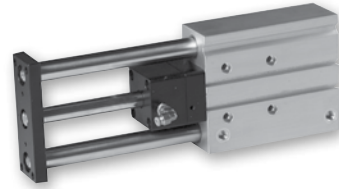


- Compact guided cylinder for heavy duty short stroke applications
- 10 bore sizes 12mm to 100mm
- Strokes 10 to 200mm depending on model
- Rod lock option to hold position upon loss of air pressure
- High load bearing option
- Optional stop collars for adjustable stroke



**Operating information**

Operating pressure:	1 MPa (145 PSIG / 10 bar)
Temperature range:	-18°C to 74°C (0°F to 165°F)
Nitrile seals (standard)	-18°C to 74°C (0°F to 165°F)
Fluorocarbon seals	-18°C to 121°C (0°F to 250°F)
Operating characteristics:	Double acting
Filtration requirements:	40 micron, dry filtered air
For technical information see CD	

**Ordering information**

**P5T2 A 032 J1 K N 1 B G J 025 A**

<b>Construction</b>		<b>Bore size</b>	
A	Standard, metric mounting Threads	012	12mm
E	Cushions <sup>6</sup> , metric mounting threads	016	16mm
		020	20mm
		025	25mm
		032	32mm
		040	40mm
		050	50mm
		063	63mm
		080	80mm
		100	100mm

<b>Port location</b>	
1	Top
2	Side
3	Rear

<b>Stroke length</b>	
Order standard stroke from tables below using 3 digits, i.e. 025 = 25mm	

<b>Other options</b>		
Tool Plate	Seals	
	Buna-N	Fluorocarbon
Front	G	L
Front & Rear <sup>5</sup>	H	M

<b>Ports / flow controls</b>			
Ports	Flow controls <sup>5</sup>		
	None	Prestolok	Threaded
NPTF	A	E	P
BSP or M5	B	F	R

<b>Sensor option</b>					
Type	Connection	Proximity sensor <sup>8</sup>			None
		Extend	Retract	Extend & retract	
PNP	Lead type	U	A	E	N
	Plug in	V	B	F	
NPN	Lead type	W	C	J	
	Plug in	Y	D	K	

<b>Extend options</b>	
A	Shock absorber <sup>1,9</sup>
K	Bumpers and adjustable stop collars <sup>2</sup>
L	Bumpers and shock absorbers <sup>3,9</sup>
N	None

<b>Retract options</b>	
A	Shock absorber <sup>4,9</sup>
K	Bumpers and adjustable stop collars <sup>4</sup>
L	Bumpers and shock absorber <sup>4,9</sup>
R	Rod lock (sizes 32-100 only)
N	None

<b>Bearings / shaft</b>	
J1	Composite bushings, chrome plated rod
J3	Composite bushings, stainless steel rod
K1	Composite high load bearings, chrome plated rod <sup>7</sup>
K3	Composite high load bearings, stainless steel rod <sup>7</sup>
H3	Linear ball bearings, stainless steel rod
L3	Linear ball high load bearings, stainless steel rod <sup>7</sup>

<b>Notes:</b>	
1	not available with rear or side port; not available with retract option I; not available on 100mm size with 25mm stroke.
2	Not available with rear ports.
3	Not available with rear or side ports; not available with retract option a.
4	Not available with rod lock.
5	Not available with rear ports.
6	Cushions not available on sizes 12 & 16. Cushions may not be effective in combination with shocks or bumpers/stop collars.
7	High load bearings option only available with 50mm and greater strokes.
8	Consult factory for retract proximity sensors on rodlock unit.
9	Shock absorbers not available on sizes 12 & 16.

<b>Sensors</b>	
For sensors see page B294.	

<b>Standard strokes, basic units*</b>												
Bore size	10	20	25	30	40	50	75	100	125	150	175	200
12 - 16	•	•		•	•	•	•	•	•	•	•	•
20 - 25		•		•	•	•	•	•	•	•	•	•
32 - 100			•			•	•	•	•	•	•	•

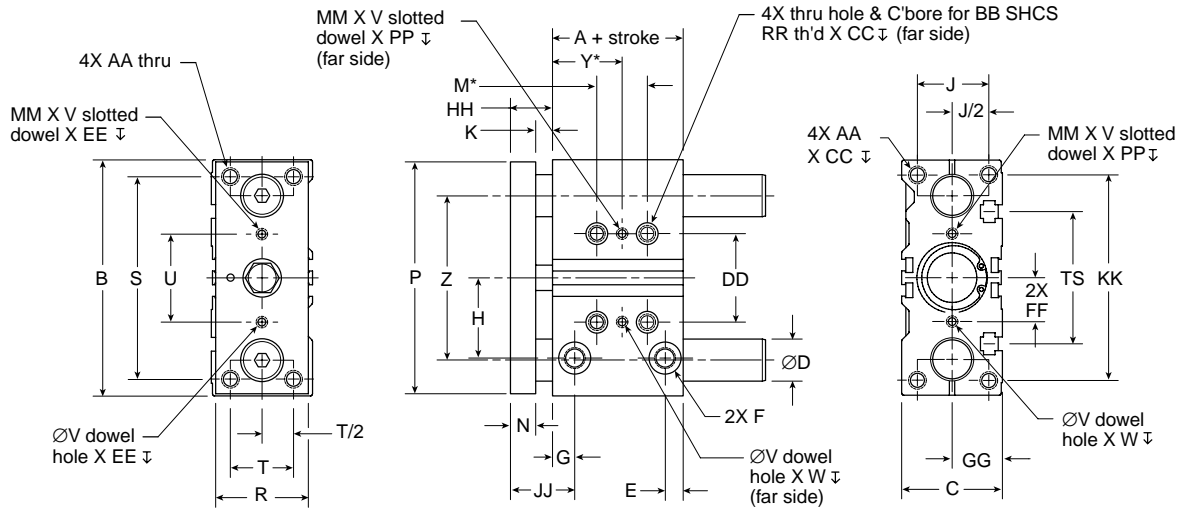
<b>Standard strokes, cushioned units*</b>												
Bore Size	10	20	25	30	40	50	75	100	125	150	175	200
20 - 63			•			•	•	•	•	•	•	•
80 - 100						•	•	•	•	•	•	•

\*Consult factory for special stroke lengths.

