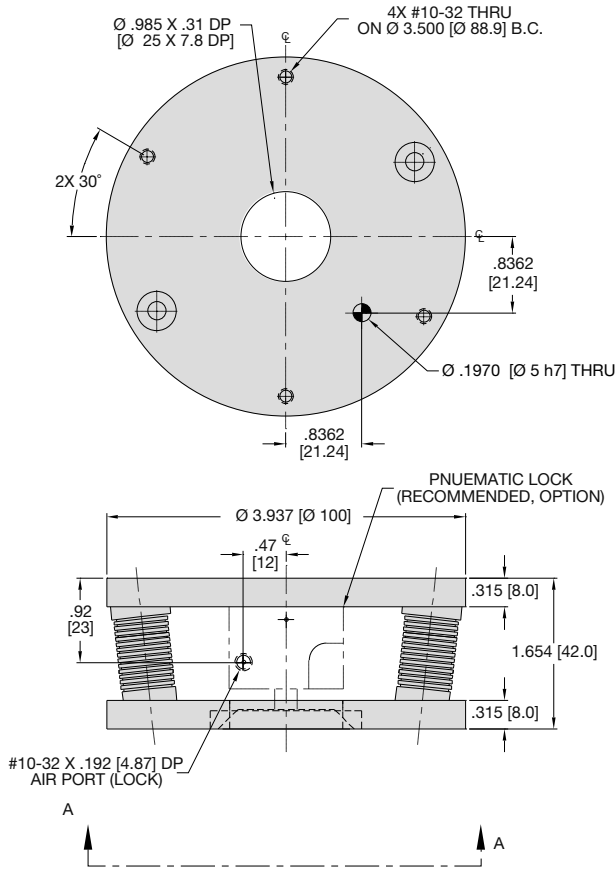
	Imperial	Metric
Maximum Force <b>F</b>	34 lbs.	150 N
Maximum Tension <b>T</b>	124 lbs.	550 N
Maximum Compressive <b>C</b>	124 lbs.	550 N
Maximum Moment <b>M<sub>x</sub></b>	177 in.-lbs.	20 Nm
Maximum Moment <b>M<sub>y</sub></b>	177 in.-lbs.	20 Nm
Maximum Moment <b>M<sub>z</sub></b>	177 in.-lbs.	20 Nm
Maximum Payload <b>W</b>	8 lbs.	3.5 Kg

### Stiffness Information

	Imperial	Metric
Torsional Stiffness about <b>Z</b> axis	412 in.-lbs/deg	46 N-m/deg
Lateral Stiffness ( <b>X</b> and <b>Y</b> axis)	286 lbf/in	50 N/mm
Axial Stiffness (compression <b>Z</b> axis)	11991 lbf/in	2100 N/mm
Insertion Point <b>L Max</b>	6 in.	150 mm

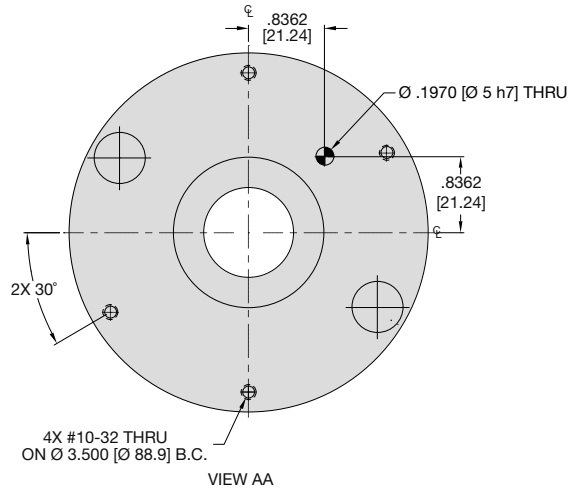


# COMPLIANCE WRIST RCW-100-6



### Specifications

	RCW-100-6	
Maximum Payload.....	8 lbs	3.5 Kg
Misalignment Capability .....	±0.118 in.	±3 mm
Maximum Rotation .....	±2°	±2°
Weight .....	1.0 lbs.	0.4 Kg
Pressure Range (locked cylinder).....	40-100 psi	3-7 bar
Temperature Range.....	-20°~180° F	-30°~80° C
Locking Force @ 80 PSI [5.5 bar].....	80 lbs	355 N
Valve required to actuate .....	4-way, 2-position	

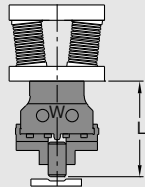
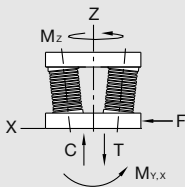


UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

Dimensions are symmetrical about centerline	Third Angle Projection	All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or [±.013mm]	Metric Threads Course Pitch	<b>Imperial in.</b> 0.00 ± .01 0.000 ± .0005 0.0000 ± .0005	<b>Metric [mm]</b> [0.] = [±.25] [0.0] = [±.13] [0.00] = [±.013]
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## Loading Information

## How to Order:



BASIC MODEL

PNEUMATIC LOCKING

**RCW-100-6 -OV - L**

OVERLOAD PINS

RCW SERIES

6.63

### Loading Capacity<sup>†</sup>

	Imperial	Metric
Maximum Force <b>F</b>	55 lbs.	240 N
Maximum Tension <b>T</b>	180 lbs.	800 N
Maximum Compressive <b>C</b>	180 lbs.	800 N
Maximum Moment <b>M<sub>x</sub></b>	265 in.-lbs.	30 Nm
Maximum Moment <b>M<sub>y</sub></b>	265 in.-lbs.	30 Nm
Maximum Moment <b>M<sub>z</sub></b>	265 in.-lbs.	30 Nm
Maximum Payload <b>W</b>	8 lbs.	3.5 Kg

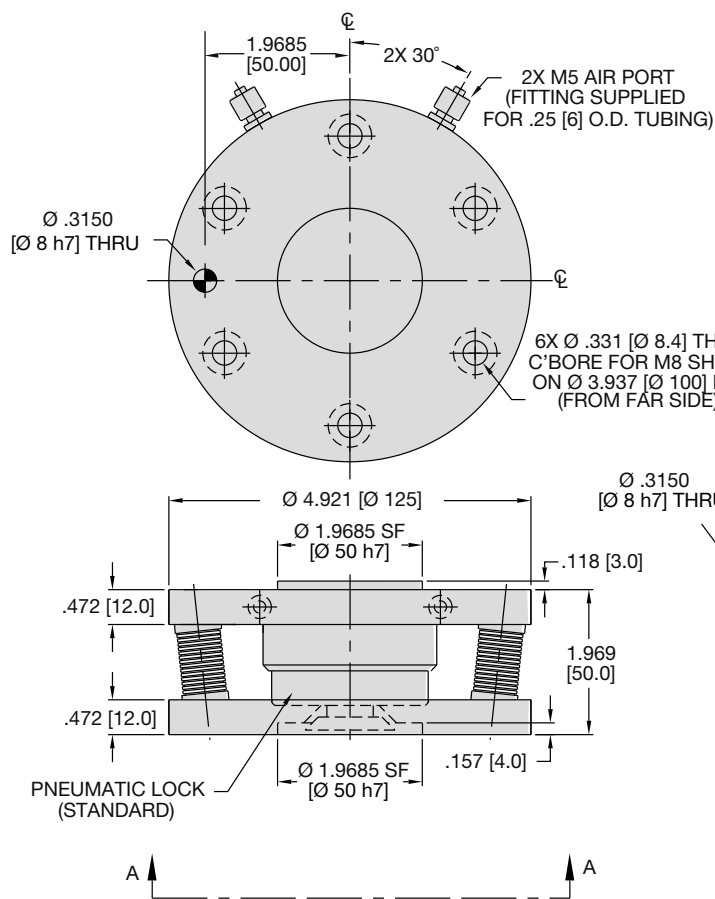
### Stiffness Information

	Imperial	Metric
Torsional Stiffness about <b>Z</b> axis	628 in-lbs/deg	71 N-m/deg
Lateral Stiffness ( <b>X</b> and <b>Y</b> axis)	457 lbf/in	80 N/mm
Axial Stiffness (compression <b>Z</b> axis)	18275 lbf/in	3200 N/mm
Insertion Point <b>L Max</b>	6 in.	150 mm

Please see back cover for DE-STA-CO Global Locations. [www.destaco.com](http://www.destaco.com)

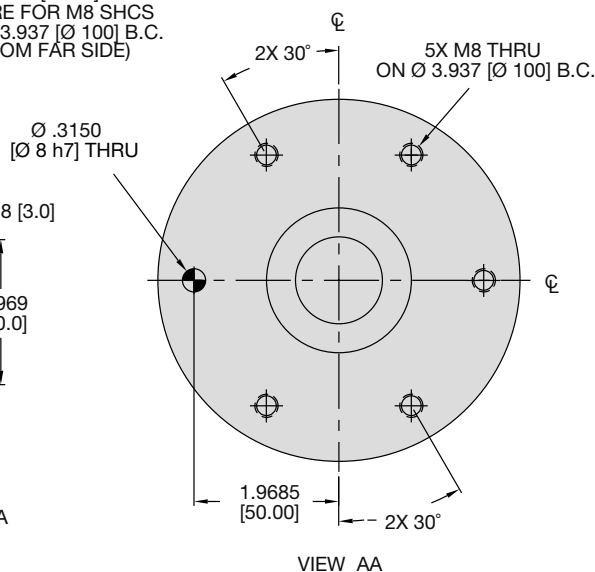
[www.comoso.com](http://www.comoso.com)

# COMPLIANCE WRIST RCW-125-6



## Specifications

	RCW-125-6
Maximum Payload.....	15 lbs 7 Kg
Misalignment Capability.....	±0.079 in. ±2 mm
Maximum Rotation.....	±1° ±1°
Weight.....	2.6 lbs. 1.2 Kg
Pressure Range (locked cylinder).....	40-100 psi 3-7 bar
Temperature Range.....	-20°~180° F -30°~80° C
Locking Force @ 80 PSI [5.5 bar].....	135 lbs 600 N
Valve required to actuate.....	4-way, 2-position



UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

Imperial in.	Metric [mm]
0.00 = ±.01	[0.1] = [±.25]
0.000 = ±.005	[0.0] = [±.13]
0.0000 = ±.0005	[0.00] = [±.013]

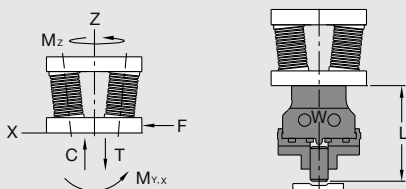
Dimensions are symmetrical about centerline  
 Third Angle Projection  
 All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or [±.013mm]  
 Metric Threads Course Pitch

RCW SERIES

6.64

## Loading Information

## How to Order:



BASIC MODEL

**RCW-125-6**

### Loading Capacity<sup>†</sup>

	Imperial	Metric
Maximum Force <b>F</b>	36 lbs.	160 N
Maximum Tension <b>T</b>	180 lbs.	800 N
Maximum Compressive <b>C</b>	180 lbs.	800 N
Maximum Moment <b>M<sub>x</sub></b>	265 in.-lbs.	30 Nm
Maximum Moment <b>M<sub>y</sub></b>	265 in.-lbs.	30 Nm
Maximum Moment <b>M<sub>z</sub></b>	265 in.-lbs.	30 Nm
Maximum Payload <b>W</b>	15 lbs.	7 Kg

### PNEUMATIC ACCESSORIES

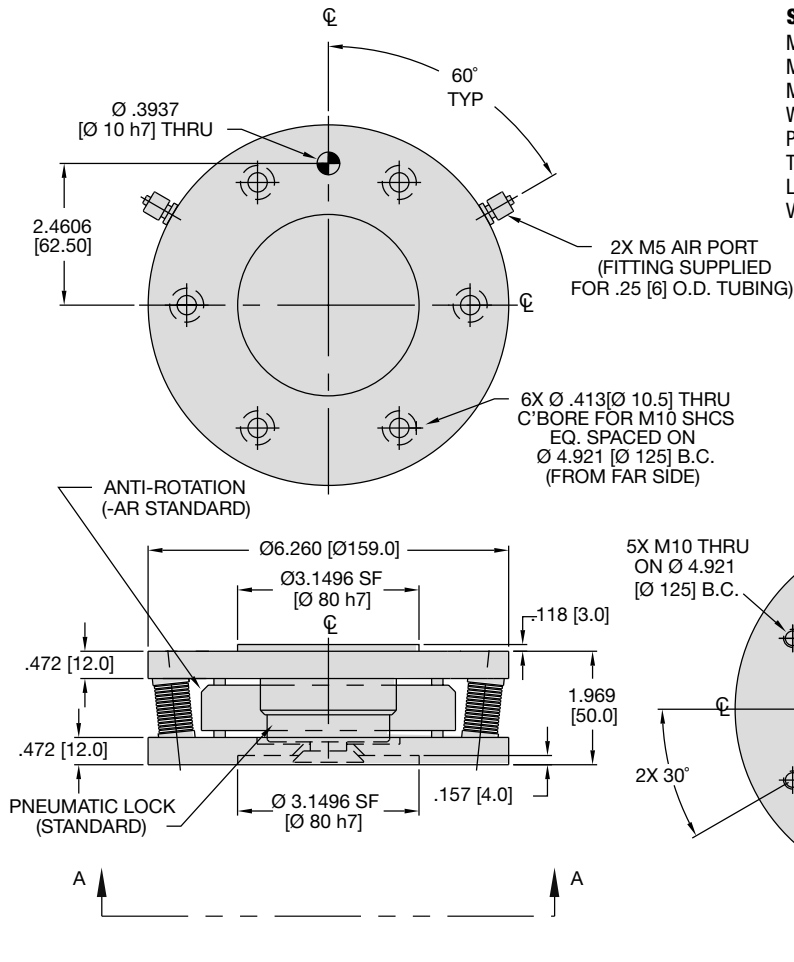
	ORDER #	QTY/UNIT
Standard Seal Repair Kit	<b>SLKT-227</b>	<b>1</b>

### Stiffness Information

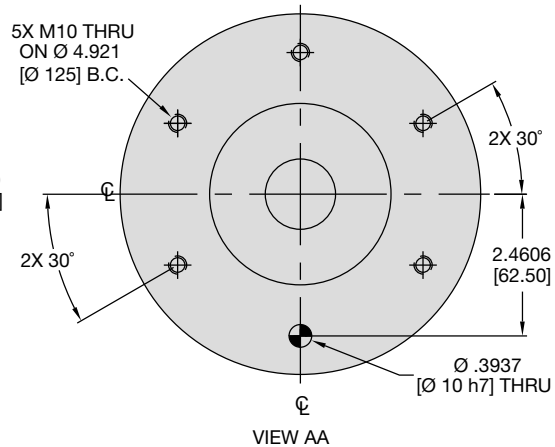
	Imperial	Metric
Torsional Stiffness about <b>Z</b> axis	785 in-lbs/deg	88 N-m/deg
Lateral Stiffness ( <b>X</b> and <b>Y</b> axis)	457 lbf/in	80 N/mm
Axial Stiffness (compression <b>Z</b> axis)	18275 lbf/in	3200 N/mm
Insertion Point <b>L Max</b>	8 in.	200 mm



# COMPLIANCE WRIST RCW-160-6



Specifications	RCW-160-6	
Maximum Payload.....	40 lbs	18 Kg
Misalignment Capability.....	±0.079 in.	±2 mm
Maximum Rotation.....	±1°	±1°
Weight.....	3.7 lbs.	1.7 Kg
Pressure Range (locked cylinder).....	40-100 psi	3-7 bar
Temperature Range.....	-20°~180° F	-30°~80° C
Locking Force @ 80 PSI [5.5 bar].....	110 lbs	489 N
Valve required to actuate.....	4-way, 2-position	

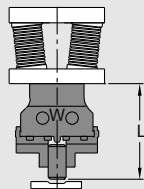
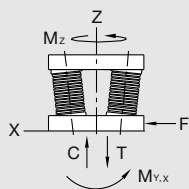


UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

Imperial in.	Metric [mm]
0.00 = ±.01	[0.] = [±.25]
0.000 = ±.005	[0.0] = [±.13]
0.0000 = ±.0005	[0.00] = [±.013]

## Loading Information

## How to Order:



BASIC MODEL ANTI-ROTATION

**RCW-160-6 -AR**

### Loading Capacity†

	Imperial	Metric
Maximum Force <b>F</b>	36 lbs.	160 N
Maximum Tension <b>T</b>	180 lbs.	800 N
Maximum Compressive <b>C</b>	180 lbs.	800 N
Maximum Moment <b>M<sub>x</sub></b>	265 in.-lbs.	30 Nm
Maximum Moment <b>M<sub>y</sub></b>	265 in.-lbs.	30 Nm
Maximum Moment <b>M<sub>z</sub></b>	265 in.-lbs.	30 Nm
Maximum Payload <b>W</b>	40 lbs.	18 Kg

### Stiffness Information

	Imperial	Metric
Torsional Stiffness about <b>Z</b> axis	998 in.-lbs/deg	113 N-m/deg
Lateral Stiffness ( <b>X</b> and <b>Y</b> axis)	457 lbf/in	80 N/mm
Axial Stiffness (compression <b>Z</b> axis)	18275 lbf/in	3200 N/mm
Insertion Point <b>L Max</b>	12 in.	300 mm

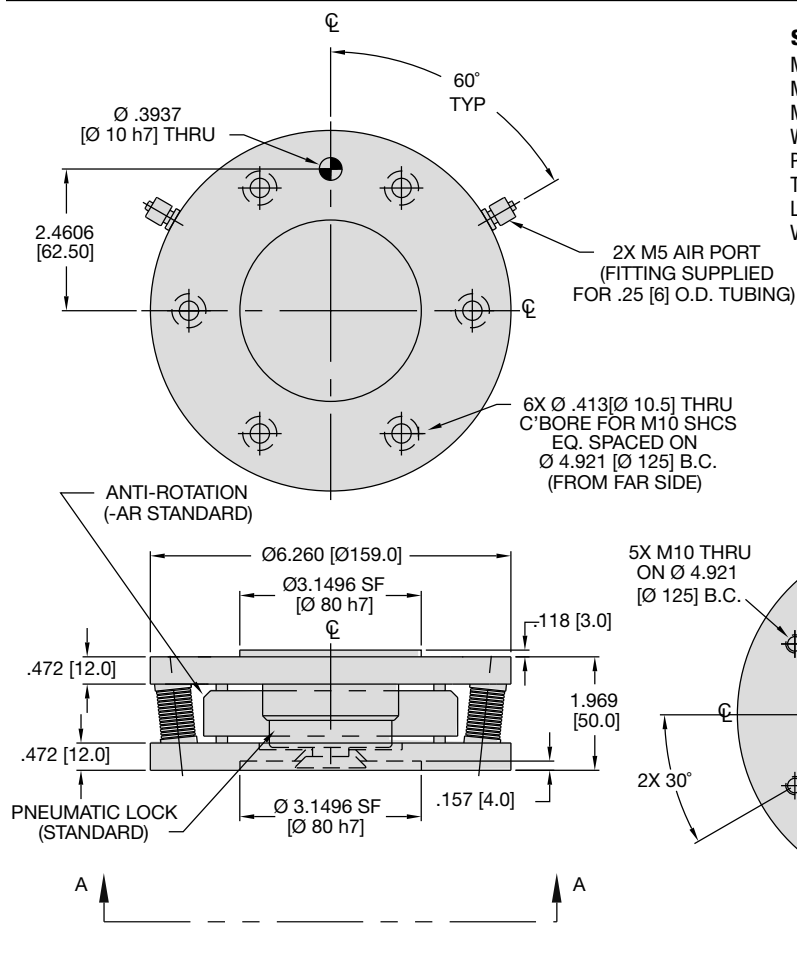
Please see back cover for DE-STA-CO Global Locations. [www.destaco.com](http://www.destaco.com)

[www.comoso.com](http://www.comoso.com)

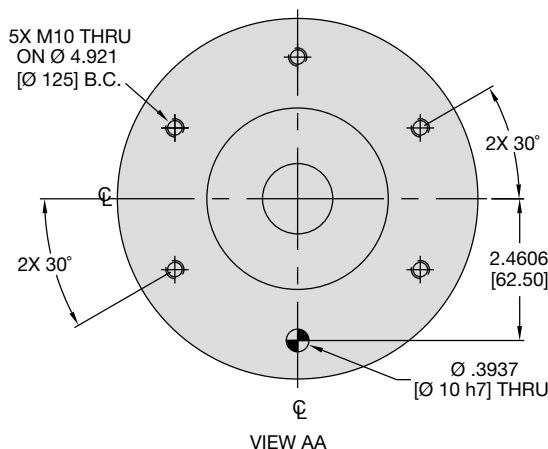
RCW SERIES

6.65

# COMPLIANCE WRIST RCW-160-8



Specifications	RCW-160-8	
Maximum Payload.....	40 lbs	18 Kg
Misalignment Capability .....	±0.079 in.	±2 mm
Maximum Rotation.....	±1°	±1°
Weight .....	3.7 lbs.	1.7 Kg
Pressure Range (locked cylinder).....	40-100 psi	3-7 bar
Temperature Range.....	-20°~180° F	-30°~80° C
Locking Force @ 80 PSI [5.5 bar].....	110 lbs	489 N
Valve required to actuate .....	4-way, 2-position	



UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

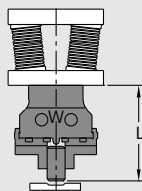
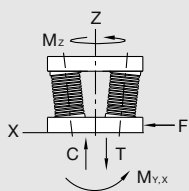
Imperial in.	Metric [mm]
0.00 = ±.01	[0.] = [±.25]
0.000 = ±.005	[0.0] = [±.13]
0.0000 = ±.0005	[0.00] = [±.013]

RCW SERIES

6.66

## Loading Information

## How to Order:



BASIC MODEL ANTI-ROTATION

**RCW-160-8 - AR**

### Loading Capacity<sup>1</sup>

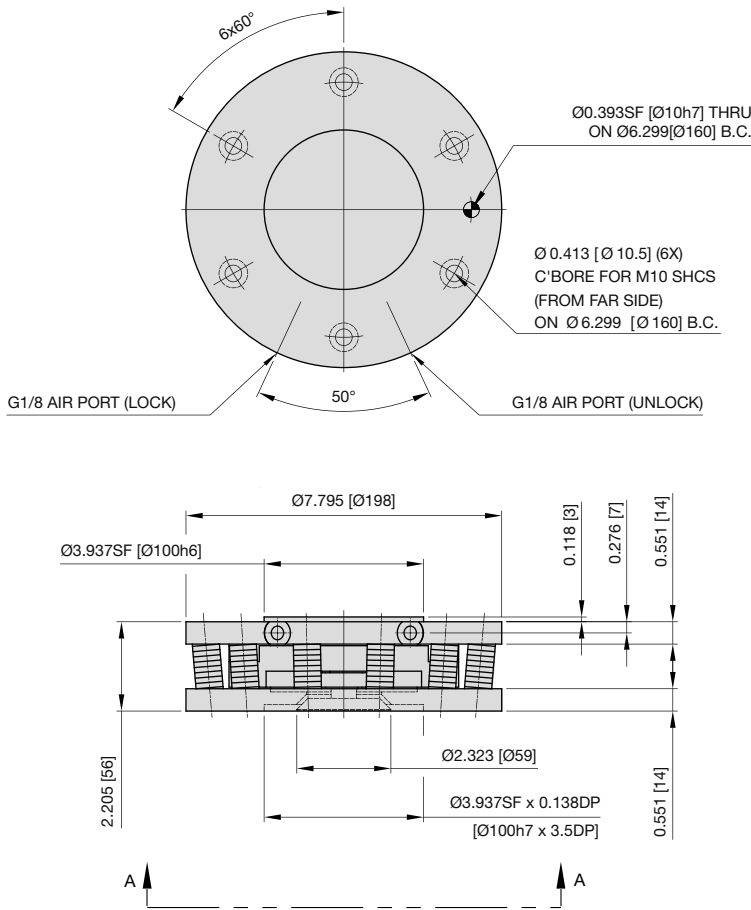
	Imperial	Metric
Maximum Force <b>F</b>	45 lbs.	200 N
Maximum Tension <b>T</b>	225 lbs.	1001 N
Maximum Compressive <b>C</b>	225 lbs.	1001 N
Maximum Moment <b>M<sub>x</sub></b>	708 in.-lbs.	80 Nm
Maximum Moment <b>M<sub>y</sub></b>	708 in.-lbs.	80 Nm
Maximum Moment <b>M<sub>z</sub></b>	708 in.-lbs.	80 Nm
Maximum Payload <b>W</b>	40 lbs.	18 Kg

### Stiffness Information

	Imperial	Metric
Torsional Stiffness about <b>Z</b> axis	1310 in.-lbs/deg	148 N-m/deg
Lateral Stiffness ( <b>X</b> and <b>Y</b> axis)	570 lbf/in	100 N/mm
Axial Stiffness (compression <b>Z</b> axis)	23985 lbf/in	4200 N/mm
Insertion Point <b>L Max</b>	12 in.	300 mm



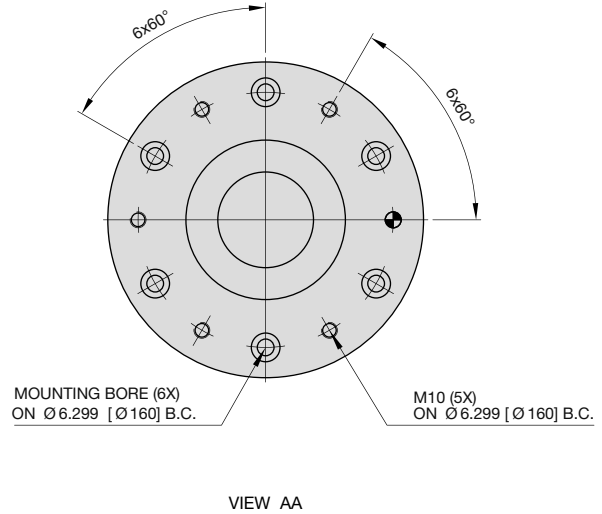
# COMPLIANCE WRIST RCW-200-12



## Specifications

## RCW-200-12

Maximum Payload.....	115 lbs	52 Kg
Misalignment Capability.....	$\pm 0.118$ in.	$\pm 3$ mm
Maximum Rotation.....	$\pm 1^\circ$	$\pm 1^\circ$
Weight.....	18.3 lbs.	8.3 Kg
Pressure Range (locked cylinder).....	40-100 psi	3-7 bar
Temperature Range.....	-20°~180° F	-30°~80° C
Locking Force @ 80 PSI [5.5 bar].....	400 lbs	1779 N
Valve required to actuate.....	4-way, 2-position	

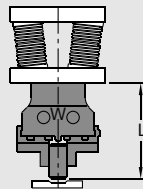
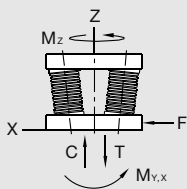


### UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

Dimensions are symmetrical about centerline	Third Angle Projection	All Dowel Holes are SF (Slip Fit). Locational Tolerance $\pm 0.0005^\circ$ or $[\pm 0.13\text{mm}]$	Metric Threads Course Pitch	<b>Imperial in.</b> 0.00 = $\pm 0.01$ 0.000 = $\pm 0.005$ 0.0000 = $\pm 0.0005$	<b>Metric [mm]</b> [0.] = $[\pm 0.25]$ [0.0] = $[\pm 0.13]$ [0.00] = $[\pm 0.13]$
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## Loading Information

## How to Order:



BASIC MODEL

ANTI-ROTATION

**RCW-200-12 - AR**

RCW SERIES

6.67

### Loading Capacity<sup>1</sup>

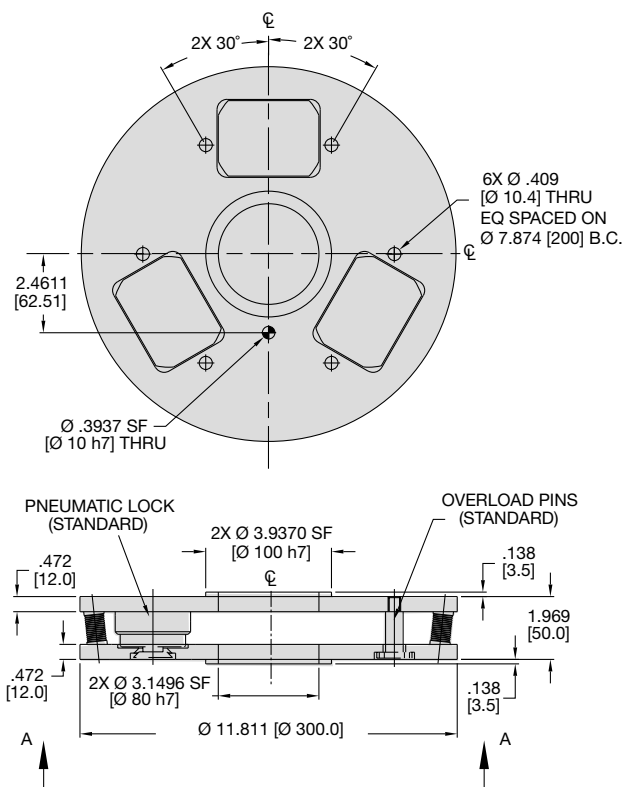
	Imperial	Metric
Maximum Force <b>F</b>	68 lbs.	300 N
Maximum Tension <b>T</b>	450 lbs.	2000 N
Maximum Compressive <b>C</b>	450 lbs.	2000 N
Maximum Moment <b>M<sub>x</sub></b>	709 in.-lbs.	80 Nm
Maximum Moment <b>M<sub>y</sub></b>	709 in.-lbs.	80 Nm
Maximum Moment <b>M<sub>z</sub></b>	709 in.-lbs.	80 Nm
Maximum Payload <b>W</b>	115 lbs.	52 Kg

### Stiffness Information

	Imperial	Metric
Torsional Stiffness about <b>Z</b> axis	1632 in-lbs/deg	184 N-m/deg
Lateral Stiffness ( <b>X</b> and <b>Y</b> axis)	570 lbf/in	100 N/mm
Axial Stiffness (compression <b>Z</b> axis)	36544 lbf/in	6400 N/mm
Insertion Point <b>L Max</b>	16 in.	400 mm



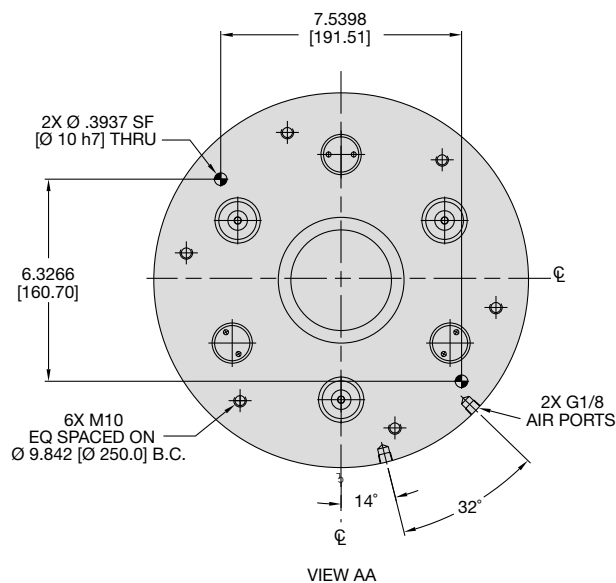
# COMPLIANCE WRIST RCW-300-12



## Specifications

## RCW-300-12

Maximum Payload.....	330 lbs	150 Kg
Misalignment Capability.....	±0.098 in.	±2.5 mm
Maximum Rotation.....	±1°	±1°
Weight.....	12.8 lbs.	5.8 Kg
Pressure Range (locked cylinder).....	40-100 psi	3-7 bar
Temperature Range.....	-20°~180° F	-30°~80° C
Locking Force @ 80 PSI [5.5 bar].....	400 lbs	1779 N
Valve required to actuate.....	4-way, 2-position	



UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

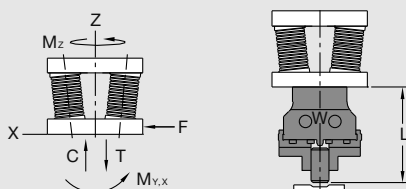
				<b>Imperial in.</b>	<b>Metric [mm]</b>
Dimensions are symmetrical about centerline	Third Angle Projection	All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or [±.013mm]	Metric Threads Course Pitch	0.00 = ±.01 0.000 = ±.005 0.0000 = ±.0005	[0.] = [±.25] [0.0] = [±.13] [0.00] = [±.013]

RCW SERIES

6.68

## Loading Information

## How to Order:



BASIC MODEL

**RCW-300-12**

### Loading Capacity<sup>1</sup>

	Imperial	Metric
Maximum Force <b>F</b>	90 lbs.	400 N
Maximum Tension <b>T</b>	450 lbs.	2000 N
Maximum Compressive <b>C</b>	450 lbs.	2000 N
Maximum Moment <b>M<sub>x</sub></b>	880 in.-lbs.	100 Nm
Maximum Moment <b>M<sub>y</sub></b>	880 in.-lbs.	100 Nm
Maximum Moment <b>M<sub>z</sub></b>	880 in.-lbs.	100 Nm
Maximum Payload <b>W</b>	330 lbs.	150 Kg

### PNEUMATIC ACCESSORIES

Standard Seal Repair Kit

ORDER #

SLKT-226

QTY/UNIT

3

### Stiffness Information

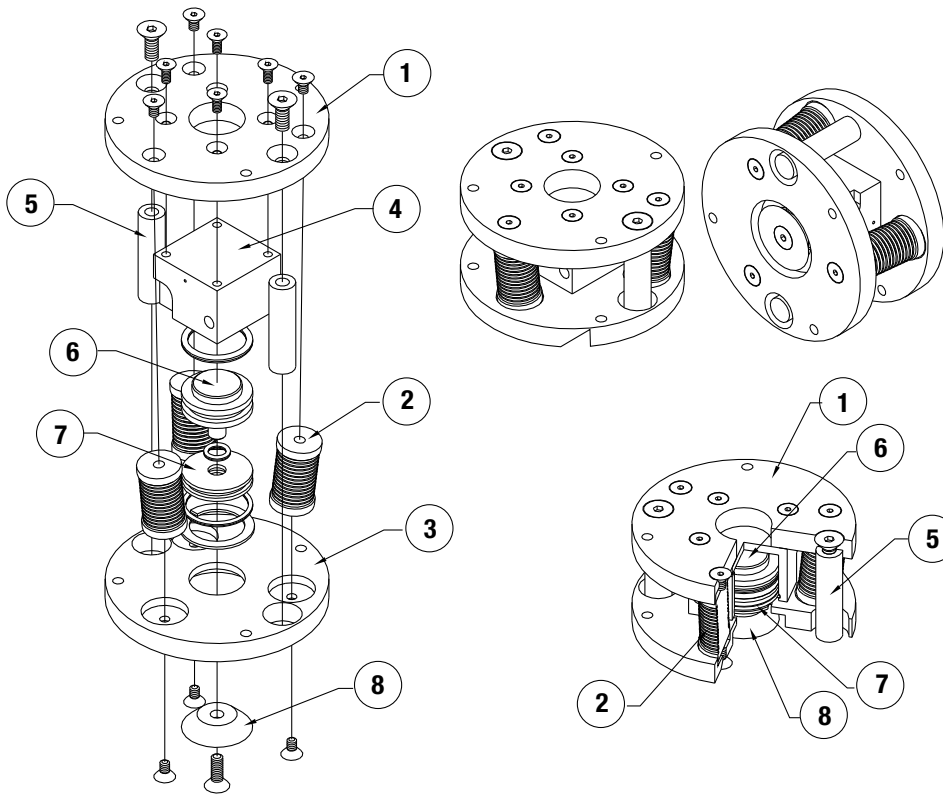
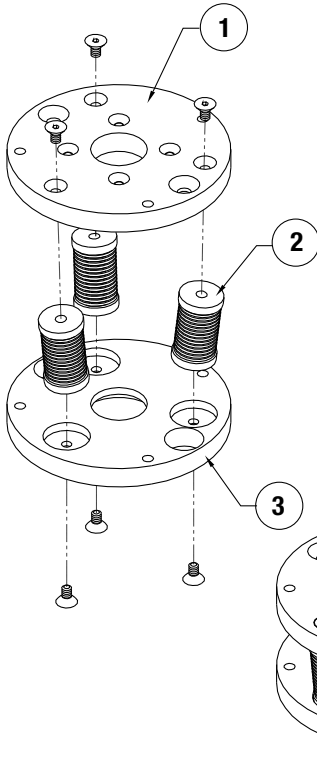
	Imperial	Metric
Torsional Stiffness about <b>Z</b> axis	3742 in.-lbs/deg	422 N-m/deg
Lateral Stiffness ( <b>X</b> and <b>Y</b> axis)	915 lbf/in	160 N/mm
Axial Stiffness (compression <b>Z</b> axis)	36545 lbf/in	6400 N/mm
Insertion Point <b>L Max</b>	24 in.	600 mm

**Item Qty Name**

01	1	Top Plate
02	x	Flexible Element
03	1	Bottom Plate
04	1	Locking Cylinder
05	1	Overload Pin
06	1	Piston
07	1	Cap
08	1	Centering Cone

**NOTE:** Contact the Robohand Sales Department for a complete spare parts list with order numbers and prices.

**SK Seal Repair Kit Order #'s**  
See Product Data Sheets



RCW SERIES  
6.69

SK Seal Kit Items	THREAD LOCKER Thread Locker	KRYTOX™ Lubricant	O Lightweight Machine Oil	G Teflon® Based Grease	GLUE Super Bonder	Third Angle Projection

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[www.comoso.com](http://www.comoso.com)

# Lateral Compliance Device – Pneumatic Centering



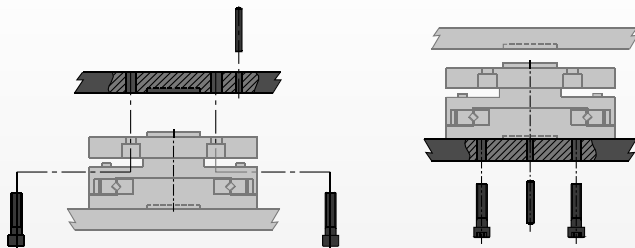
## Robotic applications:

For inserting components that may be laterally misaligned with respect to mating parts. Reduces part jamming which could transmit excessive forces to the robot. Robot and tool side mounting patterns are made to DIN robot mounting standards.

## Automation applications:

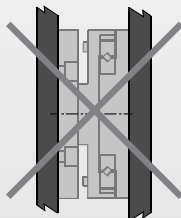
For insertion applications where part positioning may be less than precise. Compliance in lateral directions allows this device to compensate for part placing inaccuracies. Reduces jamming of mating components.

## Mounting Information:



Robot side has counter bored holes for mounting with a dowel hole and raised boss for location

The tool side has tapped holes for mounting and a pilot hole and dowel hole for positioning



**Not recommended** in horizontal axis applications where the weight attached to the tool side can deflect the device

## Technical Specifications:

### Pneumatic Specifications

Pressure Operating Range  
Cylinder Type  
Dynamic Seals  
Valve Required to Operate

<b>Imperial</b>	<b>Metric</b>
40-100 psi	3-7 bar
Double Acting	
Buna-N	
4-way, 2-position	

### Air Quality Requirements

Air Filtration  
Air Lubrication  
Air Humidity

40 Micron or Better  
Not Necessary\*  
Low Moisture Content (dry)

### Temperature Operating Range

Buna-N Seals (standard)	-20°~180° F	-30°~80° C
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### Maintenance Specifications<sup>†</sup>

Expected Life  
Normal Application  
w/ Preventative Maintenance

5 million cycles  
10+ million cycles\*

### Application Restrictions

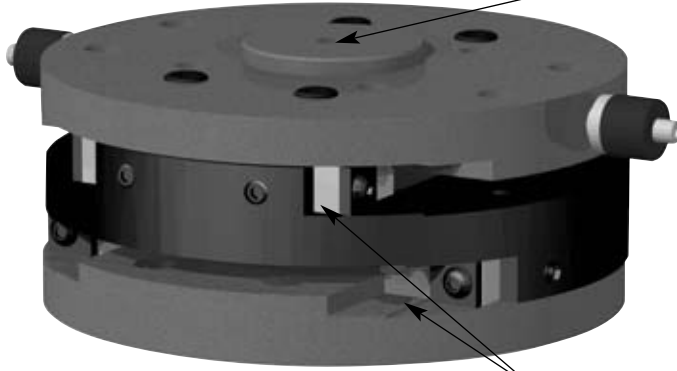
- Dirty or gritty environments
- Machining operations generating chips
- Environments with loose particulate

\*Addition of lubrication will greatly increase service life  
† See Maintenance Section

## Product Features

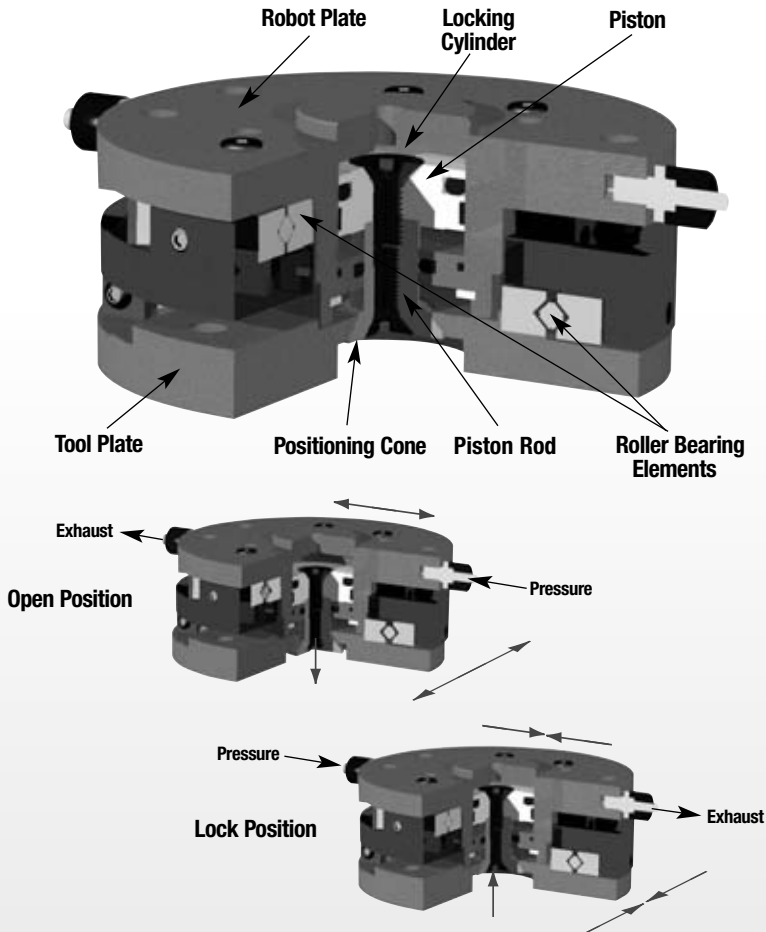
**Hard Coat Anodize**  
Anodized aluminum components

**Locking Cylinder**  
Locking cylinder creates a rigid connection between robot and tool side



**Crossed Roller Bearing**  
Crossed roller bearings eliminate side forces generated by placing misaligned components

## Operating Principle



- The two halves of this device are connected by two pairs of crossed roller bearing slides that are perpendicular to one another.
- In the unlocked position, relative motion can occur independently between the two halves in both the X & Y directions.
- In the locked position, the tool half is brought back on center with respect to the robot half with the use of cone centering which is actuated by the built in air cylinder.

## Style-KA Lateral Alignment

**Size -80R** Style: KA-80R  
Max. Payload: 2 lb 1 Kg  
Max. Misalignment: 0.08 in. 2mm  
Weight: 1.10 lb 0.50 Kg



See Page **6.72**

## Style-KA Lateral Alignment

**Size -100** Style: KA-100  
Max. Payload: 5 lb 2.5 Kg  
Max. Misalignment: 0.08 in. 2mm  
Weight: 1.80 lb 0.82 Kg



See Page **6.73**

## Style-KA Lateral Alignment

**Size -125** Style: KA-125  
Max. Payload: 10 lb 5 Kg  
Max. Misalignment: 0.12 in. 3.00mm  
Weight: 4.4 lb 2.0 Kg



See Page **6.74**

## Style-KA Lateral Alignment

**Size -160** Style: KA-160  
Max. Payload: 25 lb 11 Kg  
Max. Misalignment: 0.15 in. 4mm  
Weight: 7.0 lb 3.2 Kg



See Page **6.75**

## Style-KA Lateral Alignment

**Size -200** Style: KA-200  
Max. Payload: 90 lb 40 Kg  
Max. Misalignment: 0.47 in. 12 mm  
Weight: 16.5 lb 7.5 Kg



See Page **6.76**

## Style-KA Lateral Alignment

**Size -300** Style: KA-300  
Max. Payload: 440 lb 200 Kg  
Max. Misalignment: 0.98 in. 25 mm  
Weight: 115 lb 52 Kg

See Page **6.77**

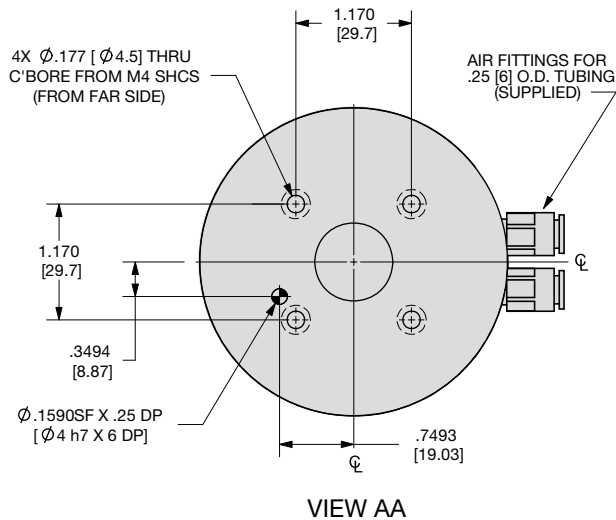
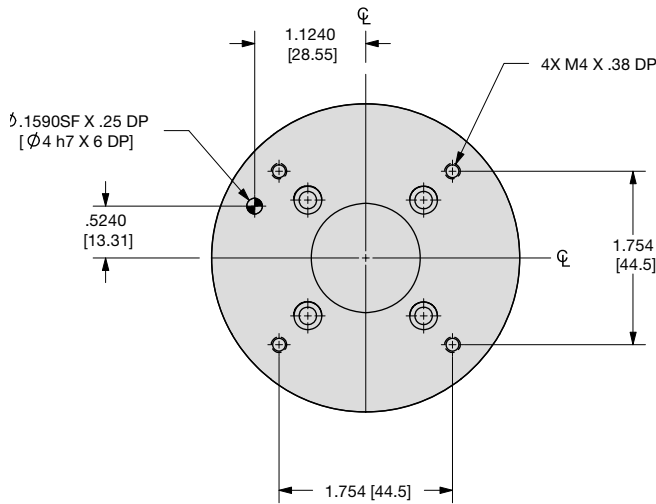
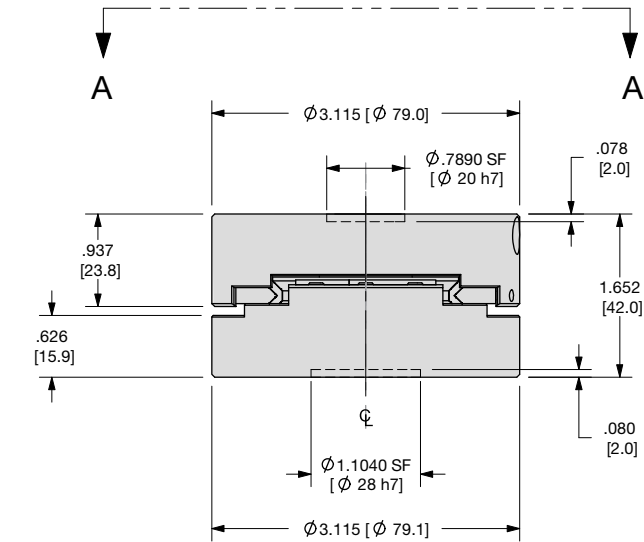
# LATERAL ALIGNMENT KA-80R PNEUMATIC CENTERING SERIES



## KA-80R

### Specifications

Maximum Payload.....	2 lbs	1 Kg
Misalignment Capability.....	±0.08 in.	±2 mm
Weight.....	1.1 lb	0.50 Kg
Pressure Range (locked cylinder).....	40-100 psi	3-7 bar
Temperature Range.....	-20°~180° F	-30°~80° C
Locking Force @ 80 PSI [5.5 bar].....	30 lbs	133 N
Repeatability.....	±0.001 in.	±0.03 mm
Valve required to actuate.....	4-way, 2-position	



UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

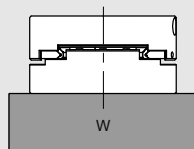
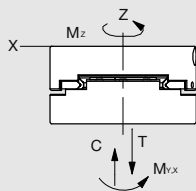
Dimensions are symmetrical about centerline	Third Angle Projection	All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or [±.013mm]	Metric Threads Course Pitch	<b>Imperial in.</b> 0.00 = ±.01 0.000 = ±.005 0.0000 = ±.0005	<b>Metric [mm]</b> [0.] = [±.25] [0.0] = [±.13] [0.00] = [±.013]
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KA SERIES

6.72

## Loading Information

## How to Order:



BASIC MODEL

**KA-80R**

### Loading Capacity

	Imperial	Metric
Maximum Tensile <b>T</b>	45 lb	200 N
Maximum Compressive <b>C</b>	45 lb	200 N
Maximum Moment <b>M<sub>x</sub></b>	26 in.-lb	3.0 Nm
Maximum Moment <b>M<sub>y</sub></b>	26 in.-lb	3.0 Nm
Maximum Moment <b>M<sub>z</sub></b>	26 in.-lb	3.0 Nm
Maximum Payload <b>W</b>	2.0 lb	1 Kg

### PNEUMATIC ACCESSORIES

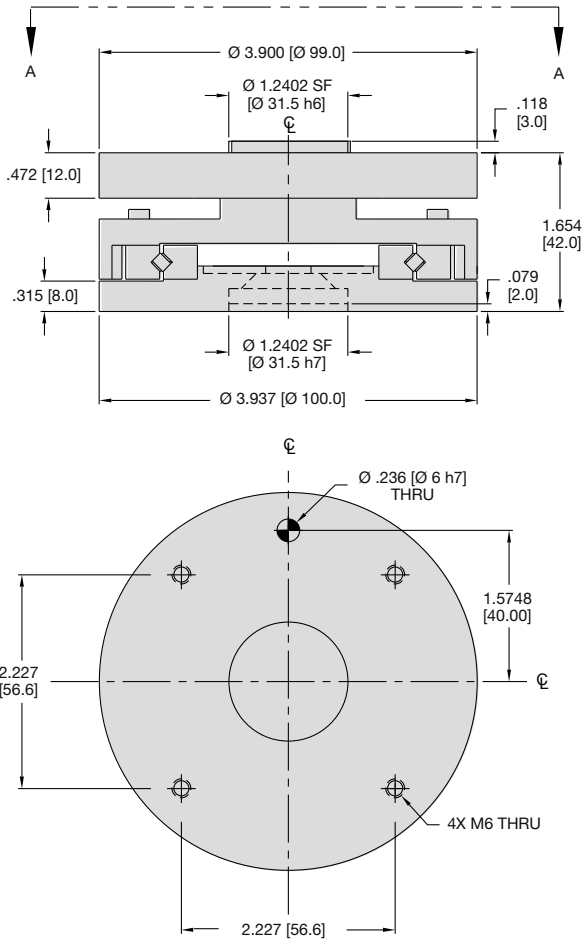
Standard Seal Repair Kit	<b>SLKT-213</b>	<b>1</b>
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Please see back cover for DE-STA-CO Global Locations. [www.destaco.com](http://www.destaco.com)

[www.comoso.com](http://www.comoso.com)

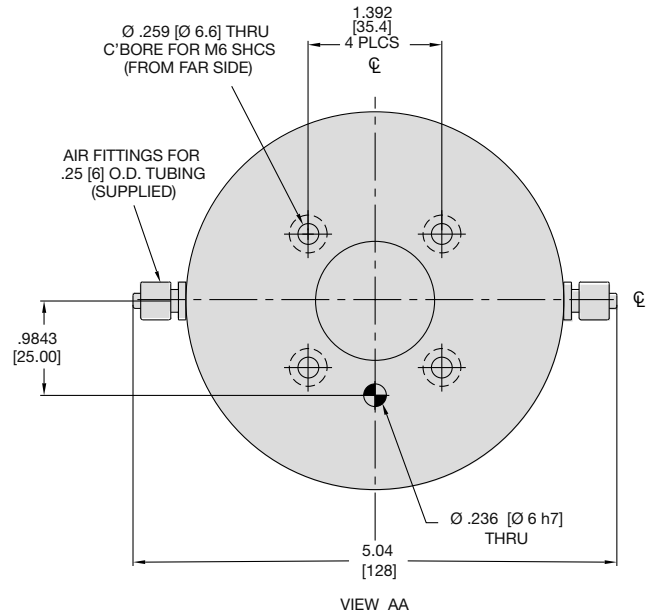


# LATERAL ALIGNMENT KA-100 PNEUMATIC CENTERING SERIES



## Specifications

	KA-100	
Maximum Payload.....	5 lbs	2.5 Kg
Misalignment Capability.....	±0.08 in.	±2 mm
Weight.....	1.80 lb	0.82 Kg
Pressure Range (locked cylinder).....	40-100 psi	3-7 bar
Temperature Range.....	-20°~180° F	-30°~80° C
Locking Force @ 80 PSI [5.5 bar].....	70 lbs	311 N
Repeatability.....	±0.001 in.	±0.03 mm
Valve required to actuate.....	4-way, 2-position	



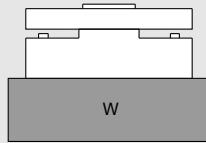
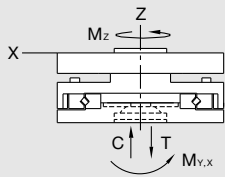
UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

Symbol	Imperial in.	Metric [mm]
$\phi$	0.00 = ±.01	[0.] = [±.25]
$\phi$	0.000 = ±.005	[0.0] = [±.13]
$\phi$	0.0000 = ±.0005	[0.00] = [±.013]

$\phi$  Dimensions are symmetrical about centerline  
 Third Angle Projection  
 All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or (±.013mm)  
 Metric Threads Course Pitch

## Loading Information

## How to Order:



### Loading Capacity

	Imperial	Metric
Maximum Tensile <b>T</b>	90 lb	400 N
Maximum Compressive <b>C</b>	90 lb	400 N
Maximum Moment <b>M<sub>x</sub></b>	265 in.-lb	30.0 Nm
Maximum Moment <b>M<sub>y</sub></b>	265 in.-lb	30.0 Nm
Maximum Moment <b>M<sub>z</sub></b>	265 in.-lb	30.0 Nm
Maximum Payload <b>W</b>	5 lb	2.5 Kg

### PNEUMATIC ACCESSORIES

Standard Seal Repair Kit

ORDER #

SLKT-132

QTY/UNIT

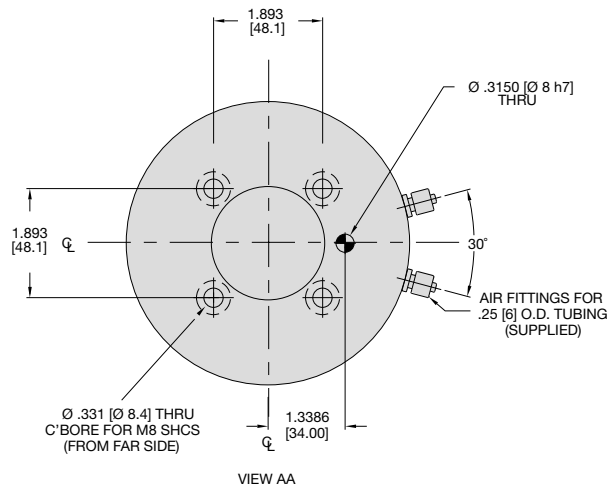
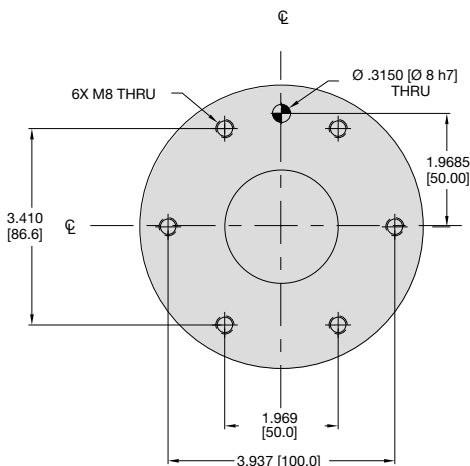
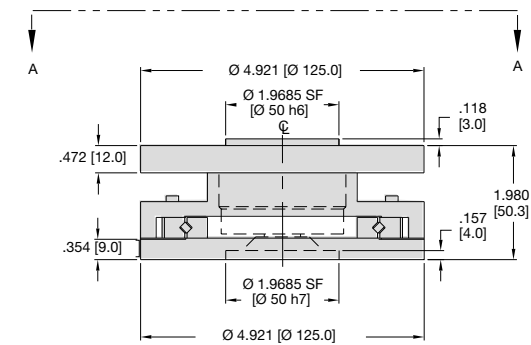
1

KA SERIES

6.73



# LATERAL ALIGNMENT KA-125 PNEUMATIC CENTERING SERIES



## Specifications

## KA-125

Maximum Payload.....	10 lbs	5 Kg
Misalignment Capability.....	±0.12 in.	±3 mm
Weight.....	4.4 lb	2.0 Kg
Pressure Range (locked cylinder).....	40-100 psi	3-7 bar
Temperature Range.....	-20°~180° F	-30°~80° C
Locking Force @ 80 PSI [5.5 bar].....	120 lbs	533 N
Repeatability.....	±0.001 in.	±0.03 mm
Valve required to actuate.....	4-way, 2-position	

KA SERIES

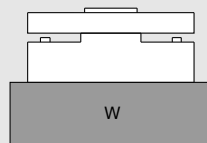
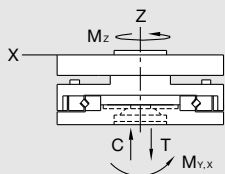
6.74

UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

Dimensions are symmetrical about centerline	Third Angle Projection	All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or [±.013mm]	Metric Threads Course Pitch	<b>Imperial in.</b> 0.00 = ±.01 0.000 = ±.005 0.0000 = ±.0005	<b>Metric [mm]</b> [0.] = [±.25] [0.0] = [±.13] [0.00] = [±.013]
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## Loading Information

## How to Order:



BASIC MODEL

**KA-125**

### Loading Capacity

	Imperial	Metric
Maximum Tensile <b>T</b>	180 lb	801 N
Maximum Compressive <b>C</b>	180 lb	801 N
Maximum Moment <b>M<sub>x</sub></b>	530 in.-lb	59.9 Nm
Maximum Moment <b>M<sub>y</sub></b>	530 in.-lb	59.9 Nm
Maximum Moment <b>M<sub>z</sub></b>	530 in.-lb	59.9 Nm
Maximum Payload <b>W</b>	10 lb	5 Kg

### PNEUMATIC ACCESSORIES

Standard Seal Repair Kit

ORDER #

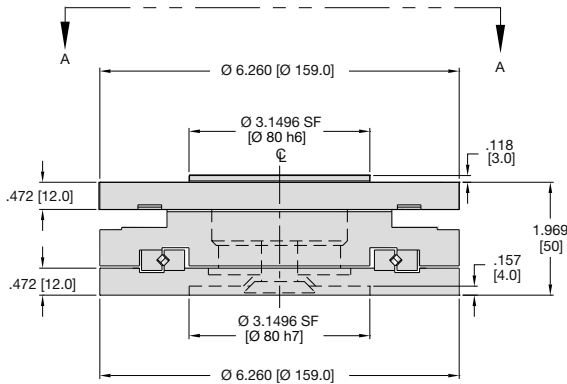
**SLKT-133**

QTY/UNIT

**1**

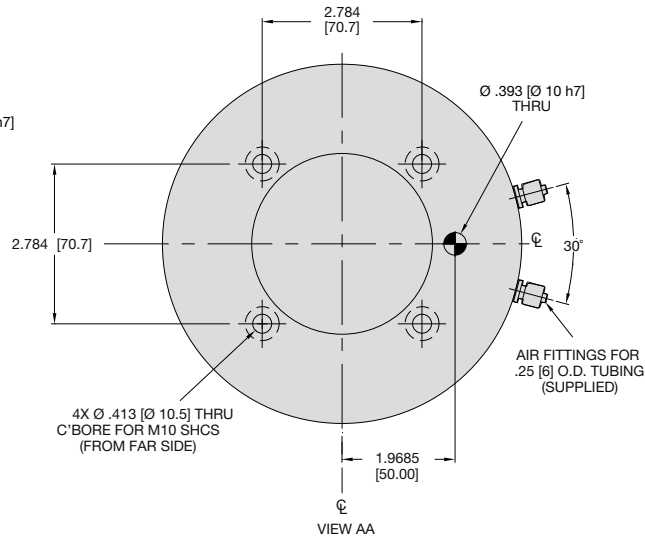
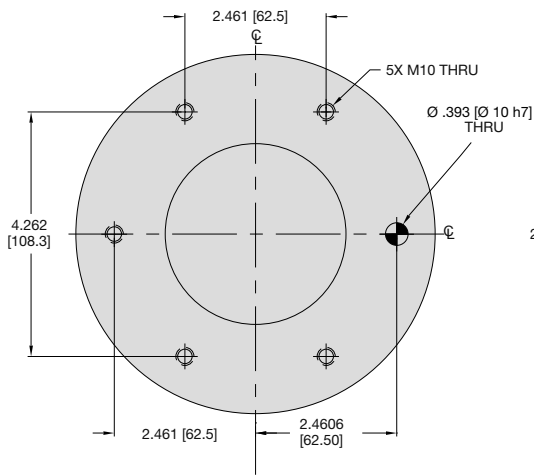


# LATERAL ALIGNMENT KA-160 PNEUMATIC CENTERING SERIES



### Specifications

	KA-160	
Maximum Payload.....	25 lbs	11 Kg
Misalignment Capability .....	±0.15 in.	±4 mm
Weight .....	7.0 lb	3.2 Kg
Pressure Range (locked cylinder).....	40-100 psi	3-7 bar
Temperature Range.....	-20°~180° F	-30°~80° C
Locking Force @ 80 PSI [5.5 bar] .....	120 lbs	533 N
Repeatability.....	±0.001 in.	±0.03 mm
Valve required to actuate .....	4-way, 2-position	



