Royal L Series Air Cylinders

ROYAL by Westcoast Cylinders Inc.

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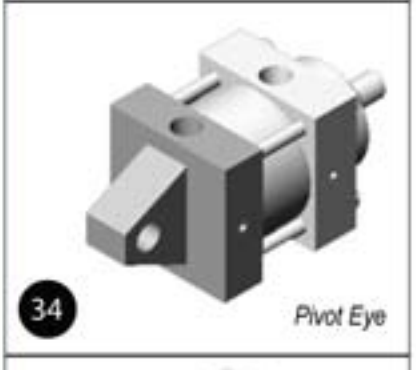
34 *Fixed Clevis*

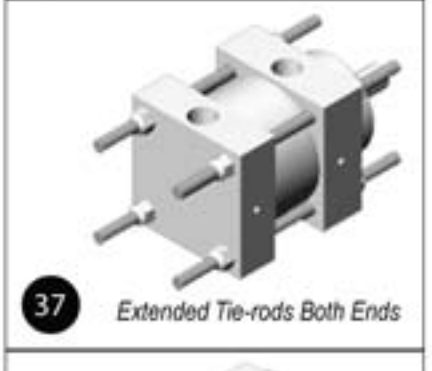
36 *Self-aligning Eye*



34 *Pivot Eye*

36 *No Mount*

35 *Foot Mount*

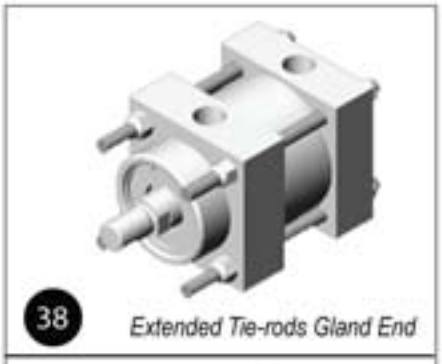


37 *Extended Tie-rods Both Ends*

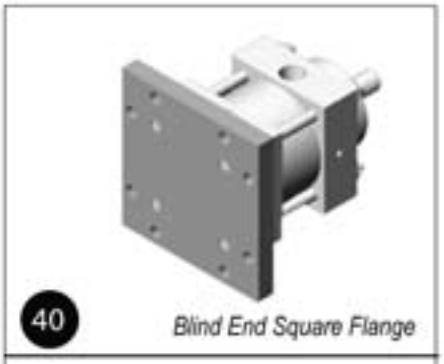
36 *Detachable Blind-end Clevis*

38 *Extended Tie-rods Blind End*

L Series - Mounting Styles



38 Extended Tie-rods Gland End

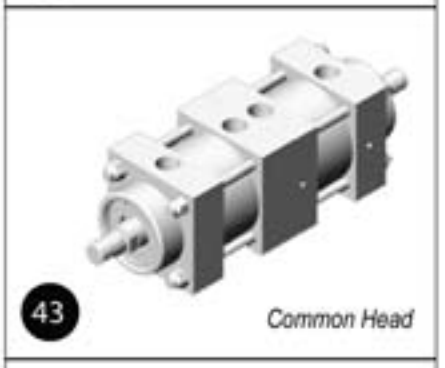


40 Blind End Square Flange

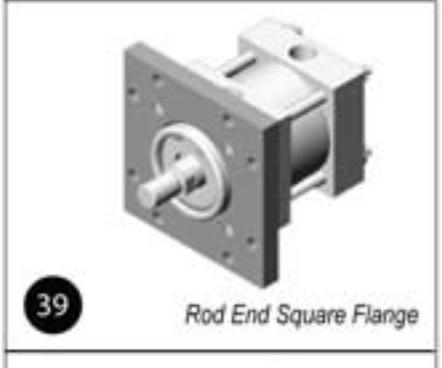
42 Mid Trunnion

39 Rod End Rectangular Flange

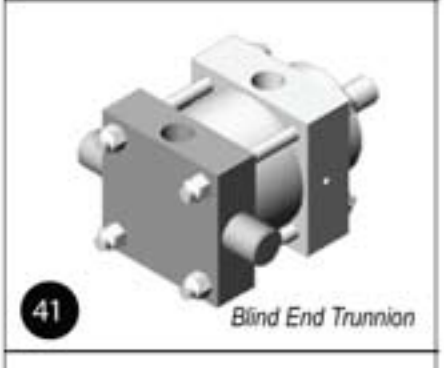
41 Rod End Trunnion



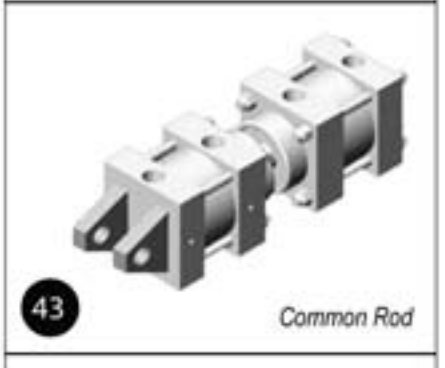
43 Common Head



39 Rod End Square Flange



41 Blind End Trunnion



43 Common Rod

40 Blind End Rectangular Flange

42 Double Rod

44 Common Head/Common Rod

Westcoast Cylinders have been manufacturing high quality, reliable ROYAL cylinders for over 40 years. Production started with a single cylinder design and expanded to a full range of multi-use, hydraulic, pneumatic cylinders and accessories.

Quality:
WCI is a leader in the design and manufacture of custom heavy duty cylinders. The materials, machinery and tools used to produce our products are continuously being updated. Our cylinders are built to the highest standards utilising the latest technology and processes.

Delivery:
MVP maintains a large range of stock parts which gives us the flexibility to respond to your needs in emergency situations. Please contact Mac Valves Pacific to expedite your special requirements.

NFPA STANDARD MOUNTS

All mountings are NFPA compliant and can be interchanged with other cylinders meeting NFPA standards.

NITROTEC TREATED MATERIALS

Nitrotec is a patented furnace treatment process which converts the steel surface into an extremely hard black iron nitride layer. It is superior to chrome plating in that the nitriding is diffused into the steel surface rendering the surface nonporous. There is no flaking or lifting as with overlying chrome on a softer material. Nitrotec delivers an exceptional surface hardness of up to 71 Rc, improves corrosion resistance and minimizes friction loss for long seal and gland bushing life. The Nitrotec process also gives an extremely hard dent-resistant finish to materials. Beneath the outer surface is a diffusion zone which gradually reduces in hardness to approximately 40 Rc at 0.015" depth. This diffusion zone acts as a case-hardening which is much superior to the relatively soft material underlying chrome plate.

Nitrotec Piston Rod

The piston rod is Nitrotec treated C1045 carbon steel. Other rod materials are available including chrome plated 316 stainless steel and chrome plated carbon steel. If you require a rod size that is not included in this catalogue, contact Mac Valves Pacific for information regarding availability and dimensions.

Nitrotec Barrel

Nitrotec treated steel is the standard barrel material. Other barrel materials are available upon request including chromed I.D. steel, Brass and Amalgon.

TEFLON® / HYTHANE® SEALS

The piston seal is a double acting Teflon impregnated compound to reduce friction yet enhance seal life. It has an exceptional temperature range of from -40 to 275°F. The Hythane rod seal is a high performance, high temperature seal compound having ultra low friction and long seal life. Its temperature range is from -40 to 230°F. The Hythane rod wiper, with internal ribs for extra stability and prevention of pressure trapping, cleans the rod on the return stroke. The static external seal is Buna-N material.

ROTOCAST BRONZE GLAND BUSHING

The gland bushing is manufactured from Rotocast bronze for low friction and long bearing life. Other materials such as Zinc alloy are available upon request. A snap ring retainer allows for easyremoval of the bushing for maintenance without dismantling thecylinder. Optional gland bushings with wear rings may be available, Mac Valves Pacific.

