



Series HD

Heavy-Duty Industrial
Interchangeable
Hydraulic Cylinders



Heavy Duty Service — Tie Rod Construction

Nominal Pressure — 3000 PSI
Standard Bore Sizes — 1½" Through 8"
Piston Rod Diameters — 5/8" Through 5½"
Thirteen Standard Mounting Styles

For additional information – call your local Parker Cylinder Distributor.

Parker Series HD Automotive Heavy Duty Hydraulic Cylinders

Standard Specifications

- Heavy Duty Service – ANSI/(NFPA) T3.6.7R2-1996 Mounting and Specification Dimensions
- Standard Construction – Square Head – Tie Rod Design
- Nominal Pressure – 3000 P.S.I.*
- Standard Fluid – Hydraulic Oil
- Standard Temperature – -10° F to +165° F**
- Bore Sizes – 1½" through 6"
- Piston Rod Diameter – 5/8" through 4"
- Mounting Styles – 13 standard styles at various application ratings

- Standard – Externally removable bolt-on gland assembly
- Strokes – Available in any practical stroke length
- Cushions – Optional at either end or both ends of stroke. "Float Check" at cap end.
- Rod Ends – Three Standard Choices – Specials to Order

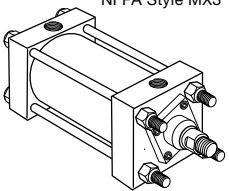
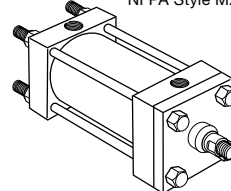
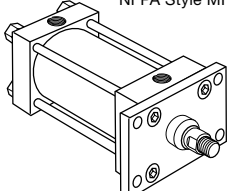
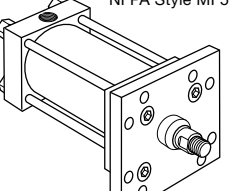
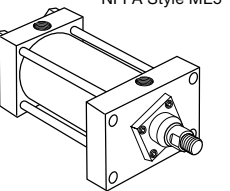
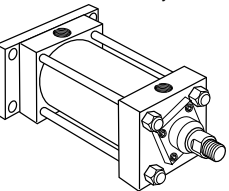
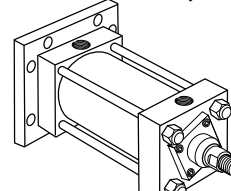
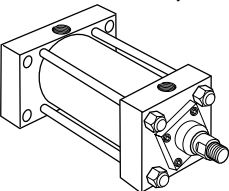
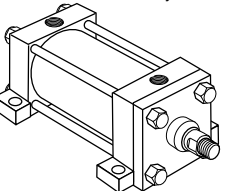
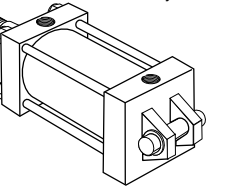
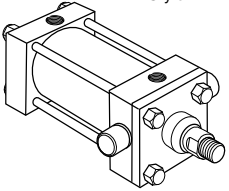
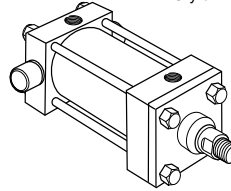
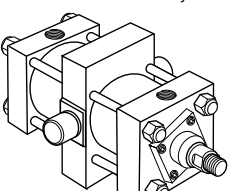
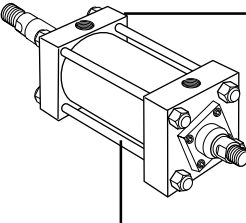
Note: Series HD Hydraulic Cylinders fully meet ANSI/(NFPA) T3.6.7R2-1996 Mounting Dimensions

*If hydraulic operating pressure exceeds 3000 P.S.I., send application data for engineering evaluation and recommendation.

In line with our policy of continuing product improvement, specifications in this catalog are subject to change.

** See section C, for higher temperature service.

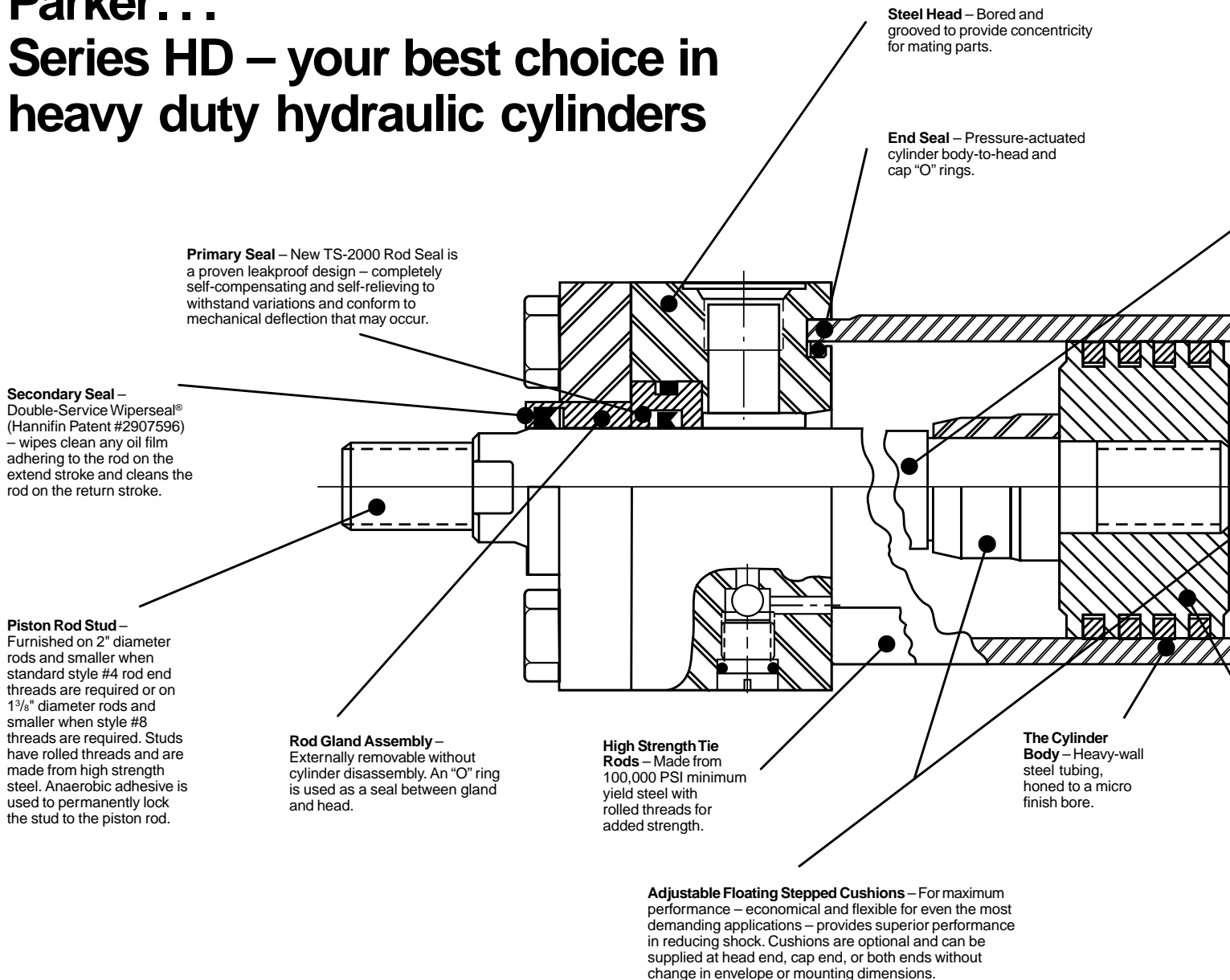
Available Mounting Styles and Where to Find Them

<p>Tie Rods Extended Head End Style TB NFPA Style MX3</p> 	<p>Tie Rods Extended Cap End Style TC NFPA Style MX2</p> 	<p>Head Rectangular Flange Style J NFPA Style MF1</p> 	<p>Head Square Flange Style JB NFPA Style MF5</p> 	<p>Head Rectangular Style JJ NFPA Style ME5</p> 
<p>Cap Rectangular Flange Style H NFPA Style MF2</p> 	<p>Cap Square Flange Style HB NFPA Style MF6</p> 	<p>Cap Rectangular Style HH NFPA Style ME6</p> 	<p>Side Lug Style C NFPA Style MS2</p> 	<p>Cap Fixed Clevis Style BB NFPA Style MP1</p> 
<p>Head Trunnion Style D NFPA Style MT1</p> 	<p>Cap Trunnion Style DB NFPA Style MT2</p> 	<p>Intermediate Fixed Trunnion Style DD NFPA Style MT4</p> 	<p>Double Rod Cylinders</p>  <p>KT</p>	

Most of the above illustrated mounting styles are available in double rod cylinders.

For Cylinder Division Plant Locations – See Page II.

Parker... Series HD – your best choice in heavy duty hydraulic cylinders



PARKER'S NEW, EXCLUSIVE

Stepped floating cushions combine the best features of known cushion technology.

Deceleration devices or built-in "cushions" are optional and can be supplied at head end, cap end, or both ends without change in envelope or mounting dimensions. Parker cylinder cushions are a stepped design and combine the best features of known cushion technology.

Standard straight or tapered cushions have been used in industrial cylinders over a very broad range of applications, Parker research has found that both designs have their limitations.

As a result, Parker has taken a new approach in cushioning of industrial hydraulic cylinders and for specific load and velocity conditions have been able to obtain deceleration curves that come very close to the ideal. The success lies in a stepped sleeve or spear concept where the steps are calculated to approximate theoretical orifice areas curves.

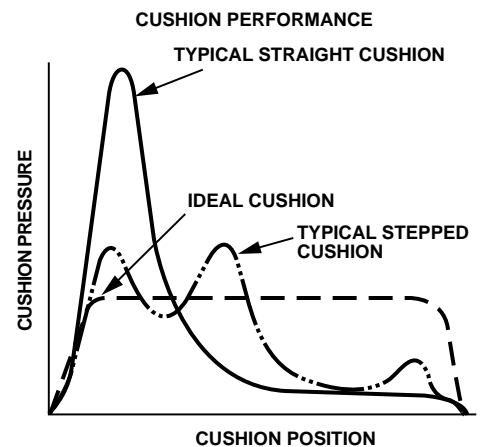
In the cushion performance chart, pressure traces show the results of typical orifice flow conditions. Tests of a three-step sleeve or spear show three pressure pulses coinciding with the steps. The deceleration cushion

plunger curves shape comes very close to being theoretical, with the exception of the last 1/2 inch of travel.

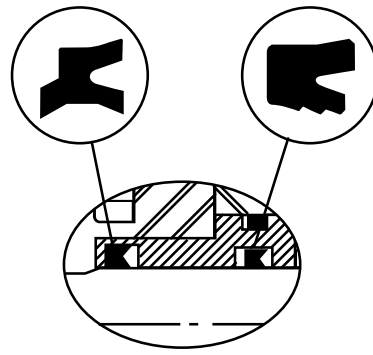
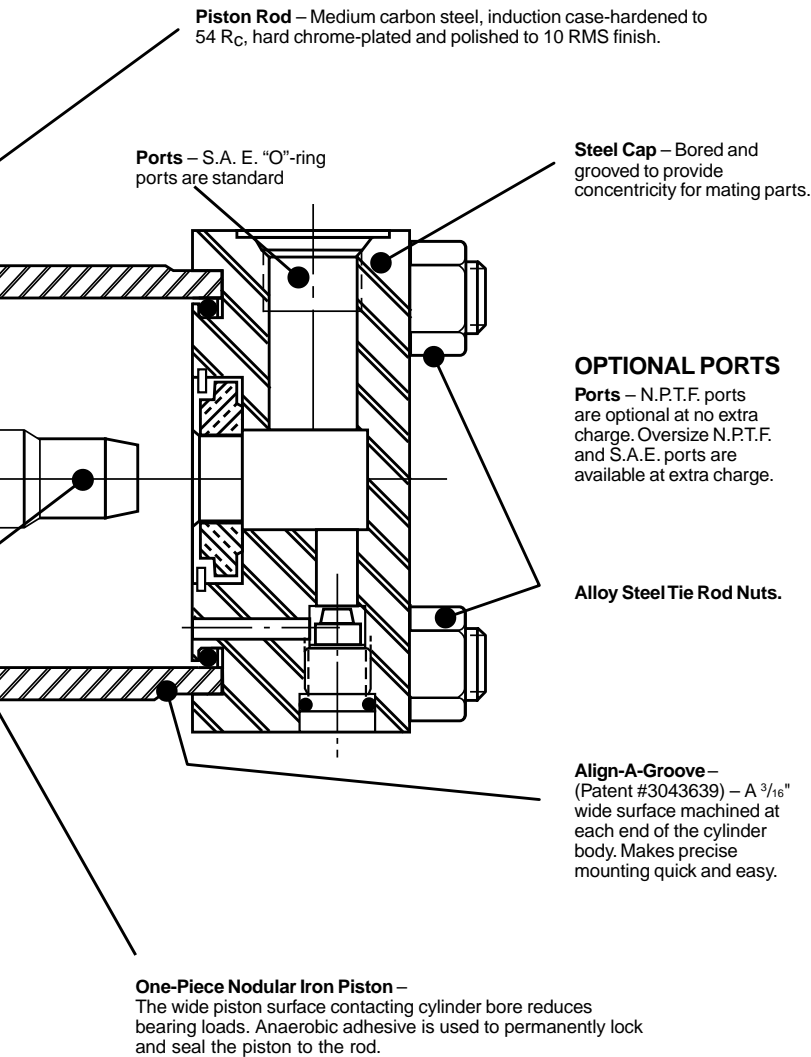
This is a constant shape in order to have some flexibility in application. The stepped cushion design shows reduced pressure peaks for most load and speed conditions, with comparable reduction of objectionable stopping forces being transmitted to the load and the support structure.

All Parker Hannifin cushions are adjustable.

The Series HD cylinder design incorporates the longest cushion sleeve and cushion spear that can be provided in the standard envelope without decreasing the rod bearing and piston bearing lengths.



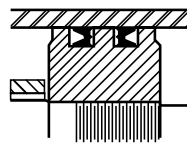
For additional information – call your local Parker Cylinder Distributor.



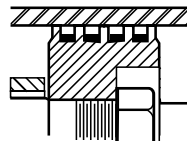
Gland Assembly with TS-2000 Rod Seal

Gland Assembly externally removable without cylinder disassembly. An O-ring is used as a seal between the gland and head. The serrated TS-2000 (primary seal) is completely self-compensating and self-relieving. The result is positive, no-leak sealing – regardless of conditions. The Wiperseal wipes away any dirt on the rod. This means less wear on bearing surfaces and internal parts. Back up washer prevents extrusion of lipseal.

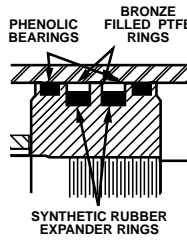
OPTIONAL PISTONS



Lipseal® Piston – Optional at no extra charge in 1 1/2"-6" bore sizes. Zero leakage under static conditions for hydraulic pressures up to 3000 PSI. Seals are self-compensating to conform to variations in pressure, mechanical deflection, and wear. Back-up washer prevents extrusion.



Piston with Retainer Nut – Optional at no extra charge.



Hi Load Piston – Optional at extra charge. Includes wear rings and bronze-filled PTFE seals. Two wear rings serve as bearings which deform radially under side-loading, enabling the load to be spread over a larger area and reduce unit loading. Bronze-filled PTFE seals are designed for extrusion-free, leak-proof service and longer cylinder life than the lipseal type piston. Not available with retainer nut.

- (1) When a cushion is specified at the head end:
- A self-centering stepped sleeve is furnished on the piston rod assembly.
 - A needle valve is provided that is flush with the side of the head even when wide open. It may be identified by the fact that it is socket-keyed. It is located on side number 2, in all mounting styles except D, DB, DD, JJ and HH. In these styles it is located on side number 3.
 - On 6" bore and larger cylinders (except for 2 1/2" bores with code 2 rods), a springless check valve is provided that is also flush with the side of the head and is mounted adjacent to the needle valve except on mounting style C, where it is mounted opposite the needle valve. It may be identified by the fact that it is slotted.
 - On 1 1/2" - 5" bore cylinders a slotted sleeve design is used in place of the check valve.
 - 1 1/2" - 2 1/2" bore cylinders use cartridge style needle valve (see Figure A).

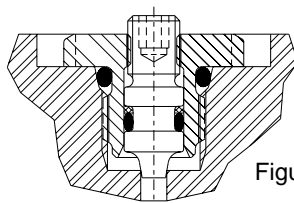
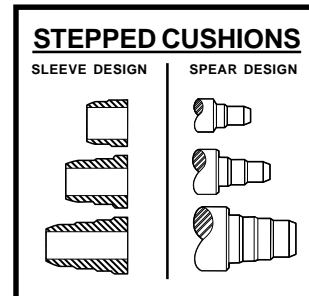


Figure A

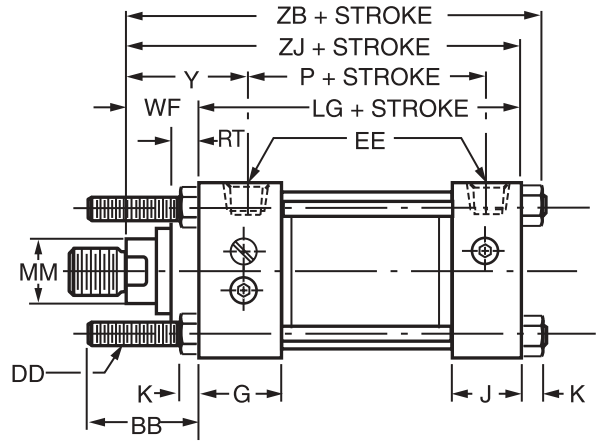
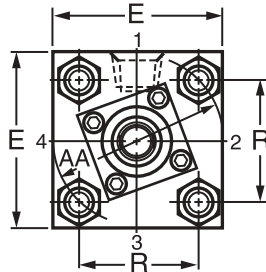
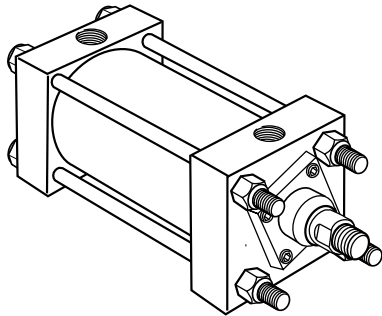
- (2) When a cushion is specified at the cap end:
- A cushion stepped spear is provided on the piston rod.
 - A “float check” self-centering bushing is provided which incorporates a large flow check valve for fast “out-stroke” action.
 - A socket-keyed needle valve is provided that is flush with the side of the cap when wide open. It is located on side number 2 in all mounting styles except D, DB, DD, JJ and HH. In these styles it is located on side number 3.



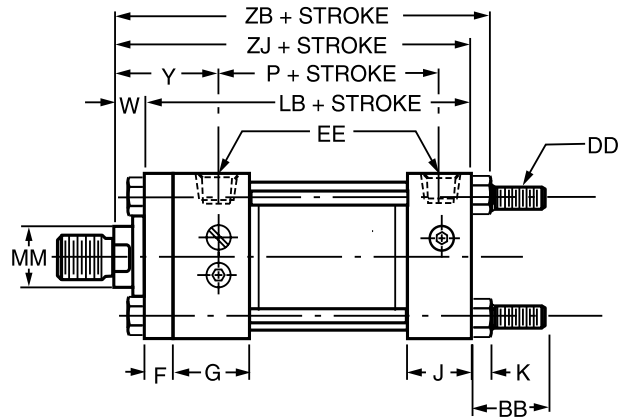
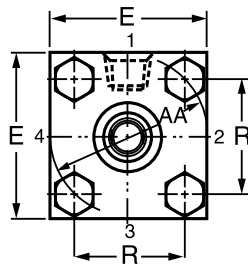
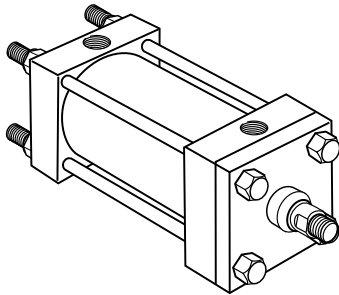
For Cylinder Division Plant Locations – See Page II.



**Tie Rods Extended Head End
Style TB**
NFPA Style MX3



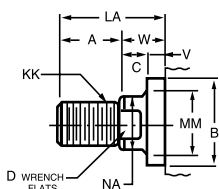
**Tie Rods Extended Cap End
Style TC**
NFPA Style MX2



Rod End Dimensions for Full Face Retainers (See Table 2)

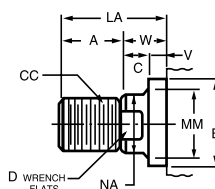
See Chart A on Page B136 to determine which bore, rod and mount combinations have this feature.

Thread Style 4
(NFPA Style SM)
Small Male



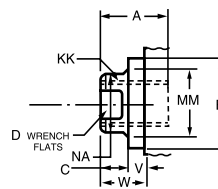
A high strength rod end stud is supplied on thread style 4 through 2" diameter rods and on thread style 8 through 1 3/8" diameter rods. Larger sizes or special rod ends are cut threads. Style 4 rod ends are recommended where the workpiece is secured against the rod shoulder.

Thread Style 8
(NFPA Style IM)
Intermediate Male



When the workpiece is not shouldered, style 4 rod ends are recommended through 2" piston rod diameters and style 8 rod ends are recommended on larger diameters. Use style 9 for applications where female rod end threads are required. If rod end is not specified, style 4 will be supplied.

Thread Style 9
(NFPA Style SF)
Small Female



"Special" Thread Style 3

Special thread, extension, rod eye, blank, etc., are also available.

To order, specify "Style 3" and give desired dimensions for CC or KK, A and LA. If otherwise special, furnish dimensioned sketch.

For additional information – call your local Parker Cylinder Distributor.

Parker Series HD Heavy Duty Hydraulic Cylinders

Tie Rod Mountings
1 1/2" to 6" Bore Sizes

Table 1—Envelope and Mounting Dimensions

Bore	AA	BB	DD	E	EE		F	G	J	K	R	Add Stroke		
					NPTF \ominus	SAE*						LB	LG	P*
1 1/2	2.3	1 3/8	3/8-24	2 1/2	1/2	10	3/8	1 3/4	1 1/2	3/8	1.63	5	4 5/8	27/8
2	2.9	1 13/16	1/2-20	3	1/2	10	5/8	1 3/4	1 1/2	7/16	2.05	5 1/4	4 5/8	27/8
2 1/2	3.6	1 13/16	1/2-20	3 1/2	1/2	10	5/8	1 3/4	1 1/2	7/16	2.55	5 3/8	4 3/4	3
3 1/4	4.6	2 5/16	5/8-18	4 1/2	3/4	12	3/4	2	1 3/4	9/16	3.25	6 1/4	5 1/2	3 1/2
4	5.4	2 5/16	5/8-18	5	3/4	12	7/8	2	1 3/4	9/16	3.82	6 5/8	5 3/4	3 3/4
5	7.0	3 3/16	7/8-14	6 1/2	3/4	12	7/8	2	1 3/4	13/16	4.95	7 1/8	6 1/4	4 1/4
6	8.1	3 5/8	1-14	7 1/2	1	16	1	2 1/4	2 1/4	7/8	5.73	8 3/8	7 3/8	4 7/8

*SAE straight thread ports are standard and are indicated by port number. On 1 1/2", 2" and 2 1/2" bore sizes, when #10 SAE port is specified, reduce dimension "P" by 1/16" and increase dimension "Y" by 1/16".