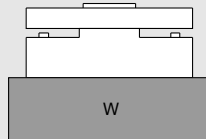
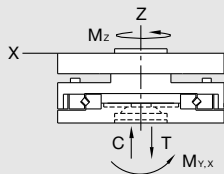
UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

Imperial in.	Metric [mm]
0.00 ± .01	[0.] = [±.25]
0.000 ± .005	[0.0] = [±.13]
0.0000 ± .0005	[0.00] = [±.013]

Dimensions are symmetrical about centerline  
 Third Angle Projection  
 All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or [±.013mm]  
 Metric Threads Course Pitch

## Loading Information

## How to Order:



BASIC MODEL

**KA-160**

PNEUMATIC ACCESSORIES  
Standard Seal Repair Kit

ORDER #  
**SLKT-134**

QTY/UNIT  
**1**

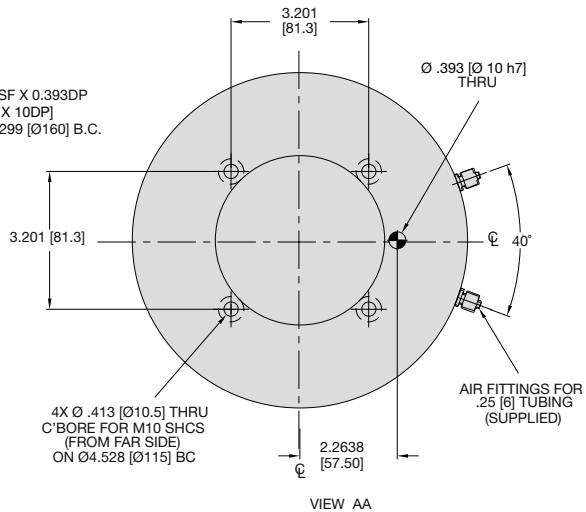
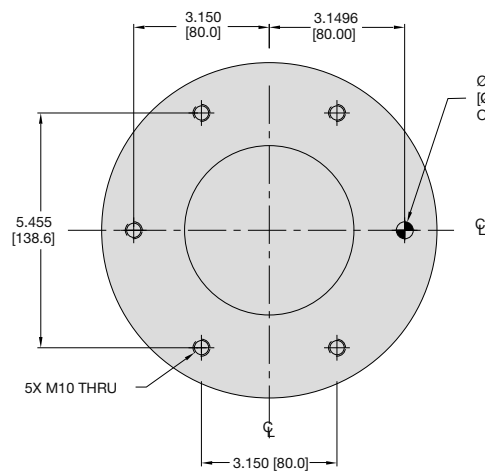
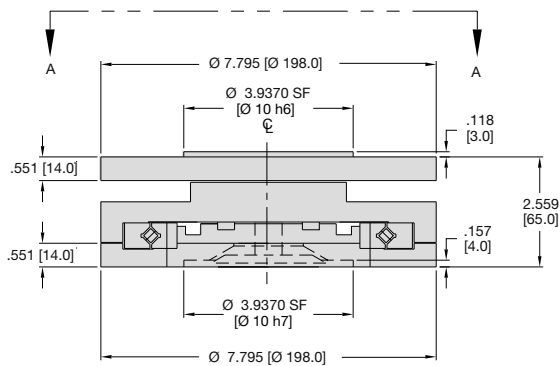
### Loading Capacity

	Imperial	Metric
Maximum Tensile <b>T</b>	225 lb	1001 N
Maximum Compressive <b>C</b>	225 lb	1001 N
Maximum Moment <b>M<sub>x</sub></b>	885 in.-lb	100.0 Nm
Maximum Moment <b>M<sub>y</sub></b>	885 in.-lb	100.0 Nm
Maximum Moment <b>M<sub>z</sub></b>	885 in.-lb	100.0 Nm
Maximum Payload <b>W</b>	25 lb	11 Kg

KA SERIES

6.75

# LATERAL ALIGNMENT KA-200 PNEUMATIC CENTERING SERIES



## Specifications

## KA-200

Maximum Payload.....	90 lbs	40 Kg
Misalignment Capability.....	±0.47 in.	±12 mm
Weight.....	18.5 lb	7.5 Kg
Pressure Range (locked cylinder).....	40-100 psi	3-7 bar
Temperature Range.....	-20°~180° F	-30°~80° C
Locking Force @ 80 PSI [5.5 bar].....	400 lbs	1779 N
Repeatability.....	±0.001 in.	±0.03 mm
Valve required to actuate.....	4-way, 2-position	

KA SERIES

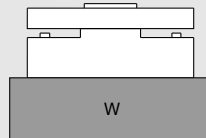
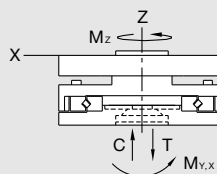
6.76

## UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

Dimensions are symmetrical about centerline	Third Angle Projection	All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or [±.013mm]	Metric Threads Course Pitch	<b>Imperial in.</b> 0.00 = ±.01 0.000 = ±.005 0.0000 = ±.0005	<b>Metric [mm]</b> [0.] = [±.25] [0.0] = [±.13] [0.00] = [±.013]
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## Loading Information

## How to Order:



## BASIC MODEL

**KA-200**

## PNEUMATIC ACCESSORIES

Standard Seal Repair Kit

## ORDER #

**SLKT-135**

## QTY/UNIT

**1**

## Loading Capacity

	Imperial	Metric
Maximum Tensile <b>T</b>	360 lb	1601 N
Maximum Compressive <b>C</b>	360 lb	1601 N
Maximum Moment <b>M<sub>x</sub></b>	1327 in.-lb	150.0 Nm
Maximum Moment <b>M<sub>y</sub></b>	1327 in.-lb	150.0 Nm
Maximum Moment <b>M<sub>z</sub></b>	1327 in.-lb	150.0 Nm
Maximum Payload <b>W</b>	90 lb	40 Kg

Please see back cover for DE-STA-CO Global Locations. [www.destaco.com](http://www.destaco.com)

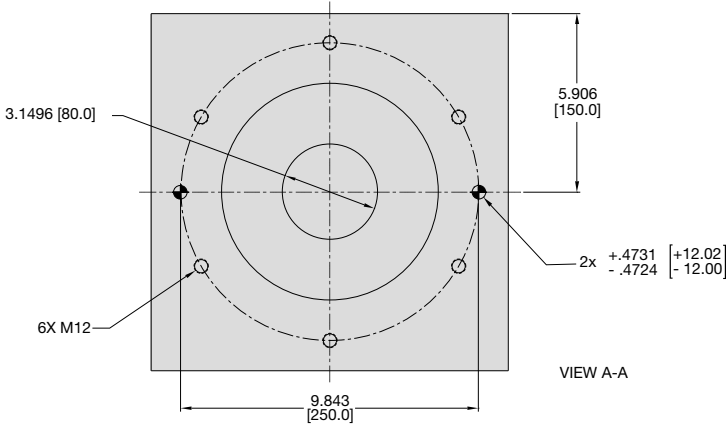
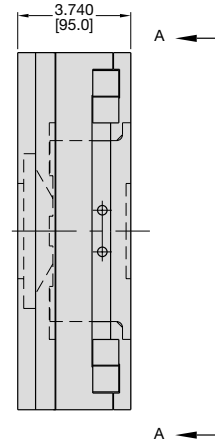
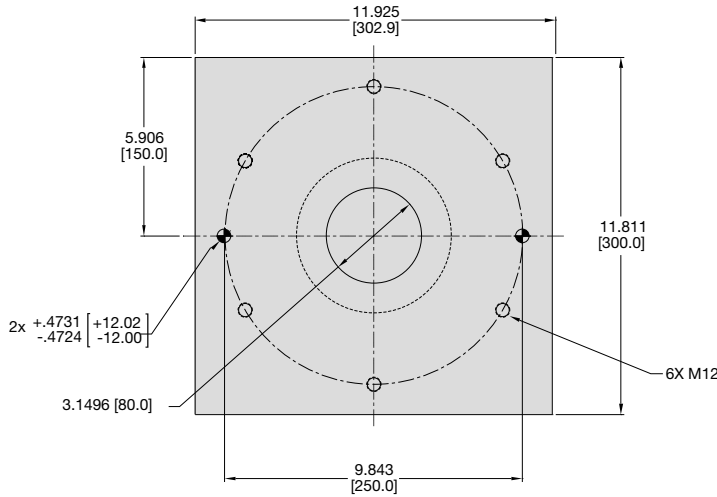
[www.comoso.com](http://www.comoso.com)



# LATERAL ALIGNMENT KA-300 PNEUMATIC CENTERING SERIES

## Specifications

	KA-300	
Maximum Payload.....	440 lbs	200 Kg
Misalignment Capability.....	±0.98 in.	±25 mm
Weight.....	115 lb	52 Kg
Pressure Range (locked cylinder).....	40-100 psi	3-7 bar
Temperature Range.....	-20°~180° F	-30°~80° C
Locking Force @ 80 PSI [5.5 bar].....	725 lbs	3224 N
Repeatability.....	±0.001 in.	±0.03 mm
Valve required to actuate .....	4-way, 2-position	



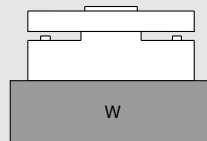
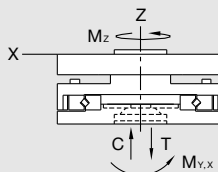
VIEW A-A

UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

Dimensions are symmetrical about centerline	Third Angle Projection	All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or [±.013mm]	Metric Threads Course Pitch	<b>Imperial in.</b> 0.00 = ±.01 0.000 = ±.005 0.0000 = ±.0005	<b>Metric [mm]</b> [0.] = [±.25] [0.0] = [±.13] [0.00] = [±.013]
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## Loading Information

## How to Order:



## BASIC MODEL

# KA-300

### Loading Capacity

	Imperial	Metric
Maximum Tensile <b>T</b>	900 lb	4003 N
Maximum Compressive <b>C</b>	900 lb	4003 N
Maximum Moment <b>M<sub>x</sub></b>	2655 in.-lb	300.0 Nm
Maximum Moment <b>M<sub>y</sub></b>	2655 in.-lb	300.0 Nm
Maximum Moment <b>M<sub>z</sub></b>	2655 in.-lb	300.0 Nm
Maximum Payload <b>W</b>	440 lb	200 Kg

### PNEUMATIC ACCESSORIES

Standard Seal Repair Kit

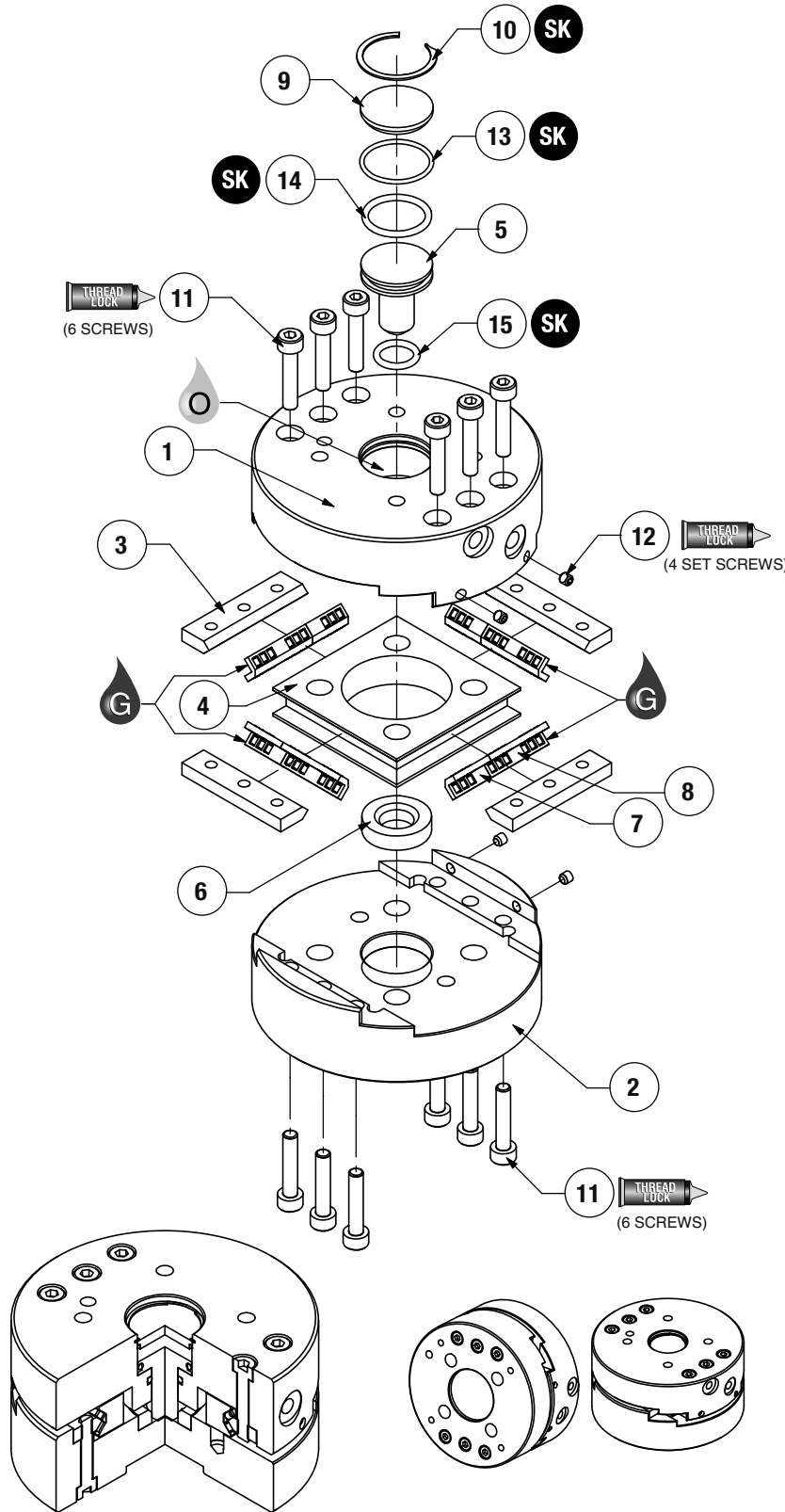
ORDER #

**SLKT-136**

QTY/UNIT

**1**

# KA-80R Series Exploded View



## Item Qty Name

01	1	Robot Half
02	1	Tool Half
03	4	Way
04	1	Center Rail
05	1	Piston
06	1	Bushing
07	4	Roller Cage Half
08	4	Roller Cage Full
09	1	Cap
10	1	Retaining Ring
11	12	Socket Head Screw
12	4	Set Screw
13	1	O-Ring
14	1	O-Ring
15	1	O-Ring

**NOTE:** Contact the Robohand Sales Department for a complete spare parts list with order numbers and prices.

### Preload Adjustment

- 1) Loosen the six socket head cap screws on the robot half (1) about 1/2 turn.
- 2) Seat the way (3) that is furthest from the preload set screws (4) in position and using loctite on the threads, tighten those three screws to fasten the way in place.
- 3) Evenly advance the two preload set screws to a point where there is no play in the robot half.
- 4) Using loctite on the threads, tighten the remaining three screws to fasten the way (3) in place. **NOTE:** There is a possibility that when the second set of screws are tightened, the preload will increase - if this happens, loosen the three screws again and back off slightly and evenly on the two preload adjustment set screws.
- 5) Follow 1 thru 4 again to adjust the preload for the tool half (2).
- 6) Be sure that the bearings glide freely - if the unit becomes choppy then the preload might be too tight.
- 7) As a check to see that the preload has been set properly, you should be able to push on the end of one of the nylon bearing cages with about 3 pounds, and that half will move without the bearing skidding.

**SK Seal Repair Kit Order #'s See Product Data Sheets**

KA SERIES

6.78



Seal Kit Items



Thread Locker



Krytox™ Lubricant



Lightweight Machine Oil



Teflon® Based Grease



Super Bonder



Third Angle Projection

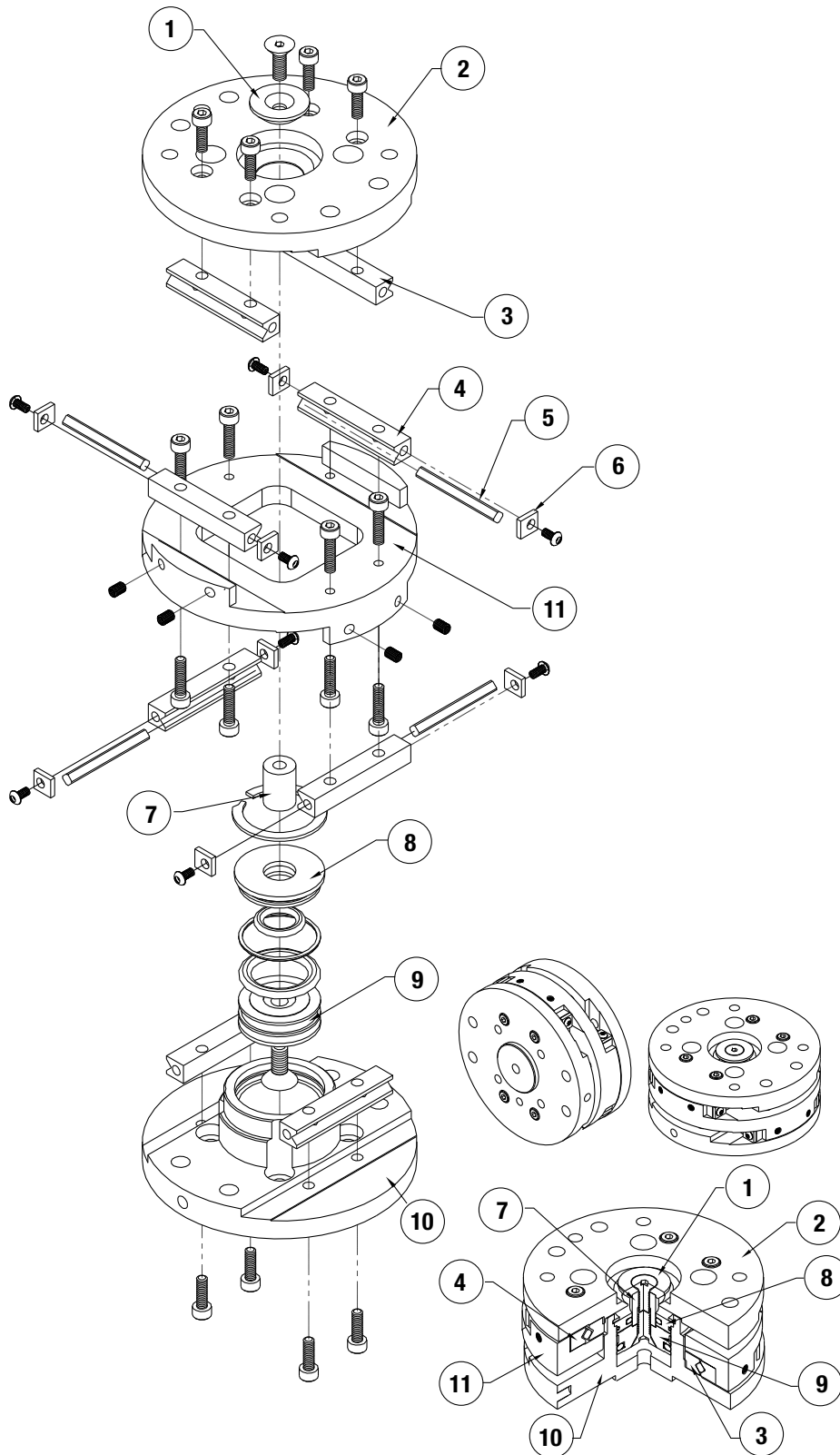


# KA-100~300 Series Exploded View

Item	Qty	Name
01	1	Centering Cone
02	1	Top Plate
03	4	Rail, Fixed
04	4	Rail, Moveable
05	4	Bearings
06	8	Stop
07	1	Shaft
08	1	Cap
09	1	Piston
10	1	Bottom Plate
11	1	Center Plate

**NOTE:** Contact the Robohand Sales Department for a complete spare parts list with order numbers and prices.

**SK Seal Repair Kit Order #'s See Product Data Sheets**



KA SERIES  
6.79

<p>SK Seal Kit Items</p>	<p>THREAD LOCKER Thread Locker</p>	<p>KRYTOX Krytox™ Lubricant</p>	<p>O Lightweight Machine Oil</p>	<p>G Teflon® Based Grease</p>	<p>GLUE Super Bonder</p>	<p>Third Angle Projection</p>
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Please see back cover for DE-STA-CO Global Locations. [www.destaco.com](http://www.destaco.com)

[www.comoso.com](http://www.comoso.com)

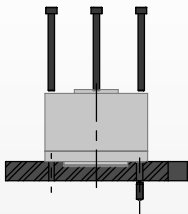


# Cylindrical Horizontal Compliance Devices

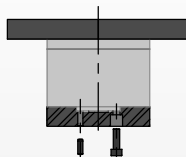
- Flexibility of the tool:**  
 Cylindrical Horizontal compliance devices are used for inserting components that may be misaligned with the tool. They allow a horizontal displacement that compensates for part placing inaccuracies.
- For precision applications:**  
 The use of high quality components allow to get centering repeatability from 0.02mm and angular repeatability from +/- 10°.
- Harsh environments:**  
 The enclosed design of this series allows them to be used in harsh environments.
- Spring assist:**  
 Due to the optional spring assist, compliance may be used in single acting mode.

## Mounting Information:

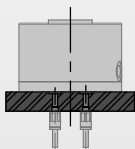
It is recommended to use the compliance in the vertical axis only



The compliance is located using a pilot boss and a dowel pin and assembled using 4 or 6 through body screws



Tooling is located using a centering and a dowel pin and assembled using 4 screws



Compliance can be operated using top manifold airport

## Technical Specifications:

Pneumatic Specifications	Imperial	Metric
Pressure Operating Range	30-100 psi	2-7 bar
Cylinder Type	Double acting or double acting spring assist or single acting spring return	
Dynamic seals	Internally lubricated Buna-N seals	
Valves Required to Operate	4-way, 2 position	
Double Acting	3 way, 2 position	
Single Acting (-RL or -RA option)		
<b>Air Quality Requirements</b>	40 Micron or Better	
Air Filtration	Not Necessary*	
Air Lubrication	Low Moisture Content (dry)	
Air Humidity		
<b>Temperature Operating Range</b>		
Joints Nitrile (standard)	-10°~180° F	-25°~80° C
<b>Maintenance Specifications**</b>		
Expected Life		
Normal Application	3 million cycles	
w/ Preventative Maintenance	6+ million cycles	
Field Repairable	Yes	
Seal Repair Kits Available	Yes	

\*Addition of lubrication will greatly increase service life  
 \*\*See Maintenance Section

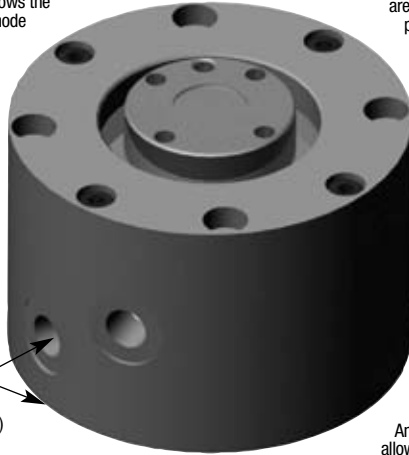
## Product Features

### Spring Assist

Spring assist option allows to center the tool (RA) or to release the tooling (RL). It also allows the use in single acting mode

### Quality Components

Made from aluminum alloy hard coat anodization. Main components are made of hardened and precision ground steel



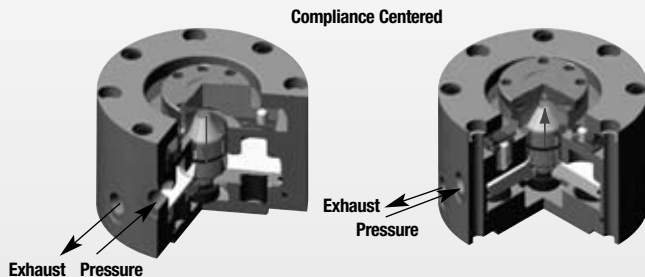
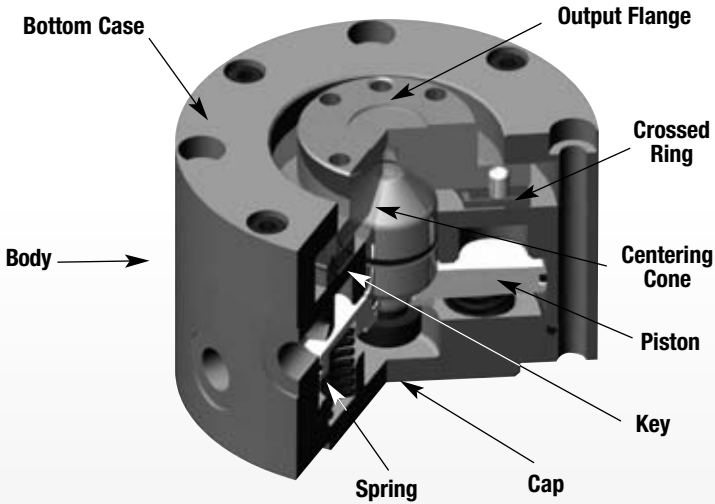
### Air Ports

Side or top airports (top ports require O-rings)

### Interface

An optional blank interface allows to easily machine adapt the tooling onto the compliance

## Operating Principle



- A double acting piston is linked to a centering cone with a male cone at its end.
- When actuated, the male cone goes into the female cone of the output flange.
- The two perpendicular slots of the crossed ring enables the tooling to keep its orientation.
- The spring assist option allows to center (RA) or to release (RL) the output flange in case of air failure. It also allows the use in single acting mode.

## Style - Cylindrical Horizontal Compliance Devices

### Size-50

Style:	CH-50
Misalignment Capability:	± 0.118 in. ± 3 mm
Maximum Payload:	4.4 lbs. 2 Kg
Weight:	0.43 lbs. 0.195 Kg

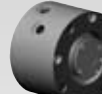


See Page **6.82**

## Style - Cylindrical Horizontal Compliance Devices

### Size-80

Style:	CH-80
Misalignment Capability:	± 0.197 in. ± 5 mm
Maximum Payload:	17.6 lbs. 8 Kg
Weight:	1.65 lbs. 0.750 Kg

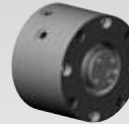


See Page **6.83**

## Style - Cylindrical Horizontal Compliance Devices

### Size-110

Style:	CH-110
Misalignment Capability:	± 0.256 in. ± 6.5 mm
Maximum Payload:	30.8 lbs. 14 Kg
Weight:	4.63 lbs. 2.10 Kg



See Page **6.84**

## Style - Cylindrical Horizontal Compliance Devices

### Size-140

Style:	CH-140
Misalignment Capability:	± 0.315 in. ± 8 mm
Maximum Payload:	66.12 lbs. 30 Kg
Weight:	9.50 lbs. 4.310 Kg



See Page **6.85**

## Style - Cylindrical Horizontal Compliance Devices

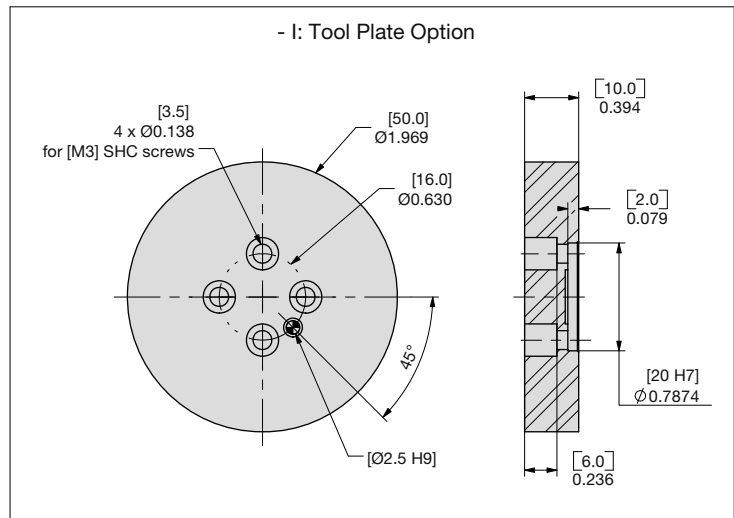
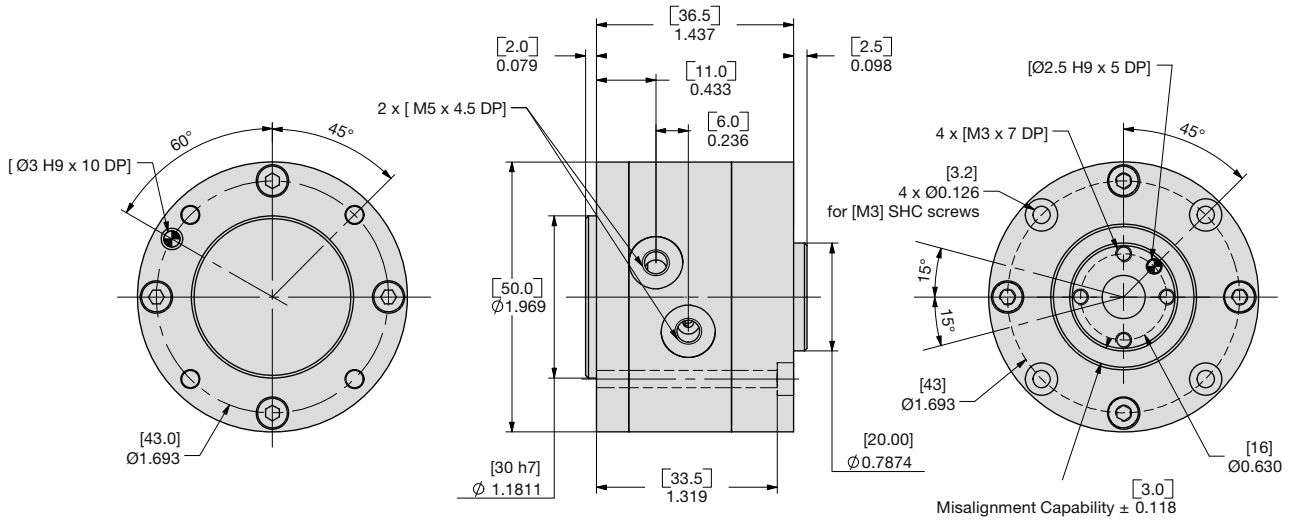
### Size-165

Style:	CH-165
Misalignment Capability:	± 0.472 in. ± 12 mm
Maximum Payload:	88.18 lbs. 40 Kg
Weight:	19.18 lbs. 8.7 Kg



See Page **6.86**

# CH-50 CYLINDRICAL HORIZONTAL COMPLIANCE DEVICES



## Specifications

	CH-50
Centering force @100psi [7 bar] .....	74 lbs. 332 N
Maximum payload .....	4.4 lbs. 2 Kg
Misalignment Capability .....	$\pm 0.12$ in. $\pm 3$ mm
Weight .....	0.43 lbs. 0.195 Kg
Pressure Range (without springs) .....	30-100 psi 2-7 bar
Pressure Range (with springs) .....	43-100 psi 3-7 bar
Cylinder bore .....	1.34 in. 34 mm
Displacement .....	0.32 in <sup>3</sup> 5.2 cm <sup>3</sup>
Actuation .....	0.07 sec. /0.07 sec
Repeatability .....	$\pm 0.0008$ in. $\pm 0.02$ mm
Angular repeatability .....	$\pm 10$ mn