**B**  
 Guided Cylinders  
 Actuator Products

P5T Series  
 P5T2 Series  
 P5L Series  
 HB Series  
 P5E Series





Dimensions in mm (inch)

Note: See next page for these stroke dependent dimensions.

Bore	A	B	C	D <sub>1</sub>	D <sub>2</sub>	E	F	G	H	J	K	N	P	R	S	T	U
12	29 (1.14)	58 (2.28)	26 (1.02)	6 (0.24)	8 (0.31)	6.75 (0.27)	M5x0.8*	10.5 (0.41)	7.5 (0.30)	18 (0.71)	6 (0.24)	7 (0.28)	56 (2.20)	22 (0.87)	48 (1.89)	14 (0.55)	23 (0.91)
16	33 (1.30)	64 (2.52)	30 (1.18)	8 (0.31)	10 (0.39)	6.2 (0.24)	M5x0.8*	12 (0.47)	16.5 (0.65)	22 (0.87)	5 (0.20)	8 (0.31)	62 (2.44)	25 (0.98)	54 (2.13)	16 (0.63)	24 (0.94)
20	37 (1.46)	83 (3.27)	36 (1.42)	10 (0.39)	12 (0.47)	10 (0.39)	1/8 BSPP 1/8 NPTF	11 (0.43)	25 (0.98)	24 (0.94)	8 (0.31)	8 (0.31)	81 (3.19)	30 (1.18)	70 (2.76)	18 (0.71)	28 (1.10)
25	37.5 (1.48)	93 (3.66)	42 (1.65)	12 (0.47)	16 (0.63)	10.5 (0.41)	1/8 BSPP 1/8 NPTF	10.5 (0.41)	30 (1.18)	30 (1.18)	8 (0.31)	8 (0.31)	91 (3.58)	38 (1.50)	78 (3.07)	26 (1.02)	34 (1.34)
32	37.5 (1.48)	112 (4.41)	48 (1.89)	16 (0.63)	20 (0.79)	10.75 (0.42)	1/8 BSPP 1/8 NPTF	11.75 (0.46)	37.5 (1.48)	34 (1.34)	10 (0.39)	12 (0.47)	110 (4.33)	44 (1.73)	96 (3.78)	30 (1.18)	42 (1.65)
40	44 (1.73)	120 (4.72)	54 (2.13)	16 (0.63)	20 (0.79)	11.5 (0.45)	1/8 BSPP 1/8 NPTF	16 (0.63)	42 (1.65)	40 (1.57)	10 (0.39)	12 (0.47)	118 (4.65)	44 (1.73)	104 (4.09)	30 (1.18)	50 (1.97)
50	44 (1.73)	148 (5.83)	64 (2.52)	20 (0.79)	25 (0.98)	12.5 (0.49)	1/4 BSPP 1/4 NPTF	16 (0.63)	49 (1.93)	46 (1.81)	15 (0.59)	13 (0.51)	146 (5.75)	60 (2.36)	130 (5.12)	40 (1.57)	66 (2.60)
63	49 (1.93)	162 (6.38)	78 (3.07)	20 (0.79)	25 (0.98)	13 (0.51)	1/4 BSPP 1/4 NPTF	16 (0.63)	57 (2.24)	58 (2.28)	15 (0.59)	13 (0.51)	158 (6.22)	70 (2.76)	130 (5.12)	50 (1.97)	80 (3.15)
80	56.5 (2.22)	202 (7.95)	91.5 (3.60)	25 (0.98)	30 (1.18)	17 (0.67)	3/8 BSPP 3/8 NPTF	18 (0.71)	74 (2.91)	54 (2.13)	18 (0.71)	22 (0.87)	198 (7.80)	75 (2.95)	174 (6.85)	52 (2.05)	100 (3.94)
100	66 (2.60)	240 (9.45)	112 (4.41)	30 (1.18)	35 (1.38)	20 (0.79)	3/8 BSPP 3/8 NPTF	23 (0.91)	94 (3.70)	48 (1.89)	25 (0.98)	25 (0.98)	236 (9.29)	89 (3.50)	210 (8.27)	64 (2.52)	124 (4.88)