\ominus NPTF ports are available at no extra charge.

Table 3—Envelope and Mounting Dimensions

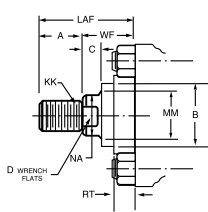
Table 2—Rod Dimensions

Bore	Rod No.	Rod Dia. MM	Thread		Rod Extensions and Pilot Dimensions										Y*	Add Stroke	
			Style 8 CC	Style 4 & 9 KK	A	+0.000 -0.002 B	C	D	LA	NA	RT	V	W	WF		ZB	ZJ
1 1/2	1(Std.)	5/8	1/2-20	7/16-20	3/4	1.124	3/8	1/2	1 3/8	9/16	1/2	1/4	5/8	1	2	6	5 5/8
	2	1	7/8-14	3/4-16	1 1/8	1.499	1/2	7/8	2 1/8	15/16	1/2	1/2	1	1 3/8	2 3/8	6 3/8	6
2	1(Std.)	1	7/8-14	3/4-16	1 1/8	1.499	1/2	7/8	1 7/8	15/16	11/16	1/4	3/4	1 3/8	2 3/8	6 7/16	6
	2	1 3/8	1 1/4-12	1-14	1 5/8	1.999	5/8	1 1/8	2 5/8	15/16	1/2	3/8	1	1 5/8	2 5/8	6 11/16	6 1/4
2 1/2	1(Std.)	1	7/8-14	3/4-16	1 1/8	1.499	1/2	7/8	1 7/8	15/16	11/16	1/4	3/4	1 3/8	2 3/8	6 9/16	6 1/8
	3	1 3/8	1 1/4-12	1-14	1 5/8	1.999	5/8	1 1/8	2 5/8	15/16	3/4	3/8	1	1 5/8	2 5/8	6 13/16	6 3/8
3 1/4	1(Std.)	1 3/8	1 1/4-12	1-14	1 5/8	1.999	5/8	1 1/8	2 1/2	15/16	3/4	1/4	7/8	1 5/8	2 3/4	7 1/16	7 1/8
	3	1 3/4	1 1/2-12	1 1/4-12	2	2.374	3/4	1 1/2	3 1/4	1 11/16	3/4	1/2	1 1/4	1 7/8	2 7/8	7 1/16	6 5/8
4	1(Std.)	1 3/4	1 1/2-12	1 1/4-12	2	2.374	3/4	1 1/2	3	1 11/16	3/4	1/4	1	1 7/8	3	7 15/16	7 3/8
	3	2	1 3/4-12	1 1/2-12	2 1/4	2.624	7/8	1 11/16	3 1/2	1 15/16	3/4	3/8	1 1/4	2	3 1/8	8 1/16	7 1/2
5	1(Std.)	2	1 3/4-12	1 1/2-12	2 1/4	2.624	7/8	1 11/16	3 3/8	1 15/16	3/4	1/4	1 1/8	2	3 1/8	8 3/16	7 5/8
	3	2 1/2	2 1/4-12	1 7/8-12	3	3.124	1	2 1/16	4 3/8	2 3/8	3/4	3/8	1 3/8	2 1/4	3 3/8	8 5/16	7 3/4
6	1(Std.)	2 1/2	2 1/4-12	1 7/8-12	3	3.124	1	2 1/16	4 1/4	2 3/8	3/4	1/4	1 1/4	2 1/4	3 1/2	10 1/2	9 5/8
	4	3 1/2	3 1/4-12	2 1/2-12	3 1/2	4.249	1	3	4 7/8	2 3/8	3/4	3/8	1 3/8	2 1/4	3 3/8	9 5/16	8 1/2
6	2	4	3 3/4-12	3-12	4	4.749	1	3 3/8	5 1/4	3 7/8	15/16	1/4	1 1/4	2 1/4	3 1/2	10 1/2	9 5/8

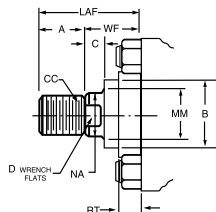
Rod End Dimensions for Bolted Retainers (See Table 2)

See Chart A on Page B136 to determine which bore, rod and mount combinations have this feature.

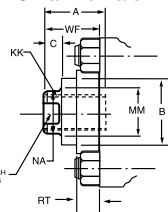
Thread Style 4
(NFPA Style SM)
Small Male



Thread Style 8
(NFPA Style IM)
Intermediate Male



Thread Style 9
(NFPA Style SF)
Small Female



A high strength rod end stud is supplied on thread style 4 through 2" diameter rods and on thread style 8 through 1 3/8" diameter rods. Larger sizes or special rod ends are cut threads. Style 4 rod ends are recommended where the workpiece is secured against the rod shoulder.

When the workpiece is not shouldered, style 4 rod ends are recommended through 2" piston rod diameters and style 8 rod ends are recommended on larger diameters. Use style 9 for applications where female rod end threads are required. If rod end is not specified, style 4 will be supplied.

"Special" Thread Style 3

Special thread, extension, rod eye, blank, etc., are also available.

To order, specify "Style 3" and give desired dimensions for CC or KK, A and LA. If otherwise special, furnish dimensioned sketch.

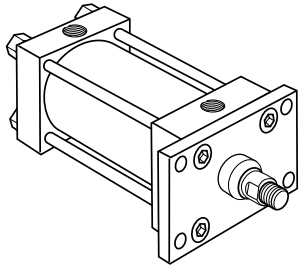
For Cylinder Division Plant Locations – See Page II.



Rectangular Flange and Head Mountings 1 1/2" to 6" Bore Sizes

Parker Series HD Heavy Duty Hydraulic Cylinders

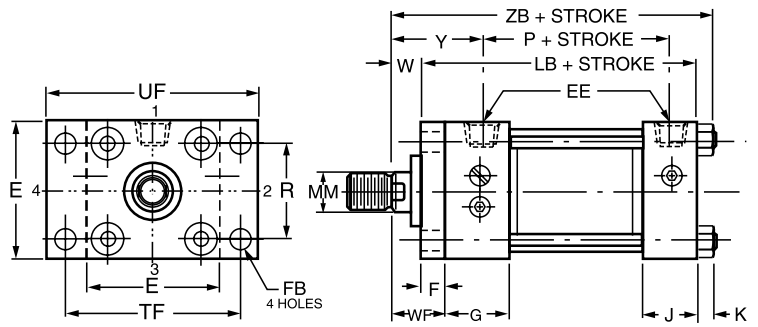
Head Rectangular Flange Mounting Style J NFFA Style MF1



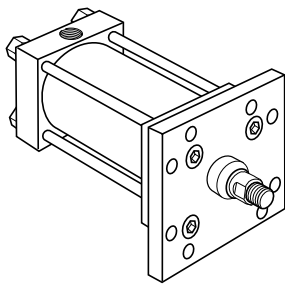
Maximum Pressure Rating, Push Application

Bore Size	Rod Dia.				
	5/8	1	1-3/8	1-3/4	2
1 1/2	3000	3000	—	—	—
2	—	3000	3000	—	—
2 1/2	—	950	950	950	—
3 1/4	—	—	1050	650	650
4	—	—	—	1100	1050
5	—	—	—	—	1000
6, 8	—	—	—	—	—

Bore Size	Rod Dia.				
	2-1/2	3	3-1/2	4	5-1/2
1 1/2, 2	—	—	—	—	—
2 1/2, 3 1/4	—	—	—	—	—
4	650	—	—	—	—
5	850	650	500	—	—
6	950	—	700	500	—



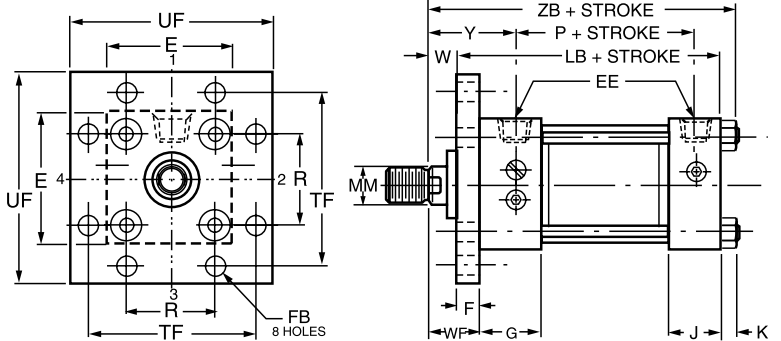
Head Square Flange Mounting Style JB NFFA Style MF5



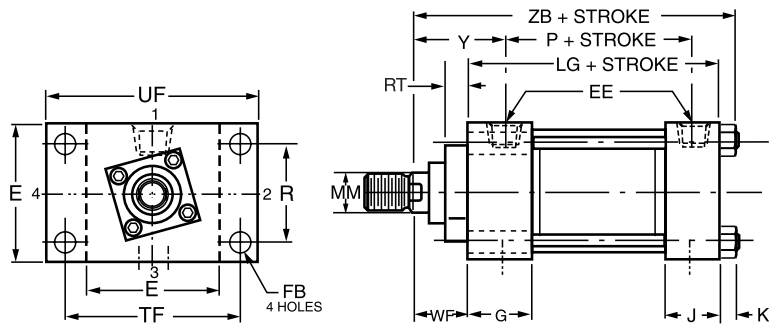
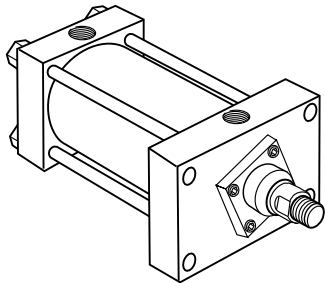
Maximum Pressure Rating, Push Application

Bore Size	Rod Dia.				
	5/8	1	1-3/8	1-3/4	2
1 1/2	—	3000	—	—	—
2	—	3000	3000	—	—
2 1/2	—	3000	3000	3000	—
3 1/4	—	—	3000	3000	3000
4	—	—	—	3000	3000
5	—	—	—	—	3000
6	—	—	—	—	—

Bore Size	Rod Dia.				
	2-1/2	3	3-1/2	4	5-1/2
1 1/2, 2	—	—	—	—	—
2 1/2, 3 1/4	—	—	—	—	—
4	3000	—	—	—	—
5	2650	2250	1950	—	—
6	2800	—	2250	1900	—



Head Rectangular Mounting Style JJ NFFA Style ME5

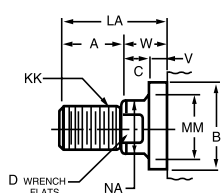


Rod End Dimensions for Full Face Retainers (See Table 2)

See Chart A on Page B136 to determine which bore, rod and mount combinations have this feature.

Thread Style 4

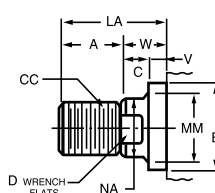
(NFFA Style SM)
Small Male



A high strength rod end stud is supplied on thread style 4 through 2" diameter rods and on thread style 8 through 1 3/8" diameter rods. Larger sizes or special rod ends are cut threads. Style 4 rod ends are recommended where the workpiece is secured against the rod shoulder.

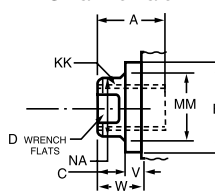
Thread Style 8

(NFFA Style IM)
Intermediate Male



Thread Style 9

(NFFA Style SF)
Small Female



When the workpiece is not shouldered, style 4 rod ends are recommended through 2" piston rod diameters and style 8 rod ends are recommended on larger diameters. Use style 9 for applications where female rod end threads are required. If rod end is not specified, style 4 will be supplied.

"Special" Thread Style 3

Special thread, extension, rod eye, blank, etc., are also available.

To order, specify "Style 3" and give desired dimensions for CC or KK, A and LA. If otherwise special, furnish dimensioned sketch.

For additional information – call your local Parker Cylinder Distributor.

Parker Series HD Heavy Duty Hydraulic Cylinders

Rectangular Flange
and Head Mountings
1 1/2" to 6" Bore Sizes

Table 1—Envelope and Mounting Dimensions

Bore	E	EE		F	FB	G	J	K	R	TF	UF	Add Stroke		
		NPTF \ominus	SAE \star									LB	LG	P \star
1 1/2	2 1/2	1/2	10	3/8	7/16	1 3/4	1 1/2	3/8	1.63	37/16	4 1/4	5	4 5/8	27/8
2	3	1/2	10	5/8	9/16	1 3/4	1 1/2	7/16	2.05	4 1/8	5 1/8	5 1/4	4 5/8	27/8
2 1/2	3 1/2	1/2	10	5/8	9/16	1 3/4	1 1/2	7/16	2.55	4 5/8	5 5/8	5 3/8	4 3/4	3
3 1/4	4 1/2	3/4	12	3/4	1 1/16	2	1 3/4	9/16	3.25	5 7/8	7 1/8	6 1/4	5 1/2	3 1/2
4	5	3/4	12	7/8	1 1/16	2	1 3/4	9/16	3.82	6 3/8	7 5/8	6 5/8	5 3/4	3 3/4
5	6 1/2	3/4	12	7/8	1 5/16	2	1 3/4	1 3/16	4.95	8 3/16	9 3/4	7 1/8	6 1/4	4 1/4
6	7 1/2	1	16	1	1 1/16	2 1/4	2 1/4	7/8	5.73	9 7/16	11 1/4	8 3/8	7 3/8	4 7/8

\star SAE straight thread ports are standard and are indicated by port number. On 1 1/2", 2" and 2 1/2" bore sizes, when #10 SAE port is specified, reduce dimension "P" by 1/16" and increase dimension "Y" by 1/16".

\ominus NPTF ports are available at no extra charge.

Table 3—Envelope and Mounting Dimensions

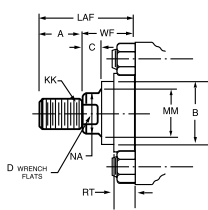
Table 2—Rod Dimensions

Bore	Rod No.	Rod Dia. MM	Thread		Rod Extensions and Pilot Dimensions										Y \star	Add Stroke ZB
			Style 8 CC	Style 4 & 9 KK	A	+0.000 -0.002 B	C	D	LA	NA	RT	V	W	WF		
1 1/2	1(Std.)	5/8	1/2-20	7/16-20	3/4	1.124	3/8	1/2	1 3/8	9/16	1/2	1/4	5/8	1	2	6
	2	1	7/8-14	3/4-16	1 1/8	1.499	1/2	7/8	2 1/8	15/16	1/2	1/2	1	1 3/8	2 3/8	6 3/8
2	1(Std.)	1	7/8-14	3/4-16	1 1/8	1.499	1/2	7/8	1 7/8	15/16	1 1/16	1/4	3/4	1 3/8	2 3/8	6 7/16
	2	1 3/8	1 1/4-12	1-14	1 5/8	1.999	5/8	1 1/8	2 5/8	15/16	1/2	3/8	1	1 5/8	2 5/8	6 11/16
2 1/2	1(Std.)	1	7/8-14	3/4-16	1 1/8	1.499	1/2	7/8	1 7/8	15/16	1 1/16	1/4	3/4	1 3/8	2 3/8	6 9/16
	3	1 3/8	1 1/4-12	1-14	1 5/8	1.999	5/8	1 1/8	2 5/8	15/16	3/4	3/8	1	1 5/8	2 5/8	6 13/16
2 1/2	2	1 3/4	1 1/2-12	1 1/4-12	2	2.374	3/4	1 1/2	3 1/4	1 11/16	3/4	1/2	1 1/4	1 7/8	2 7/8	7 1/16
	1(Std.)	1 3/8	1 1/4-12	1-14	1 5/8	1.999	5/8	1 1/8	2 1/2	15/16	3/4	1/4	7/8	1 5/8	2 3/4	7 11/16
3 1/4	3	1 3/4	1 1/2-12	1 1/4-12	2	2.374	3/4	1 1/2	3 1/8	1 11/16	3/4	3/8	1 1/8	1 7/8	3	7 15/16
	2	2	1 3/4-12	1 1/2-12	2 1/4	2.624	7/8	1 1/2	3 1/2	1 15/16	3/4	3/8	1 1/4	2	3 1/8	8 1/16
4	1(Std.)	1 3/4	1 1/2-12	1 1/4-12	2	2.374	3/4	1 1/2	3	1 11/16	3/4	1/4	1	1 7/8	3	8 3/16
	3	2	1 3/4-12	1 1/2-12	2 1/4	2.624	7/8	1 1/2	3 3/8	1 15/16	3/4	1/4	1 1/8	2	3 1/8	8 5/16
4	2	2 1/2	2 1/4-12	1 7/8-12	3	3.124	1	2 1/16	4 3/8	2 3/8	3/4	3/8	1 3/8	2 1/4	3 3/8	8 9/16
	1(Std.)	2	1 3/4-12	1 1/2-12	2 1/4	2.624	7/8	1 1/16	3 3/8	1 15/16	3/4	1/4	1 1/8	2	3 1/8	9 1/16
5	3	2 1/2	2 1/4-12	1 7/8-12	3	3.124	1	2 1/16	4 3/8	2 3/8	3/4	3/8	1 3/8	2 1/4	3 3/8	9 5/16
	2	3 1/2	3 1/4-12	2 1/2-12	3 1/2	4.249	1	3	4 7/8	3 3/8	3/4	3/8	1 3/8	2 1/4	3 3/8	9 5/16
6	1(Std.)	2 1/2	2 1/4-12	1 7/8-12	3	3.124	1	2 1/16	4 1/4	2 3/8	3/4	1/4	1 1/4	2 1/4	3 1/2	10 1/2
	4	3 1/2	3 1/4-12	2 1/2-12	3 1/2	4.249	1	3	4 3/4	3 3/8	3/4	1/4	1 1/4	2 1/4	3 1/2	10 1/2
6	2	4	3 3/4-12	3-12	4	4.749	1	3 3/8	5 1/4	3 7/8	15/16	1/4	1 1/4	2 1/4	3 1/2	10 1/2

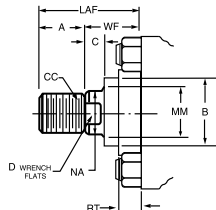
Rod End Dimensions for Bolted Retainers (See Table 2)

See Chart A on Page B136 to determine which bore, rod and mount combinations have this feature.

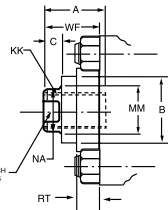
Thread Style 4
(NFPA Style SM)
Small Male



Thread Style 8
(NFPA Style IM)
Intermediate Male



Thread Style 9
(NFPA Style SF)
Small Female



"Special" Thread Style 3

Special thread, extension, rod eye, blank, etc., are also available.

To order, specify "Style 3" and give desired dimensions for CC or KK, A and LA. If otherwise special, furnish dimensioned sketch.

A high strength rod end stud is supplied on thread style 4 through 2" diameter rods and on thread style 8 through 1 3/8" diameter rods. Larger sizes or special rod ends are cut threads. Style 4 rod ends are recommended where the workpiece is secured against the rod shoulder.

When the workpiece is not shouldered, style 4 rod ends are recommended through 2" piston rod diameters and style 8 rod ends are recommended on larger diameters. Use style 9 for applications where female rod end threads are required. If rod end is not specified, style 4 will be supplied.

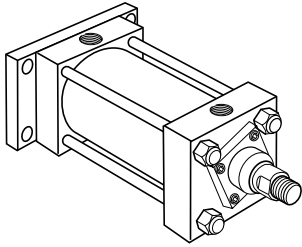
For Cylinder Division Plant Locations – See Page II.



**Rectangular Flange
and Cap Mountings
1 1/2" to 6" Bore Sizes**

**Parker Series HD
Heavy Duty Hydraulic Cylinders**

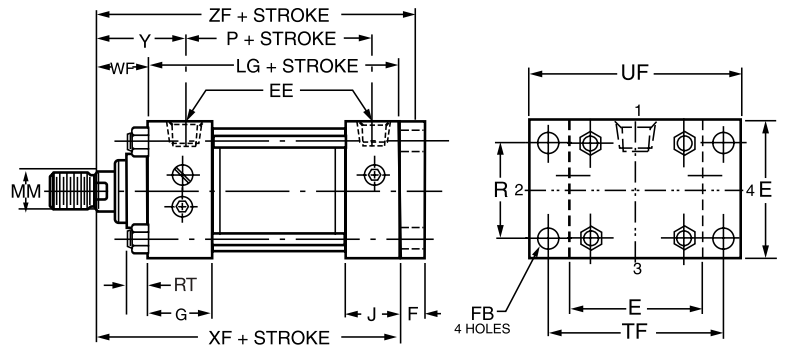
**Cap Rectangular
Flange Mounting
Style H
NFFA Style MF2**



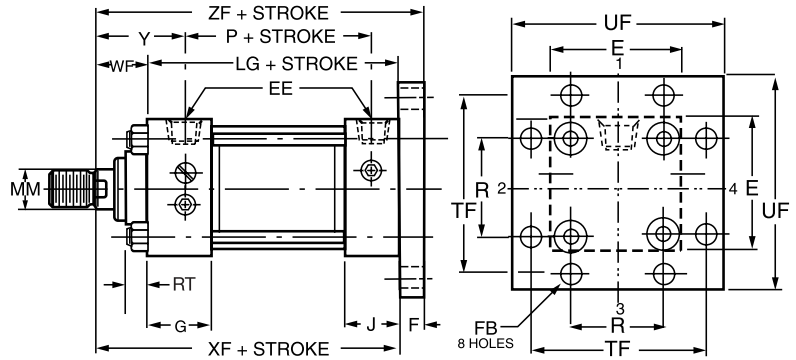
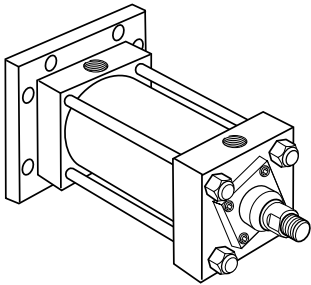
Maximum Pressure Rating,
Pull Application

Bore Size	Rod Dia.				
	5/8	1	1-3/8	1-3/4	2
1 1/2	3000	3000	—	—	—
2	—	3000	3000	—	—
2 1/2	—	3000	3000	3000	—
3 1/4	—	—	3000	3000	3000
4	—	—	—	3000	3000
5	—	—	—	—	2000
6	—	—	—	—	—

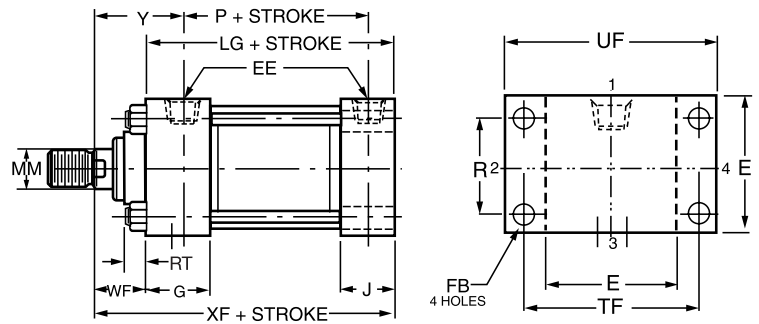
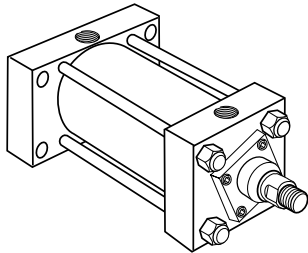
Bore Size	Rod Dia.				
	2-1/2	3	3-1/2	4	5-1/2
1 1/2, 2	—	—	—	—	—
2 1/2, 3 1/4	—	—	—	—	—
4	3000	—	—	—	—
5	2500	2800	3000	—	—
6	2000	—	2800	3000	—



**Cap Square Flange Mounting
Style HB
NFFA Style MF6**



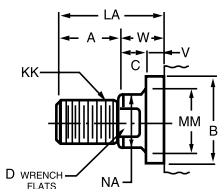
**Cap Rectangular Mounting
Style HH
NFFA Style ME6**



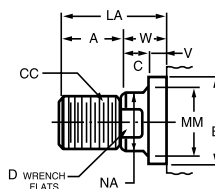
Rod End Dimensions for Full Face Retainers (See Table 2)

See Chart A on Page B136 to determine which bore, rod and mount combinations have this feature.