CH SERIES

6.82

UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

Imperial in.	Metric [mm]
0.00 $\pm$ 0.01	[0.1] $\pm$ [0.25]
0.000 $\pm$ 0.005	[0.0] $\pm$ [0.13]
0.0000 $\pm$ 0.0005	[0.00] $\pm$ [0.13]

Dimensions are symmetrical about centerline  
 Third Angle Projection  
 All Dowel Holes are SF (Slip Fit). Locational Tolerance  $\pm 0.0005$ " or  $\pm 0.13$ mm  
 Metric Threads Course Pitch

## Loading Information

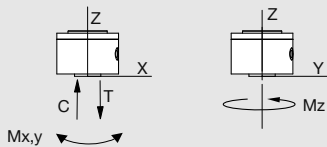
How to Order: (Order Accessories separately from Basic Model)

BASIC MODEL

TOOL PLATE

CH-50P - [ ] - I - [ ]

SPRING ASSIST MISALIGNMENT



SPRING RA Tool Recentering  
RL Tool Release

Leave Blank. No Spring Option (standard)

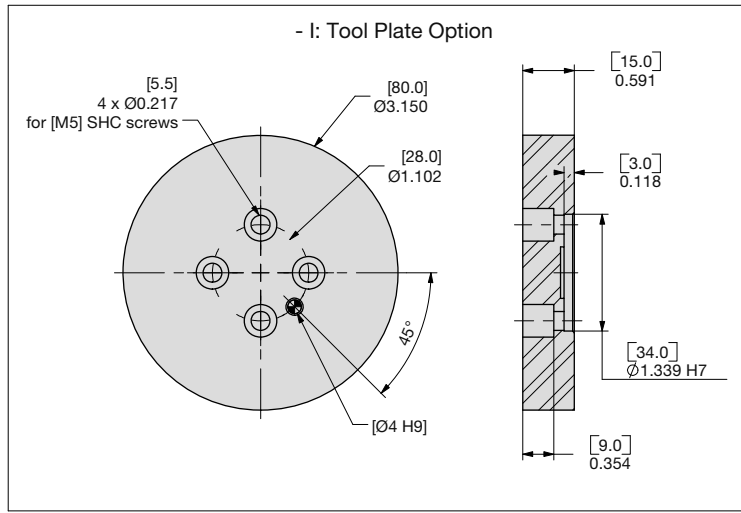
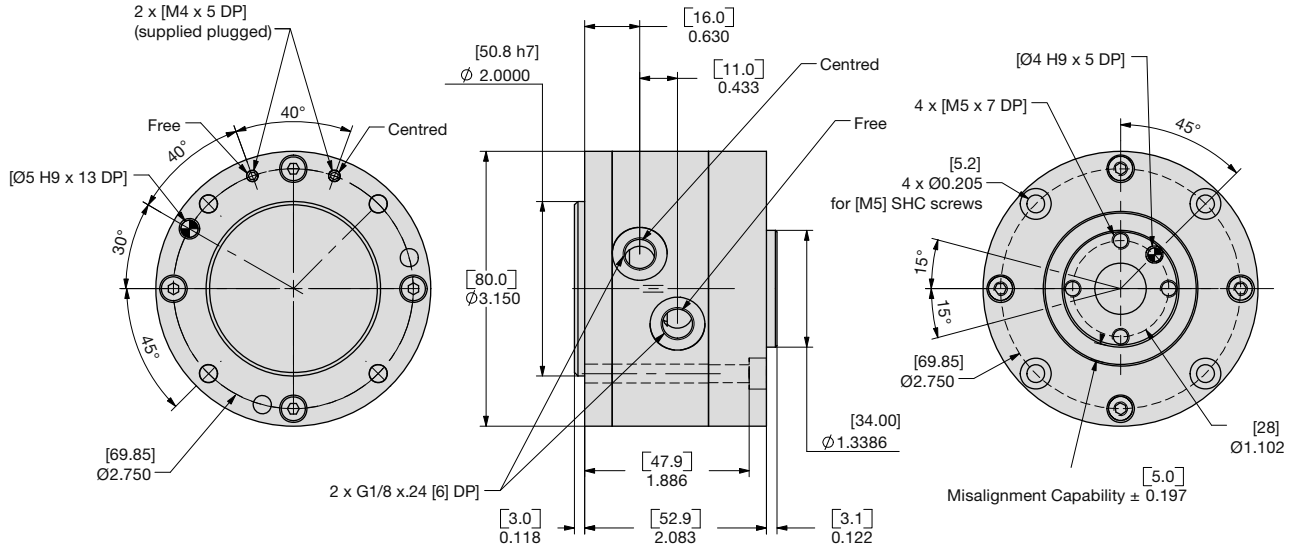
MISALIGNMENT XX Special Misalignment x 10 (ie: 15 is for +/- 1.5mm)  
Leave Blank. Standard Capability

## Loading Capacity

	Imperial	Metric
Maximum Tensile <b>T</b>	17 lbs.	75 N
Maximum Breakaway Compressive <b>C</b>	17 lbs.	75 N
Maximum Breakaway Moment <b>Mx</b>	17.7 in.-lbs.	2 Nm
Maximum Breakaway Moment <b>My</b>	17.7 in.-lbs.	2 Nm
Maximum Breakaway Moment <b>Mz</b>	8.8 in.-lbs.	1 Nm

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[www.comoso.com](http://www.comoso.com)



### Specifications

	CH-80	
Centering force @100psi [7 bar] .....	232 lbs.	1035 N
Maximum payload.....	17.6 lbs.	8 Kg
Misalignment Capability.....	±0.20 in.	±5 mm
Weight.....	1.65 lbs.	0.750 Kg
Pressure Range (without springs).....	30-100 psi	2-7 bar
Pressure Range (with springs).....	60-100 psi	4-7 bar
Cylinder bore.....	2.37 in.	60 mm
Displacement.....	1.64 in <sup>3</sup>	26.8 cm <sup>3</sup>
Actuation.....	0.08 sec. /0.08 sec.	
Repeatability.....	±0.0008 in.	±0.02 mm
Angular repeatability.....		±10mn

UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

Imperial in.	Metric [mm]
0.00 ± .01	[0.1] = [±.25]
0.000 ± .005	[0.0] = [±.13]
0.0000 ± .0005	[0.00] = [±.013]

Dimensions are symmetrical about centerline  
 Third Angle Projection  
 All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or [±.013mm]  
 Metric Threads Course Pitch

## Loading Information

## How to Order: (Order Accessories separately from Basic Model)

BASIC MODEL

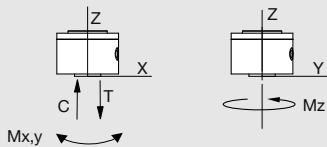
TOOL PLATE

CH-80P - [ ] - I - [ ]

SPRING ASSIST MISALIGNMENT

SPRING RA Tool Recentering  
 RL Tool Release  
 \_ Leave Blank. No Spring Option (standard)

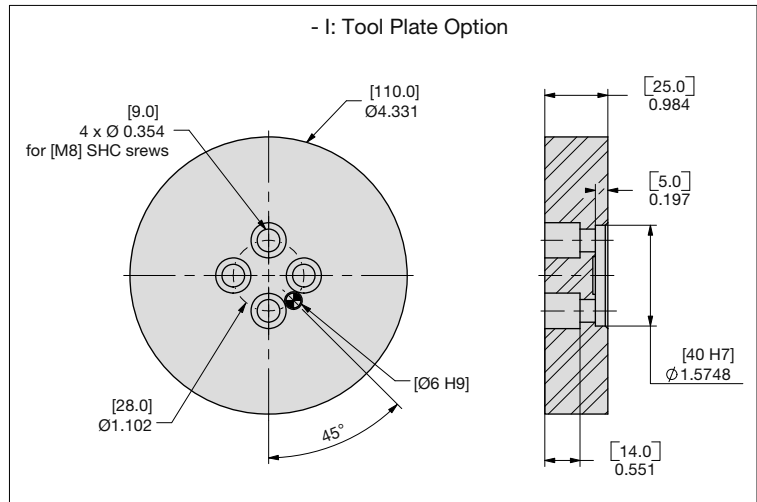
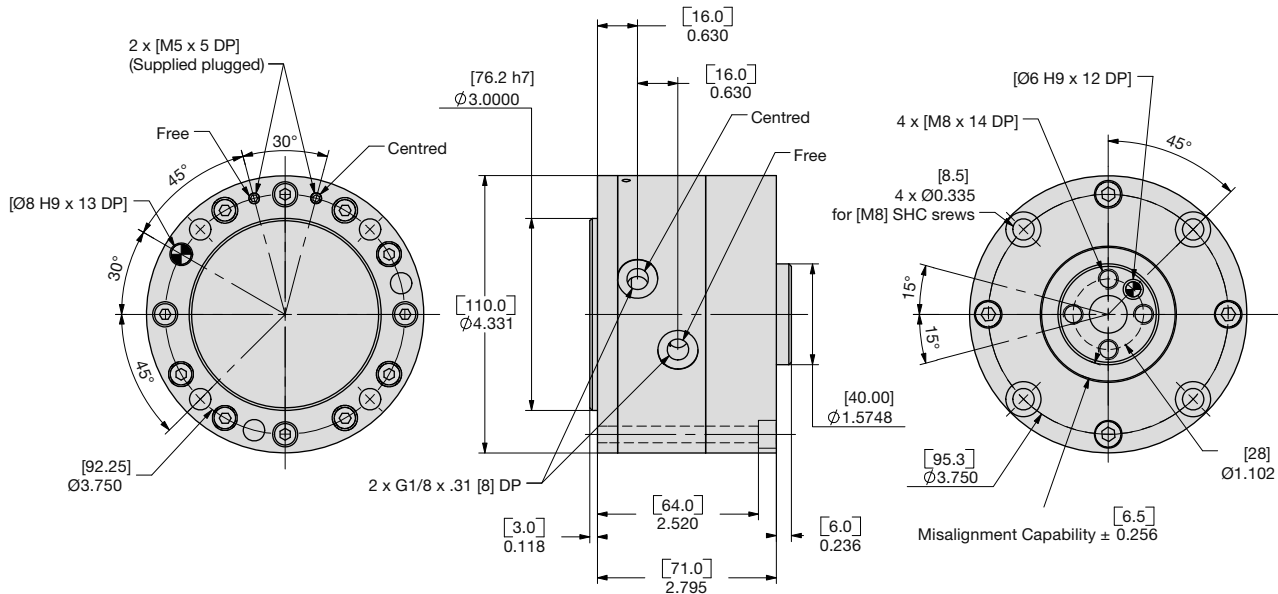
MISALIGNMENT XX Special Misalignment x 10 (ie: 15 is for +/- 1.5mm)  
 \_ Leave Blank. Standard Capability



### Loading Capacity

	Imperial	Metric
Maximum Tensile <b>T</b>	36 lbs.	160 N
Maximum Breakaway Compressive <b>C</b>	36 lbs.	160 N
Maximum Breakaway Moment <b>Mx</b>	71 in.-lbs.	8 Nm
Maximum Breakaway Moment <b>My</b>	71 in.-lbs.	8 Nm
Maximum Breakaway Moment <b>Mz</b>	53 in.-lbs.	6 Nm

# CH-110 CYLINDRICAL HORIZONTAL COMPLIANCE DEVICES



## Specifications

	CH-110	
Centering force @100psi [7 bar] .....	373 lbs.	1660 N
Maximum payload.....	30.8 lbs.	14 Kg
Misalignment Capability.....	±0.25 in.	±6.5 mm
Weight.....	4.6 lbs.	2.10 Kg
Pressure Range (without springs) .....	30-100 psi	2-7 bar
Pressure Range (with springs) .....	60-100 psi	4-7 bar
Cylinder bore.....	3.0 in.	76 mm
Displacement .....	3.42 in <sup>3</sup>	56 cm <sup>3</sup>
Actuation .....	0.1 sec. /0.1 sec.	
Repeatability.....	±0.0016 in.	±0.04 mm
Angular repeatability .....		±15mm

UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

Imperial in.	Metric [mm]
0.00 ± 0.01	[0.1] = [±.25]
0.000 ± 0.005	[0.0] = [±.13]
0.0000 ± 0.0005	[0.00] = [±.013]

Dimensions are symmetrical about centerline  
 Third Angle Projection  
 All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or [±.013mm]  
 Metric Threads Course Pitch

CH SERIES

6.84

## Loading Information

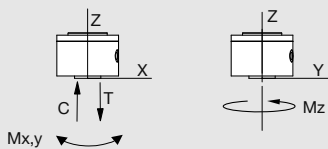
## How to Order: (Order Accessories separately from Basic Model)

BASIC MODEL

TOOL PLATE

CH-110P - [ ] - I - [ ]

SPRING ASSIST MISALIGNMENT



**SPRING** RA Tool Recentering  
 RL Tool Release  
 \_ Leave Blank. No Spring Option (standard)

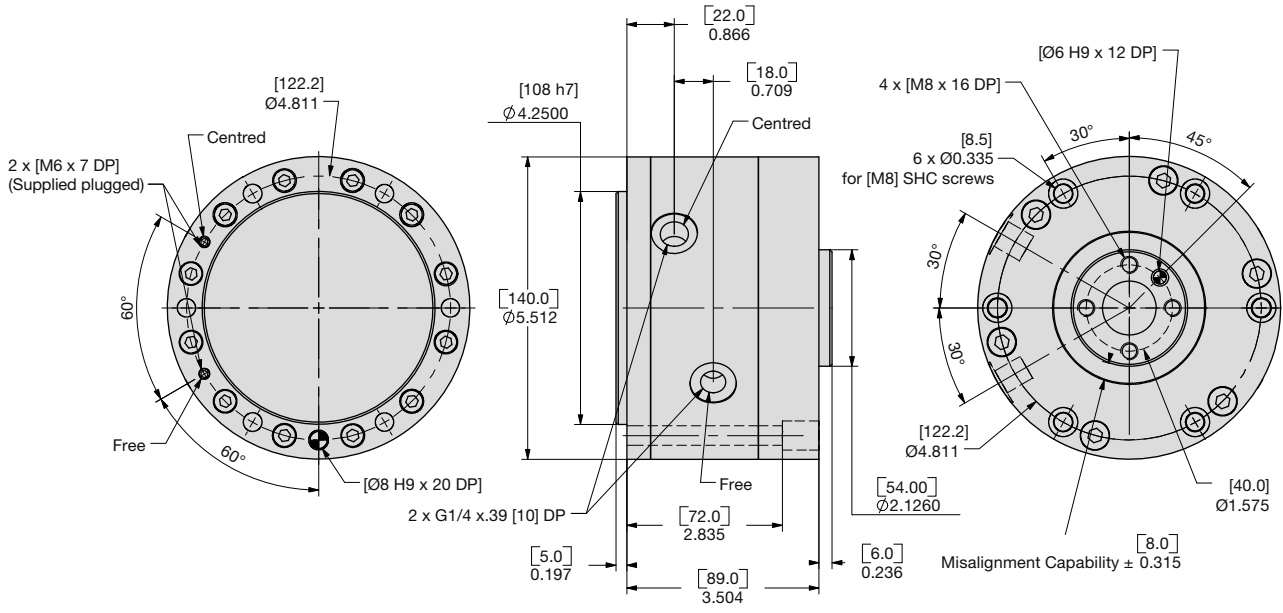
**MISALIGNMENT** XX Special Misalignment x 10 (ie: 15 is for +/- 1.5mm)  
 \_ Leave Blank. Standard Capability

### Loading Capacity

	Imperial	Metric
Maximum Tensile <b>T</b>	43 lbs.	190 N
Maximum Breakaway Compressive <b>C</b>	43 lbs.	190 N
Maximum Breakaway Moment <b>Mx</b>	106 in.-lbs.	12 Nm
Maximum Breakaway Moment <b>My</b>	106 in.-lbs.	12 Nm
Maximum Breakaway Moment <b>Mz</b>	159 in.-lbs.	18 Nm

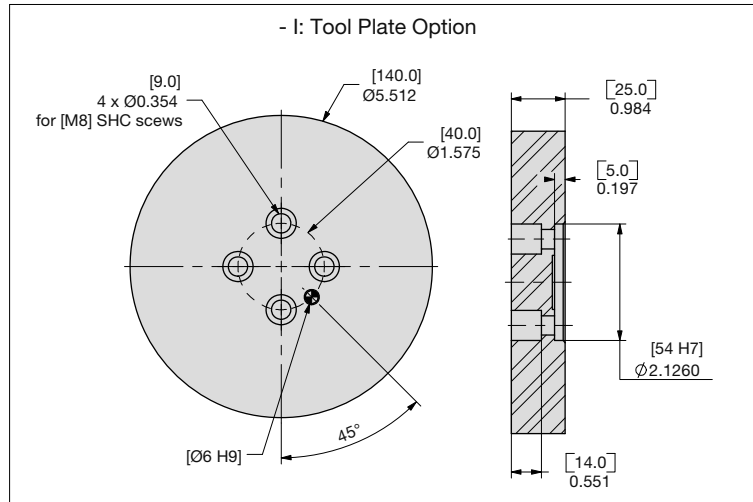
Please see back cover for DE-STA-CO Global Locations. [www.destaco.com](http://www.destaco.com)

[www.comoso.com](http://www.comoso.com)



### Specifications

	CH-140	
Centering force @100psi [7 bar] .....	712 lbs.	3170 N
Maximum payload .....	66.1 lbs.	30 Kg
Misalignment Capability .....	$\pm 0.31$ in.	$\pm 8$ mm
Weight .....	9.5 lbs.	4.31 Kg
Pressure Range (without springs) .....	30-100 psi	2-7 bar
Pressure Range (with springs) .....	60-100 psi	4-7 bar
Cylinder bore .....	4.13 in.	105 mm
Displacement .....	9.03 in <sup>3</sup>	148 cm <sup>3</sup>
Actuation .....	0.2 sec. / 0.2 sec.	
Repeatability .....	$\pm 0.0024$ in.	$\pm 0.06$ mm
Angular repeatability .....	$\pm 20$ mn	



UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

Imperial in.	Metric [mm]
0.00 = $\pm 0.01$	[0] = $\pm 0.25$
0.000 = $\pm 0.005$	[0.0] = $\pm 0.13$
0.0000 = $\pm 0.0005$	[0.00] = $\pm 0.013$

## Loading Information

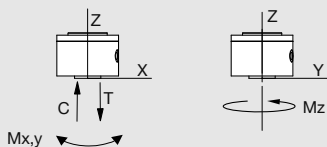
## How to Order: (Order Accessories separately from Basic Model)

BASIC MODEL

TOOL PLATE

CH-140P - [ ] - I - [ ]

SPRING ASSIST MISALIGNMENT



SPRING RA Tool Recentering  
RL Tool Release  
Leave Blank. No Spring Option (standard)

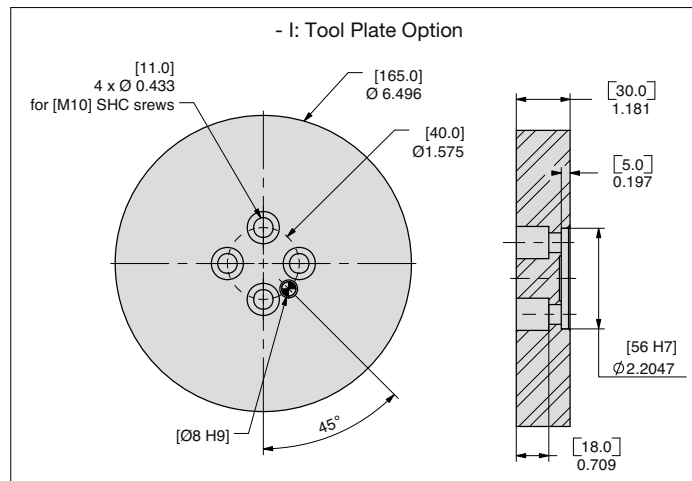
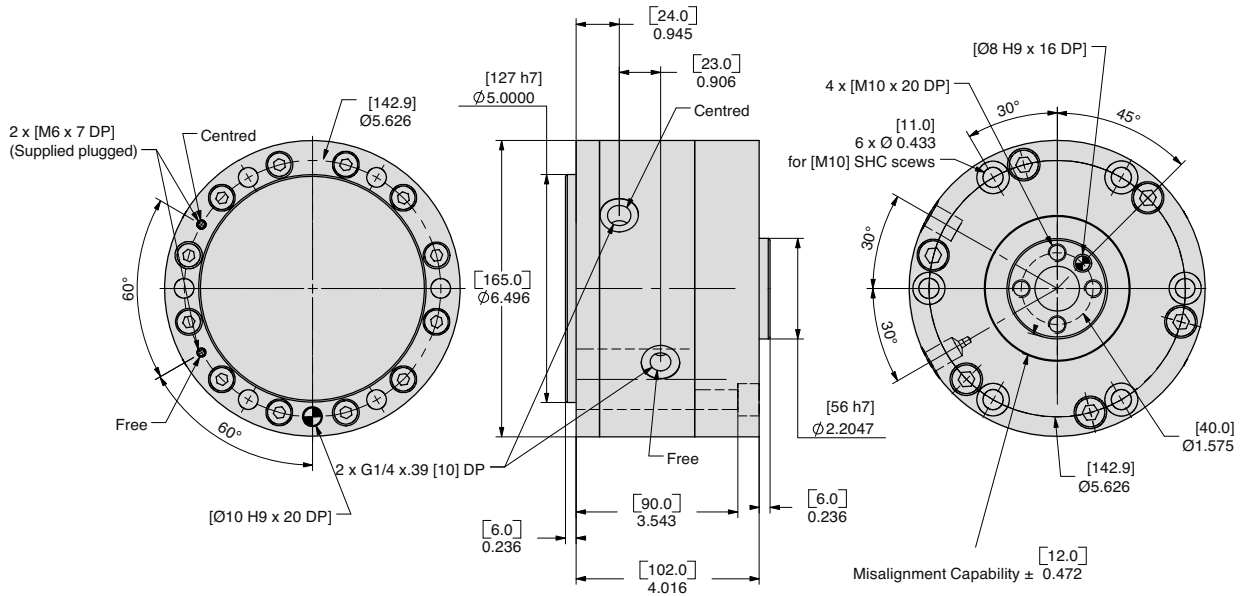
MISALIGNMENT XX Special Misalignment x 10 (ie: 15 is for +/- 1.5mm)  
Leave Blank. Standard Capability

### Loading Capacity

	Imperial	Metric
Maximum Tensile <b>T</b>	50 lbs.	225 N
Maximum Breakaway Compressive <b>C</b>	50 lbs.	225 N
Maximum Breakaway Moment <b>Mx</b>	168 in.-lbs.	19 Nm
Maximum Breakaway Moment <b>My</b>	168 in.-lbs.	19 Nm
Maximum Breakaway Moment <b>Mz</b>	177 in.-lbs.	20 Nm



# CH-165 CYLINDRICAL HORIZONTAL COMPLIANCE DEVICES



## Specifications

	CH-165	
Centering force @100psi [7 bar] .....	931 lbs.	4140 N
Maximum payload.....	88.2 lbs.	40 Kg
Misalignment Capability.....	$\pm 0.47$ in.	$\pm 12$ mm
Weight.....	19.2 lbs.	8.7 Kg
Pressure Range (without springs) .....	30-100 psi	2-7 bar
Pressure Range (with springs) .....	60-100 psi	4-7 bar
Cylinder bore.....	4.72 in.	120 mm
Displacement .....	14.40 in <sup>3</sup>	236 cm <sup>3</sup>
Actuation .....	0.36 sec. / 0.36 sec.	
Repeatability.....	$\pm 0.0024$ in.	$\pm 0.06$ mm
Angular repeatability .....	$\pm 20$ mn	

CH SERIES

6.86

UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

Imperial in.	Metric [mm]
0.00 $\pm$ 0.01	[0.1] = $\pm$ .25
0.000 $\pm$ 0.005	[0.0] = $\pm$ .13
0.0000 $\pm$ 0.0005	[0.00] = $\pm$ .013

## Loading Information

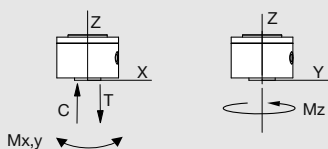
## How to Order: (Order Accessories separately from Basic Model)

BASIC MODEL

TOOL PLATE

CH-165P - [ ] - I - [ ]

SPRING ASSIST MISALIGNMENT



SPRING RA Tool Recentering  
RL Tool Release  
Leave Blank. No Spring Option (standard)

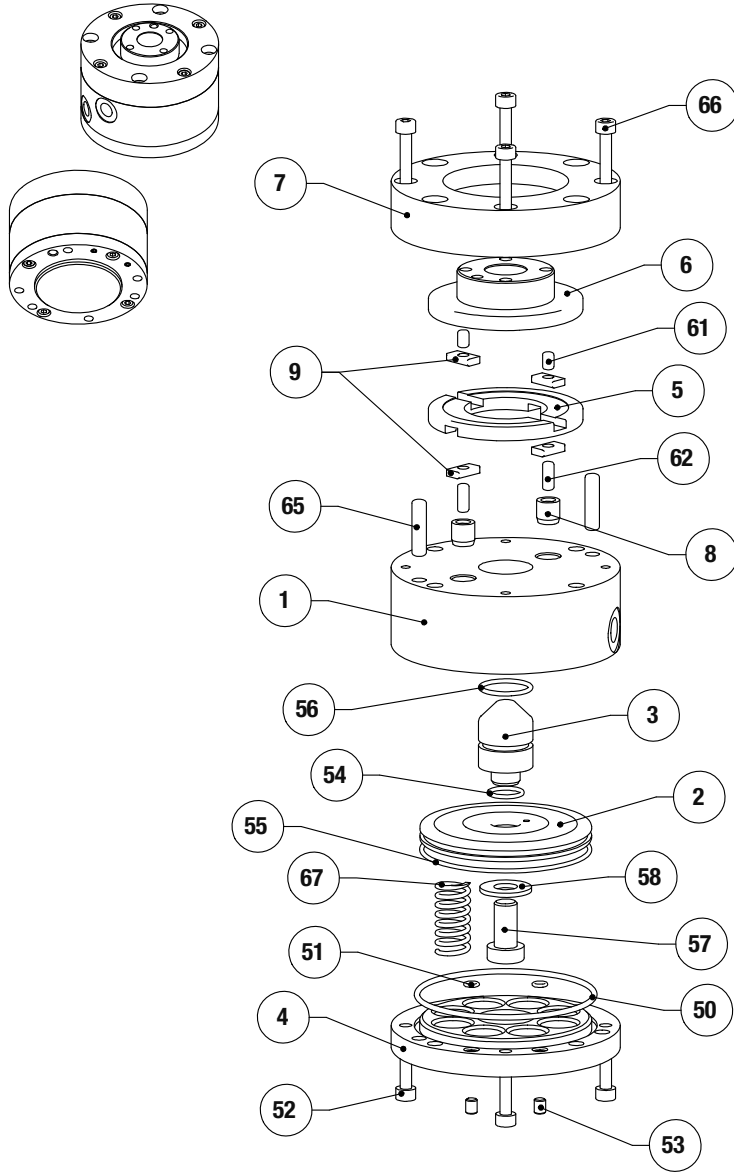
MISALIGNMENT XX Special Misalignment x 10 (ie: 15 is for +/- 1.5mm)  
Leave Blank. Standard Capability

## Loading Capacity

	Imperial	Metric
Maximum Tensile <b>T</b>	52 lbs.	230 N
Maximum Breakaway Compressive <b>C</b>	52 lbs.	230 N
Maximum Breakaway Moment <b>Mx</b>	203 in.-lbs.	23 Nm
Maximum Breakaway Moment <b>My</b>	203 in.-lbs.	23 Nm
Maximum Breakaway Moment <b>Mz</b>	248 in.-lbs.	28 Nm

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Item	Qty	Name
1	1	Body
2	1	Piston
3	1	Centering cone
4	1	Cap
5	1	Crossed ring
6	1	Output flange
7	1	Bottom case
8	2	Sleeve
9	4	Key
50	1	O-ring, Cap
51	2	O-ring, Cap
52	4	SS screw, Cap
53	2	SHC screw, Cap
54	1	O-ring, Piston
55	1	O-ring, Piston
56	1	O-ring, Centering cone
57	1	LHC screw, Piston
58	1	Washer, Piston
61	2	Pin, Key
62	2	Pin, Sleeve
65	2	Pin, Body
66	4	SHC screw, Flask
67	6	Spring

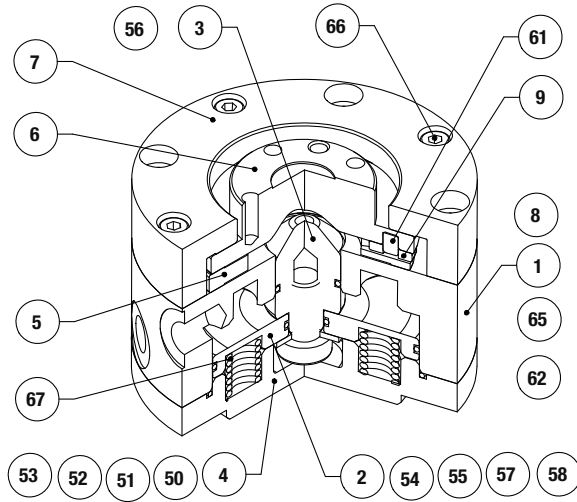
**NOTE:** Contact the Robohand Sales Department for a complete spare parts list with order numbers and prices.

### Assembly Procedures

- Press-in the bushing (#8) into the body (#1)
- Insert the pins (#65) into the body (#1)
- Lubricate and insert the pins (#62) into the bushings (#8)
- Lubricate and insert the keys (#9) into the pins (#62)
- Lubricate and assemble the crossed ring (#5) onto the body (#1).  
The keys (#9) have to be positioned into the slots of the crossed ring
- Insert the pins (#61) into the output flange (#6)
- Lubricate and insert the keys (#9) into the pins (#61)
- Assemble the sub assembly output flange and keys on the crossed ring (#5). The keys (#9) have to be positioned into the slots of the crossed ring
- Mount the bottom case (#7) onto the body, positioning with the pins (#65).
- Fasten the bottom case (#7) using the screws (#66) with thread locker
- Insert the O-Ring (#56) into the centering cone (#3)
- Insert the O-Ring (#54) into the inside groove of the piston (#2)
- Insert the O-Ring (#55) into the outside groove of the piston (#2)
- Assemble the piston (#2) with the centering cone (#3). For -RL option, the piston counterbore holes have to face the body counterbore holes. Opposite mounting for -RA option.
- Fasten the centering cone (#3) with the piston (#2) using the washer (#58) and the screw (#57) with thread locker
- For -RL option, insert the springs (#67) into the body and piston counterbore holes.
- Insert the piston + centering cone sub assembly into the body
- For -RA option, insert the springs (#67) into the cap and piston counterbore holes.
- Insert the O-Ring (#50) into cap groove (#4)
- Insert the O-Ring (#51) into counterbore holes of the cap (#4)
- Screw the SS screws into the cap (#4) with thread locker
- Locate and insert the cap (#4) into the body (#1) using the screws (#52) with thread locker.








