

# Medium Duty Hydraulic Cylinders

## Series 3L



### Medium Duty Service Industrial Tie Rod Construction

- Nominal Pressure – 1000 PSI –  
Depending on Bore Size
- Standard Bore Sizes  
1" through 8"
- Piston Rod Diameters –  
1/2" through 5-1/2"
- 17 Standard Mounting Styles

For Cylinder Division Plant Locations – See Page II.

# The medium-duty hydraulic cylinder with a proven record of performance.

Parker Series 3L cylinders have established an impressive record of millions of *continuous* maintenance-free cycles. Each one is built with important extras you wouldn't ordinarily find in cylinders designed for 1,000 psi nominal operating pressure. Patented "Jewel" rod gland for longer life and lower operating

costs. High yield-strength and rolled threads add extra strength to rod end studs. High strength tie rods also with rolled threads instead of just cut. And every Parker cylinder is *individually* tested before it is shipped. Parker puts more into the Series 3L so you get more out.



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For additional information – call your local Parker Cylinder Distributor.

# Series 3L Medium Duty Hydraulic Cylinders

Specifications/  
Mountings

## Standard Specifications

- Medium Duty Service – NFPA Specifications and ANSI B93.15-1981 Mounting Dimension Standards
- Standard Construction – Square Head – Tie Rod Design
- Nominal Pressure – 1000 PSI Dependent on Bore Size\*
- Standard Fluid – Hydraulic Oil
- Standard Temperature -10½F to +165½F\*\*
- Bore Sizes – 1" through 8"

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

Note: Series 3L Hydraulic Cylinders fully meet NFPA Standards and ANSI Standard B93.15-1981 for Mounting Dimensions for Square Head Industrial Fluid Power Cylinders.

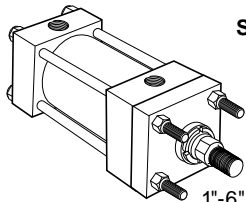
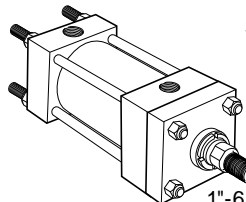
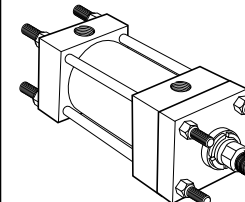
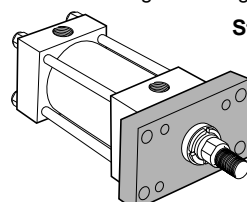
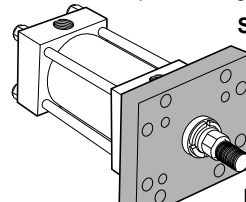
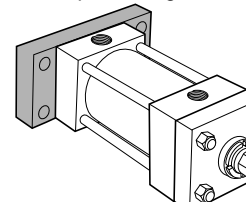
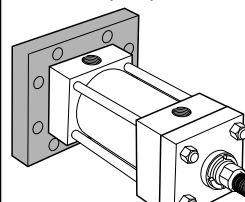
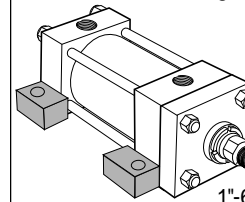
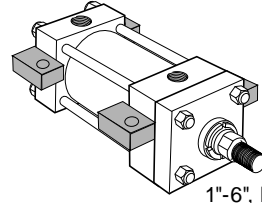
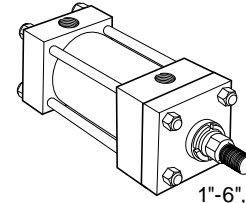
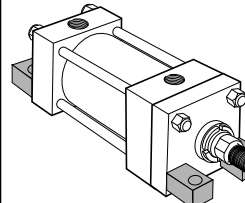
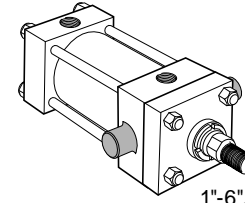
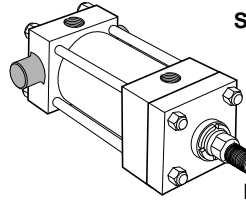
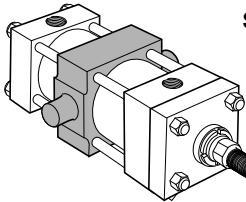
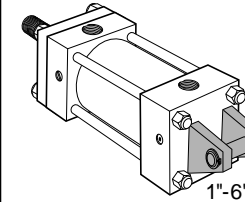
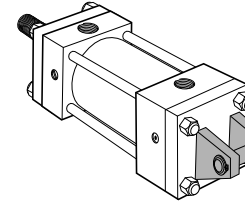
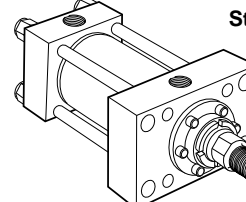
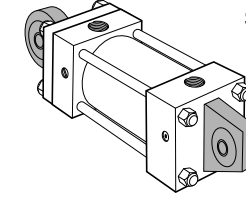
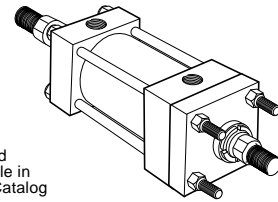
†Parker Style JJ mount for the Series 3L is a non-NFPA mount.

- Piston Rod Diameter – ½" through 5½"
- 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. Float Check at cap end.
- Rod Ends – Three Standard Choices – Specials to Order

\* See Section C, page 84 for recommended operating pressure.

\*\* See Section C, Page 83 for higher temperature service.

## Available Mounting Styles

<p>Tie Rods Extended Head End <b>Style TB</b></p>  <p>(NFPA MX3) 1"-6", Page 8 8", Page 22</p>	<p>Tie Rods Extended Cap End <b>Style TC</b></p>  <p>(NFPA MX2) 1"-6", Page 8 8", Page 22</p>	<p>Tie Rods Extended Both Ends <b>Style TD</b></p>  <p>(NFPA MX1) 1"-6", Page 8 8", Page 22</p>	<p>Head Rectangular Flange <b>Style J</b></p>  <p>(NFPA MF1) 1"-6", Page 8</p>
<p>Head Square Flange <b>Style JB</b></p>  <p>(NFPA MF5) 1"-6", Page 10 8", Page 22</p>	<p>Cap Rectangular Flange <b>Style H</b></p>  <p>(NFPA MF2) 1"-6", Page 8</p>	<p>Cap Square Flange <b>Style HB</b></p>  <p>(NFPA MF6) 1"-6", Page 10 8", Page 22</p>	<p>Side Lug <b>Style C</b></p>  <p>(NFPA MS2) 1"-6", Page 12 8", Page 24</p>
<p>Centerline Lugs <b>Style E</b></p>  <p>(NFPA MS3) 1"-6", Page 12 8", Page 24</p>	<p>Side Tapped <b>Style F</b></p>  <p>(NFPA MS4) 1"-6", Page 14 8", Page 24</p>	<p>Side End Lugs <b>Style G</b></p>  <p>(NFPA MS7) 1½"-6", Page 14 8", Page 26</p>	<p>Head Trunnion <b>Style D</b></p>  <p>(NFPA MT1) 1"-6", Page 16 8", Page 28</p>
<p>Cap Trunnion <b>Style DB</b></p>  <p>(NFPA MT2) 1"-6", Page 16 8", Page 28</p>	<p>Intermediate Fixed Trunnion <b>Style DD</b></p>  <p>(NFPA MT4) 1½"-6", Page 16 8", Page 28</p>	<p>Cap Fixed Clevis <b>Style BB</b></p>  <p>(NFPA MP1) 1"-6", Page 18 8", Page 26</p>	<p>Cap Detachable Clevis <b>Style BC</b></p>  <p>(NFPA MP2) 1"-6", Page 18</p>
<p>Head Rectangular <b>Style JJ†</b></p>  <p>1"-6", Page 20</p>	<p>Spherical Bearing <b>Style SB</b></p>  <p>See Pages 30 and 31.</p>	<p>Double Rod Cylinders <b>Style KTB Shown</b></p>  <p>Most of the above illustrated mounting styles are available in double rod cylinders. See Catalog Page 32.</p>	

For Cylinder Division Plant Locations – See Page II.

# The inside story on why Series 3L is your best choice in medium duty hydraulic cylinders

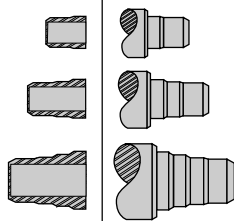
**Secondary Seal** – Double-Service Wiperseal® (Hannifin Patent #2907596) – wipes clean any oil film adhering to the rod on the extend stroke and cleans the rod on the return stroke.

**Piston Rod Stud** – Furnished on 2" diameter rods and smaller when standard style #4 rod end threads are required or on 1 3/8" diameter rods and smaller when style #8 threads are required. Also available in 2 times the catalog "A" dimension length. Studs have rolled threads and are made from high strength steel. Anaerobic adhesive is used to permanently lock the stud to the piston rod.

**"Jewel" Rod Gland Assembly** – Externally removable without cylinder disassembly. Long bearing surface is inboard of the seals, assuring positive lubrication from within the cylinder. An "O" ring is used as a seal between gland and head, and also serves as a prevailing torque-type lock.

**Primary Seal** – New TS-2000 Rod Seal is a proven leakproof design – completely self-compensating and self-relieving to withstand variations and conform to mechanical deflection that may occur.

Optional Adjustable Floating Stepped Cushions  
Sleeve Design | Spear Design



**High Strength Tie Rods** – Made from 100,000 psi minimum yield steel with rolled threads for added strength.

**Adjustable Floating Cushions** – Optional at extra charge. For faster cycle time and increased productivity – for maximum performance – economical and flexible for even the most demanding applications – reduces shock and machine noise – lower maintenance costs – can be supplied at head, cap or both ends.

**Steel Head** – Bored and grooved to provide concentricity for mating parts.

**Ports** – NPTF ports are standard.

**End Seals** – Pressure-actuated cylinder body-to-head and cap "O" rings.

**The Cylinder Body** – Heavy-wall steel tubing, honed to a micro finish bore.

## Adjustable floating cushions

Cushions are optional and can be supplied at head end, cap end, or both ends without change in envelope or mounting dimensions. All Parker cushions are adjustable. The Series 3L 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.

- (1) When a cushion is specified at the head end:
  - a. A self-centering sleeve is furnished on the piston rod assembly.
  - b. A needle valve is provided that is flush with the side of the head 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, and E. In these styles it is located on side number 3.
  - c. On 3 1/4" bores and larger, 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 certain bores of mounting style C where it is mounted opposite the needle valve. It may be identified by the fact that it is slotted.

- d. The check and needle valves are interchangeable in the head.
  - e. 1" - 2 1/2" bore 3L's utilize a slotted sleeve design in place of the check valve.
- (2) When a cushion is specified at the cap end:
    - a. A cushion spear is provided on the piston rod assembly.
    - b. A "float check" self-centering bushing is provided which incorporates a large flow check valve for fast "out-stroke" action.
    - c. 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, and E. In these styles it is located on side number 3.

For additional information – call your local Parker Cylinder Distributor.

**Piston Rod** – Medium carbon steel, induction case-hardened to 54 R<sub>c</sub>, hard chrome-plated and polished to 10 RMS finish. Piston rods are made from 90,000 to 100,000 psi minimum yield material in 1/2" through 4" diameters. Larger diameters vary between 57,000 and 90,000 psi minimum material, depending on rod diameter. The piston thread equals the catalog style #4 rod end thread for each rod diameter to assure proper piston-to-rod thread strength. Two wrench flats are provided for rod end attachment.

**Ports** – NPTF ports are standard.

**Steel Cap** – Bored and grooved to provide concentricity for mating parts.

**Optional Ports**

**Ports** – SAE "O" ring ports are optional at no extra charge. Oversize NPTF and SAE ports are available at extra charge.

**Seals** – Buna-N (Nitrile) seals are standard.

**Viton Seals** – Optional at extra charge.

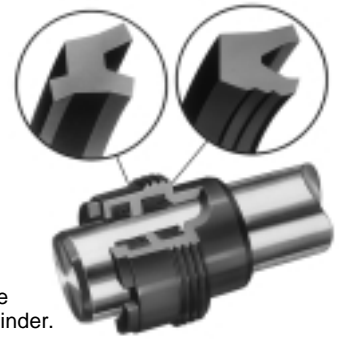
**Alloy Steel Tie Rod Nuts**

**Align-A-Groove** – (Patent #3043639) – A 3/16" wide surface machined at each end of the cylinder body. Makes precise mounting quick and easy.

**One-Piece Fine Grained Cast Iron Piston** – The wide piston surface contacting cylinder bore reduces bearing loads, and a long thread engagement with rod provides greater shock absorption. Anaerobic adhesive is used to permanently lock and seal the piston to the rod.

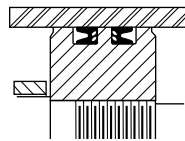
**Step Cut Iron Piston Rings** are standard.

## The exclusive "Jewel" gland gives you longer cylinder life, better performance and lower costs.



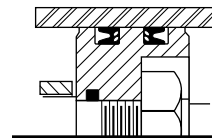
An extra-long inboard bearing surface insures lubrication from within the cylinder. Outboard of the bearing surface are two leakproof seals – The TS-2000 and Wiperseal. The serrated TS-2000 (primary seal) is completely self-compensating and self-relieving. It adjusts to mechanical deflections or any pressure variation from near-zero to rated operating pressure. The result is positive, no-leak sealing – regardless of conditions.

The Wiperseal does double duty. On the advance stroke, it acts as a secondary pressure seal. On the return, it wipes away any dirt on the rod. This means less wear on bearing surfaces and internal parts. Longer life for working parts. And, less loss of fluid. Plus, you can replace a "Jewel" gland without removing the tie rods or the retainer. Just a few twists with a spanner wrench does the job.



**Optional Lipseal® Piston**

Optional at no extra charge. Zero leakage under static conditions. Seals are self-compensating to conform to variations in pressure, mechanical deflection, and wear. Back-up washers prevent extrusion.



**Optional Nut Retained Piston**

Piston with retainer nut optional at extra charge.

**Cushion Length**

Cylinder Bore (Inches)	Rod Diameter* (Inches)	Rod Number	Cushion Length (Inches)	
			Head*	Cap
1	1/2	1	7/8	3/4
	5/8	2	7/8	3/4
1 1/2	5/8	1	7/8	13/16
	1	2	7/8	13/16
2	5/8	1	7/8	13/16
	1 3/8	2	7/8	13/16
2 1/2	1	1	7/8	13/16
	1 3/4	2	7/8	13/16
3 1/4	1	1	1 1/8	1
	2	2	13/16	1
4	1 3/8	1	1 1/8	1
	2 1/2	2	13/16	1

Cylinder Bore (Inches)	Rod Diameter* (Inches)	Rod Number	Cushion Length (Inches)	
			Head*	Cap
5	1 3/4	1	1 1/8	1
	3 1/2	2	13/16	1
6	1 3/4	1	13/8	1 1/4
	4	2	1 1/16	1 1/4
8	2	1	1 1/16	1 1/4
	5 1/2	2	15/16	1 1/4

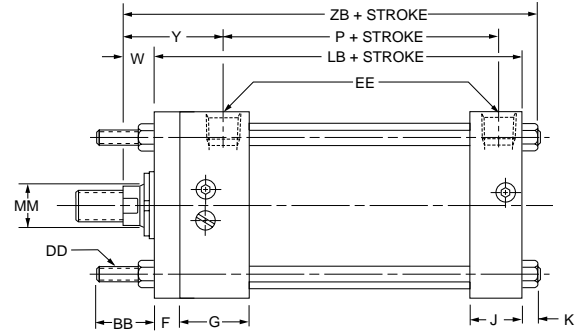
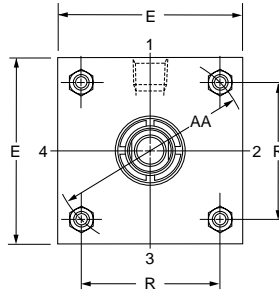
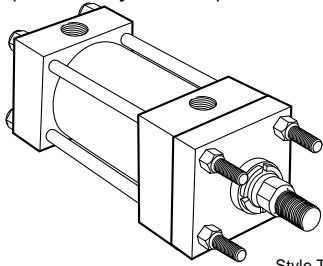
\* Head end cushions for rod diameters not listed have cushion lengths within the limits shown.

For Cylinder Division Plant Locations – See Page II.

Tie Rod and Rectangular Flange Mountings  
1" to 6" Bore Sizes

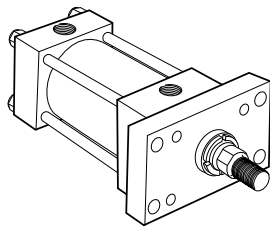
# Series 3L Medium Duty Hydraulic Cylinders

Tie Rods Extended  
Style TB  
(NFPA Style MX3)



Style TB (NFPA MX3) Head Tie Rods Extended, illustrated; Style TC (NFPA MX2), Cap Tie Rods Extended; and Style TD (NFPA MX1), Both Ends Tie Rods Extended are also available. All "T" styles can be dimensioned from Style TB drawing at right.  
Basic Mounting (T) — NFPA MX0 — no tie rods extended can be supplied upon request.

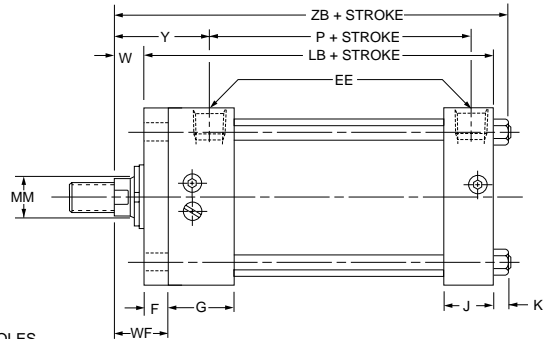
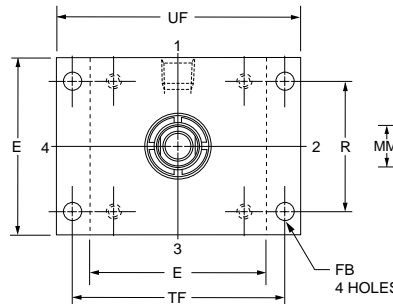
Head Rectangular Flange  
Style J  
(NFPA Style MF1)



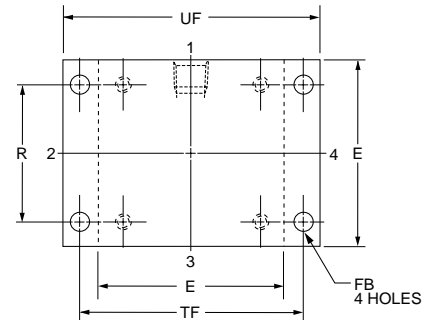
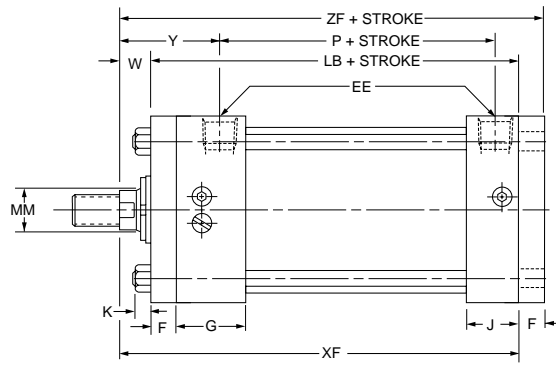
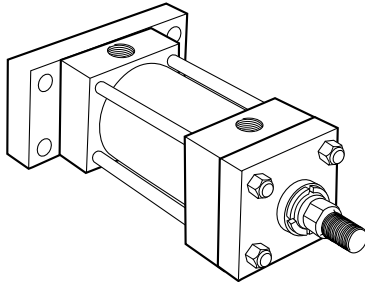
For Style "J" Mount

Bore Size	Max. PSI — Push*			
	Rod Code			
	1,7,8	2	3,4	5,6
1	650	450	—	—
1½	650	375	—	—
2	500	200	350	—
2½	300	150	200	—
3¼	650	350	400	—
4	450	225	325	—
5	300	125	225	175
6	350	200	300	200

\*Maximum pressure rating — push application.

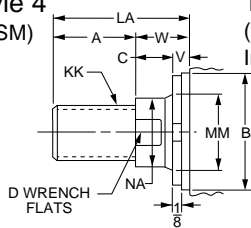


Cap Rectangular Flange  
Style H  
(NFPA Style MF2)

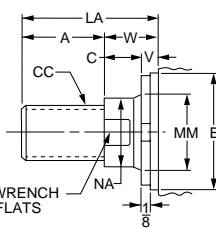


Rod End Dimensions—see table 2

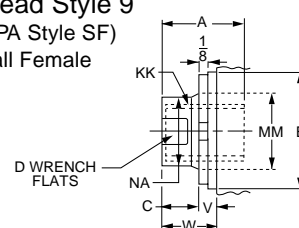
Thread Style 4  
(NFPA Style SM)  
Small Male



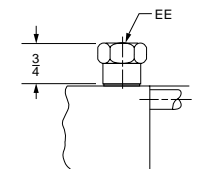
Thread Style 8  
(NFPA Style IM)  
Intermediate Male



Thread Style 9  
(NFPA Style SF)  
Small Female



Straight Thread  
Port Adapters



A high strength rod end stud is supplied on thread style 4 through 2" diameter rods and on thread style 8 through 1½" 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.

Used on 1½" bore cap end. Also used on 1½" bore with Code 2 rod head end.

"Specials" Thread Style 3

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

For additional information – call your local Parker Cylinder Distributor.

# Series 3L Medium Duty Hydraulic Cylinders

Tie Rod and  
Rectangular Flange Mountings  
1" to 6" Bore Sizes

Table 1—Envelope and Mounting Dimensions

Bore	AA	BB	DD	E	EE		F	FB	G	J	K	R	TF	UF	Add Stroke	
					NPTF <sup>⊖</sup>	SAE*									LB	P
1 <sup>†</sup>	1.53	3/4	10-24	■	1/4 <sup>†</sup>	6 <sup>#</sup>	3/8	1/4	1 1/2	1	3/16	1.08	2	2 1/2	37/8	2 1/8
1 1/2	2.02	1	1/4-28	2	3/8 <sup>†</sup>	6 <sup>#</sup>	3/8	5/16	1 1/2	1	1/4	1.43	2 3/4	3 3/8	4	2 1/4
2	2.6	1 1/8	5/16-24	2 1/2	3/8 <sup>†</sup>	6	3/8	3/8	1 1/2	1	5/16	1.84	3 3/8	4 1/8	4	2 1/4
2 1/2	3.1	1 1/8	5/16-24	3	3/8 <sup>†</sup>	6	3/8	3/8	1 1/2	1	5/16	2.19	3 7/8	4 5/8	4 1/8	2 3/8
3 1/4	3.9	1 3/8	3/8-24	3 3/4	1/2	10	5/8	7/16	1 3/4	1 1/4	3/8	2.76	4 11/16	5 1/2	4 7/8	2 5/8
4	4.7	1 3/8	3/8-24	4 1/2	1/2	10	5/8	7/16	1 3/4	1 1/4	3/8	3.32	5 7/16	6 1/4	4 7/8	2 5/8
5	5.8	1 13/16	1/2-20	5 1/2	1/2	10	5/8	9/16	1 3/4	1 1/4	7/16	4.10	6 5/8	7 5/8	5 1/8	2 7/8
6	6.9	1 13/16	1/2-20	6 1/2	3/4	12	3/4	9/16	2	1 1/2	7/16	4.88	7 5/8	8 5/8	5 3/4	3 1/8

⊖ NPTF ports will be furnished as standard unless SAE straight thread ports are specified.

\* SAE straight thread ports are indicated by port number.

† Cushion adjusting needle valve for 1" bore projects beyond sides of head and cap.

† On 1", 1 1/2", 2" and 2 1/2" bore sizes, the head end (only) pipe thread is not full depth on cylinders with No. 2 rods. Minimum of 3 full threads available.

■ 1" bore 3L heads are rectangular — see page 20.

# Straight thread ports on 1 1/2" bore cap end, and head end with Code 2 rod, require an adapter fitting. (See "Straight Thread Port Adapter" drawing on opposite page.) Adapters are furnished as standard.

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	LA	NA	V	W	WF	Y	XF	ZB	ZF	
1	1(Std.)	1/2	7/16-20	5/16-24	5/8	.999	3/8	3/8	1 1/4	7/16	1/4	5/8	1	1 15/16	4 1/2	4 11/16	4 7/8	
	2	5/8	1/2-20	7/16-20	3/4	1.124	3/8	1/2	1 3/8	9/16	1/4	5/8	1	1 15/16	4 1/2	4 11/16	4 7/8	
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	1/4	5/8	1	1 15/16	4 5/8	4 7/8	5	
	2	1	7/8-14	3/4-16	1 1/8	1.499	1/2	7/8	2 1/8	1 5/16	1/2	1	1 3/8	2 5/16	5	5 1/4	5 3/8	
2	1(Std.)	5/8	1/2-20	7/16-20	3/4	1.124	3/8	1/2	1 3/8	9/16	1/4	5/8	1	1 15/16	4 5/8	4 15/16	5	
	2	1 3/8	1 1/4-12	1-14	1 5/8	1.999	5/8	1 1/8	2 7/8	1 5/16	5/8	1 1/4	1 5/8	2 9/16	5 1/4	5 9/16	5 5/8	
	3	1	7/8-14	3/4-16	1 1/8	1.499	1/2	7/8	2 1/8	1 5/16	1/2	1	1 3/8	2 5/16	5	5 5/16	5 3/8	
2 1/2	1(Std.)	1	7/8-14	3/4-16	1 1/8	1.499	1/2	7/8	2 1/8	1 5/16	1/2	1	1 3/8	2 5/16	5 1/8	5 1/16	5 1/2	
	2	1 3/4	1 1/2-12	1 1/4-12	2	2.374	3/4	1 1/2	3 1/2	1 11/16	3/4	1 1/2	1 7/8	2 13/16	5 5/8	5 5/16	6	
	3	1 3/8	1 1/4-12	1-14	1 5/8	1.999	5/8	1 1/8	2 7/8	1 5/16	5/8	1 1/4	1 5/8	2 9/16	5 3/8	5 11/16	5 3/4	
	7	5/8	1/2-20	7/16-20	3/4	1.124	3/8	1/2	1 3/8	9/16	1/4	5/8	1	1 15/16	4 3/4	5 1/16	5 1/8	
3 1/4	1(Std.)	1	7/8-14	3/4-16	1 1/8	1.499	1/2	7/8	1 7/8	1 5/16	1/4	3/4	1 3/8	2 7/16	5 5/8	6	6 1/4	
	2	2	1 3/4-12	1 1/2-12	2 1/4	2.624	7/8	1 11/16	3 5/8	1 15/16	1/2	1 3/8	2	3 1/16	6 1/4	6 5/8	6 7/8	
	3	1 3/8	1 1/4-12	1-14	1 5/8	1.999	5/8	1 1/8	2 5/8	1 5/16	3/8	1	1 5/8	2 11/16	5 7/8	6 1/4	6 1/2	
	4	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	1/2	1 1/4	1 7/8	2 15/16	6 1/8	6 1/2	6 3/4	
4	1(Std.)	1 3/8	1 1/4-12	1-14	1 5/8	1.999	5/8	1 1/8	2 5/8	1 5/16	3/8	1	1 5/8	2 11/16	5 7/8	6 1/4	6 1/2	
	2	2 1/2	2 1/4-12	1 7/8-12	3	3.124	1	2 1/16	4 5/8	2 3/8	5/8	1 5/8	2 1/4	3 5/16	6 1/2	6 7/8	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	1/2	1 1/4	1 7/8	2 15/16	6 1/8	6 1/2	6 3/4	
	4	2	1 3/4-12	1 1/2-12	2 1/4	2.624	7/8	1 11/16	3 5/8	1 15/16	1/2	1 3/8	2	3 1/16	6 1/4	6 5/8	6 7/8	
5	7	1	7/8-14	3/4-16	1 1/8	1.499	1/2	7/8	1 7/8	1 5/16	1/4	3/4	1 3/8	2 7/16	5 5/8	6	6 1/4	
	1(Std.)	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	1/2	1 1/4	1 7/8	2 15/16	6 3/8	6 13/16	7	
	2	3 1/2	3 1/4-12	2 1/2-12	3 1/2	4.249	1	3	5 1/8	3 3/8	5/8	1 5/8	2 1/4	3 5/16	6 3/4	7 3/16	7 3/8	
	3	2	1 3/4-12	1 1/2-12	2 1/4	2.624	7/8	1 11/16	3 5/8	1 15/16	1/2	1 3/8	2	3 1/16	6 1/2	6 15/16	7 1/8	
	4	2 1/2	2 1/4-12	1 7/8-12	3	3.124	1	2 1/16	4 5/8	2 3/8	5/8	1 5/8	2 1/4	3 5/16	6 3/4	7 3/16	7 3/8	
	5	3	2 3/4-12	2 1/4-12	3 1/2	3.749	1	2 5/8	5 1/8	2 7/8	5/8	1 5/8	2 1/4	3 5/16	6 3/4	7 3/16	7 3/8	
6	7	1	7/8-14	3/4-16	1 1/8	1.499	1/2	7/8	1 7/8	1 5/16	1/4	3/4	1 3/8	2 7/16	5 7/8	6 5/16	6 1/2	
	8	1 3/8	1 1/4-12	1-14	1 5/8	1.999	5/8	1 1/8	2 5/8	1 5/16	3/8	1	1 5/8	2 11/16	6 1/8	6 9/16	6 3/4	
	1(Std.)	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	3/8	1 1/8	1 7/8	3 1/16	6 7/8	7 5/16	7 5/8	
	2	4	3 3/4-12	3-12	4	4.749	1	3 3/8	5 1/2	3 7/8	1/2	1 1/2	2 1/4	3 7/16	7 1/4	7 11/16	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	3/8	1 1/4	2	3 3/16	7	7 7/16	7 3/4	
	4	2 1/2	2 1/4-12	1 7/8-12	3	3.124	1	2 1/16	4 1/2	2 3/8	1/2	1 1/2	2 1/4	3 7/16	7 1/4	7 11/16	8	
	5	3	2 3/4-12	2 1/4-12	3 1/2	3.749	1	2 5/8	5	2 7/8	1/2	1 1/2	2 1/4	3 7/16	7 1/4	7 11/16	8	
6	3 1/2	3 1/4-12	2 1/2-12	3 1/2	4.249	1	3	5	3 3/8	1/2	1 1/2	2 1/4	3 7/16	7 1/4	7 11/16	8		
7	1 3/8	1 1/4-12	1-14	1 5/8	1.999	5/8	1 1/8	2 1/2	1 5/16	1/4	7/8	1 5/8	2 13/16	6 5/8	7 1/16	7 3/8		

Table 3—Envelope and Mounting Dimensions

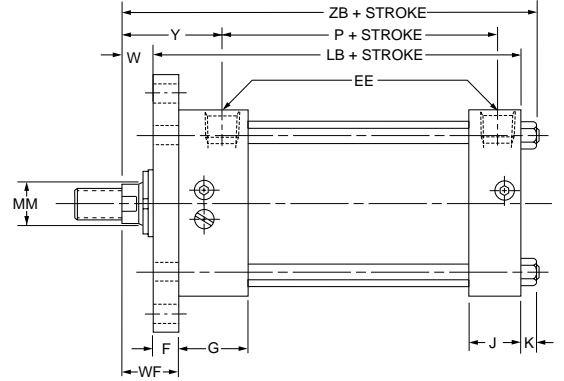
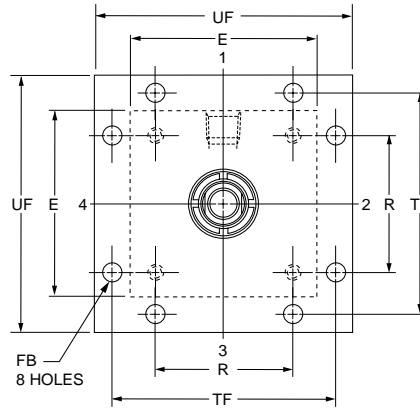
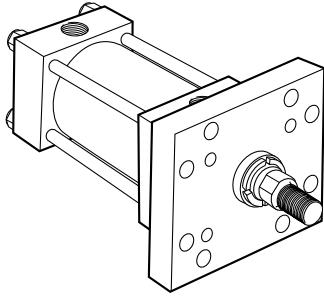
For Cylinder Division Plant Locations – See Page II.