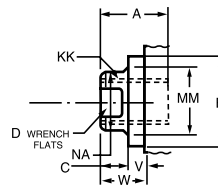
**Thread Style 4
(NFFA Style SM)
Small Male**



**Thread Style 8
(NFFA Style IM)
Intermediate Male**



**Thread Style 9
(NFFA Style SF)
Small Female**



**"Special" Thread
Style 3**

Special thread, extension, rod eye, blank, etc., are also available.

To order, specify "Style 3" and give desired dimensions for CC or KK, A and LA. If otherwise special, furnish dimensioned sketch.

A high strength rod end stud is supplied on thread style 4 through 2" diameter rods and on thread style 8 through 1 3/8" diameter rods. Larger sizes or special rod ends are cut threads. Style 4 rod ends are recommended where the workpiece is secured against the rod shoulder.

When the workpiece is not shouldered, style 4 rod ends are recommended through 2" piston rod diameters and style 8 rod ends are recommended on larger diameters. Use style 9 for applications where female rod end threads are required. If rod end is not specified, style 4 will be supplied.

For additional information – call your local Parker Cylinder Distributor.

Parker Series HD Heavy Duty Hydraulic Cylinders

Rectangular Flange
and Cap Mountings
1 1/2" to 6" Bore Sizes

Table 1—Envelope and Mounting Dimensions

Bore	E	EE		F	FB	G	J	K	R	TF	UF	Add Stroke		
		NPTF \ominus	SAE \star									LB	LG	P \star
1 1/2	2 1/2	1/2	10	3/8	7/16	13/4	1 1/2	3/8	1.63	37/16	4 1/4	5	4 5/8	27/8
2	3	1/2	10	5/8	9/16	13/4	1 1/2	7/16	2.05	4 1/8	5 1/8	5 1/4	4 5/8	27/8
2 1/2	3 1/2	1/2	10	5/8	9/16	13/4	1 1/2	7/16	2.55	4 5/8	5 5/8	5 3/8	4 3/4	3
3 1/4	4 1/2	3/4	12	3/4	1 1/16	2	1 3/4	9/16	3.25	5 7/8	7 1/8	6 1/4	5 1/2	3 1/2
4	5	3/4	12	7/8	1 1/16	2	1 3/4	9/16	3.82	6 3/8	7 5/8	6 5/8	5 3/4	3 3/4
5	6 1/2	3/4	12	7/8	1 5/16	2	1 3/4	13/16	4.95	8 3/16	9 3/4	7 1/8	6 1/4	4 1/4
6	7 1/2	1	16	1	1 1/16	2 1/4	2 1/4	7/8	5.73	9 7/16	11 1/4	8 3/8	7 3/8	4 7/8

\star SAE straight thread ports are standard and are indicated by port number. On 1 1/2", 2" and 2 1/2" bore sizes, when #10 SAE port is specified, reduce dimension "P" by 1/16" and increase dimension "Y" by 1/16".

\ominus NPTF ports are available at no extra charge.

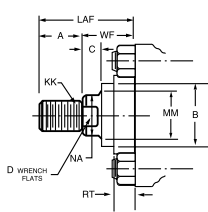
Table 2—Rod Dimensions

Bore	Rod No.	Rod Dia. MM	Thread		Rod Extensions and Pilot Dimensions										Add Stroke		
			Style 8 CC	Style 4 & 9 KK	A	+0.000 -0.002 B	C	D	LA	NA	RT	V	W	WF	Y \star	XF	ZF
1 1/2	1(Std.)	5/8	1/2-20	7/16-20	3/4	1.124	3/8	1/2	13/8	9/16	1/2	1/4	5/8	1	2	5 5/8	6
	2	1	7/8-14	3/4-16	1 1/8	1.499	1/2	7/8	2 1/8	15/16	1/2	1/2	1	1 3/8	2 3/8	6	6 3/8
2	1(Std.)	1	7/8-14	3/4-16	1 1/8	1.499	1/2	7/8	1 7/8	15/16	1 1/16	1/4	3/4	1 3/8	2 3/8	6	6 5/8
	2	1 3/8	1 1/4-12	1-14	1 5/8	1.999	5/8	1 1/8	2 5/8	15/16	1/2	3/8	1	1 5/8	2 5/8	6 1/4	6 7/8
2 1/2	1(Std.)	1	7/8-14	3/4-16	1 1/8	1.499	1/2	7/8	1 7/8	15/16	1 1/16	1/4	3/4	1 3/8	2 3/8	6 1/8	6 3/4
	3	1 3/8	1 1/4-12	1-14	1 5/8	1.999	5/8	1 1/8	2 5/8	15/16	3/4	3/8	1	1 5/8	2 5/8	6 3/8	7
	2	1 3/4	1 1/2-12	1 1/4-12	2	2.374	3/4	1 1/2	3 1/4	1 11/16	3/4	1/2	1 1/4	1 7/8	2 7/8	6 5/8	7 1/4
3 1/4	1(Std.)	1 3/8	1 1/4-12	1-14	1 5/8	1.999	5/8	1 1/8	2 1/2	15/16	3/4	1/4	7/8	1 5/8	2 3/4	7 1/8	7 7/8
	3	1 3/4	1 1/2-12	1 1/4-12	2	2.374	3/4	1 1/2	3 1/8	1 11/16	3/4	3/8	1 1/8	1 7/8	3	7 3/8	8 1/8
	2	2	1 3/4-12	1 1/2-12	2 1/4	2.624	7/8	1 11/16	3 1/2	1 15/16	3/4	3/8	1 1/4	2	3 1/8	7 1/2	8 1/4
4	1(Std.)	1 3/4	1 1/2-12	1 1/4-12	2	2.374	3/4	1 1/2	3	1 11/16	3/4	1/4	1	1 7/8	3	7 5/8	8 1/2
	3	2	1 3/4-12	1 1/2-12	2 1/4	2.624	7/8	1 11/16	3 3/8	1 15/16	3/4	1/4	1 1/8	2	3 1/8	7 3/4	8 5/8
	2	2 1/2	2 1/4-12	1 7/8-12	3	3.124	1	2 1/16	4 3/8	2 3/8	3/4	3/8	1 3/8	2 1/4	3 3/8	8	8 7/8
5	1(Std.)	2	1 3/4-12	1 1/2-12	2 1/4	2.624	7/8	1 11/16	3 3/8	1 15/16	3/4	1/4	1 1/8	2	3 1/8	8 1/4	9 1/8
	3	2 1/2	2 1/4-12	1 7/8-12	3	3.124	1	2 1/16	4 3/8	2 3/8	3/4	3/8	1 3/8	2 1/4	3 3/8	8 1/2	9 3/8
	2	3 1/2	3 1/4-12	2 1/2-12	3 1/2	4.249	1	3	4 7/8	3 3/8	3/4	3/8	1 3/8	2 1/4	3 3/8	8 1/2	9 3/8
6	1(Std.)	2 1/2	2 1/4-12	1 7/8-12	3	3.124	1	2 1/16	4 1/4	2 3/8	3/4	1/4	1 1/4	2 1/4	3 1/2	9 5/8	10 5/8
	4	3 1/2	3 1/4-12	2 1/2-12	3 1/2	4.249	1	3	4 3/4	3 3/8	3/4	1/4	1 1/4	2 1/4	3 1/2	9 5/8	10 5/8
	2	4	3 3/4-12	3-12	4	4.749	1	3 3/8	5 1/4	3 7/8	15/16	1/4	1 1/4	2 1/4	3 1/2	9 5/8	10 5/8

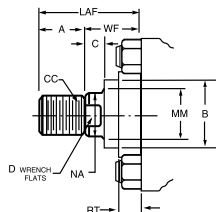
Rod End Dimensions for Bolted Retainers (See Table 2)

See Chart A on Page B136 to determine which bore, rod and mount combinations have this feature.

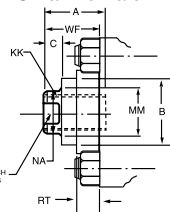
Thread Style 4 (NFPA Style SM) Small Male



Thread Style 8 (NFPA Style IM) Intermediate Male



Thread Style 9 (NFPA Style SF) Small Female



"Special" Thread Style 3

Special thread, extension, rod eye, blank, etc., are also available.

To order, specify "Style 3" and give desired dimensions for CC or KK, A and LA. If otherwise special, furnish dimensioned sketch.

A high strength rod end stud is supplied on thread style 4 through 2" diameter rods and on thread style 8 through 1 3/8" diameter rods. Larger sizes or special rod ends are cut threads. Style 4 rod ends are recommended where the workpiece is secured against the rod shoulder.

When the workpiece is not shouldered, style 4 rod ends are recommended through 2" piston rod diameters and style 8 rod ends are recommended on larger diameters. Use style 9 for applications where female rod end threads are required. If rod end is not specified, style 4 will be supplied.

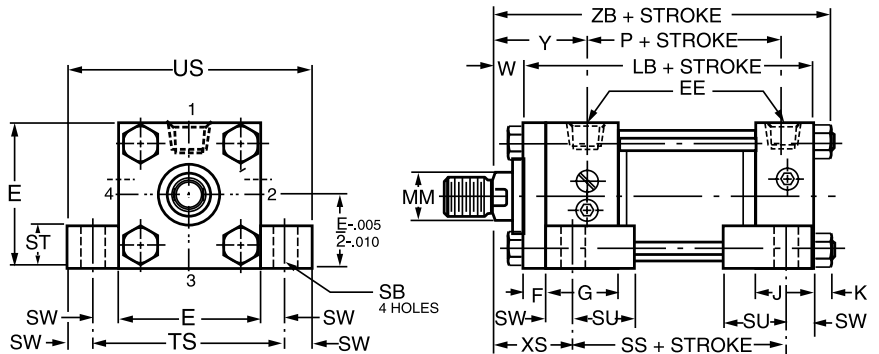
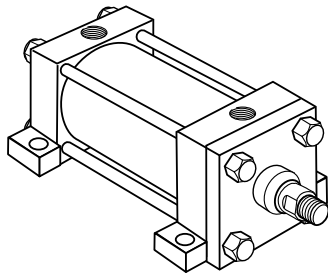
For Cylinder Division Plant Locations – See Page II.



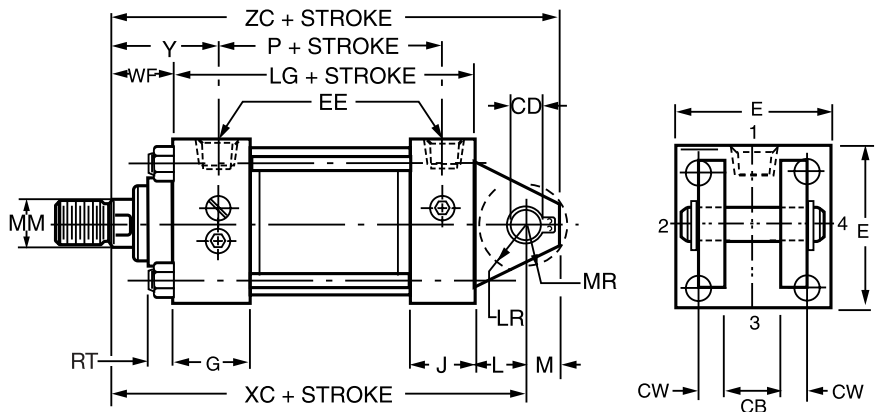
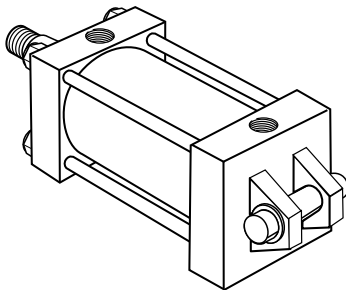
**Side Lugs and
Cap Fixed Clevis Mountings
1 1/2" to 6" Bore Sizes**

Parker Series HD Heavy Duty Hydraulic Cylinders

**Side Lug Mountings
Style C
NFPA Style MS2**



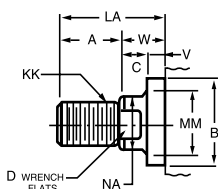
**Cap Fixed Clevis Mounting
Style BB
NFPA Style MP1**



Rod End Dimensions for Full Face Retainers (See Table 2)

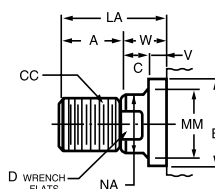
See Chart A on Page B136 to determine which bore, rod and mount combinations have this feature.

**Thread Style 4
(NFPA Style SM)
Small Male**



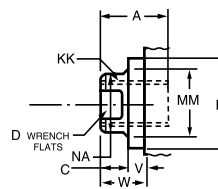
A high strength rod end stud is supplied on thread style 4 through 2" diameter rods and on thread style 8 through 1 3/8" diameter rods. Larger sizes or special rod ends are cut threads. Style 4 rod ends are recommended where the workpiece is secured against the rod shoulder.

**Thread Style 8
(NFPA Style IM)
Intermediate Male**



When the workpiece is not shouldered, style 4 rod ends are recommended through 2" piston rod diameters and style 8 rod ends are recommended on larger diameters. Use style 9 for applications where female rod end threads are required. If rod end is not specified, style 4 will be supplied.

**Thread Style 9
(NFPA Style SF)
Small Female**



**"Special" Thread
Style 3**

Special thread, extension, rod eye, blank, etc., are also available.

To order, specify "Style 3" and give desired dimensions for CC or KK, A and LA. If otherwise special, furnish dimensioned sketch.

For additional information – call your local Parker Cylinder Distributor.

Parker Series HD Heavy Duty Hydraulic Cylinders

Side Lugs and
Cap Fixed Clevis Mountings
1 1/2" to 6" Bore Sizes

Table 1—Envelope and Mounting Dimensions

Bore	CB	+.000 -.002 CD†	CW	E	EE																Add Stroke			
					NPTF⊖	SAE★	F	G	J	K	L	LR	M	MR	SB*	ST	SU	SW	TS	US	LB	LG	P★	SS
1 1/2	3/4	.501	1/2	2 1/2	1/2	10	3/8	1 3/4	1 1/2	3/8	3/4	9/16	1/2	5/8	7/16	1/2	15/16	3/8	3 1/4	4	5	4 5/8	27/8	3 7/8
2	1 1/4	.751	5/8	3	1/2	10	5/8	1 3/4	1 1/2	7/16	1 1/4	1	3/4	15/16	9/16	3/4	1 1/4	1/2	4	5	5 1/4	4 5/8	27/8	3 5/8
2 1/2	1 1/4	.751	5/8	3 1/2	1/2	10	5/8	1 3/4	1 1/2	7/16	1 1/4	15/16	3/4	15/16	13/16	1	19/16	11/16	47/8	6 1/4	5 1/8	4 3/4	3	3 3/8
3 1/4	1 1/2	1.001	3/4	4 1/2	3/4	12	3/4	2	1 3/4	9/16	1 1/2	1 1/4	1	1 3/16	13/16	1	19/16	11/16	57/8	7 1/4	6 1/4	5 1/2	3 1/2	4 1/8
4	2	1.376	1	5	3/4	12	7/8	2	1 3/4	9/16	2 1/8	1 3/4	1 3/8	1 5/8	1 1/16	1 1/4	2	7/8	6 3/4	8 1/2	6 5/8	5 3/4	3 1/4	4
5	2 1/2	1.751	1 1/4	6 1/2	3/4	12	7/8	2	1 3/4	13/16	2 1/4	2 1/16	1 3/4	2 1/8	1 1/16	1 1/4	2	7/8	8 1/4	10	7 1/8	6 1/4	4 1/4	4 1/2
6	2 1/2	2.001	1 1/4	7 1/2	1	16	1	2 1/4	2 1/4	7/8	2 1/2	2 5/16	2	2 3/8	1 5/16	1 1/2	2 1/2	1 1/8	9 3/4	12	8 3/8	7 3/8	4 7/8	5 1/8

★ SAE straight thread ports are standard and are indicated by port number. On 1 1/2", 2" and 2 1/2" bore sizes, when #10 SAE port is specified, reduce dimension "P" by 1/16" and increase dimension "Y" by 1/16".

⊖ NPTF ports are available at no extra charge.

* Upper surface spotfaced for socket head screws. † Dimension CD is pin diameter.

Table 3—
Envelope and
Mounting Dimensions

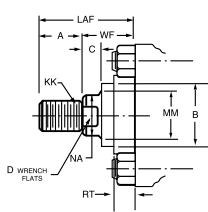
Table 2—Rod Dimensions

Bore	Rod No.	Rod Dia. MM	Thread		Rod Extensions and Pilot Dimensions													Add Stroke				
			Style 8 CC	Style 4 & 9 KK	A	+.000 -.002 B	C	D	LA	NA	RT	V	W	WF	XS	Y★	XC	ZB	ZC			
1 1/2	1(Std.)	5/8	1/2-20	7/16-20	3/4	1.124	3/8	1/2	1 3/8	9/16	1/2	1/4	5/8	1	1 3/8	2	6 3/8	6	6 7/8			
	2	1	7/8-14	3/4-16	1 1/8	1.499	1/2	7/8	2 1/8	15/16	1/2	1/2	1	1 3/8	1 3/4	2 3/8	6 3/4	6 3/8	7 1/4			
2	1(Std.)	1	7/8-14	3/4-16	1 1/8	1.499	1/2	7/8	1 7/8	15/16	1 1/16	1/4	3/4	1 3/8	1 7/8	2 3/8	7 1/4	6 7/16	8			
	2	1 3/8	1 1/4-12	1-14	1 5/8	1.999	5/8	1 1/8	2 5/8	15/16	1/2	3/8	1	1 5/8	2 1/8	2 5/8	7 1/2	6 11/16	8 1/4			
2 1/2	1(Std.)	1	7/8-14	3/4-16	1 1/8	1.499	1/2	7/8	1 7/8	15/16	1 1/16	1/4	3/4	1 3/8	2 1/16	2 3/8	7 3/8	6 9/16	8 1/8			
	3	1 3/8	1 1/4-12	1-14	1 5/8	1.999	5/8	1 1/8	2 5/8	15/16	3/4	3/8	1	1 5/8	2 5/16	2 5/8	7 5/8	6 13/16	8 3/8			
2 1/2	2	1 3/4	1 1/2-12	1 1/4-12	2	2.374	3/4	1 1/2	3 1/4	1 11/16	3/4	1/2	1 1/4	1 7/8	2 9/16	2 7/8	7 7/8	7 1/16	8 5/8			
	1(Std.)	1 3/8	1 1/4-12	1-14	1 5/8	1.999	5/8	1 1/8	2 1/2	15/16	3/4	1/4	7/8	1 5/8	2 5/16	2 3/4	8 5/8	7 11/16	9 5/8			
3 1/4	3	1 3/4	1 1/2-12	1 1/4-12	2	2.374	3/4	1 1/2	3 1/8	1 11/16	3/4	3/8	1 1/8	1 7/8	2 9/16	3	8 7/8	7 15/16	9 7/8			
	2	2	1 3/4-12	1 1/2-12	2 1/4	2.624	7/8	1 1/16	3 1/2	1 15/16	3/4	3/8	1 1/4	2	2 11/16	3 1/8	9	8 1/16	10			
4	1(Std.)	1 3/4	1 1/2-12	1 1/4-12	2	2.374	3/4	1 1/2	3	1 11/16	3/4	1/4	1	1 7/8	2 3/4	3	9 3/4	8 3/16	11 1/8			
	3	2	2 1/4-12	1 1/2-12	2 1/4	2.624	7/8	1 1/16	3 3/8	1 15/16	3/4	1/4	1 1/8	2	3 7/8	3 1/8	9 7/8	8 5/16	11 1/4			
4	2	2 1/2	1 3/4-12	1 7/8-12	3	3.124	1	2 1/16	4 3/8	2 3/8	3/4	3/8	1 3/8	2 1/4	2 1/8	3 3/8	10 1/8	8 9/16	11 1/2			
	1(Std.)	2	1 3/4-12	1 1/2-12	2 1/4	2.624	7/8	1 1/16	3 3/8	1 15/16	3/4	1/4	1 1/8	2	2 7/8	3 1/8	10 1/2	9 1/16	12 1/4			
5	3	2 1/2	3 1/4-12	1 7/8-12	3	3.124	1	2 1/16	4 3/8	3 3/8	3/4	3/8	1 3/8	2 1/4	3 1/8	3 3/8	10 3/4	9 5/16	12 1/2			
	2	3 1/2	2 1/4-12	2 1/2-12	3 1/2	4.249	1	3	4 7/8	2 3/8	3/4	3/8	1 3/8	2 1/4	3 1/8	3 3/8	10 3/4	9 5/16	12 1/2			
6	1(Std.)	2 1/2	2 1/4-12	1 7/8-12	3	3.124	1	2 1/16	4 1/4	2 3/8	3/4	1/4	1 1/4	2 1/4	3 3/8	3 1/2	12 1/8	10 1/2	14 1/8			
	4	3 1/2	3 1/4-12	2 1/2-12	3 1/2	4.249	1	3	4 3/4	3 3/8	3/4	1/4	1 1/4	2 1/4	3 3/8	3 1/2	12 1/8	10 1/2	14 1/8			
6	2	4	3 3/4-12	3-12	4	4.749	1	3 3/8	5 1/4	3 7/8	15/16	1/4	1 1/4	2 1/4	3 3/8	3 1/2	12 1/8	10 1/2	14 1/8			

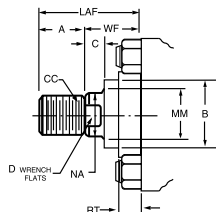
Rod End Dimensions for Bolted Retainers (See Table 2)

See Chart A on Page B136 to determine which bore, rod and mount combinations have this feature.