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# CH Series Assembled View



Item	Qty	Name
1	1	Body
2	1	Piston
3	1	Centering cone
4	1	Cap
5	1	Crossed ring
6	1	Output flange
7	1	Bottom case
8	2	Sleeve
9	4	Key
50	1	O-ring, Cap
51	2	O-ring, Cap
52	4	SS screw, Cap
53	2	SHC screw, Cap
54	1	O-ring, Piston
55	1	O-ring, Piston
56	1	O-ring, Centering cone
57	1	LHC screw, Piston
58	1	Washer, Piston
61	2	Pin, Key
62	2	Pin, Sleeve
65	2	Pin, Body
66	4	SHC screw, Flask
67	6	Spring

**NOTE:** Contact the Robohand Sales Department for a complete spare parts list with order numbers and prices.

 Seal Kit Items	 Thread Locker	 Krytox™ Lubricant	 Lightweight Machine Oil	 Teflon® Based Grease	 Super Bonder	 Third Angle Projection
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A DORSEY COMPANY

# QUALITY PRECISION **DESIGN NOTES** DURABILITY



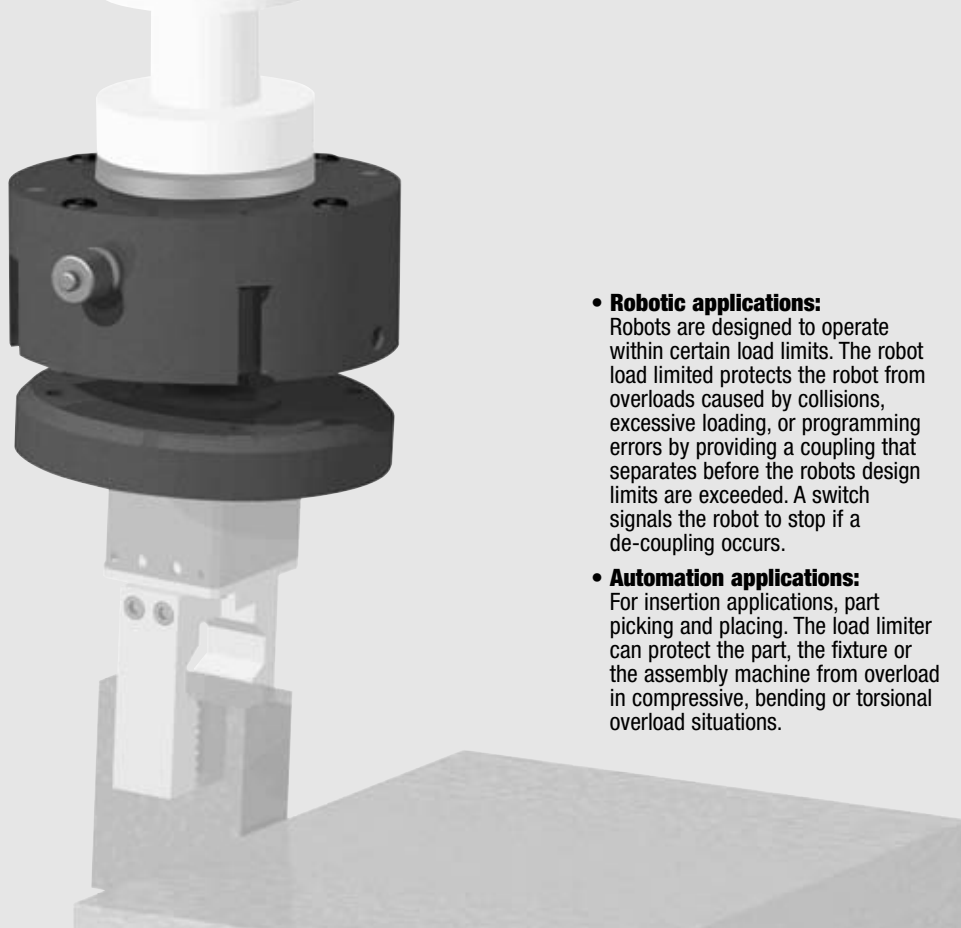
CH SERIES  
6.89

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PRECISION DURABILITY QUALITY  
DURABILITY QUALITY PRECISION  
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QUALITY PRECISION DURABILITY

# Robot Load Limiters



• **Robotic applications:**

Robots are designed to operate within certain load limits. The robot load limited protects the robot from overloads caused by collisions, excessive loading, or programming errors by providing a coupling that separates before the robots design limits are exceeded. A switch signals the robot to stop if a de-coupling occurs.

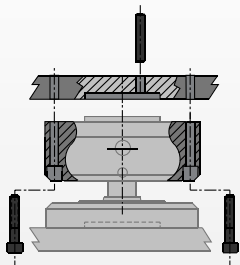
• **Automation applications:**

For insertion applications, part picking and placing. The load limiter can protect the part, the fixture or the assembly machine from overload in compressive, bending or torsional overload situations.

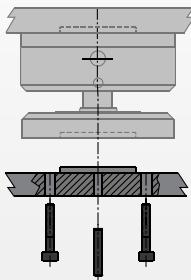
U/LS SERIES

6.90

## Mounting Information:



Robot side has counter bored holes for mounting with a dowel hole and raised boss for location



The tool side has tapped holes for mounting and a pilot hole and dowel hole for positioning

## Technical Specifications:

**Pneumatic Specifications**

	<b>Imperial</b>	<b>Metric</b>
Pressure Operating Range	40-100 psi	3-7 bar
Cylinder Type	Non-Conventional	
Valve Required to Operate	3-way, 2-position	

**Air Quality Requirements**

Air Filtration	40 Micron or Better	
Air Lubrication	Not Necessary*	
Air Humidity	Low Moisture Content (dry)	

**Temperature**

<b>Operating Range</b>	-20°~180° F	30°~80° C
------------------------	-------------	-----------

**Maintenance Specifications<sup>†</sup>**

Expected Life	
Normal Application	5 million cycles
w/ Preventative Maintenance	10+ million cycles
Field Repairable	Yes
Seal Repair Kits Available	Yes

**Application Restrictions**

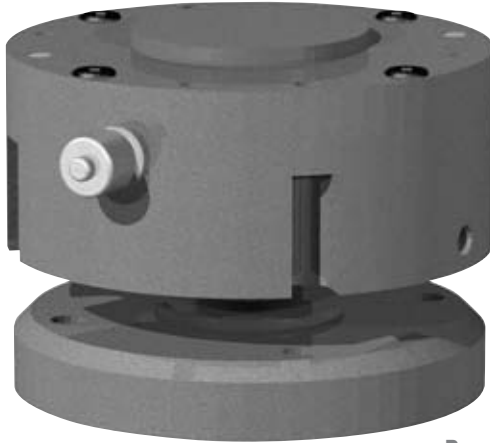
- Dirty or gritty environments
- Machining operations generating chips
- Environments with loose particulate

<sup>†</sup> See Maintenance Section

## Product Features

### Quality Components

Anodized aluminum components



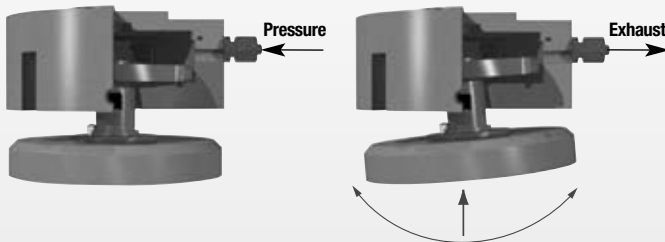
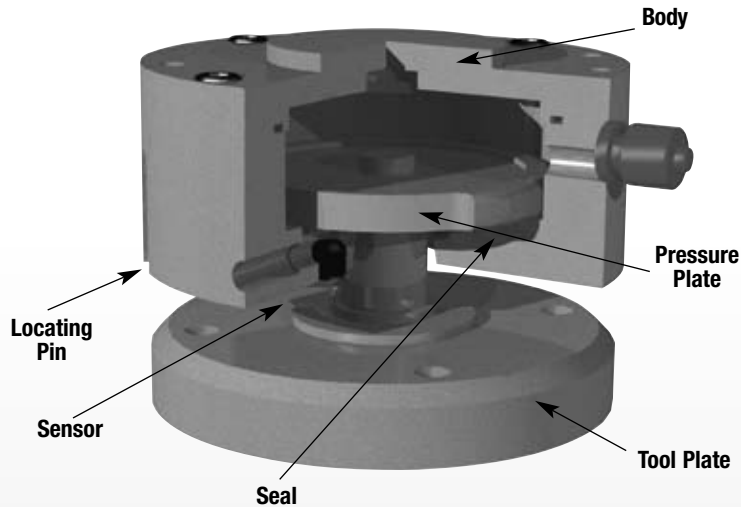
### Built-in Sensor

Built in proximity sensor for detecting de-coupling

### Pressure Plate

Accurate pressure plate locating for repeatable re-coupling.

## Operating Principle



- The robot limiter is comprised of two halves, the robot side and the tool side, which can be separated from one another but not detached.
- The two halves are held together by compressed air forcing the pressure plate to seal on the inside surface of the robot half.
- The force required to breakaway the unit is proportional to the air pressure.
- In the event of an overload the sensor detects the motion of the pressure plate and can signal the robot or assembly machine and the valve supplying pressure to the load limiter to shut down.
- When the collision is cleared and the tool is manually returned to the normal orientation the sensor can reactivate the valve to re-pressurize the device.

## Style-ULS Load Limiter

### Size-80

Style:	ULS-80
Axial Breakaway:	240 lbs. 1068 N
Weight:	1.3 lbs. 0.59 Kg



See Page **6.92**

## Style-ULS Load Limiter

### Size-100

Style:	ULS-100
Axial Breakaway:	330 lbs. 1468 N
Weight:	1.87 lbs. 0.85 Kg



See Page **6.93**

## Style-ULS Load Limiter

### Size-125

Style:	ULS-125
Axial Breakaway:	620 lbs. 2750 N
Weight:	3.52 lbs. 1.6 Kg



See Page **6.94**

## Style-ULS Load Limiter

### Size-160

Style:	ULS-160
Axial Breakaway:	1125 lbs. 5000 N
Weight:	7.1 lbs. 3.2 Kg



See Page **6.95**

## Style-ULS Load Limiter

### Size-200

Style:	ULS-200
Axial Breakaway:	1750 lbs. 7784 N
Weight:	21.56 lbs. 9.8 Kg

See Page **6.96**

## Style-ULS Load Limiter

### Size-250

Style:	ULS-250
Axial Breakaway:	2025 lbs. 9000 N
Weight:	35 lbs. 16 Kg

See Page **6.97**

## Style-ULS Load Limiter

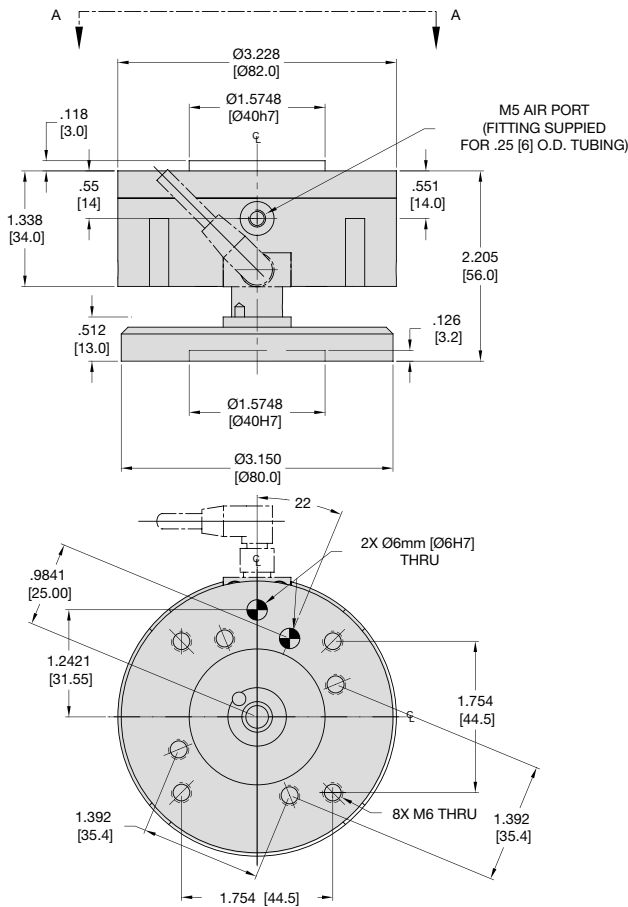
### Size-300

Style:	ULS-300
Axial Breakaway:	2475 lbs. 11,000 N
Weight:	53 lbs. 24 Kg

See Page **6.98**

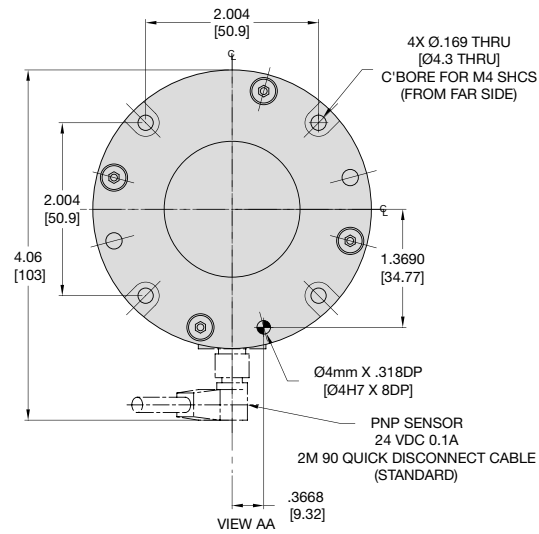


# ULS-80 ROBOT LOAD LIMITER SERIES



## Specifications

	ULS-80
Maximum Payload.....	8.8 lbs. 4.0 Kg
Rotational Compliance (X and Y axis).....	10° 10°
Rotational Compliance (Z axis).....	360° 360°
Axial Compliance (Z axis).....	0.47 in. 12 mm
Weight.....	1.3 lbs. 0.59 Kg
Pressure Range (locked cylinder).....	15-100 psi 1-7 bar
Temperature Range.....	-5°~160° F -20°~70° C
Repeatability.....	±0.001 in. ±0.03 mm
Valve required to actuate.....	3-way, 2-position



UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

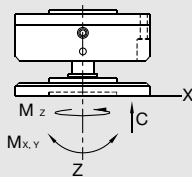
	Imperial in.	Metric [mm]
Dimensions are symmetrical about centerline	0.00 ± .01	[0.] = [±.25]
Third Angle Projection	0.000 ± .005	[0.0] = [±.13]
All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or [±.013mm]	0.0000 ± .0005	[0.00] = [±.013]
Metric Threads Course Pitch		

ULS SERIES

6.92

## Loading Information

How to Order: (Order Accessories separately from Basic Model)



BASIC MODEL

ULS-80

### PNEUMATIC ACCESSORIES

Standard Seal Repair Kit

ORDER #

SLKT-137

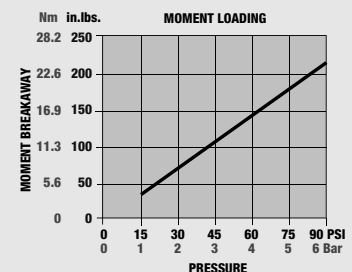
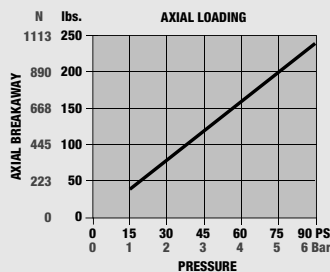
QTY/UNIT

1

### Loading Capacity at 90 psi 6 bar

	Imperial	Metric
Maximum Breakaway Compressive <b>C</b>	240 lbs.	1068 N
Maximum Breakaway Moment <b>M<sub>x</sub></b>	210 in.-lbs.	24 Nm
Maximum Breakaway Moment <b>M<sub>y</sub></b>	210 in.-lbs.	24 Nm
Maximum Breakaway Moment <b>M<sub>z</sub></b>	210 in.-lbs.	24 Nm

## Maximum Overload

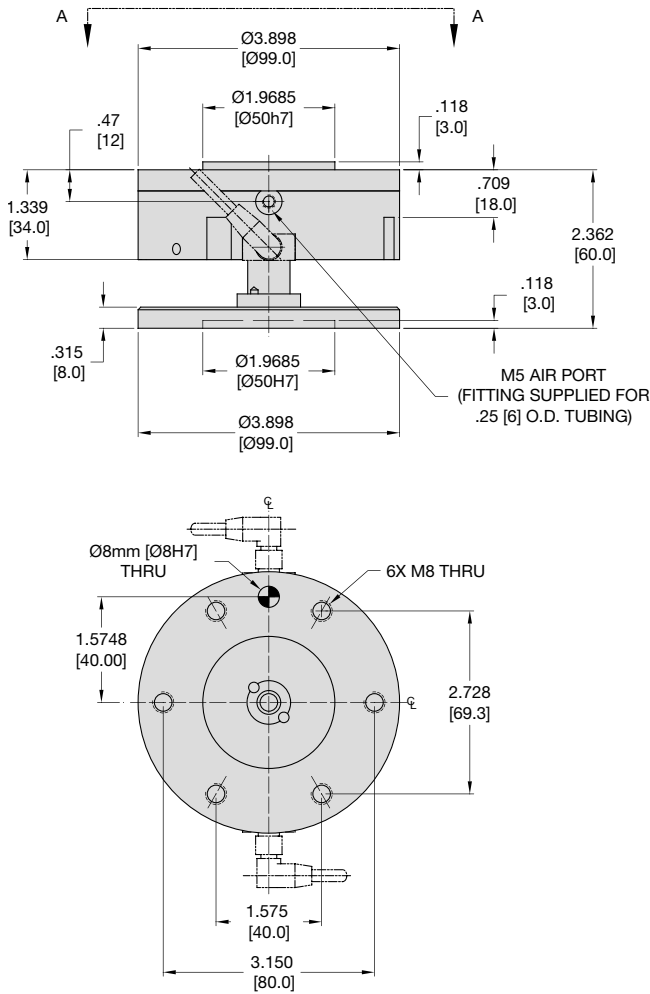


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[www.comoso.com](http://www.comoso.com)

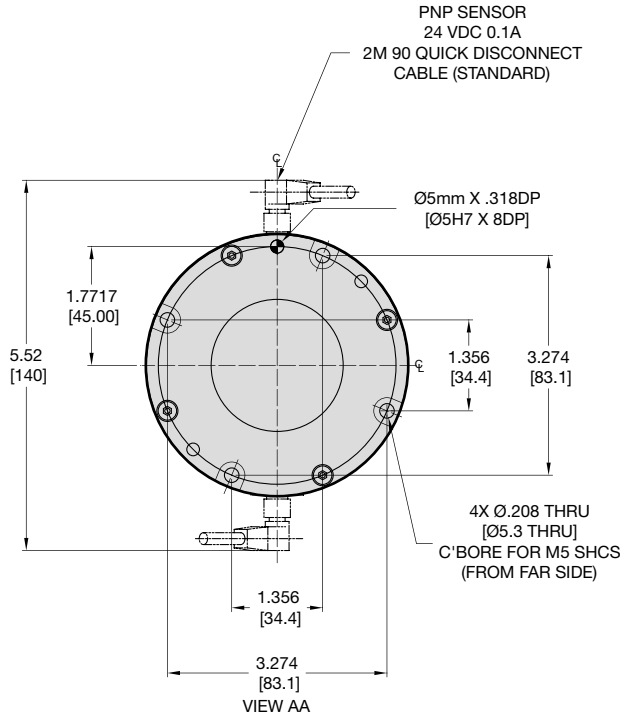


# ULS-100 ROBOT LOAD LIMITER SERIES



### Specifications

	ULS-100	
Maximum Payload.....	17.6 lbs.	8.0 Kg
Rotational Compliance (X and Y axis).....	12°	12°
Rotational Compliance (Z axis).....	360°	360°
Axial Compliance (Z axis).....	0.56 in.	14 mm
Weight.....	1.87 lbs.	0.85 Kg
Pressure Range (locked cylinder).....	15-100 psi	1-7 bar
Temperature Range.....	-5°~160° F	-20°~70° C
Repeatability.....	±0.001 in.	±0.03 mm
Valve required to actuate.....	3-way, 2-position	

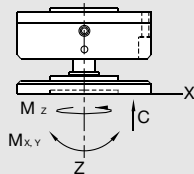


### UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

Dimensions are symmetrical about centerline	Third Angle Projection	All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or ±.013mm	Metric Threads Course Pitch	Imperial in. 0.00 = ±.01 0.000 = ±.005 0.0000 = ±.0005	Metric [mm] [0.] = ±.25 [0.0] = ±.13 [0.00] = ±.013
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## Loading Information

## How to Order: (Order Accessories separately from Basic Model)



### BASIC MODEL

## ULS-100

### PNEUMATIC ACCESSORIES

Standard Seal Repair Kit

ORDER #

SLKT-138

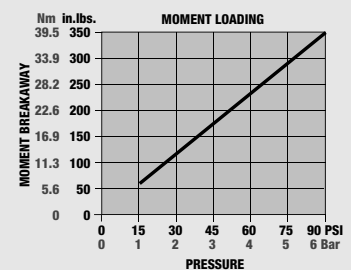
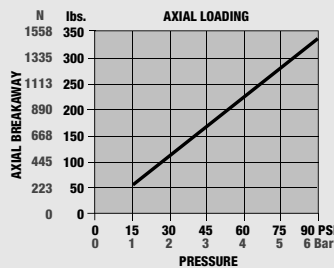
QTY/UNIT

1

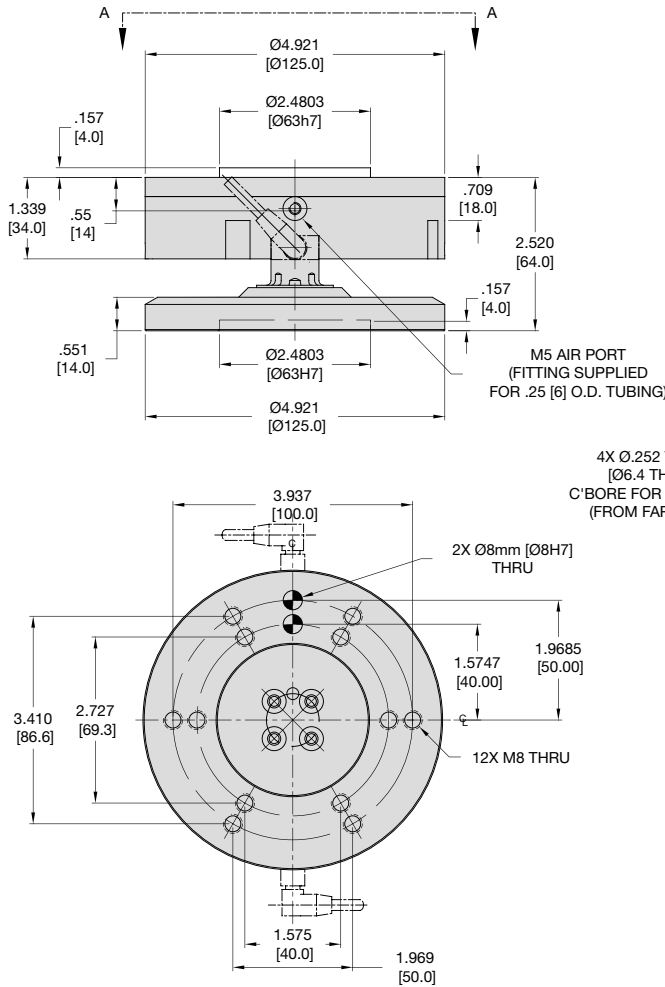
### Loading Capacity at 90 psi 6 bar

	Imperial	Metric
Maximum Breakaway Compressive <b>C</b>	330 lbs.	1468 N
Maximum Breakaway Moment <b>Mx</b>	350 in.-lbs.	40 Nm
Maximum Breakaway Moment <b>My</b>	350 in.-lbs.	40 Nm
Maximum Breakaway Moment <b>Mz</b>	350 in.-lbs.	40 Nm

## Maximum Overload



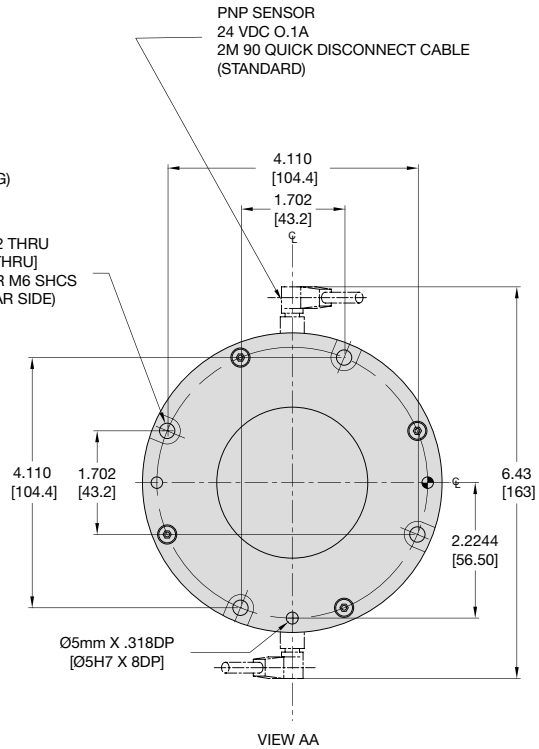
# ULS-125 ROBOT LOAD LIMITER SERIES



## Specifications

## ULS-125

Maximum Payload.....	26.5 lbs.	12.0 Kg
Rotational Compliance (X and Y axis).....	10°	10°
Rotational Compliance (Z axis).....	360°	360°
Axial Compliance (Z axis).....	0.47 in.	12 mm
Weight.....	3.52 lbs.	1.60 Kg
Pressure Range (locked cylinder).....	15-100 psi	1-7 bar
Temperature Range.....	-5°~160° F	-20°~70° C
Repeatability.....	±0.001 in.	±0.03 mm
Valve required to actuate.....	3-way, 2-position	



## UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

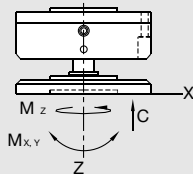
				Imperial in.	Metric [mm]
Dimensions are symmetrical about centerline	Third Angle Projection	All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or [±.013mm]	Metric Threads Course Pitch	0.00 ± .01 0.000 ± .005 0.0000 ± .0005	[0.] = [±.25] [0.0] = [±.13] [0.00] = [±.013]

ULS SERIES

6.94

## Loading Information

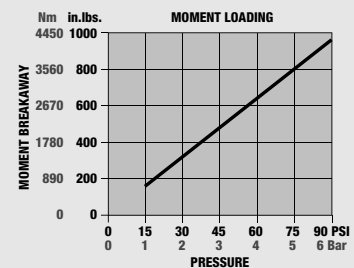
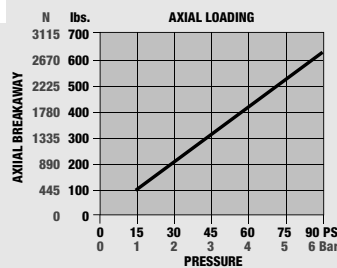
## How to Order: (Order Accessories separately from Basic Model)



### Loading Capacity at 90 psi 6 bar

	Imperial	Metric
Maximum Breakaway Compressive <b>C</b>	620 lbs.	2750 N
Maximum Breakaway Moment <b>Mx</b>	960 in.-lbs.	109 Nm
Maximum Breakaway Moment <b>My</b>	960 in.-lbs.	109 Nm
Maximum Breakaway Moment <b>Mz</b>	960 in.-lbs.	109 Nm

## Maximum Overload



### PNEUMATIC ACCESSORIES

Standard Seal Repair Kit

ORDER #

SLKT-139

QTY/UNIT

1

## BASIC MODEL

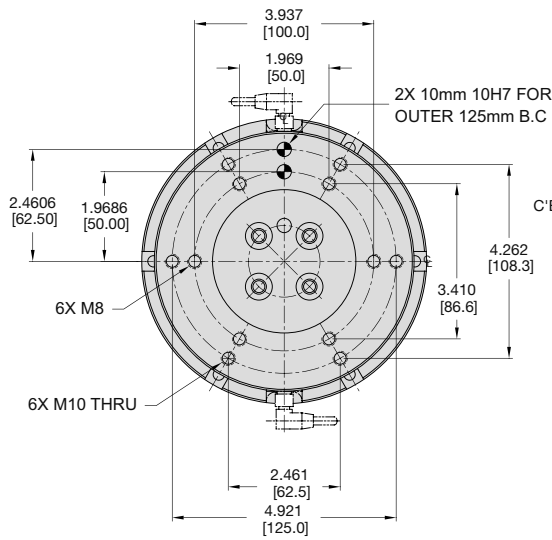
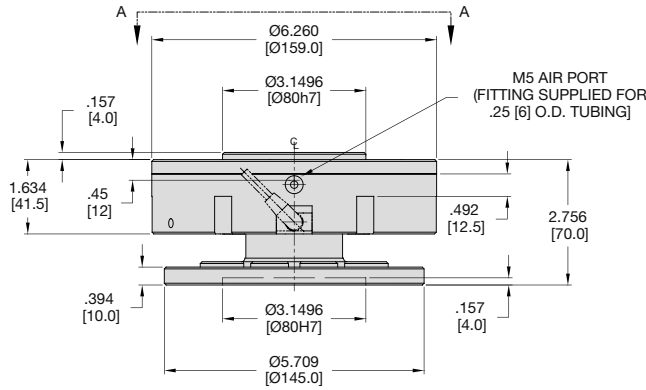
## ULS-125

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[www.comoso.com](http://www.comoso.com)

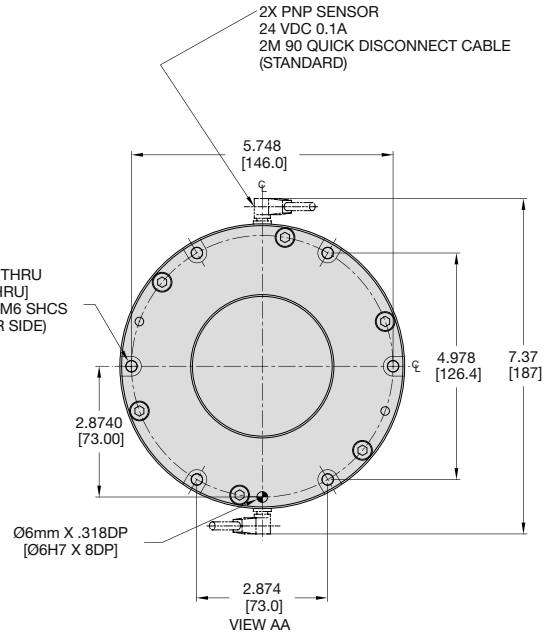


# ULS-160 ROBOT LOAD LIMITER SERIES



## Specifications

	ULS-160	
Maximum Payload.....	44.1 lbs.	20 Kg
Rotational Compliance (X and Y axis).....	7°	7°
Rotational Compliance (Z axis).....	360°	360°
Axial Compliance (Z axis).....	0.57 in.	14.5 mm
Weight.....	7.1 lbs.	3.2 Kg
Pressure Range (locked cylinder).....	15-100 psi	1-7 bar
Temperature Range.....	-5°~160° F	-20°~70° C
Repeatability.....	± 0.002in.	± 0.05 mm
Valve required to actuate.....	3-way, 2-position	

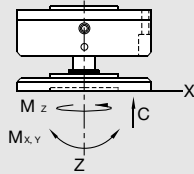


### UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

Dimensions are symmetrical about centerline	Third Angle Projection	All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or [±.013mm]	Metric Threads Course Pitch	Imperial in. 0.00 = ±.01 0.000 = ±.005 0.0000 = ±.0005	Metric [mm] [0.] = [±.25] [0.0] = [±.13] [0.00] = [±.013]
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## Loading Information