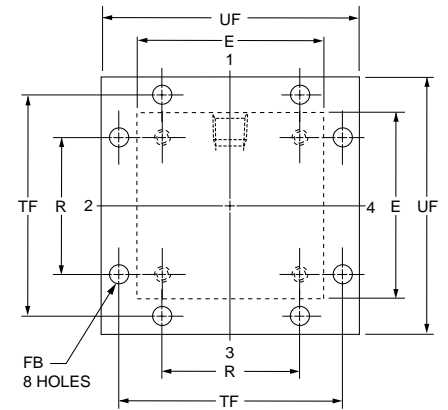
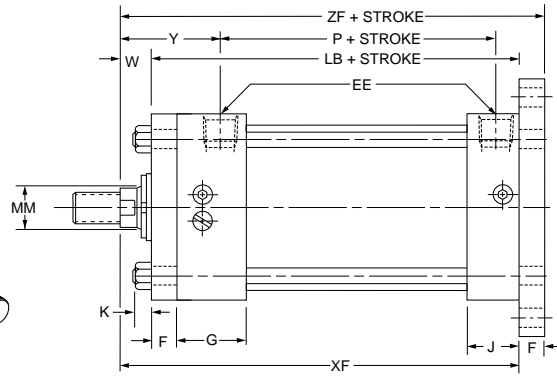
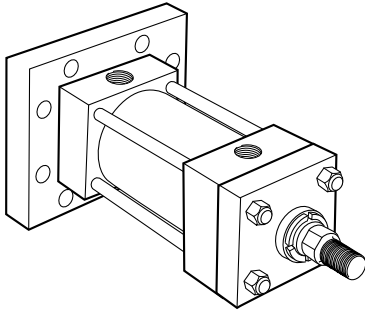
Square Flange Mountings  
1" to 6" Bore Sizes

# Series 3L Medium Duty Hydraulic Cylinders

Head Square Flange  
Style JB  
(NFPA Style MF5)

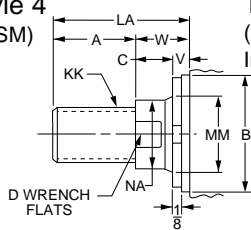


Cap Square Flange  
Style HB  
(NFPA Style MF6)

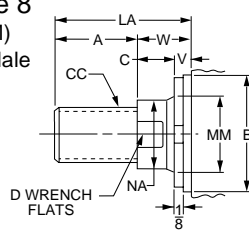


Rod End Dimensions—see table 2

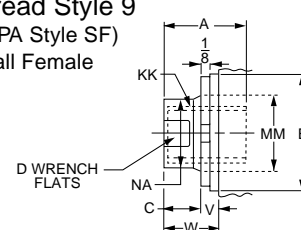
Thread Style 4  
(NFPA Style SM)  
Small Male



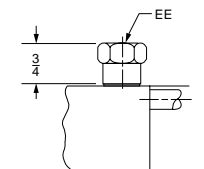
Thread Style 8  
(NFPA Style IM)  
Intermediate Male



Thread Style 9  
(NFPA Style SF)  
Small Female



Straight Thread  
Port Adapters



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.

Used on 1 1/2" bore cap end and on head end of 1 1/2" bore with Code 2 rod.

"Specials" Thread Style 3

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

For additional information – call your local Parker Cylinder Distributor.



# Series 3L Medium Duty Hydraulic Cylinders

Square Flange Mountings  
1" to 6" Bore Sizes

Table 1—Envelope and Mounting Dimensions

Bore	AA	BB	DD	E	EE		F	FB	G	J	K	R	TF	UF	Add Stroke	
					NPTF <sup>⊖</sup>	SAE*									LB	P
1 <sup>†</sup>	1.53	3/4	10-24	■	1/4 <sup>†</sup>	6 <sup>#</sup>	3/8	1/4	1 1/2	1	3/16	1.08	2	2 1/2	37/8	2 1/8
1 1/2	2.02	1	1/4-28	2	3/8 <sup>†</sup>	6 <sup>#</sup>	3/8	5/16	1 1/2	1	1/4	1.43	2 3/4	3 3/8	4	2 1/4
2	2.6	1 1/8	5/16-24	2 1/2	3/8 <sup>†</sup>	6	3/8	3/8	1 1/2	1	5/16	1.84	3 3/8	4 1/8	4	2 1/4
2 1/2	3.1	1 1/8	5/16-24	3	3/8 <sup>†</sup>	6	3/8	3/8	1 1/2	1	5/16	2.19	3 7/8	4 5/8	4 1/8	2 3/8
3 1/4	3.9	1 3/8	3/8-24	3 3/4	1/2	10	5/8	7/16	1 3/4	1 1/4	3/8	2.76	4 11/16	5 1/2	4 7/8	2 5/8
4	4.7	1 3/8	3/8-24	4 1/2	1/2	10	5/8	7/16	1 3/4	1 1/4	3/8	3.32	5 7/16	6 1/4	4 7/8	2 5/8
5	5.8	1 13/16	1/2-20	5 1/2	1/2	10	5/8	9/16	1 3/4	1 1/4	7/16	4.10	6 5/8	7 5/8	5 1/8	2 7/8
6	6.9	1 13/16	1/2-20	6 1/2	3/4	12	3/4	9/16	2	1 1/2	7/16	4.88	7 5/8	8 5/8	5 3/4	3 1/8

⊖ NPTF ports will be furnished as standard unless SAE straight thread ports are specified.

\* SAE straight thread ports are indicated by port number.

† Cushion adjusting needle valve for 1" bore projects beyond sides of head and cap.

† On 1", 1 1/2", 2" and 2 1/2" bore sizes, the head end (only) pipe thread is not full depth on cylinders with No. 2 rods. Minimum of 3 full threads available.

■ 1" bore 3L heads are rectangular — see page 20.

# Straight thread ports on 1 1/2" bore cap end, and head end with Code 2 rod, require an adapter fitting. (See "Straight Thread Port Adapter" drawing on opposite page.) Adapters are furnished as standard.

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	V	W	WF	Y	XF	ZB	ZF
1	1(Std.)	1/2	7/16-20	5/16-24	5/8	.999	3/8	3/8	1 1/4	7/16	1/4	5/8	1	1 15/16	4 1/2	4 11/16	4 7/8
	2	5/8	1/2-20	7/16-20	3/4	1.124	3/8	1/2	1 3/8	9/16	1/4	5/8	1	1 15/16	4 1/2	4 11/16	4 7/8
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	1/4	5/8	1	1 15/16	4 5/8	4 7/8	5
	2	1	7/8-14	3/4-16	1 1/8	1.499	1/2	7/8	2 1/8	1 5/16	1/2	1	1 3/8	2 5/16	5	5 1/4	5 3/8
2	1(Std.)	5/8	1/2-20	7/16-20	3/4	1.124	3/8	1/2	1 3/8	9/16	1/4	5/8	1	1 15/16	4 5/8	4 15/16	5
	2	1 3/8	1 1/4-12	1-14	1 5/8	1.999	5/8	1 1/8	2 7/8	1 5/16	5/8	1 1/4	1 5/8	2 9/16	5 1/4	5 9/16	5 5/8
	3	1	7/8-14	3/4-16	1 1/8	1.499	1/2	7/8	2 1/8	1 5/16	1/2	1	1 3/8	2 5/16	5	5 5/16	5 3/8
2 1/2	1(Std.)	1	7/8-14	3/4-16	1 1/8	1.499	1/2	7/8	2 1/8	1 5/16	1/2	1	1 3/8	2 5/16	5 1/8	5 1/16	5 1/2
	2	1 3/4	1 1/2-12	1 1/4-12	2	2.374	3/4	1 1/2	3 1/2	1 11/16	3/4	1 1/2	1 7/8	2 13/16	5 5/8	5 5/16	6
	3	1 3/8	1 1/4-12	1-14	1 5/8	1.999	5/8	1 1/8	2 7/8	1 5/16	5/8	1 1/4	1 5/8	2 9/16	5 3/8	5 11/16	5 3/4
	7	5/8	1/2-20	7/16-20	3/4	1.124	3/8	1/2	1 3/8	9/16	1/4	5/8	1	1 15/16	4 3/4	5 1/16	5 1/8
3 1/4	1(Std.)	1	7/8-14	3/4-16	1 1/8	1.499	1/2	7/8	1 7/8	1 5/16	1/4	3/4	1 3/8	2 7/16	5 5/8	6	6 1/4
	2	2	1 3/4-12	1 1/2-12	2 1/4	2.624	7/8	1 11/16	3 5/8	1 15/16	1/2	1 3/8	2	3 1/16	6 1/4	6 5/8	6 7/8
	3	1 3/8	1 1/4-12	1-14	1 5/8	1.999	5/8	1 1/8	2 5/8	1 5/16	3/8	1	1 5/8	2 11/16	5 7/8	6 1/4	6 1/2
	4	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	1/2	1 1/4	1 7/8	2 15/16	6 1/8	6 1/2	6 3/4
4	1(Std.)	1 3/8	1 1/4-12	1-14	1 5/8	1.999	5/8	1 1/8	2 5/8	1 5/16	3/8	1	1 5/8	2 11/16	5 7/8	6 1/4	6 1/2
	2	2 1/2	2 1/4-12	1 7/8-12	3	3.124	1	2 1/16	4 5/8	2 3/8	5/8	1 5/8	2 1/4	3 5/16	6 1/2	6 7/8	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	1/2	1 1/4	1 7/8	2 15/16	6 1/8	6 1/2	6 3/4
	4	2	1 3/4-12	1 1/2-12	2 1/4	2.624	7/8	1 11/16	3 5/8	1 15/16	1/2	1 3/8	2	3 1/16	6 1/4	6 5/8	6 7/8
5	7	1	7/8-14	3/4-16	1 1/8	1.499	1/2	7/8	1 7/8	1 5/16	1/4	3/4	1 3/8	2 7/16	5 5/8	6	6 1/4
	1(Std.)	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	1/2	1 1/4	1 7/8	2 15/16	6 3/8	6 13/16	7
	2	3 1/2	3 1/4-12	2 1/2-12	3 1/2	4.249	1	3	5 1/8	3 3/8	5/8	1 5/8	2 1/4	3 5/16	6 3/4	7 3/16	7 3/8
	3	2	1 3/4-12	1 1/2-12	2 1/4	2.624	7/8	1 11/16	3 5/8	1 15/16	1/2	1 3/8	2	3 1/16	6 1/2	6 15/16	7 1/8
	4	2 1/2	2 1/4-12	1 7/8-12	3	3.124	1	2 1/16	4 5/8	2 3/8	5/8	1 5/8	2 1/4	3 5/16	6 3/4	7 3/16	7 3/8
	5	3	2 3/4-12	2 1/4-12	3 1/2	3.749	1	2 5/8	5 1/8	2 7/8	5/8	1 5/8	2 1/4	3 5/16	6 3/4	7 3/16	7 3/8
6	7	1	7/8-14	3/4-16	1 1/8	1.499	1/2	7/8	1 7/8	1 5/16	1/4	3/4	1 3/8	2 7/16	5 7/8	6 5/16	6 1/2
	8	1 3/8	1 1/4-12	1-14	1 5/8	1.999	5/8	1 1/8	2 5/8	1 5/16	3/8	1	1 5/8	2 11/16	6 1/8	6 9/16	6 3/4
	1(Std.)	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	3/8	1 1/8	1 7/8	3 1/16	6 7/8	7 5/16	7 5/8
	2	4	3 3/4-12	3-12	4	4.749	1	3 3/8	5 1/2	3 7/8	1/2	1 1/2	2 1/4	3 7/16	7 1/4	7 11/16	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	3/8	1 1/4	2	3 3/16	7	7 7/16	7 3/4
	4	2 1/2	2 1/4-12	1 7/8-12	3	3.124	1	2 1/16	4 1/2	2 3/8	1/2	1 1/2	2 1/4	3 7/16	7 1/4	7 11/16	8
	5	3	2 3/4-12	2 1/4-12	3 1/2	3.749	1	2 5/8	5	2 7/8	1/2	1 1/2	2 1/4	3 7/16	7 1/4	7 11/16	8
6	3 1/2	3 1/4-12	2 1/2-12	3 1/2	4.249	1	3	5	3 3/8	1/2	1 1/2	2 1/4	3 7/16	7 1/4	7 11/16	8	
7	1 3/8	1 1/4-12	1-14	1 5/8	1.999	5/8	1 1/8	2 1/2	1 5/16	1/4	7/8	1 5/8	2 13/16	6 5/8	7 1/16	7 3/8	

Table 3—Envelope and Mounting Dimensions

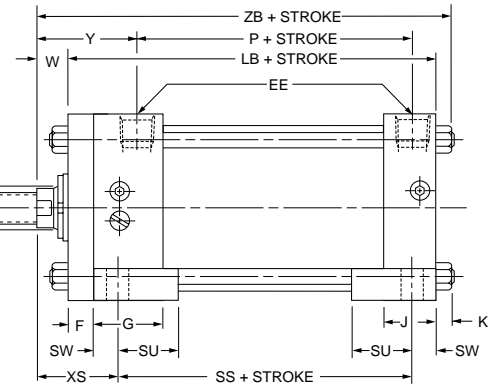
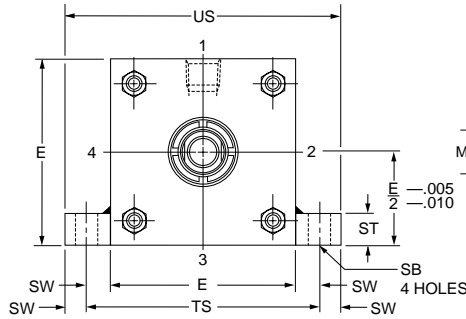
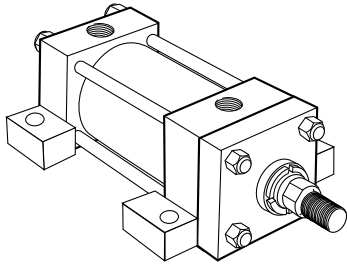
For Cylinder Division Plant Locations – See Page II.



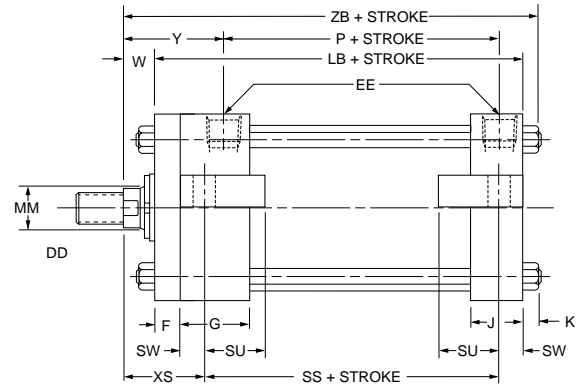
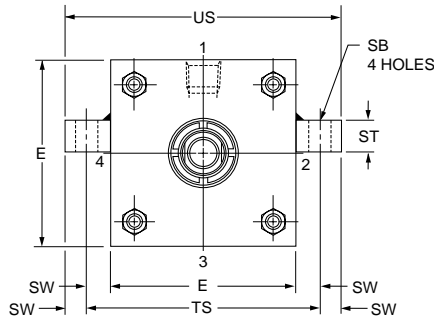
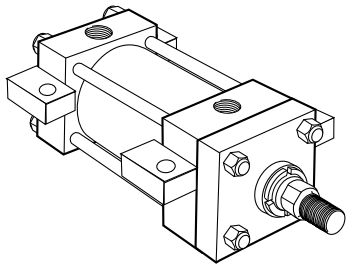
Side Lugs, Centerline Lugs  
and Side Tapped Mountings  
1" to 6" Bore Sizes

# Series 3L Medium Duty Hydraulic Cylinders

Side Lug  
Style C  
(NFFA Style MS2)

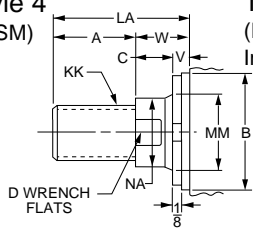


Centerline Lugs  
Style E  
(NFFA Style MS3)

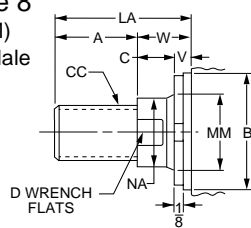


Rod End Dimensions—see table 2

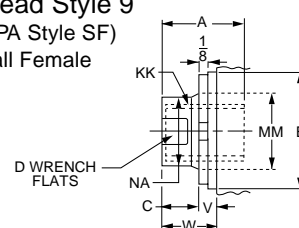
Thread Style 4  
(NFFA Style SM)  
Small Male



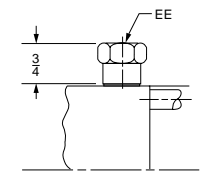
Thread Style 8  
(NFFA Style IM)  
Intermediate Male



Thread Style 9  
(NFFA Style SF)  
Small Female



Straight Thread  
Port Adapters



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.

Used on 1 1/2" bore cap end and on head end of 1 1/2" bore with Code 2 rod.

"Specials" Thread Style 3

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

For additional information – call your local Parker Cylinder Distributor.

# Series 3L Medium Duty Hydraulic Cylinders

Side Lugs, Centerline Lugs  
and Side Tapped Mountings  
1" to 6" Bore Sizes

Table 1—Envelope and Mounting Dimensions

Bore	E	EE		F	G	J	K	SB*	ST	SU	SW	TS	US	Add Stroke		
		NPTF <sup>†</sup>	SAE*											LB	P	SS
1 <sup>†</sup>	■	1/4 <sup>†</sup>	6 <sup>#</sup>	3/8	1 1/2	1	3/16	9/32*	5/16*	3/4*	5/16*	2 1/8*	2 3/4*	3 7/8	2 1/8	2 7/8*
1 1/2	2	3/8 <sup>†</sup>	6 <sup>#</sup>	3/8	1 1/2	1	1/4	7/16	1/2	15/16	3/8	2 3/4	3 1/2	4	2 1/4	2 7/8
2	2 1/2	3/8 <sup>†</sup>	6	3/8	1 1/2	1	5/16	7/16	1/2	15/16	3/8	3 1/4	4	4	2 1/4	2 7/8
2 1/2	3	3/8 <sup>†</sup>	6	3/8	1 1/2	1	5/16	7/16	1/2	15/16	3/8	3 3/4	4 1/2	4 1/8	2 3/8	3
3 1/4	3 3/4	1/2	10	5/8	1 3/4	1 1/4	3/8	9/16	3/4	1 1/4	1/2	4 3/4	5 3/4	4 7/8	2 5/8	3 1/4
4	4 1/2	1/2	10	5/8	1 3/4	1 1/4	3/8	9/16	3/4	1 1/4	1/2	5 1/2	6 1/2	4 7/8	2 5/8	3 1/4
5	5 1/2	1/2	10	5/8	1 3/4	1 1/4	7/16	13/16	1	1 9/16	1 1/16	6 7/8	8 1/4	5 1/8	2 7/8	3 1/8
6	6 1/2	3/4	12	3/4	2	1 1/2	7/16	13/16	1	1 9/16	1 1/16	7 7/8	9 1/4	5 3/4	3 1/8	3 5/8

† NPTF ports will be furnished as standard unless SAE straight thread ports are specified.

\* SAE straight thread ports are indicated by port number.

‡ Cushion adjusting needle valve for 1" bore projects beyond sides of head and cap.

† On 1", 1 1/2", 2" and 2 1/2" bore sizes, the head end (only) pipe thread is not full depth on cylinders with No. 2 rods. Minimum of 3 full threads available.

■ 1" bore 3L heads are rectangular — see page 20.

# Straight thread ports on 1 1/2" bore cap end, and head end with Code 2 rod, require an adapter fitting. (See "Straight Thread Port Adapter" drawing on opposite page.) Adapters are furnished as standard.

Table 2—Rod Dimensions

Bore	Rod No.	Rod Dia. MM	Thread		Rod Extensions and Pilot Dimensions								XS	Y	Add Stroke ZB
			Style 8 CC	Style 4 & 9 KK	A	+0.000 -.002 B	C	D	LA	NA	V	W			
1	1(Std.)	1/2	7/16-20	5/16-24	5/8	.999	3/8	3/8	1 1/4	7/16	1/4	5/8	1 5/16*	1 15/16	4 11/16
	2	5/8	1/2-20	7/16-20	3/4	1.124	3/8	1/2	1 3/8	9/16	1/4	5/8	1 5/16*	1 15/16	4 11/16
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	1/4	5/8	1 3/8	1 15/16	4 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	1 3/4	2 5/16	5 1/4
2	1(Std.)	5/8	1/2-20	7/16-20	3/4	1.124	3/8	1/2	1 3/8	9/16	1/4	5/8	1 3/8	1 15/16	4 5/16
	2	1 3/8	1 1/4-12	1-14	1 5/8	1.999	5/8	1 1/8	2 7/8	15/16	5/8	1 1/4	2	2 9/16	5 9/16
	3	1	7/8-14	3/4-16	1 1/8	1.499	1/2	7/8	2 1/8	15/16	1/2	1	1 3/4	2 5/16	5 5/16
2 1/2	1(Std.)	1	7/8-14	3/4-16	1 1/8	1.499	1/2	7/8	2 1/8	15/16	1/2	1	1 3/4	2 5/16	5 7/16
	2	1 3/4	1 1/2-12	1 1/4-12	2	2.374	3/4	1 1/2	3 1/2	1 11/16	3/4	1 1/2	2 1/4	2 13/16	5 5/16
	3	1 3/8	1 1/4-12	1-14	1 5/8	1.999	5/8	1 1/8	2 7/8	15/16	5/8	1 1/4	2	2 9/16	5 11/16
	7	5/8	1/2-20	7/16-20	3/4	1.124	3/8	1/2	1 3/8	9/16	1/4	5/8	1 3/8	1 15/16	5 1/16
3 1/4	1(Std.)	1	7/8-14	3/4-16	1 1/8	1.499	1/2	7/8	1 7/8	15/16	1/4	3/4	1 7/8	2 7/16	6
	2	2	1 3/4-12	1 1/2-12	2 1/4	2.624	7/8	1 11/16	3 5/8	1 15/16	1/2	1 3/8	2 1/2	3 1/16	6 5/8
	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	3/8	1	2 1/8	2 11/16	6 1/4
	4	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	1/2	1 1/4	2 3/8	2 15/16	6 1/2
4	1(Std.)	1 3/8	1 1/4-12	1-14	1 5/8	1.999	5/8	1 1/8	2 5/8	15/16	3/8	1	2 1/8	2 11/16	6 1/4
	2	2 1/2	2 1/4-12	1 7/8-12	3	3.124	1	2 1/16	4 5/8	2 3/8	5/8	1 5/8	2 3/4	3 5/16	6 7/8
	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	1/2	1 1/4	2 3/8	2 15/16	6 1/2
	4	2	1 3/4-12	1 1/2-12	2 1/4	2.624	7/8	1 11/16	3 5/8	1 15/16	1/2	1 3/8	2 1/2	3 1/16	6 5/8
5	7	1	7/8-14	3/4-16	1 1/8	1.499	1/2	7/8	1 7/8	15/16	1/4	3/4	1 7/8	2 7/16	6
	1(Std.)	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	1/2	1 1/4	2 9/16	2 15/16	6 13/16
	2	3 1/2	3 1/4-12	2 1/2-12	3 1/2	4.249	1	3	5 1/8	3 3/8	5/8	1 5/8	2 15/16	3 5/16	7 3/16
	3	2	1 3/4-12	1 1/2-12	2 1/4	2.624	7/8	1 11/16	3 5/8	1 15/16	1/2	1 3/8	2 11/16	3 1/16	6 15/16
	4	2 1/2	2 1/4-12	1 7/8-12	3	3.124	1	2 1/16	4 5/8	2 3/8	5/8	1 5/8	2 15/16	3 5/16	7 3/16
	5	3	2 3/4-12	2 1/4-12	3 1/2	3.749	1	2 5/8	5 1/8	2 7/8	5/8	1 5/8	2 15/16	3 5/16	7 3/16
	7	1	7/8-14	3/4-16	1 1/8	1.499	1/2	7/8	1 7/8	15/16	1/4	3/4	2 1/16	2 7/16	6 5/16
6	8	1 3/8	1 1/4-12	1-14	1 5/8	1.999	5/8	1 1/8	2 5/8	15/16	3/8	1	2 5/16	2 11/16	6 9/16
	1(Std.)	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	3/8	1 1/8	2 9/16	3 1/16	7 5/16
	2	4	3 3/4-12	3-12	4	4.749	1	3 3/8	5 1/2	3 7/8	1/2	1 1/2	2 15/16	3 7/16	7 11/16
	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	3/8	1 1/4	2 11/16	3 3/16	7 7/16
	4	2 1/2	2 1/4-12	1 7/8-12	3	3.124	1	2 1/16	4 1/2	2 3/8	1/2	1 1/2	2 15/16	3 7/16	7 11/16
	5	3	2 3/4-12	2 1/4-12	3 1/2	3.749	1	2 5/8	5	2 7/8	1/2	1 1/2	2 15/16	3 7/16	7 11/16
	6	3 1/2	3 1/4-12	2 1/2-12	3 1/2	4.249	1	3	5	3 3/8	1/2	1 1/2	2 15/16	3 7/16	7 11/16
7	1 3/8	1 1/4-12	1-14	1 5/8	1.999	5/8	1 1/8	2 1/2	1 5/16	1/4	7/8	2 5/16	2 13/16	7 1/16	

\* Mounting style E not available in 1" bore.

Table 3—Envelope and Mounting Dimensions

B

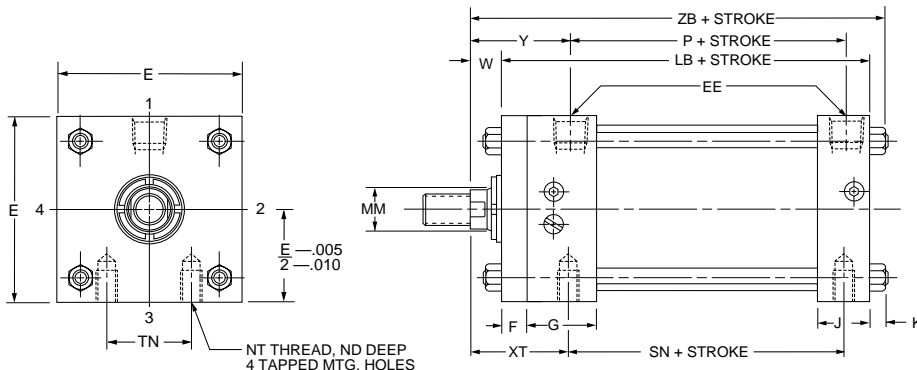
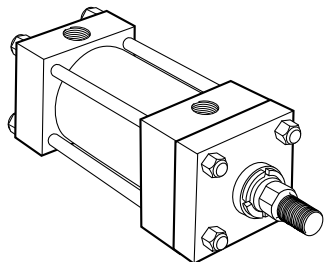
For Cylinder Division Plant Locations – See Page II.