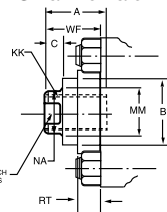
Thread Style 4
(NFPA Style SM)
Small Male



Thread Style 8
(NFPA Style IM)
Intermediate Male



Thread Style 9
(NFPA Style SF)
Small Female



"Special" Thread Style 3

Special thread, extension, rod eye, blank, etc., are also available.

To order, specify "Style 3" and give desired dimensions for CC or KK, A and LA. If otherwise special, furnish dimensioned sketch.

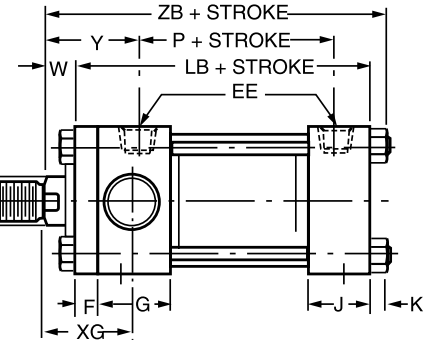
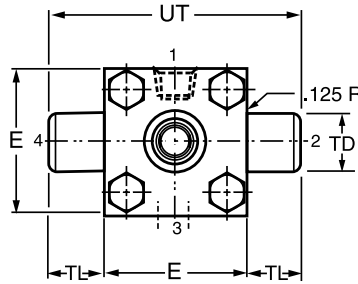
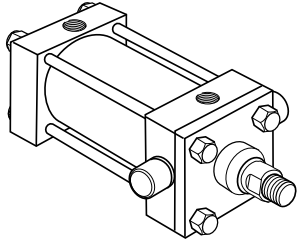
A high strength rod end stud is supplied on thread style 4 through 2" diameter rods and on thread style 8 through 1 3/8" diameter rods. Larger sizes or special rod ends are cut threads. Style 4 rod ends are recommended where the workpiece is secured against the rod shoulder.

When the workpiece is not shouldered, style 4 rod ends are recommended through 2" piston rod diameters and style 8 rod ends are recommended on larger diameters. Use style 9 for applications where female rod end threads are required. If rod end is not specified, style 4 will be supplied.

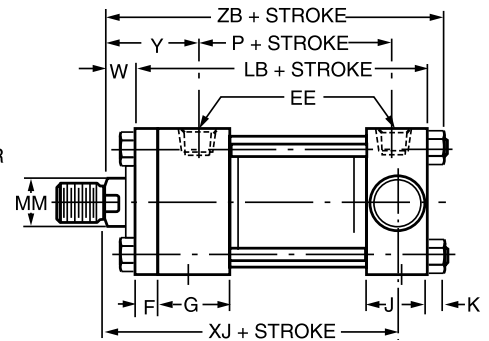
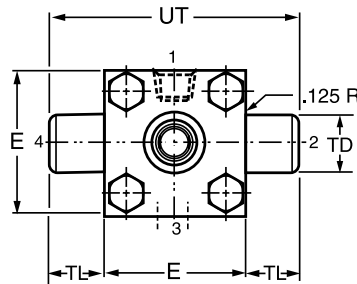
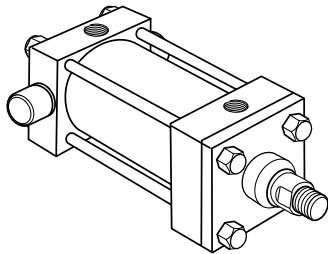
For Cylinder Division Plant Locations – See Page II.



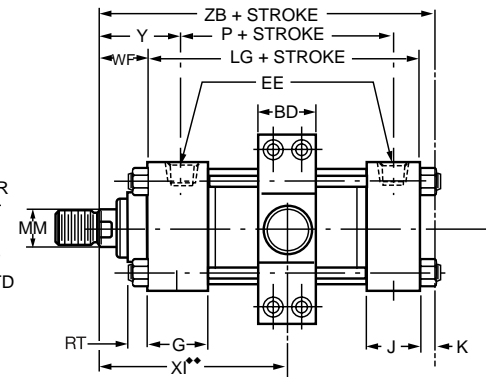
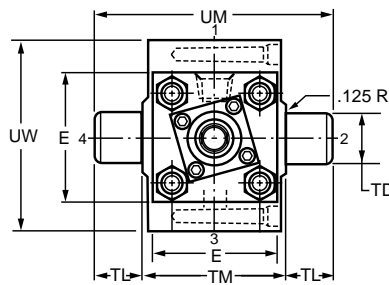
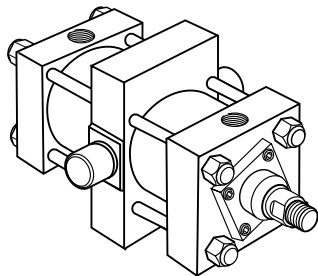
**Head Trunnion Mounting
Style D**
NFFPA Style MT1



**Cap Trunnion Mounting
Style DB**
NFFPA Style MT2



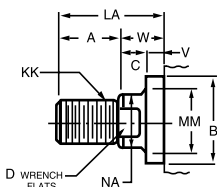
**Intermediate Fixed Trunnion Mounting
Style DD**
NFFPA Style MT4



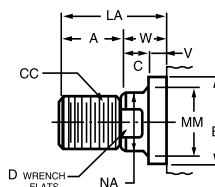
Rod End Dimensions for Full Face Retainers (See Table 2)

See Chart A on Page B136 to determine which bore, rod and mount combinations have this feature.

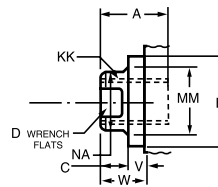
Thread Style 4
(NFFPA Style SM)
Small Male



Thread Style 8
(NFFPA Style IM)
Intermediate Male



Thread Style 9
(NFFPA Style SF)
Small Female



"Special" Thread Style 3

Special thread, extension, rod eye, blank, etc., are also available.

To order, specify "Style 3" and give desired dimensions for CC or KK, A and LA. If otherwise special, furnish dimensioned sketch.

A high strength rod end stud is supplied on thread style 4 through 2" diameter rods and on thread style 8 through 1 3/8" diameter rods. Larger sizes or special rod ends are cut threads. Style 4 rod ends are recommended where the workpiece is secured against the rod shoulder.

When the workpiece is not shouldered, style 4 rod ends are recommended through 2" piston rod diameters and style 8 rod ends are recommended on larger diameters. Use style 9 for applications where female rod end threads are required. If rod end is not specified, style 4 will be supplied.

For additional information – call your local Parker Cylinder Distributor.

Parker Series HD Heavy Duty Hydraulic Cylinders

Trunnion Mountings
1 1/2" to 6" Bore Sizes

Table 1—Envelope and Mounting Dimensions

Bore	BD	E	EE		F	G	J	K	+0.000 -0.001 TD	TL	TM	UM	UT	UW	Add Stroke			Style MT4 Minimum Stroke
			NPTF ⊕	SAE ★											LB	LG	P★	
1 1/2	1 1/4	2 1/2	1/2	10	3/8	1 3/4	1 1/2	3/8	1.000	1	3	5	4 1/2	3 3/8	5	4 5/8	2 7/8	0
2	1 1/2	3	1/2	10	5/8	1 3/4	1 1/2	7/16	1.375	1 3/8	3 1/2	6 1/4	5 3/4	4 1/8	5 1/4	4 5/8	2 7/8	1/4
2 1/2	1 1/2	3 1/2	1/2	10	5/8	1 3/4	1 1/2	7/16	1.375	1 3/8	4	6 3/4	6 1/4	4 5/8	5 3/8	4 3/4	3	1/8
3 1/4	2	4 1/2	3/4	12	3/4	2	1 3/4	9/16	1.750	1 3/4	5	8 1/2	8	5 13/16	6 1/4	5 1/2	3 1/2	3/8
4	2	5	3/4	12	7/8	2	1 3/4	9/16	1.750	1 3/4	5 1/2	9	8 1/2	6 3/8	6 5/8	5 3/4	3 3/4	1/8
5	2	6 1/2	3/4	12	7/8	2	1 3/4	13/16	1.750	1 3/4	7	10 1/2	10	7 3/4	7 1/8	6 1/4	4 1/4	0
6	3	7 1/2	1	16	1	2 1/4	2 1/4	7/8	2.000	2	8 1/2	12 1/2	11 1/2	9 1/2	8 3/8	7 3/8	4 7/8	1/4

★ SAE straight thread ports are standard and are indicated by port number. On 1 1/2", 2" and 2 1/2" bore sizes, when #10 SAE port is specified, reduce dimension "P" by 1/16" and increase dimension "Y" by 1/16".

⊕ NPTF ports are available at no extra charge. * To be specified by customer.

Table 3 —
Envelope and
Mounting Dimensions

Table 2—Rod Dimensions

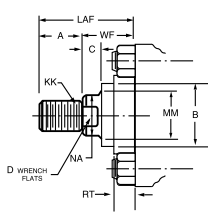
Bore	Rod No.	Rod Dia. MM	Thread		Rod Extensions and Pilot Dimensions										Add Stroke				
			Style 8 CC	Style 4 & 9 KK	A	+0.000 -0.002 B	C	D	LA	NA	RT	V	W	WF	XG	Min. XI ♦♦	Y★	XJ	ZB
1 1/2	1 (Std.)	5/8	1/2-20	7/16-20	3/4	1.124	3/8	1/2	13/8	9/16	1/2	1/4	5/8	1	17/8	37/16	2	47/8	6
	2	1	7/8-14	3/4-16	1 1/8	1.499	1/2	7/8	2 1/8	15/16	1/2	1/2	1	13/8	2 1/4	3 13/16	23/8	5 1/4	6 3/8
2	1 (Std.)	1	7/8-14	3/4-16	1 1/8	1.499	1/2	7/8	17/8	15/16	11/16	1/4	3/4	13/8	2 1/4	3 15/16	23/8	5 1/4	6 7/16
	2	1 3/8	1 1/4-12	1-14	1 5/8	1.999	5/8	1 1/8	2 5/8	15/16	1/2	3/8	1	1 5/8	2 1/2	4 3/16	2 5/8	5 1/2	6 11/16
2 1/2	1 (Std.)	1	7/8-14	3/4-16	1 1/8	1.499	1/2	7/8	17/8	15/16	11/16	1/4	3/4	13/8	2 1/4	3 15/16	23/8	5 3/8	6 9/16
	3	1 3/8	1 1/4-12	1-14	1 5/8	1.999	5/8	1 1/8	2 5/8	15/16	3/4	3/8	1	1 5/8	2 1/2	4 3/16	2 5/8	5 5/8	6 13/16
2 1/2	2	1 3/4	1 1/2-12	1 1/4-12	2	2.374	3/4	1 1/2	3 1/4	1 11/16	3/4	1/2	1 1/4	1 7/8	2 3/4	4 7/16	2 7/8	5 7/8	7 1/16
	1 (Std.)	1 3/8	1 1/4-12	1-14	1 5/8	1.999	5/8	1 1/8	2 1/2	15/16	3/4	1/4	7/8	1 5/8	2 5/8	4 11/16	2 3/4	6 1/4	7 11/16
3 1/4	3	1 3/4	1 1/2-12	1 1/4-12	2	2.374	3/4	1 1/2	3 1/8	1 11/16	3/4	3/8	1 1/8	1 7/8	2 7/8	4 15/16	3	6 1/2	7 15/16
	2	2	1 3/4-12	1 1/2-12	2 1/4	2.624	7/8	1 11/16	3 1/2	1 15/16	3/4	3/8	1 1/4	2	3	5 1/16	3 1/8	5 5/8	8 1/16
4	1 (Std.)	1 3/4	1 1/2-12	1 1/4-12	2	2.374	3/4	1 1/2	3	1 11/16	3/4	1/4	1	1 7/8	2 7/8	4 15/16	3	6 3/4	8 3/16
	3	2	1 3/4-12	1 1/2-12	2 1/4	2.624	7/8	1 11/16	3 3/8	1 15/16	3/4	1/4	1 1/8	2	3	5 1/16	3 1/8	6 7/8	8 5/16
4	2	2 1/2	2 1/4-12	1 7/8-12	3	3.124	1	2 1/16	4 3/8	2 3/8	3/4	3/8	1 3/8	2 1/4	3 1/4	5 5/16	3 3/8	7 1/8	8 9/16
	1 (Std.)	2	1 3/4-12	1 1/2-12	2 1/4	2.624	7/8	1 11/16	3 3/8	1 15/16	3/4	1/4	1 1/8	2	3	5 1/16	3 1/8	7 3/8	9 1/16
5	3	2 1/2	2 1/4-12	1 7/8-12	3	3.124	1	2 1/16	4 3/8	2 3/8	3/4	3/8	1 3/8	2 1/4	3 1/4	5 5/16	3 3/8	7 5/8	9 5/16
	2	3 1/2	3 1/4-12	2 1/2-12	3 1/2	4.249	1	3	4 7/8	3 3/8	3/4	3/8	1 3/8	2 1/4	3 1/4	5 5/16	3 3/8	7 5/8	9 5/16
6	1 (Std.)	2 1/2	2 1/4-12	1 7/8-12	3	3.124	1	2 1/16	4 1/4	2 3/8	3/4	1/4	1 1/4	2 1/4	3 3/8	6 1/16	3 1/2	8 3/8	10 1/2
	4	3 1/2	3 1/4-12	2 1/2-12	3 1/2	4.249	1	3	4 3/4	3 3/8	3/4	1/4	1 1/4	2 1/4	3 3/8	6 1/16	3 1/2	8 3/8	10 1/2
6	2	4	3 3/4-12	3-12	4	4.749	1	3 3/8	5 1/4	3 7/8	15/16	1/4	1 1/4	2 1/4	3 3/8	6 1/16	3 1/2	8 3/8	10 1/2

♦♦ Dimension XI to be specified by customer.

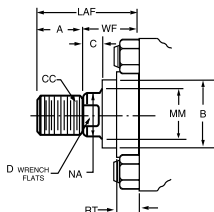
Rod End Dimensions for Bolted Retainers (See Table 2)

See Chart A on Page B136 to determine which bore, rod and mount combinations have this feature.

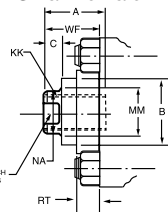
Thread Style 4
(NFPA Style SM)
Small Male



Thread Style 8
(NFPA Style IM)
Intermediate Male



Thread Style 9
(NFPA Style SF)
Small Female



"Special" Thread Style 3

Special thread, extension, rod eye, blank, etc., are also available.

To order, specify "Style 3" and give desired dimensions for CC or KK, A and LA. If otherwise special, furnish dimensioned sketch.

A high strength rod end stud is supplied on thread style 4 through 2" diameter rods and on thread style 8 through 1 3/8" diameter rods. Larger sizes or special rod ends are cut threads. Style 4 rod ends are recommended where the workpiece is secured against the rod shoulder.

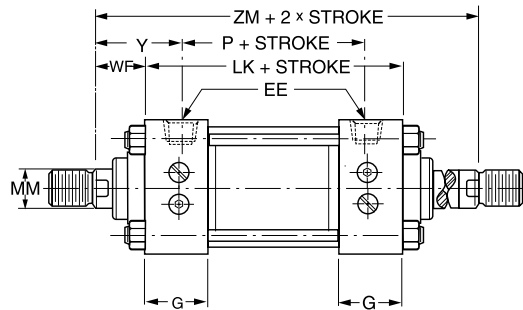
When the workpiece is not shouldered, style 4 rod ends are recommended through 2" piston rod diameters and style 8 rod ends are recommended on larger diameters. Use style 9 for applications where female rod end threads are required. If rod end is not specified, style 4 will be supplied.

For Cylinder Division Plant Locations – See Page II.



How to Use Double Rod Cylinder Dimensioned Drawings

To determine dimensions for a double rod cylinder, first refer to the desired single rod mounting style cylinder shown on preceding pages of this catalog. See table at right. After selecting necessary dimensions from that drawing return to this page, supplement the single rod dimensions with those shown on drawing at right and dimension table below. Note that double rod cylinders have a head (Dim. G) at both ends and that dimension LD replaces LB and ZL replaces ZB, etc. The double rod dimensions differ from, or are in addition to, those for single rod cylinders shown on preceding pages and provide the information needed to completely dimension a double rod cylinder.



On a double rod cylinder where the two rod ends are different, be sure to clearly state which rod end is to be assembled at which end. Port position 1 is standard. If other than standard, specify pos. 2, 3 or 4 when viewed from one end only.

Bore	Rod No.	Rod Dia. MM	Add stroke		Add 2X Stroke
			LK	SS _K	
1 1/2	1	5/8	47/8	41/8	67/8
2	1	1	47/8	37/8	75/8
2 1/2	1	1	5	35/8	73/4
3 1/4	1	1 3/8	53/4	43/8	9
4	1	1 3/4	6	41/4	93/4
5	1	2	6 1/2	43/4	10 1/2
6	1	2 1/2	7 3/8	5 1/8	11 7/8
Replaces:			LG	SS	—
On single rod mounting styles:			All Mtg. Styles	C	All Mtgs.

All dimensions are in inches and apply to smallest rod sizes only. For alternate rod sizes, determine all envelope dimensions (with LD dim.) as described above and then use appropriate rod end dimensions for proper rod size from single rod cylinder.

Cylinders with a bore size, rod size and mounting style combination listed below feature a square, full faced retainer. Refer to rod end drawings on even numbered pages for appropriate rod end dimensions.

Chart A - Cylinders with Full-Faced Square Retainers

Bore	Rod Code	Rod Dia.	Mounting Style
1 1/2	1	5/8	TC, C, DB, D, F
	2	1	TB, TC, C, BB, DB, D, HH, F
2	1	1	TC, C, DB, D, F
	2	1 3/8	TB, TC, C, H, DB, D, DD, HH, F
2 1/2	1	1	TC, C, DB, D, F
	3	1 3/8	TC, C, DB, D, F
3 1/4	1	1 3/8	TC, C, DB, D, F
	3	1 3/4	TC, C, DB, D, F
4	1	1 3/4	TC, C, DB, D, F
	3	2	TC, C, DB, D, F
5	1	2	TC, C, DB, D, F
	3	2 1/2	TC, C, DB, D, F
6	1	2 1/2	TC, C, DB, D, F
	4	3 1/2	TC, C, DB, D, F
7	1	3	TC, C, DB, D, F
	2	5	TC, C, DB, D, F
8	1	3 1/2	TC, C, DB, D, F
	2	5 1/2	TC, C, DB, D, F

Series HD Bolted Retainers

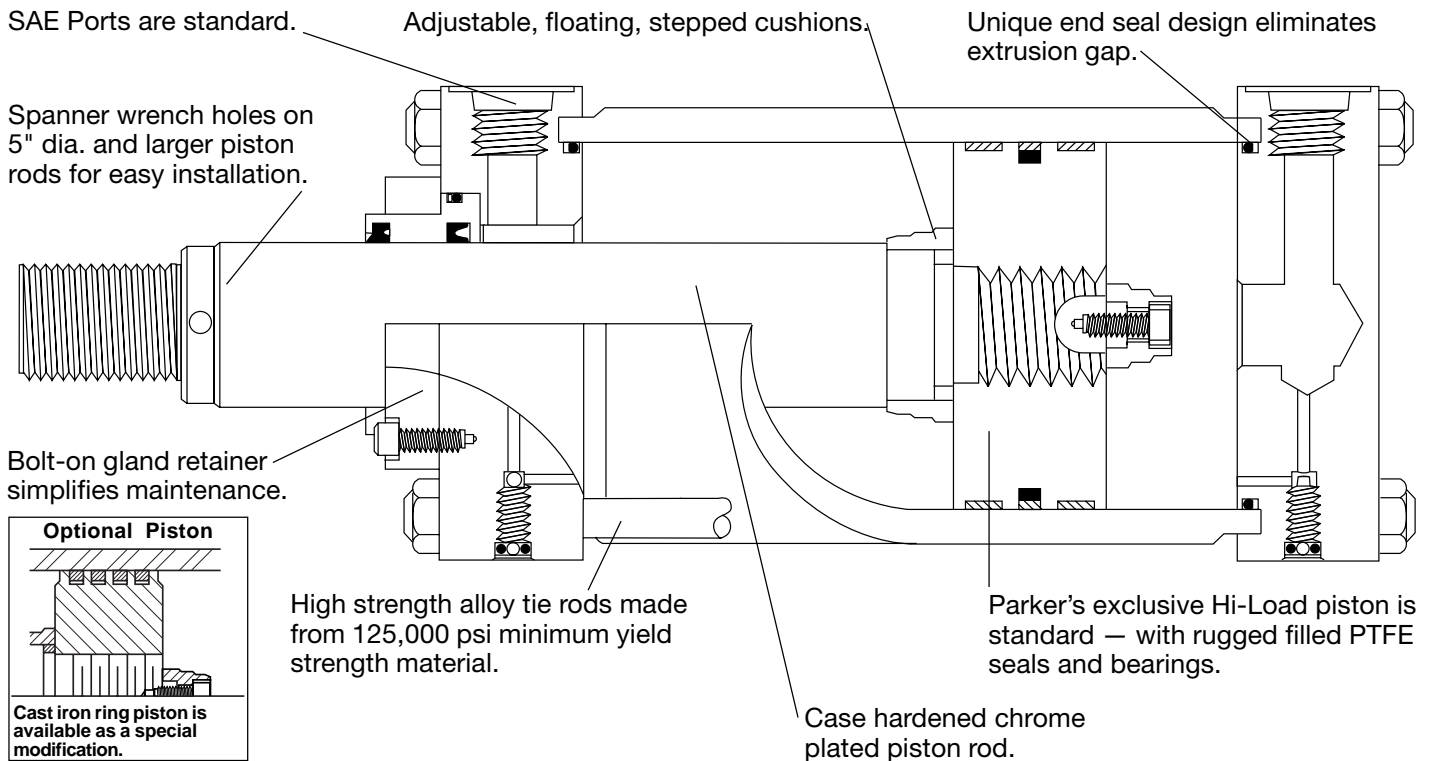
Bore	Rod Code	Rod Dia.	Type of Retainer	Retainer Dia./ Across Corners
1 1/2	1	5/8	Square	2 31/64
	2	1	Round	2 1/2
2	1	1 3/8	Square	2 27/32
	2	1 3/8	Round	3
2 1/2	1	1	Square	2 27/32
	3	1 3/8	Square	3 35/64
3 1/4	1	1 3/8	Square	3 35/64
	3	1 3/4	Square	3 57/64
4	1	1 3/4	Square	3 57/64
	3	2	Round	4 1/4
5	1	2	Round	4 1/4
	3	2 1/2	Round	4 5/8
6	1	2 1/2	Round	4 5/8
	4	3 1/2	Round	5 9/16
7	1	3	Round	5 1/4
	2	5	Round	7 9/16
8	1	3 1/2	Round	5 9/16
	2	5 1/2	Round	8 9/32

For additional information – call your local Parker Cylinder Distributor.