## How to Order: (Order Accessories separately from Basic Model)



### BASIC MODEL

## ULS-160

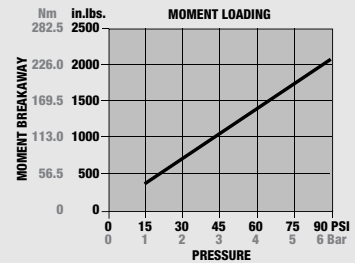
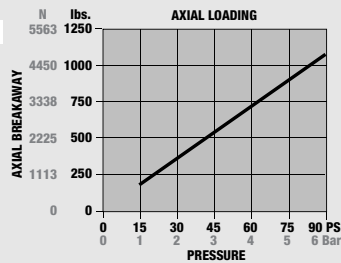
### PNEUMATIC ACCESSORIES

	ORDER #	QTY/UNIT
Standard Seal Repair Kit	SLKT-140	1

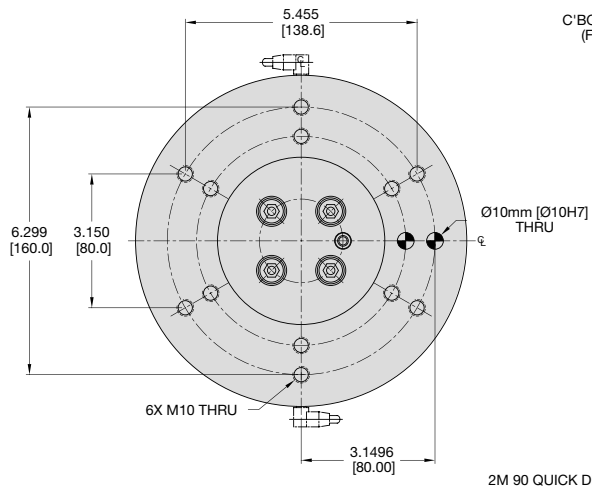
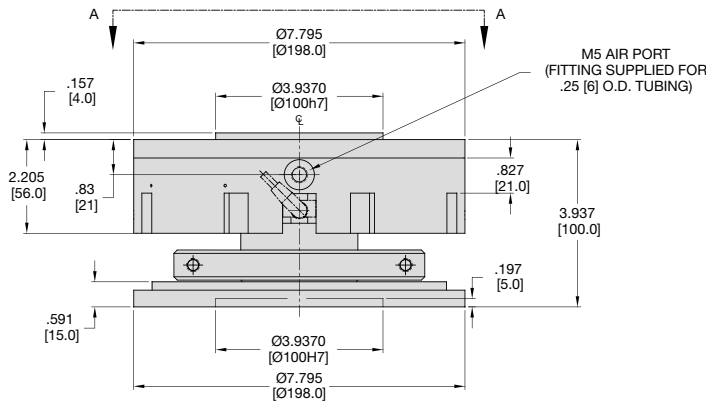
### Loading Capacity at 90 psi 6 bar

	Imperial	Metric
Maximum Breakaway Compressive <b>C</b>	1125 lbs.	5000 N
Maximum Breakaway Moment <b>Mx</b>	2100 in.-lbs.	237 Nm
Maximum Breakaway Moment <b>My</b>	2100 in.-lbs.	237 Nm
Maximum Breakaway Moment <b>Mz</b>	2100 in.-lbs.	237 Nm

## Maximum Overload



# ULS-200 ROBOT LOAD LIMITER SERIES



M5 AIR PORT  
(FITTING SUPPLIED FOR  
.25 [6] O.D. TUBING)

8X Ø.331 THRU  
[Ø8.4 THRU]  
C' BORE FOR M8 SHCS  
(FROM FAR SIDE)

Ø10mm [Ø10H7]  
THRU

2X PNP SENSOR  
24 VDC 0.1A  
2M 90 QUICK DISCONNECT CABLE  
(STANDARD)

VIEW AA

## Specifications

## ULS-200

Maximum Payload.....	121.3 lbs.	55.0 Kg
Rotational Compliance (X and Y axis).....	4°	4°
Rotational Compliance (Z axis).....	360°	360°
Axial Compliance (Z axis).....	0.38 in.	9.50 mm
Weight.....	21.56 lbs.	9.8 Kg
Pressure Range (locked cylinder).....	15-100 psi	1-7 bar
Temperature Range.....	-5°~160° F	-20°~70° C
Repeatability.....	±0.004 in.	±0.10 mm
Valve required to actuate.....	3-way, 2-position	

### UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

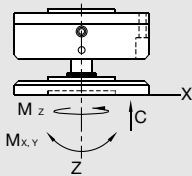
Dimensions are symmetrical about centerline	Third Angle Projection	All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or [±.013mm]	Metric Threads Course Pitch	Imperial in. 0.00 ± .01 0.000 ± .005 0.0000 ± .0005	Metric [mm] [0.] = [±.25] [0.0] = [±.13] [0.00] = [±.013]
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ULS SERIES

6.96

## Loading Information

## How to Order: (Order Accessories separately from Basic Model)



BASIC MODEL

**ULS-200**

### PNEUMATIC ACCESSORIES

Standard Seal Repair Kit

ORDER #

SLKT-141

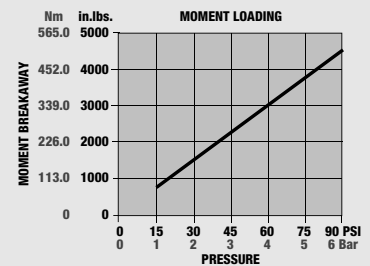
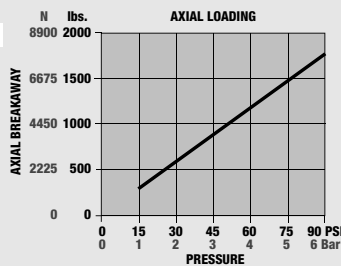
QTY/UNIT

1

### Loading Capacity at 90 psi 6 bar

	Imperial	Metric
Maximum Breakaway Compressive <b>C</b>	1750 lbs.	7784 N
Maximum Breakaway Moment <b>Mx</b>	4500 in.-lbs.	509 Nm
Maximum Breakaway Moment <b>My</b>	4500 in.-lbs.	509 Nm
Maximum Breakaway Moment <b>Mz</b>	4500 in.-lbs.	509 Nm

### Maximum Overload

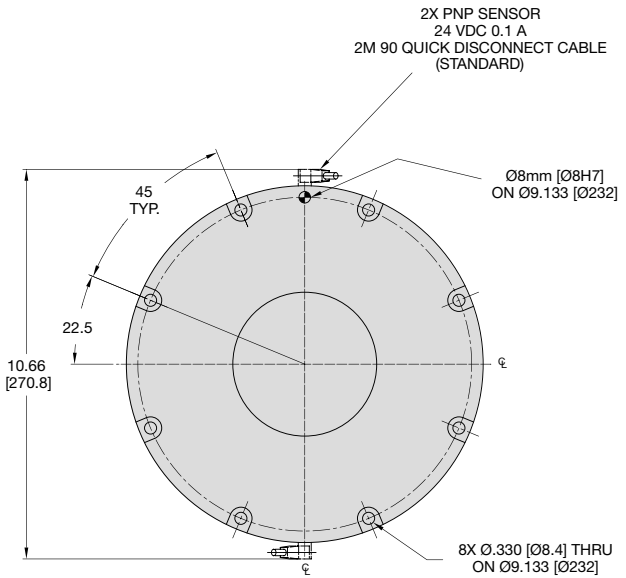
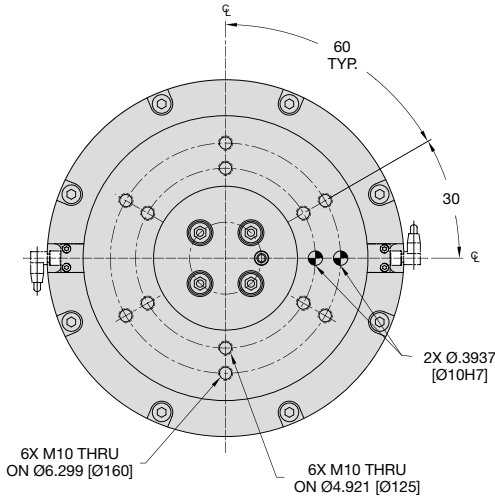
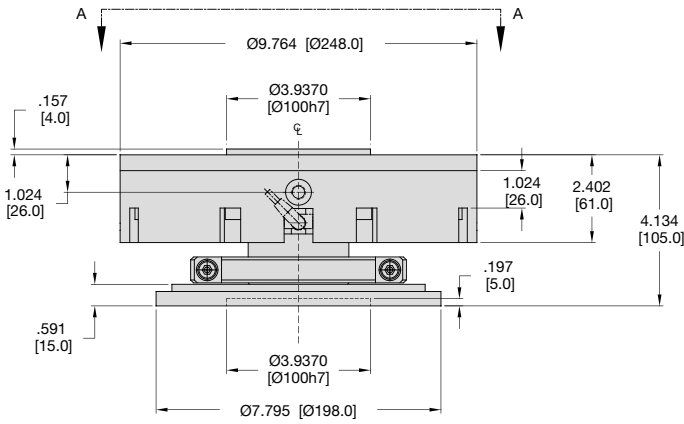


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# ULS-250 ROBOT LOAD LIMITER SERIES



## Specifications

## ULS-250

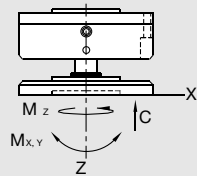
Maximum Payload.....	176.4 lbs.	80.0 Kg
Rotational Compliance (X and Y axis).....	5°	5°
Rotational Compliance (Z axis).....	360°	360°
Axial Compliance (Z axis).....	0.63 in.	16 mm
Weight.....	35 lbs.	16 Kg
Pressure Range (locked cylinder).....	15-100 psi	1-7 bar
Temperature Range.....	-5°~160° F	-20°~70° C
Repeatability.....	±0.004 in.	±0.10 mm
Valve required to actuate.....	3-way, 2-position	

## UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

Dimensions are symmetrical about centerline	Third Angle Projection	All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or ±.013mm	Metric Threads Course Pitch	Imperial in. 0.00 = ±.01 0.000 = ±.005 0.0000 = ±.0005	Metric [mm] [0.] = ±.25 [0.0] = ±.13 [0.00] = ±.013
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## Loading Information

## How to Order: (Order Accessories separately from Basic Model)



## BASIC MODEL

## ULS-250

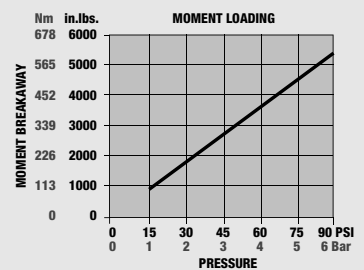
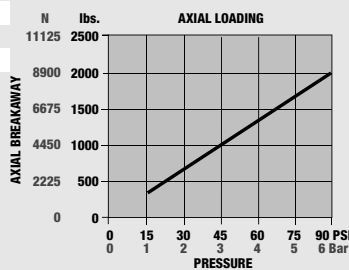
### PNEUMATIC ACCESSORIES

Standard Seal Repair Kit	ORDER # <b>SLKT-434</b>	QTY/UNIT <b>1</b>
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### Loading Capacity at 90 psi 6 bar

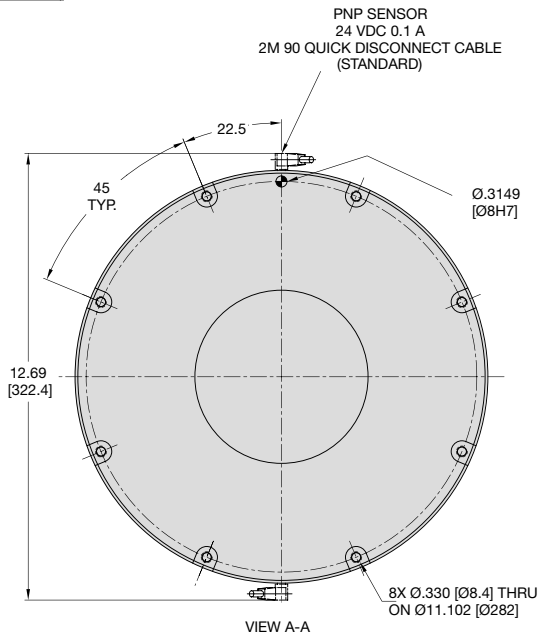
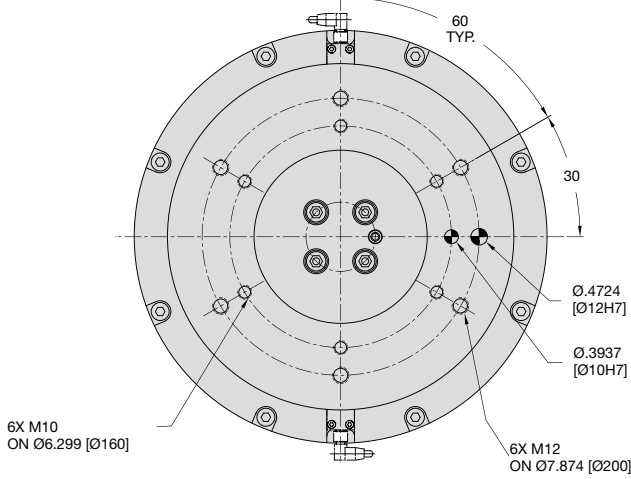
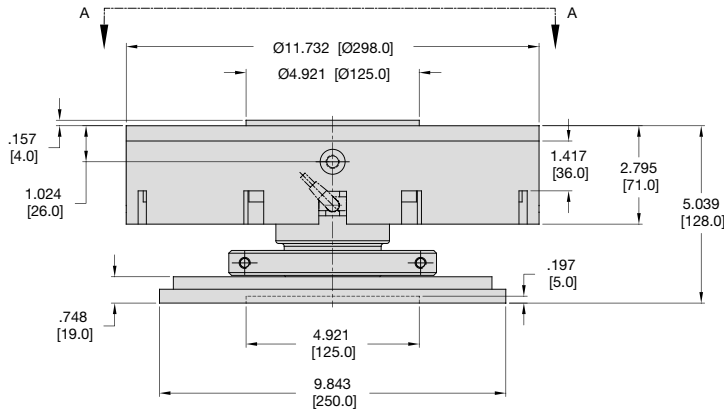
	Imperial	Metric
Maximum Breakaway Compressive <b>C</b>	2025 lbs.	9000 N
Maximum Breakaway Moment <b>M<sub>x</sub></b>	5400 in.-lbs.	610 Nm
Maximum Breakaway Moment <b>M<sub>y</sub></b>	5400 in.-lbs.	610 Nm
Maximum Breakaway Moment <b>M<sub>z</sub></b>	5400 in.-lbs.	610 Nm

### Maximum Overload





# ULS-300 ROBOT LOAD LIMITER SERIES



## Specifications

	ULS-300
Maximum Payload.....	264.6 lbs. 120.0 Kg
Rotational Compliance (X and Y axis).....	6° 6°
Rotational Compliance (Z axis).....	360° 360°
Axial Compliance (Z axis).....	0.98 in. 25 mm
Weight.....	52.8 lbs. 24.0 Kg
Pressure Range (locked cylinder).....	15-100 psi 1-7 bar
Temperature Range.....	-5°~160° F -20°~70° C
Repeatability.....	±0.008 in. ±0.20 mm
Valve required to actuate.....	3-way, 2-position

ULS SERIES

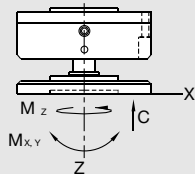
6.98

## Loading Information

**How to Order:** (Order Accessories separately from Basic Model)

**BASIC MODEL**

**ULS-300**



### PNEUMATIC ACCESSORIES

Standard Seal Repair Kit

ORDER #

SLKT-433

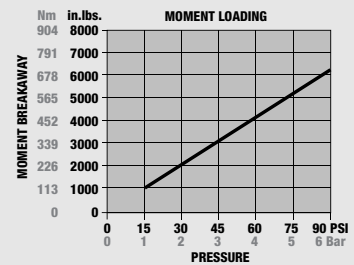
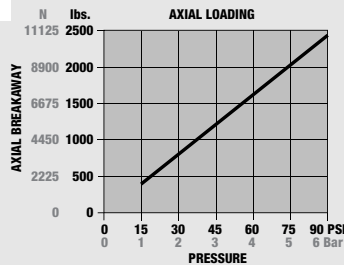
QTY/UNIT

1

### Loading Capacity at 90 psi 6 bar

	Imperial	Metric
Maximum Breakaway Compressive <b>C</b>	2475 lbs.	11,000 N
Maximum Breakaway Moment <b>My</b>	6195 in.-lbs.	700 Nm
Maximum Breakaway Moment <b>Mz</b>	6195 in.-lbs.	700 Nm

## Maximum Overload

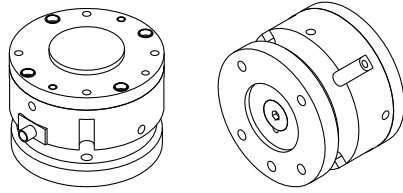


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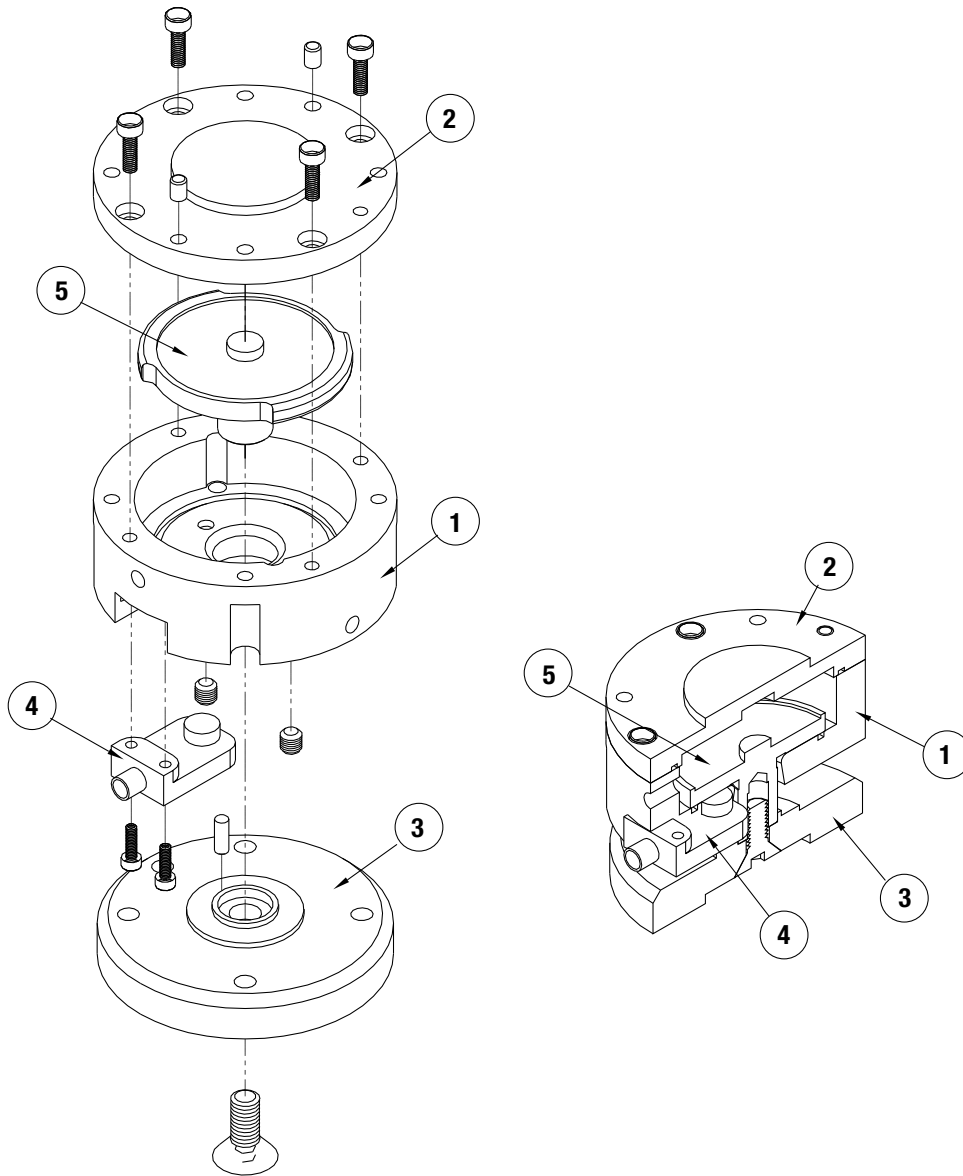
# ULS Series Exploded View



Item	Qty	Name
01	1	Body
02	1	Top Plate
03	1	Bottom Plate
04	1	Sensor
05	1	Pressure Plate

**NOTE:** Contact the Robohand Sales Department for a complete spare parts list with order numbers and prices.

**SK Seal Repair Kit Order #'s See Product Data Sheets**



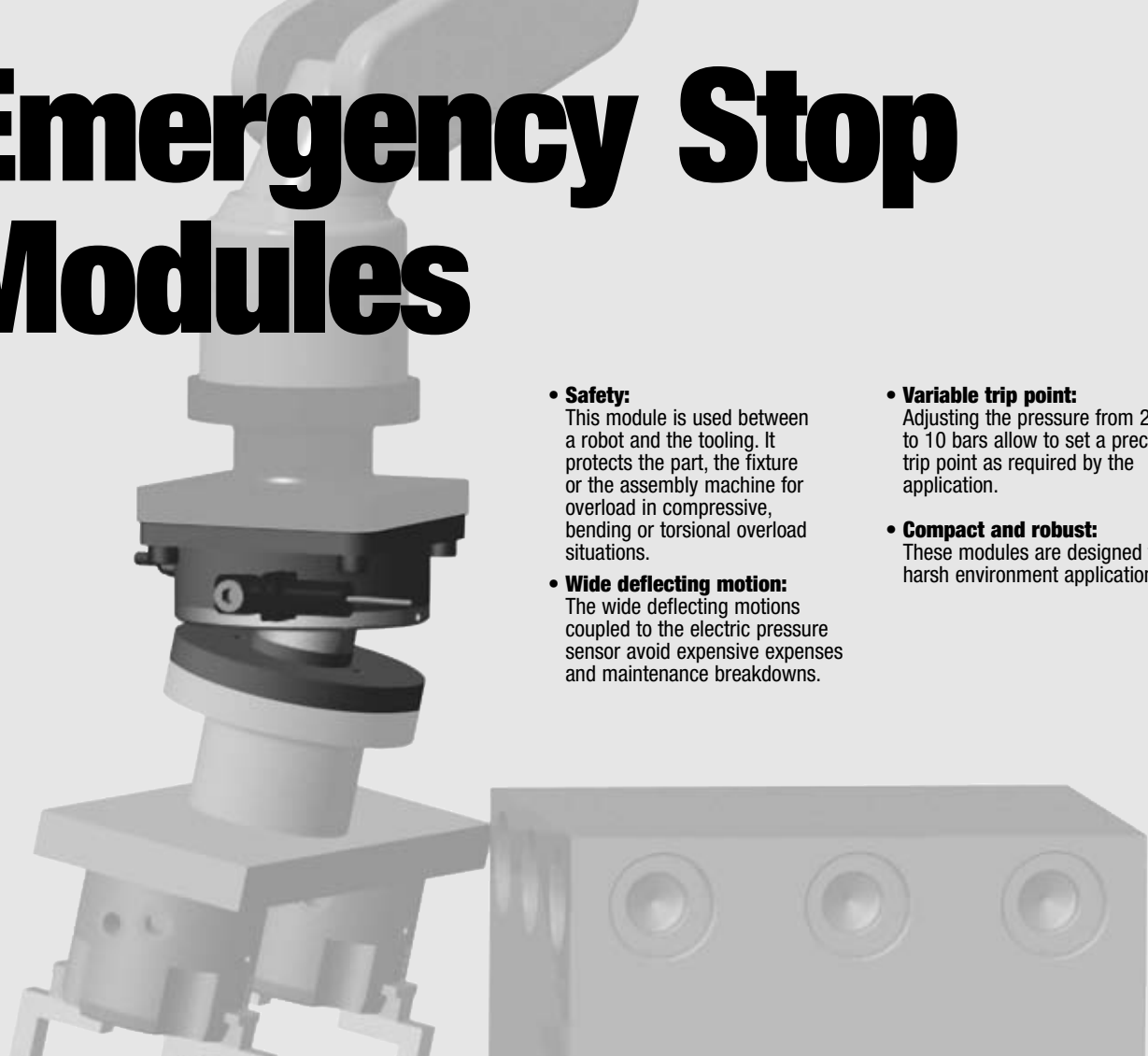
ULS SERIES  
6.99

Seal Kit Items	Thread Locker	Krytox™ Lubricant	Lightweight Machine Oil	Teflon® Based Grease	Super Bonder	Third Angle Projection

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[www.comoso.com](http://www.comoso.com)

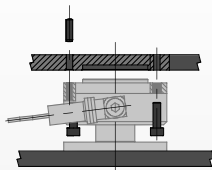
# Emergency Stop Modules



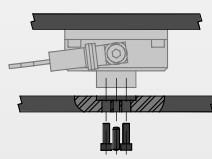
- Safety:**  
 This module is used between a robot and the tooling. It protects the part, the fixture or the assembly machine for overload in compressive, bending or torsional overload situations.
- Wide deflecting motion:**  
 The wide deflecting motions coupled to the electric pressure sensor avoid expensive expenses and maintenance breakdowns.
- Variable trip point:**  
 Adjusting the pressure from 2 to 10 bars allow to set a precise trip point as required by the application.
- Compact and robust:**  
 These modules are designed for harsh environment applications.

## Mounting Information:

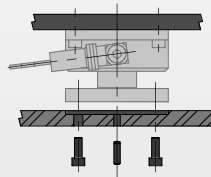
Modules can be mounted & operated in any orientation



The module is located using pilot boss and a dowel pin and assembled with 4 thru body screws



The tooling is located using pilot boss and a dowel pin and assembles with 3 or 4 screws



Using the blank plate allows the customer to locate and assemble its tooling to their convenience

## Technical Specifications:

Pneumatic Specifications	Imperial	Metric
Pressure Operating Range	30-145 psi	2-10 bar
Cylinder Type	Non-Conventional	
Dynamic seals	Internally lubricated Buna-N seals	
Valve Required to Operate	0-145 PSI regulator	
<b>Air Quality Requirements</b>		
Air Filtration	40 Micron or Better	
Air Lubrication	Not Necessary*	
Air Humidity	Low Moisture Content (dry)	
<b>Temperature Operating Range</b>		
	-30°~180° F	-35°~80° C
<b>Maintenance Specifications**</b>		
Expected Life	Normal Application	
	w/ Preventative Maintenance	5 million cycles 10+ million cycles
Field Repairable	Yes	
Seal Repair Kits Available	Yes	

\*Addition of lubrication will greatly increase service life  
 \*\*See Maintenance Section

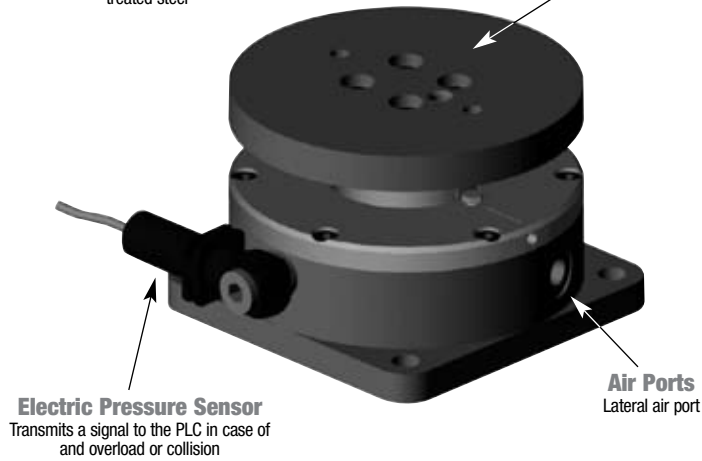
## Product Features

### Quality Components

Made from aluminum alloy with red coat anodization. The modules main components are made of heat treated steel

### Tooling Attachment

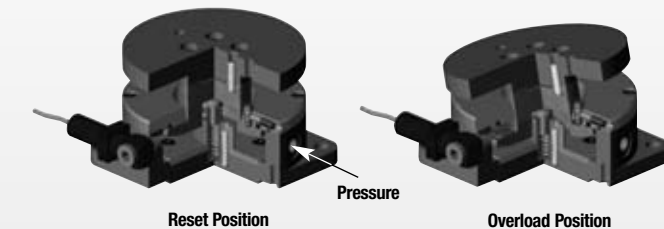
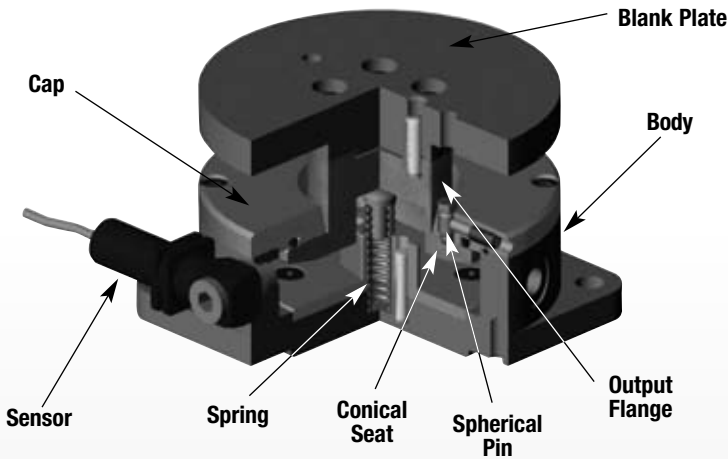
Tooling can be mounted directly on the output flange or using the provided blank flange



**Electric Pressure Sensor**  
Transmits a signal to the PLC in case of and overload or collision

**Air Ports**  
Lateral air port

## Operating Principle



- The conical seat in the output flange and the spherical pin are used to place the module in the home position.
- The pressure inside the chamber applies an effort on the output flange to keep it in the home position.
- When an outside force or moment applied to the output flange is higher than the preset force, the conical seat moves from the spherical pin generating an air leakage.
- The air leakage causes a pressure fall down in the module chamber which is detected by the sensor. The tool reset has to be done manually.