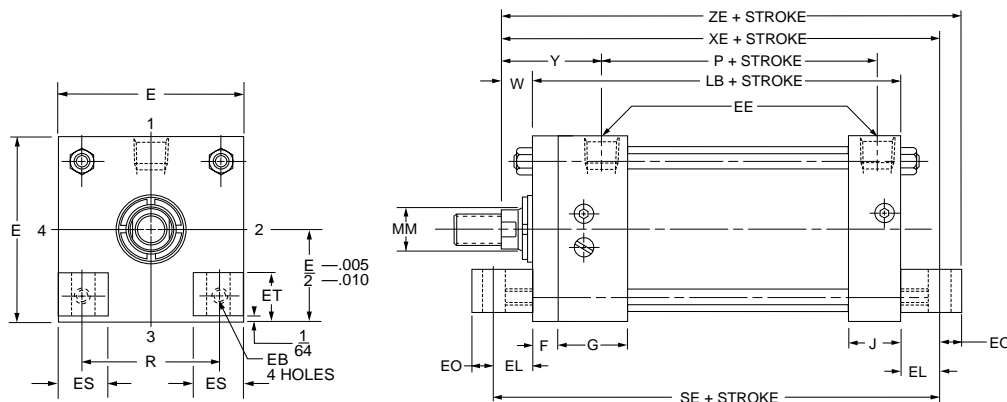
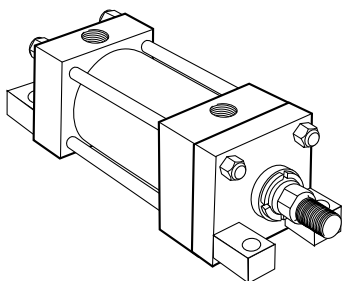
Side Tapped and  
Side End Lug Mountings  
1" to 6" Bore Sizes

# Series 3L Medium Duty Hydraulic Cylinders

Side Tapped  
Style F  
(NFPA Style MS4)

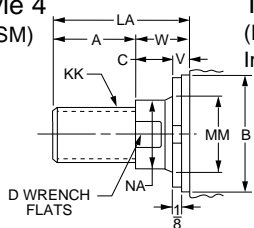


Side End Lug  
Style G  
(NFPA Style MS7)

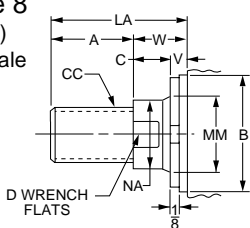


Rod End Dimensions—see table 2

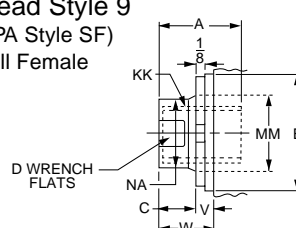
Thread Style 4  
(NFPA Style SM)  
Small Male



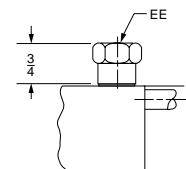
Thread Style 8  
(NFPA Style IM)  
Intermediate Male



Thread Style 9  
(NFPA Style SF)  
Small Female



Straight Thread  
Port Adapters



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.

Used on 1 1/2" bore cap end and on head end of 1 1/2" bore with Code 2 rod.

"Specials" Thread Style 3

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

For additional information – call your local Parker Cylinder Distributor.

# Series 3L Medium Duty Hydraulic Cylinders

Side End Angles and  
Side End Lug Mountings  
1" to 6" Bore Sizes

Table 1—Envelope and Mounting Dimensions

Bore	E	EB	EE		EL	EO	ES	ET	F	G	J	K	NT	TN	R	Add Stroke			
			NPTF <sup>†</sup>	SAE <sup>*</sup>												LB	P	SE	SN
1 <sup>‡</sup>	■	•	1/4 <sup>†</sup>	6 <sup>#</sup>	•	•	•	•	3/8	1 1/2	1	3/16	10-24	9/16	•	3/8	2 1/8	•	2 1/8
1 1/2	2	5/16	3/8 <sup>†</sup>	6 <sup>#</sup>	3/4	1/4	9/16	17/32	3/8	1 1/2	1	1/4	1/4-20	5/8	1.43	4	2 1/4	5 1/2	2 1/4
2	2 1/2	3/8	3/8 <sup>†</sup>	6	15/16	5/16	5/8	5/8	3/8	1 1/2	1	5/16	5/16-18	7/8	1.84	4	2 1/4	5 7/8	2 1/4
2 1/2	3	3/8	3/8 <sup>†</sup>	6	1 1/16	5/16	13/16	25/32	3/8	1 1/2	1	5/16	3/8-16	1 1/4	2.19	4 1/8	2 3/8	6 1/4	2 3/8
3 1/4	3 3/4	7/16	1/2	10	7/8	3/8	1	15/16	5/8	1 3/4	1 1/4	3/8	1/2-13	1 1/2	2.76	4 7/8	2 5/8	6 5/8	2 5/8
4	4 1/2	7/16	1/2	10	1	3/8	1 1/4	15/32	5/8	1 3/4	1 1/4	3/8	1/2-13	2 1/16	3.32	4 7/8	2 5/8	6 7/8	2 5/8
5	5 1/2	9/16	1/2	10	1 1/16	1/2	1 3/8	13/8	5/8	1 3/4	1 1/4	7/16	5/8-11	2 11/16	4.10	5 1/8	2 7/8	7 1/4	2 7/8
6	6 1/2	9/16	3/4	12	1	1/2	1 3/4	1 19/32	3/4	2	1 1/2	7/16	3/4-10	3 1/4	4.88	5 3/4	3 1/8	7 3/4	3 1/8

○ NPTF ports will be furnished as standard unless SAE straight thread ports are specified.  
\* SAE straight thread ports are indicated by port number.  
‡ Cushion adjusting needle valve for 1" bore projects beyond sides of head and cap.

† On 1", 1 1/2", 2" and 2 1/2" bore sizes, the head end (only) pipe thread is not full depth on cylinders with No. 2 rods. Minimum of 3 full threads available.  
• Mounting style G not available in 1" bore.  
■ 1" bore 3L heads are rectangular — see page 20.

# Straight thread ports on 1 1/2" bore cap end, and head end with Code 2 rod, require an adapter fitting. (See "Straight Thread Port Adapter" drawing on opposite page.) Adapters are furnished as standard.

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	V	W	ND	XT	Y	XE	ZB	ZE
1	1(Std.)	1/2	7/16-20	5/16-24	5/8	.999	3/8	3/8	1 1/4	7/16	1/4	5/8	1/4	115/16	115/16	•	4 11/16	•
	2	5/8	1/2-20	7/16-20	3/4	1.124	3/8	1/2	13/8	9/16	1/4	5/8	1/4	115/16	115/16	•	4 11/16	•
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	1/4	5/8	3/16	115/16	115/16	53/8	4 7/8	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	3/16	25/16	25/16	53/4	5 1/4	6
2	1(Std.)	5/8	1/2-20	7/16-20	3/4	1.124	3/8	1/2	13/8	9/16	1/4	5/8	11/32	115/16	115/16	59/16	4 15/16	5 7/8
	2	1 3/8	1 1/4-12	1-14	1 5/8	1.999	5/8	1 1/8	2 7/8	15/16	5/8	1 1/4	11/32	29/16	29/16	63/16	5 9/16	6 1/2
	3	1	7/8-14	3/4-16	1 1/8	1.499	1/2	7/8	2 1/8	15/16	1/2	1	11/32	25/16	25/16	55/16	5 5/16	6 1/4
2 1/2	1(Std.)	1	7/8-14	3/4-16	1 1/8	1.499	1/2	7/8	2 1/8	15/16	1/2	1	7/16	25/16	25/16	63/16	5 7/16	6 1/2
	2	1 3/4	1 1/2-12	1 1/4-12	2	2.374	3/4	1 1/2	3 1/2	1 11/16	3/4	1 1/2	7/16	213/16	213/16	61 1/16	5 15/16	7
	3	1 3/8	1 1/4-12	1-14	1 5/8	1.999	5/8	1 1/8	2 7/8	15/16	5/8	1 1/4	7/16	29/16	29/16	67/16	5 11/16	6 3/4
	7	5/8	1/2-20	7/16-20	3/4	1.124	3/8	1/2	13/8	9/16	1/4	5/8	7/16	115/16	115/16	53/16	5 1/16	6 1/8
3 1/4	1(Std.)	1	7/8-14	3/4-16	1 1/8	1.499	1/2	7/8	1 7/8	15/16	1/4	3/4	1/2	27/16	27/16	61/2	6	6 7/8
	2	2	1 3/4-12	1 1/2-12	2 1/4	2.624	7/8	1 11/16	3 5/8	1 15/16	1/2	1 3/8	1/2	31/16	31/16	71/8	6 5/8	7 1/2
	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	3/8	1	1/2	21 1/16	21 1/16	63/4	6 1/4	7 1/8
	4	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	1/2	1 1/4	1/2	21 5/16	21 5/16	7	6 1/2	7 3/8
4	1(Std.)	1 3/8	1 1/4-12	1-14	1 5/8	1.999	5/8	1 1/8	2 5/8	15/16	3/8	1	5/8	21 1/16	21 1/16	67/8	6 1/4	7 1/4
	2	2 1/2	2 1/4-12	1 7/8-12	3	3.124	1	2 1/16	4 5/8	2 3/8	5/8	1 5/8	5/8	35/16	35/16	7 1/2	6 7/8	7 7/8
	3	1 3/4	1 1/2-12	1 1/4-12	2	2.374	3/4	1 1/2	3 1/4	1 11/16	1/2	1 1/4	5/8	21 5/16	21 5/16	7 1/8	6 1/2	7 1/2
	4	2	1 3/4-12	1 1/2-12	2 1/4	2.624	7/8	1 11/16	3 5/8	1 15/16	1/2	1 3/8	5/8	31/16	31/16	7 1/4	6 5/8	7 5/8
5	7	1	7/8-14	3/4-16	1 1/8	1.499	1/2	7/8	1 7/8	15/16	1/4	3/4	3/4	27/16	27/16	65/8	6	7
	1(Std.)	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	1/2	1 1/4	3/4	21 5/16	21 5/16	77/16	6 13/16	7 15/16
	2	3 1/2	3 1/4-12	2 1/2-12	3 1/2	4.249	1	3	5 1/8	3 3/8	5/8	1 5/8	3/4	35/16	35/16	7 13/16	7 3/16	8 5/16
	3	2	1 3/4-12	1 1/2-12	2 1/4	2.624	7/8	1 11/16	3 5/8	1 15/16	1/2	1 3/8	3/4	31/16	31/16	7 9/16	6 15/16	8 1/16
	4	2 1/2	2 1/4-12	1 7/8-12	3	3.124	1	2 1/16	4 5/8	2 3/8	5/8	1 5/8	3/4	35/16	35/16	7 13/16	7 3/16	8 5/16
	5	3	2 3/4-12	2 1/4-12	3 1/2	3.749	1	2 5/8	5 1/8	2 7/8	5/8	1 5/8	3/4	35/16	35/16	7 13/16	7 3/16	8 5/16
6	7	1	7/8-14	3/4-16	1 1/8	1.499	1/2	7/8	1 7/8	15/16	1/4	3/4	3/4	27/16	27/16	61 5/16	6 5/16	7 7/16
	8	1 3/8	1 1/4-12	1-14	1 5/8	1.999	5/8	1 1/8	2 5/8	15/16	3/8	1	3/4	21 1/16	21 1/16	73/16	6 9/16	7 11/16
	1(Std.)	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	3/8	1 1/8	7/8	31/16	31/16	77/8	7 5/16	8 3/8
	2	4	3 3/4-12	3-12	4	4.749	1	3 3/8	5 1/2	3 7/8	1/2	1 1/2	7/8	37/16	37/16	8 1/4	7 11/16	8 3/4
	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	3/8	1 1/4	7/8	33/16	33/16	8	7 7/16	8 1/2
	4	2 1/2	2 1/4-12	1 7/8-12	3	3.124	1	2 1/16	4 1/2	2 3/8	1/2	1 1/2	7/8	37/16	37/16	8 1/4	7 11/16	8 3/4
	5	3	2 3/4-12	2 1/4-12	3 1/2	3.749	1	2 5/8	5	2 7/8	1/2	1 1/2	7/8	37/16	37/16	8 1/4	7 11/16	8 3/4
6	3 1/2	3 1/4-12	2 1/2-12	3 1/2	4.249	1	3	5	3 3/8	1/2	1 1/2	7/8	37/16	37/16	8 1/4	7 11/16	8 3/4	
7	1 3/8	1 1/4-12	1-14	1 5/8	1.999	5/8	1 1/8	2 1/2	1 5/16	1/4	7/8	7/8	21 3/16	21 3/16	7 5/8	7 1/16	8 1/8	

• Mounting style G not available in 1" bore.  
Caution: When using mounting styles G, check clearance between mounting members and rod attachment or accessory. If necessary, specify longer rod extension to avoid interference with mounting members.

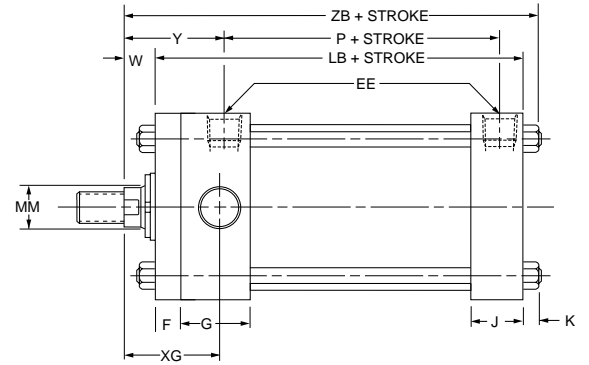
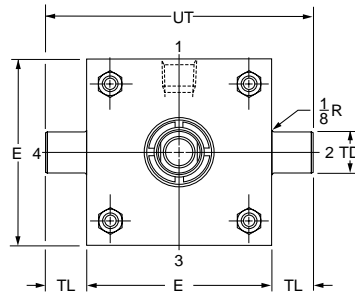
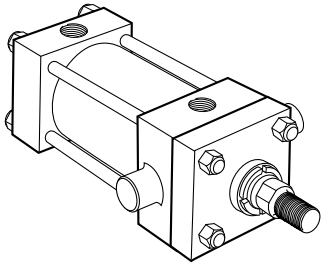
For Cylinder Division Plant Locations – See Page II.



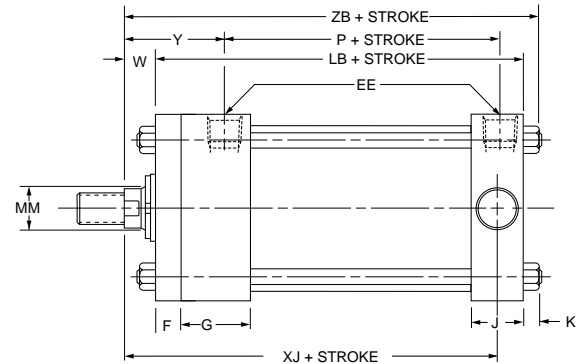
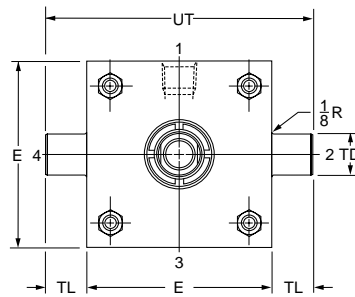
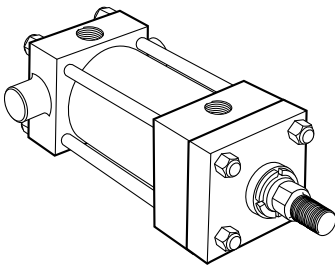
B

# Series 3L Medium Duty Hydraulic Cylinders

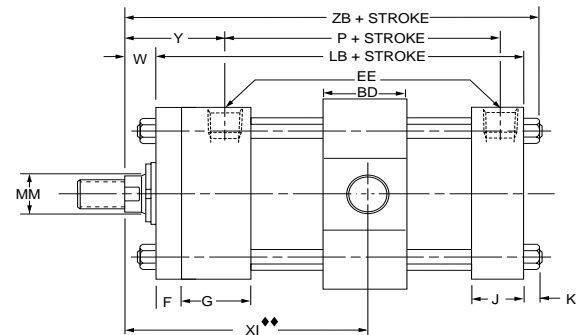
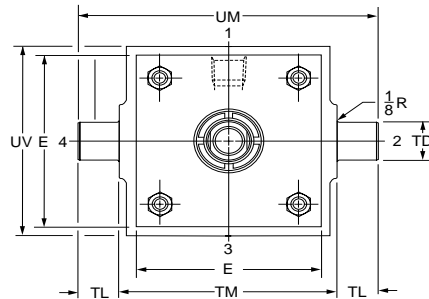
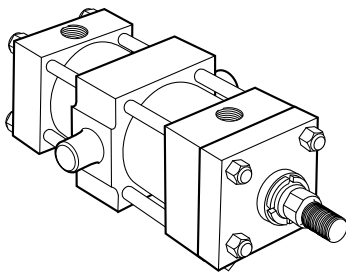
## Head Trunnion Style D (NFPA Style MT1)



## Cap Trunnion Style DB (NFPA Style MT2)

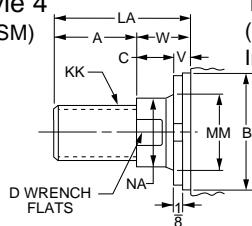


## Intermediate Fixed Trunnion Style DD (NFPA Style MT4)

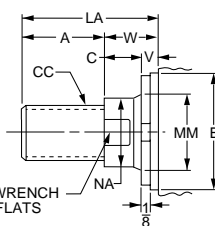


## Rod End Dimensions—see table 2

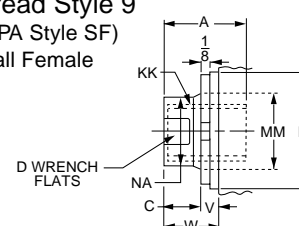
### Thread Style 4 (NFPA Style SM) Small Male



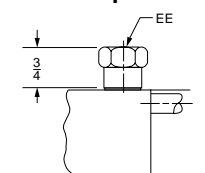
### Thread Style 8 (NFPA Style IM) Intermediate Male



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



### Straight Thread Port Adapters



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.

Used on 1 1/2" bore cap end and on head end of 1 1/2" bore with Code 2 rod.

### "Specials" Thread Style 3

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

For additional information – call your local Parker Cylinder Distributor.

# Series 3L Medium Duty Hydraulic Cylinders

Trunnion Mountings  
1" to 6" Bore Sizes

Table 1—Envelope and Mounting Dimensions

Bore	BD	E	EE		F	G	J	K	+0.000 TD -.001	TL	TM	UM	UT	UV	Add Stroke		Style DD Min. Stroke
			NPTF <sup>o</sup>	SAE <sup>#</sup>											LB	P	
1*	•	■	1/4 <sup>†</sup>	6 <sup>#</sup>	3/8	1 1/2	1	3/16	.750	3/4	•	•	3	•	37/8	2 1/8	•
1 1/2	1 1/4	2	3/8 <sup>†</sup>	6 <sup>#</sup>	3/8	1 1/2	1	1/4	1.000	1	2 1/2	4 1/2	4	2 1/2	4	2 1/4	1/4
2	1 1/2	2 1/2	3/8 <sup>†</sup>	6	3/8	1 1/2	1	5/16	1.000	1	3	5	4 1/2	3	4	2 1/4	1/2
2 1/2	1 1/2	3	3/8 <sup>†</sup>	6	3/8	1 1/2	1	5/16	1.000	1	3 1/2	5 1/2	5	3 1/2	4 1/8	2 3/8	3/8
3 1/4	2	3 3/4	1/2	10	5/8	1 3/4	1 1/4	3/8	1.000	1	4 1/2	6 1/2	5 3/4	4 1/4	4 7/8	2 5/8	7/8
4	2	4 1/2	1/2	10	5/8	1 3/4	1 1/4	3/8	1.000	1	5 1/4	7 1/4	6 1/2	5	4 7/8	2 5/8	7/8
5	2	5 1/2	1/2	10	5/8	1 3/4	1 1/4	7/16	1.000	1	6 1/4	8 1/4	7 1/2	6	5 1/8	2 7/8	5/8
6	2 1/2	6 1/2	3/4	12	3/4	2	1 1/2	7/16	1.375	1 3/8	7 5/8	10 3/8	9 1/4	7	5 3/4	3 1/8	1 1/8

o NPTF ports will be furnished as standard unless SAE straight thread ports are specified.

# SAE straight thread ports are indicated by port number.

† Cushion adjusting needle valve for 1" bore projects beyond sides of head and cap.

† On 1", 1 1/2", 2" and 2 1/2" bore sizes, the head end (only) pipe thread is not full depth on cylinders with No. 2 rods. Minimum of 3 full threads available.

■ 1" bore 3L heads are rectangular — see page 20.

• Mounting style DD not available in 1" bore.

# Straight thread ports on 1 1/2" bore cap end, and head end with Code 2 rod, require an adapter fitting. (See "Straight Thread Port Adapter" drawing on opposite page.) Adapters are furnished as standard.

Table 2—Rod Dimensions

Bore	Rod No.	Rod Dia. MM	Thread		Rod Extensions and Pilot Dimensions								XG	Min. XI**	Y	Add Stroke	
			Style 8 CC	Style 4 & 9 KK	A	+0.000 -.002 B	C	D	LA	NA	V	W				XJ	ZB
1	1(Std.)	1/2	7/16-20	5/16-24	5/8	.999	3/8	3/8	1 1/4	7/16	1/4	5/8	13/4	*	115/16	4	4 11/16
	2	5/8	1/2-20	7/16-20	3/4	1.124	3/8	1/2	13/8	9/16	1/4	5/8	13/4	*	115/16	4	4 11/16
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	1/4	5/8	13/4	33/16	115/16	4 1/8	4 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 1/8	39/16	25/16	4 1/2	5 1/4
2	1(Std.)	5/8	1/2-20	7/16-20	3/4	1.124	3/8	1/2	13/8	9/16	1/4	5/8	13/4	35/16	115/16	4 1/8	4 5/16
	2	1 3/8	1 1/4-12	1-14	1 5/8	1.999	5/8	1 1/8	2 7/8	15/16	5/8	1 1/4	2 3/8	315/16	29/16	4 3/4	5 9/16
	3	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 1/8	311/16	25/16	4 1/2	5 5/16
2 1/2	1(Std.)	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 1/8	311/16	25/16	4 5/8	5 7/16
	2	1 3/4	1 1/2-12	1 1/4-12	2	2.374	3/4	1 1/2	3 1/2	1 11/16	3/4	1 1/2	2 5/8	43/16	213/16	5 1/8	5 5/16
	3	1 3/8	1 1/4-12	1-14	1 5/8	1.999	5/8	1 1/8	2 7/8	15/16	5/8	1 1/4	2 3/8	315/16	29/16	4 7/8	5 11/16
	7	5/8	1/2-20	7/16-20	3/4	1.124	3/8	1/2	13/8	9/16	1/4	5/8	13/4	35/16	115/16	4 1/4	5 1/16
3 1/4	1(Std.)	1	7/8-14	3/4-16	1 1/8	1.499	1/2	7/8	1 7/8	15/16	1/4	3/4	2 1/4	43/16	27/16	5	6
	2	2	1 3/4-12	1 1/2-12	2 1/4	2.624	7/8	1 11/16	3 5/8	1 15/16	1/2	1 3/8	2 7/8	413/16	31/16	5 5/8	6 5/8
	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	3/8	1	2 1/2	47/16	211/16	5 1/4	6 1/4
	4	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	1/2	1 1/4	2 3/4	411/16	215/16	5 1/2	6 1/2
4	1(Std.)	1 3/8	1 1/4-12	1-14	1 5/8	1.999	5/8	1 1/8	2 5/8	15/16	3/8	1	2 1/2	47/16	211/16	5 1/4	6 1/4
	2	2 1/2	2 1/4-12	1 7/8-12	3	3.124	1	2 1/16	4 5/8	2 3/8	5/8	1 5/8	3 1/8	5 1/16	3 5/16	5 7/8	6 7/8
	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	1/2	1 1/4	2 3/4	411/16	215/16	5 1/2	6 1/2
	4	2	1 3/4-12	1 1/2-12	2 1/4	2.624	7/8	1 11/16	3 5/8	1 15/16	1/2	1 3/8	2 7/8	413/16	31/16	5 5/8	6 5/8
5	1	7/8-14	3/4-16	1 1/8	1.499	1/2	7/8	1 7/8	1 5/16	1/4	3/4	2 1/4	43/16	27/16	5	6	
	1(Std.)	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	1/2	1 1/4	2 3/4	411/16	215/16	5 3/4	6 13/16
	2	3 1/2	3 1/4-12	2 1/2-12	3 1/2	4.249	1	3	5 1/8	3 3/8	5/8	1 5/8	3 1/8	5 1/16	3 5/16	6 1/8	7 3/16
	3	2	1 3/4-12	1 1/2-12	2 1/4	2.624	7/8	1 11/16	3 5/8	1 15/16	1/2	1 3/8	2 7/8	413/16	31/16	5 7/8	6 15/16
	4	2 1/2	2 1/4-12	1 7/8-12	3	3.124	1	2 1/16	4 5/8	2 3/8	5/8	1 5/8	3 1/8	5 1/16	3 5/16	6 1/8	7 3/16
	5	3	2 3/4-12	2 1/4-12	3 1/2	3.749	1	2 5/8	5 1/8	2 7/8	5/8	1 5/8	3 1/8	5 1/16	3 5/16	6 1/8	7 3/16
	7	1	7/8-14	3/4-16	1 1/8	1.499	1/2	7/8	1 7/8	1 5/16	1/4	3/4	2 1/4	43/16	27/16	5 1/4	6 5/16
6	1(Std.)	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	3/8	1 1/8	2 7/8	5 3/16	3 1/16	6 1/8	7 5/16
	2	4	3 3/4-12	3-12	4	4.749	1	3 3/8	5 1/2	3 7/8	1/2	1 1/2	3 1/4	5 9/16	3 7/16	6 1/2	7 11/16
	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	3/8	1 1/4	3	5 5/16	3 3/16	6 1/4	7 7/16
	4	2 1/2	2 1/4-12	1 7/8-12	3	3.124	1	2 1/16	4 1/2	2 3/8	1/2	1 1/2	3 1/4	5 9/16	3 7/16	6 1/2	7 11/16
	5	3	2 3/4-12	2 1/4-12	3 1/2	3.749	1	2 5/8	5	2 7/8	1/2	1 1/2	3 1/4	5 9/16	3 7/16	6 1/2	7 11/16
	6	3 1/2	3 1/4-12	2 1/2-12	3 1/2	4.249	1	3	5	3 3/8	1/2	1 1/2	3 1/4	5 9/16	3 7/16	6 1/2	7 11/16
	7	1 3/8	1 1/4-12	1-14	1 5/8	1.999	5/8	1 1/8	2 1/2	1 5/16	1/4	7/8	2 5/8	4 15/16	2 13/16	5 7/8	7 1/16

\* Mounting style DD not available in 1" bore.

\*\*Dimension XI to be specified by customer.

Table 3—Envelope and Mounting Dimensions

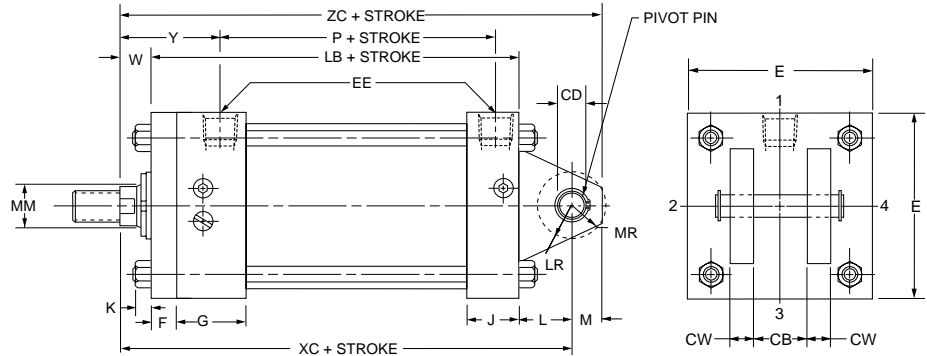
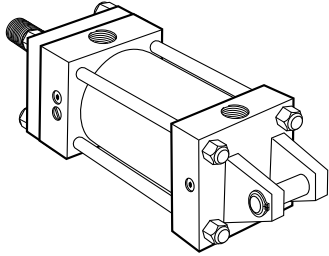
B

For Cylinder Division Plant Locations – See Page II.