Bore	V <sup>+0.01 -0.00</sup>	W	Z	AA	BB	CC	DD	EE	FF	GG	HH	JJ	KK	MM**	PP	RR	TS
12	3.06 (0.12)	6 (0.24)	41 (1.61)	M4 x 0.7	M4	10 (0.39)	23 (0.91)	4.5 (0.18)	11.5 (0.45)	13 (0.51)	18 (0.71)	23.5 (0.93)	50 (1.97)	3.5 (0.14)	3 (0.12)	M5 x 0.8	37 (1.46)
16	3.06 (0.12)	6 (0.24)	46 (1.81)	M5 x 0.8	M4	10 (0.39)	24 (0.94)	4.5 (0.18)	12 (0.47)	15 (0.59)	18 (0.71)	25 (0.98)	56 (2.20)	3.5 (0.14)	3 (0.12)	M5 x 0.8	38 (1.50)
20	3.06 (0.12)	6 (0.24)	54 (2.13)	M5 x 0.8	M5	12 (0.47)	28 (1.10)	4.5 (0.18)	14 (0.55)	18 (0.71)	33 (1.30)	27 (1.06)	72 (2.83)	3.5 (0.14)	3 (0.12)	M6 x 1.0	44 (1.73)
25	4.06 (0.16)	6 (0.24)	64 (2.52)	M6 x 1.0	M5	12 (0.47)	34 (1.34)	4.5 (0.18)	17 (0.67)	21 (0.83)	33 (1.30)	26.5 (1.04)	82 (3.23)	4.5 (0.18)	3 (0.12)	M6 x 1.0	50 (1.97)
32	4.06 (0.16)	6 (0.24)	78 (3.07)	M8 x 1.25	M6	16 (0.63)	42 (1.65)	5.5 (0.22)	21 (0.83)	24 (0.94)	43 (1.69)	33.75 (1.33)	98 (3.86)	4.5 (0.18)	3 (0.12)	M8 x 1.25	63 (2.48)
40	4.06 (0.16)	6 (0.24)	86 (3.39)	M8 x 1.25	M6	16 (0.63)	50 (1.97)	5.5 (0.22)	25 (0.98)	27 (1.06)	44 (1.73)	38 (1.50)	106 (4.17)	4.5 (0.18)	3 (0.12)	M8 x 1.25	72 (2.83)
50	5.04 (0.20)	8 (0.31)	110 (4.33)	M10 x 1.5	M8	20 (0.79)	66 (2.60)	5.5 (0.22)	33 (1.30)	32 (1.26)	52 (2.05)	44 (1.73)	130 (5.12)	6 (0.24)	4 (0.16)	M1 x 1.5	92 (3.62)
63	5.04 (0.20)	8 (0.31)	124 (4.88)	M10 x 1.5	M8	20 (0.79)	80 (3.15)	5.5 (0.22)	40 (1.57)	39 (1.54)	52 (2.05)	44 (1.73)	142 (5.59)	6 (0.24)	4 (0.16)	M10 x 1.5	110 (4.33)
80	6.04 (0.24)	10 (0.39)	156 (6.14)	M12 x 1.75	M10	24 (0.94)	100 (3.94)	7.0 (0.28)	50 (1.97)	46 (1.81)	68 (2.68)	58 (2.28)	180 (7.09)	7 (0.28)	5 (0.20)	M12 x 1.75	140 (5.51)
100	6.04 (0.24)	10 (0.39)	188 (7.40)	M14 x 2.0	M12	28 (1.10)	124 (4.88)	7.0 (0.28)	62 (2.44)	56 (2.20)	61 (2.40)	73 (2.87)	221 (8.70)	7 (0.28)	5 (0.20)	M14 x 2.0	166 (6.54)

D1 with linear ball bearing; D2 with composite bushing  
 \* 10-32 fittings will fit into M5x0.8 ports.  
 \*\* Slot length