COLD FINISHED HEADS

Heads are precision machined from high quality cold finished steel for perfect alignment of barrel and moving parts.
For the 1½"bore and all bores 3¼" and larger, the heads are common for allrod sizes. This allows the end user to lower costs by stocking onlyone head for all rod sizes. The common head design also enables customers to increase or decrease rod sizes with little effort or expense. Due to space constraints on the 2" bore, the heads are common between the 1" and 1 3/8" rod sizes only. On the 2½" bore the heads are common only on the 5/8" and 1" rod sizes.

IMPROVED CUSHIONING:

Floating Check Seals

Cushions are now standard in our pneumatic cylinders. They have been redesigned with a new floating check seal that provides quick and reliable breakaway performance. They are made from the same long wearing Hythane® material.

Lengthened Cushion Sleeves

Our cushion sleeves have been lengthened with a new profile to provide a more effective cushion. On some of the smaller sizes that cannot fit a floating check seal, the cushion sleeve itself is floating. This eliminates the possibility of metal "pick-up" and premature wear. In addition, this floating sleeve has a locational-memory feature which centers the sleeve after the first cylinder cycle and holds its position thereafter to eliminate wear from repeated radial displacement.

Flush Mount Needle Valves

Needle valves are now the flush mount style and allow a fine adjustment. The standard location is at position 4, but they can be specified elsewhere. Contact the factory for cushioning options on the gland end of the 1½" bore (both rod sizes), and the 2" bore (1" and 1 3/8" only rod sizes).

CONVERTING TO NON-CUSHIONED

All heads are manufactured with integral cushion features making a conversion from a cushioned to a non-cushioned cylinder a simple, inexpensive process. To convert to a non-cushioned cylinder simply remove the check seal. If no check seal exists, as on the rod end of some smaller bore sizes, remove the cushion sleeve.

ONE-PIECE ALUMINUM PISTON

The piston is a one-piece design, aluminum construction, incorporating a replaceable wear ring to prevent metal to metal contact and increase the life of the cylinder.

NPTF / SAE PORTS

NPTF ports are standard at position 1 but can be specified in other positions. SAE straight thread O-ring ports are available at no additional cost.

REDUCED AIR PRESSURE REQUIREMENTS

The combination of seals and materials used within Royal air cylinders reduces internal friction thus reducing air pressure requirements. Reducing air pressure lowers consumption costs. Testimonials from customers show a reduction in pressure from 10 to 30%.

INTERNAL / EXTERNAL PISTON STOP

Standard external or optional internal piston stops are available to reduce stress on the piston rod for all cylinder sizes.

STROKE POSITION SENSORS

Proximity sensors or other switches can be fitted in most models. Contact Mac Valves Pacific for details.

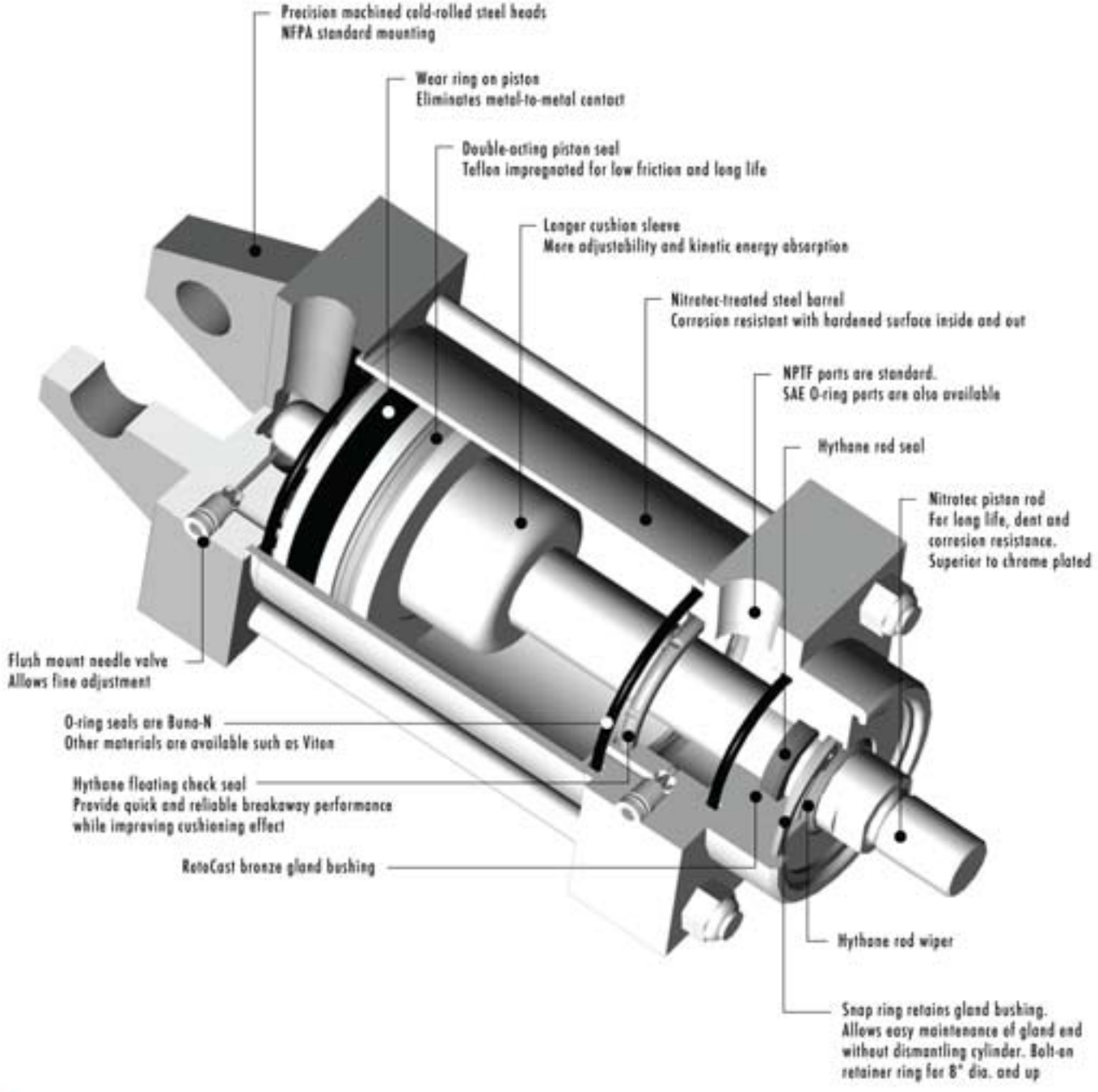
CUSTOM CYLINDERS

If our standard product does not meet your specifications, Mac Valves Pacific will manufacture custom cylinders to meet your requirements. Please contact Us.

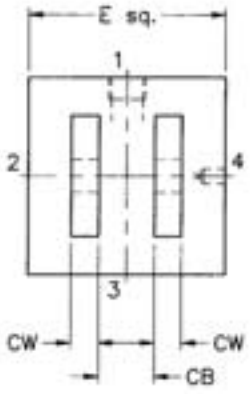
SPARE PARTS

Genuine Royal seal kits include all seal components, wear rings and needle valves. Please ensure to specify genuine Royal replacement parts to ensure you will receive all feature benefits.

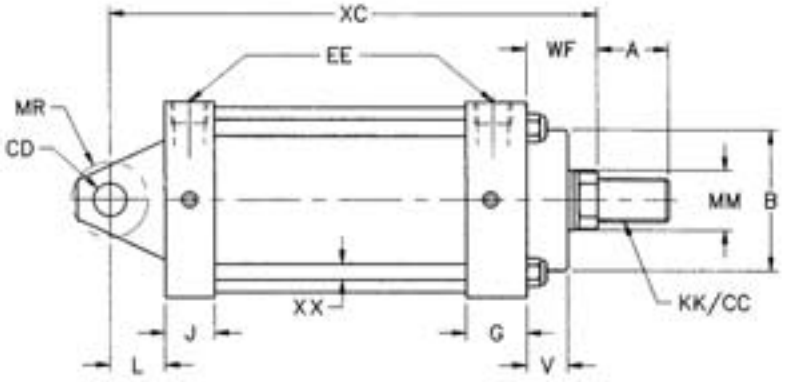
* Hythane® is a registered trademark of Hallite Seals International Ltd.