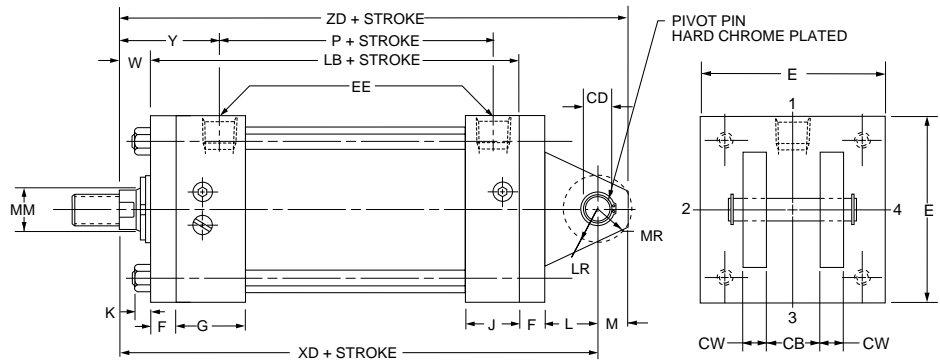
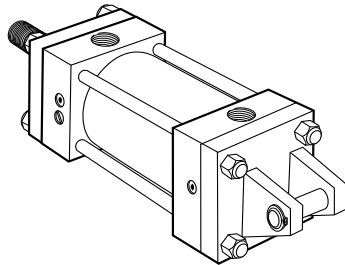
# Series 3L Medium Duty Hydraulic Cylinders

Cap Fixed Clevis  
Style BB  
(NFFA Style MP1)



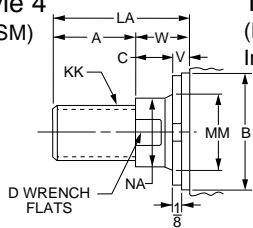
The 1", 4", 5" and 6" bore sizes have tie rod nuts at both ends as shown. Tie rods thread into cap on all other sizes.

Cap Detachable Clevis  
Style BC  
(NFFA Style MP2)

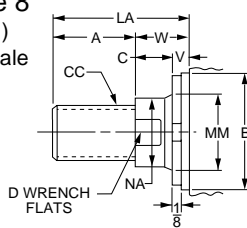


Rod End Dimensions—see table 2

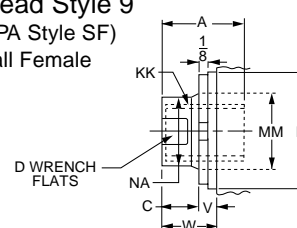
Thread Style 4  
(NFFA Style SM)  
Small Male



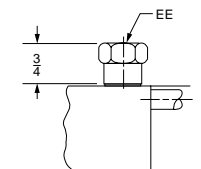
Thread Style 8  
(NFFA Style IM)  
Intermediate Male



Thread Style 9  
(NFFA Style SF)  
Small Female



Straight Thread  
Port Adapters



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. NA 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.

Used on 1 1/2" bore cap end and on head end of 1 1/2" bore with Code 2 rod.

"Specials" Thread Style 3

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

For additional information – call your local Parker Cylinder Distributor.



# Series 3L Medium Duty Hydraulic Cylinders

Clevis Mountings  
1" to 6" Bore Sizes

Table 1—Envelope and Mounting Dimensions

Bore	CB	+.000 CD <sup>▲</sup> -.002	CW	E	EE		F	G	J	K	L	LR	M	MR	Add Stroke	
					NPTF <sup>⊖</sup>	SAE <sup>*</sup>									LB	P
1 <sup>†</sup>	•	.441•	•	■	1/4 <sup>†</sup>	6 <sup>#</sup>	3/8	1 1/2	1	3/16	1/2•	1/2•	7/16•	1/2•	37/8	2 1/8
1 1/2	3/4	.501	1/2	2	3/8 <sup>†</sup>	6 <sup>#</sup>	3/8	1 1/2	1	1/4	3/4	3/4	1/2	5/8	4	2 1/4
2	3/4	.501	1/2	2 1/2	3/8 <sup>†</sup>	6	3/8	1 1/2	1	5/16	3/4	3/4	1/2	5/8	4	2 1/4
2 1/2	3/4	.501	1/2	3	3/8 <sup>†</sup>	6	3/8	1 1/2	1	5/16	3/4	3/4	1/2	5/8	4 1/8	2 3/8
3 1/4	1 1/4	.751	5/8	3 3/4	1/2	10	5/8	1 3/4	1 1/4	3/8	1 1/4	1	3/4	15/16	47/8	2 5/8
4	1 1/4	.751	5/8	4 1/2	1/2	10	5/8	1 3/4	1 1/4	3/8	1 1/4	1	3/4	15/16	47/8	2 5/8
5	1 1/4	.751	5/8	5 1/2	1/2	10	5/8	1 3/4	1 1/4	7/16	1 1/4	1	3/4	15/16	5 1/8	2 7/8
6	1 1/2	1.001	3/4	6 1/2	3/4	12	3/4	2	1 1/2	7/16	1 1/2	1 1/4	1	13/16	5 3/4	3 1/8

⊖ NPTF ports will be furnished as standard unless SAE straight thread ports are specified.

\* SAE straight thread ports are indicated by port number.

‡ Cushion adjusting needle valve for 1" bore projects beyond sides of head and cap.

† On 1", 1 1/2", 2" and 2 1/2" bore sizes, the head end (only) pipe thread is not full depth on cylinders with No. 2 rods. Minimum of 3 full threads available.

■ 1" bore 3L heads are rectangular — see page 20.

▲ Dimension CD is pin diameter except in 1" bore.

# Straight thread ports on 1 1/2" bore cap end, and head end with Code 2 rod, require an adapter fitting. (See "Straight Thread Port Adapter" drawing on opposite page.) Adapters are furnished as standard.

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	LA	NA	V	W	Y	XC	XD	ZC	ZD
1	1(Std.)	1/2	7/16-20	5/16-24	5/8	.999	3/8	3/8	1 1/4	7/16	1/4	5/8	1 15/16	5	5 3/8	5 7/16	5 13/16
	2	5/8	1/2-20	7/16-20	3/4	1.124	3/8	1/2	13/8	9/16	1/4	5/8	1 15/16	5	5 3/8	5 7/16	5 13/16
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	1/4	5/8	1 15/16	5 3/8	5 3/4	5 7/8	6 1/4
	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 5/16	5 3/4	6 1/8	6 1/4	6 5/8
2	1(Std.)	5/8	1/2-20	7/16-20	3/4	1.124	3/8	1/2	13/8	9/16	1/4	5/8	1 15/16	5 3/8	5 3/4	5 7/8	6 1/4
	2	1 3/8	1 1/4-12	1-14	1 5/8	1.999	5/8	1 1/8	2 7/8	15/16	5/8	1 1/4	2 9/16	6	6 3/8	6 1/2	6 7/8
	3	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 5/16	5 3/4	6 1/8	6 1/4	6 5/8
2 1/2	1(Std.)	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 5/16	5 7/8	6 1/4	6 3/8	6 3/4
	2	1 3/4	1 1/2-12	1 1/4-12	2	2.374	3/4	1 1/2	3 1/2	1 11/16	3/4	1 1/2	2 13/16	6 3/8	6 3/4	6 7/8	7 1/4
	3	1 3/8	1 1/4-12	1-14	1 5/8	1.999	5/8	1 1/8	2 7/8	15/16	5/8	1 1/4	2 9/16	6 1/8	6 1/2	6 5/8	7
	7	5/8	1/2-20	7/16-20	3/4	1.124	3/8	1/2	13/8	9/16	1/4	5/8	1 15/16	5 1/2	5 7/8	6	6 3/8
3 1/4	1(Std.)	1	7/8-14	3/4-16	1 1/8	1.499	1/2	7/8	1 7/8	15/16	1/4	3/4	2 7/16	6 7/8	7 1/2	7 5/8	8 1/4
	2	2	1 3/4-12	1 1/2-12	2 1/4	2.624	7/8	1 11/16	3 5/8	1 15/16	1/2	1 3/8	3 1/16	7 1/2	8 1/8	8 1/4	8 7/8
	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	3/8	1	2 11/16	7 1/8	7 3/4	7 7/8	8 1/2
	4	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	1/2	1 1/4	2 15/16	7 3/8	8	8 1/8	8 3/4
4	1(Std.)	1 3/8	1 1/4-12	1-14	1 5/8	1.999	5/8	1 1/8	2 5/8	15/16	3/8	1	2 11/16	7 1/8	7 3/4	7 7/8	8 1/2
	2	2 1/2	2 1/4-12	1 7/8-12	3	3.124	1	2 1/16	4 5/8	2 3/8	5/8	1 5/8	3 5/16	7 3/4	8 3/8	8 1/2	9 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	1/2	1 1/4	2 15/16	7 3/8	8	8 1/8	8 3/4
	4	2	1 3/4-12	1 1/2-12	2 1/4	2.624	7/8	1 11/16	3 5/8	1 15/16	1/2	1 3/8	3 1/16	7 1/2	8 1/8	8 1/4	8 7/8
5	7	1	7/8-14	3/4-16	1 1/8	1.499	1/2	7/8	1 7/8	15/16	1/4	3/4	2 7/16	6 7/8	7 1/2	7 5/8	8 1/4
	1(Std.)	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	1/2	1 1/4	2 15/16	7 5/8	8 1/4	8 3/8	9
	2	3 1/2	3 1/4-12	2 1/2-12	3 1/2	4.249	1	3	5 1/8	3 3/8	5/8	1 5/8	3 5/16	8	8 5/8	8 3/4	9 3/8
	3	2	1 3/4-12	1 1/2-12	2 1/4	2.624	7/8	1 11/16	3 5/8	1 15/16	1/2	1 3/8	3 1/16	7 3/4	8 3/8	8 1/2	9 1/8
	4	2 1/2	2 1/4-12	1 7/8-12	3	3.124	1	2 1/16	4 5/8	2 3/8	5/8	1 5/8	3 5/16	8	8 5/8	8 3/4	9 3/8
	5	3	2 3/4-12	2 1/4-12	3 1/2	3.749	1	2 5/8	5 1/8	2 7/8	5/8	1 5/8	3 5/16	8	8 5/8	8 3/4	9 3/8
6	7	1	7/8-14	3/4-16	1 1/8	1.499	1/2	7/8	1 7/8	15/16	1/4	3/4	2 7/16	7 1/8	7 3/4	7 7/8	8 1/2
	8	1 3/8	1 1/4-12	1-14	1 5/8	1.999	5/8	1 1/8	2 5/8	15/16	3/8	1	2 11/16	7 3/8	8	8 1/8	8 3/4
	1(Std.)	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	3/8	1 1/8	3 1/16	8 3/8	9 1/8	9 3/8	10 1/8
	2	4	3 3/4-12	3-12	4	4.749	1	3 3/8	5 1/2	3 7/8	1/2	1 1/2	3 7/16	8 3/4	9 1/2	9 3/4	10 1/2
	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	3/8	1 1/4	3 3/16	8 1/2	9 1/4	9 1/2	10 1/4
	4	2 1/2	2 1/4-12	1 7/8-12	3	3.124	1	2 1/16	4 1/2	2 3/8	1/2	1 1/2	3 7/16	8 3/4	9 1/2	9 3/4	10 1/2
	5	3	2 3/4-12	2 1/4-12	3 1/2	3.749	1	2 5/8	5	2 7/8	1/2	1 1/2	3 7/16	8 3/4	9 1/2	9 3/4	10 1/2
6	3 1/2	3 1/4-12	2 1/2-12	3 1/2	4.249	1	3	5	3 3/8	1/2	1 1/2	3 7/16	8 3/4	9 1/2	9 3/4	10 1/2	
7	1 3/8	1 1/4-12	1-14	1 5/8	1.999	5/8	1 1/8	2 1/2	1 5/16	1/4	7/8	2 13/16	8 1/8	8 7/8	9 1/8	9 7/8	

Table 3—Envelope and Mounting Dimensions

B

For Cylinder Division Plant Locations – See Page II.



Head Rectangular  
 1 1/2" to 6" Bore Sizes  
 1" 3L Head Dimensions

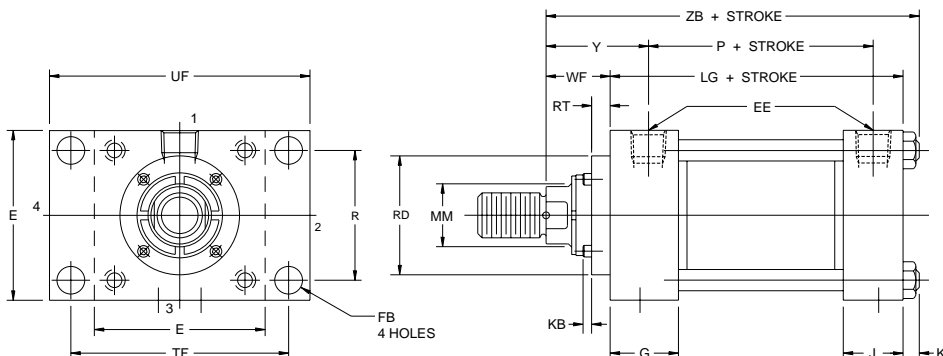
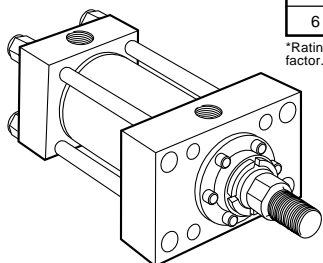
# Series 3L Medium Duty Hydraulic Cylinders

Head Rectangular  
 Style JJ\*

For Style "JJ" Mount

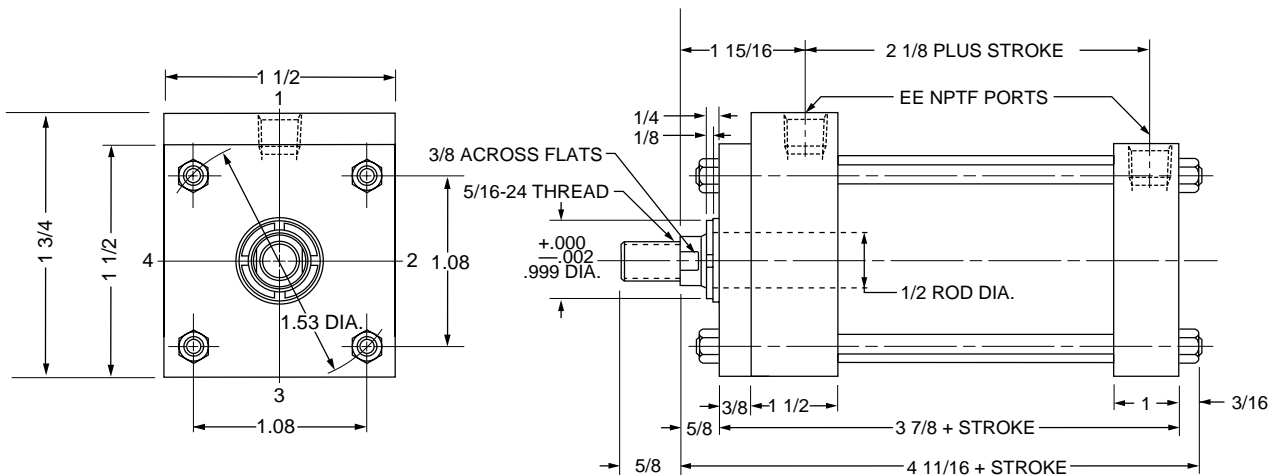
Bore Size	Maximum Pressure Rating — PSI
1 1/2	2500
2	1950
2 1/2	1400
3 1/4	1400
4	850
5	800
6	650

\*Ratings at 4:1 design factor.



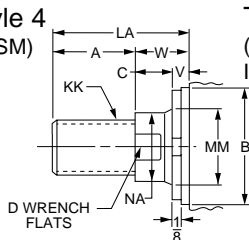
\*Parker Style JJ Mount is a Non-NFPA Mount

## 1" Bore 3L Series—Envelope and Head Dimensions

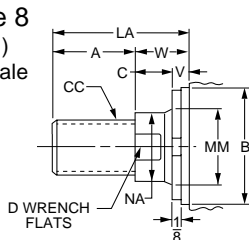


## Rod End Dimensions—see table 2

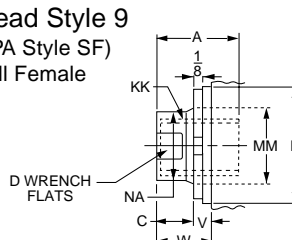
Thread Style 4  
 (NFPA Style SM)  
 Small Male



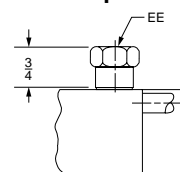
Thread Style 8  
 (NFPA Style IM)  
 Intermediate Male



Thread Style 9  
 (NFPA Style SF)  
 Small Female



Straight Thread  
 Port Adapters



A high strength rod end stud is supplied on thread style 4 through 2" diameter rods and on thread style 8 through 1 3/4" 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.

Used on 1 1/2" bore cap end on head end of 1 1/2" bore with Code 2 rod.

## "Specials" Thread Style 3

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

For additional information – call your local Parker Cylinder Distributor.

# Series 3L Medium Duty Hydraulic Cylinders

Head Rectangular  
1 1/2" to 6" Bore Sizes

Table 1—Envelope and Mounting Dimensions

Bore	E	EE		FB	G	J*	K	R	UF	TF	Add Stroke	
		NPTF <sup>⊖</sup>	SAE*								LG	P
1 1/2	2	3/8	6#	5/16	1 1/2	1	1/4	1.43	2 3/4	2 5/16	3 5/8	2 1/4
2	2 1/2	3/8	6	3/8	1 1/2	1	5/16	1.84	3 3/8	2 7/8	3 5/8	2 1/4
2 1/2	3	3/8	6	3/8	1 1/2	1	5/16	2.19	3 3/4	3 1/4	3 3/4	2 3/8
3 1/4	3 3/4	1/2	10	7/16	1 3/4	1 1/4	3/8	2.76	4 5/8	4	4 1/4	2 5/8
4	4 1/2	1/2	10	7/16	1 3/4	1 1/4	3/8	3.32	5 1/8	4 1/2	4 1/4	2 5/8
5	5 1/2	1/2	10	9/16	1 3/4	1 1/4	7/16	4.10	6 7/16	5 5/8	4 1/2	2 7/8
6	6 1/2	3/4	12	9/16	2	1 1/2	7/16	4.88	7 1/4	6 7/16	5	3 1/8

⊖ NPTF ports will be furnished as standard unless SAE straight thread ports are specified.

\* SAE straight thread ports are indicated by port number.

Note: The Parker style JJ3L mount is not mounting interchangeable with the Parker style J3L.

# Straight thread ports on 1 1/2" bore cap end, and head end with Code 2 rod, require an adapter fitting. (See "Straight Thread Port Adapter" drawing on opposite page.)

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	RT	Max. RD	KB	WF	Y	ZB
1 1/2	1(Std.)	5/8	1/2-20	7/16-20	3/4	1.124	3/8	1/2	1/4	1.967	3/16	1	1 15/16	4 7/8
	1(Std.)	5/8	1/2-20	7/16-20	3/4	1.124	3/8	1/2	1/4	1.967	3/16	1	1 15/16	4 15/16
2	3	1	7/8-14	3/4-16	1 1/8	1.499	1/2	7/8	3/8	2.467	1/4	1 3/8	2 5/16	5 5/16
	1(Std.)	1	7/8-14	3/4-16	1 1/8	1.499	1/2	7/8	3/8	2.467	1/4	1 3/8	2 5/16	5 7/16
2 1/2	3	1 3/8	1 1/4-12	1-14	1 5/8	1.999	5/8	1 1/8	3/8	2.967	1/4	1 5/8	2 9/16	5 11/16
	1(Std.)	1	7/8-14	3/4-16	1 1/8	1.499	1/2	7/8	3/8	2.467	1/4	1 3/8	2 7/16	6
3 1/4	3	1 3/8	1 1/4-12	1-14	1 5/8	1.999	5/8	1 1/8	3/8	2.967	1/4	1 5/8	2 11/16	6 1/4
	1(Std.)	1 3/8	1 1/4-12	1-14	1 5/8	1.999	5/8	1 1/8	3/8	2.967	1/4	1 5/8	2 11/16	6 1/4
4	3	1 3/4	1 1/2-12	1 1/4-12	2	2.374	3/4	1 1/2	3/8	3.467	1/4	1 7/8	2 15/16	6 1/2
	1(Std.)	1 3/4	1 1/2-12	1 1/4-12	2	2.374	3/4	1 1/2	3/8	3.467	1/4	1 7/8	2 15/16	6 13/16
5	3	2	1 3/4-12	1 1/2-12	2 1/4	2.624	7/8	1 11/16	3/8	3.717	1/4	2	3 1/16	6 15/16
	1(Std.)	1 3/4	1 1/2-12	1 1/4-12	2	2.374	3/4	1 1/2	3/8	3.467	1/4	1 7/8	3 1/16	7 5/16
6	3	2	1 3/4-12	1 1/2-12	2 1/4	2.624	7/8	1 11/16	3/8	3.717	1/4	2	3 3/16	7 7/16
	1(Std.)	1 3/4	1 1/2-12	1 1/4-12	2	2.374	3/4	1 1/2	3/8	3.467	1/4	1 7/8	3 1/16	7 5/16

Table 3—Envelope and Mounting Dimensions

B

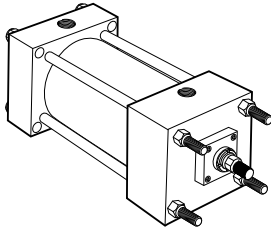
For Cylinder Division Plant Locations – See Page II.



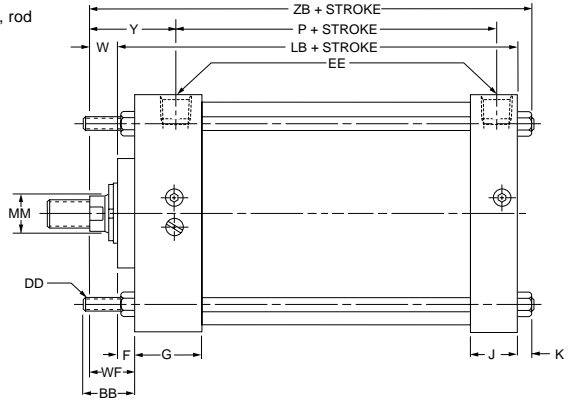
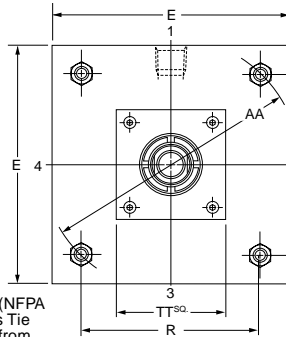
Tie Rod, Head Square and  
Cap Square Mountings  
8" Bore Size

# Series 3L Medium Duty Hydraulic Cylinders

**Tie Rods Extended  
Style TB  
(NFFA Style MX3)**

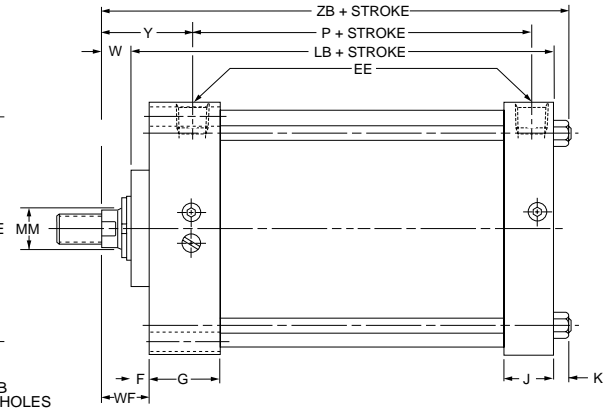
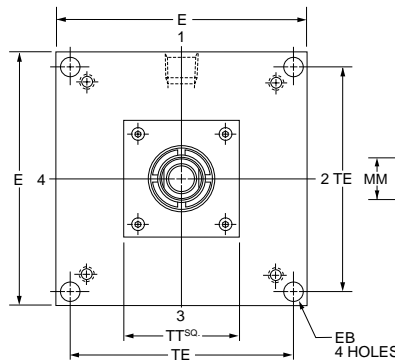
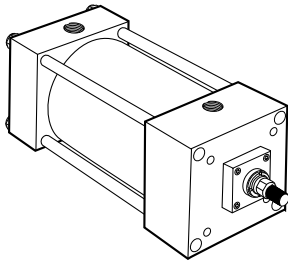


Mounting styles TB and TD not offered in 8" bore size, rod codes #2, 9 and 0.

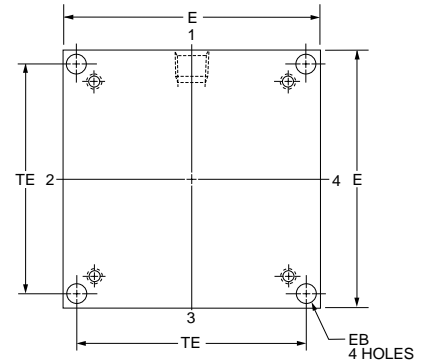
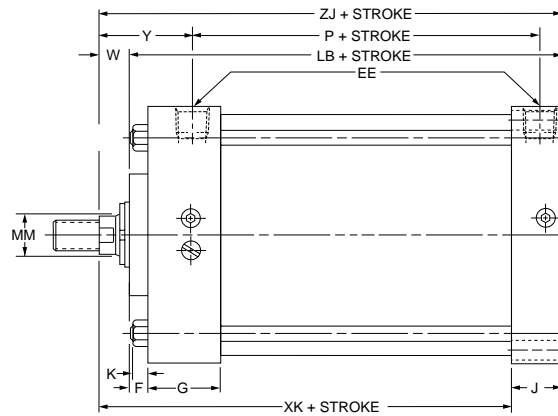
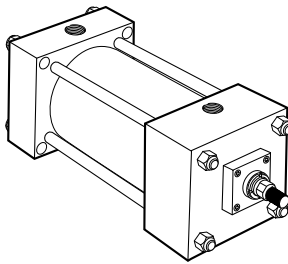


Style TB (NFFA MX3) Head Tie Rods Extended, illustrated: Style TC (NFFA MX2), Cap Tie Rods Extended; and Style TD (NFFA MX1), Both Ends Tie Rods Extended are also available. All "T" styles can be dimensioned from Style TB drawing at right.

**Head Square Flange  
Style JB  
(NFFA Style ME3)**

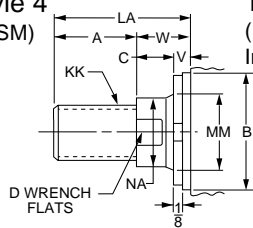


**Cap Square Flange  
Style HB  
(NFFA Style ME4)**

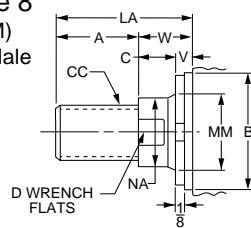


**Rod End Dimensions — see table 2**

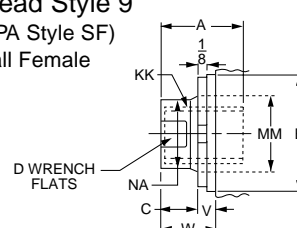
**Thread Style 4  
(NFFA Style SM)  
Small Male**



**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 dimensional 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 diam-

eters 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.

# Series 3L Medium Duty Hydraulic Cylinders

Tie Rod, Head Square and  
Cap Square Mountings  
8" Bore Size

Table 1—Envelope and Mounting Dimensions—Style T

Bore	AA	BB	DD	E	EE		F	G	J	K	R	Add Stroke	
					NPTF <sup>o</sup>	SAE*						LB	P
8	9.1	2 <sup>5</sup> / <sub>16</sub>	5 <sup>5</sup> / <sub>8</sub> -18	8 <sup>1</sup> / <sub>2</sub>	<sup>3</sup> / <sub>4</sub>	12	<sup>3</sup> / <sub>4</sub>	2	1 <sup>1</sup> / <sub>2</sub>	<sup>9</sup> / <sub>16</sub>	6.44	5 <sup>7</sup> / <sub>8</sub>	3 <sup>1</sup> / <sub>4</sub>

<sup>o</sup> NPTF ports will be furnished as standard unless SAE straight thread ports are specified.

\* SAE straight thread ports are indicated by port number.