## Style - Emergency Stop Modules

### Size-60

<b>Style:</b>	<b>AU-60</b>	
<b>Axial Compliance:</b>	0.28 in.	7 mm
<b>Rotation:</b>	45°	45°
<b>Angular:</b>	12°	12°
<b>Weight:</b>	0.99 lbs.	0.45 Kg



See Page **6.102**

## Style - Emergency Stop Modules

### Size-80

<b>Style:</b>	<b>AU-80</b>	
<b>Axial Compliance:</b>	0.334 in.	8.5 mm
<b>Rotation:</b>	24°	24°
<b>Angular:</b>	12°	12°
<b>Weight:</b>	1.5 lbs.	0.68 Kg



See Page **6.103**

## Style - Emergency Stop Modules

### Size-110

<b>Style:</b>	<b>AU-110</b>	
<b>Axial Compliance:</b>	0.531 in.	13.5 mm
<b>Rotation:</b>	31°	31°
<b>Angular:</b>	12°	12°
<b>Weight:</b>	4.6 lbs.	2.1 Kg



See Page **6.104**

## Style - Emergency Stop Modules

### Size-140

<b>Style:</b>	<b>AU-140</b>	
<b>Axial Compliance:</b>	0.63 in.	16 mm
<b>Rotation:</b>	45°	45°
<b>Angular:</b>	12°	12°
<b>Weight:</b>	8.8 lbs.	4.0 Kg



See Page **6.105**

## Style - Emergency Stop Modules

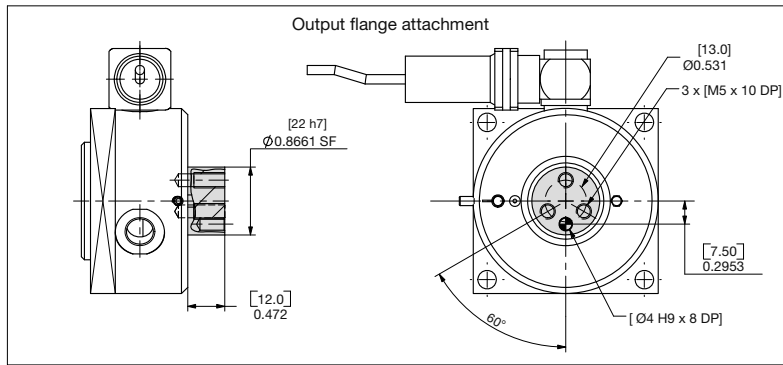
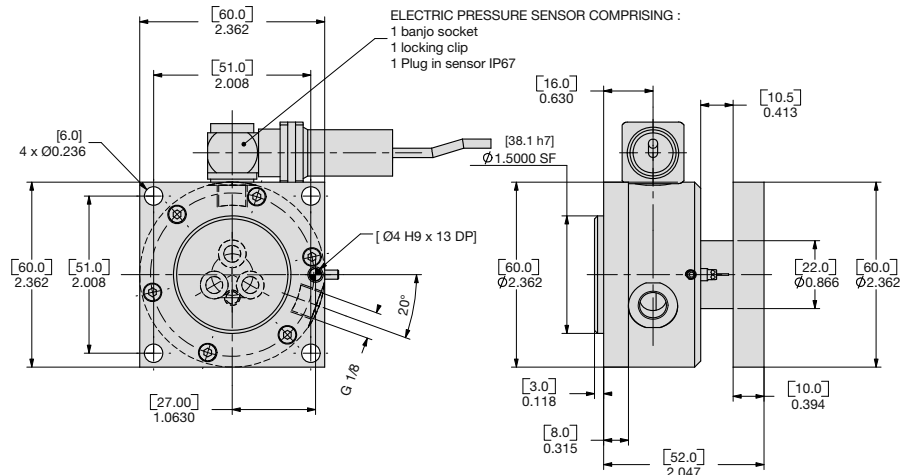
### Size-165

<b>Style:</b>	<b>AU-165</b>	
<b>Axial Compliance:</b>	0.67 in.	17 mm
<b>Rotation:</b>	24°	24°
<b>Angular:</b>	12°	12°
<b>Weight:</b>	12.8 lbs.	5.8 Kg



See Page **6.106**

# AU-60 EMERGENCY STOP MODULES



## Specifications

### AU-60

Maximum Payload .....	4.0 lbs.	1.8 Kg
Rotational Compliance (X and Y axis) ..	12°	12°
Rotational Compliance (Z axis) .....	45°	45°
Axial Compliance (Z axis).....	0.28 in.	7 mm
Weight.....	0.99 lbs.	0.45 Kg
Pressure Range (locked cylinder) .....	30-145 psi	2-10 bar
Cylinder bore .....	1.77 in.	45 mm
Displacement.....	0.06 in. <sup>3</sup>	1 cm <sup>3</sup>
Temperature Range .....	-30°~180° F	-35°~80° C
Repeatability .....	±0.002 in.	±0.05 mm
Valve required to actuate.....	3-way, 2-position	

## UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

Dimensions are symmetrical about centerline	Third Angle Projection	All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or ±.013mm	Metric Threads Course Pitch	Imperial in. 0.00 = ±.01 0.000 = ±.005 0.0000 = ±.0005	Metric [mm] [0.] = [±.25] [0.0] = [±.13] [0.00] = [±.013]
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AU SERIES

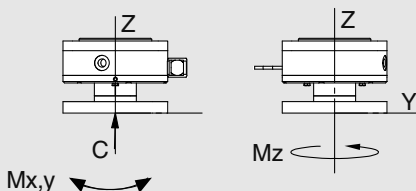
6.102

## Loading Information

## How to Order: (Order Accessories separately from Basic Model)

### BASIC MODEL

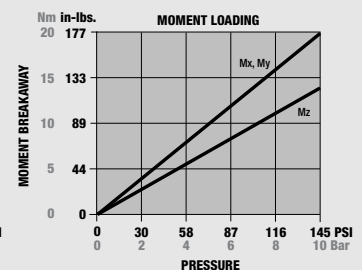
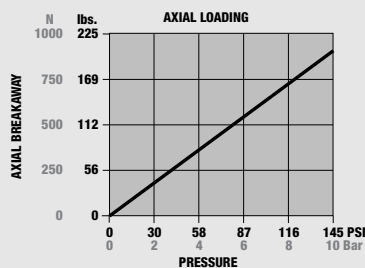
## AU-60



### Loading Capacity at 100 psi 7 bar

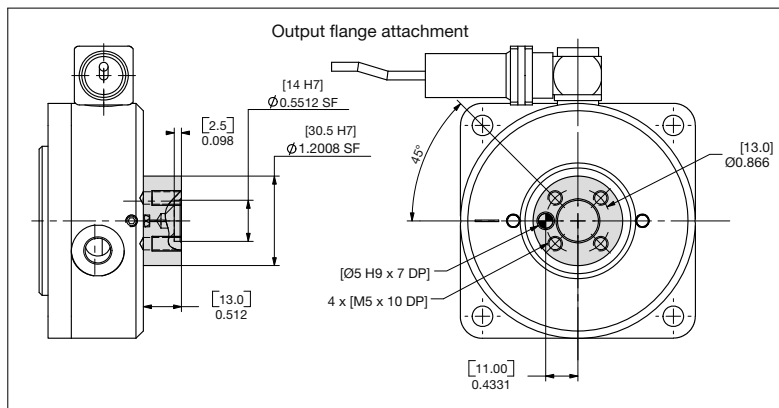
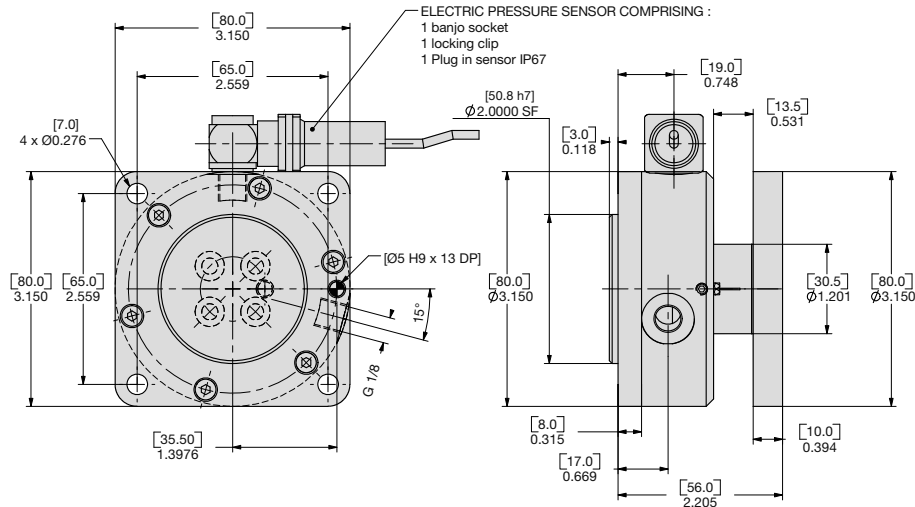
	Imperial	Metric
Maximum Breakaway Compressive <b>C</b>	139 lbs.	620 N
Maximum Breakaway Moment <b>Mx</b>	124 in.-lbs.	14 Nm
Maximum Breakaway Moment <b>My</b>	89 in.-lbs.	10 Nm
Maximum Breakaway Moment <b>Mz</b>	124 in.-lbs.	14 Nm

## Maximum Overload



Please see back cover for DE-STA-CO Global Locations. [www.destaco.com](http://www.destaco.com)

[www.comoso.com](http://www.comoso.com)



### Specifications

### AU-80

Maximum Payload .....	10.0 lbs.	4.5 Kg
Rotational Compliance (X and Y axis) ..	12°	12°
Rotational Compliance (Z axis) .....	24°	24°
Axial Compliance (Z axis) .....	0.334 in.	8.5 mm
Weight .....	1.5 lbs.	0.68 Kg
Pressure Range (locked cylinder) .....	30-145 psi	2-10 bar
Cylinder bore .....	2.4 in.	61 mm
Displacement .....	0.99 in. <sup>3</sup>	16.3 cm <sup>3</sup>
Temperature Range .....	-30°~180° F	-35°~80° C
Repeatability .....	±0.0025 in.	±0.06 mm
Valve required to actuate .....	3-way, 2-position	

UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

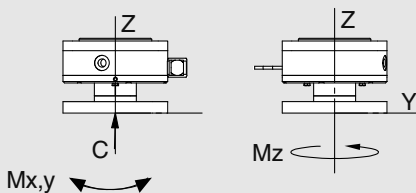
Dimensions are symmetrical about centerline	Third Angle Projection	All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or ±.013mm	Metric Threads Course Pitch	Imperial in. 0.00 = ±.01 0.000 = ±.005 0.0000 = ±.0005	Metric [mm] [0.] = [±.25] [0.0] = [±.13] [0.00] = [±.013]
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## Loading Information

## How to Order: (Order Accessories separately from Basic Model)

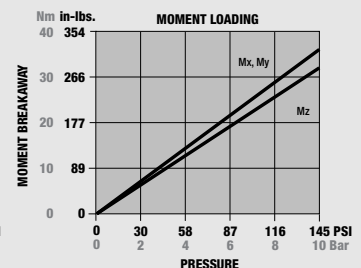
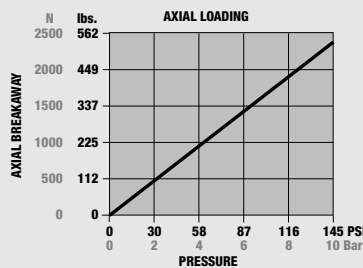
### BASIC MODEL

## AU-80



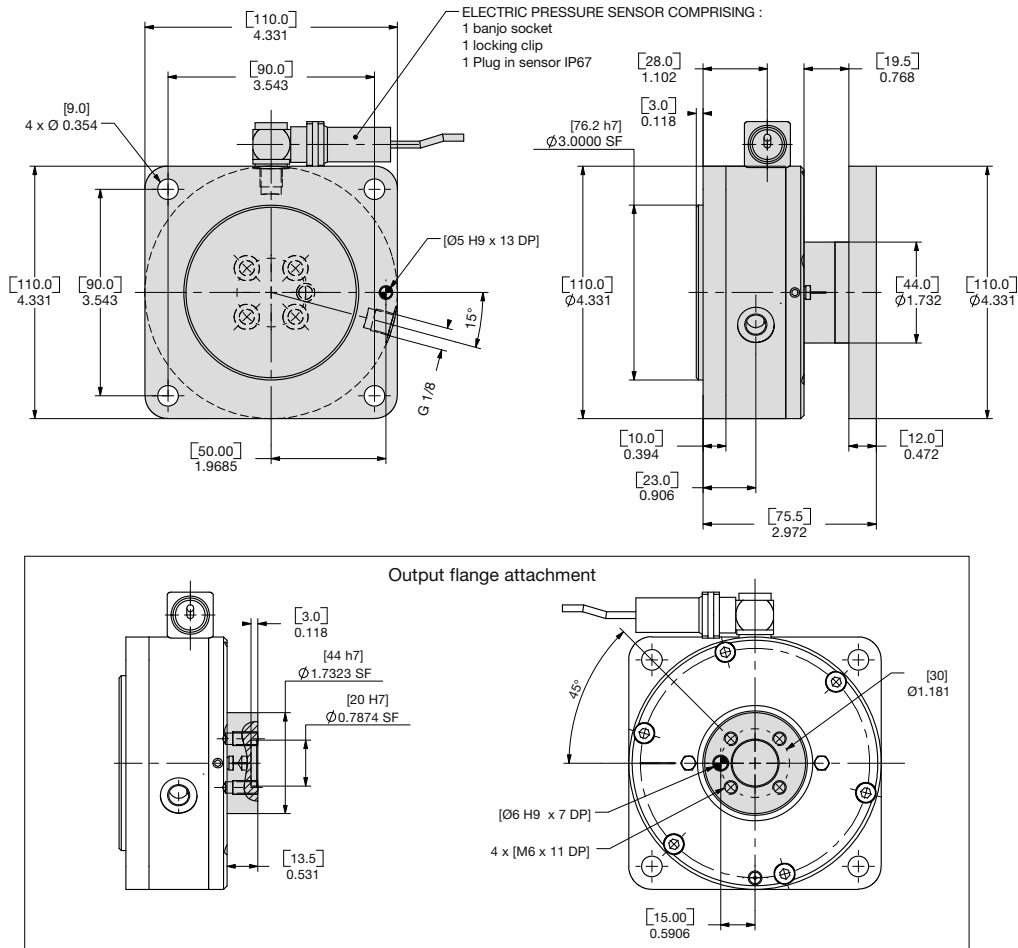
Loading Capacity at 100 psi 7 bar	Imperial	Metric
Maximum Breakaway Compressive <b>C</b>	372 lbs.	1655 N
Maximum Breakaway Moment <b>Mx</b>	195 in.-lbs.	22 Nm
Maximum Breakaway Moment <b>My</b>	221 in.-lbs.	25 Nm
Maximum Breakaway Moment <b>Mz</b>	195 in.-lbs.	22 Nm

### Maximum Overload





# AU-110 EMERGENCY STOP MODULES



## Specifications

### AU-110

Maximum Payload .....	18.8 lbs.	8.5 Kg
Rotational Compliance (X and Y axis) ..	12°	12°
Rotational Compliance (Z axis) .....	31°	31°
Axial Compliance (Z axis).....	0.531 in.	13.5 mm
Weight.....	4.6 lbs.	2.1 Kg
Pressure Range (locked cylinder) .....	30-145 psi	2-10 bar
Cylinder bore .....	3.38 in.	86 mm
Displacement.....	2.22 in. <sup>3</sup>	36.5 cm <sup>3</sup>
Temperature Range .....	-30°~180° F	-35°~80° C
Repeatability .....	±0.003 in.	±0.08 mm
Valve required to actuate.....	3-way, 2-position	

UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

				Imperial in.	Metric [mm]
Dimensions are symmetrical about centerline	Third Angle Projection	All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or ±.013mm	Metric Threads Course Pitch	0.00 = ±.01 0.000 = ±.005 0.0000 = ±.0005	[0.] = [±.25] [0.0] = [±.13] [0.00] = [±.013]

AU SERIES

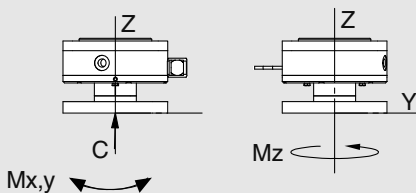
6.104

## Loading Information

How to Order: (Order Accessories separately from Basic Model)

BASIC MODEL

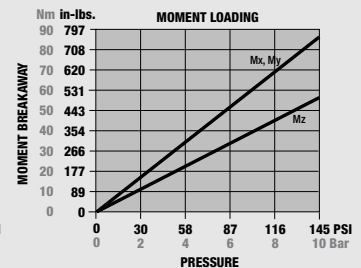
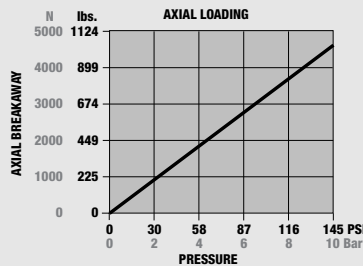
**AU-110**



### Loading Capacity at 100 psi 7 bar

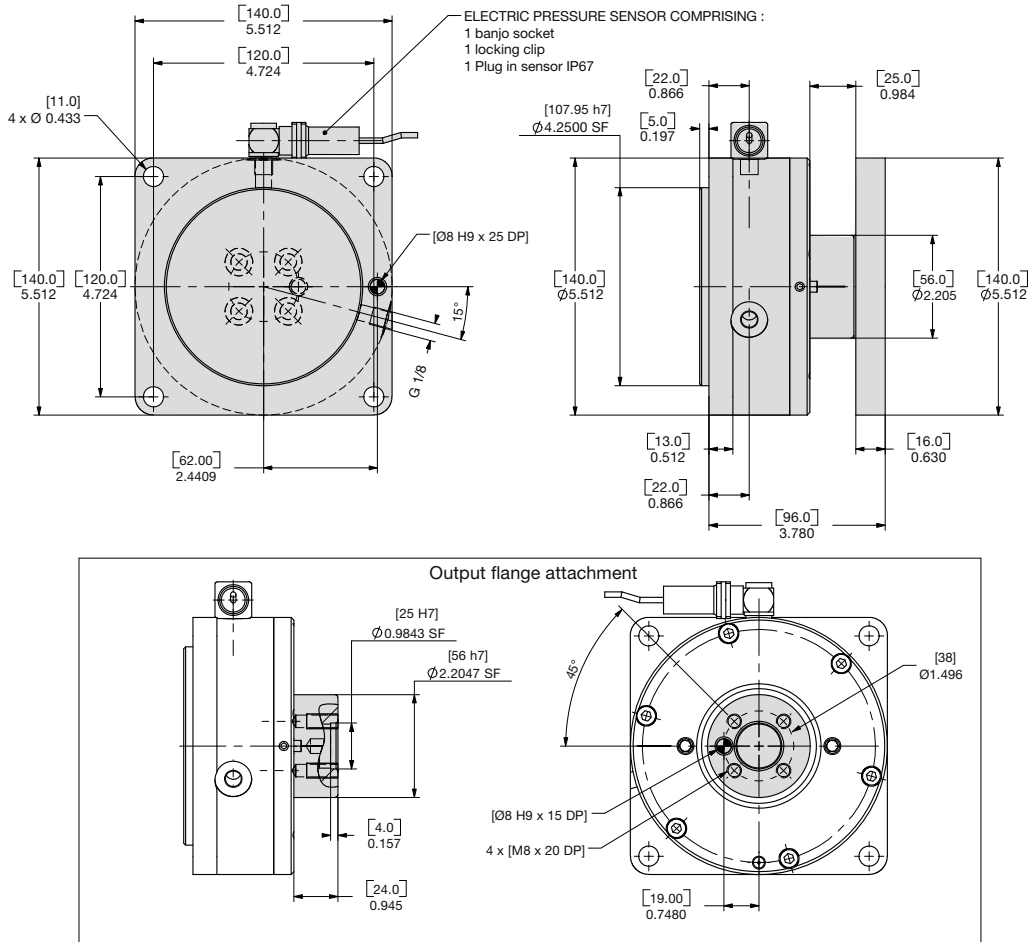
	Imperial	Metric
Maximum Breakaway Compressive <b>C</b>	712 lbs.	3170 N
Maximum Breakaway Moment <b>Mx</b>	522 in.-lbs	59 Nm
Maximum Breakaway Moment <b>My</b>	345 in.-lbs	39 Nm
Maximum Breakaway Moment <b>Mz</b>	522 in.-lbs	59 Nm

## Maximum Overload



Please see back cover for DE-STA-CO Global Locations. [www.destaco.com](http://www.destaco.com)

[www.comoso.com](http://www.comoso.com)



### Specifications

### AU-140

Maximum Payload .....	38.6 lbs.	17.5 Kg
Rotational Compliance (X and Y axis) ..	12°	12°
Rotational Compliance (Z axis) .....	45°	45°
Axial Compliance (Z axis).....	0.63 in.	16 mm
Weight.....	8.8 lbs.	4.0 Kg
Pressure Range (locked cylinder) .....	30-145 psi	2-10 bar
Cylinder bore .....	4.25 in.	108 mm
Displacement.....	3.31 in. <sup>3</sup>	54.3 cm <sup>3</sup>
Temperature Range .....	-30°~180° F	-35°~80° C
Repeatability .....	±0.004 in.	±0.1 mm
Valve required to actuate.....	3-way, 2-position	

### UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

Dimensions are symmetrical about centerline	Third Angle Projection	All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or ±.013mm	Metric Threads Course Pitch	Imperial in. 0.00 = ±.01 0.000 = ±.005 0.0000 = ±.0005	Metric [mm] [0.] = [±.25] [0.0] = [±.13] [0.00] = [±.013]
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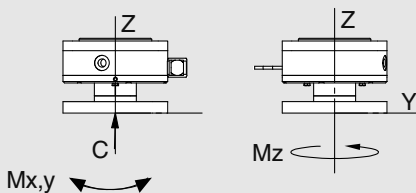
AU SERIES  
**6.105**

## Loading Information

## How to Order: (Order Accessories separately from Basic Model)

### BASIC MODEL

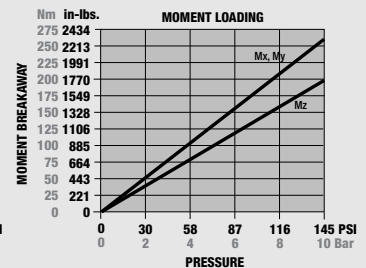
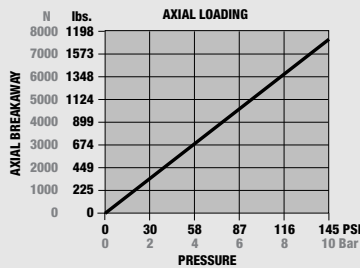
# AU-140



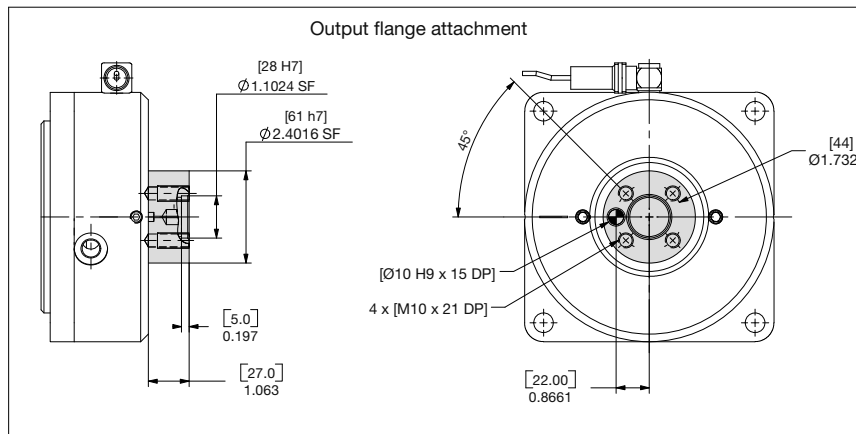
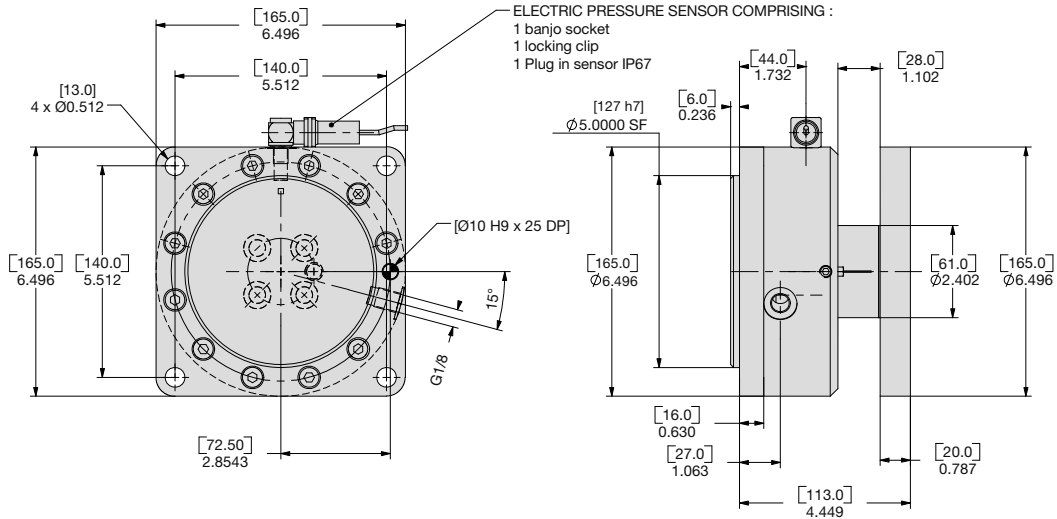
### Loading Capacity at 100 psi 7 bar

	Imperial	Metric
Maximum Breakaway Compressive <b>C</b>	1178 lbs.	5240 N
Maximum Breakaway Moment <b>Mx</b>	1584 in.-lbs	179 Nm
Maximum Breakaway Moment <b>My</b>	1221 in.-lbs	138 Nm
Maximum Breakaway Moment <b>Mz</b>	1584 in.-lbs	179 Nm

## Maximum Overload



# AU165 EMERGENCY STOP MODULES



### Specifications

### AU-165

Maximum Payload .....	48.5 lbs.	22.0 Kg
Rotational Compliance (X and Y axis) ..	12°	12°
Rotational Compliance (Z axis) .....	24°	24°
Axial Compliance (Z axis).....	0.67 in.	17 mm
Weight.....	12.7 lbs.	5.8 Kg
Pressure Range (locked cylinder) .....	30-145 psi	2-10 bar
Cylinder bore .....	4.76 in.	121 mm
Displacement.....	3.94 in.3	64.6 cm3
Temperature Range .....	-30°~180° F	-35°~80° C
Repeatability .....	±0.005 in.	±0.12 mm
Valve required to actuate.....	3-way, 2-position	

**UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW**

				Imperial in.	Metric [mm]
Dimensions are symmetrical about centerline	Third Angle Projection	All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or ±.013mm	Metric Threads Course Pitch	0.00 = ±.01 0.000 = ±.005 0.0000 = ±.0005	[0.] = [±.25] [0.0] = [±.13] [0.00] = [±.013]

AU SERIES

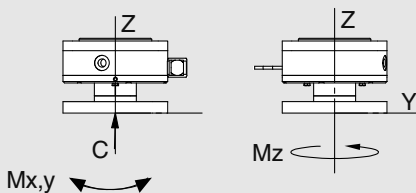
6.106

## Loading Information

**How to Order:** (Order Accessories separately from Basic Model)

**BASIC MODEL**

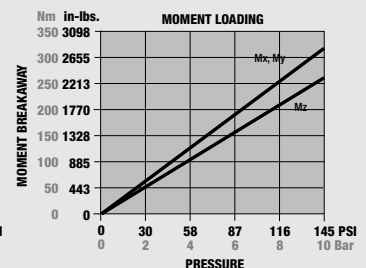
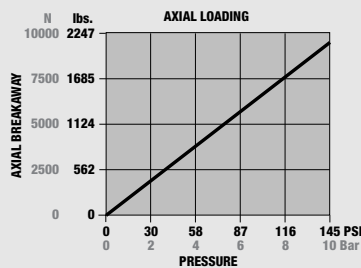
**AU-165**

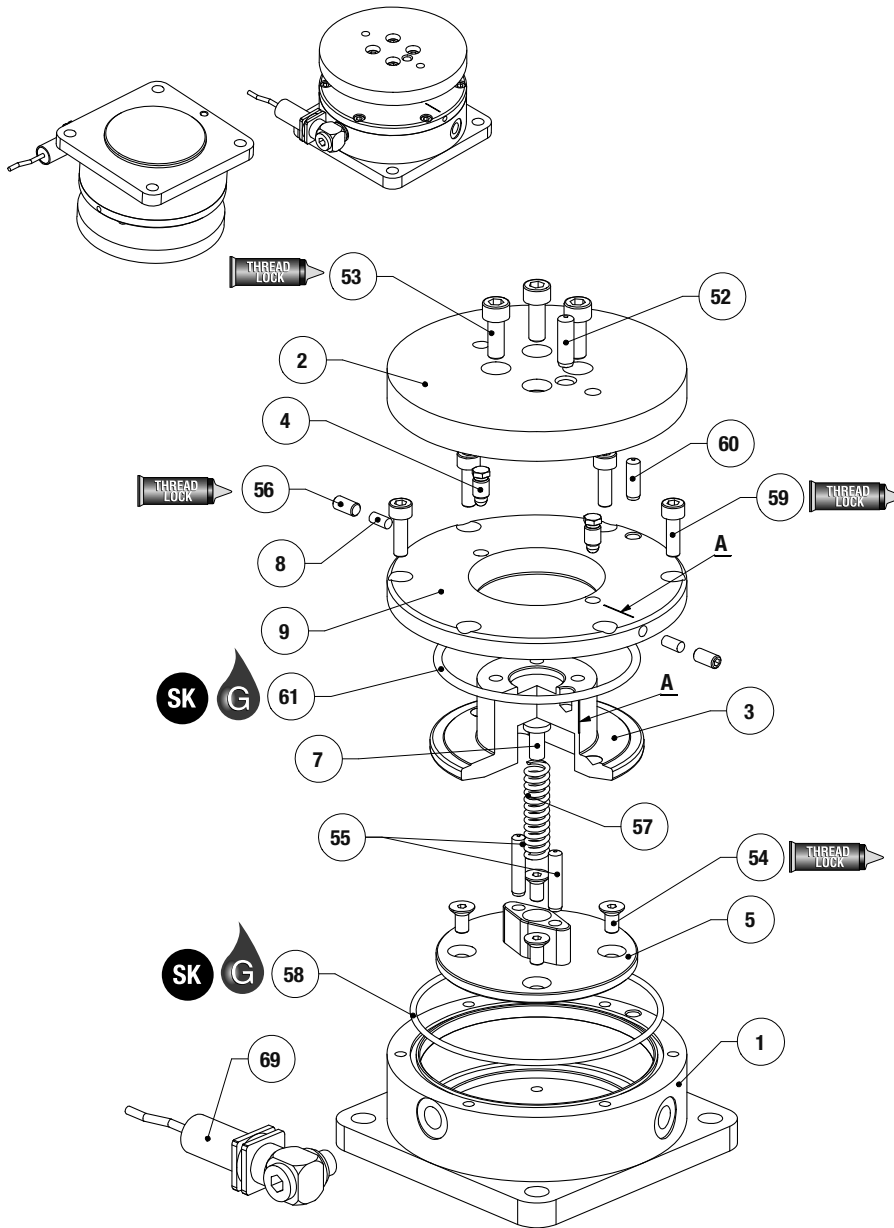


### Loading Capacity at 100 psi 7 bar

	Imperial	Metric
Maximum Breakaway Compressive <b>C</b>	1472 lbs.	6550 N
Maximum Breakaway Moment <b>Mx</b>	1956 in.-lbs	221 Nm
Maximum Breakaway Moment <b>My</b>	1584 in.-lbs	179 Nm
Maximum Breakaway Moment <b>Mz</b>	1956 in.-lbs	221 Nm

### Maximum Overload





Item	Qty	Name
1	1	Body
2	1	Blank Plate
3	1	Output Flange
4	2	Spherical pin
5	1	Stop
7	1	Spring cap
8	2	Cylindrical spacer
9	1	Cap
52	1	Pin, Output flange
53	4	SHC screw, Flange
54	4	Hexagon CSKH screw, Stop
55	2	Pin, Stop
56	2	SS screw, Cylindrical pin
57	1	Spring
58	1	O-ring, Cap
59	6	SHC screw, Cap
60	1	Pin, Cap
61	1	O-ring, output flange
69	1	Electric pressure sensor

**NOTE:** Contact the Robohand Sales Department for a complete spare parts list with order numbers and prices.

### Assembly Procedures

- 1) Locate the stop (#5) using the two pins (#55) into the body (#1)
- 2) Fasten the stop (#5) with (#54) screws with thread locker
- 3) Install the spring (#57) into the stop hole
- 4) Insert the spring cap (#7) into the spring (#57)
- 5) Insert the O-Ring (#58) into the top groove of the body (#1)
- 6) Screw the spherical pin (#4) into the cap (#9)
- 7) Insert the cylindrical spacer (#8) into the lateral holes of the cap (#9)
- 8) Fasten the SS screws (#56) into the lateral tapped holes of the cap (#9)
- 9) Insert the O-Ring (#61) into the groove of the cap (#9)
- 10) Insert the output flange (#3) into the cap (#9) lining up the engraved signs "A"
- 11) Insert this subassembly into the body (#1) and locate it using (#60) pin
- 12) Fasten the cap (#9) with (#59) SH screws with thread locker
- 13) Locate the blank plate (#2) onto the output flange (#3) using the dowel pin (#52)
- 14) Fasten the blank plate (#2) with (#53) SH screws with thread locker
- 15) Screw the electric pressure sensor (#69) in the body (#1)

### Adjustment Procedures

For an easier adjustment, the blank plate (#2) can be disassembled. It is also advised to supply the module with two bar air pressure.