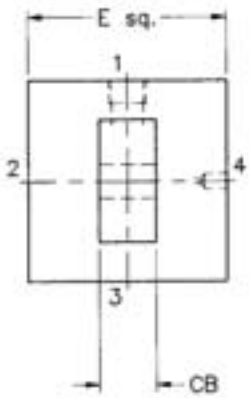


BORE	ROD	ROD DIA. MM	4K	CC	A	WF	V	B	+STR XC	E	G	J	L	LC CB	LE CB	CD	CW	EE NPTF	EE SAE	MR	XX
1 ½	1	5/8	7/16-20	1/2-20	3/4	1	3/4	1 11/16	5 3/8	2	1 3/16	15/16	3/4	25/32	3/4	1/2	1/2	3/8	-	1/2	1/4
	2	1	3/4-16	7/8-14	1 1/8	1 3/8			5 3/4												
2	1	5/8	7/16-20	1/2-20	3/4	1	3/4	2 7/32	5 3/8	2 1/2	1 3/16	15/16	3/4	25/32	3/4	1/2	1/2	3/8	-	1/2	5/16
	2	1	3/4-16	7/8-14	1 1/8	1 3/8			5 3/4												
	3	1 3/8	1-14	1 1/4-12	1 5/8	1 5/8			6												
2 ½	1	5/8	7/16-20	1/2-20	3/4	1	13/16	2 5/16	5 1/2	3	1 1/4	1	3/4	25/32	3/4	1/2	1/2	3/8	-	1/2	5/16
	2	1	3/4-16	7/8-14	1 1/8	1 3/8			5 7/8												
	3	1 3/8	1-14	1 1/4-12	1 5/8	1 5/8			6 1/8												
3 ¼	1	1	3/4-16	7/8-14	1 1/8	1 3/8	15/16	2 7/8	6 7/8	3 3/4	1 11/32	1 7/32	1 1/4	1 9/32	1 1/4	3/4	5/8	1/2	-	3/4	3/8
	2	1 3/8	1-14	1 1/4-12	1 5/8	1 5/8			7 1/8												
	3	1 3/4	1 1/4-12	1 1/2-12	2	1 7/8			7 3/8												
4	1	1	3/4-16	7/8-14	1 1/8	1 3/8	15/16	3 1/4	6 7/8	4 1/2	1 3/8	1 1/8	1 1/4	1 9/32	1 1/4	3/4	5/8	1/2	-	3/4	3/8
	2	1 3/8	1-14	1 1/4-12	1 5/8	1 5/8			7 1/8												
	3	1 3/4	1 1/4-12	1 1/2-12	2	1 7/8			7 3/8												
5	1	1	3/4-16	7/8-14	1 1/8	1 3/8	15/16	3 3/4	7 1/8	5 1/2	1 3/8	1 1/4	1 1/4	1 9/32	1 1/4	3/4	5/8	1/2	-	3/4	1/2
	2	1 3/8	1-14	1 1/4-12	1 5/8	1 5/8			7 3/8												
	3	1 3/4	1 1/4-12	1 1/2-12	2	1 7/8			7 5/8												
6	1	1 3/8	1-14	1 1/4-12	1 5/8	1 5/8	1	4 1/2	8 1/8	6 1/2	1 5/8	1 3/8	1 1/2	1 9/16	1 1/2	1	3/4	3/4	-	1	1/2
	2	1 3/4	1 1/4-12	1 1/2-12	2	1 7/8			8 3/8												
	3	2	1 1/2-12	1 3/4-12	2 1/4	2			8 1/2												
8	1	1 3/8	1-14	1 1/4-12	1 5/8	1 5/8	5/8	5 3/4	8 1/4	8 1/2	1 5/8	1 3/8	1 1/2	1 9/16	1 1/2	1	3/4	3/4	-	1	5/8
	2	1 3/4	1 1/4-12	1 1/2-12	2	1 7/8			8 1/2												
	3	2	1 1/2-12	1 3/4-12	2 1/4	2			8 5/8												
10	1	1 3/4	1 1/4-12	1 1/2-12	2	1 7/8	7/8	6 3/8	10 3/8	10 5/8	2	1 3/4	2 1/8	2 1/16	2	1 3/8	1	1	-	1 3/8	3/4
	2	2	1 1/2-12	1 3/4-12	2 1/4	2			10 1/2												
	3	2 1/2	1 7/8-12	2 1/4-12	3	2 1/4			10 3/4												
12	1	2	1 1/2-12	1 3/4-12	2 1/4	2	7/8	6 3/4	11 1/8	12 3/4	2	1 5/8	2 1/4	2 9/16	2 1/2	1 3/4	1 1/4	1	-	1 3/4	3/4
	2	2 1/2	1 7/8-12	2 1/4-12	3	2 1/4			11 3/8												
	3	3	2 1/4-12	2 3/4-12	3 1/2	2 1/4			11 3/8												