Table 2—Rod Dimensions—Style T

Bore	Rod No.	Rod Dia. MM	Thread		Rod Extensions and Pilot Dimensions								TT	WF	Y	Add Stroke ZB
			Style 8 CC	Style 4 & 9 KK	A	+0.000 -.002 B	C	D	LA	NA	V	W				
8	1(Std.)	2	1 <sup>3</sup> / <sub>4</sub> -12	1 <sup>1</sup> / <sub>2</sub> -12	2 <sup>1</sup> / <sub>4</sub>	2.624	<sup>7</sup> / <sub>8</sub>	1 <sup>11</sup> / <sub>16</sub>	3 <sup>1</sup> / <sub>2</sub>	1 <sup>5</sup> / <sub>16</sub>	<sup>3</sup> / <sub>8</sub>	1 <sup>1</sup> / <sub>4</sub>	4	2	3 <sup>3</sup> / <sub>16</sub>	7 <sup>11</sup> / <sub>16</sub>
	2	5 <sup>1</sup> / <sub>2</sub>	5 <sup>1</sup> / <sub>4</sub> -12	4-12	5 <sup>1</sup> / <sub>2</sub>	6.249	1	4 <sup>5</sup> / <sub>8</sub>	7	5 <sup>3</sup> / <sub>8</sub>	<sup>1</sup> / <sub>2</sub>	1 <sup>1</sup> / <sub>2</sub>	7	2 <sup>1</sup> / <sub>4</sub>	3 <sup>7</sup> / <sub>16</sub>	7 <sup>15</sup> / <sub>16</sub>
	3	2 <sup>1</sup> / <sub>2</sub>	2 <sup>1</sup> / <sub>4</sub> -12	1 <sup>7</sup> / <sub>8</sub> -12	3	3.124	1	2 <sup>1</sup> / <sub>16</sub>	4 <sup>1</sup> / <sub>2</sub>	2 <sup>3</sup> / <sub>8</sub>	<sup>1</sup> / <sub>2</sub>	1 <sup>1</sup> / <sub>2</sub>	4	2 <sup>1</sup> / <sub>4</sub>	3 <sup>7</sup> / <sub>16</sub>	7 <sup>15</sup> / <sub>16</sub>
	4	3	2 <sup>3</sup> / <sub>4</sub> -12	2 <sup>1</sup> / <sub>4</sub> -12	3 <sup>1</sup> / <sub>2</sub>	3.749	1	2 <sup>5</sup> / <sub>8</sub>	5	2 <sup>7</sup> / <sub>8</sub>	<sup>1</sup> / <sub>2</sub>	1 <sup>1</sup> / <sub>2</sub>	5 <sup>1</sup> / <sub>2</sub>	2 <sup>1</sup> / <sub>4</sub>	3 <sup>7</sup> / <sub>16</sub>	7 <sup>15</sup> / <sub>16</sub>
	5	3 <sup>1</sup> / <sub>2</sub>	3 <sup>1</sup> / <sub>4</sub> -12	2 <sup>1</sup> / <sub>2</sub> -12	3 <sup>1</sup> / <sub>2</sub>	4.249	1	3	5	3 <sup>3</sup> / <sub>8</sub>	<sup>1</sup> / <sub>2</sub>	1 <sup>1</sup> / <sub>2</sub>	5 <sup>1</sup> / <sub>2</sub>	2 <sup>1</sup> / <sub>4</sub>	3 <sup>7</sup> / <sub>16</sub>	7 <sup>15</sup> / <sub>16</sub>
	6	4	3 <sup>3</sup> / <sub>4</sub> -12	3-12	4	4.749	1	3 <sup>3</sup> / <sub>8</sub>	5 <sup>1</sup> / <sub>2</sub>	3 <sup>7</sup> / <sub>8</sub>	<sup>1</sup> / <sub>2</sub>	1 <sup>1</sup> / <sub>2</sub>	5 <sup>1</sup> / <sub>2</sub>	2 <sup>1</sup> / <sub>4</sub>	3 <sup>7</sup> / <sub>16</sub>	7 <sup>15</sup> / <sub>16</sub>
	7	1 <sup>3</sup> / <sub>8</sub>	1 <sup>1</sup> / <sub>4</sub> -12	1-14	1 <sup>5</sup> / <sub>8</sub>	1.999	<sup>5</sup> / <sub>8</sub>	1 <sup>1</sup> / <sub>8</sub>	2 <sup>1</sup> / <sub>2</sub>	1 <sup>5</sup> / <sub>16</sub>	<sup>1</sup> / <sub>4</sub>	<sup>7</sup> / <sub>8</sub>	4	1 <sup>5</sup> / <sub>8</sub>	2 <sup>13</sup> / <sub>16</sub>	7 <sup>5</sup> / <sub>16</sub>
	8	1 <sup>3</sup> / <sub>4</sub>	1 <sup>1</sup> / <sub>2</sub> -12	1 <sup>1</sup> / <sub>4</sub> -12	2	2.374	<sup>3</sup> / <sub>4</sub>	1 <sup>1</sup> / <sub>2</sub>	3 <sup>1</sup> / <sub>8</sub>	1 <sup>11</sup> / <sub>16</sub>	<sup>3</sup> / <sub>8</sub>	1 <sup>1</sup> / <sub>8</sub>	4	1 <sup>7</sup> / <sub>8</sub>	3 <sup>1</sup> / <sub>16</sub>	7 <sup>9</sup> / <sub>16</sub>
	9	4 <sup>1</sup> / <sub>2</sub>	4 <sup>1</sup> / <sub>4</sub> -12	3 <sup>1</sup> / <sub>4</sub> -12	4 <sup>1</sup> / <sub>2</sub>	5.249	1	3 <sup>7</sup> / <sub>8</sub>	6	4 <sup>3</sup> / <sub>8</sub>	<sup>1</sup> / <sub>2</sub>	1 <sup>1</sup> / <sub>2</sub>	7	2 <sup>1</sup> / <sub>4</sub>	3 <sup>7</sup> / <sub>16</sub>	7 <sup>15</sup> / <sub>16</sub>
	0	5	4 <sup>3</sup> / <sub>4</sub> -12	3 <sup>1</sup> / <sub>2</sub> -12	5	5.749	1	4 <sup>1</sup> / <sub>4</sub>	6 <sup>1</sup> / <sub>2</sub>	4 <sup>7</sup> / <sub>8</sub>	<sup>1</sup> / <sub>2</sub>	1 <sup>1</sup> / <sub>2</sub>	7	2 <sup>1</sup> / <sub>4</sub>	3 <sup>7</sup> / <sub>16</sub>	7 <sup>15</sup> / <sub>16</sub>

Table 3 — Envelope and Mounting Dimensions

Table 1—Envelope and Mounting Dimensions—Styles JB and HB

Bore	E	EB	EE		F	G	J	K	TE	Add Stroke	
			NPTF <sup>o</sup>	SAE*						LB	P
8	8 <sup>1</sup> / <sub>2</sub>	1 <sup>1</sup> / <sub>16</sub>	<sup>3</sup> / <sub>4</sub>	12	<sup>3</sup> / <sub>4</sub>	2	1 <sup>1</sup> / <sub>2</sub>	<sup>9</sup> / <sub>16</sub>	7.57	5 <sup>7</sup> / <sub>8</sub>	3 <sup>1</sup> / <sub>4</sub>

<sup>o</sup> NPTF ports will be furnished as standard unless SAE straight thread ports are specified.

\* SAE straight thread ports are indicated by port number.

Table 2—Rod Dimensions—Styles JB and HB

Bore	Rod No.	Rod Dia. MM	Thread		Rod Extensions and Pilot Dimensions								TT	WF	Y	Add Stroke		
			Style 8 CC	Style 4 & 9 KK	A	+0.000 -.002 B	C	D	LA	NA	V	W				XK	ZB	ZJ
8	1(Std.)	2	1 <sup>3</sup> / <sub>4</sub> -12	1 <sup>1</sup> / <sub>2</sub> -12	2 <sup>1</sup> / <sub>4</sub>	2.624	<sup>7</sup> / <sub>8</sub>	1 <sup>11</sup> / <sub>16</sub>	3 <sup>1</sup> / <sub>2</sub>	1 <sup>5</sup> / <sub>16</sub>	<sup>3</sup> / <sub>8</sub>	1 <sup>1</sup> / <sub>4</sub>	4	2	3 <sup>3</sup> / <sub>16</sub>	5 <sup>5</sup> / <sub>8</sub>	7 <sup>11</sup> / <sub>16</sub>	7 <sup>1</sup> / <sub>8</sub>
	2	5 <sup>1</sup> / <sub>2</sub>	5 <sup>1</sup> / <sub>4</sub> -12	4-12	5 <sup>1</sup> / <sub>2</sub>	6.249	1	4 <sup>5</sup> / <sub>8</sub>	7	5 <sup>3</sup> / <sub>8</sub>	<sup>1</sup> / <sub>2</sub>	1 <sup>1</sup> / <sub>2</sub>	7	2 <sup>1</sup> / <sub>4</sub>	3 <sup>7</sup> / <sub>16</sub>	5 <sup>7</sup> / <sub>8</sub>	7 <sup>15</sup> / <sub>16</sub>	7 <sup>3</sup> / <sub>8</sub>
	3	2 <sup>1</sup> / <sub>2</sub>	2 <sup>1</sup> / <sub>4</sub> -12	1 <sup>7</sup> / <sub>8</sub> -12	3	3.124	1	2 <sup>1</sup> / <sub>16</sub>	4 <sup>1</sup> / <sub>2</sub>	2 <sup>3</sup> / <sub>8</sub>	<sup>1</sup> / <sub>2</sub>	1 <sup>1</sup> / <sub>2</sub>	4	2 <sup>1</sup> / <sub>4</sub>	3 <sup>7</sup> / <sub>16</sub>	5 <sup>7</sup> / <sub>8</sub>	7 <sup>15</sup> / <sub>16</sub>	7 <sup>3</sup> / <sub>8</sub>
	4	3	2 <sup>3</sup> / <sub>4</sub> -12	2 <sup>1</sup> / <sub>4</sub> -12	3 <sup>1</sup> / <sub>2</sub>	3.749	1	2 <sup>5</sup> / <sub>8</sub>	5	2 <sup>7</sup> / <sub>8</sub>	<sup>1</sup> / <sub>2</sub>	1 <sup>1</sup> / <sub>2</sub>	5 <sup>1</sup> / <sub>2</sub>	2 <sup>1</sup> / <sub>4</sub>	3 <sup>7</sup> / <sub>16</sub>	5 <sup>7</sup> / <sub>8</sub>	7 <sup>15</sup> / <sub>16</sub>	7 <sup>3</sup> / <sub>8</sub>
	5	3 <sup>1</sup> / <sub>2</sub>	3 <sup>1</sup> / <sub>4</sub> -12	2 <sup>1</sup> / <sub>2</sub> -12	3 <sup>1</sup> / <sub>2</sub>	4.249	1	3	5	3 <sup>3</sup> / <sub>8</sub>	<sup>1</sup> / <sub>2</sub>	1 <sup>1</sup> / <sub>2</sub>	5 <sup>1</sup> / <sub>2</sub>	2 <sup>1</sup> / <sub>4</sub>	3 <sup>7</sup> / <sub>16</sub>	5 <sup>7</sup> / <sub>8</sub>	7 <sup>15</sup> / <sub>16</sub>	7 <sup>3</sup> / <sub>8</sub>
	6	4	3 <sup>3</sup> / <sub>4</sub> -12	3-12	4	4.749	1	3 <sup>3</sup> / <sub>8</sub>	5 <sup>1</sup> / <sub>2</sub>	3 <sup>7</sup> / <sub>8</sub>	<sup>1</sup> / <sub>2</sub>	1 <sup>1</sup> / <sub>2</sub>	5 <sup>1</sup> / <sub>2</sub>	2 <sup>1</sup> / <sub>4</sub>	3 <sup>7</sup> / <sub>16</sub>	5 <sup>7</sup> / <sub>8</sub>	7 <sup>15</sup> / <sub>16</sub>	7 <sup>3</sup> / <sub>8</sub>
	7	1 <sup>3</sup> / <sub>8</sub>	1 <sup>1</sup> / <sub>4</sub> -12	1-14	1 <sup>5</sup> / <sub>8</sub>	1.999	<sup>5</sup> / <sub>8</sub>	1 <sup>1</sup> / <sub>8</sub>	2 <sup>1</sup> / <sub>2</sub>	1 <sup>5</sup> / <sub>16</sub>	<sup>1</sup> / <sub>4</sub>	<sup>7</sup> / <sub>8</sub>	4	1 <sup>5</sup> / <sub>8</sub>	2 <sup>13</sup> / <sub>16</sub>	5 <sup>1</sup> / <sub>4</sub>	7 <sup>5</sup> / <sub>16</sub>	6 <sup>3</sup> / <sub>4</sub>
	8	1 <sup>3</sup> / <sub>4</sub>	1 <sup>1</sup> / <sub>2</sub> -12	1 <sup>1</sup> / <sub>4</sub> -12	2	2.374	<sup>3</sup> / <sub>4</sub>	1 <sup>1</sup> / <sub>2</sub>	3 <sup>1</sup> / <sub>8</sub>	1 <sup>11</sup> / <sub>16</sub>	<sup>3</sup> / <sub>8</sub>	1 <sup>1</sup> / <sub>8</sub>	4	1 <sup>7</sup> / <sub>8</sub>	3 <sup>1</sup> / <sub>16</sub>	5 <sup>1</sup> / <sub>2</sub>	7 <sup>9</sup> / <sub>16</sub>	7
	9	4 <sup>1</sup> / <sub>2</sub>	4 <sup>1</sup> / <sub>4</sub> -12	3 <sup>1</sup> / <sub>4</sub> -12	4 <sup>1</sup> / <sub>2</sub>	5.249	1	3 <sup>7</sup> / <sub>8</sub>	6	4 <sup>3</sup> / <sub>8</sub>	<sup>1</sup> / <sub>2</sub>	1 <sup>1</sup> / <sub>2</sub>	7	2 <sup>1</sup> / <sub>4</sub>	3 <sup>7</sup> / <sub>16</sub>	5 <sup>7</sup> / <sub>8</sub>	7 <sup>15</sup> / <sub>16</sub>	7 <sup>3</sup> / <sub>8</sub>
	0	5	4 <sup>3</sup> / <sub>4</sub> -12	3 <sup>1</sup> / <sub>2</sub> -12	5	5.749	1	4 <sup>1</sup> / <sub>4</sub>	6 <sup>1</sup> / <sub>2</sub>	4 <sup>7</sup> / <sub>8</sub>	<sup>1</sup> / <sub>2</sub>	1 <sup>1</sup> / <sub>2</sub>	7	2 <sup>1</sup> / <sub>4</sub>	3 <sup>7</sup> / <sub>16</sub>	5 <sup>7</sup> / <sub>8</sub>	7 <sup>15</sup> / <sub>16</sub>	7 <sup>3</sup> / <sub>8</sub>

Table 3 — Envelope and Mounting Dimensions

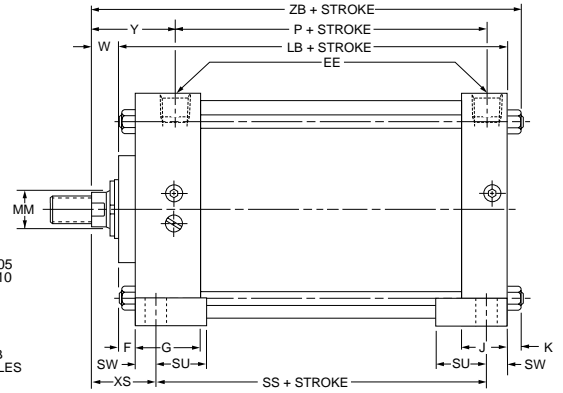
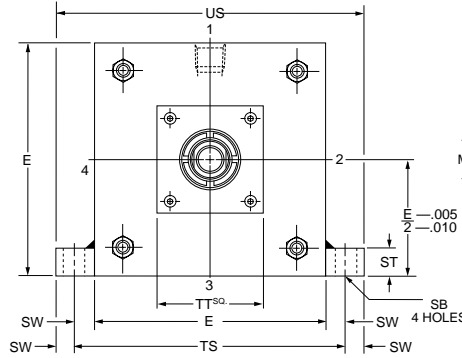
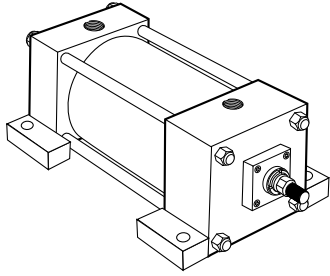
For Cylinder Division Plant Locations – See Page II.



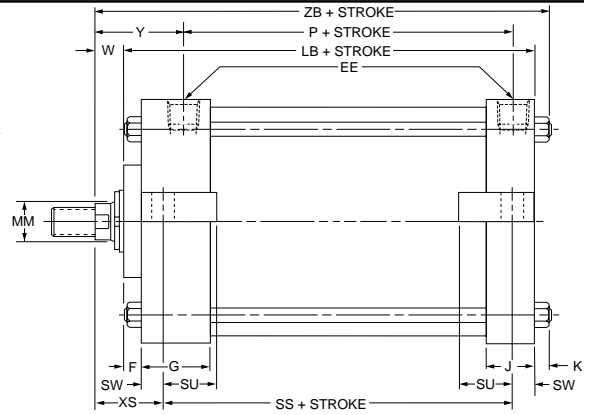
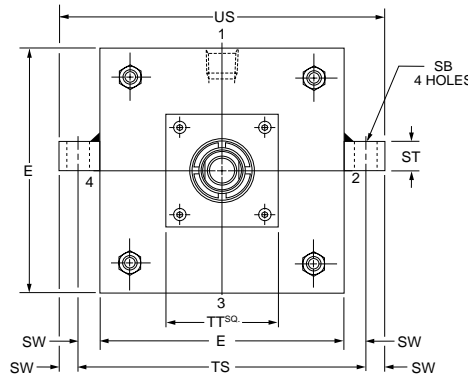
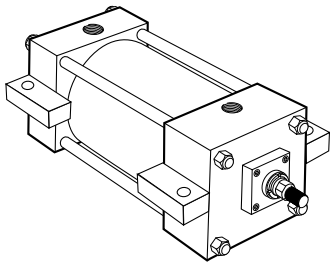
Side Lugs and  
Centerline Lugs Mountings  
8" Bore Size

# Series 3L Medium Duty Hydraulic Cylinders

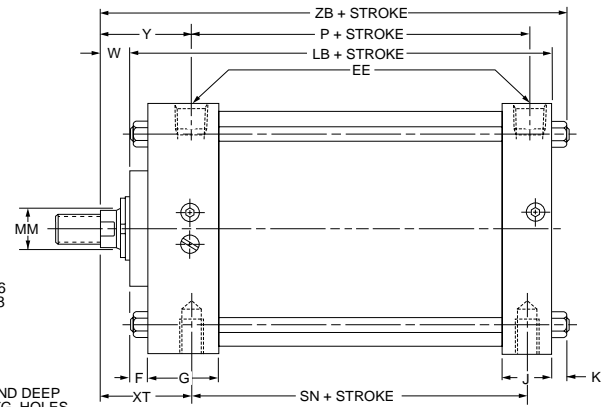
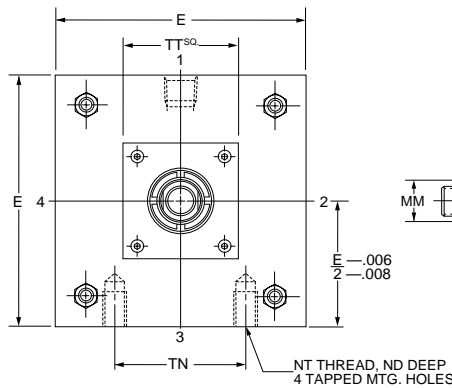
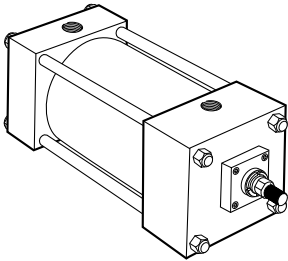
Side Lugs  
Style C  
(NFPA Style MS2)



Centerline Lugs  
Style E  
(NFPA Style MS3)

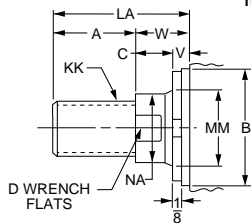


Side Tapped  
Style F  
(NFPA Style MS4)

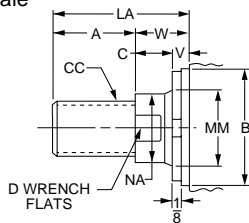


Rod End Dimensions — see tables 2 and 5

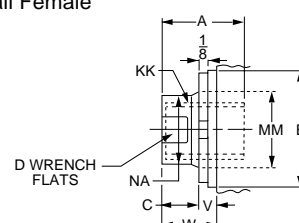
Thread Style 4  
(NFPA Style SM)  
Small Male



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 dimensional 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.

# Series 3L Medium Duty Hydraulic Cylinders

Side Lugs and  
Centerline Lugs Mountings  
8" Bore Size

Table 1—Envelope and Mounting Dimensions—Styles C and E

Bore	E	EE		F	G	J	K	SB*	ST	SU	SW	TS	US	Add Stroke		
		NPTF <sup>o</sup>	SAE*											LB	P	SS
8	8 <sup>1</sup> / <sub>2</sub>	<sup>3</sup> / <sub>4</sub>	12	<sup>3</sup> / <sub>4</sub>	2	1 <sup>1</sup> / <sub>2</sub>	<sup>9</sup> / <sub>16</sub>	<sup>13</sup> / <sub>16</sub>	1	1 <sup>9</sup> / <sub>16</sub>	<sup>11</sup> / <sub>16</sub>	9 <sup>7</sup> / <sub>8</sub>	11 <sup>1</sup> / <sub>4</sub>	5 <sup>7</sup> / <sub>8</sub>	3 <sup>1</sup> / <sub>4</sub>	3 <sup>3</sup> / <sub>4</sub>

<sup>o</sup> NPTF ports will be furnished as standard unless SAE straight thread ports are specified.

\* SAE straight thread ports are indicated by port number.

\* Upper surface spot-faced for socket-head screws.

Table 2—Rod Dimensions—Styles C and E

Bore	Rod No.	Rod Dia. MM	Thread		Rod Extensions and Pilot Dimensions								TT	XS	Y	Add Stroke ZB
			Style 8 CC	Style 4 & 9 KK	A	+0.000 -.002 B	C	D	LA	NA	V	W				
8	1(Std.)	2	1 <sup>3</sup> / <sub>4</sub> -12	1 <sup>1</sup> / <sub>2</sub> -12	2 <sup>1</sup> / <sub>4</sub>	2.624	<sup>7</sup> / <sub>8</sub>	1 <sup>11</sup> / <sub>16</sub>	3 <sup>1</sup> / <sub>2</sub>	1 <sup>15</sup> / <sub>16</sub>	<sup>3</sup> / <sub>8</sub>	1 <sup>1</sup> / <sub>4</sub>	4	2 <sup>11</sup> / <sub>16</sub>	3 <sup>3</sup> / <sub>16</sub>	7 <sup>11</sup> / <sub>16</sub>
	2	5 <sup>1</sup> / <sub>2</sub>	5 <sup>1</sup> / <sub>4</sub> -12	4-12	5 <sup>1</sup> / <sub>2</sub>	6.249	1	4 <sup>5</sup> / <sub>8</sub>	7	5 <sup>3</sup> / <sub>8</sub>	<sup>1</sup> / <sub>2</sub>	1 <sup>1</sup> / <sub>2</sub>	7	2 <sup>15</sup> / <sub>16</sub>	3 <sup>7</sup> / <sub>16</sub>	7 <sup>15</sup> / <sub>16</sub>
	3	2 <sup>1</sup> / <sub>2</sub>	2 <sup>1</sup> / <sub>4</sub> -12	1 <sup>7</sup> / <sub>8</sub> -12	3	3.124	1	2 <sup>1</sup> / <sub>16</sub>	4 <sup>1</sup> / <sub>2</sub>	2 <sup>3</sup> / <sub>8</sub>	<sup>1</sup> / <sub>2</sub>	1 <sup>1</sup> / <sub>2</sub>	4	2 <sup>15</sup> / <sub>16</sub>	3 <sup>7</sup> / <sub>16</sub>	7 <sup>15</sup> / <sub>16</sub>
	4	3	2 <sup>3</sup> / <sub>4</sub> -12	2 <sup>1</sup> / <sub>4</sub> -12	3 <sup>1</sup> / <sub>2</sub>	3.749	1	2 <sup>5</sup> / <sub>8</sub>	5	2 <sup>7</sup> / <sub>8</sub>	<sup>1</sup> / <sub>2</sub>	1 <sup>1</sup> / <sub>2</sub>	5 <sup>1</sup> / <sub>2</sub>	2 <sup>15</sup> / <sub>16</sub>	3 <sup>7</sup> / <sub>16</sub>	7 <sup>15</sup> / <sub>16</sub>
	5	3 <sup>1</sup> / <sub>2</sub>	3 <sup>1</sup> / <sub>4</sub> -12	2 <sup>1</sup> / <sub>2</sub> -12	3 <sup>1</sup> / <sub>2</sub>	4.249	1	3	5	3 <sup>3</sup> / <sub>8</sub>	<sup>1</sup> / <sub>2</sub>	1 <sup>1</sup> / <sub>2</sub>	5 <sup>1</sup> / <sub>2</sub>	2 <sup>15</sup> / <sub>16</sub>	3 <sup>7</sup> / <sub>16</sub>	7 <sup>15</sup> / <sub>16</sub>
	6	4	3 <sup>3</sup> / <sub>4</sub> -12	3-12	4	4.749	1	3 <sup>3</sup> / <sub>8</sub>	5 <sup>1</sup> / <sub>2</sub>	3 <sup>7</sup> / <sub>8</sub>	<sup>1</sup> / <sub>2</sub>	1 <sup>1</sup> / <sub>2</sub>	5 <sup>1</sup> / <sub>2</sub>	2 <sup>15</sup> / <sub>16</sub>	3 <sup>7</sup> / <sub>16</sub>	7 <sup>15</sup> / <sub>16</sub>
	7	1 <sup>3</sup> / <sub>8</sub>	1 <sup>1</sup> / <sub>4</sub> -12	1-14	1 <sup>5</sup> / <sub>8</sub>	1.999	<sup>5</sup> / <sub>8</sub>	1 <sup>1</sup> / <sub>8</sub>	2 <sup>1</sup> / <sub>2</sub>	1 <sup>5</sup> / <sub>16</sub>	<sup>1</sup> / <sub>4</sub>	<sup>7</sup> / <sub>8</sub>	4	2 <sup>5</sup> / <sub>16</sub>	2 <sup>13</sup> / <sub>16</sub>	7 <sup>5</sup> / <sub>16</sub>
	8	1 <sup>3</sup> / <sub>4</sub>	1 <sup>1</sup> / <sub>2</sub> -12	1 <sup>1</sup> / <sub>4</sub> -12	2	2.374	<sup>3</sup> / <sub>4</sub>	1 <sup>1</sup> / <sub>2</sub>	3 <sup>1</sup> / <sub>8</sub>	1 <sup>11</sup> / <sub>16</sub>	<sup>3</sup> / <sub>8</sub>	1 <sup>1</sup> / <sub>8</sub>	4	2 <sup>9</sup> / <sub>16</sub>	3 <sup>1</sup> / <sub>16</sub>	7 <sup>9</sup> / <sub>16</sub>
	9	4 <sup>1</sup> / <sub>2</sub>	4 <sup>1</sup> / <sub>4</sub> -12	3 <sup>1</sup> / <sub>4</sub> -12	4 <sup>1</sup> / <sub>2</sub>	5.249	1	3 <sup>7</sup> / <sub>8</sub>	6	4 <sup>3</sup> / <sub>8</sub>	<sup>1</sup> / <sub>2</sub>	1 <sup>1</sup> / <sub>2</sub>	7	2 <sup>15</sup> / <sub>16</sub>	3 <sup>7</sup> / <sub>16</sub>	7 <sup>15</sup> / <sub>16</sub>
	0	5	4 <sup>3</sup> / <sub>4</sub> -12	3 <sup>1</sup> / <sub>2</sub> -12	5	5.749	1	4 <sup>1</sup> / <sub>4</sub>	6 <sup>1</sup> / <sub>2</sub>	4 <sup>7</sup> / <sub>8</sub>	<sup>1</sup> / <sub>2</sub>	1 <sup>1</sup> / <sub>2</sub>	7	2 <sup>15</sup> / <sub>16</sub>	3 <sup>7</sup> / <sub>16</sub>	7 <sup>15</sup> / <sub>16</sub>

Table 3 — Envelope and Mounting Dimensions

Table 4—Envelope and Mounting Dimensions—Style F

Bore	E	EE		F	G	J	K	ND	NT	TN	Add Stroke		
		NPTF <sup>o</sup>	SAE*								LB	P	SN
8	8 <sup>1</sup> / <sub>2</sub>	<sup>3</sup> / <sub>4</sub>	12	<sup>3</sup> / <sub>4</sub>	2	1 <sup>1</sup> / <sub>2</sub>	<sup>9</sup> / <sub>16</sub>	1 <sup>1</sup> / <sub>8</sub>	<sup>3</sup> / <sub>4</sub> -10	4 <sup>1</sup> / <sub>2</sub>	5 <sup>7</sup> / <sub>8</sub>	3 <sup>1</sup> / <sub>4</sub>	3 <sup>1</sup> / <sub>4</sub>

<sup>o</sup> NPTF ports will be furnished as standard unless SAE straight thread ports are specified.

\* SAE straight thread ports are indicated by port number.