Series HD 7" and 8" Bore Heavy Duty High Pressure Hydraulic Cylinders.

- Bolt-on gland retainer for ease of maintenance.
- Hi-Load piston is standard.
- Newly designed cylinder body seal grooves and high-strength tie rods ensure trouble-free performance even in severe applications.
- Floating cushions with float-check action and positive metal-to-metal seal.

Every cylinder is *individually* tested before it leaves our plant. Parker meets all of your heavy-duty hydraulic cylinder needs.



Standard Specifications

- Heavy Duty Service — ANSI/NFPA T.3.6.7R2-1996 specifications and mounting dimension standards
- Standard Construction — Square Head — Tie Rod Design
- Nominal Pressure — 3000 PSI*
- Standard Fluid — Hydraulic Oil
- Standard Temperature — -10° F. to +165° F.
- Piston Rod Diameter — 3" through 5 1/2"
- Mounting Styles — 16 standard styles at various application ratings
- Strokes — Available in any practical stroke length
- Cushions — Optional at either end or both ends of stroke
- Rod Ends — Three Standard Choices — specials to order

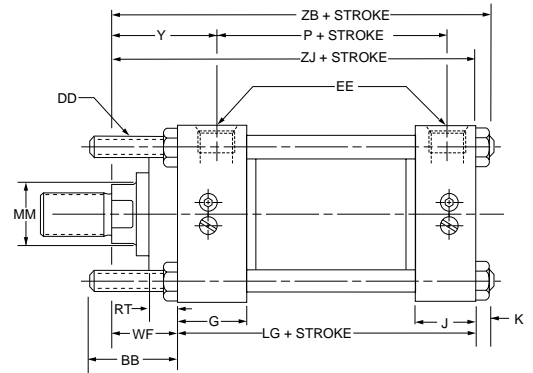
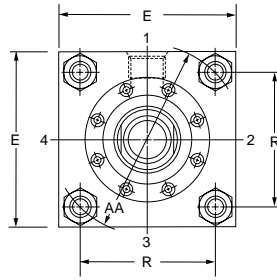
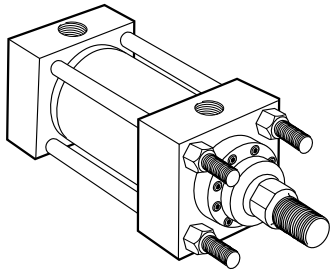
*If hydraulic operating pressure exceeds 3000 PSI, send application data for engineering evaluation and recommendation.
In line with our policy of continuing product improvement, specifications in this catalog are subject to change.

For Cylinder Division Plant Locations — See Page II.

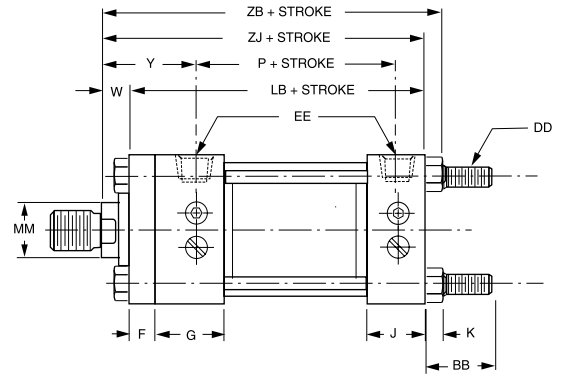
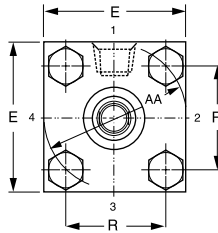
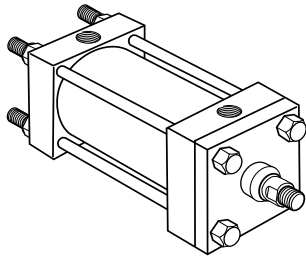
**Tie Rod Mountings
7" and 8" Bore Sizes**

**Parker Series HD
Heavy Duty Hydraulic Cylinders**

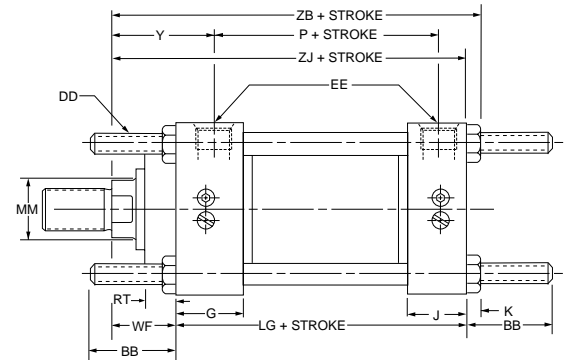
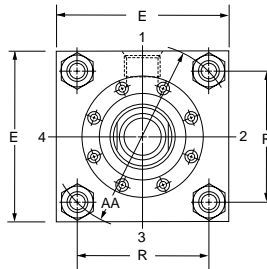
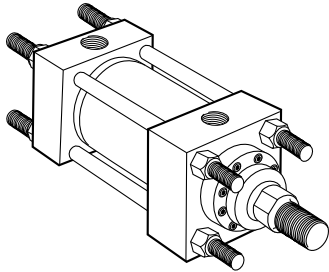
**Tie Rods Extended Head End
Style TB
NFPA Style MX3**



**Tie Rods Extended Cap End
Style TC
NFPA Style MX2**



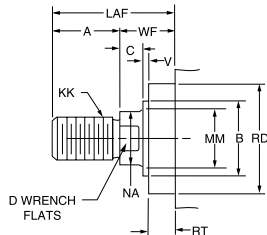
**Tie Rods Extended Both Ends
Style TD
NFPA Style MX1**



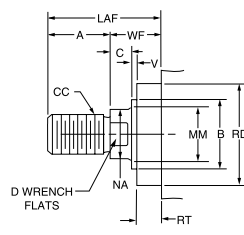
Basic Mounting (T) — NFPA MX0 — Not shown is no tie rod extended and can be supplied upon request.

Rod End Dimensions — see table 2

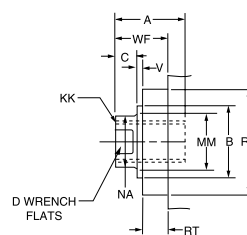
**Thread Style 4
(NFPA Style SM)**



**Thread Style 8
(NFPA Style IM)**



**Thread Style 9
(NFPA Style SF)**



**“Special” Thread
Style 3**

Special thread, extension, rod eye, blank, etc., are also available.

To order, specify “Style 3” and give desired dimensions for CC or KK, A and LAF. If otherwise special, furnish dimensioned sketch.

A high strength rod end stud is supplied on thread style 4 through 2" diameter rods and on thread style 8 through 1 3/8" diameter rods. Larger sizes or special rod ends are cut threads. Style 4 rod ends are recommended where the workpiece is secured against the rod shoulder. When the workpiece is not shouldered, style 4 rod ends are

recommended through 2" piston rod diameters and style 8 rod ends are recommended on larger diameters. Use style 9 for applications where female rod end threads are required. If rod end is not specified, style 4 will be supplied. On 4 1/2" rods and above, (4) .515 dia. spanner wrench holes will be provided instead of wrench flats.

For additional information – call your local Parker Cylinder Distributor.

Parker Series HD Heavy Duty Hydraulic Cylinders

Tie Rod Mountings
7" and 8" Bore Sizes

Table 1—Envelope and Mounting Dimensions

Bore	AA	BB	DD	E	EE		F	G	J	K	R	Add Stroke	
					NPTF \ominus	SAE \star						LG	P
7	9.3	4 $\frac{1}{8}$	1 $\frac{1}{8}$ -12	8 $\frac{1}{2}$	1 $\frac{1}{4}$	20	1	2 $\frac{3}{4}$	2 $\frac{3}{4}$	1 $\frac{1}{4}$	6.58	8 $\frac{1}{2}$	5 $\frac{1}{2}$
8	10.6	4 $\frac{1}{2}$	1 $\frac{1}{4}$ -12	9 $\frac{1}{2}$	1 $\frac{1}{2}$	24	1	3	3	1 $\frac{1}{2}$	7.50	9 $\frac{1}{2}$	6 $\frac{1}{4}$

\star SAE straight thread ports are standard and are indicated by port number.
 \ominus NPTF ports are available at no extra charge.

Table 3 —
Envelope and
Mounting
Dimensions

Table 2—Rod Dimensions

Bore	Rod No.	Rod Dia. MM	Thread		Rod Extensions and Pilot Dimensions										Add Stroke		
			Style 8 CC	Style 4 & 9 KK	A	+0.000 -.002 B	C	D	LAF	NA	V	Max. RD	RT	WF	Y	ZB	ZJ
7	1	3	2 $\frac{3}{4}$ -12	2 $\frac{1}{4}$ -12	3 $\frac{1}{2}$	3.749	1	2 $\frac{5}{8}$	5 $\frac{3}{4}$	2 $\frac{7}{8}$	5 $\frac{5}{8}$	5 $\frac{1}{4}$	3 $\frac{3}{4}$	2 $\frac{1}{4}$	3 $\frac{3}{4}$	12	10 $\frac{3}{4}$
	2	5	4 $\frac{3}{4}$ -12	3 $\frac{1}{2}$ -12	5	5.749	1	—	7 $\frac{1}{4}$	4 $\frac{7}{8}$	1 $\frac{1}{4}$	7 $\frac{9}{16}$	15 $\frac{1}{16}$	2 $\frac{1}{4}$	3 $\frac{3}{4}$	12	10 $\frac{3}{4}$
	3	3 $\frac{1}{2}$	3 $\frac{1}{4}$ -12	2 $\frac{1}{2}$ -12	3 $\frac{1}{2}$	4.249	1	3	5 $\frac{3}{4}$	3 $\frac{3}{8}$	5 $\frac{5}{8}$	5 $\frac{9}{16}$	3 $\frac{3}{4}$	2 $\frac{1}{4}$	3 $\frac{3}{4}$	12	10 $\frac{3}{4}$
	4	4	3 $\frac{3}{4}$ -12	3-12	4	4.749	1	3 $\frac{3}{8}$	6 $\frac{1}{4}$	3 $\frac{7}{8}$	1 $\frac{1}{2}$	6 $\frac{1}{2}$	15 $\frac{1}{16}$	2 $\frac{1}{4}$	3 $\frac{3}{4}$	12	10 $\frac{3}{4}$
8	1	3 $\frac{1}{2}$	3 $\frac{1}{4}$ -12	2 $\frac{1}{2}$ -12	3 $\frac{1}{2}$	4.249	1	3	5 $\frac{3}{4}$	3 $\frac{3}{8}$	5 $\frac{5}{8}$	5 $\frac{9}{16}$	3 $\frac{3}{4}$	2 $\frac{1}{4}$	3 $\frac{7}{8}$	13 $\frac{1}{4}$	11 $\frac{3}{4}$
	2	5 $\frac{1}{2}$	5 $\frac{1}{4}$ -12	4-12	5 $\frac{1}{2}$	6.249	1	—	7 $\frac{3}{4}$	5 $\frac{3}{8}$	1 $\frac{1}{4}$	8 $\frac{9}{32}$	15 $\frac{1}{16}$	2 $\frac{1}{4}$	3 $\frac{7}{8}$	13 $\frac{1}{4}$	11 $\frac{3}{4}$
	3	4	3 $\frac{3}{4}$ -12	3-12	4	4.749	1	3 $\frac{3}{8}$	6 $\frac{1}{4}$	3 $\frac{7}{8}$	1 $\frac{1}{2}$	6 $\frac{1}{2}$	15 $\frac{1}{16}$	2 $\frac{1}{4}$	3 $\frac{7}{8}$	13 $\frac{1}{4}$	11 $\frac{3}{4}$
	5	5	4 $\frac{3}{4}$ -12	3 $\frac{1}{2}$ -12	5	5.749	1	—	7 $\frac{1}{4}$	4 $\frac{7}{8}$	1 $\frac{1}{4}$	7 $\frac{9}{16}$	15 $\frac{1}{16}$	2 $\frac{1}{4}$	3 $\frac{7}{8}$	13 $\frac{1}{4}$	11 $\frac{3}{4}$

B

For Cylinder Division Plant Locations – See Page II.



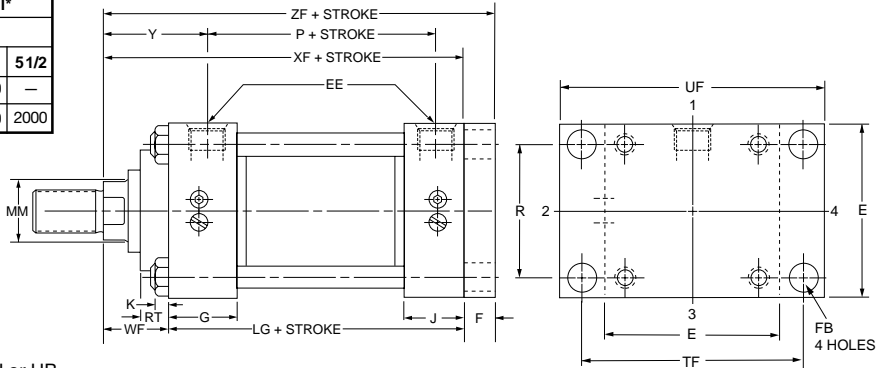
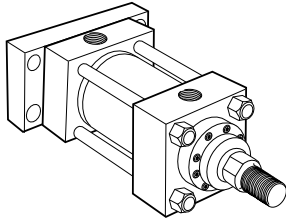
Rectangular Flange and Cap Mountings 7" and 8" Bore Sizes

Parker Series HD Heavy-Duty Hydraulic Cylinders

Cap Rectangular Flange Mounting Style H NFFA Style MF2

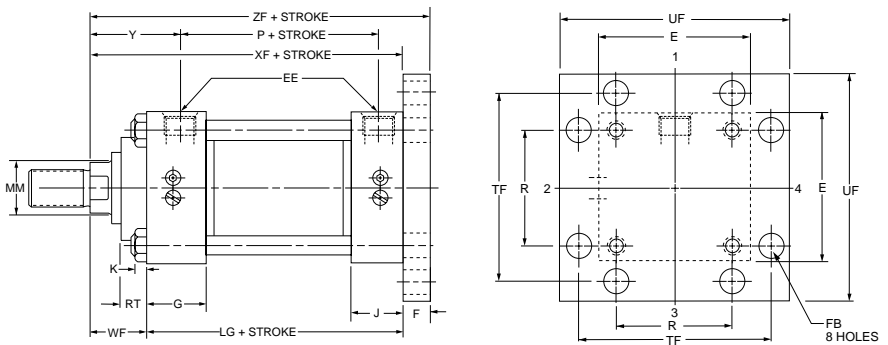
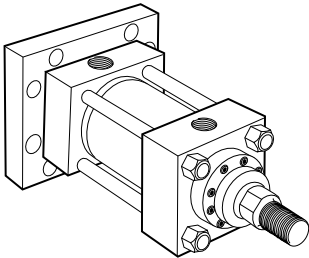
Bore Size	Max. PSI — Pull*				
	Rod Dia.				
	3	3 1/2	4	5	5 1/2
7	1500	1700	1800	2000	—
8	—	1500	1700	1900	2000

*Maximum pressure rating — pull application.

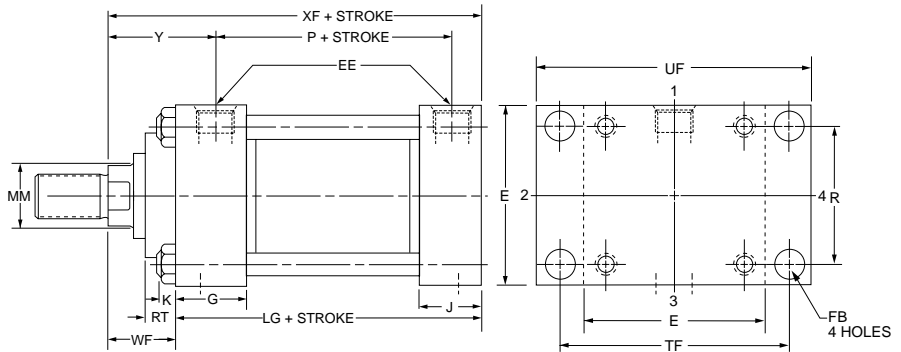
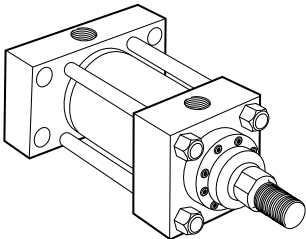


For pressures exceeding those shown use mounting styles HH or HB.

Cap Square Flange Mounting Style HB NFFA Style MF6

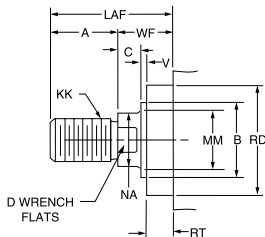


Cap Rectangular Mounting Style HH NFFA Style ME6



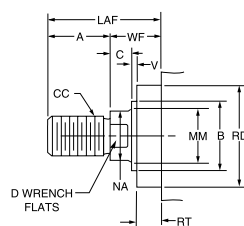
Rod End Dimensions — see table 2

Thread Style 4 (NFFA Style SM)



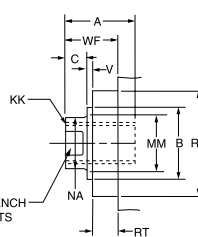
A high strength rod end stud is supplied on thread style 4 through 2" diameter rods and on thread style 8 through 1 7/8" diameter rods. Larger sizes or special rod ends are cut threads. Style 4 rod ends are recommended where the workpiece is secured against the rod shoulder. When the workpiece is not shouldered, style 4 rod ends are

Thread Style 8 (NFFA Style IM)



recommended through 2" piston rod diameters and style 8 rod ends are recommended on larger diameters. Use style 9 for applications where female rod end threads are required. If rod end is not specified, style 4 will be supplied. On 4 1/2" rods and above, (4) .515 dia. spanner wrench holes will be provided instead of wrench flats.

Thread Style 9 (NFFA Style SF)



"Special" Thread Style 3

Special thread, extension, rod eye, blank, etc., are also available.

To order, specify "Style 3" and give desired dimensions for CC or KK, A and LAF. If otherwise special, furnish dimensioned sketch.

For additional information — call your local Parker Cylinder Distributor.

Parker Series HD Heavy-Duty Hydraulic Cylinders

Rectangular Flange
and Cap Mountings
7" and 8" Bore Sizes

Table 1—Envelope and Mounting Dimensions

Bore	E	EE		F	FB	G	J	K	R	TF	UF	Add Stroke	
		NPTF [⊖]	SAE [★]									LG	P
7	8 ¹ / ₂	1 ¹ / ₄	20	1	1 ³ / ₁₆	2 ³ / ₄	2 ³ / ₄	1 ¹ / ₄	6.58	10 ⁵ / ₈	12 ⁵ / ₈	8 ¹ / ₂	5 ¹ / ₂
8	9 ¹ / ₂	1 ¹ / ₂	24	1	1 ⁵ / ₁₆	3	3	1 ¹ / ₂	7.50	11 ¹³ / ₁₆	14	9 ¹ / ₂	6 ¹ / ₄

★ SAE straight thread ports are standard and are indicated by port number.
[⊖] NPTF ports are available at no extra charge.

Table 2—Rod Dimensions

Bore	Rod No.	Rod Dia. MM	Thread		Rod Extensions and Pilot Dimensions										Add Stroke		
			Style 8 CC	Style 4 & 9 KK	A	+0.000 -0.002 B	C	D	LAF	NA	V	Max. RD	RT	WF	Y	XF	ZF
7	1	3	2 ³ / ₄ -12	2 ¹ / ₄ -12	3 ¹ / ₂	3.749	1	2 ⁵ / ₈	5 ³ / ₄	2 ⁷ / ₈	5 ⁵ / ₈	5 ¹ / ₄	3 ³ / ₄	2 ¹ / ₄	3 ³ / ₄	10 ³ / ₄	11 ³ / ₄
	2	5	4 ³ / ₄ -12	3 ¹ / ₂ -12	5	5.749	1	—	7 ¹ / ₄	4 ⁷ / ₈	1 ¹ / ₄	7 ⁹ / ₁₆	15 ¹⁵ / ₁₆	2 ¹ / ₄	3 ³ / ₄	10 ³ / ₄	11 ³ / ₄
	3	3 ¹ / ₂	3 ¹ / ₄ -12	2 ¹ / ₂ -12	3 ¹ / ₂	4.249	1	3	5 ³ / ₄	3 ³ / ₈	5 ⁵ / ₈	5 ⁹ / ₁₆	3 ³ / ₄	2 ¹ / ₄	3 ³ / ₄	10 ³ / ₄	11 ³ / ₄
	4	4	3 ³ / ₄ -12	3-12	4	4.749	1	3 ³ / ₈	6 ¹ / ₄	3 ⁷ / ₈	1 ¹ / ₂	6 ¹ / ₂	15 ¹⁵ / ₁₆	2 ¹ / ₄	3 ³ / ₄	10 ³ / ₄	11 ³ / ₄
8	1	3 ¹ / ₂	3 ¹ / ₄ -12	2 ¹ / ₂ -12	3 ¹ / ₂	4.249	1	3	5 ³ / ₄	3 ³ / ₈	5 ⁵ / ₈	5 ⁹ / ₁₆	3 ³ / ₄	2 ¹ / ₄	3 ⁷ / ₈	11 ³ / ₄	12 ³ / ₄
	2	5 ¹ / ₂	5 ¹ / ₄ -12	4-12	5 ¹ / ₂	6.249	1	—	7 ³ / ₄	5 ³ / ₈	1 ¹ / ₄	8 ⁹ / ₃₂	15 ¹⁵ / ₁₆	2 ¹ / ₄	3 ⁷ / ₈	11 ³ / ₄	12 ³ / ₄
	3	4	3 ³ / ₄ -12	3-12	4	4.749	1	3 ³ / ₈	6 ¹ / ₄	3 ⁷ / ₈	1 ¹ / ₂	6 ¹ / ₂	15 ¹⁵ / ₁₆	2 ¹ / ₄	3 ⁷ / ₈	11 ³ / ₄	12 ³ / ₄
	5	5	4 ³ / ₄ -12	3 ¹ / ₂ -12	5	5.749	1	—	7 ¹ / ₄	4 ⁷ / ₈	1 ¹ / ₄	7 ⁹ / ₁₆	15 ¹⁵ / ₁₆	2 ¹ / ₄	3 ⁷ / ₈	11 ³ / ₄	12 ³ / ₄

Table 3—
Envelope and
Mounting
Dimensions

B

For Cylinder Division Plant Locations – See Page II.