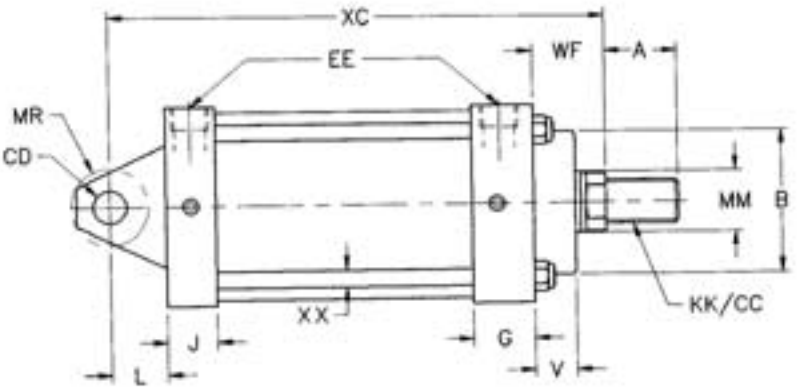


Model LC
NFPA Style MP1

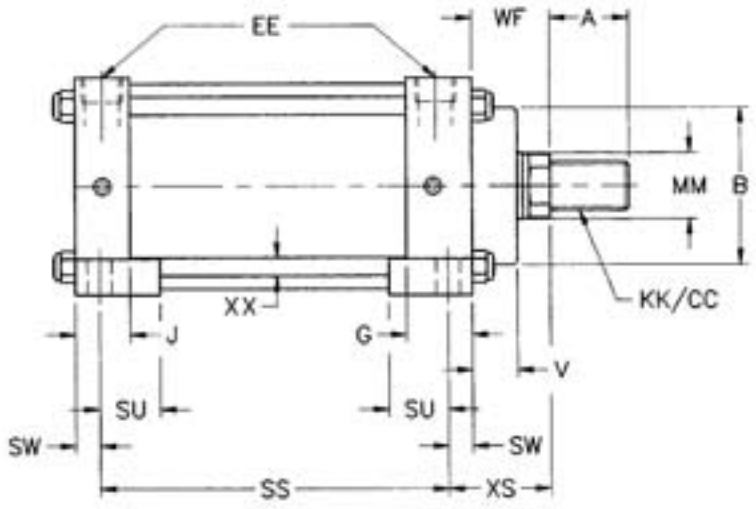


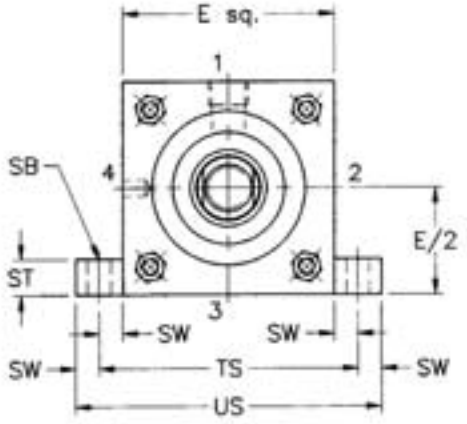


Model LE
NFPA Style MP3



BORE	ROD	ROD DIA. MM	KK	CC	A	WF	B	V	XS	+ STR SS	E	G	J	EE NPTF	EE SAE	SB	ST	SU	SW	TS	US	XX
1 ½	1	5/8	7/16-20	1/2-20	3/4	1	1 11/16	3/4	1 3/8	2 7/8	2	1 3/16	15/16	3/8	-	13/32	3/8	15/16	3/8	2 3/4	3 1/2	1/4
	2	1	3/4-16	7/8-14	1 1/8	1 3/8			1 3/4													
2	1	5/8	7/16-20	1/2-20	3/4	1	2 7/32	3/4	1 3/8	2 7/8	2 1/2	1 3/16	15/16	3/8	-	13/32	1/2	15/16	3/8	3 1/4	4	5/16
	2	1	3/4-16	7/8-14	1 1/8	1 3/8			1 3/4													
	3	1 3/8	1-14	1 1/4-12	1 5/8	1 5/8			2													
2 ½	1	5/8	7/16-20	1/2-20	3/4	1	2 5/16	13/16	1 3/8	3	3	1 1/4	1	3/8	-	13/32	1/2	15/16	3/8	3 3/4	4 1/2	5/16
	2	1	3/4-16	7/8-14	1 1/8	1 3/8			1 3/4													
	3	1 3/8	1-14	1 1/4-12	1 5/8	1 5/8			2													
3 ¼	1	1	3/4-16	7/8-14	1 1/8	1 3/8	2 7/8	15/16	1 7/8	3 1/4	3 3/4	1 11/32	1 7/32	1/2	-	17/32	3/4	1 1/4	1/2	4 3/4	5 3/4	3/8
	2	1 3/8	1-14	1 1/4-12	1 5/8	1 5/8			2 1/8													
	3	1 3/4	1 1/4-12	1 1/2-12	2	1 7/8			2 3/8													
4	1	1	3/4-16	7/8-14	1 1/8	1 3/8	3 1/4	15/16	1 7/8	3 1/4	4 1/2	1 3/8	1 5/8	1/2	-	17/32	3/4	1 1/4	1/2	5 1/2	6 1/2	3/8
	2	1 3/8	1-14	1 1/4-12	1 5/8	1 5/8			2 1/8													
	3	1 3/4	1 1/4-12	1 1/2-12	2	1 7/8			2 3/8													
5	1	1	3/4-16	7/8-14	1 1/8	1 3/8	3 3/4	15/16	2 1/16	3 1/8	5 1/2	1 3/8	1 1/4	1/2	-	13/16	1	1 9/16	11/16	6 7/8	8 1/4	1/2
	2	1 3/8	1-14	1 1/4-12	1 5/8	1 5/8			2 5/16													
	3	1 3/4	1 1/4-12	1 1/2-12	2	1 7/8			2 9/16													
6	1	1 3/8	1-14	1 1/4-12	1 5/8	1 5/8	4 1/2	1	2 5/16	3 5/8	6 1/2	1 5/8	1 3/8	3/4	-	13/16	1	1 9/16	11/16	7 7/8	9 1/4	1/2
	2	1 3/4	1 1/4-12	1 1/2-12	2	1 7/8			2 9/16													
	3	2	1 1/2-12	1 3/4-12	2 1/4	2			2 11/16													
8	1	1 3/8	1-14	1 1/4-12	1 5/8	1 5/8	5 3/4	5/8	2 5/16	3 3/4	8 1/2	1 5/8	1 3/8	3/4	-	13/16	1	1 9/16	11/16	9 7/8	11 1/4	5/8
	2	1 3/4	1 1/4-12	1 1/2-12	2	1 7/8			2 9/16													
	3	2	1 1/2-12	1 3/4-12	2 1/4	2			2 11/16													
10	1	1 3/4	1 1/4-12	1 1/2-12	2	1 7/8	6 3/8	7/8	2 3/4	4 5/8	10 5/8	2	1 3/4	1	-	1 1/16	1 1/4	2	7/8	12 3/8	14 1/8	3/4
	2	2	1 1/2-12	1 3/4-12	2 1/4	2			2 7/8													
	3	2 1/2	1 7/8-12	2 1/4-12	3	2 1/4			3 1/8													
12	1	2	1 1/2-12	1 3/4-12	2 1/4	2	6 3/4	7/8	2 7/8	5 1/8	12 3/4	2	1 5/8	1	-	1 1/16	1 1/4	2	7/8	14 1/2	16 1/4	3/4
	2	2 1/2	1 7/8-12	2 1/4-12	3	2 1/4			3 1/8													
	3	3	2 1/4-12	2 3/4-12	3 1/2	2 1/4			3 1/8													

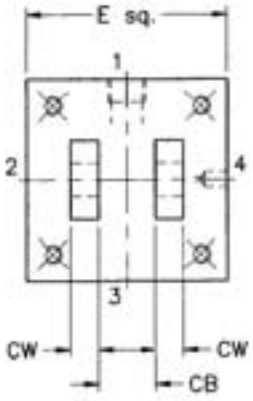




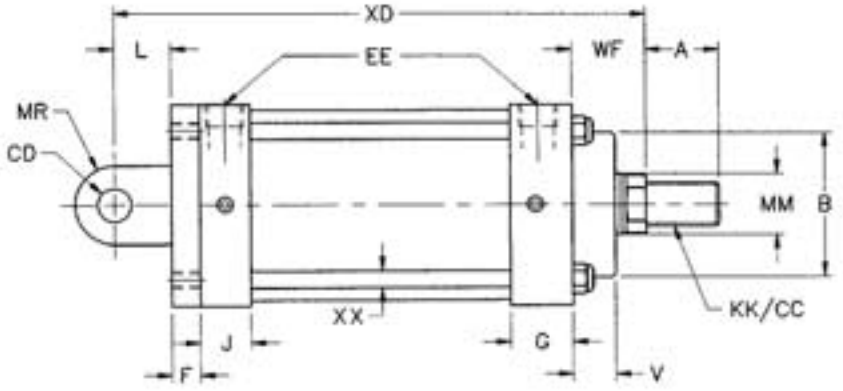
Model LF
NFPA Style MS2

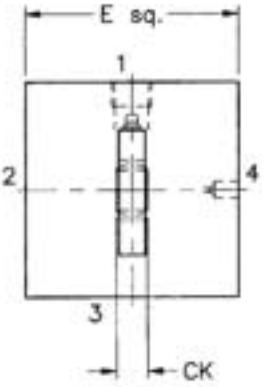
Note:
For 1 ½" bore cushioned foot mount cylinder - due to the position of the needle valve, installer should pre-adjust before cylinder is mounted.