Table 5—Rod Dimensions—Style F

Bore	Rod No.	Rod Dia. MM	Thread		Rod Extensions and Pilot Dimensions								TT	XT	Y	Add Stroke ZB
			Style 8 CC	Style 4 & 9 KK	A	+0.000 -.002 B	C	D	LA	NA	V	W				
8	1(Std.)	2	1 <sup>3</sup> / <sub>4</sub> -12	1 <sup>1</sup> / <sub>2</sub> -12	2 <sup>1</sup> / <sub>4</sub>	2.624	<sup>7</sup> / <sub>8</sub>	1 <sup>11</sup> / <sub>16</sub>	3 <sup>1</sup> / <sub>2</sub>	1 <sup>15</sup> / <sub>16</sub>	<sup>3</sup> / <sub>8</sub>	1 <sup>1</sup> / <sub>4</sub>	4	3 <sup>3</sup> / <sub>16</sub>	3 <sup>3</sup> / <sub>16</sub>	7 <sup>11</sup> / <sub>16</sub>
	2	5 <sup>1</sup> / <sub>2</sub>	5 <sup>1</sup> / <sub>4</sub> -12	4-12	5 <sup>1</sup> / <sub>2</sub>	6.249	1	4 <sup>5</sup> / <sub>8</sub>	7	5 <sup>3</sup> / <sub>8</sub>	<sup>1</sup> / <sub>2</sub>	1 <sup>1</sup> / <sub>2</sub>	7	3 <sup>7</sup> / <sub>16</sub>	3 <sup>7</sup> / <sub>16</sub>	7 <sup>15</sup> / <sub>16</sub>
	3	2 <sup>1</sup> / <sub>2</sub>	2 <sup>1</sup> / <sub>4</sub> -12	1 <sup>7</sup> / <sub>8</sub> -12	3	3.124	1	2 <sup>1</sup> / <sub>16</sub>	4 <sup>1</sup> / <sub>2</sub>	2 <sup>3</sup> / <sub>8</sub>	<sup>1</sup> / <sub>2</sub>	1 <sup>1</sup> / <sub>2</sub>	4	3 <sup>7</sup> / <sub>16</sub>	3 <sup>7</sup> / <sub>16</sub>	7 <sup>15</sup> / <sub>16</sub>
	4	3	2 <sup>3</sup> / <sub>4</sub> -12	2 <sup>1</sup> / <sub>4</sub> -12	3 <sup>1</sup> / <sub>2</sub>	3.749	1	2 <sup>5</sup> / <sub>8</sub>	5	2 <sup>7</sup> / <sub>8</sub>	<sup>1</sup> / <sub>2</sub>	1 <sup>1</sup> / <sub>2</sub>	5 <sup>1</sup> / <sub>2</sub>	3 <sup>7</sup> / <sub>16</sub>	3 <sup>7</sup> / <sub>16</sub>	7 <sup>15</sup> / <sub>16</sub>
	5	3 <sup>1</sup> / <sub>2</sub>	3 <sup>1</sup> / <sub>4</sub> -12	2 <sup>1</sup> / <sub>2</sub> -12	3 <sup>1</sup> / <sub>2</sub>	4.249	1	3	5	3 <sup>3</sup> / <sub>8</sub>	<sup>1</sup> / <sub>2</sub>	1 <sup>1</sup> / <sub>2</sub>	5 <sup>1</sup> / <sub>2</sub>	3 <sup>7</sup> / <sub>16</sub>	3 <sup>7</sup> / <sub>16</sub>	7 <sup>15</sup> / <sub>16</sub>
	6	4	3 <sup>3</sup> / <sub>4</sub> -12	3-12	4	4.749	1	3 <sup>3</sup> / <sub>8</sub>	5 <sup>1</sup> / <sub>2</sub>	3 <sup>7</sup> / <sub>8</sub>	<sup>1</sup> / <sub>2</sub>	1 <sup>1</sup> / <sub>2</sub>	5 <sup>1</sup> / <sub>2</sub>	3 <sup>7</sup> / <sub>16</sub>	3 <sup>7</sup> / <sub>16</sub>	7 <sup>15</sup> / <sub>16</sub>
	7	1 <sup>3</sup> / <sub>8</sub>	1 <sup>1</sup> / <sub>4</sub> -12	1-14	1 <sup>5</sup> / <sub>8</sub>	1.999	<sup>5</sup> / <sub>8</sub>	1 <sup>1</sup> / <sub>8</sub>	2 <sup>1</sup> / <sub>2</sub>	1 <sup>5</sup> / <sub>16</sub>	<sup>1</sup> / <sub>4</sub>	<sup>7</sup> / <sub>8</sub>	4	2 <sup>13</sup> / <sub>16</sub>	2 <sup>13</sup> / <sub>16</sub>	7 <sup>5</sup> / <sub>16</sub>
	8	1 <sup>3</sup> / <sub>4</sub>	1 <sup>1</sup> / <sub>2</sub> -12	1 <sup>1</sup> / <sub>4</sub> -12	2	2.374	<sup>3</sup> / <sub>4</sub>	1 <sup>1</sup> / <sub>2</sub>	3 <sup>1</sup> / <sub>8</sub>	1 <sup>11</sup> / <sub>16</sub>	<sup>3</sup> / <sub>8</sub>	1 <sup>1</sup> / <sub>8</sub>	4	3 <sup>1</sup> / <sub>16</sub>	3 <sup>1</sup> / <sub>16</sub>	7 <sup>9</sup> / <sub>16</sub>
	9	4 <sup>1</sup> / <sub>2</sub>	4 <sup>1</sup> / <sub>4</sub> -12	3 <sup>1</sup> / <sub>4</sub> -12	4 <sup>1</sup> / <sub>2</sub>	5.249	1	3 <sup>7</sup> / <sub>8</sub>	6	4 <sup>3</sup> / <sub>8</sub>	<sup>1</sup> / <sub>2</sub>	1 <sup>1</sup> / <sub>2</sub>	7	3 <sup>7</sup> / <sub>16</sub>	3 <sup>7</sup> / <sub>16</sub>	7 <sup>15</sup> / <sub>16</sub>
	0	5	4 <sup>3</sup> / <sub>4</sub> -12	3 <sup>1</sup> / <sub>2</sub> -12	5	5.749	1	4 <sup>1</sup> / <sub>4</sub>	6 <sup>1</sup> / <sub>2</sub>	4 <sup>7</sup> / <sub>8</sub>	<sup>1</sup> / <sub>2</sub>	1 <sup>1</sup> / <sub>2</sub>	7	3 <sup>7</sup> / <sub>16</sub>	3 <sup>7</sup> / <sub>16</sub>	7 <sup>15</sup> / <sub>16</sub>

Table 6 — Envelope and Mounting Dimensions

For Cylinder Division Plant Locations – See Page II.

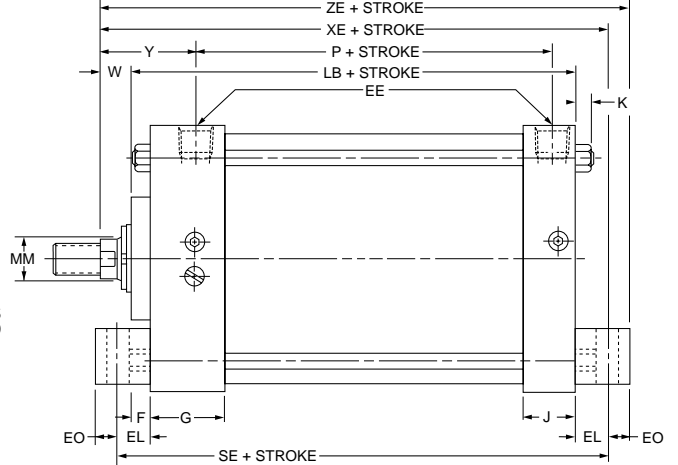
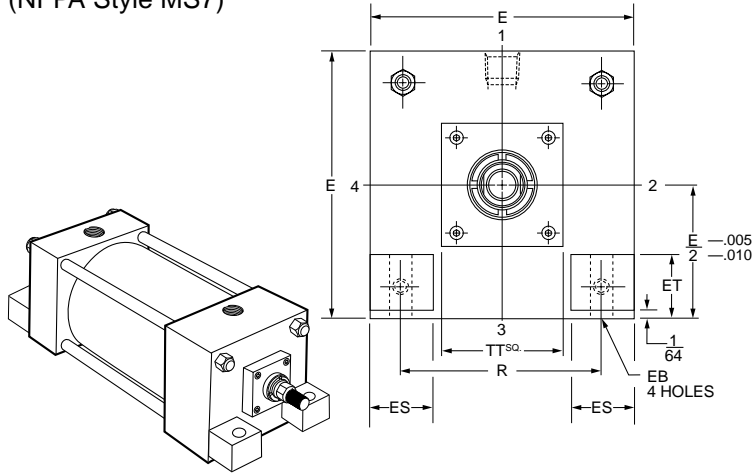


B

Side End Lugs and Clevis Mountings  
8" Bore Size

# Series 3L Medium Duty Hydraulic Cylinders

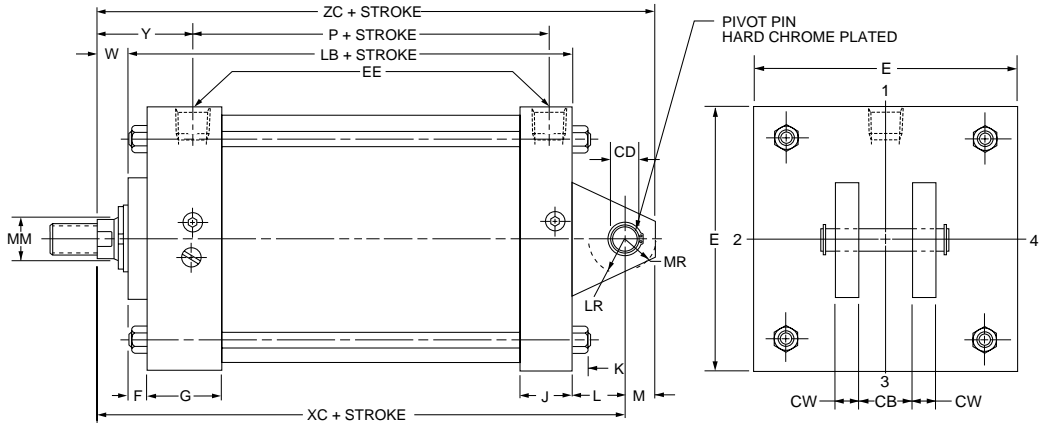
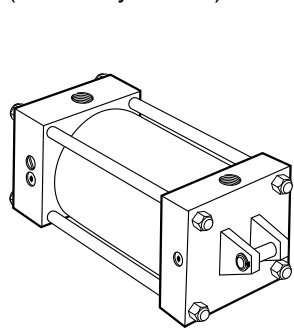
Side End Lugs  
Style G  
(NFA Style MS7)



Cylinders with this mounting style are mounted on the precision ground surfaces of the head and cap. There must be a minimum gap of at least 1/64 of an inch between the bottom of the lug and the mounting surface before the mounting bolts are tightened.

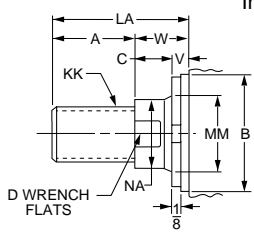
This mounting not offered in 8" bore size, rod codes #2, 4, 5, 6, 9, and 0.

Cap Fixed Clevis  
Style BB  
(NFA Style MP1)

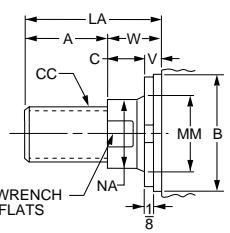


Rod End Dimensions — see tables 2 and 5

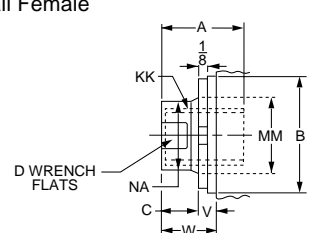
Thread Style 4  
(NFA Style SM)  
Small Male



Thread Style 8  
(NFA Style IM)  
Intermediate Male



Thread Style 9  
(NFA 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 dimensional 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.



# Series 3L Medium Duty Hydraulic Cylinders

Side End Lugs and  
Clevis Mountings  
8" Bore Size

Table 1—Envelope and Mounting Dimensions—Style G

Bore	E	EB	EE		EL	EO	ES	ET	F	G	J	K	NT	R	Add Stroke		
			NPTF <sup>o</sup>	SAE*											LB	P	SE
8	8 <sup>1</sup> / <sub>2</sub>	1 <sup>1</sup> / <sub>16</sub>	3 <sup>3</sup> / <sub>4</sub>	12	1 <sup>1</sup> / <sub>8</sub>	5 <sup>5</sup> / <sub>8</sub>	2 <sup>1</sup> / <sub>4</sub>	1 <sup>15</sup> / <sub>16</sub>	3 <sup>3</sup> / <sub>4</sub>	2	1 <sup>1</sup> / <sub>2</sub>	9 <sup>9</sup> / <sub>16</sub>	3 <sup>3</sup> / <sub>4</sub> -10	6.44	5 <sup>7</sup> / <sub>8</sub>	3 <sup>3</sup> / <sub>4</sub>	7 <sup>7</sup> / <sub>8</sub>

<sup>o</sup> NPTF ports will be furnished as standard unless SAE straight thread ports are specified.

\* SAE straight thread ports are indicated by port number.

Table 2—Rod Dimensions—Style G

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	LA	NA	V	W	TT	Y	XE	ZE
8	1(Std.)	2	1 <sup>3</sup> / <sub>4</sub> -12	1 <sup>1</sup> / <sub>2</sub> -12	2 <sup>1</sup> / <sub>4</sub>	2.624	7 <sup>7</sup> / <sub>8</sub>	1 <sup>11</sup> / <sub>16</sub>	3 <sup>3</sup> / <sub>2</sub>	1 <sup>15</sup> / <sub>16</sub>	3 <sup>3</sup> / <sub>8</sub>	1 <sup>1</sup> / <sub>4</sub>	4	3 <sup>3</sup> / <sub>16</sub>	8 <sup>1</sup> / <sub>4</sub>	8 <sup>7</sup> / <sub>8</sub>
	2	5 <sup>1</sup> / <sub>2</sub>	5 <sup>1</sup> / <sub>4</sub> -12	4-12	5 <sup>1</sup> / <sub>2</sub>	6.249	1	4 <sup>5</sup> / <sub>8</sub>	7	5 <sup>3</sup> / <sub>8</sub>	1 <sup>1</sup> / <sub>2</sub>	1 <sup>1</sup> / <sub>2</sub>	*	*	*	*
	3	2 <sup>1</sup> / <sub>2</sub>	2 <sup>1</sup> / <sub>4</sub> -12	1 <sup>7</sup> / <sub>8</sub> -12	3	3.124	1	2 <sup>1</sup> / <sub>16</sub>	4 <sup>1</sup> / <sub>2</sub>	2 <sup>3</sup> / <sub>8</sub>	1 <sup>1</sup> / <sub>2</sub>	1 <sup>1</sup> / <sub>2</sub>	4	3 <sup>7</sup> / <sub>16</sub>	8 <sup>1</sup> / <sub>2</sub>	9 <sup>1</sup> / <sub>8</sub>
	4	3	2 <sup>3</sup> / <sub>4</sub> -12	2 <sup>1</sup> / <sub>4</sub> -12	3 <sup>1</sup> / <sub>2</sub>	3.749	1	2 <sup>5</sup> / <sub>8</sub>	5	2 <sup>7</sup> / <sub>8</sub>	1 <sup>1</sup> / <sub>2</sub>	1 <sup>1</sup> / <sub>2</sub>	*	*	*	*
	5	3 <sup>1</sup> / <sub>2</sub>	3 <sup>1</sup> / <sub>4</sub> -12	2 <sup>1</sup> / <sub>2</sub> -12	3 <sup>1</sup> / <sub>2</sub>	4.249	1	3	5	3 <sup>3</sup> / <sub>8</sub>	1 <sup>1</sup> / <sub>2</sub>	1 <sup>1</sup> / <sub>2</sub>	*	*	*	*
	6	4	3 <sup>3</sup> / <sub>4</sub> -12	3-12	4	4.749	1	3 <sup>3</sup> / <sub>8</sub>	5 <sup>1</sup> / <sub>2</sub>	3 <sup>7</sup> / <sub>8</sub>	1 <sup>1</sup> / <sub>2</sub>	1 <sup>1</sup> / <sub>2</sub>	*	*	*	*
	7	1 <sup>3</sup> / <sub>8</sub>	1 <sup>1</sup> / <sub>4</sub> -12	1-14	1 <sup>5</sup> / <sub>8</sub>	1.999	5 <sup>5</sup> / <sub>8</sub>	1 <sup>1</sup> / <sub>8</sub>	2 <sup>1</sup> / <sub>2</sub>	1 <sup>5</sup> / <sub>16</sub>	1 <sup>1</sup> / <sub>4</sub>	7 <sup>7</sup> / <sub>8</sub>	4	2 <sup>13</sup> / <sub>16</sub>	7 <sup>7</sup> / <sub>8</sub>	8 <sup>1</sup> / <sub>2</sub>
	8	1 <sup>3</sup> / <sub>4</sub>	1 <sup>1</sup> / <sub>2</sub> -12	1 <sup>1</sup> / <sub>4</sub> -12	2	2.374	3 <sup>3</sup> / <sub>4</sub>	1 <sup>1</sup> / <sub>2</sub>	3 <sup>1</sup> / <sub>8</sub>	1 <sup>11</sup> / <sub>16</sub>	3 <sup>3</sup> / <sub>8</sub>	1 <sup>1</sup> / <sub>8</sub>	4	3 <sup>1</sup> / <sub>16</sub>	8 <sup>1</sup> / <sub>8</sub>	8 <sup>3</sup> / <sub>4</sub>
	9	4 <sup>1</sup> / <sub>2</sub>	4 <sup>1</sup> / <sub>4</sub> -12	3 <sup>1</sup> / <sub>4</sub> -12	4 <sup>1</sup> / <sub>2</sub>	5.249	1	3 <sup>7</sup> / <sub>8</sub>	6	4 <sup>3</sup> / <sub>8</sub>	1 <sup>1</sup> / <sub>2</sub>	1 <sup>1</sup> / <sub>2</sub>	7	3 <sup>7</sup> / <sub>16</sub>	*	*
0	5	4 <sup>3</sup> / <sub>4</sub> -12	3 <sup>1</sup> / <sub>2</sub> -12	5	5.749	1	4 <sup>1</sup> / <sub>4</sub>	6 <sup>1</sup> / <sub>2</sub>	4 <sup>7</sup> / <sub>8</sub>	1 <sup>1</sup> / <sub>2</sub>	1 <sup>1</sup> / <sub>2</sub>	*	*	*	*	

\* Mounting style G not offered in this rod size.

Caution: When using mounting style G, check clearance between mounting members and rod attachment or accessory. If necessary, specify longer rod extension to avoid interference with mounting members.

Table 3 — Envelope and Mounting Dimensions

Table 4—Envelope and Mounting Dimensions—Style BB

Bore	CB	+0.000 -.002 CD*	CW	E	EE		F	G	J	K	L	LR	M	Add Stroke		
					NPTF <sup>o</sup>	SAE*								MR	LB	P
8	1 <sup>1</sup> / <sub>2</sub>	1.001	3 <sup>3</sup> / <sub>4</sub>	8 <sup>1</sup> / <sub>2</sub>	3 <sup>3</sup> / <sub>4</sub>	12	3 <sup>3</sup> / <sub>4</sub>	2	1 <sup>1</sup> / <sub>2</sub>	9 <sup>9</sup> / <sub>16</sub>	1 <sup>1</sup> / <sub>2</sub>	1 <sup>1</sup> / <sub>4</sub>	1	1 <sup>3</sup> / <sub>16</sub>	5 <sup>7</sup> / <sub>8</sub>	3 <sup>3</sup> / <sub>4</sub>

<sup>o</sup> NPTF ports will be furnished as standard unless SAE straight thread ports are specified.

\* SAE straight thread ports are indicated by port number.

\* Dimension CD is pin diameter.

Table 5—Rod Dimensions—Style BB

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	LA	NA	V	W	Y	XC	ZC
8	1(Std.)	2	1 <sup>3</sup> / <sub>4</sub> -12	1 <sup>1</sup> / <sub>2</sub> -12	2 <sup>1</sup> / <sub>4</sub>	2.624	7 <sup>7</sup> / <sub>8</sub>	1 <sup>11</sup> / <sub>16</sub>	3 <sup>3</sup> / <sub>2</sub>	1 <sup>15</sup> / <sub>16</sub>	3 <sup>3</sup> / <sub>8</sub>	1 <sup>1</sup> / <sub>4</sub>	3 <sup>3</sup> / <sub>16</sub>	8 <sup>5</sup> / <sub>8</sub>	9 <sup>5</sup> / <sub>8</sub>
	2	5 <sup>1</sup> / <sub>2</sub>	5 <sup>1</sup> / <sub>4</sub> -12	4-12	5 <sup>1</sup> / <sub>2</sub>	6.249	1	4 <sup>5</sup> / <sub>8</sub>	7	5 <sup>3</sup> / <sub>8</sub>	1 <sup>1</sup> / <sub>2</sub>	1 <sup>1</sup> / <sub>2</sub>	3 <sup>7</sup> / <sub>16</sub>	8 <sup>7</sup> / <sub>8</sub>	9 <sup>7</sup> / <sub>8</sub>
	3	2 <sup>1</sup> / <sub>2</sub>	2 <sup>1</sup> / <sub>4</sub> -12	1 <sup>7</sup> / <sub>8</sub> -12	3	3.124	1	2 <sup>1</sup> / <sub>16</sub>	4 <sup>1</sup> / <sub>2</sub>	2 <sup>3</sup> / <sub>8</sub>	1 <sup>1</sup> / <sub>2</sub>	1 <sup>1</sup> / <sub>2</sub>	3 <sup>7</sup> / <sub>16</sub>	8 <sup>7</sup> / <sub>8</sub>	9 <sup>7</sup> / <sub>8</sub>
	4	3	2 <sup>3</sup> / <sub>4</sub> -12	2 <sup>1</sup> / <sub>4</sub> -12	3 <sup>1</sup> / <sub>2</sub>	3.749	1	2 <sup>5</sup> / <sub>8</sub>	5	2 <sup>7</sup> / <sub>8</sub>	1 <sup>1</sup> / <sub>2</sub>	1 <sup>1</sup> / <sub>2</sub>	3 <sup>7</sup> / <sub>16</sub>	8 <sup>7</sup> / <sub>8</sub>	9 <sup>7</sup> / <sub>8</sub>
	5	3 <sup>1</sup> / <sub>2</sub>	3 <sup>1</sup> / <sub>4</sub> -12	2 <sup>1</sup> / <sub>2</sub> -12	3 <sup>1</sup> / <sub>2</sub>	4.249	1	3	5	3 <sup>3</sup> / <sub>8</sub>	1 <sup>1</sup> / <sub>2</sub>	1 <sup>1</sup> / <sub>2</sub>	3 <sup>7</sup> / <sub>16</sub>	8 <sup>7</sup> / <sub>8</sub>	9 <sup>7</sup> / <sub>8</sub>
	6	4	3 <sup>3</sup> / <sub>4</sub> -12	3-12	4	4.749	1	3 <sup>3</sup> / <sub>8</sub>	5 <sup>1</sup> / <sub>2</sub>	3 <sup>7</sup> / <sub>8</sub>	1 <sup>1</sup> / <sub>2</sub>	1 <sup>1</sup> / <sub>2</sub>	3 <sup>7</sup> / <sub>16</sub>	8 <sup>7</sup> / <sub>8</sub>	9 <sup>7</sup> / <sub>8</sub>
	7	1 <sup>3</sup> / <sub>8</sub>	1 <sup>1</sup> / <sub>4</sub> -12	1-14	1 <sup>5</sup> / <sub>8</sub>	1.999	5 <sup>5</sup> / <sub>8</sub>	1 <sup>1</sup> / <sub>8</sub>	2 <sup>1</sup> / <sub>2</sub>	1 <sup>5</sup> / <sub>16</sub>	1 <sup>1</sup> / <sub>4</sub>	7 <sup>7</sup> / <sub>8</sub>	2 <sup>13</sup> / <sub>16</sub>	8 <sup>1</sup> / <sub>4</sub>	9 <sup>1</sup> / <sub>4</sub>
	8	1 <sup>3</sup> / <sub>4</sub>	1 <sup>1</sup> / <sub>2</sub> -12	1 <sup>1</sup> / <sub>4</sub> -12	2	2.374	3 <sup>3</sup> / <sub>4</sub>	1 <sup>1</sup> / <sub>2</sub>	3 <sup>1</sup> / <sub>8</sub>	1 <sup>11</sup> / <sub>16</sub>	3 <sup>3</sup> / <sub>8</sub>	1 <sup>1</sup> / <sub>8</sub>	3 <sup>1</sup> / <sub>16</sub>	8 <sup>1</sup> / <sub>2</sub>	9 <sup>1</sup> / <sub>2</sub>
	9	4 <sup>1</sup> / <sub>2</sub>	4 <sup>1</sup> / <sub>4</sub> -12	3 <sup>1</sup> / <sub>4</sub> -12	4 <sup>1</sup> / <sub>2</sub>	5.249	1	3 <sup>7</sup> / <sub>8</sub>	6	4 <sup>3</sup> / <sub>8</sub>	1 <sup>1</sup> / <sub>2</sub>	1 <sup>1</sup> / <sub>2</sub>	3 <sup>7</sup> / <sub>16</sub>	8 <sup>7</sup> / <sub>8</sub>	9 <sup>7</sup> / <sub>8</sub>
0	5	4 <sup>3</sup> / <sub>4</sub> -12	3 <sup>1</sup> / <sub>2</sub> -12	5	5.749	1	4 <sup>1</sup> / <sub>4</sub>	6 <sup>1</sup> / <sub>2</sub>	4 <sup>7</sup> / <sub>8</sub>	1 <sup>1</sup> / <sub>2</sub>	1 <sup>1</sup> / <sub>2</sub>	3 <sup>7</sup> / <sub>16</sub>	8 <sup>7</sup> / <sub>8</sub>	9 <sup>7</sup> / <sub>8</sub>	

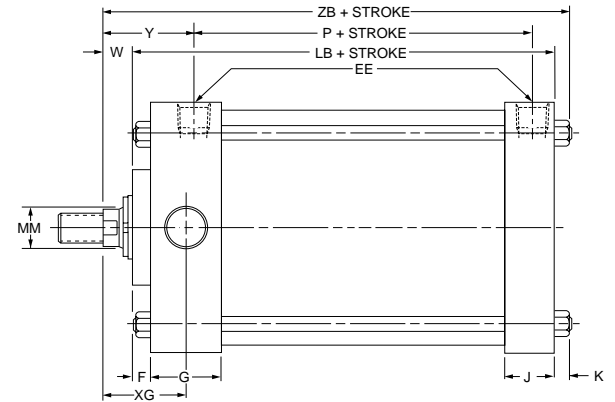
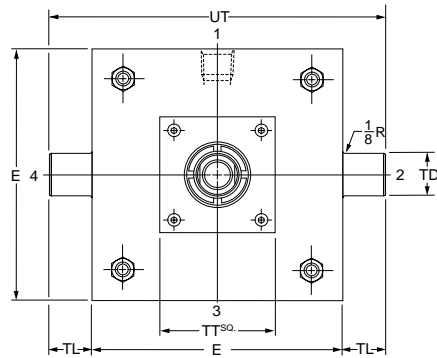
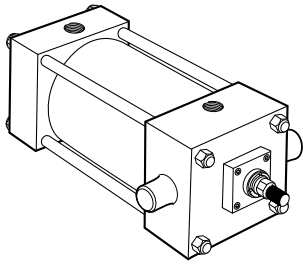
Table 6 — Envelope and Mounting Dimensions

For Cylinder Division Plant Locations – See Page II.

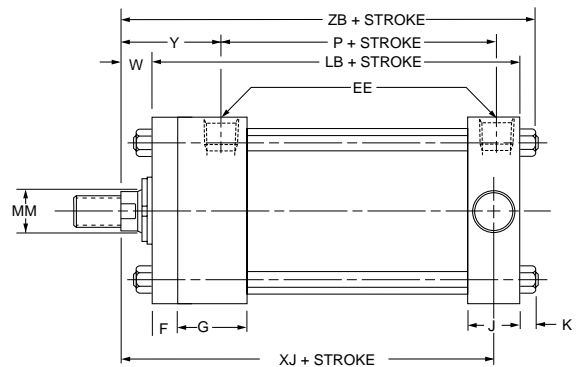
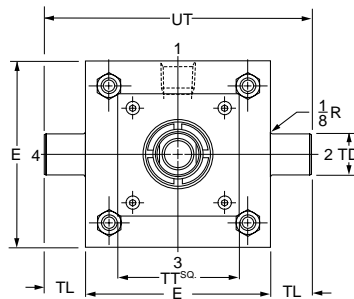
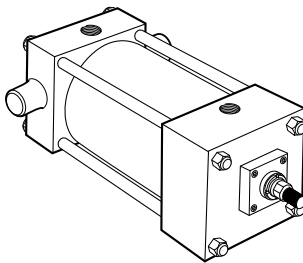


# Series 3L Medium Duty Hydraulic Cylinders

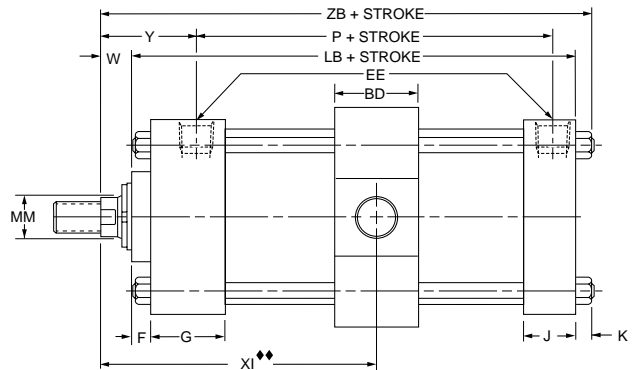
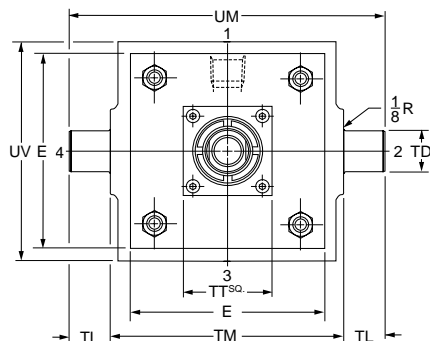
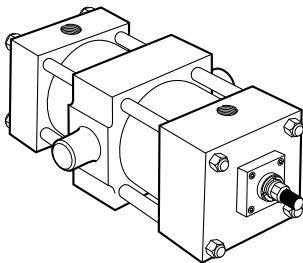
## Head Trunnion Style D (NFPA Style MT1)



## Cap Trunnion Style DB (NFPA Style MT2)

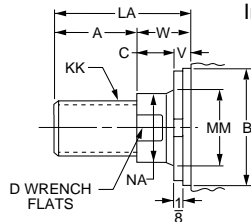


## Intermediate Fixed Trunnion Style DD (NFPA Style MT4)

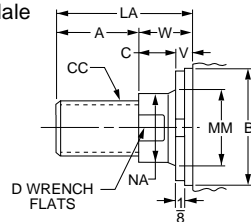


## Rod End Dimensions — see tables 2 and 5

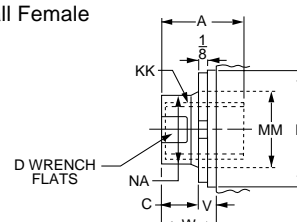
### Thread Style 4 (NFPA Style SM) Small Male



### 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 dimensional sketch.

A high strength rod end stud is supplied on thread style 4 through 2" diameter rods and on thread style 8 through 1 1/2" 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.