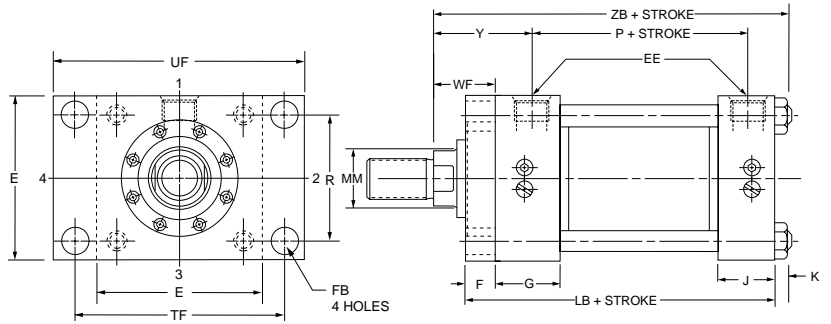
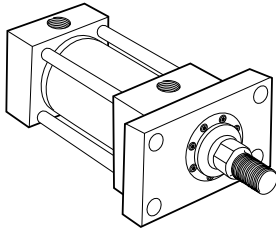
Rectangular Flange and Head Mountings 7" and 8" Bore Sizes

Parker Series HD Heavy Duty Hydraulic Cylinders

Head Rectangular Flange Mounting Style J NFFA Style MF1

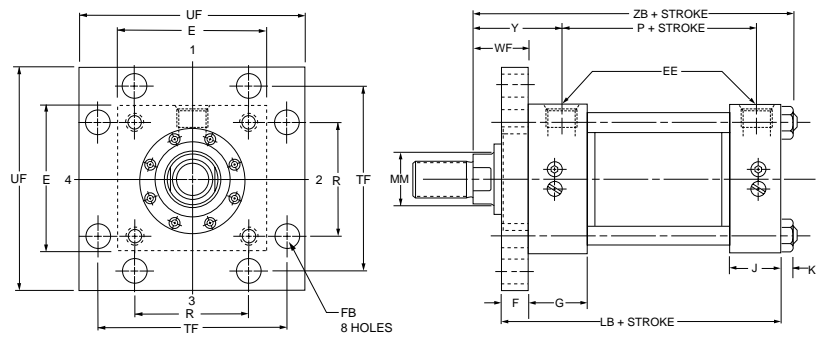
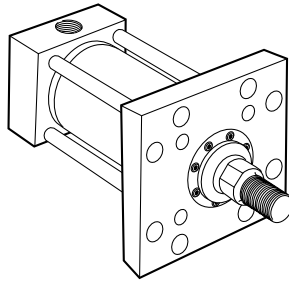
Bore Size	Max. PSI — Push*			
	Rod Dia.			
	3	3-1/2	4	5
7	1500	1250	1000	500
8	—	900	800	600

*Maximum pressure rating — push application.

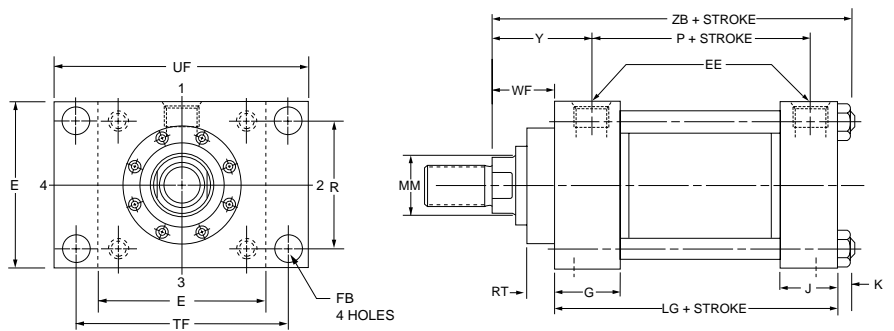
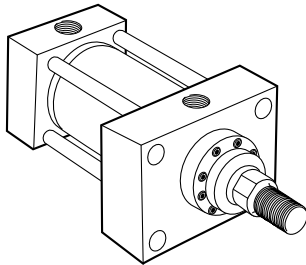


For pressures exceeding those shown use mounting styles JJ, JB.

Head Square Flange Mounting Style JB NFFA Style MF5

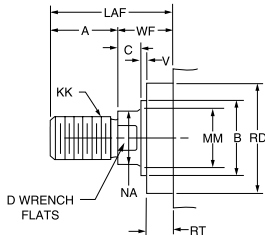


Head Rectangular Mounting Style JJ NFFA Style ME5



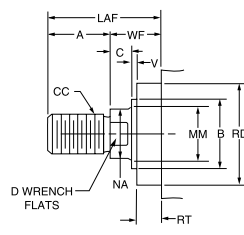
Rod End Dimensions — see table 2

Thread Style 4 (NFFA Style SM)



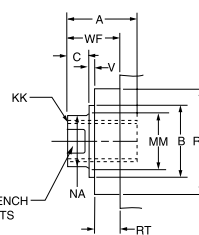
A high strength rod end stud is supplied on thread style 4 through 2" diameter rods and on thread style 8 through 1 7/8" diameter rods. Larger sizes or special rod ends are cut threads. Style 4 rod ends are recommended where the workpiece is secured against the rod shoulder. When the workpiece is not shouldered, style 4 rod ends are

Thread Style 8 (NFFA Style IM)



recommended through 2" piston rod diameters and style 8 rod ends are recommended on larger diameters. Use style 9 for applications where female rod end threads are required. If rod end is not specified, style 4 will be supplied. On 4 1/2" rods and above, (4) .515 dia. spanner wrench holes will be provided instead of wrench flats.

Thread Style 9 (NFFA Style SF)



"Special" Thread Style 3

Special thread, extension, rod eye, blank, etc., are also available.

To order, specify "Style 3" and give desired dimensions for CC or KK, A and LAF. If otherwise special, furnish dimensioned sketch.

For additional information – call your local Parker Cylinder Distributor.

Parker Series HD Heavy Duty Hydraulic Cylinders

Rectangular Flange
and Head Mountings
7" and 8" Bore Sizes

Table 1—Envelope and Mounting Dimensions

Bore	E	EE		F	FB	G	J	K	R	TF	UF	Add Stroke		
		NPTF [⊖]	SAE★									LB	LG	P
7	8 ¹ / ₂	1 ¹ / ₄	20	1	1 ³ / ₁₆	2 ³ / ₄	2 ³ / ₄	1 ¹ / ₄	6.58	10 ⁵ / ₈	12 ⁵ / ₈	9 ¹ / ₂	8 ¹ / ₂	5 ¹ / ₂
8	9 ¹ / ₂	1 ¹ / ₂	24	1	1 ⁵ / ₁₆	3	3	1 ¹ / ₂	7.50	11 ¹³ / ₁₆	14	10 ¹ / ₂	9 ¹ / ₂	6 ¹ / ₄

★ SAE straight thread ports are standard and are indicated by port number.
[⊖] NPTF ports are available at no extra charge.

Table 2—Rod Dimensions

Bore	Rod No.	Rod Dia. MM	Thread		Rod Extensions and Pilot Dimensions										Add Stroke	
			Style 8 CC	Style 4 & 9 KK	A	+0.000 -0.002 B	C	D	LAF	NA	V	Max. RD	RT	WF	Y	ZB
7	1	3	2 ³ / ₄ -12	2 ¹ / ₄ -12	3 ¹ / ₂	3.749	1	2 ⁵ / ₈	5 ³ / ₄	2 ⁷ / ₈	5 ⁸ / ₈	5 ¹ / ₄	3 ⁴ / ₄	2 ¹ / ₄	3 ³ / ₄	12
	2	5	4 ³ / ₄ -12	3 ¹ / ₂ -12	5	5.749	1	—	7 ¹ / ₄	4 ⁷ / ₈	1 ⁴ / ₄	7 ⁹ / ₁₆	1 ⁵ / ₁₆	2 ¹ / ₄	3 ³ / ₄	12
	3	3 ¹ / ₂	3 ¹ / ₄ -12	2 ¹ / ₂ -12	3 ¹ / ₂	4.249	1	3	5 ³ / ₄	3 ³ / ₈	5 ⁸ / ₈	5 ⁹ / ₁₆	3 ⁴ / ₄	2 ¹ / ₄	3 ³ / ₄	12
	4	4	3 ³ / ₄ -12	3-12	4	4.749	1	3 ³ / ₈	6 ¹ / ₄	3 ⁷ / ₈	1 ² / ₂	6 ¹ / ₂	1 ⁵ / ₁₆	2 ¹ / ₄	3 ³ / ₄	12
8	1	3 ¹ / ₂	3 ¹ / ₄ -12	2 ¹ / ₂ -12	3 ¹ / ₂	4.249	1	3	5 ³ / ₄	3 ³ / ₈	5 ⁸ / ₈	5 ⁹ / ₁₆	3 ⁴ / ₄	2 ¹ / ₄	3 ⁷ / ₈	13 ¹ / ₄
	2	5 ¹ / ₂	5 ¹ / ₄ -12	4-12	5 ¹ / ₂	6.249	1	—	7 ³ / ₄	5 ³ / ₈	1 ⁴ / ₄	8 ⁹ / ₃₂	1 ⁵ / ₁₆	2 ¹ / ₄	3 ⁷ / ₈	13 ¹ / ₄
	3	4	3 ³ / ₄ -12	3-12	4	4.749	1	3 ³ / ₈	6 ¹ / ₄	3 ⁷ / ₈	1 ² / ₂	6 ¹ / ₂	1 ⁵ / ₁₆	2 ¹ / ₄	3 ⁷ / ₈	13 ¹ / ₄
	5	5	4 ³ / ₄ -12	3 ¹ / ₂ -12	5	5.749	1	—	7 ¹ / ₄	4 ⁷ / ₈	1 ⁴ / ₄	7 ⁹ / ₁₆	1 ⁵ / ₁₆	2 ¹ / ₄	3 ⁷ / ₈	13 ¹ / ₄

Table 3—
Envelope and
Mounting
Dimensions

B

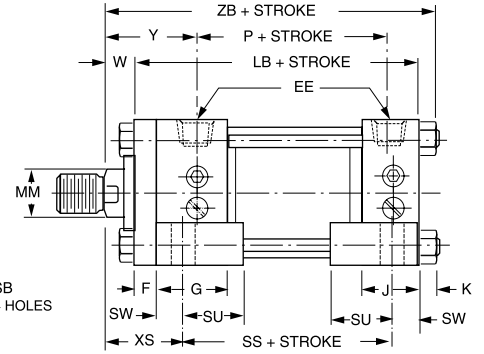
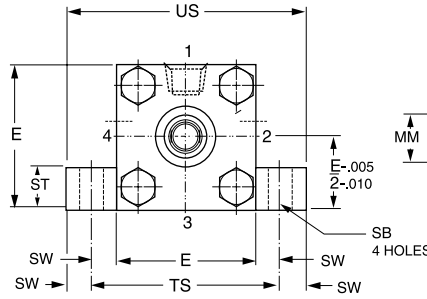
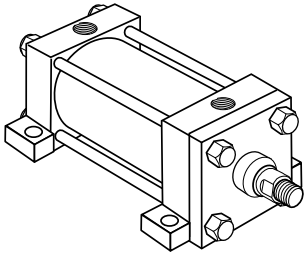
For Cylinder Division Plant Locations – See Page II.



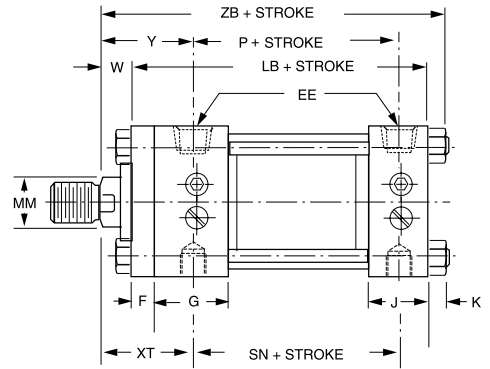
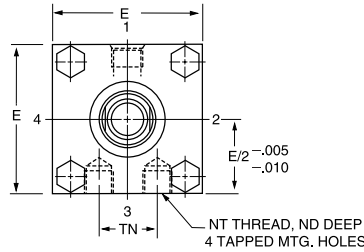
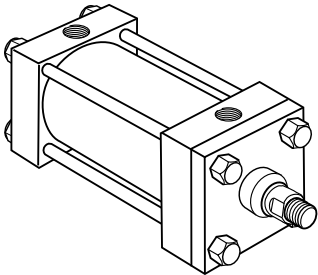
**Side Lugs and
Side Tapped Mountings
7" and 8" Bore Sizes**

Parker Series HD Heavy Duty Hydraulic Cylinders

**Side Lug Mountings
Style C
NFFA Style MS2**

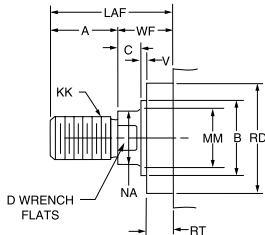


**Side Tapped Mounting
Style F
NFFA Style MS4**



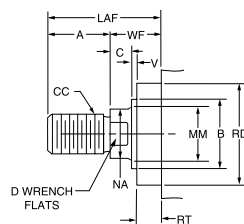
Rod End Dimensions — see table 2

**Thread Style 4
(NFFA Style SM)**



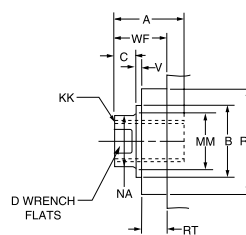
A high strength rod end stud is supplied on thread style 4 through 2" diameter rods and on thread style 8 through 1 7/8" diameter rods. Larger sizes or special rod ends are cut threads. Style 4 rod ends are recommended where the workpiece is secured against the rod shoulder. When the workpiece is not shouldered, style 4 rod ends are

**Thread Style 8
(NFFA Style IM)**



recommended through 2" piston rod diameters and style 8 rod ends are recommended on larger diameters. Use style 9 for applications where female rod end threads are required. If rod end is not specified, style 4 will be supplied. On 4 1/2" rods and above, (4) .515 dia. spanner wrench holes will be provided instead of wrench flats.

**Thread Style 9
(NFFA Style SF)**



**"Special" Thread
Style 3**

Special thread, rod eye, blank, etc., are also available.

To order, specify "Style 3" and give desired dimensions for CC or KK, A and LAF. If otherwise special, furnish dimensioned sketch.

For additional information – call your local Parker Cylinder Distributor.

Parker Series HD Heavy Duty Hydraulic Cylinders

Side Lugs and
Side Tapped Mountings
7" and 8" Bore Sizes

Table 1—Envelope and Mounting Dimensions

Bore	E	EE		F	G	J	K	NT	SB†	ST	SU	SW	TN	TS	US	Add Stroke			
		NPTF⊖	SAE★													LG	P	SN	SS
7	8½	1¼	20	1	2¾	2¾	1¼	1½-6	19/16	1¾	27/8	13/8	3¾	11¼	14	8½	5½	57/8	5¾
8	9½	1½	24	1	3	3	1½	1½-6	19/16	1¾	27/8	13/8	4¼	12¼	15	9½	6¼	65/8	6¾

★ SAE straight thread ports are standard and are indicated by port number.
 ⊖ NPTF ports are available at no extra charge.
 † Upper surface spotfaced for socket head screws.

Table 2—Rod Dimensions

Bore	Rod No.	Rod Dia. MM	Thread		Rod Extensions and Pilot Dimensions										ND	XS	XT	Y	ZB	Add Stroke
			Style 8 CC	Style 4 & 9 KK	A	+0.000 -0.002 B	C	D	LAF	NA	V	Max. RD	RT	WF						
7	1	3	2¾-12	2¼-12	3½	3.749	1	25/8	5¾	27/8	5/8	5¼	¾	2¼	1½	35/8	313/16	3¾	12	
	2	5	4¾-12	3½-12	5	5.749	1	—	7¼	47/8	¼	79/16	15/16	2¼	—	35/8	313/16	3¾	12	
	3	3½	3¼-12	2½-12	3½	4.249	1	3	5¾	3¾	5/8	59/16	¾	2¼	1½	35/8	313/16	3¾	12	
	4	4	3¾-12	3-12	4	4.749	1	33/8	6¼	37/8	½	6½	15/16	2¼	1½	35/8	313/16	3¾	12	
8	1	3½	3¼-12	2½-12	3½	4.249	1	3	5¾	3¾	5/8	59/16	¾	2¼	1½	35/8	315/16	37/8	13¼	
	2	5½	5¼-12	4-12	5½	6.249	1	—	7¾	5¾	¼	89/32	15/16	2¼	—	35/8	315/16	37/8	13¼	
	3	4	3¾-12	3-12	4	4.749	1	33/8	6¼	37/8	½	6½	15/16	2¼	1½	35/8	315/16	37/8	13¼	
	5	5	4¾-12	3½-12	5	5.749	1	—	7¼	47/8	¼	79/16	15/16	2¼	—	35/8	315/16	37/8	13¼	

Style F not available on 7" bore with 5" rod or 8" bore with 5" or 5 1/2" rod.

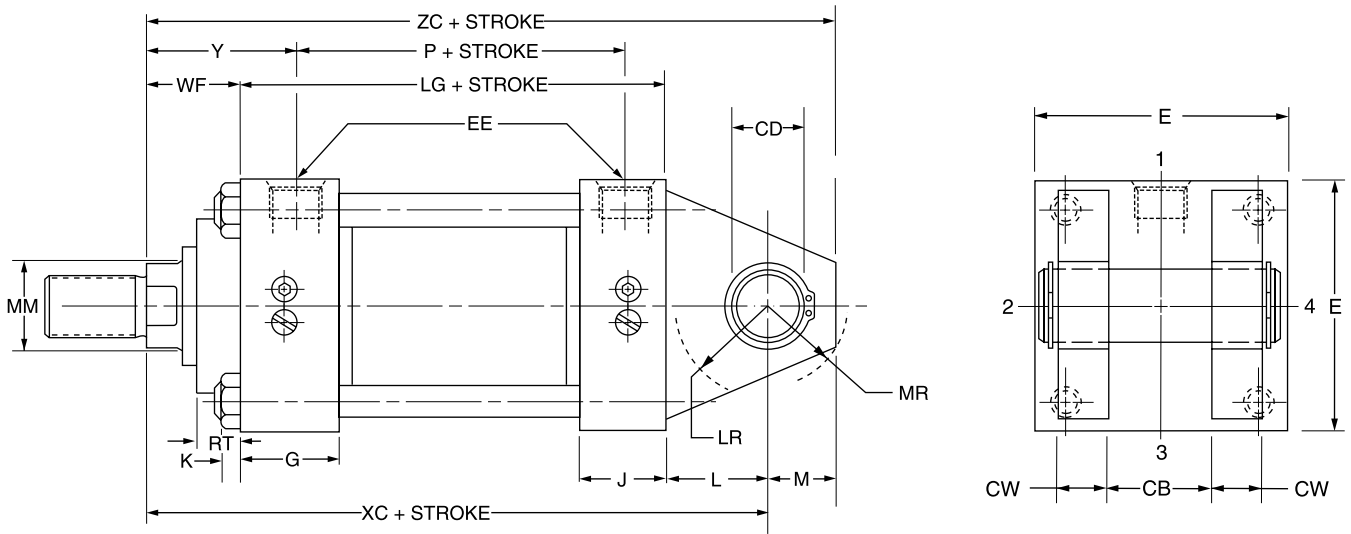
**Table 3—
Envelope and
Mounting
Dimensions**

B

For Cylinder Division Plant Locations – See Page II.

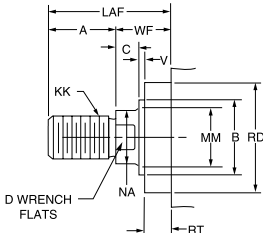


Cap Fixed Clevis Mounting
Style BB
NFFA Style MP1



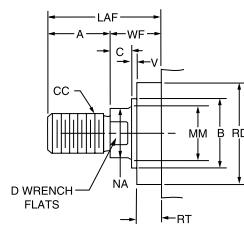
Rod End Dimensions — see table 2

Thread Style 4
(NFFA Style SM)



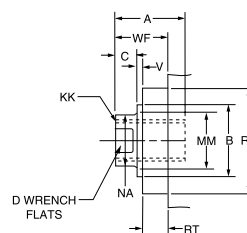
A high strength rod end stud is supplied on thread style 4 through 2" diameter rods and on thread style 8 through 1 3/8" diameter rods. Larger sizes or special rod ends are cut threads. Style 4 rod ends are recommended where the workpiece is secured against the rod shoulder. When the workpiece is not shouldered, style 4 rod ends are

Thread Style 8
(NFFA Style IM)



recommended through 2" piston rod diameters and style 8 rod ends are recommended on larger diameters. Use style 9 for applications where female rod end threads are required. If rod end is not specified, style 4 will be supplied. On 4 1/2" rods and above, (4) .515 dia. spanner wrench holes will be provided instead of wrench flats.

Thread Style 9
(NFFA Style SF)



"Special" Thread Style 3

Special thread, extension, rod eye, blank, etc., are also available.

To order, specify "Style 3" and give desired dimensions for CC or KK , A and LAF . If otherwise special, furnish dimensioned sketch.

For additional information – call your local Parker Cylinder Distributor.

Parker Series HD Heavy Duty Hydraulic Cylinders

Cap Fixed Clevis Mountings
7" and 8" Bore Sizes

Table 1—Envelope and Mounting Dimensions

Bore	CB	+.000 -.002 CD†	CW	E	EE		F	G	J	K	L	LR	M	MR	R	Add Stroke	
					NPTF⊖	SAE★										LG	P
7	3	2.501	1½	8½	1¼	20	1	2¾	2¾	1¼	3	2¾	2½	27/8	6.58	8½	5½
8	3	3.001	1½	9½	1½	24	1	3	3	1½	3¼	3¼	2¾	3½	7.50	9½	6¼

★ SAE straight thread ports are standard and are indicated by port number.
 ⊖ NPTF ports are available at no extra charge.
 † Dimension CD is pin diameter.