BORE	ROD	ROD DIA. MM	KK	CC	A	WF	V	B	+ STR XD	+ STR XH	E	F	G	J	L	CB	CK	CD	CW	EE NPTF	EE SAE	MA	MR	SL	XX
1 1/2	1	5/8	7/16-20	1/2-20	3/4	1	3/4	1 1/16	5 3/4	5 7/16	2	3/8	1 3/16	15/16	3/4	0.76	7/16	1/2	1/2	3/8	-	3/4	5/8	15/16	1/4
	2	1	3/4-16	7/8-14	1 1/8	1 3/8			6 1/8	5 13/16															
2	1	5/8	7/16-20	1/2-20	3/4	1	3/4	2 7/32	5 3/4	5 7/16	2 1/2	3/8	1 3/16	15/16	3/4	0.76	7/16	1/2	1/2	3/8	-	3/4	5/8	15/16	5/16
	2	1	3/4-16	7/8-14	1 1/8	1 3/8			6 1/8	5 13/16															
	3	1 3/8	1-14	1 1/4-12	1 5/8	1 5/8			6 3/8	6 1/16															
2 1/2	1	5/8	7/16-20	1/2-20	3/4	1	13/16	2 5/16	5 7/8	5 9/16	3	3/8	1 1/4	1	3/4	0.76	7/16	1/2	1/2	3/8	-	3/4	5/8	15/16	5/16
	2	1	3/4-16	7/8-14	1 1/8	1 3/8			6 1/4	5 15/16															
	3	1 3/8	1-14	1 1/4-12	1 5/8	1 5/8			6 1/2	6 3/16															
3 1/4	1	1	3/4-16	7/8-14	1 1/8	1 3/8	15/16	2 7/8	7 1/2	6 11/16	3 1/4	5/8	1 13/32	1 7/32	1 1/4	1.26	2 3/32	3/4	5/8	1/2	-	1 1/4	7/8	1 3/16	3/8
	2	1 3/8	1-14	1 1/4-12	1 5/8	1 5/8			7 3/4	7 1/16															
	3	1 3/4	1 1/4-12	1 1/2-12	2	1 7/8			8	7 5/16															
4	1	1	3/4-16	7/8-14	1 1/8	1 3/8	15/16	3 1/4	7 1/2	6 15/16	4 1/2	5/8	1 3/8	1 3/8	1 1/4	1.26	2 3/32	3/4	5/8	1/2	-	1 1/4	7/8	1 3/16	3/8
	2	1 3/8	1-14	1 1/4-12	1 5/8	1 5/8			7 3/4	7 1/16															
	3	1 3/4	1 1/4-12	1 1/2-12	2	1 7/8			8	7 5/16															
5	1	1	3/4-16	7/8-14	1 1/8	1 3/8	15/16	3 3/4	7 3/4	7 1/16	5 1/2	5/8	1 3/8	1 3/4	1 1/4	1.26	2 3/32	3/4	5/8	1/2	-	1 1/4	7/8	1 3/16	1/2
	2	1 3/8	1-14	1 1/4-12	1 5/8	1 5/8			8	7 5/16															
	3	1 3/4	1 1/4-12	1 1/2-12	2	1 7/8			8 1/4	7 9/16															
6	1	1 3/8	1-14	1 1/4-12	1 5/8	1 5/8	1	4 1/2	8 7/8	8 3/16	6 1/2	3/4	1 3/8	1 3/8	1 1/2	1.51	2 3/8	1	3/4	3/4	-	1 1/2	1 3/8	1 9/16	1/2
	2	1 3/4	1 1/4-12	1 1/2-12	2	1 7/8			9 1/8	8 7/16															
	3	2	1 1/2-12	1 3/4-12	2 1/4	2			9 1/4	8 9/16															

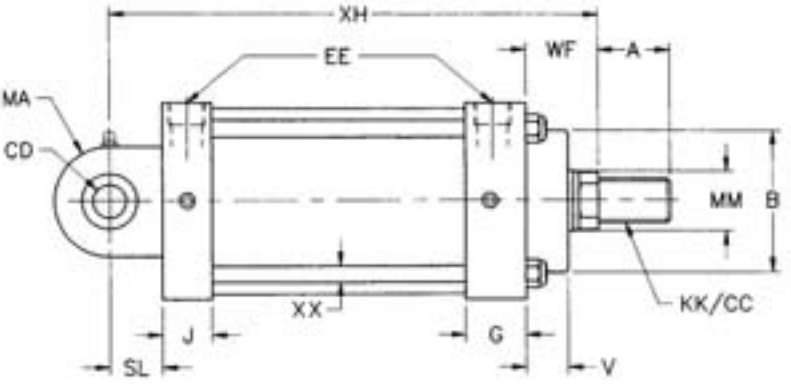


Model LMP
NFPA Style MP-2



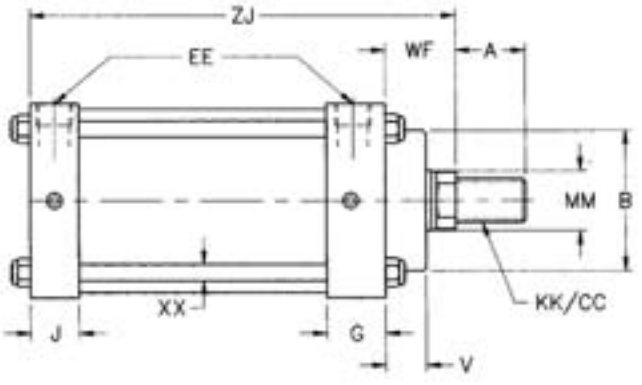


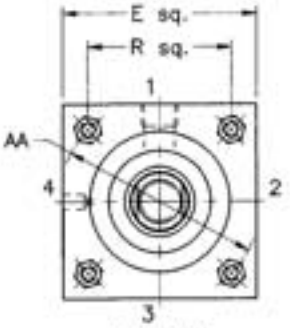
Model LW
NFPA Style MPU3



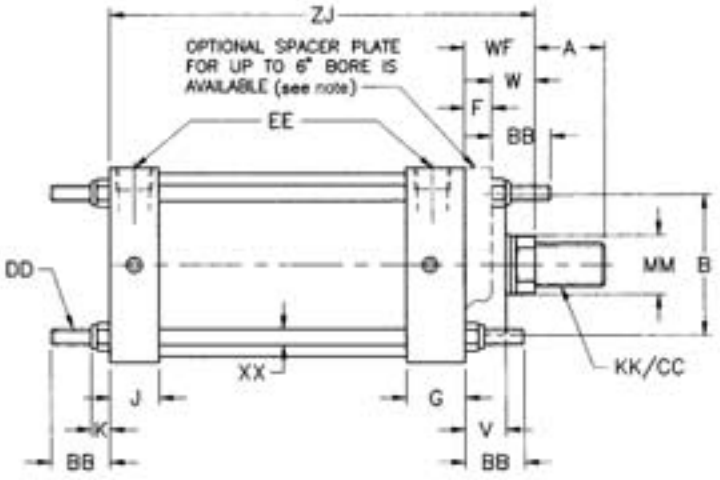
BORE	ROD	ROD DIA. M M	KK	CC	A	WF	W	V	B	AA	BB	DD	+ STR ZJ	E	F	G	J	K	R	EE NPTF	EE SAE	XX
1 ½	1	5/8	7/16-20	1/2-20	3/4	1	5/8	3/4	1 11/16	2.02	1	1/4-28	4 5/8	2	3/8	1 3/16	15/16	5/16	1.43	3/8	-	1/4
	2	1	3/4-16	7/8-14	1 1/8	1 3/8	1						5									
2	1	5/8	7/16-20	1/2-20	3/4	1	5/8	3/4	2 7/32	2.60	1 1/8	5/16-24	4 5/8	2 1/2	3/8	1 3/16	15/16	3/8	1.84	3/8	-	5/16
	2	1	3/4-16	7/8-14	1 1/8	1 3/8	1						5									
	3	1 3/8	1-14	1 1/4-12	1 5/8	1 5/8	1 1/4						5 1/4									
2 ½	1	5/8	7/16-20	1/2-20	3/4	1	5/8	13/16	2 5/16	3.10	1 1/8	5/16-24	4 3/4	3	3/8	1 1/4	1	3/8	2.19	3/8	-	5/16
	2	1	3/4-16	7/8-14	1 1/8	1 3/8	1						5 1/8									
	3	1 3/8	1-14	1 1/4-12	1 5/8	1 5/8	1 1/4						5 3/8									
3 ¼	1	1	3/4-16	7/8-14	1 1/8	1 3/8	3/4	15/16	2 7/8	3.90	1 3/8	3/8-24	5 5/8	3 3/4	5/8	1 11/32	1 7/32	7/16	2.76	1/2	-	3/8
	2	1 3/8	1-14	1 1/4-12	1 5/8	1 5/8	1						5 7/8									
	3	1 3/4	1 1/4-12	1 1/2-12	2	1 7/8	1 1/4						6 1/8									
4	1	1	3/4-16	7/8-14	1 1/8	1 3/8	3/4	15/16	3 1/4	4.70	1 3/8	3/8-24	5 5/8	4 1/2	5/8	1 3/8	1 1/8	7/16	3.32	1/2	-	3/8
	2	1 3/8	1-14	1 1/4-12	1 5/8	1 5/8	1						5 7/8									
	3	1 3/4	1 1/4-12	1 1/2-12	2	1 7/8	1 1/4						6 1/8									
5	1	1	3/4-16	7/8-14	1 1/8	1 3/8	3/4	15/16	3 3/4	5.80	1 13/16	1/2-20	5 7/8	5 1/2	5/8	1 3/8	1 1/4	5/8	4.10	1/2	-	1/2
	2	1 3/8	1-14	1 1/4-12	1 5/8	1 5/8	1						6 1/8									
	3	1 3/4	1 1/4-12	1 1/2-12	2	1 7/8	1 1/4						6 3/8									
6	1	1 3/8	1-14	1 1/4-12	1 5/8	1 5/8	7/8	1	4 1/2	6.90	1 13/16	1/2-20	6 5/8	6 1/2	3/4	1 5/8	1 3/8	5/8	4.88	3/4	-	1/2
	2	1 3/4	1 1/4-12	1 1/2-12	2	1 7/8	1 1/8						6 7/8									
	3	2	1 1/2-12	1 3/4-12	2 1/4	2	1 1/4						7									
8	1	1 3/8	1-14	1 1/4-12	1 5/8	1 5/8	-	5/8	5 3/4	9.10	2 5/16	5/8-18	6 3/4	8 1/2	-	1 5/8	1 3/8	3/4	6.44	3/4	-	5/8
	2	1 3/4	1 1/4-12	1 1/2-12	2	1 7/8	-						7									
	3	2	1 1/2-12	1 3/4-12	2 1/4	2	-						7 1/8									
10	1	1 3/4	1 1/4-12	1 1/2-12	2	1 7/8	-	7/8	6 3/8	11.20	2 11/16	3/4-16	8 1/4	10 5/8	-	2	1 3/4	7/8	7.92	1	-	3/4
	2	2	1 1/2-12	1 3/4-12	2 1/4	2	-						8 3/8									
	3	2 1/2	1 7/8-12	2 1/4-12	3	2 1/4	-						8 5/8									
12	1	2	1 1/2-12	1 3/4-12	2 1/4	2	-	7/8	6 3/4	13.30	2 11/16	3/4-16	8 7/8	12 3/4	-	2	1 5/8	7/8	9.40	1	-	3/4
	2	2 1/2	1 7/8-12	2 1/4-12	3	2 1/4	-						9 1/8									
	3	3	2 1/4-12	2 3/4-12	3 1/2	2 1/4	-						9 1/8									