# Series 3L Medium Duty Hydraulic Cylinders

Trunnion Mountings  
8" Bore Size

Table 1—Envelope and Mounting Dimensions—Styles D and DB

Bore	E	EE		F	G	J	K	+0.000 -.001 TD	TL	UT	Add Stroke	
		NPTF <sup>o</sup>	SAE*								LB	P
8	8 <sup>1</sup> / <sub>2</sub>	<sup>3</sup> / <sub>4</sub>	12	<sup>3</sup> / <sub>4</sub>	2	1 <sup>1</sup> / <sub>2</sub>	<sup>9</sup> / <sub>16</sub>	1.375	1 <sup>3</sup> / <sub>8</sub>	11 <sup>1</sup> / <sub>4</sub>	5 <sup>7</sup> / <sub>8</sub>	3 <sup>1</sup> / <sub>4</sub>

<sup>o</sup> NPTF ports will be furnished as standard unless SAE straight thread ports are specified.  
\* SAE straight thread ports are indicated by port number.

Table 2—Rod Dimensions—Styles D and DB

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	LA	NA	V	W	TT	XG	Y	XJ	ZB
8	1(Std.)	2	1 <sup>3</sup> / <sub>4</sub> -12	1 <sup>1</sup> / <sub>2</sub> -12	2 <sup>1</sup> / <sub>4</sub>	2.624	<sup>7</sup> / <sub>8</sub>	1 <sup>11</sup> / <sub>16</sub>	3 <sup>1</sup> / <sub>2</sub>	1 <sup>15</sup> / <sub>16</sub>	<sup>3</sup> / <sub>8</sub>	1 <sup>1</sup> / <sub>4</sub>	4	3	3 <sup>3</sup> / <sub>16</sub>	6 <sup>3</sup> / <sub>8</sub>	7 <sup>11</sup> / <sub>16</sub>
	2	5 <sup>1</sup> / <sub>2</sub>	5 <sup>1</sup> / <sub>4</sub> -12	4-12	5 <sup>1</sup> / <sub>2</sub>	6.249	1	4 <sup>5</sup> / <sub>8</sub>	7	5 <sup>3</sup> / <sub>8</sub>	<sup>1</sup> / <sub>2</sub>	1 <sup>1</sup> / <sub>2</sub>	7	3 <sup>1</sup> / <sub>4</sub>	3 <sup>7</sup> / <sub>16</sub>	6 <sup>5</sup> / <sub>8</sub>	7 <sup>15</sup> / <sub>16</sub>
	3	2 <sup>1</sup> / <sub>2</sub>	2 <sup>1</sup> / <sub>4</sub> -12	1 <sup>7</sup> / <sub>8</sub> -12	3	3.124	1	2 <sup>1</sup> / <sub>16</sub>	4 <sup>1</sup> / <sub>2</sub>	2 <sup>3</sup> / <sub>8</sub>	<sup>1</sup> / <sub>2</sub>	1 <sup>1</sup> / <sub>2</sub>	4	3 <sup>1</sup> / <sub>4</sub>	3 <sup>7</sup> / <sub>16</sub>	6 <sup>5</sup> / <sub>8</sub>	7 <sup>15</sup> / <sub>16</sub>
	4	3	2 <sup>3</sup> / <sub>4</sub> -12	2 <sup>1</sup> / <sub>4</sub> -12	3 <sup>1</sup> / <sub>2</sub>	3.749	1	2 <sup>5</sup> / <sub>8</sub>	5	2 <sup>7</sup> / <sub>8</sub>	<sup>1</sup> / <sub>2</sub>	1 <sup>1</sup> / <sub>2</sub>	5 <sup>1</sup> / <sub>2</sub>	3 <sup>1</sup> / <sub>4</sub>	3 <sup>7</sup> / <sub>16</sub>	6 <sup>5</sup> / <sub>8</sub>	7 <sup>15</sup> / <sub>16</sub>
	5	3 <sup>1</sup> / <sub>2</sub>	3 <sup>1</sup> / <sub>4</sub> -12	2 <sup>1</sup> / <sub>2</sub> -12	3 <sup>1</sup> / <sub>2</sub>	4.249	1	3	5	3 <sup>3</sup> / <sub>8</sub>	<sup>1</sup> / <sub>2</sub>	1 <sup>1</sup> / <sub>2</sub>	5 <sup>1</sup> / <sub>2</sub>	3 <sup>1</sup> / <sub>4</sub>	3 <sup>7</sup> / <sub>16</sub>	6 <sup>5</sup> / <sub>8</sub>	7 <sup>15</sup> / <sub>16</sub>
	6	4	3 <sup>3</sup> / <sub>4</sub> -12	3-12	4	4.749	1	3 <sup>3</sup> / <sub>8</sub>	5 <sup>1</sup> / <sub>2</sub>	3 <sup>7</sup> / <sub>8</sub>	<sup>1</sup> / <sub>2</sub>	1 <sup>1</sup> / <sub>2</sub>	5 <sup>1</sup> / <sub>2</sub>	3 <sup>1</sup> / <sub>4</sub>	3 <sup>7</sup> / <sub>16</sub>	6 <sup>5</sup> / <sub>8</sub>	7 <sup>15</sup> / <sub>16</sub>
	7	1 <sup>3</sup> / <sub>8</sub>	1 <sup>1</sup> / <sub>4</sub> -12	1-14	1 <sup>5</sup> / <sub>8</sub>	1.999	<sup>5</sup> / <sub>8</sub>	1 <sup>1</sup> / <sub>8</sub>	2 <sup>1</sup> / <sub>2</sub>	1 <sup>5</sup> / <sub>16</sub>	<sup>1</sup> / <sub>4</sub>	<sup>7</sup> / <sub>8</sub>	4	2 <sup>5</sup> / <sub>8</sub>	2 <sup>13</sup> / <sub>16</sub>	6	7 <sup>5</sup> / <sub>16</sub>
	8	1 <sup>3</sup> / <sub>4</sub>	1 <sup>1</sup> / <sub>2</sub> -12	1 <sup>1</sup> / <sub>4</sub> -12	2	2.374	<sup>3</sup> / <sub>4</sub>	1 <sup>1</sup> / <sub>2</sub>	3 <sup>1</sup> / <sub>8</sub>	1 <sup>11</sup> / <sub>16</sub>	<sup>3</sup> / <sub>8</sub>	1 <sup>1</sup> / <sub>8</sub>	4	2 <sup>7</sup> / <sub>8</sub>	3 <sup>1</sup> / <sub>16</sub>	6 <sup>1</sup> / <sub>4</sub>	7 <sup>9</sup> / <sub>16</sub>
	9	4 <sup>1</sup> / <sub>2</sub>	4 <sup>1</sup> / <sub>4</sub> -12	3 <sup>1</sup> / <sub>4</sub> -12	4 <sup>1</sup> / <sub>2</sub>	5.249	1	3 <sup>7</sup> / <sub>8</sub>	6	4 <sup>3</sup> / <sub>8</sub>	<sup>1</sup> / <sub>2</sub>	1 <sup>1</sup> / <sub>2</sub>	7	3 <sup>1</sup> / <sub>4</sub>	3 <sup>7</sup> / <sub>16</sub>	6 <sup>5</sup> / <sub>8</sub>	7 <sup>15</sup> / <sub>16</sub>
0	5	4 <sup>3</sup> / <sub>4</sub> -12	3 <sup>1</sup> / <sub>2</sub> -12	5	5.749	1	4 <sup>1</sup> / <sub>4</sub>	6 <sup>1</sup> / <sub>2</sub>	4 <sup>7</sup> / <sub>8</sub>	<sup>1</sup> / <sub>2</sub>	1 <sup>1</sup> / <sub>2</sub>	7	3 <sup>1</sup> / <sub>4</sub>	3 <sup>7</sup> / <sub>16</sub>	6 <sup>5</sup> / <sub>8</sub>	7 <sup>15</sup> / <sub>16</sub>	

Table 3—Envelope and Mounting Dimensions

Table 4—Envelope and Mounting Dimensions—Style DD

Bore	BD	E	EE		F	G	J	K	+0.000 -.001 TD	TL	TM	UM	UV	Add Stroke		Style DD Min. Stroke
			NPTF <sup>o</sup>	SAE*										LB	P	
8	2 <sup>1</sup> / <sub>2</sub>	8 <sup>1</sup> / <sub>2</sub>	<sup>3</sup> / <sub>4</sub>	12	<sup>3</sup> / <sub>4</sub>	2	1 <sup>1</sup> / <sub>2</sub>	<sup>9</sup> / <sub>16</sub>	1.375	1 <sup>3</sup> / <sub>8</sub>	9 <sup>3</sup> / <sub>4</sub>	12 <sup>1</sup> / <sub>2</sub>	9 <sup>1</sup> / <sub>2</sub>	5 <sup>7</sup> / <sub>8</sub>	3 <sup>1</sup> / <sub>4</sub>	<sup>7</sup> / <sub>8</sub>

<sup>o</sup> NPTF ports will be furnished as standard unless SAE straight thread ports are specified.  
\* SAE straight thread ports are indicated by port number.

Table 5—Rod Dimensions—Style DD

Bore	Rod No.	Rod Dia. MM	Thread		Rod Extensions and Pilot Dimensions								TT	Min. ♦♦ XI	Y	Add Stroke ZB
			Style 8 CC	Style 4 & 9 KK	A	+0.000 -.002 B	C	D	LA	NA	V	W				
8	1(Std.)	2	1 <sup>3</sup> / <sub>4</sub> -12	1 <sup>1</sup> / <sub>2</sub> -12	2 <sup>1</sup> / <sub>4</sub>	2.624	<sup>7</sup> / <sub>8</sub>	1 <sup>11</sup> / <sub>16</sub>	3 <sup>1</sup> / <sub>2</sub>	1 <sup>15</sup> / <sub>16</sub>	<sup>3</sup> / <sub>8</sub>	1 <sup>1</sup> / <sub>4</sub>	4	5 <sup>5</sup> / <sub>16</sub>	3 <sup>3</sup> / <sub>16</sub>	7 <sup>11</sup> / <sub>16</sub>
	2	5 <sup>1</sup> / <sub>2</sub>	5 <sup>1</sup> / <sub>4</sub> -12	4-12	5 <sup>1</sup> / <sub>2</sub>	6.249	1	4 <sup>5</sup> / <sub>8</sub>	7	5 <sup>3</sup> / <sub>8</sub>	<sup>1</sup> / <sub>2</sub>	1 <sup>1</sup> / <sub>2</sub>	7	5 <sup>9</sup> / <sub>16</sub>	3 <sup>7</sup> / <sub>16</sub>	7 <sup>15</sup> / <sub>16</sub>
	3	2 <sup>1</sup> / <sub>2</sub>	2 <sup>1</sup> / <sub>4</sub> -12	1 <sup>7</sup> / <sub>8</sub> -12	3	3.124	1	2 <sup>1</sup> / <sub>16</sub>	4 <sup>1</sup> / <sub>2</sub>	2 <sup>3</sup> / <sub>8</sub>	<sup>1</sup> / <sub>2</sub>	1 <sup>1</sup> / <sub>2</sub>	4	5 <sup>9</sup> / <sub>16</sub>	3 <sup>7</sup> / <sub>16</sub>	7 <sup>15</sup> / <sub>16</sub>
	4	3	2 <sup>3</sup> / <sub>4</sub> -12	2 <sup>1</sup> / <sub>4</sub> -12	3 <sup>1</sup> / <sub>2</sub>	3.749	1	2 <sup>5</sup> / <sub>8</sub>	5	2 <sup>7</sup> / <sub>8</sub>	<sup>1</sup> / <sub>2</sub>	1 <sup>1</sup> / <sub>2</sub>	5 <sup>1</sup> / <sub>2</sub>	5 <sup>9</sup> / <sub>16</sub>	3 <sup>7</sup> / <sub>16</sub>	7 <sup>15</sup> / <sub>16</sub>
	5	3 <sup>1</sup> / <sub>2</sub>	3 <sup>1</sup> / <sub>4</sub> -12	2 <sup>1</sup> / <sub>2</sub> -12	3 <sup>1</sup> / <sub>2</sub>	4.249	1	3	5	3 <sup>3</sup> / <sub>8</sub>	<sup>1</sup> / <sub>2</sub>	1 <sup>1</sup> / <sub>2</sub>	5 <sup>1</sup> / <sub>2</sub>	5 <sup>9</sup> / <sub>16</sub>	3 <sup>7</sup> / <sub>16</sub>	7 <sup>15</sup> / <sub>16</sub>
	6	4	3 <sup>3</sup> / <sub>4</sub> -12	3-12	4	4.749	1	3 <sup>3</sup> / <sub>8</sub>	5 <sup>1</sup> / <sub>2</sub>	3 <sup>7</sup> / <sub>8</sub>	<sup>1</sup> / <sub>2</sub>	1 <sup>1</sup> / <sub>2</sub>	5 <sup>1</sup> / <sub>2</sub>	5 <sup>9</sup> / <sub>16</sub>	3 <sup>7</sup> / <sub>16</sub>	7 <sup>15</sup> / <sub>16</sub>
	7	1 <sup>3</sup> / <sub>8</sub>	1 <sup>1</sup> / <sub>4</sub> -12	1-14	1 <sup>5</sup> / <sub>8</sub>	1.999	<sup>5</sup> / <sub>8</sub>	1 <sup>1</sup> / <sub>8</sub>	2 <sup>1</sup> / <sub>2</sub>	1 <sup>5</sup> / <sub>16</sub>	<sup>1</sup> / <sub>4</sub>	<sup>7</sup> / <sub>8</sub>	4	4 <sup>15</sup> / <sub>16</sub>	2 <sup>13</sup> / <sub>16</sub>	7 <sup>5</sup> / <sub>16</sub>
	8	1 <sup>3</sup> / <sub>4</sub>	1 <sup>1</sup> / <sub>2</sub> -12	1 <sup>1</sup> / <sub>4</sub> -12	2	2.374	<sup>3</sup> / <sub>4</sub>	1 <sup>1</sup> / <sub>2</sub>	3 <sup>1</sup> / <sub>8</sub>	1 <sup>11</sup> / <sub>16</sub>	<sup>3</sup> / <sub>8</sub>	1 <sup>1</sup> / <sub>8</sub>	4	5 <sup>3</sup> / <sub>16</sub>	3 <sup>1</sup> / <sub>16</sub>	7 <sup>9</sup> / <sub>16</sub>
	9	4 <sup>1</sup> / <sub>2</sub>	4 <sup>1</sup> / <sub>4</sub> -12	3 <sup>1</sup> / <sub>4</sub> -12	4 <sup>1</sup> / <sub>2</sub>	5.249	1	3 <sup>7</sup> / <sub>8</sub>	6	4 <sup>3</sup> / <sub>8</sub>	<sup>1</sup> / <sub>2</sub>	1 <sup>1</sup> / <sub>2</sub>	7	5 <sup>9</sup> / <sub>16</sub>	3 <sup>7</sup> / <sub>16</sub>	7 <sup>15</sup> / <sub>16</sub>
0	5	4 <sup>3</sup> / <sub>4</sub> -12	3 <sup>1</sup> / <sub>2</sub> -12	5	5.749	1	4 <sup>1</sup> / <sub>4</sub>	6 <sup>1</sup> / <sub>2</sub>	4 <sup>7</sup> / <sub>8</sub>	<sup>1</sup> / <sub>2</sub>	1 <sup>1</sup> / <sub>2</sub>	7	5 <sup>9</sup> / <sub>16</sub>	3 <sup>7</sup> / <sub>16</sub>	7 <sup>15</sup> / <sub>16</sub>	

♦♦ Dimension XI to be specified by customer.

Table 6—Envelope and Mounting Dimensions

For Cylinder Division Plant Locations – See Page II.



B

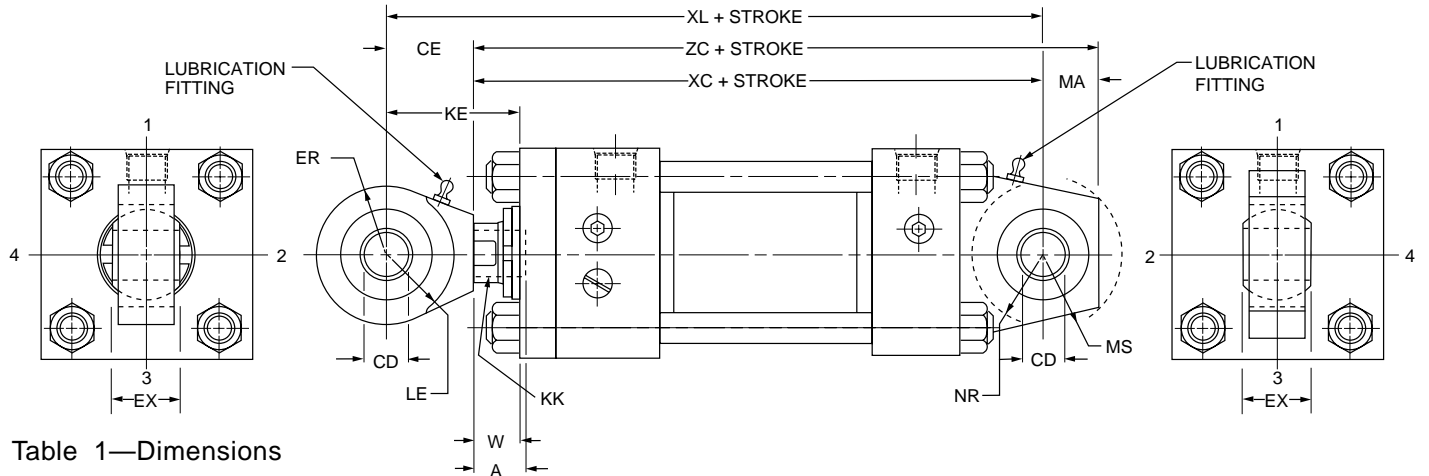


Table 1—Dimensions

Bore	Rod No. 3L	Rod Dia.	Rod End Thread		A	W	Add Stroke			KE	CD*	CE	ER	EX	LE	MA	MS	NR	Max. Oper. PSI	
			Style 9 KK	Style 7 KK			XC	XL	ZC										2A	3L†
1½	1(Std.)	5/8	7/16-20	—	3/4	5/8	53/8	61/4	61/8	11½	.0005	7/8	13/16	7/16	3/4	3/4	15/16	5/8	250	1750
	2	1	—	7/16-20	3/4	1	53/4	65/8	61/2	17/8	.5000									
2	1(Std.)	5/8	7/16-20	—	3/4	5/8	53/8	61/4	61/8	11½	.0005	7/8	13/16	7/16	3/4	3/4	15/16	5/8	250	980
	2	13/8	—	7/16-20	3/4	1¼	6	67/8	63/4	21/8	.5000									
	3	1	—	7/16-20	3/4	1	53/4	65/8	61/2	17/8										
2½	7	5/8	7/16-20	—	3/4	5/8	51/2	63/8	61/4	11½	.0005	7/8	13/16	7/16	3/4	3/4	15/16	5/8	250	630
	2	13/4	—	7/16-20	3/4	1½	63/8	71/4	71/8	23/8	.5000									
	1(Std.)	1	—	7/16-20	3/4	1	57/8	63/4	65/8	17/8										
3¼	3	13/8	—	7/16-20	3/4	1¼	61/8	7	67/8	21/8										
	1(Std.)	1	3/4.16	—	1½	3/4	67/8	81/8	77/8	2	.0005									
	2	2	—	3/4.16	1½	13/8	71/2	83/4	81/2	25/8	.7500	1¼	1½	21/32	11/16	1	13/8	1	250	830
	3	13/8	—	3/4.16	1½	1	71/8	83/8	81/8	21¼										
4	4	13/4	—	3/4.16	1½	1¼	73/8	85/8	83/8	21½										
	7	1	3/4.16	—	1½	3/4	67/8	81/8	77/8	2	.0005									
	2	2½	—	3/4.16	1½	15/8	73/4	9	83/4	27/8	.7500	1¼	1½	21/32	11/16	1	13/8	1	250	550
	1(Std.)	13/8	—	3/4.16	1½	1	71/8	83/8	81/8	21¼										
5	3	13/4	—	3/4.16	1½	1¼	73/8	85/8	83/8	21½										
	4	2	—	3/4.16	1½	13/8	71/2	83/4	81/2	25/8										
	7	1	3/4.16	—	1½	3/4	71/8	83/8	81/8	2	.0005									
	2	3½	—	3/4.16	1½	15/8	8	91/4	9	27/8	.7500	1¼	1½	21/32	11/16	1	13/8	1	250	350
	8	13/8	—	3/4.16	1½	1	73/8	85/8	83/8	21¼										
	1(Std.)	13/4	—	3/4.16	1½	1¼	75/8	87/8	85/8	21½										
6	3	2	—	3/4.16	1½	13/8	73/4	9	83/4	25/8										
	4	2½	—	3/4.16	1½	15/8	8	91/4	9	27/8										
	5	3	—	3/4.16	1½	15/8	8	91/4	9	27/8										
	7	13/8	1-14	—	15/8	7/8	81/8	10	93/8	23/4	.0005									
	2	4	—	1-14	15/8	1½	83/4	105/8	10	33/8	1.0000	17/8	1¼	7/8	17/16	1¼	111/16	1¼	250	440
	1(Std.)	13/4	—	1-14	15/8	11/8	83/8	101/4	95/8	3										

Note: For additional dimensions see Series 3L, Style BB mount.  
 \* Dimension CD is hole diameter.  
 † Maximum operating pressure at 4:1 design factor is based on tensile strength of material. Pressure ratings are based on standard commercial bearing ratings.  
 Rod No. 1 is standard

For additional information – call your local Parker Cylinder Distributor.

# Series 3L Medium Duty Hydraulic Cylinders

Spherical Bearing Mounting  
Style SB  
8" Bore Size

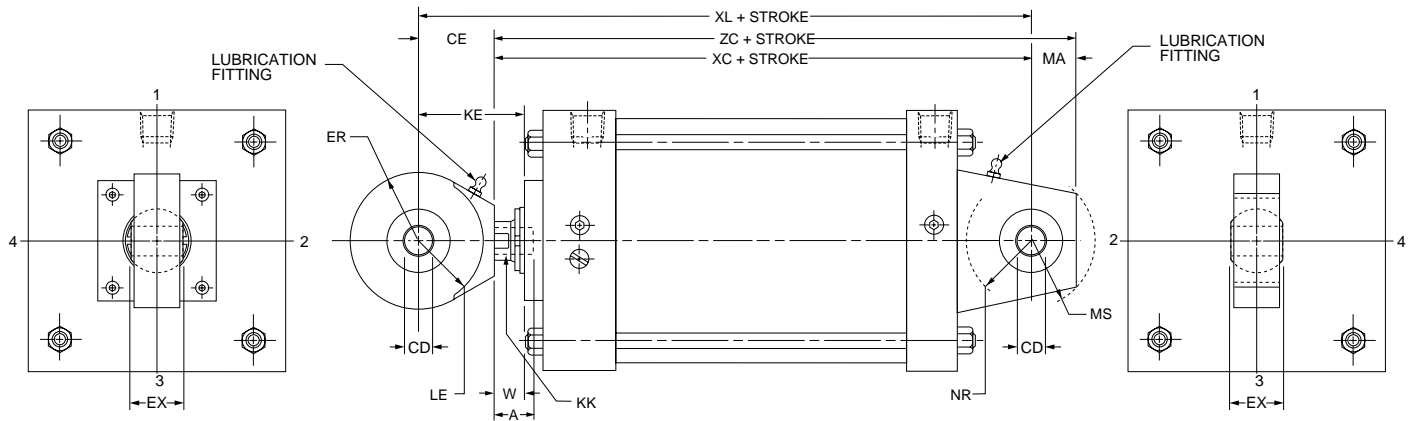


Table 1—Dimensions

Bore	Rod No. 3L	Rod Dia.	Rod End Thread		A	W	Add Stroke				CD*	CE	ER	EX	LE	MA	MS	NR	Max. Oper. PSI	
			Style 9 KK	Style 7 KK			XC	XL	ZC	KE									2A	3L†
8	7	1 3/8	1-14	—	15/8	7/8	8 1/4	10 1/8	9 1/2	2 3/4	.0005 1.0000	17/8	1 1/4	7/8	17/16	1 1/4	1 11/16	1 1/4	250	250
	2	5 1/2	—	1-14	15/8	1 1/2	8 7/8	10 3/4	10 1/8	3 3/8										
	8	1 3/4	—	1-14	15/8	1 1/8	8 1/2	10 3/8	9 3/4	3										
	1*	2	—	1-14	15/8	1 1/4	8 5/8	10 1/2	9 7/8	3 1/8										
	3	2 1/2	—	1-14	15/8	1 1/2	8 7/8	10 3/4	10 1/8	3 3/8										
	4	3	—	1-14	15/8	1 1/2	8 7/8	10 3/4	10 1/8	3 3/8										
	5	3 1/2	—	1-14	15/8	1 1/2	8 7/8	10 3/4	10 1/8	3 3/8										
	6	4	—	1-14	15/8	1 1/2	8 7/8	10 3/4	10 1/8	3 3/8										
	9	4 1/2	—	1-14	15/8	1 1/2	8 7/8	10 3/4	10 1/8	3 3/8										
0	5	—	1-14	15/8	1 1/2	8 7/8	10 3/4	10 1/8	3 3/8											

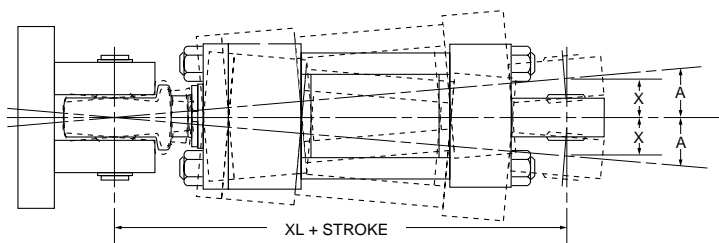
Note: For additional dimensions see Series 3L, Style F mount.

\* 10, 12 and 14 inch bores are not available in Series 3L Hydraulic Cylinders.

\* Dimension CD is hole diameter.

† Maximum operating pressure at 4:1 design factor is based on tensile strength of material. Pressure ratings are based on standard commercial bearing ratings.

## Mounting Information Head End Mounting



## Cap End Mounting

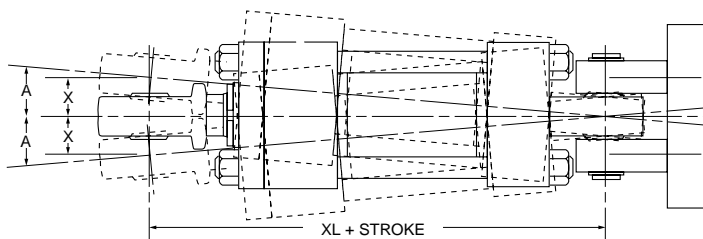


Table 1

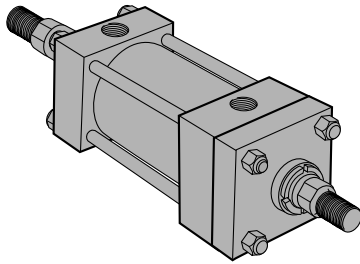
Recommended maximum swivel angle on each side of the cylinder centerline.

Bore	Head End Mounted		Cap End Mounted	
	Angle a	Tan. of a	Angle a	Tan. of a
1 1/2	2 1/2	.035	2 1/2	.035
2	2 3/2	.044	4 1/2	.079
2 1/2	2 3/2	.044	4 1/2	.079
3 1/4	3 1/2	.052	3 1/2	.052
4	2 3/2	.044	3 1/2	.052
5	3 1/2	.052	3 1/2	.052
6	3 1/2	.052	3 1/2	.052

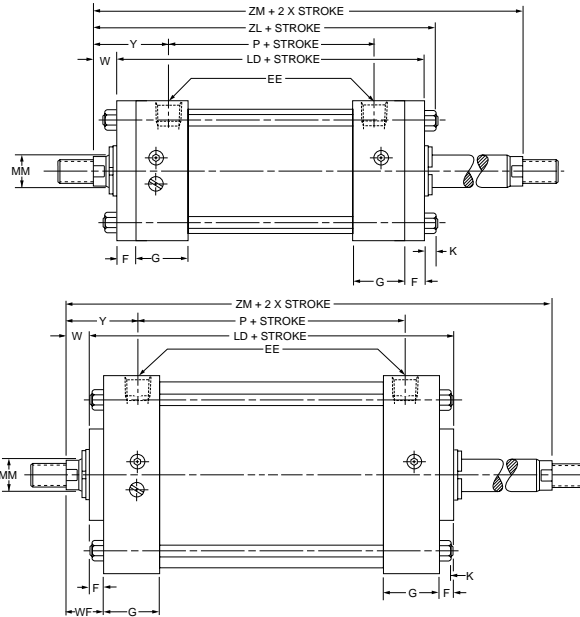
Note: Dimension X is the maximum off center mounting of the cylinder. To determine dimension X for various stroke lengths multiply the distance between pivot pin holes by tangent of angle a. For extended position use X = XL times 2X stroke.

For Cylinder Division Plant Locations – See Page II.