**Stroke dependent dimensions**

Bore size	Dim	Standard stroke length (mm)												
		10	20	25	30	40	50	75	100	125	150	175	200	
12	M	20 (0.79)	20 (0.79)	N/A	20 (0.79)	40 (1.57)	40 (1.57)	40 (1.57)	40 (1.57)	40 (1.57)	110 (4.33)	110 (4.33)	110 (4.33)	110 (4.33)
	Y	15 (0.59)	15 (0.59)	N/A	15 (0.59)	25 (0.98)	25 (0.98)	25 (0.98)	25 (0.98)	25 (0.98)	60 (2.36)	60 (2.36)	60 (2.36)	60 (2.36)
16	M	24 (0.94)	24 (0.94)	N/A	24 (0.94)	44 (1.73)	44 (1.73)	44 (1.73)	44 (1.73)	44 (1.73)	110 (4.33)	110 (4.33)	110 (4.33)	110 (4.33)
	Y	17 (0.67)	17 (0.67)	N/A	17 (0.67)	27 (1.06)	27 (1.06)	27 (1.06)	27 (1.06)	27 (1.06)	60 (2.36)	60 (2.36)	60 (2.36)	60 (2.36)
20, 25	M	N/A	24 (0.94)	N/A	24 (0.94)	44 (1.73)	44 (1.73)	44 (1.73)	44 (1.73)	44 (1.73)	120 (4.72)	120 (4.72)	120 (4.72)	120 (4.72)
	Y	N/A	29 (1.14)	N/A	29 (1.14)	39 (1.54)	39 (1.54)	39 (1.54)	39 (1.54)	39 (1.54)	77 (3.03)	77 (3.03)	77 (3.03)	77 (3.03)
32	M	N/A	N/A	24 (0.94)	N/A	N/A	48 (1.89)	48 (1.89)	48 (1.89)	48 (1.89)	124 (4.88)	124 (4.88)	124 (4.88)	124 (4.88)
	Y	N/A	N/A	33 (1.30)	N/A	N/A	45 (1.77)	45 (1.77)	45 (1.77)	45 (1.77)	83 (3.27)	83 (3.27)	83 (3.27)	83 (3.27)
40	M	N/A	N/A	24 (0.94)	N/A	N/A	48 (1.89)	48 (1.89)	48 (1.89)	48 (1.89)	124 (4.88)	124 (4.88)	124 (4.88)	124 (4.88)
	Y	N/A	N/A	34 (1.34)	N/A	N/A	46 (1.81)	46 (1.81)	46 (1.81)	46 (1.81)	84 (3.31)	84 (3.31)	84 (3.31)	84 (3.31)
50	M	N/A	N/A	24 (0.94)	N/A	N/A	48 (1.89)	48 (1.89)	48 (1.89)	48 (1.89)	124 (4.88)	124 (4.88)	124 (4.88)	124 (4.88)
	Y	N/A	N/A	36 (1.42)	N/A	N/A	48 (1.89)	48 (1.89)	48 (1.89)	48 (1.89)	86 (3.39)	86 (3.39)	86 (3.39)	86 (3.39)
63	M	N/A	N/A	24 (0.94)	N/A	N/A	52 (2.05)	52 (2.05)	52 (2.05)	52 (2.05)	128 (5.04)	128 (5.04)	128 (5.04)	128 (5.04)
	Y	N/A	N/A	38 (1.50)	N/A	N/A	50 (1.97)	50 (1.97)	50 (1.97)	50 (1.97)	88 (3.46)	88 (3.46)	88 (3.46)	88 (3.46)
80	M	N/A	N/A	28 (1.10)	N/A	N/A	52 (2.05)	52 (2.05)	52 (2.05)	52 (2.05)	128 (5.04)	128 (5.04)	128 (5.04)	128 (5.04)
	Y	N/A	N/A	42 (1.65)	N/A	N/A	54 (2.13)	54 (2.13)	54 (2.13)	54 (2.13)	92 (3.62)	92 (3.62)	92 (3.62)	92 (3.62)
100	M	N/A	N/A	48 (1.89)	N/A	N/A	72 (2.83)	72 (2.83)	72 (2.83)	72 (2.83)	148 (5.83)	148 (5.83)	148 (5.83)	148 (5.83)
	Y	N/A	N/A	35 (1.38)	N/A	N/A	47 (1.85)	47 (1.85)	47 (1.85)	47 (1.85)	85 (3.35)	85 (3.35)	85 (3.35)	85 (3.35)

**B**  
**Guided Cylinders**  
**Actuator Products**  
  
**P5T**  
**Series**  
  
**P5T2**  
**Series**  
  
**P5L**  
**Series**  
  
**HB**  
**Series**  
  
**P5E**  
**Series**

**Rod Lock (R)**

P5T2 Series units in 32mm - 100mm bore sizes are available with an integral rod lock mechanism.

The powerful rod lock device is air/spring activated and enables the piston rod to be locked in any position. In the absence of air signal pressure, full holding force is applied to the piston rod. When an air signal pressure of 60 PSI (4 Bar) is applied, the locking device is released. Exhaust air can be piped away when a contaminant-free environment is required.

- Applications:**
- Vertical guided cylinders
  - In the event of pressure loss
  - In the event of electrical control failure

**Design tip:** The piston rod should not be moving when the locking device is activated. The locking device is not intended to repeatedly brake movement. See sample pneumatic circuit.

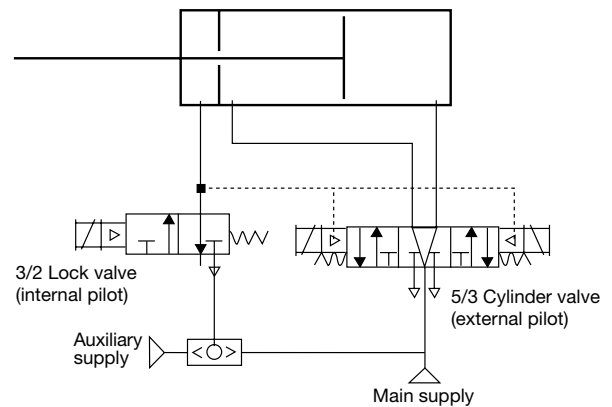
**Technical Data**

Maximum Pressure: 145 PSI (10 Bar)  
 Pressure Required to Unlock: 60 PSI (4 Bar)

Bore size (mm)	Holding force @7 bar (102 PSI)	
	lb	N
32	123	550
40	193	860
50	303	1345
63	481	2140
80	755	3450
100	1211	5390

**Rod Lock Circuit**

Lock valve must be maintained energized during cylinder motion, otherwise rod lock is engaged and cylinder valve shifts to mid position. For manual override of the rod lock, insert a shuttle valve and an auxiliary air supply to disable rod lock.

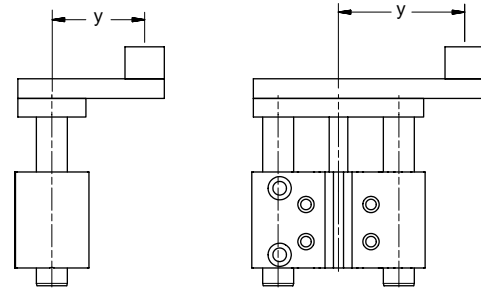


**Vertical Eccentric Load Capacity**

P5T2 Series units mounted vertically will have the same eccentric load capacity regardless of orientation. The graphs provide maximum load capacity for an eccentric mounted load. The load is assumed to be mounted at the face of the tool plate.