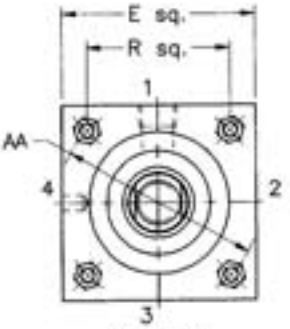
For models LNA and LNC up to 6" bore:
If the cylinder will be mounted directly onto the rod-end face and the standard NFPA "W" dimension is required, an optional spacer plate is available. For this option, choose letter "F" in the options section of the nomenclature page when creating the cylinder model number.





Model LNM
NFPA Style MX0

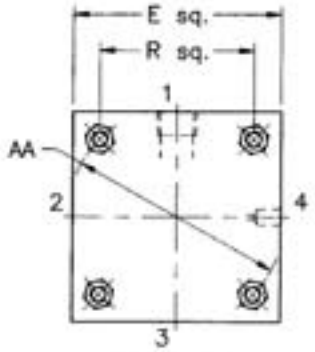




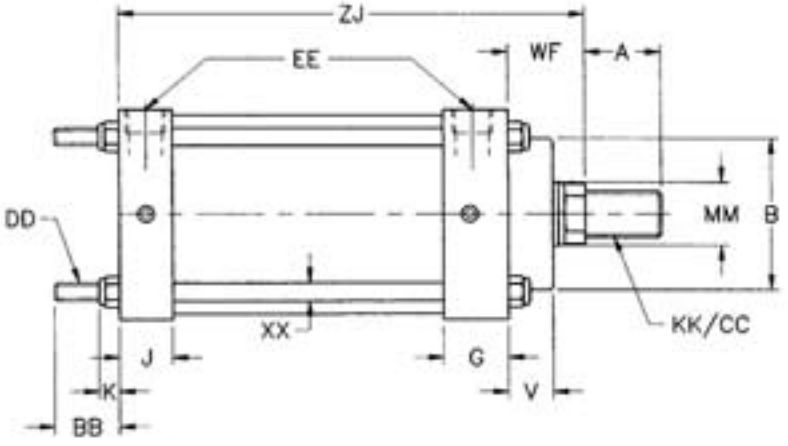
Model LNA
NFPA Style MX1

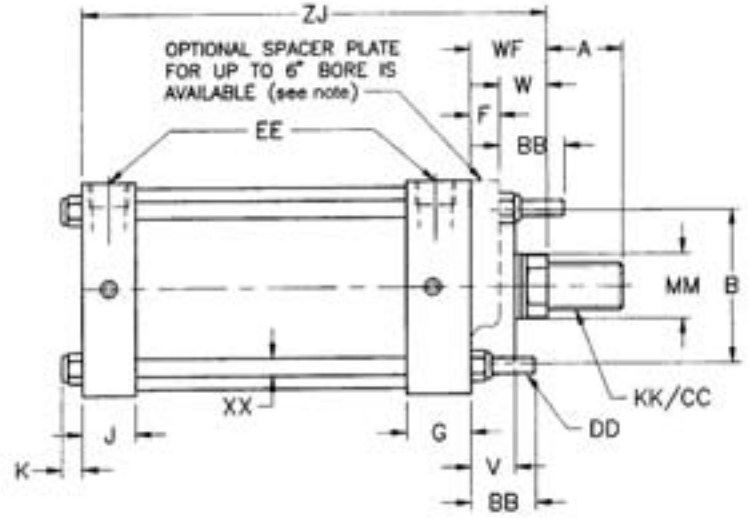
BORE	ROD DIA. ROD	MM	KK	CC	A	WF	W	V	B	AA	BB	DD	+ STR ZJ	E	F	G	J	K	R	EE NPTF	EE SAE	XX
1 ½	1	5/8	7/16-20	1/2-20	3/4	1	5/8	3/4	1 11/16	2.02	1	1/4-28	4 5/8	2	3/8	1 3/16	15/16	5/16	1.43	3/8	-	1/4
	2	1	3/4-16	7/8-14	1 1/8	1 3/8	1						5									
2	1	5/8	7/16-20	1/2-20	3/4	1	5/8	3/4	2 7/32	2.60	1 1/8	5/16-24	4 5/8	2 1/2	3/8	1 3/16	15/16	3/8	1.84	3/8	-	5/16
	2	1	3/4-16	7/8-14	1 1/8	1 3/8	1						5									
	3	1 3/8	1-14	1 1/4-12	1 5/8	1 5/8	1 1/4						5 1/4									
2 ½	1	5/8	7/16-20	1/2-20	3/4	1	5/8	13/16	2 5/16	3.10	1 1/8	5/16-24	4 3/4	3	3/8	1 1/4	1	3/8	2.19	3/8	-	5/16
	2	1	3/4-16	7/8-14	1 1/8	1 3/8	1						5 1/8									
	3	1 3/8	1-14	1 1/4-12	1 5/8	1 5/8	1 1/4						5 3/8									
3 ¼	1	1	3/4-16	7/8-14	1 1/8	1 3/8	3/4	15/16	2 7/8	3.90	1 3/8	3/8-24	5 5/8	3 3/4	5/8	1 11/32	1 7/32	7/16	2.76	1/2	-	3/8
	2	1 3/8	1-14	1 1/4-12	1 5/8	1 5/8	1						5 7/8									
	3	1 3/4	1 1/4-12	1 1/2-12	2	1 7/8	1 1/4						6 1/8									
4	1	1	3/4-16	7/8-14	1 1/8	1 3/8	3/4	15/16	3 1/4	4.70	1 3/8	3/8-24	5 5/8	4 1/2	5/8	1 3/8	1 1/8	7/16	3.32	1/2	-	3/8
	2	1 3/8	1-14	1 1/4-12	1 5/8	1 5/8	1						5 7/8									
	3	1 3/4	1 1/4-12	1 1/2-12	2	1 7/8	1 1/4						6 1/8									
5	1	1	3/4-16	7/8-14	1 1/8	1 3/8	3/4	15/16	3 3/4	5.80	1 13/16	1/2-20	5 7/8	5 1/2	5/8	1 3/8	1 1/4	5/8	4.10	1/2	-	1/2
	2	1 3/8	1-14	1 1/4-12	1 5/8	1 5/8	1						6 1/8									
	3	1 3/4	1 1/4-12	1 1/2-12	2	1 7/8	1 1/4						6 3/8									
6	1	1 3/8	1-14	1 1/4-12	1 5/8	1 5/8	7/8	1	4 1/2	6.90	1 13/16	1/2-20	6 5/8	6 1/2	3/4	1 5/8	1 3/8	5/8	4.88	3/4	-	1/2
	2	1 3/4	1 1/4-12	1 1/2-12	2	1 7/8	1 1/8						6 7/8									
	3	2	1 1/2-12	1 3/4-12	2 1/4	2	1 1/4						7									
8	1	1 3/8	1-14	1 1/4-12	1 5/8	1 5/8	-	5/8	5 3/4	9.10	2 5/16	5/8-18	6 3/4	8 1/2	-	1 5/8	1 3/8	3/4	6.44	3/4	-	5/8
	2	1 3/4	1 1/4-12	1 1/2-12	2	1 7/8	-						7									
	3	2	1 1/2-12	1 3/4-12	2 1/4	2	-						7 1/8									