# Series 3L Medium Duty Hydraulic Cylinders



## How to Use Double Rod Cylinder Dimensioned Drawings



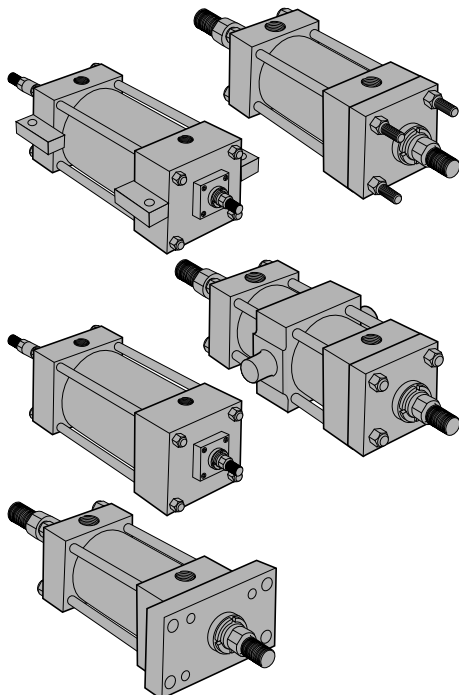
Mounting Styles for Single Rod Models	Mounting Styles for Corresponding Double Rod Models*	Dimensions Shown on This Page Supplement Dimensions on Pages Listed Below	
		1" - 6" Bore Page No.	8" Bore Page No.
T	KT	8	20
TB	KTB	8	20
TD	KTD	8	20
J	KJ	8	—
JB	KJB	10	20
C	KC	12	22
E	KE	12	22
F	KF	14	22
G	KG	14	24
D	KD	16	26
DD	KDD	16	26

\*If only one end of these Double Rod Cylinders is to be cushioned, be sure to specify clearly which end this will be.

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 left.) After selecting necessary dimensions from that drawing, return to this page supplement the single rod dimensions with those shown on drawings above 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 dimen-

sions 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. (See port position information in Section C.)



All dimensions are in inches and apply to Code 1 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 No.	Rod Dia. MM	Add Stroke							Add 2X Stroke
			LD	ZL	SS <sub>K</sub>	SN <sub>K</sub>	SE <sub>K</sub>	XE <sub>K</sub>	ZE <sub>K</sub>	
1	1	1/2	4 3/4	5 1/2	3 3/8*	2 1/8	*	*	*	6
1 1/2	1	5/8	4 7/8	5 3/4	3 3/8	2 1/4	6 3/8	6 1/4	6 1/2	6 1/8
2	1	5/8	4 7/8	5 13/16	3 3/8	2 1/4	6 3/4	6 7/16	6 3/4	6 1/8
2 1/2	1	1	5	6 5/16	3 1/2	2 3/8	7 1/8	7 1/16	7 3/8	7
3 1/4	1	1	6	7 1/8	3 3/4	2 5/8	7 3/4	7 5/8	8	7 1/2
4	1	1 3/8	6	7 3/8	3 3/4	2 5/8	8	8	8 3/8	8
5	1	1 3/4	6 1/4	7 15/16	3 5/8	2 7/8	8 3/8	8 9/16	9 1/16	8 3/4
6	1	1 3/4	7	8 11/16	4 1/8	3 1/8	9	9 1/8	9 5/8	9 1/4
8	1	2	7 1/8	—	4 1/4	3 1/4	7 7/8	8 3/4	9 3/8	9 5/8
<b>Replaces:</b>			<b>LB</b>	<b>ZB</b>	<b>SS</b>	<b>SN</b>	<b>SE</b>	<b>XE</b>	<b>ZE</b>	—
On single rod mounting styles:			All Mtg. Styles		<b>C, E</b>	<b>F</b>	<b>G</b>			All Mtgs.

\* Mounting styles KE, KG and KDD not available in 1" bore size.

For additional information – call your local Parker Cylinder Distributor.

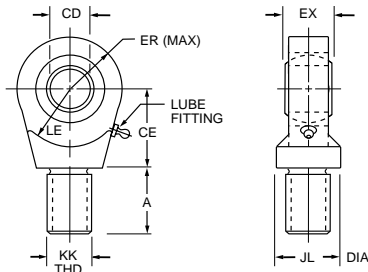
# Series 3L Medium Duty Hydraulic Cylinders

Cylinder Accessories  
Spherical Bearing Mounting  
Style SB

Parker offers a complete range of Cylinder Accessories to assure you of the greatest versatility in present or future cylinder applications. Accessories offered for the

respective cylinder include the Rod Eye, Pivot Pin and Clevis Bracket. To select the proper part number for any desired accessory refer to the charts below.

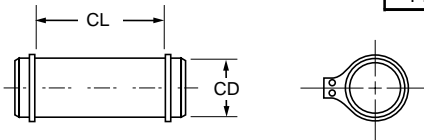
## Spherical Rod Eye



Order to fit Piston Rod Thread Size.

Bore Sizes	Series 2A & 3L	1 1/2, 2 & 2 1/2	3 1/4, 4 & 5	6 & 8	10	12	14
Rod Eye	Part No.	132290	132291	132292	132293	132294	132295
CD		.5000-0005	.7500-0005	1.0000-0005	1.3750-0005	1.7500-0005	2.0000-0005
A		1 1/16	1	1 1/2	2	2 1/8	2 7/8
CE		7/8	1 1/4	1 7/8	2 1/8	2 1/2	2 3/4
EX		7/16	2 1/32	7/8	1 3/16	1 17/32	1 3/4
ER		1 3/16	1 1/8	1 1/4	1 11/16	2 1/16	2 1/2
LE		3/4	1 1/16	1 7/16	1 7/8	2 1/8	2 1/2
KK		7/16-20	3/4-16	1-14	1 1/4-12	1 1/2-12	1 7/8-12
JL		7/8	1 5/16	1 1/2	2	2 1/4	2 3/4
<b>LOAD CAPACITY LBS.</b>		2644	9441	16860	28562	43005	70193

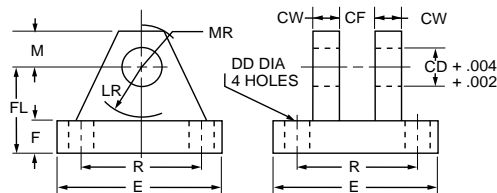
## Pivot Pin



Pivot Pins are furnished with (2) Retainer Rings.

Bore Sizes	Series 2A & 3L	1 1/2, 2 & 2 1/2	3 1/4, 4 & 5	6 & 8	10	12	14
Pivot Pin	Part No.	83962	83963	83964	83965	83966	83967
CD		.4997-0004	.7497-0005	.9997-0005	1.3746-0006	1.7496-0006	1.9996-0007
CL		1 9/16	2 1/32	2 1/2	3 5/16	4 7/32	4 15/16
<b>LOAD CAPACITY LBS.</b>		8600	19300	34300	65000	105200	137400

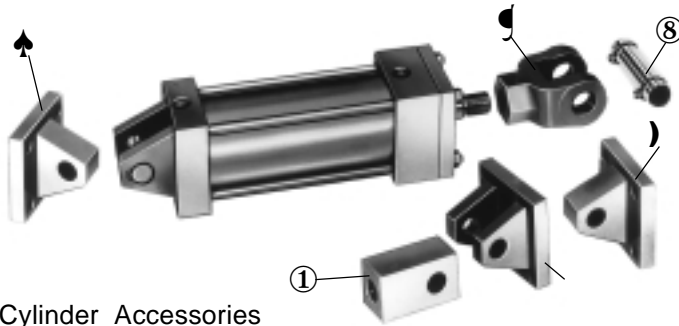
## Clevis Bracket



Order to fit Mounting Plate or Rod Eye.

Bore Sizes	Series 2A & 3L	1 1/2, 2 & 2 1/2	3 1/4, 4 & 5	6 & 8	10	12	14
Clevis Bracket	Part No.	83947	83948	83949	83950	83951	83952
CD		1/2	3/4	1	1 3/8	1 3/4	2
CF		7/16	2 1/32	7/8	1 3/16	1 17/32	1 3/4
CW		1/2	5/8	3/4	1	1 1/4	1 1/2
DD		1 3/32	1 7/32	1 7/32	2 1/32	2 9/32	2 9/32
E		3	3 3/4	5 1/2	6 1/2	8 1/2	10 5/8
F		1/2	5/8	3/4	7/8	1 1/4	1 1/2
FL		1 1/2	2	2 1/2	3 1/2	4 1/2	5
LR		1 5/16	1 3/8	1 11/16	2 7/16	2 7/8	3 5/16
M		1/2	7/8	1	1 3/8	1 3/4	2
MR		5/8	1	1 3/16	1 5/8	2 1/16	2 3/8
R		2.05	2.76	4.10	4.95	6.58	7.92
<b>LOAD CAPACITY LBS.</b>		5770	9450	14300	20322	37800	50375

For Cylinder Division Plant Locations – See Page II.



### 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	144500-0105
7/16-20	50940	69195	68368	69089	69205	68368	144500-0107
1/2-20	50941	69195	68368	69090	69205	68368	144500-0108
3/4-16	50942	69196	68369	69091	69206†	68369	144500-0112
3/4-16	133284	69196	68369	69091	69206	68369	144500-0112
7/8-14	50943	*85361	68370	69092	69207	68370	144500-0114
1-14	50944	*85361	68370	69093	69207	68370	144500-0116
1-14	133285	*85361	68370	69093	69207	68370	144500-0116
1 1/4-12	50945	69198	68371	69094	69208	68371	144500-0120
1 1/4-12	133286	69198	68371	69094	69208	68371	144500-0120
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	73437	73542	73545	
4-12	50954	73539	73547	73438	73543	82181	
4 1/2-12	—	—	—	73439	73544	73547	

†For alignment coupler dimensions, see Section C.  
 \*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. Parker 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 on this page and the following page have been load rated for your convenience. The load capacity in lbs. shown on the following page is the recommended maximum load for that accessory based on a 4:1 design factor in tension. (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.

### Chart B

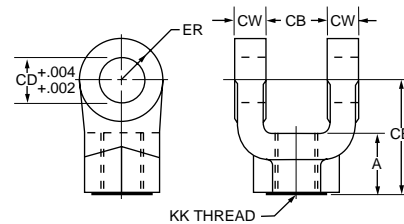
Mtg. Plate	Series 3L
Part No.	Bore Size
74076‡	1"
69195	1 1/2", 2", 2 1/2"
69196	3 1/4", 4", 5"
*85361	6"
*85361	8"

‡Mounting plate for 1" bore single lug BC & BB cylinder mounting style is Clevis Bracket P/N 74076.

### Mounting Plates

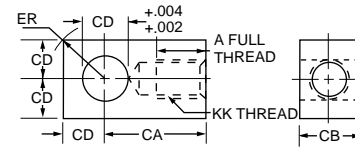
Mounting Plates for Style BB and Style BC (Clevis mounted) cylinders are offered. To select proper part number for your application, refer to Chart B to above right.

### Female Rod Clevis

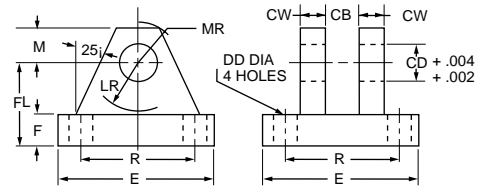


Order to fit thread size.

### ① Knuckle (Female Rod Eye)

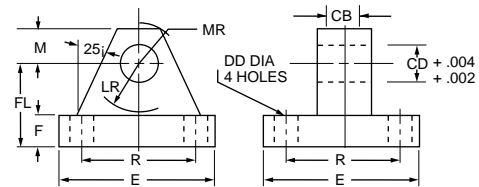


### Clevis Bracket for Knuckle



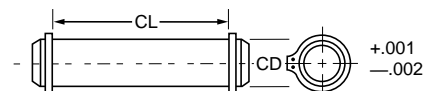
Order to fit Knuckle.

### Mounting Plate or Eye Bracket



- When used to mate with the Rod Clevis, select from Chart A.
- When used to mount the Style BB or BC cylinders, select from the Mounting Plate Selection Table. See Chart B at lower left.

### ⑧ Pivot Pin



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

For additional information – call your local Parker Cylinder Distributor.



# Series 3L Medium Duty Hydraulic Cylinders

Cylinder  
Accessories

	Female Rod Clevis Part Number																		
	51221 <sup>†</sup>	50940	50941	50942	133284	50943	50944	133285	50945	133286	50946	50947	50948	50949	50950	50951	50952	50953	50954
A	13/16	3/4	3/4	1 1/8	1 1/8	1 5/8	1 5/8	1 5/8	2	2	2 1/4	3	3	3 1/2	3 1/2	3 1/2	3 1/2	4 <sup>‡</sup>	4 <sup>‡</sup>
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	13/64	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	19/64	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	15/16-24	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. <sup>Ⓔ</sup>	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 <sup>‡</sup>	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	19/32	23/32	23/32	1 1/16	1 7/16	1 7/16	1 13/16	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. <sup>Ⓔ</sup>	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	15/32	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	17/64	13/32	17/32	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 21/32	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. <sup>Ⓔ</sup>	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	17/64	13/32	17/32	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. <sup>Ⓔ</sup>	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	15/16	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. <sup>Ⓔ</sup>	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. Parker 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.



B

## How to Order Series 3L Cylinders

### Data Required on All Cylinder Orders

When ordering Series 3L cylinders, be sure to specify each of the following requirements:

**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.

<b>Bore:</b>	Specify bore in inches.
<b>Mounting Style:</b>	Specify your choice of mounting style — as shown and dimensioned in this catalog. If double rod is wanted, specify “with double rod”.
<b>Series Designation (3L) Length of Stroke Piston Rod Diameter:</b>	Call out rod diameter or rod code number. In Series 3L cylinders, standard rod diameters (Code No. 1) will be furnished if not otherwise specified, unless length of stroke makes the application questionable.
<b>Piston Rod End Thread Style:</b>	Call out thread style number or specify dimensions. Thread style number 4 will be furnished if not otherwise specified.
<b>Cushions (If required):</b>	Specify “Cushion-head end”, “Cushion-cap end” or “Cushion-both ends” as required. If 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.
<b>Alternate Lipseal® Piston (If desired):</b>	Parker Lipseal® pistons are offered as an option at no extra cost in the Series 3L 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.
<b>Ports:</b>	Parker recommends SAE Straight Thread Ports for leak-proof port connections on Series 3L hydraulic cylinders. Call out “with Straight Thread Ports” if desired. If not specified, NPTF ports will be furnished.
<b>Fluid Medium:</b>	Series 3L 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).
<b>Additional Data:</b>	Additional data is required on orders for cylinders with special modifications. For further information, consult factory.

### Water Service Modifications

Standard — When requested, Parker can supply Series 3L 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; cadmium-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. (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 3L 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 on operating limitations of all components, see section C.

For the 3L 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 polyme back-up washers  
O-Rings – Nitrile (nitrile back-up washer when used)

### 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 on page VI.

### 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.

### Warranty

Seller warrants the goods sold hereunder to be free from defects in material and workmanship. This warranty shall terminate eighteen months after date of shipment from Seller's plant and claims not made in writing within such period are waived.

The above warranty does not extend to goods damaged after date of shipment from Seller's plant where damage is not directly due to a defect in material or workmanship, nor does it apply to goods altered or repaired by anyone other than Seller's authorized employees, nor to goods furnished by Buyer or acquired at Buyer's request and/or to Buyer's specifications.

If the goods are in accordance with or in reference to an engineering drawing specified by or furnished to the customer, the specifications and information on the drawing shall be applicable in determining such correct use, operation and application.

When claiming a breach of warranty, Buyer must notify Seller promptly whereupon Seller will either examine the goods at their site, or issue shipping instructions for return to Seller (transportation costs prepaid by Buyer). When any goods sold hereunder are proved as not warranted, Seller's sole obligation under this warranty shall be to repair or replace the goods, at its option, without charge to Buyer.

**The above warranty comprises Seller's sole and entire warranty obligation and liability to Buyer, its customers and assigns in connection with goods sold hereunder. All other warranties, express or implied, including but not limited to, warranties of merchantability and fitness, are expressly excluded.**

For additional information – call your local Parker Cylinder Distributor.

# Series 3L Medium Duty Hydraulic Cylinders

Model Numbers

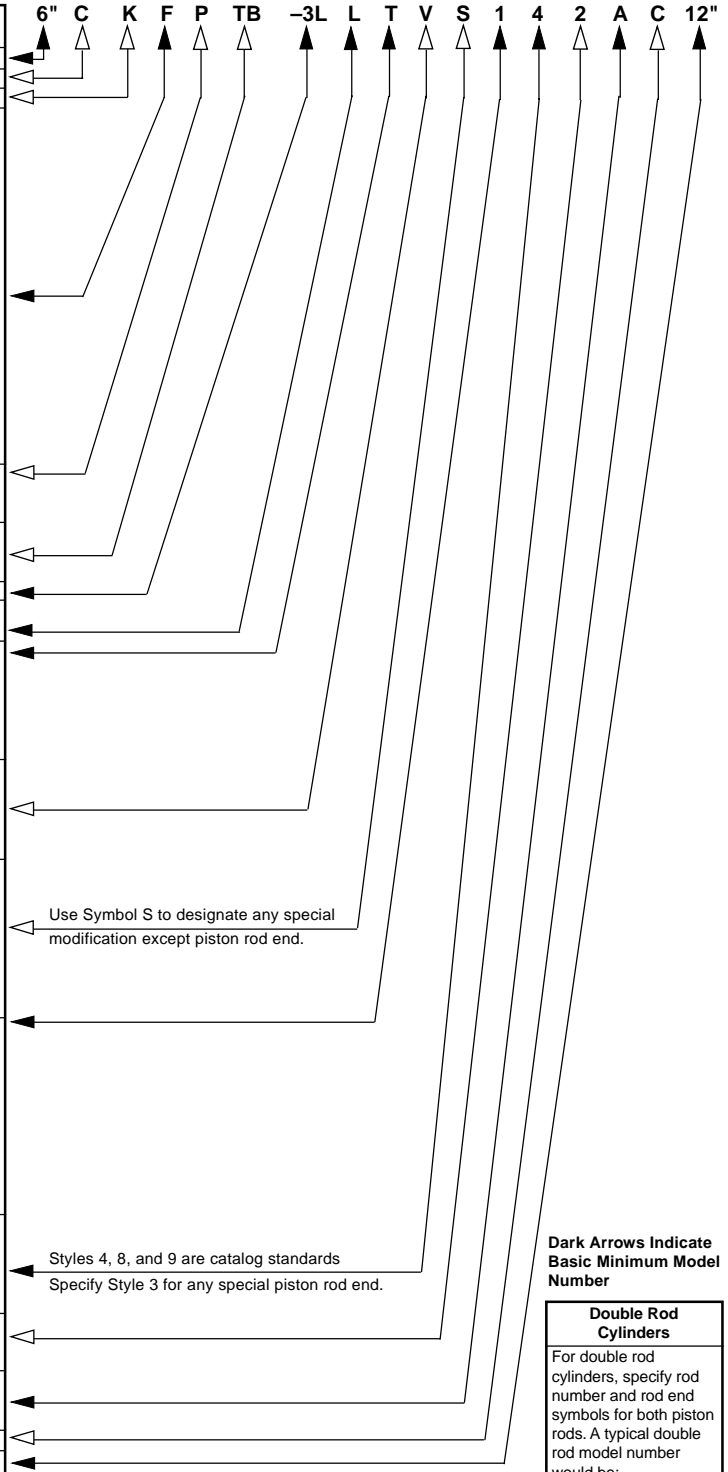
## Series 3L Model Numbers – How to Develop Them – How to “Decode” Them

Parker Series 3L 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 nine places are needed to completely describe a standard non-cushioned Series 3L

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, ie: C77, are located in section C of this catalog.**

Feature	Description	Page No.	Symbol
<b>Bore*</b>	Specify in inches	—	—
<b>Cushion-Head</b>	Used <b>only</b> if cushion required	6	C
<b>Double-Rod</b>	Used <b>only</b> if double-rod cylinder is required	32	K
<b>Mounting* Style</b>	Head Tie Rods Extended	8 & 22	TB
	Cap Tie Rods Extended	8 & 22	TC
	Both End Tie Rods Extended	8 & 22	TD
	Head Rectangular Flange	8	J
	Cap Rectangular Flange	8	H
	Head Square Flange	10 & 22	JB
	Cap Square Flange	10 & 22	HB
	Side Lugs	12 & 24	C†
	Centerline Lugs	12 & 24	E
	Side Tapped	14 & 24	F†
	Side End Lugs	14 & 26	G†
	Head Trunnion	16 & 28	D
	Cap Trunnion	16 & 28	DB
	Intermediate Fixed Trunnion	16 & 28	DD
	Cap Fixed Clevis	18 & 26	BB
	Cap Detachable Clevis	18	BC
Spherical Bearing	30 & 31	SB	
Head Rectangular	20	JJ	
<b>Mounting Modifications</b>	Used <b>only</b> for Thrust Key (Styles C, F & G)	C93	P
	Used <b>only</b> for Manifold Port O-Ring Seal (Style C)	C91	M
<b>Combination Mounting Style</b>	Any Practical Mounting Style Listed Above	—	As listed above
		—	—
<b>Series*</b>	Used in all 3L Model Numbers	—	-3L
<b>Piston</b>	Ring packed piston is standard.	—	C
	Use <b>only</b> for Lipseal® Piston.	6 & 7	L
<b>Ports*</b>	SAE Straight Thread O-Ring Port	C89	T
	Used <b>only</b> for NPTF (Dry Seal Pipe Thread)	C89	U
	Used <b>only</b> for BSP (Parallel Thread ISO 228)	C89	R
	Used <b>only</b> for BSPT (Taper Thread)	C89	B
	Used <b>only</b> for Metric Thread	C89	G
	Used <b>only</b> for Metric Thread per ISO 6149	C89	Y
<b>Common Modifications</b>	High Water Content Fluid	C83	J
	Nut Retained Piston	7	F
	Viton Seals	C83	V
	Water Service	C83	W
<b>Special Modifications</b>	EPR Seals	C83	X
	Used <b>only</b> if special Modifications are required:		
	Oversize Ports	C91	S
	Port Position Change	C89	
	Rod End Bellows	C104	
	Special Seals	C83	
	Stop Tube	C95	
Stroke Adjuster	C93		
Tie Rod Supports	C93		
<b>Piston Rod* Number</b>	For Single Rod Cylinders, select one only. Refer to Rod number listing, Table 2, Catalog Pages 8 through 27. See chart in Section C, page 83 for minimum piston rod diameter	—	1
		—	2
		—	3
		—	4
		—	5
		—	6
		—	7
		—	8
		—	9
		—	0
<b>Piston* Rod End</b>	Select:		
	Style 4 Small Male	C92	4
	Style 8 Intermediate Male	C92	8
	Style 9 Short Female	C92	9
	Style 3 Special (Specify)	C92	3
<b>Piston Rod Alternate Thread</b>	Used <b>only</b> for stud two times longer than standard.	C92	2
<b>Piston Rod* Threads</b>	UNF Standard	C92	A
	BSF (British Fine)	C92	W
	Metric	C92	M
<b>Cushion-Cap</b>	Used <b>only</b> if cushion required	6	C
<b>Stroke*</b>	Specify in inches	C96	—



\*Required for Basic Cylinder Model Number

† Cylinders with these mounting configurations should have a minimum stroke length equal to or greater than their bore diameters.

Cylinder serial numbers are factory production record numbers and are assigned to each cylinder, in addition to the model number.

Dark Arrows Indicate Basic Minimum Model Number

**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-3LU14A/14AX12"

For Cylinder Division Plant Locations – See Page II.



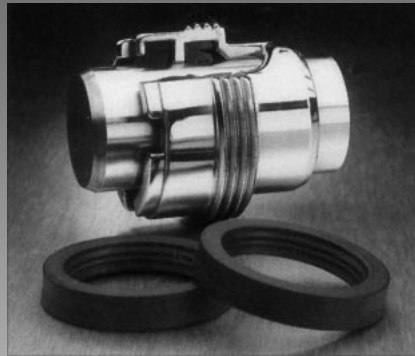
# Parker TS-2000 seal designed to eliminate cylinder rod seal leakage.

Parker Series 2H Heavy Duty and Series 3L Medium Duty Hydraulic Cylinders with the TS-2000 seal offers positive protection against cylinder rod leakage under the most demanding applications.

The TS-2000 seal is the product of countless hours of research, development and extensive field testing and is only available on Parker Cylinders.

Based on the popular Parker Serrated Lipseal rod design, the TS-2000 incorporates the pressure-compensated, uni-directional characteristics of a U-cup with the multiple edge sealing effectiveness of compression-type stacked-packings.

The goal for the Parker team was to design a rod seal suitable for all types of applications, regardless of pressure profile. It had to be composed of a



**"Jewel" gland with wiperseal and TS-2000 cylinder rod seal.**

material that would not react chemically with hydraulic fluids. And it had to produce better and more reliable "dry rod" performance than the standard serrated lip-seal design in a broad range of applications.

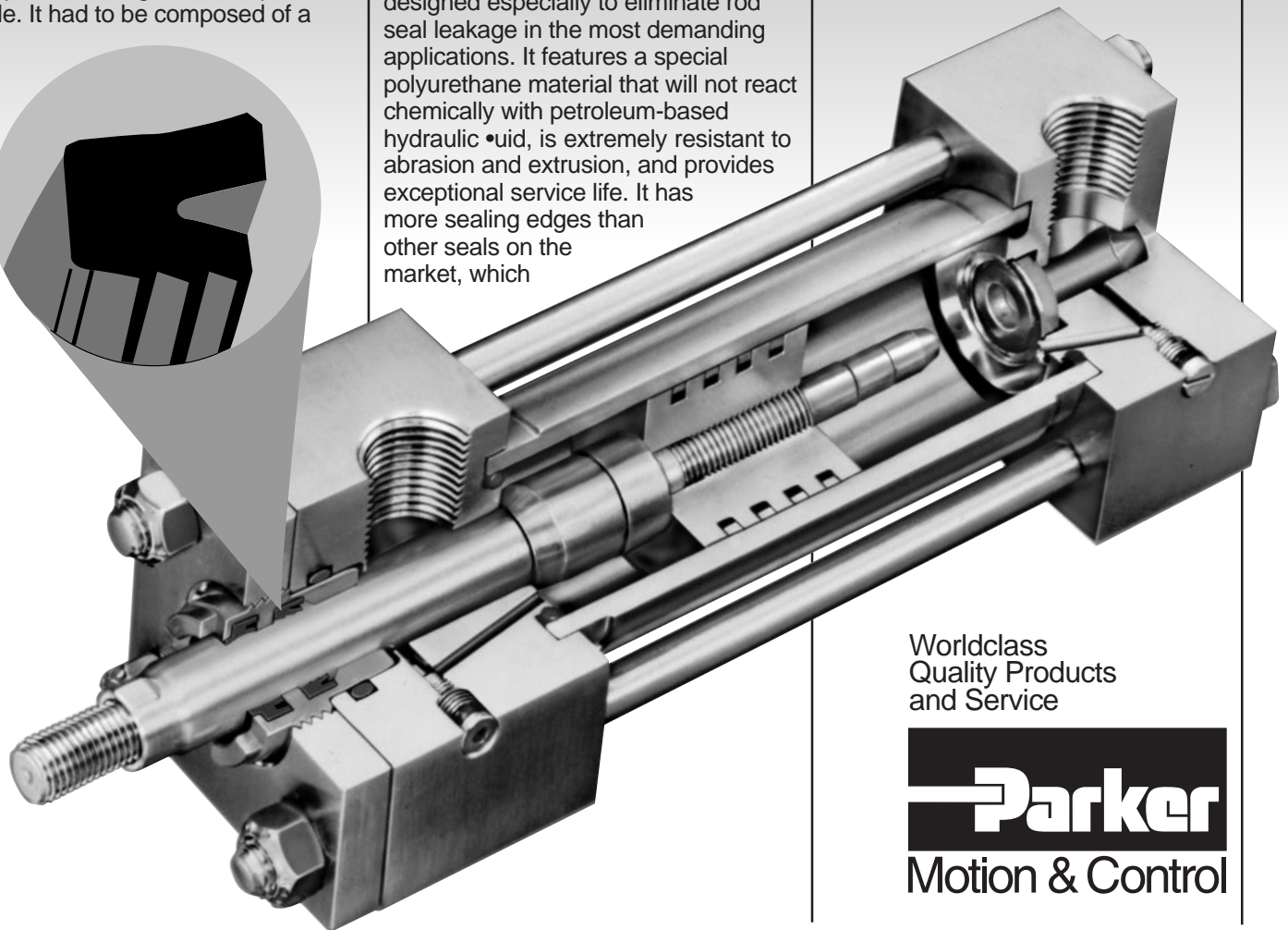
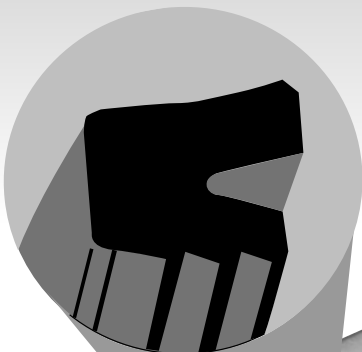
The result is the TS-2000 seal, designed especially to eliminate rod seal leakage in the most demanding applications. It features a special polyurethane material that will not react chemically with petroleum-based hydraulic fluid, is extremely resistant to abrasion and extrusion, and provides exceptional service life. It has more sealing edges than other seals on the market, which

in turn produces "dry rod" performance. The seal geometry was refined for maximum stability in the groove and has excellent performance characteristics throughout a broad range of pressures and piston rod velocities.

The Parker design team was successful!

TS-2000 rod seal has not failed in any of the test applications in the lab or on the job, no matter how tough or demanding.

For more information on the TS-2000 call or write your local Parker distributor or Parker Hannifin Corporation, Cylinder Division, 500 S. Wolf Road, Des Plaines, IL 60016, 847-298-2400.



Worldclass  
Quality Products  
and Service

**Parker**  
Motion & Control

For additional information – call your local  
Parker Fluidpower Motion & Control Distributor.