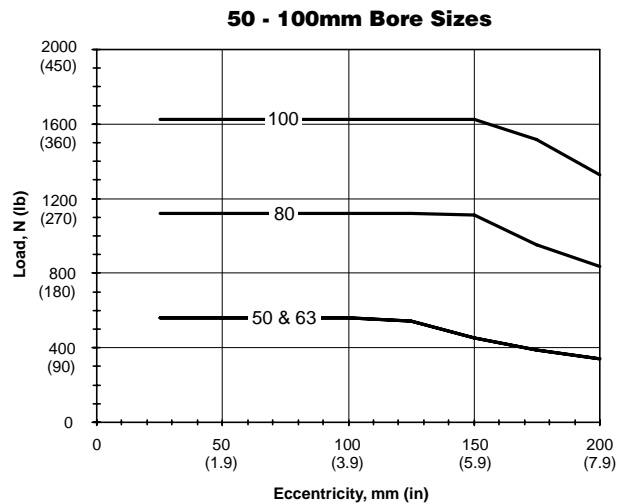
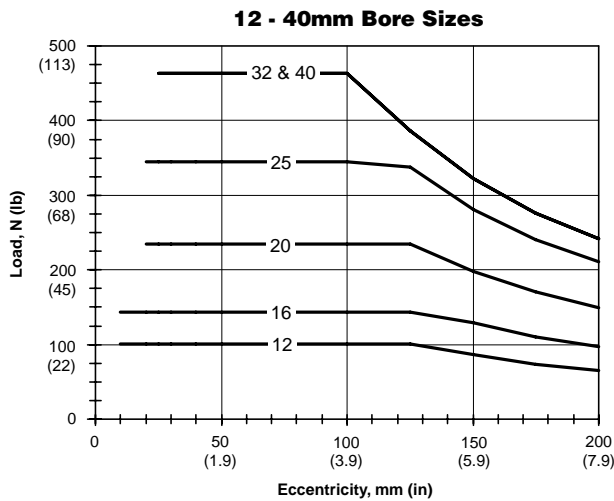
These load curves illustrate load ratings based on the bearing system of the product. Load rating is a key selection criterion but is not the only one to consider in the selection of a product.

**EXAMPLE:** A P5T2-050 unit will lift up to a 90-lb load, offset 170mm from actuator centerline.

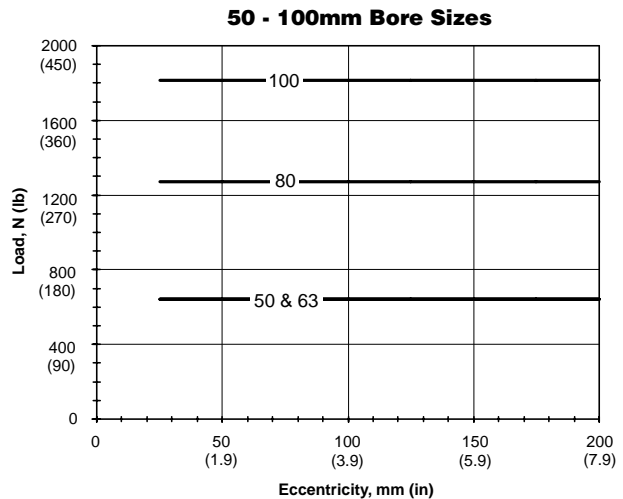
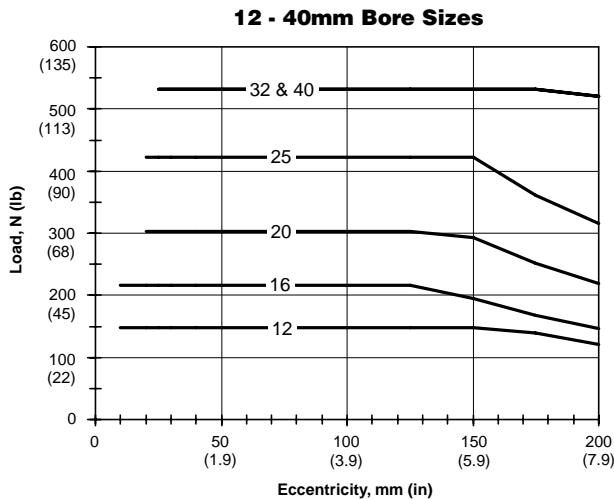


y = distance from the center of gravity of the moveable load to the center of the actuator.