10	1	1 3/4	1 1/4-12	1 1/2-12	2	1 7/8	-	7/8	6 3/8	11.20	2 11/16	3/4-16	8 1/4	10 5/8	-	2	1 3/4	7/8	7.92	1	-	3/4
	2	2	1 1/2-12	1 3/4-12	2 1/4	2	-						8 3/8									
	3	2 1/2	1 7/8-12	2 1/4-12	3	2 1/4	-						8 5/8									
12	1	2	1 1/2-12	1 3/4-12	2 1/4	2	-	7/8	6 3/4	13.30	2 11/16	3/4-16	8 7/8	12 3/4	-	2	1 5/8	7/8	9.40	1	-	3/4
	2	2 1/2	1 7/8-12	2 1/4-12	3	2 1/4	-						9 1/8									
	3	3	2 1/4-12	2 3/4-12	3 1/2	2 1/4	-						9 1/8									

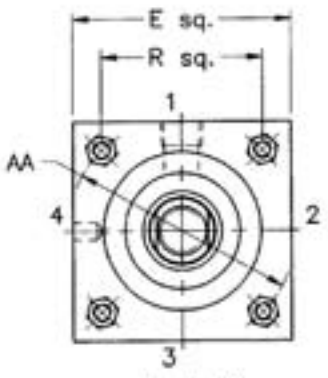
For models LNA and LNC up to 6" bore:
If the cylinder will be mounteddirectly onto the rod-end face and the standard NFPA "W"dimension is required, an optional spacer plate is available. For this option, choose letter "F" in the options section of the nomenclature page when creating the cylinder model number.



Model LNB
NFPA Style MX2





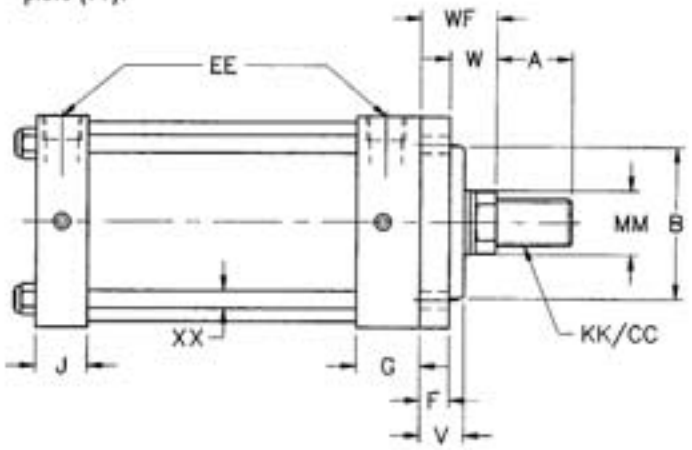


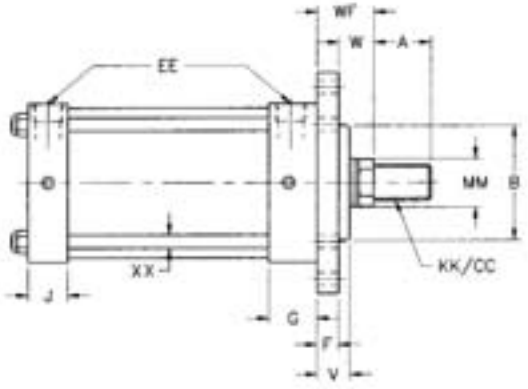
Model LNC
NFPA Style MX3

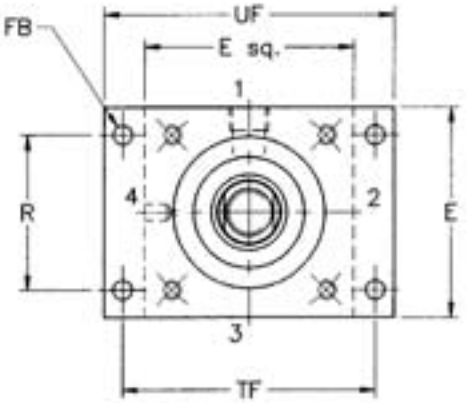
BORE	ROD	ROD DIA. MM	KK	CC	A	WF	W	V	B	E	F	F1	G	J	EE NPTF	EE SAE	FB	R	TF	UF	XX
1 ½	1	5/8	7/16-20	1/2-20	3/4	1	5/8	3/4	1 11/16	2	3/8	13/16	1 3/16	15/16	3/8	-	9/32	1.43	2 3/4	3 3/8	1/4
	2	1	3/4-16	7/8-14	1 1/8	1 3/8	1														
2	1	5/8	7/16-20	1/2-20	3/4	1	5/8	3/4	2 7/32	2 1/2	3/8	13/16	1 3/16	15/16	3/8	-	11/32	1.84	3 3/8	4 1/8	5/16
	2	1	3/4-16	7/8-14	1 1/8	1 3/8	1														
	3	1 3/8	1-14	1 1/4-12	1 5/8	1 5/8	1 1/4														
2 ½	1	5/8	7/16-20	1/2-20	3/4	1	5/8	13/16	2 5/16	3	3/8	7/8	1 1/4	1	3/8	-	11/32	2.19	3 7/8	4 5/8	5/16
	2	1	3/4-16	7/8-14	1 1/8	1 3/8	1														
	3	1 3/8	1-14	1 1/4-12	1 5/8	1 5/8	1 1/4														
3 ¼	1	1	3/4-16	7/8-14	1 1/8	1 3/8	3/4	15/16	2 7/8	3 3/4	5/8	1	1 11/32	1 7/32	1/2	-	13/32	2.76	4 11/16	5 1/2	3/8
	2	1 3/8	1-14	1 1/4-12	1 5/8	1 5/8	1														
	3	1 3/4	1 1/4-12	1 1/2-12	2	1 7/8	1 1/4														
4	1	1	3/4-16	7/8-14	1 1/8	1 3/8	3/4	15/16	3 1/4	4 1/2	5/8	1	1 3/8	1 1/8	1/2	-	13/32	3.32	5 7/16	6 1/4	3/8
	2	1 3/8	1-14	1 1/4-12	1 5/8	1 5/8	1														
	3	1 3/4	1 1/4-12	1 1/2-12	2	1 7/8	1 1/4														
5	1	1	3/4-16	7/8-14	1 1/8	1 3/8	3/4	15/16	3 3/4	5 1/2	5/8	1	1 3/8	1 1/4	1/2	-	17/32	4.10	6 5/8	7 5/8	1/2
	2	1 3/8	1-14	1 1/4-12	1 5/8	1 5/8	1														
	3	1 3/4	1 1/4-12	1 1/2-12	2	1 7/8	1 1/4														
6	1	1 3/8	1-14	1 1/4-12	1 5/8	1 5/8	7/8	1	4 1/2	6 1/2	3/4	1 1/16	1 5/8	1 3/8	3/4	-	17/32	4.88	7 5/8	8 5/8	1/2
	2	1 3/4	1 1/4-12	1 1/2-12	2	1 7/8	1 1/8														
	3	2	1 1/2-12	1 3/4-12	2 1/4	2	1 1/4														