- 1) Unscrew the SS screws (#56) to release the cylindrical spacer (#8)
- 2) Unscrew the spherical pin (#4) to release the contact with the conical seats of the output flange (#3).

- 3) Line up the engraved "A" sign of the body (#1) and the output flange (#3)
- 4) Screw, simultaneously, by successive quarter of turn, the spherical pin (#4) till getting a contact into the conical seats of the output flange (#3). Repeat this operation until getting a minimal angular freedom.
- 5) Fasten the SS screws (#56) into the lateral tapped holes of the cap (#9).



Seal Kit Items



Thread Locker



Krytox™ Lubricant



Lightweight Machine Oil



Teflon® Based Grease

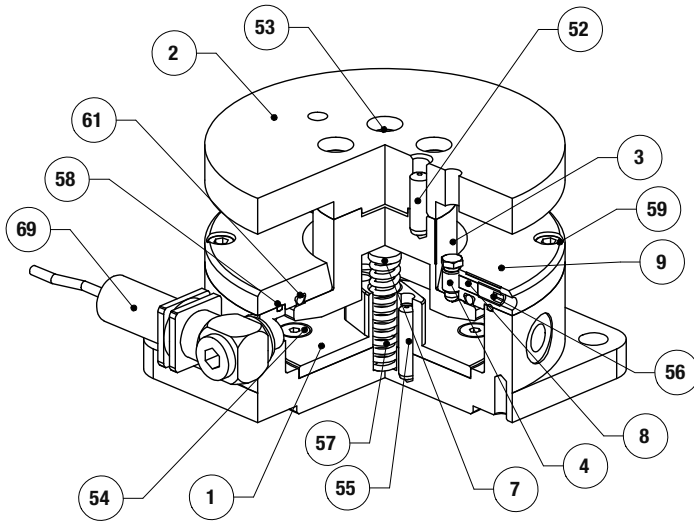


Super Bonder



Third Angle Projection

# AU Series Assembled View



Item	Qty	Name
1	1	Body
2	1	Blank Plate
3	1	Output Flange
4	2	Spherical pin
5	1	Stop
7	1	Spring cap
8	2	Cylindrical spacer
9	1	Cap
52	1	Pin, Output flange
53	4	SHC screw, Flange
54	4	Hexagon CSKH screw, Stop
55	2	Pin, Stop
56	2	SS screw, Cylindrical pin
57	1	Spring
58	1	O-ring, Cap
59	6	SHC screw, Cap
60	1	Pin, Cap
61	1	O-ring, output flange
69	1	Electric pressure sensor

**NOTE:** Contact the Robohand Sales Department for a complete spare parts list with order numbers and prices.



Seal Kit  
Items



Thread  
Locker



Krytox™  
Lubricant



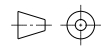
Lightweight  
Machine Oil



Teflon® Based  
Grease



Super  
Bonder



Third Angle  
Projection





# Resettable Emergency Stop Modules

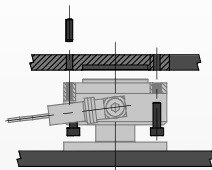


- Safety:**  
 This module is used between a robot and the tooling. It protects the part, the fixture or the assembly machine for overload in compressive, bending or torsional overload situations.
- Resettable:**  
 This module is equipped with a patented mechanism that helps to reset the tooling after an overload or collision.
- Wide deflecting motion:**  
 The wide deflecting motions coupled to the electric pressure sensor avoid expensive expenses and maintenance breakdowns.
- Variable trip point:**  
 Adjusting the pressure from 2 to 10 bars allow to set a precise trip point as required by the application.
- Compact and robust:**  
 These modules are designed for harsh environment applications.

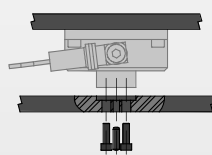


## Mounting Information:

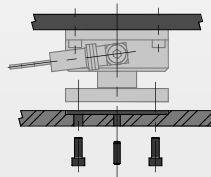
Modules can be mounted & operated in any orientation



The module is located using pilot boss and a dowel pin and assembled with 4 thru body screws



The tooling is located using 2 dowel pins and assembled with 4 screws



Using the blank plate allows the customer to locate and assemble its tooling to their convenience

## Technical Specifications:

Pneumatic Specifications	Imperial	Metric
Pressure Operating Range	30-145 psi	2-10 bar
Cylinder Type	Non-Conventional	
Dynamic seals	Internally lubricated Viton® seals	
Valve Required to Operate	0-145 PSI regulator	
<b>Air Quality Requirements</b>		
Air Filtration	40 Micron or Better	
Air Lubrication	Not Necessary*	
Air Humidity	Low Moisture Content (dry)	
<b>Temperature Operating Range</b>		
	-30°~180° F	-35°~80° C
<b>Maintenance Specifications**</b>		
Expected Life	Normal Application	
	w/ Preventative Maintenance	5 million cycles
Field Repairable	10+ million cycles	
Seal Repair Kits Available	Yes	
	Yes	

\*Addition of lubrication will greatly increase service life  
 \*\*See Maintenance Section

## Product Features

### Tooling Attachment

Tooling can be mounted directly on the output flange or using the provided blank flange

### Quality Components

Made from aluminum alloy with red coat anodization. The modules main components are made of heat treated steel

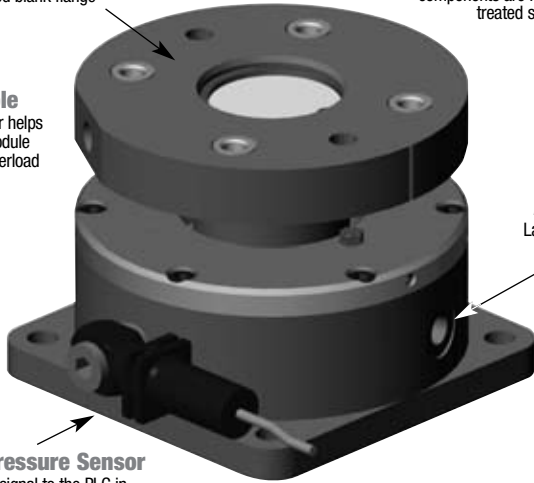
### Resettable

A built-in cylinder helps to reset the module once after an overload

**Air Port**  
Lateral air port

### Electric Pressure Sensor

Transmits a signal to the PLC in case of an overload or collision



## Style- Emergency Stop Modules

### Size-110

Style:	AU-110R	
Axial Compliance:	0.531 in.	13.5 mm
Rotation:	45°	45°
Angular:	12°	12°
Weight:	4.9 lbs.	2.25 Kg



See Page **6.112**

## Style- Emergency Stop Modules

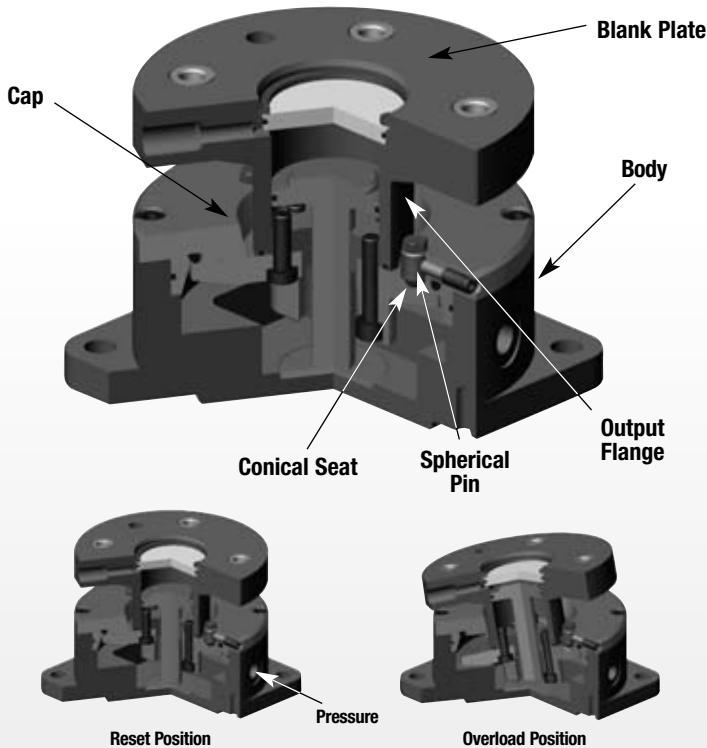
### Size-140

Style:	AU-140R	
Axial Compliance:	0.689 in.	17.5 mm
Rotation:	46.8°	46.8°
Angular:	12°	12°
Weight:	10.4 lbs.	4.75 Kg



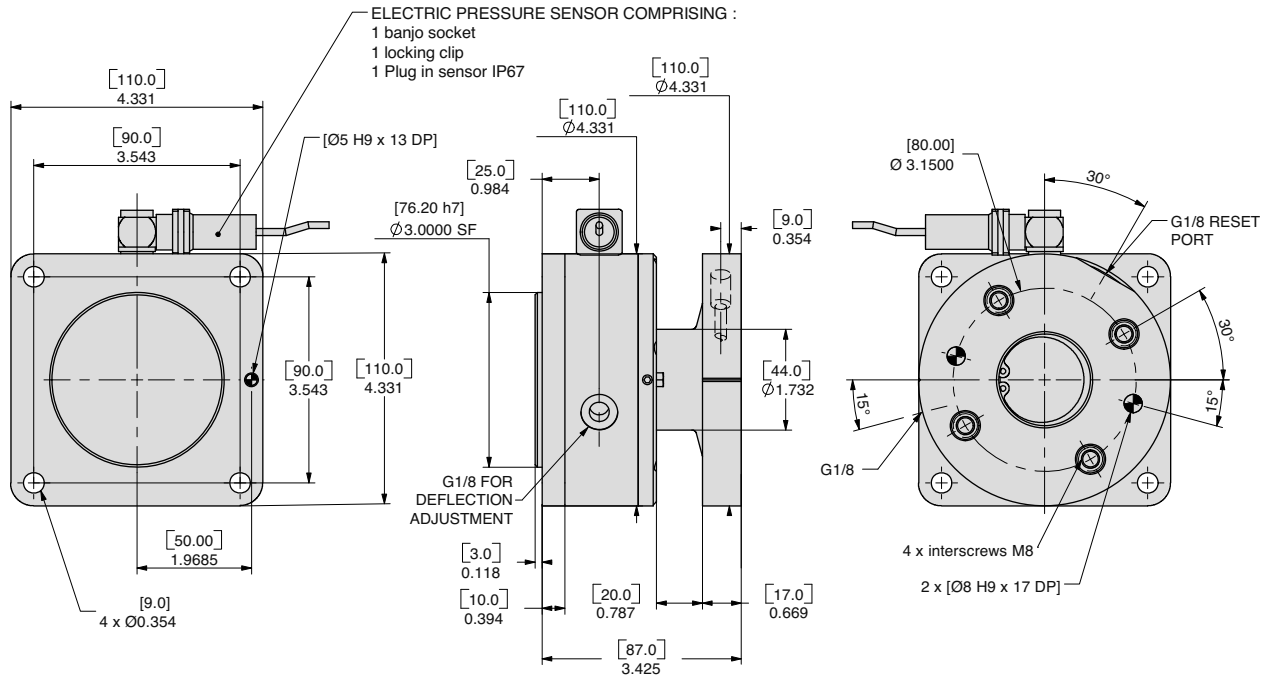
See Page **6.113**

## Operating Principle



- The conical seat in the output flange and the spherical pin are used to place the module in the home position.
- The pressure inside the chamber applies an effort on the output flange to keep it in the home position.
- When an outside force or moment applied to the output flange is higher than the preset force, the conical seat moves from the spherical pin generating an air leakage.
- The air leakage causes a pressure fall down in the module chamber which is detected by the sensor.
- The module can be reset using the piston placed into the cylinder.

# AU-110R RESETTABLE EMERGENCY STOP MODULES



## Specifications

### AU-110R

Maximum Payload .....	18.8 lbs.	8.5 Kg
Rotational Compliance (X and Y axis) ..	12°	12°
Rotational Compliance (Z axis) .....	45°	45°
Axial Compliance (Z axis).....	0.531 in.	13.5 mm
Weight.....	4.96 lbs.	2.25 Kg
Pressure Range (locked cylinder) .....	30-145 psi	2-10 bar
Cylinder bore .....	3.38 in.	86 mm
Displacement.....	4.27 in. <sup>3</sup>	70 cm <sup>3</sup>
Temperature Range .....	-30°~180° F	-35°~80° C
Repeatability .....	±0.003 in.	±0.08 mm
Valve required to actuate.....	3-way, 2-position	

UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

				Imperial in.	Metric [mm]
Dimensions are symmetrical about centerline	Third Angle Projection	All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or ±.013mm	Metric Threads Course Pitch	0.00 = ±.01 0.000 = ±.005 0.0000 = ±.0005	[0.] = [±.25] [0.0] = [±.13] [0.00] = [±.013]

AUR SERIES

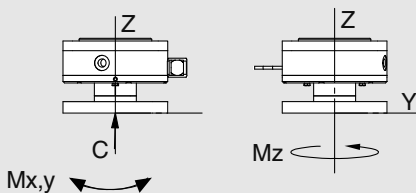
6.112

## Loading Information

How to Order: (Order Accessories separately from Basic Model)

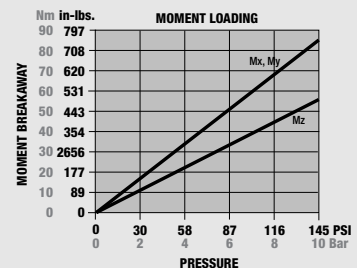
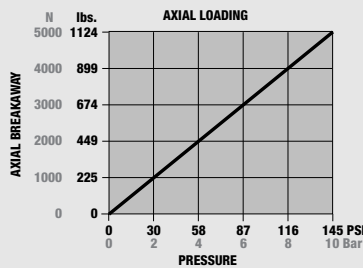
BASIC MODEL

**AU-110R**



Loading Capacity at 100 psi [7 bar]	Imperial	Metric
Maximum Breakaway Compressive <b>C</b>	773 lbs.	3440 N
Maximum Breakaway Moment <b>Mx</b>	522 in.-lbs.	59 Nm
Maximum Breakaway Moment <b>My</b>	336 in.-lbs.	38 Nm
Maximum Breakaway Moment <b>Mz</b>	522 in.-lbs.	59 Nm

## Maximum Overload

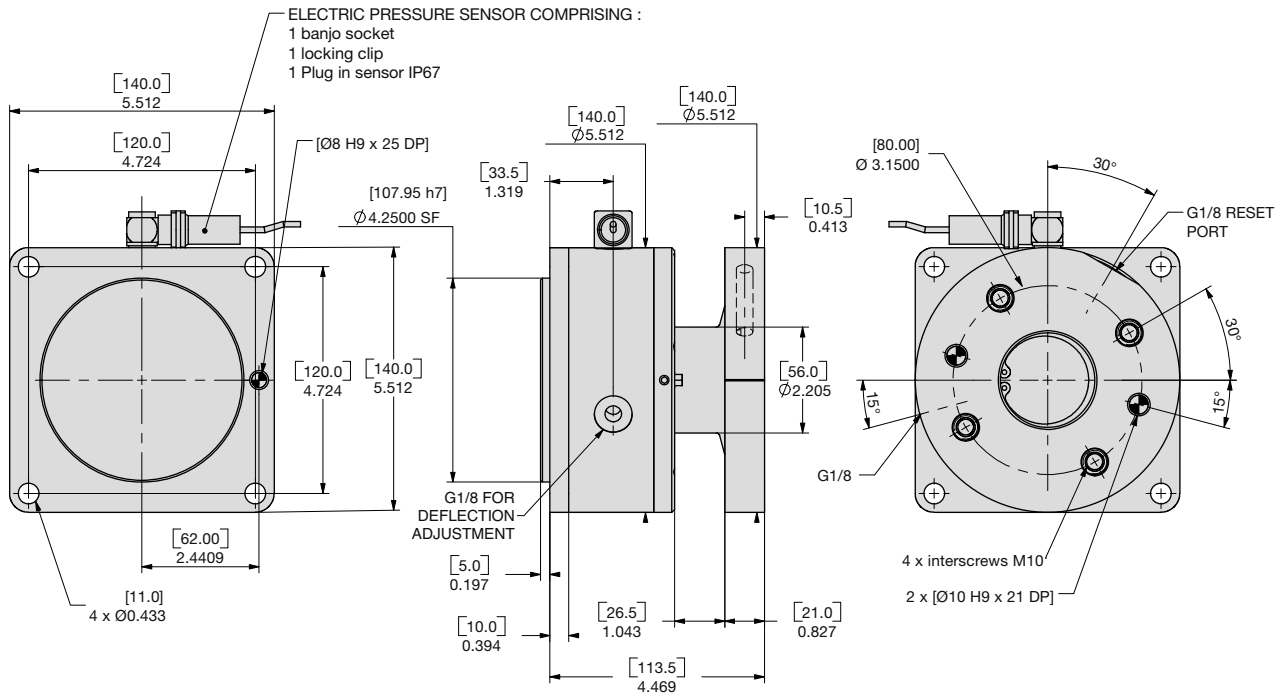


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[www.comoso.com](http://www.comoso.com)



# AU-140R RESETTABLE EMERGENCY STOP MODULES



## Specifications

### AU-140R

Maximum Payload .....	38.6 lbs.	17.5 Kg
Rotational Compliance (X and Y axis) ..	12°	12°
Rotational Compliance (Z axis) .....	45°	46.8°
Axial Compliance (Z axis) .....	0.689 in.	17.5 mm
Weight .....	10.47 lbs.	4.75 Kg
Pressure Range (locked cylinder) .....	30-145 psi	2-10 bar
Cylinder bore .....	4.25 in.	108 mm
Displacement .....	9.76 in. <sup>3</sup>	160 cm <sup>3</sup>
Temperature Range .....	-30°~180° F	-35°~80° C
Repeatability .....	±0.004 in.	±0.1 mm
Valve required to actuate .....	3-way, 2-position	

UNLESS OTHERWISE NOTED ALL TOLERANCES ARE AS SHOWN BELOW

				Imperial in.	Metric [mm]
Dimensions are symmetrical about centerline	Third Angle Projection	All Dowel Holes are SF (Slip Fit). Locational Tolerance ±.0005" or [±.013mm]	Metric Threads Course Pitch	0.00 = ±.01 0.000 = ±.005 0.0000 = ±.0005	[0.] = [±.25] [0.0] = [±.13] [0.00] = [±.013]

AUR SERIES

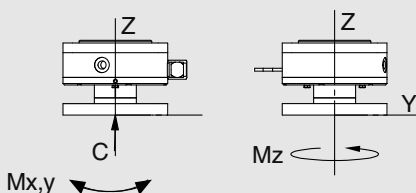
6.113

## Loading Information

How to Order: (Order Accessories separately from Basic Model)

BASIC MODEL

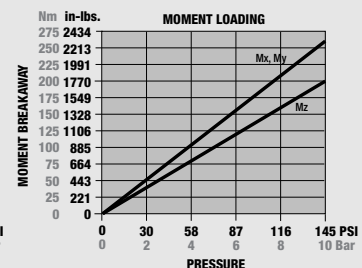
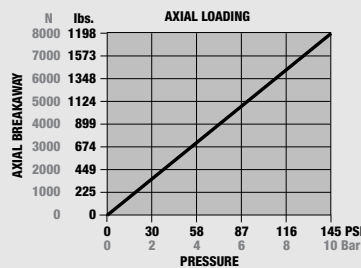
**AU-140R**



### Loading Capacity at 100 psi [7 bar]

	Imperial	Metric
Maximum Breakaway Compressive <b>C</b>	1238 lbs.	5510 N
Maximum Breakaway Moment <b>Mx</b>	1549 in.-lbs.	175 Nm
Maximum Breakaway Moment <b>My</b>	1195 in.-lbs.	135 Nm
Maximum Breakaway Moment <b>Mz</b>	1549 in.-lbs.	175 Nm

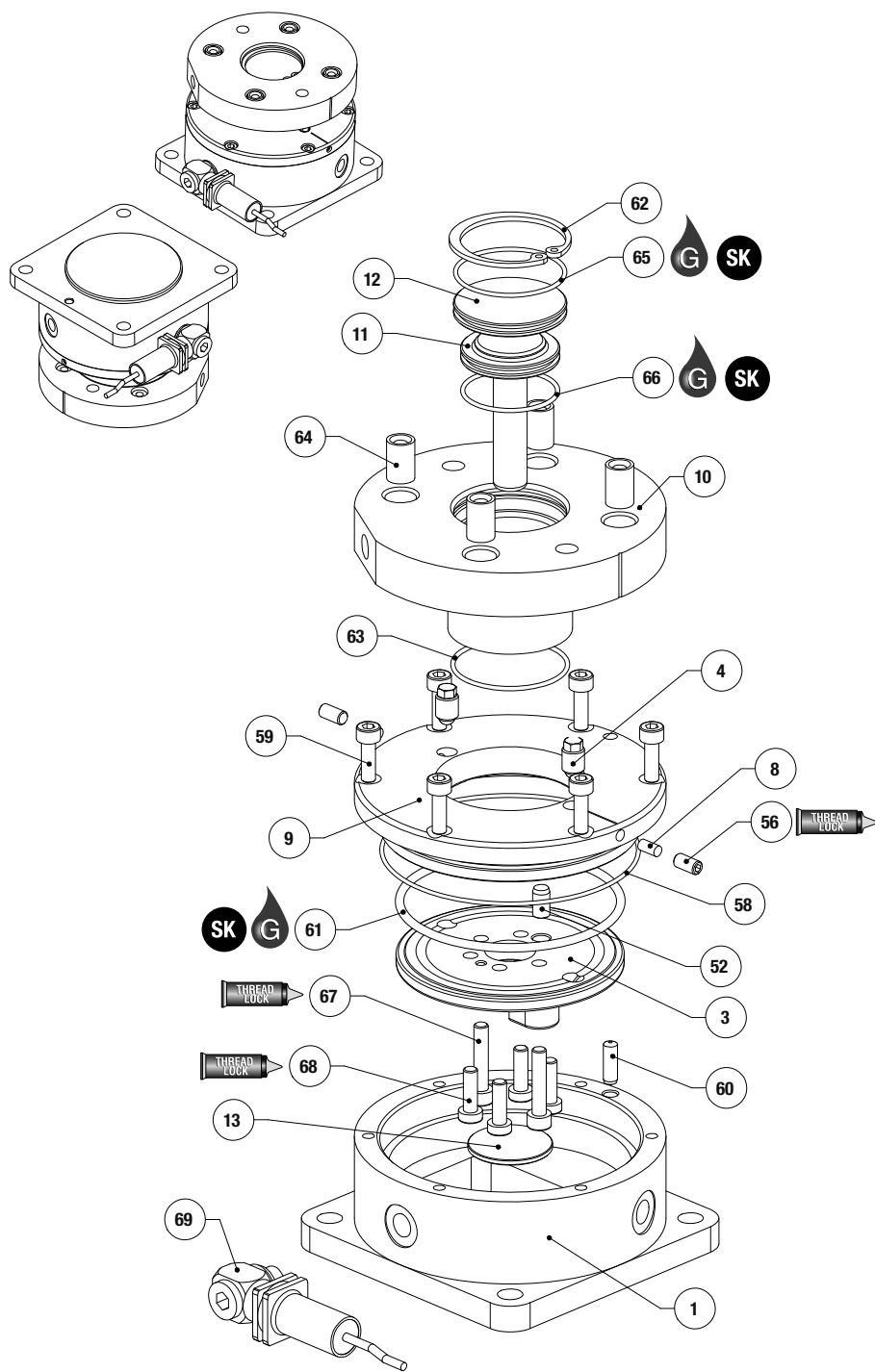
## Maximum Overload



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[www.comoso.com](http://www.comoso.com)

# AUR Series Exploded View



Item	Qty	Name
1	1	Body
3	1	Output flange
4	2	Spherical pin
8	2	Cylindrical spacer
9	1	Cap
10	1	Cylinder
11	1	Piston
12	1	Cap
13	1	Stop ring
52	1	Pin, output flange
56	2	SS screw, Cylindrical pin
58	1	O-ring, cap
59	6	SHC screw, Cap
60	1	Pin, Body
61	1	O-ring, Cap
62	1	Retaining ring, cap
63	1	O-ring, Cylinder
64	4	Screw crimping bush, Cylinder
65	1	O-ring, Cap
66	1	O-ring, Piston
67	2	SHC screw, Output flange
68	4	LHC screw, Cylinder
69	1	Electric pressure sensor

**NOTE:** Contact the Robohand Sales Department for a complete spare parts list with order numbers and prices.

### Assembly Procedures

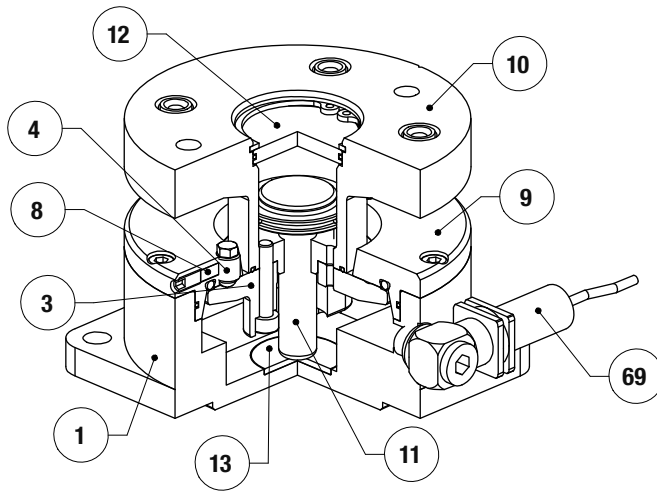
- Assemble the stop ring (#13) into the body counterbore hole (#1)
- Screw the spherical pin (#4) into the cap (#9)
- Insert the cylindrical spacer (#8) into the lateral holes of the cap (#9)
- Fasten the SS screws (#56) into the lateral tapped holes of the cap (#9)
- Insert the O-Ring (#58) into the outside groove of the cap (#9)
- Insert the O-Ring (#61) into the inside groove of the cap (#9)
- Mount the Screw crimping bush (#64) into the cylinder (#10)
- Insert the O-Ring (#63) into the groove of the cylinder (#10)
- Insert the pin (#52) into the cylinder (#10)
- Fit the cap (#9) between the cylinder (#10) and the output flange (#3) and fasten the cylinder (#10) and the output flange (#3) using the SHC screws (#67) and (#68) with thread locker
- Insert the pin (#60) into the body (#1)
- Insert the subassembly built step 10 into the body (#1). The engraved signs of the body and the cap have to be aligned
- Fasten the cap (#9) with (#59) SHC screws with thread locker
- Insert the O-Ring (#66) onto the piston (#11)
- Place the piston (#11) into the cylinder (#10)
- Insert the O-Ring (#65) onto the cap (#12)
- Assemble the cap (#12) into the cylinder (#10) using the retaining ring (#62)

### Adjustment Procedures

For an easier adjustment, the blank plate (#2) can be disassembled. It is also advised to supply the module with two bar air pressure.

- Unscrew the SS screws (#56) to release the cylindrical spacer (#8)
- Unscrew the spherical pin (#4) to release the contact with the conical seats of the output flange (#3).
- Line up the engraved "A" sign of the body (#1) and the output flange (#3)
- Screw, simultaneously, by successive quarter of turn, the spherical pin (#4) till getting a contact into the conical seats of the output flange (#3). Repeat this operation until getting a minimal angular freedom.
- Fasten the SS screws (#56) into the lateral tapped holes of the cap (#9).

Seal Kit Items	Thread Locker	Krytox™ Lubricant	Lightweight Machine Oil	Teflon® Based Grease	Super Bonder	Third Angle Projection



Item	Qty	Name
1	1	Body
3	1	Output flange
4	2	Spherical pin
8	2	Cylindrical spacer
9	1	Cap
10	1	Cylinder
11	1	Piston
12	1	Cap
13	1	Stop ring
52	1	Pin, output flange
56	2	SS screw, Cylindrical pin
58	1	O-ring, cap
59	6	SHC screw, Cap
60	1	Pin, Body
61	1	O-ring, Cap
62	1	Retaining ring, cap
63	1	O-ring, Cylinder
64	4	Screw crimping bush, Cylinder
65	1	O-ring, Cap
66	1	O-ring, Piston
67	2	SHC screw, Output flange
68	4	LHC screw, Cylinder
69	1	Electric pressure sensor

**NOTE:** Contact the Robohand Sales Department for a complete spare parts list with order numbers and prices.

<p>SK Seal Kit Items</p>	<p>THREAD LOCKER Thread Locker</p>	<p>KRYTOX Lubricant</p>	<p>O Lightweight Machine Oil</p>	<p>G Teflon® Based Grease</p>	<p>GLUE Super Bonder</p>	<p>Third Angle Projection</p>
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# Engineering Resources

## from DE-STA-CO Robohand

### SPECIALS

- Receive custom solutions for your unique applications with our Custom Product program
- Speak directly with one of our highly trained engineers that understands your specific needs
- Custom capabilities range, from adding a simple dowel hole to developing a solution from the beginning
- A minimum order quantity is not required, and for most special requests, receive a quote within 24 hours
- DE-STA-CO Robohand offers a level of expertise unmatched in the industry

- All custom solutions are priced competitively and delivered with complete CAD files
- Receive a unique part number for complete convenience of future orders
- Nearly all custom solutions will be delivered within two to five weeks of your request



### 3D LIBRARY & CAD CONFIGURATOR

- Receive online viewing of both automation and workholding products
- Compatible with virtually any CAD language in many output formats
- Graphically configure components with the sizes, features and options you require
- Rotate, zoom and pan your models online
- Experience extremely user-friendly digital content
- Receive high-quality, native CAD data, including a DE-STA-CO part number



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# AUTOMATION SOLUTIONS

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