**Standard unit**



**High load bearings**



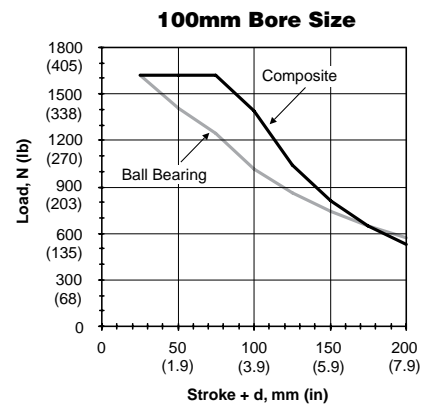
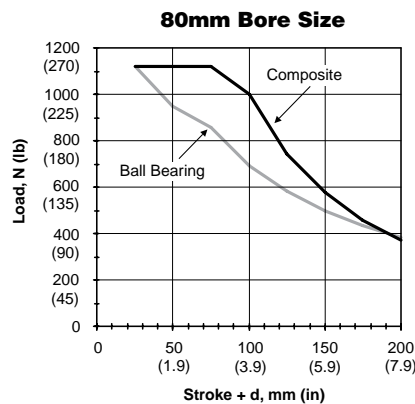
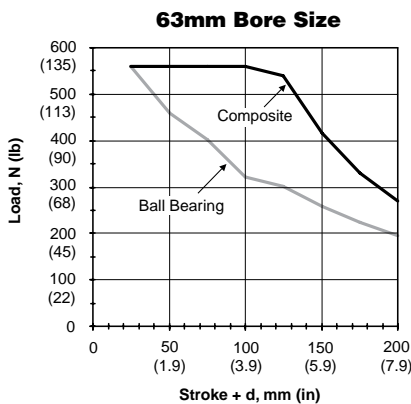
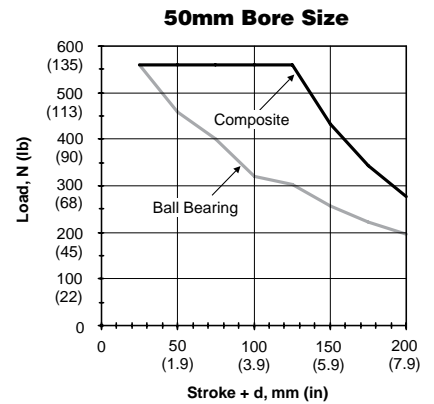
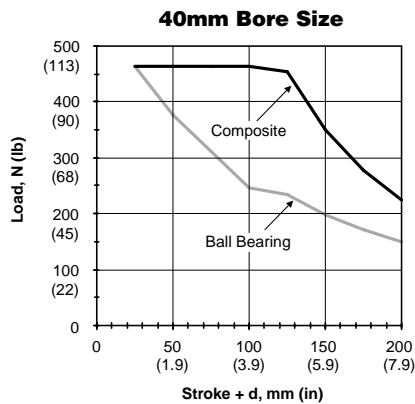
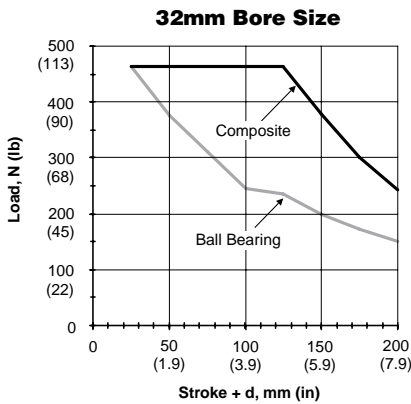
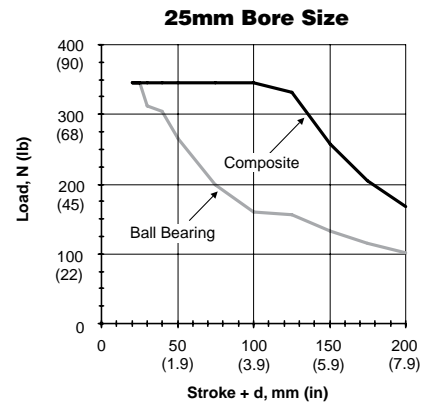
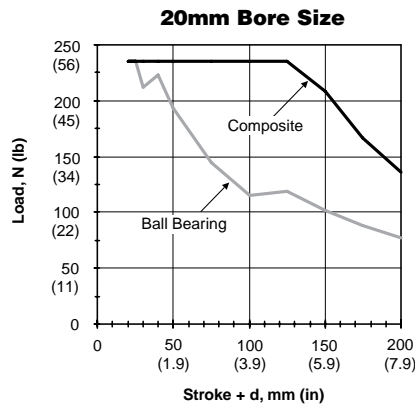
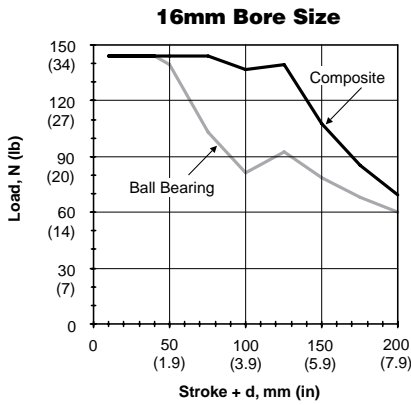
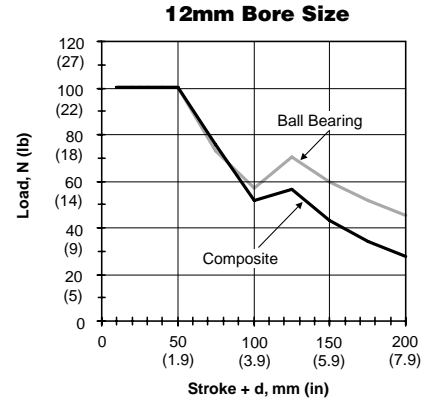
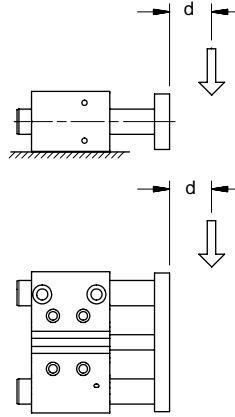
<b>B</b>	Guided Cylinders Actuator Products
	P5T Series
P5T2 Series	
P5L Series	
HB Series	
P5E Series	

**Horizontal Load Capacity with Standard Bearings (J1, J3, H3)**

P5T2 Series units will have the same load capacity regardless of orientation. The graphs below show maximum load capacity based on a unit life of 10 million cycles.

These load curves illustrate load ratings based on the bearing system of the product. Load rating is a key selection criterion but is not the only one to consider in the selection of a product.