Table 2—Rod Dimensions

Bore	Rod No.	Rod Dia. MM	Thread		Rod Extensions and Pilot Dimensions										Add Stroke		
			Style 8 CC	Style 4 & 9 KK	A	+.000 -.002 B	C	D	LAF	NA	V	Max. RD	RT	WF	Y	XC	ZC
7	1	3	2¾-12	2¼-12	3½	3.749	1	2⅝	5¾	27/8	5/8	5¼	¾	2¼	3¾	13¾	16¼
	2	5	4¾-12	3½-12	5	5.749	1	—	7¼	47/8	¼	7 ⁹ / ₁₆	15 ¹⁵ / ₁₆	2¼	3¾	13¾	16¼
	3	3½	3¼-12	2½-12	3½	4.249	1	3	5¾	3¾	5/8	5 ⁹ / ₁₆	¾	2¼	3¾	13¾	16¼
	4	4	3¾-12	3-12	4	4.749	1	3¾	6¼	37/8	½	6½	15 ¹⁵ / ₁₆	2¼	3¾	13¾	16¼
8	1	3½	3¼-12	2½-12	3½	4.249	1	3	5¾	3¾	5/8	5 ⁹ / ₁₆	¾	2¼	37/8	15	17¾
	2	5½	5¼-12	4-12	5½	6.249	1	—	7¾	5¾	¼	8 ⁹ / ₃₂	15 ¹⁵ / ₁₆	2¼	37/8	15	17¾
	3	4	3¾-12	3-12	4	4.749	1	3¾	6¼	37/8	½	6½	15 ¹⁵ / ₁₆	2¼	37/8	15	17¾
	5	5	4¾-12	3½-12	5	5.749	1	—	7¼	47/8	¼	7 ⁹ / ₁₆	15 ¹⁵ / ₁₆	2¼	37/8	15	17¾

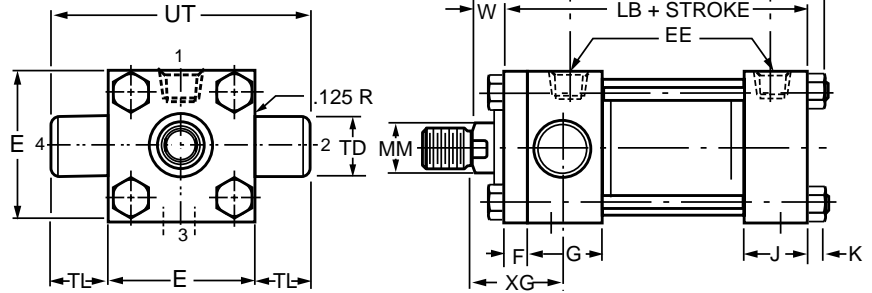
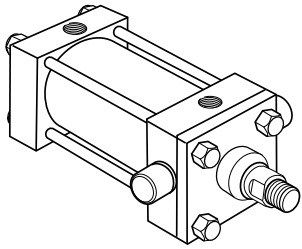
Table 3—
Envelope and
Mounting
Dimensions

B

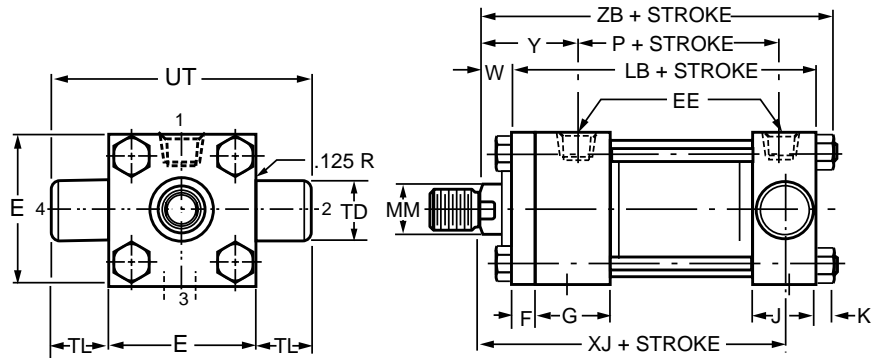
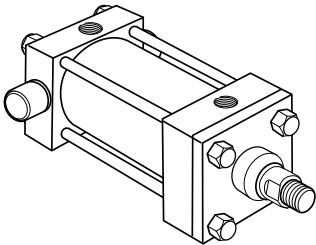
For Cylinder Division Plant Locations – See Page II.



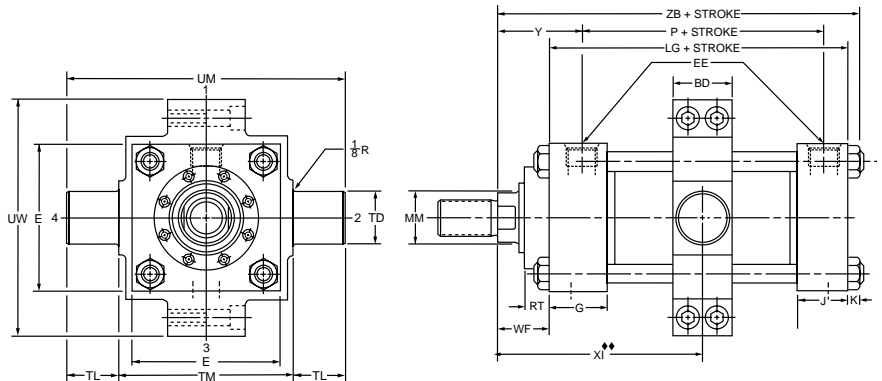
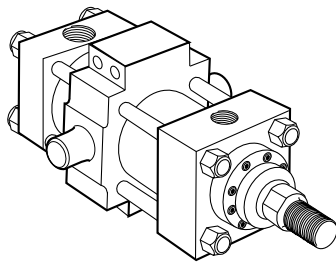
**Head Trunnion Mounting
Style D**
NFPA Style MT1



**Cap Trunnion Mounting
Style DB**
NFPA Style MT2

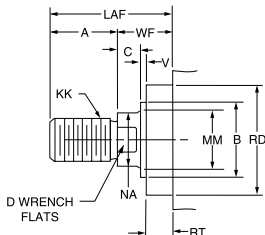


**Intermediate Fixed Trunnion Mounting
Style DD**
NFPA Style MT4

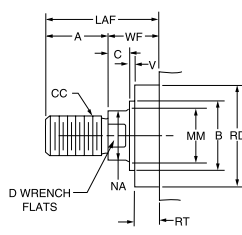


Rod End Dimensions — see table 2

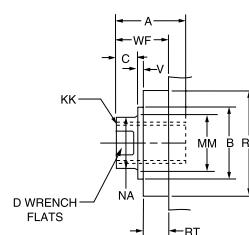
Thread Style 4
(NFPA Style SM)



Thread Style 8
(NFPA Style IM)



Thread Style 9
(NFPA Style SF)



A high strength rod end stud is supplied on thread style 4 through 2" diameter rods and on thread style 8 through 1 3/8" diameter rods. Larger sizes or special rod ends are cut threads. Style 4 rod ends are recommended where the workpiece is secured against the rod shoulder. When the workpiece is not shouldered, style 4 rod ends are

recommended through 2" piston rod diameters and style 8 rod ends are recommended on larger diameters. Use style 9 for applications where female rod end threads are required. If rod end is not specified, style 4 will be supplied. On 4 1/2" rods and above, (4) .515 dia. spanner wrench holes will be provided instead of wrench flats.

**"Special" Thread
Style 3**

Special thread, extension, rod eye, blank, etc., are also available.

To order, specify "Style 3" and give desired dimensions for CC or KK, A and LAF. If otherwise special, furnish dimensioned sketch.

For additional information – call your local Parker Cylinder Distributor.

Parker Series HD Heavy Duty Hydraulic Cylinders

Trunnion Mountings
7" and 8" Bore Sizes

Table 1—Envelope and Mounting Dimensions

Bore	BD	E	EE		F	G	J	K	+0.000 -0.002 TD	TL	TM	UM	UT	UW	Add Stroke		
			NPTF \ominus	SAE \star											LB	LG	P
7	3	8 $\frac{1}{2}$	1 $\frac{1}{4}$	20	1	2 $\frac{3}{4}$	2 $\frac{3}{4}$	1 $\frac{1}{4}$	2.500	2 $\frac{1}{2}$	9 $\frac{3}{4}$	14 $\frac{3}{4}$	13 $\frac{1}{2}$	11 $\frac{1}{2}$	9 $\frac{1}{2}$	8 $\frac{1}{2}$	5 $\frac{1}{2}$
8	3 $\frac{1}{2}$	9 $\frac{1}{2}$	1 $\frac{1}{2}$	24	1	3	3	1 $\frac{1}{2}$	3.000	3	11	17	15 $\frac{1}{2}$	13 $\frac{3}{8}$	10 $\frac{1}{2}$	9 $\frac{1}{2}$	6 $\frac{1}{4}$

\star SAE straight thread ports are standard and are indicated by port number.
 \ominus NPTF ports are available at no extra charge.

Table 2—Rod Dimensions

Bore	Rod No.	Rod Dia. MM	Thread		Rod Extensions and Pilot Dimensions										Add Stroke				
			Style 8 CC	Style 4 & 9 KK	A	+0.000 -0.002 B	C	D	LAF	NA	V	Max. RD	RT	WF	XG	Min. XI \blacklozenge	Y	XJ	ZB
7	1	3	2 $\frac{3}{4}$ -12	2 $\frac{1}{4}$ -12	3 $\frac{1}{2}$	3.749	1	2 $\frac{5}{8}$	5 $\frac{3}{4}$	2 $\frac{7}{8}$	5 $\frac{5}{8}$	5 $\frac{1}{4}$	3 $\frac{3}{4}$	2 $\frac{1}{4}$	3 $\frac{5}{8}$	6 $\frac{9}{16}$	3 $\frac{3}{4}$	9 $\frac{3}{8}$	12
	2	5	4 $\frac{3}{4}$ -12	3 $\frac{1}{2}$ -12	5	5.749	1	—	7 $\frac{1}{4}$	4 $\frac{7}{8}$	1 $\frac{1}{4}$	7 $\frac{9}{16}$	1 $\frac{5}{16}$	2 $\frac{1}{4}$	3 $\frac{5}{8}$	6 $\frac{9}{16}$	3 $\frac{3}{4}$	9 $\frac{3}{8}$	12
	3	3 $\frac{1}{2}$	3 $\frac{1}{4}$ -12	2 $\frac{1}{2}$ -12	3 $\frac{1}{2}$	4.249	1	3	5 $\frac{3}{4}$	3 $\frac{3}{8}$	5 $\frac{5}{8}$	5 $\frac{9}{16}$	3 $\frac{3}{4}$	2 $\frac{1}{4}$	3 $\frac{5}{8}$	6 $\frac{9}{16}$	3 $\frac{3}{4}$	9 $\frac{3}{8}$	12
	4	4	3 $\frac{3}{4}$ -12	3-12	4	4.749	1	3 $\frac{3}{8}$	6 $\frac{1}{4}$	3 $\frac{7}{8}$	1 $\frac{1}{2}$	6 $\frac{1}{2}$	1 $\frac{5}{16}$	2 $\frac{1}{4}$	3 $\frac{5}{8}$	6 $\frac{9}{16}$	3 $\frac{3}{4}$	9 $\frac{3}{8}$	12
8	1	3 $\frac{1}{2}$	3 $\frac{1}{4}$ -12	2 $\frac{1}{2}$ -12	3 $\frac{1}{2}$	4.249	1	3	5 $\frac{3}{4}$	3 $\frac{3}{8}$	5 $\frac{5}{8}$	5 $\frac{9}{16}$	3 $\frac{3}{4}$	2 $\frac{1}{4}$	3 $\frac{3}{4}$	7 $\frac{1}{16}$	3 $\frac{7}{8}$	10 $\frac{1}{4}$	13 $\frac{1}{4}$
	2	5 $\frac{1}{2}$	5 $\frac{1}{4}$ -12	4-12	5 $\frac{1}{2}$	6.249	1	—	7 $\frac{3}{4}$	5 $\frac{3}{8}$	1 $\frac{1}{4}$	8 $\frac{9}{32}$	1 $\frac{5}{16}$	2 $\frac{1}{4}$	3 $\frac{3}{4}$	7 $\frac{1}{16}$	3 $\frac{7}{8}$	10 $\frac{1}{4}$	13 $\frac{1}{4}$
	3	4	3 $\frac{3}{4}$ -12	3-12	4	4.749	1	3 $\frac{3}{8}$	6 $\frac{1}{4}$	3 $\frac{7}{8}$	1 $\frac{1}{2}$	6 $\frac{1}{2}$	1 $\frac{5}{16}$	2 $\frac{1}{4}$	3 $\frac{3}{4}$	7 $\frac{1}{16}$	3 $\frac{7}{8}$	10 $\frac{1}{4}$	13 $\frac{1}{4}$
	5	5	4 $\frac{3}{4}$ -12	3 $\frac{1}{2}$ -12	5	5.749	1	—	7 $\frac{1}{4}$	4 $\frac{7}{8}$	1 $\frac{1}{4}$	7 $\frac{9}{16}$	1 $\frac{5}{16}$	2 $\frac{1}{4}$	3 $\frac{3}{4}$	7 $\frac{1}{16}$	3 $\frac{7}{8}$	10 $\frac{1}{4}$	13 $\frac{1}{4}$

\blacklozenge Dimension XI to be specified by customer.

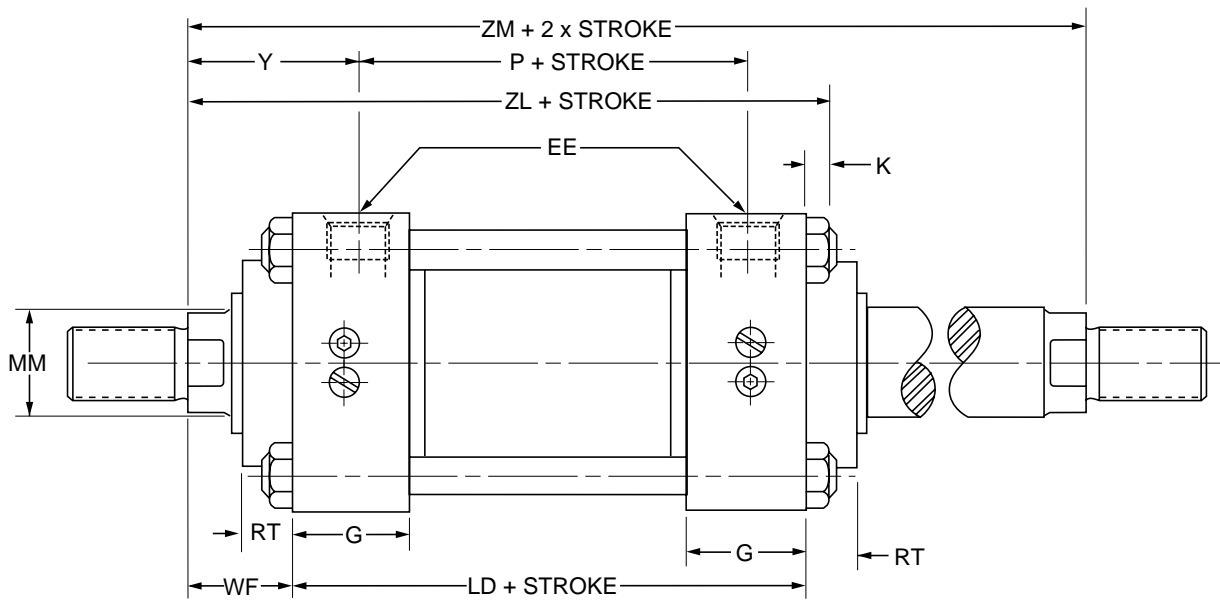
Table 3—
Envelope and
Mounting
Dimensions

B

For Cylinder Division Plant Locations – See Page II.



Parker Series HD Heavy Duty Hydraulic Cylinders



All dimensions are shown in inches and apply to standard rod sizes only. For alternate rod sizes, determine all envelope dimensions (within LD dim.) as described above and then use appropriate rod end dimensions for proper rod size from single rod cylinder.

Bore	Rod	Add Stroke				Add 2X Stroke
	Dia. MM	LD	ZL	SN _k	SS _k	ZM
7	3	8½	11¾	5⅜	5¾	13
8	3½	9½	12 ¹³ / ₁₆	6⅛	6¾	14
Replaces: On single rod mounting styles:		LG	ZB	SN	SS	-
		All Mtg. Styles		KF	KC	All Mtgs.

For additional information – call your local Parker Cylinder Distributor.

Linear Alignment Couplers are available in 13 standard thread sizes...

Cost Saving Features and Benefits Include...

- Maximum reliability for trouble-free operation, long life and lower operating costs
- Increased cylinder life by reducing wear on piston and rod bearings
- Simplified cylinder installation and reduced assembly costs
- Increased rod bearing and rod seal life for lower maintenance costs

Alignment Coupler

See Table 1 for Part Numbers and Dimensions

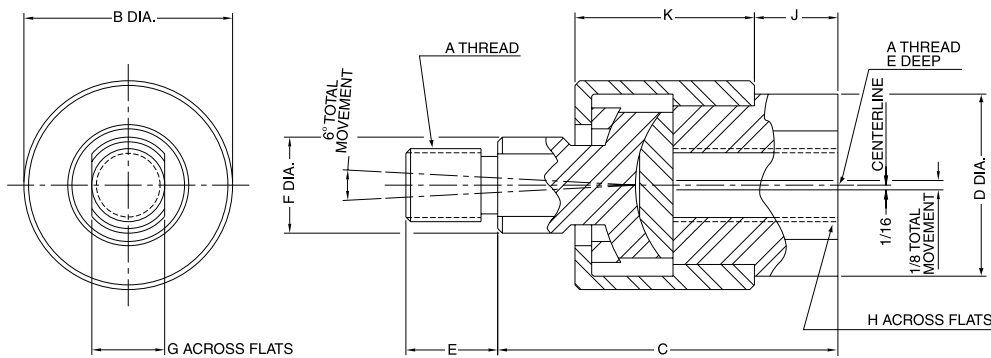
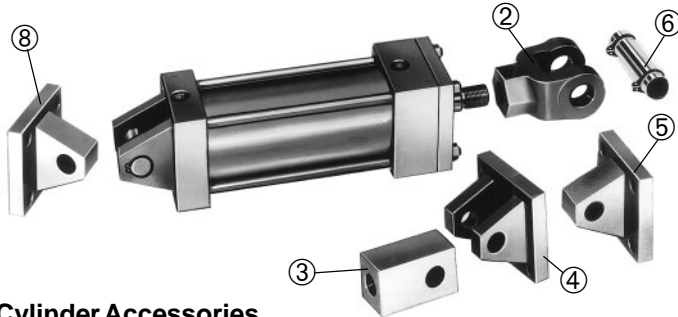


Table 1 — Part Numbers and Dimensions

Part No.	A	B	C*	D	E	F	G	H	J	K	Max. Pull Load (lbs.)	Approx. Weight (lbs.)
1347570031	5/16-24	1 1/8	1 3/4	15/16	1/2	1/2	3/8	3/4	3/8	15/16	1200	.35
1347570038	3/8-24	1 1/8	1 3/4	15/16	1/2	1/2	3/8	3/4	3/8	15/16	2425	.35
1347570044	7/16-20	1 3/8	2	1 1/8	3/4	5/8	1/2	7/8	3/8	1 3/32	3250	.55
1347570050	1/2-20	1 3/8	2	1 1/8	3/4	5/8	1/2	7/8	3/8	1 3/32	4450	.55
1347570063	5/8-18	1 3/8	2	1 1/8	3/4	5/8	1/2	7/8	3/8	1 3/32	6800	.55
1347570075	3/4-16	2	2 5/16	1 5/8	1 1/8	15/16	3/4	1 5/16	7/16	1 9/32	9050	1.4
1347570088	7/8-14	2	2 5/16	1 5/8	1 1/8	15/16	3/4	1 5/16	7/16	1 9/32	14450	1.4
1347570100	1-14	3 1/8	3	2 3/8	1 5/8	1 7/16	1 1/4	1 7/8	3/4	1 25/32	19425	4.8
1347570125	1 1/4-12	3 1/8	3	2 3/8	1 5/8	1 7/16	1 1/4	1 7/8	3/4	1 25/32	30500	4.8
1337390125	1 1/4-12	3 1/2	4	2	2	1 1/2	1 1/4	1 11/16	3/4	2 1/2	30500	6.9
1337390150	1 1/2-12	4	4 3/8	2 1/4	2 1/4	1 3/4	1 1/2	1 15/16	7/8	2 3/4	45750	9.8
1337390175	1 3/4-12	4	4 3/8	2 1/4	2 1/4	1 3/4	1 1/2	1 15/16	7/8	2 3/4	58350	9.8
1337390188	1 7/8-12	5	5 5/8	3	3	2 1/4	1 15/16	2 5/8	1 3/8	3 3/8	67550	19.8

How to Order Linear Alignment Couplers — When ordering a cylinder with a threaded male rod end, specify the coupler of equal thread size by part number as listed in Table 1, i.e.; Piston Rod “KK” or “CC” dimension is 3/4” - 16”, specify coupler part number 1347570075.



Cylinder Accessories

Parker offers a complete range of cylinder accessories to assure you of greatest versatility in present or future cylinder applications.

Rod End Accessories

Accessories offered for the rod end of the cylinder include Rod Clevis, Eye Bracket, Knuckle, Clevis Bracket and Pivot Pin. To select the proper part number for any desired accessory, refer to Chart A below and look opposite the thread size of the rod end as indicated in the first column. The Pivot Pins, Eye Brackets and Clevis Brackets are listed opposite the thread size which their mating Knuckles or Clevises fit.

Chart A

Thread Size	Mating Parts			Mating Parts			Alignment Coupler
	Rod Clevis	Eye Bracket	Pin	Knuckle	Clevis Bracket	Pin	
5/16-24	51221	74077	—	74075	74076	74078	1347570031
7/16-20	50940	69195	68368	69089	69205	68368	1347570044
1/2-20	50941	69195	68368	69090	69205	68368	1347570050
3/4-16	50942	69196	68369	69091	69206†	68369	1347570075
3/4-16	133284	69196	68369	69091	69206	68369	1347570075
7/8-14	50943	*85361	68370	69092	69207	68370	1347570088
1-14	50944	*85361	68370	69093	69207	68370	1347570100
1-14	133285	*85361	68370	69093	69207	68370	1347570100
1 1/4-12	50945	69198	68371	69094	69208	68371	1337390125
1 1/4-12	133286	69198	68371	69094	69208	68371	1337390125
1 1/2-12	50946	*85362	68372	69095	69209	68372	Consult Factory
1 3/4-12	50947	*85363	68373	69096	69210	69215	
1 7/8-12	50948	*85363	68373	69097	69210	69215	
2 1/4-12	50949	*85364	68374	69098	69211	68374	
2 1/2-12	50950	*85365	68375	69099	69212	68375	
2 3/4-12	50951	*85365	68375	69100	69213	69216	
3 1/4-12	50952	73538	73545	73536	73542	73545	
3 1/2-12	50953	73539	73547	73537	73542	73545	
4-12	50954	73539	73547	73538	73543	82181	
4 1/2-12	—	—	—	73439	73544	73547	

†For alignment coupler dimensions, see page 46.

*Cylinder accessory dimensions conform to NFPA recommended standard NFPA/T3.6.8 R1-1984, NFPA recommended standard fluid power systems — cylinder — dimensions for accessories for cataloged square head industrial types. Lin-Act adopted this standard in April, 1985. Eye Brackets or Mounting Plates shipped before this date may have different dimensions and will not necessarily interchange with the NFPA standard. For dimensional information on older style Eye Brackets or Mounting Plates consult Drawing #144805 or previous issues of this catalog.

NOTE: For economical accessory selection, it is recommended that rod end style 4 be specified on your cylinder order.

Accessory Load Capacity

The various accessories have been load rated for your convenience. The load capacity in lbs. is the recommended maximum load for that accessory based on a 4:1 design factor in tensions. (Pivot Pin is rated in shear.) Before specifying, compare the actual load or the tension (pull) force at maximum operating pressure of the cylinder with the load capacity of the accessory you plan to use. If load or pull force of cylinder exceeds load capacity of accessory, consult factory.

Mounting Plates

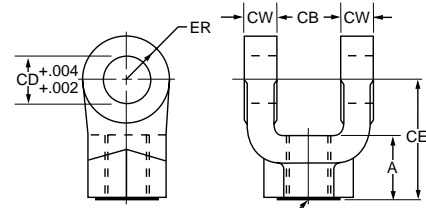
Mounting Plates for Style MP1 and Style MP2 (Clevis mounted) cylinders are offered. To select proper part number for your application, refer to Chart B, above right.