**EXAMPLE:** A P5T2-016 with “stroke + d” of 100mm and linear ball bearings would have a load capacity of 80 N. The capacity would be 135 N with composite bushings.



<b>B</b>	Guided Cylinders
	Actuator Products
Series	P5T
Series	P5T2
Series	P5L
Series	HB
Series	P5E



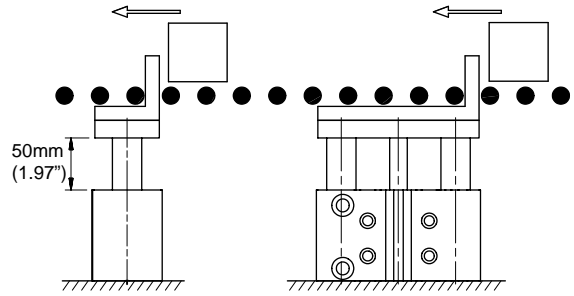
**Load Stopping Capacity**

P5T2 Series actuators are ideal for conveyor stopping applications. Units can be mounted horizontally or vertically. These load curves illustrate load ratings based on the bearing system of the product. Load rating is a key selection criterion but is not the only one to consider in the selection of a product.

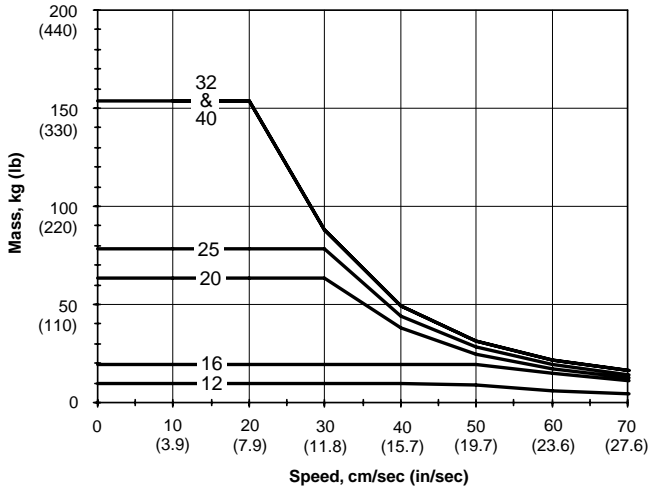
**Composite bushings are strongly recommended for this type of application.**

**EXAMPLE:** A P5T2-032 unit with a stroke up to 50mm will stop an object moving at 40 cm/second (15.7 in/s) that weighs up to 50 kg (110 lb).

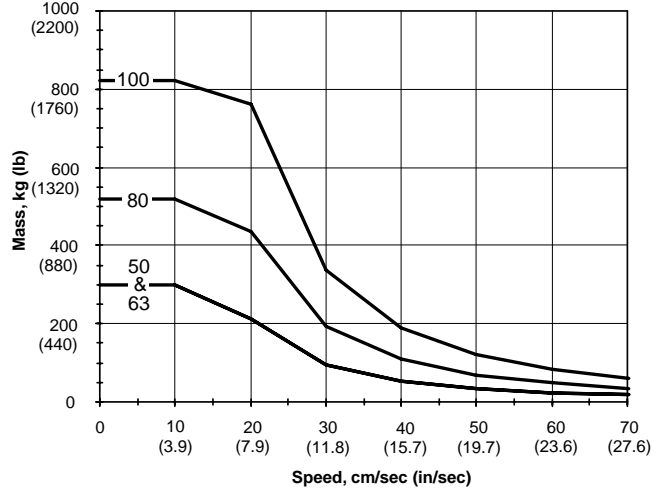
**Note:** The following graphs are based on 50mm of stroke.



**12 - 40mm Bore Sizes**



**50 - 100mm Bore Sizes**



**B**

Guided Cylinders  
 Actuator Products

P5T Series

P5T2 Series

P5L Series

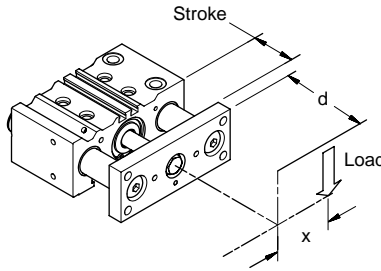
HB Series

P5E Series

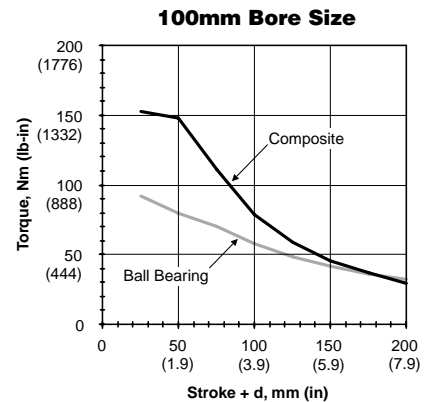
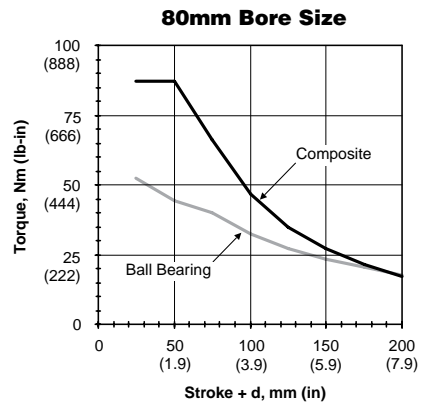
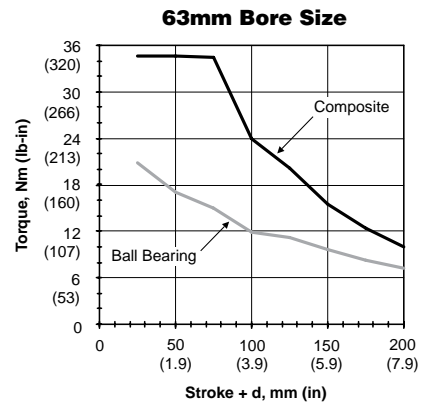
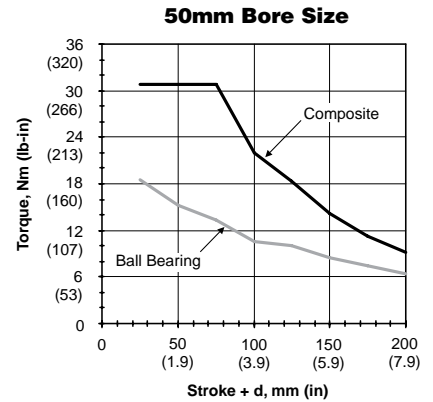
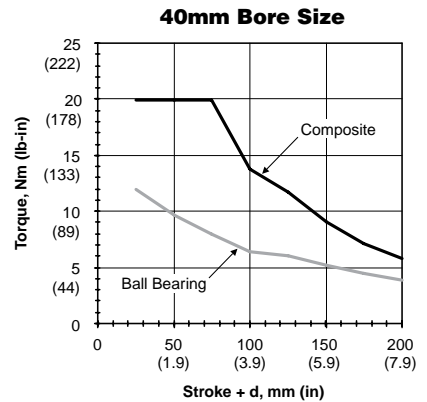
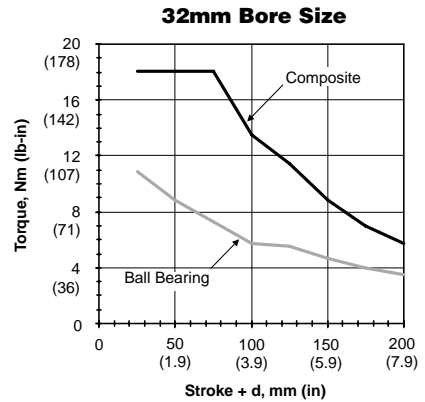
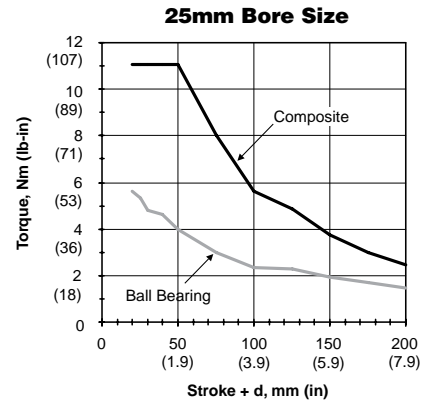
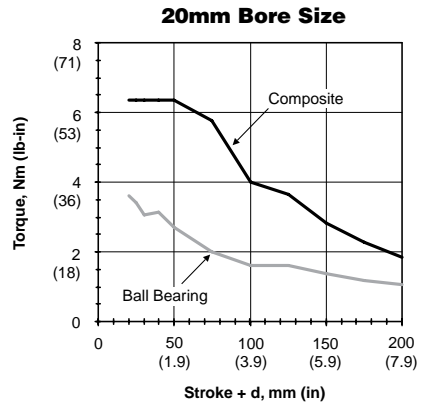
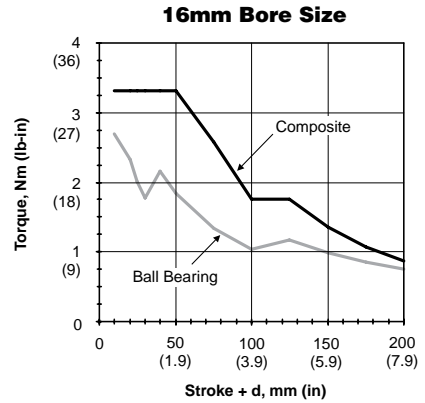
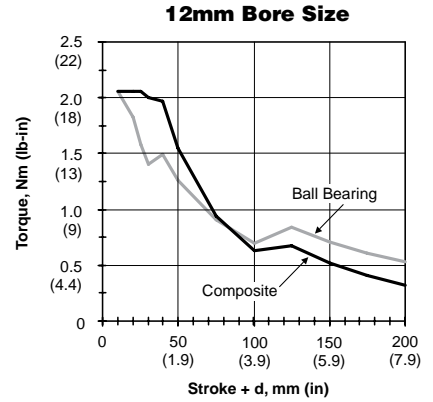
**Asymmetrical Torque Capacity with Standard Bearings (J1, J3, H3)**

Asymmetrical loading occurs when the load is applied to one side of the unit. P5T2 Series units can resist torsional loads that are asymmetrical up to the charted lines.

**EXAMPLE:** A mechanism exerts an asymmetrical load of 15 Nm on a unit with 50mm "stroke+d". The P5T2-050 with composite bushings will have adequate torsional capacity.



Torque is calculated by multiplying the distance 'x' by the load. The torque will be either Nm or lb-in.



B	Guided Cylinders
	Actuator Products
P5T	Series
P5T2	Series
P5L	Series
HB	Series
P5E	Series