Chart B

Mtg. Plate	Series HD
Part No.	Bore Size
69195	1 1/2"
69196	2", 2 1/2"
*85361	3 1/4"
69198	4"
*85362	5"
*85363	6"
*85364	7"
*85365	8"

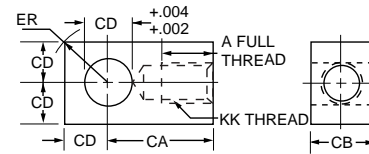
#Mounting plate for 1" bore single lug MP2 & MP1 cylinder mounting style is Clevis Bracket P/N 74076.

② Female Rod Clevis



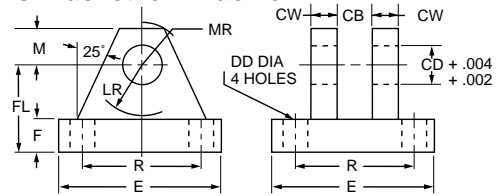
Order to fit thread size.

③ Knuckle (Female Rod Eye)



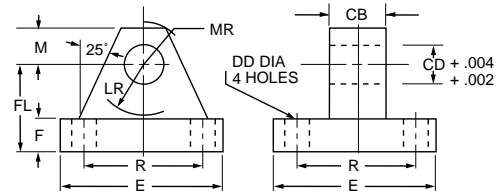
Order to fit thread size.

④ Clevis Bracket for Knuckle



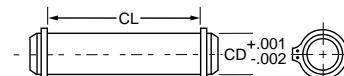
Order to fit Knuckle.

⑧ Mounting Plate or ⑤ Eye Bracket



1. When used to mate with the Rod Clevis, select from Chart A.
2. When used to mount the style MP1 or MP2 cylinders, select from the Mounting Plate Selection Table. See Chart B at lower left.

⑥ Pivot Pin



1. Pivot Pins are furnished with Clevis Mounted Cylinders as standard.
2. Pivot Pins are furnished with (2) Retainer Rings.
3. Pivot Pins must be ordered as a separate item if to be used with Knuckles, Rod Clevises, or Clevis Brackets.

For additional information – call your local Parker Cylinder Distributor.

Parker Series HD Heavy Duty Hydraulic Cylinders

Cylinder
Accessories

	Female Rod Clevis Part Number																		
	51221†	50940	50941	50942	133284	50943	50944	133285	50945	133286	50946	50947	50948	50949	50950	50951	50952	50953	50954
A	1 ³ / ₁₆	3/4	3/4	1 1/8	1 1/8	1 5/8	1 5/8	1 5/8	1 7/8	2	2 1/4	3	3	3 1/2	3 1/2	3 1/2	3 1/2††	4††	4††
CB	1 1/32	3/4	3/4	1 1/4	1 1/4	1 1/2	1 1/2	1 1/2	2	2	2 1/2	2 1/2	2 1/2	3	3	3	4	4 1/2	4 1/2
CD	5/16	1/2	1/2	3/4	3/4	1	1	1	1 3/8	1 3/8	1 3/4	2	2	2 1/2	3	3	3 1/2	4	4
CE	2 1/4	1 1/2	1 1/2	2 1/8	2 3/8	2 15/16	2 15/16	3 1/8	3 3/4	4 1/8	4 1/2	5 1/2	5 1/2	6 1/2	6 3/4	6 3/4	7 3/4	8 13/16	8 13/16
CW	1 3/64	1/2	1/2	5/8	5/8	3/4	3/4	3/4	1	1	1 1/4	1 1/4	1 1/4	1 1/2	1 1/2	1 1/2	2	2 1/4	2 1/4
ER	1 9/64	1/2	1/2	3/4	3/4	1	1	1	1 3/8	1 3/8	1 3/4	2	2	2 1/2	2 3/4	2 3/4	3 1/2	4	4
KK	5/16-24	7/16-20	1/2-20	3/4-16	3/4-16	7/8-14	1-14	1-14	1 1/4-12	1 1/4-12	1 1/2-12	1 3/4-12	1 7/8-12	2 1/4-12	2 1/2-12	2 3/4-12	3 1/4-12	3 1/2-12	4-12
Load Capacity Lbs. O	2600	4250	4900	11200	11200	18800	19500	19500	33500	33500	45600	65600	65600	98200	98200	98200	156700	193200	221200

	Knuckle Part Number																
	74075	69089	69090	69091	69092	69093	69094	69095	69096	69097	69098	69099	69100	73536	73437	73438	73439
A	3/4	3/4	3/4	1 1/8	1 1/8	1 5/8	2	2 1/4	2 1/4	3	3 1/2	3 1/2	3 5/8	4 1/2	5	5 1/2	5 1/2
CA	1 1/2	1 1/2	1 1/2	2 1/16	2 3/8	2 13/16	3 7/16	4	4 3/8	5	5 13/16	6 1/8	6 1/2	7 5/8	7 5/8	9 1/8	9 1/8
CB	7/16	3/4	3/4	1 1/4	1 1/2	1 1/2	2	2 1/2	2 1/2	2 1/2	3	3	3 1/2	4	4	4 1/2	5
CD	7/16	1/2	1/2	3/4	1	1	1 3/8	1 3/4	2	2	2 1/2	3	3	3 1/2	3 1/2	4	4
ER	1 9/32	2 3/32	2 3/32	1 1/16	1 7/16	1 7/16	1 31/32	2 1/2	2 27/32	2 27/32	3 9/16	4 1/4	4 1/4	4 31/32	4 31/32	5 11/16	5 11/16
KK	5/16-24	7/16-20	1/2-20	3/4-16	7/8-14	1-14	1 1/4-12	1 1/2-12	1 3/4-12	1 7/8-12	2 1/4-12	2 1/2-12	2 3/4-12	3 1/4-12	3 1/2-12	4-12	4 1/2-12
Load Capacity Lbs. O	3300	5000	5700	12100	13000	21700	33500	45000	53500	75000	98700	110000	123300	161300	217300	273800	308500

	Clevis Bracket for Knuckle Part Number													
	74076	69205	69206	69207	69208	69209	69210	69211	69212	69213	73542	73543	73544	
CB	1 5/32	3/4	1 1/4	1 1/2	2	2 1/2	2 1/2	3	3	3 1/2	4	4 1/2	5	
CD	7/16	1/2	3/4	1	1 3/8	1 3/4	2	2 1/2	3	3	3 1/2	4	4	
CW	3/8	1/2	5/8	3/4	1	1 1/4	1 1/2	1 1/2	1 1/2	1 1/2	2	2	2	
DD	1 7/64	1 3/32	1 7/32	2 1/32	2 1/32	2 9/32	1 1/16	1 3/16	1 5/16	1 5/16	1 13/16	2 1/16	2 1/16	
E	2 1/4	3 1/2	5	6 1/2	7 1/2	9 1/2	12 3/4	12 3/4	12 3/4	12 3/4	15 1/2	17 1/2	17 1/2	
F	3/8	1/2	5/8	3/4	7/8	7/8	1	1	1	1	1 11/16	1 15/16	1 15/16	
FL	1	1 1/2	1 7/8	2 1/4	3	3 5/8	4 1/4	4 1/2	6	6	6 11/16	7 11/16	7 11/16	
LR	5/8	3/4	1 3/16	1 1/2	2	2 3/4	3 3/16	3 1/2	4 1/4	4 1/4	5	5 3/4	5 3/4	
M	3/8	1/2	3/4	1	1 3/8	1 3/4	2 1/4	2 1/2	3	3	3 1/2	4	4	
MR	1/2	5/8	2 9/32	1 1/4	1 2 1/32	2 7/32	2 25/32	3 1/8	3 19/32	3 19/32	4 1/8	4 7/8	4 7/8	
R	1.75	2.55	3.82	4.95	5.73	7.50	9.40	9.40	9.40	9.40	12.00	13.75	13.75	
Load Capacity Lbs. O	3600	7300	14000	19200	36900	34000	33000	34900	33800	36900	83500	102600	108400	

	Eye Bracket and Mounting Plate Part Number											
	74077	69195	69196	85361*	69198	85362*	85363*	85364*	85365*	73538	73539	
CB	5/16	3/4	1 1/4	1 1/2	2	2 1/2	2 1/2	3	3	4	4 1/2	
CD	5/16	1/2	3/4	1	1 3/8	1 3/4	2	2 1/2	3	3 1/2	4	
DD	1 7/64	1 3/32	1 7/32	2 1/32	2 1/32	2 9/32	1 1/16	1 3/16	1 5/16	1 13/16	2 1/16	
E	2 1/4	2 1/2	3 1/2	4 1/2	5	6 1/2	7 1/2	8 1/2	9 1/2	12 5/8	14 7/8	
F	3/8	3/8	5/8	7/8	7/8	1 1/8	1 1/2	1 3/4	2	1 11/16	1 15/16	
FL	1	1 1/8	1 7/8	2 3/8	3	3 3/8	4	4 3/4	5 1/4	5 11/16	6 7/16	
LR	5/8	3/4	1 1/4	1 1/2	2 1/8	2 1/4	2 1/2	3	3 1/4	4	4 1/2	
M	3/8	1/2	3/4	1	1 3/8	1 3/4	2	2 1/2	2 3/4	3 1/2	4	
MR	1/2	9/16	7/8	1 1/4	1 5/8	2 1/8	2 7/16	3	3 1/4	4 1/8	5 1/4	
R	1.75	1.63	2.55	3.25	3.82	4.95	5.73	6.58	7.50	9.62	11.45	
Load Capacity Lbs. O	1700	4100	10500	20400	21200	49480	70000	94200	121900	57400	75000	

	Pivot Pin Part Number													
	74078	68368	68369	68370	68371	68372	68373	69215	68374	68375	69216	73545	82181	73547*
CD	7/16	1/2	3/4	1	1 3/8	1 3/4	2	2	2 1/2	3	3	3 1/2	4	4
CL	1 5/16	1 7/8	2 5/8	3 1/8	4 1/8	5 3/16	5 3/16	5 11/16	6 3/16	6 1/4	6 3/4	8 1/4	8 5/8	9
Shear Capacity Lbs. O	6600	8600	19300	34300	65000	105200	137400	137400	214700	309200	309200	420900	565800	565800

*Cylinder accessory dimensions conform to NFPA recommended standard NFPA/T3.6.8 R1-1984, NFPA recommended standard fluid power systems — cylinder — dimensions for accessories for cataloged square head industrial types. Lin-Act adopted this standard in April, 1985. Eye Brackets or Mounting Plates shipped before this date may have different dimensions and will not necessarily interchange with the NFPA standard. For dimensional information on older style Eye Brackets or Mounting Plates consult Drawing #144805 or previous issues of this catalog.

† See Accessory Load Capacity note on previous page.

*These sizes supplied with cotter pins.

†Includes Pivot Pin.

Consult appropriate cylinder rod end dimensions for compatibility.

For Cylinder Division Plant Locations – See Page II.



Parker Series HD Heavy Duty Hydraulic Cylinders

How to Order

How to Order Series “HD” Cylinders

When ordering Series HD cylinders, please review the following:

Note: Duplicate cylinders can be ordered by giving the SERIAL NUMBER from the nameplate of the original cylinder. Factory records supply a quick positive identification.

Piston Rods: Specify rod code number based on diameter. Give thread style number for a standard thread or specify dimensions. See “Style 3 Rod End” below.

Cushions: If cushions are required specify according to the model number on the next page. If the cylinder is to have a double rod and only one cushion is required, be sure to specify clearly which end of the cylinder is to be cushioned.

Special Modifications: Additional information is required on orders for cylinders with special modifications. This is best handled with descriptive notes. For further information, consult factory.

Additional Lipseal® Piston (if desired): Parker Lipseal® pistons are offered as an option at no extra cost in the Series HD cylinders. With this feature, zero leakage under static holding conditions is attained. Call out “with Lipseal piston” if this type of piston is desired. If not specified, the ring type piston will be furnished. Hi Load piston seals are available for an additional charge. Refer to the beginning of Section C for the benefits of this piston seal assembly.

Fluid Medium: Series HD hydraulic cylinders are equipped with seals for use with hydraulic oil. If other than hydraulic oil will be used, specify class of fluid (See Catalog section C.)

Water Service Modifications

Standard – When requested, Parker can supply Series HD cylinders with standard modifications that make the cylinders more nearly suitable for use with water as the fluid medium. The modifications include chrome-plated cylinder bore; electroless nickel-plated, non-wearing internal surfaces; Lipseal style piston, Buna N Seals and chrome-plated, stainless steel piston rod. On orders for water service cylinders, be sure to specify the maximum operating pressure.

(These factors must be taken into account because of the lower tensile strength of stainless steels available for use in piston rods.)

Warranty– Parker will warrant Series HD cylinders modified for water service to be free of defects in materials or workmanship. On the other hand, Parker cannot accept responsibility for premature failure of cylinder function, where failure is caused by corrosion, electrolysis or mineral deposits within the cylinder.

Class 1 Seals

Class 1 seals are the seals provided as standard in a cylinder assembly unless otherwise specified. For further information on fluid compatibility or operating limitations of all components, see section C.

For the 2H series cylinders the following make-up Class 1 Seals:

Primary Piston Rod Seal – Enhanced Polyurethane

Piston Rod Wiper – Nitrile

Piston Seals – Cast Iron Rings

Option – Nitrile lipseals with polymyte back-up washers

Option – Hi-Load. Filled P.T.F.E. seals with a nitrile expander

O-Rings – Nitrile (nitrile back-up washer when used)

Combination Mountings

Single Rod End The first mounting is the one called out on the head end of the cylinder. The second or subsequent mountings are called out as they appear in the assembly moving away from the rod end. Exception: When tie rod mountings are part of a combination, the model number should contain an “S” (Special) in the model code and a note in the body of the order clarifying the mounting arrangement. The “P” is used to define a thrust key and is not considered to be a mounting. However, it is located at the primary end.

Example: 4.00 CCBHDLT14AC x 10.000

Combination “C” mounting head only. “BB” mounting cap end

This cylinder is also cushioned at both ends.

Double Rod End In general, the model number is read left to right corresponding to the cylinder as viewed from left to right with the

primary end at rod end #1. See Double Rod Models information page in this section. For this option the piston rod number, piston rod end, and piston rod threads are to be specified for both ends. The simplest are for symmetric cylinders such as: TD, C, E, F, G, and CB mounts. All other mounting styles, the description of the first rod end will be at the mounting end. In the case of multiple mounts, the description of the first rod end will be at the primary mounting end. For “DD” mounts, the description of the first rod end will be the same location as the “XI” dimension.

Example: 4.00 KDDHDLT24A/18A x 10.000 XI=8

This is a center trunnion mounting cylinder with the XI dimension measured from the code 2 rod side of the cylinder which has the style 4 thread. The opposite end code 1 rod with the style 8 thread.

Style 3 Rod End

A style 3 rod end indicates a special rod end configuration. All special piston rod dimensions must have **all three:** KK; A; W/WF or LA/LAF specified with the rod fully retracted. A sketch or drawing should be submitted for rod ends requiring special machining such as snap ring grooves, keyways, tapers, multiple diameters, etc. It is good design practice to have this machining done on a diameter at least 0.065 inches smaller than the piston rod diameter. This allows the piston rod to have a chamfer preventing rod seal damage during assembly or

maintenance. Standard style 55 rod ends with a longer than standard WG dimension should call out a style 3 rod end and the note: **same as 55 except WG=_____**. A drawing should be submitted for special 55 rod ends that have specific tolerances or special radii. Special rod ends that have smaller than standard male threads, larger than standard female threads, or style 55 rod ends with smaller than standard AF or AE dimensions are to be reviewed by Engineering for proper strength at operating pressure.

Service Policy

On cylinders returned to the factory for repairs, it is standard policy for the Cylinder Division to make such part replacements as will put the cylinder in as good as new condition. Should the condition of the returned cylinder be such that expenses for repair would exceed the costs of a new one, you will be notified.

Address all correspondence and make shipments to, Service Department at your nearest regional plant listed in the pages of this catalog.

Certified Dimensions

Parker Cylinder Division guarantees that all cylinders ordered from this catalog will be built to dimensions shown. All dimensions are certified to be correct, and thus it is not necessary to request certified drawings.

For additional information – call your local Parker Cylinder Distributor.

Parker Series HD Automotive Heavy Duty Hydraulic Cylinders

Model Numbers

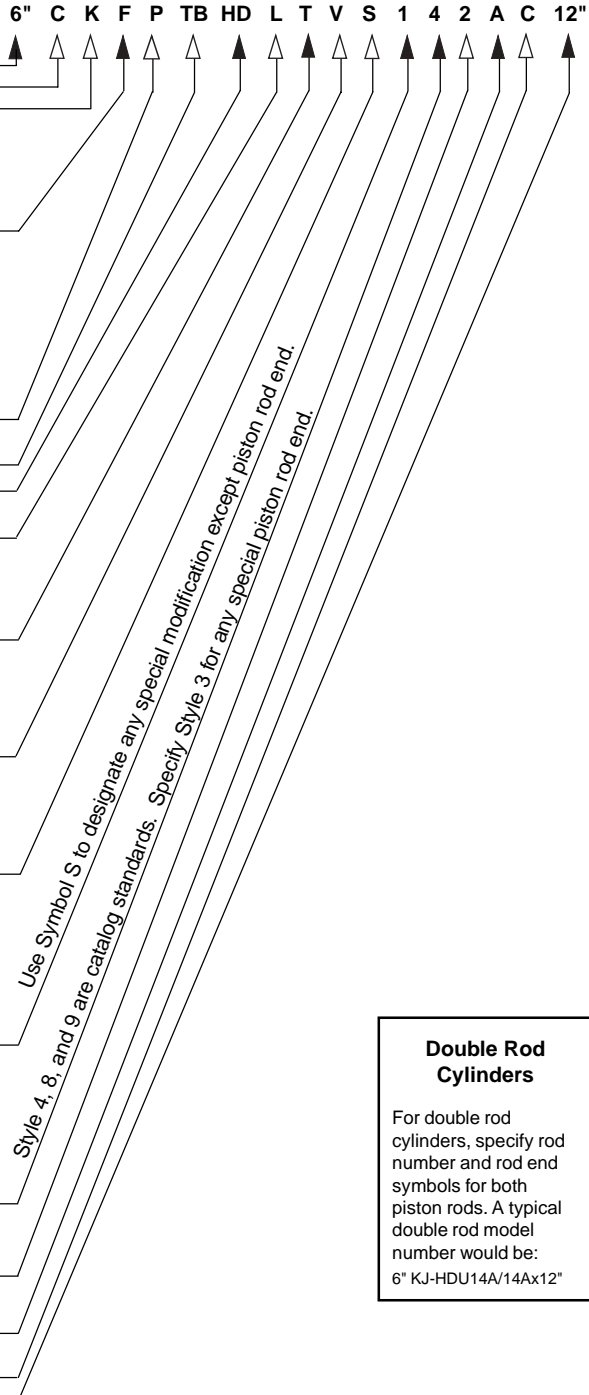
SERIES HD MODEL NUMBERS – How to Develop Them – How to “Decode” Them

Parker Series HD cylinders can be completely and accurately described by a model number consisting of coded symbols. For single rod cylinders a maximum of 17 places for digits and letters are used in a prescribed sequence to produce a model number. Only eight places are needed to completely describe

a standard noncushioned series HD cylinder. To develop a model number, select only those symbols that represent the cylinder required, and place them in the sequence indicated below.

NOTE: Page numbers with a letter prefix, i.e.: C77, are located in section C of this catalog.

Feature	Description	Page No.	Symbol	
Bore*	Specify in inches		-	6"
Cushion-Head	Use only if cushion required	C94	C	C
Double Rod	Use only if double-rod cylinder is required	126, 136, 150	K	K
Mounting* Style	Head Tie Rods Extended	126, 138	TB	TB
	Cap Tie Rods Extended	126, 138	TC	TC
	Head Rectangular Flange	128, 142	J	J
	Head Square Flange	128, 142	JB	JB
	Head Rectangular	128, 142	JJ	JJ
	Cap Rectangular Flange	130, 140	H	H
	Cap Square Flange	130, 140	HB	HB
	Cap Rectangular	130, 140	HH	HH
	Side Lugs	132, 144	C†	C†
	Cap Fixed Clevis	132, 146	BB	BB
	Head Trunnion	134, 148	D	D
	Cap Trunnion	134, 148	DB	DB
	Intermediate Fixed Trunnion	134, 148	DD	DD
Mounting Modifications	Use only for Thrust Key (Style C)	C93	P	P
	Use only for Manifold Port O-ring Seal (Style C)	C91	M	M
Combination Mounting Style	Any Practical Mounting Style Listed Above	-	As listed Above	
Series*	Cylinder with Lipseal Rod Packing	124-125	HD	HD
Piston	Ring packed piston standard		-	
	Used only for Lipseal® piston	124-125	L	L
	Used only for Hi Load piston	124-125	K	K
Ports*	SAE Straight Thread O-ring Port (Standard)	C89	T	T
	Used only for NPTF (Dry Seal Pipe Thread)	C89	U	U
	Used only for BSP (Parallel Thread ISO 228)	C89	R	R
	Used only for SAE Flange Ports (3000 PSI)	C89	P	P
	Used only for BSPT (Taper Thread)	C89	B	B
	Used only for Metric Thread	C89	G	G
	Used only for Metric Thread per ISO 6149	C89	Y	Y
Common Modifications	High Water Content Fluid	C83	J	J
	Viton Seals	C83	V	V
	Nut Retained Piston	125	F	F
	Water Service	C83	W	W
Special Modifications	Used only if special Modifications are required:			
	Oversize Ports	C91	S	
	Port Position Change	C89		
	Special Seals	C83		
	Stop Tube	C95		
	Stroke Adjuster	C93		
Tie Rod Supports	C93			
Piston Rod* Number	For Single Rod Cylinders, select one only. Refer to Rod number listings, Table 2, Pages 106 through 115, See chart in section C, page 83 for minimum piston rod diameter.		1	1
			2	2
			3	3
			4	4
			5	5
			6	6
			7	7
			8	8
			9	9
			0	0
Piston* Rod End	Select:			
	Style 4 Small Male	C92	4	4
	Style 8 Intermediate Male		8	8
	Style 9 Short Female		9	9
Style 3 Special (Specify)	3		3	
Piston Rod Alternate Thread	Used only for stud two times longer than standard	C92	2	2
Piston Rod* Threads	UNF Standard	C92	A	A
	BSF (British Fine)		W	W
	Metric		M	M
Cushion-Cap	Used only if cushion required	124, C94	C	C
Stroke*	Specify in inches	C93	-	-



Double Rod Cylinders

For double rod cylinders, specify rod number and rod end symbols for both piston rods. A typical double rod model number would be:
6" KJ-HDU14A/14Ax12"

* Required for Basic Cylinder Model Number.
 ▲ Solid Arrows indicate Basic Minimum Model Number.
 Cylinder serial numbers are factory production record numbers and are assigned to each cylinder, in addition to the model number.
 † Cylinders with this mounting configuration should have a stroke length equal to or greater than the bore diameter.

For Cylinder Division Plant Locations – See Page II.