Models LR and LRS with optional thicker mounting flange plate
Note: For the LR and LRS models – if the protruding hub is to be used as a mounting spigot, use the table values for B and V to ensure proper fit. If B dia. is too large and existing equipment cannot be modified, a thicker mounting flange plate (F1) is available that will recess the hub. An equivalent rod extension will accompany the increase in plate thickness. For this option, choose letter "U" in the options section of the nomenclature page when creating the cylinder model number.

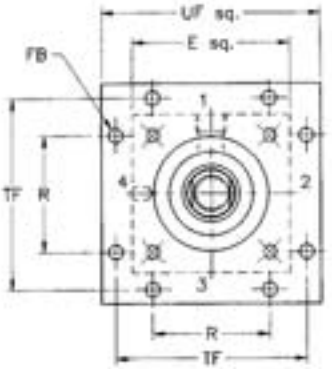
Detail of optional thicker mounting plate (F1).





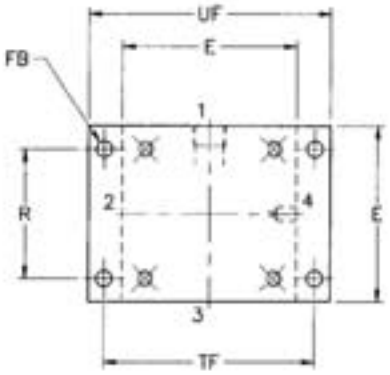


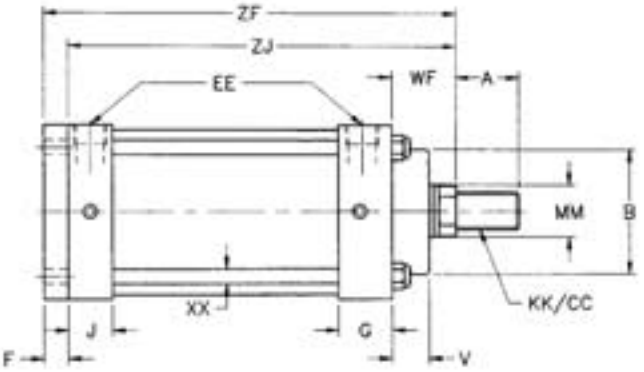
Model LR
NFPA Style MF1



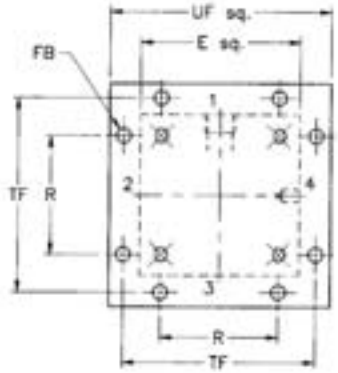
Model LRS
NFPA Style MF5

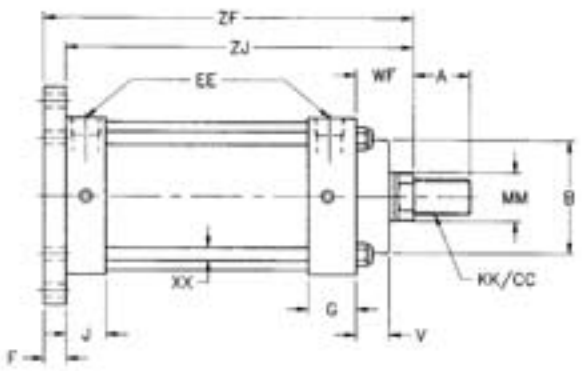
BORE	ROD	ROD DIA. MM	KK	CC	A	WF	V	B	ADD STROKE ZF	ADD STROKE ZJ	E	F	G	J	EE NPTF	EE SAE	FB	R	TF	UF	XX
1 ½	1	5/8	7/16-20	1/2-20	3/4	1	3/4	1 11/16	5	4 5/8	2	3/8	1 3/16	15/16	3/8	-	9/32	1.43	2 3/4	3 3/8	1/4
	2	1	3/4-16	7/8-14	1 1/8	1 3/8			5 3/8	5											
2	1	5/8	7/16-20	1/2-20	3/4	1	3/4	2 7/32	5	4 5/8	2 1/2	3/8	1 3/16	15/16	3/8	-	11/32	1.84	3 3/8	4 1/8	5/16
	2	1	3/4-16	7/8-14	1 1/8	1 3/8			5 3/8	5											
	3	1 3/8	1-14	1 1/4-12	1 5/8	1 5/8			5 5/8	5 1/4											
2 ½	1	5/8	7/16-20	1/2-20	3/4	1	13/16	2 5/16	5 1/8	4 3/4	3	3/8	1 1/4	1	3/8	-	11/32	2.19	3 7/8	4 5/8	5/16
	2	1	3/4-16	7/8-14	1 1/8	1 3/8			5 1/2	5 1/8											
	3	1 3/8	1-14	1 1/4-12	1 5/8	1 5/8			5 3/4	5 3/8											
3 ¼	1	1	3/4-16	7/8-14	1 1/8	1 3/8	15/16	2 7/8	6 1/4	5 5/8	3 3/4	5/8	1 11/32	1 7/32	1/2	-	13/32	2.76	4 11/16	5 1/2	3/8
	2	1 3/8	1-14	1 1/4-12	1 5/8	1 5/8			6 1/2	5 7/8											
	3	1 3/4	1 1/4-12	1 1/2-12	2	1 7/8			6 3/4	6 1/8											
4	1	1	3/4-16	7/8-14	1 1/8	1 3/8	15/16	3 1/4	6 1/4	5 5/8	4 1/2	5/8	1 3/8	1 1/8	1/2	-	13/32	3.32	5 7/16	6 1/4	3/8
	2	1 3/8	1-14	1 1/4-12	1 5/8	1 5/8			6 1/2	5 7/8											
	3	1 3/4	1 1/4-12	1 1/2-12	2	1 7/8			6 3/4	6 1/8											
5	1	1	3/4-16	7/8-14	1 1/8	1 3/8	15/16	3 3/4	6 1/2	5 7/8	5 1/2	5/8	1 3/8	1 1/4	1/2	-	17/32	4.10	6 5/8	7 5/8	1/2
	2	1 3/8	1-14	1 1/4-12	1 5/8	1 5/8			6 3/4	6 1/8											
	3	1 3/4	1 1/4-12	1 1/2-12	2	1 7/8			7	6 3/8											
6	1	1 3/8	1-14	1 1/4-12	1 5/8	1 5/8	1	4 1/2	7 3/8	6 5/8	6 1/2	3/4	1 5/8	1 3/8	3/4	-	17/32	4.88	7 5/8	8 5/8	1/2
	2	1 3/4	1 1/4-12	1 1/2-12	2	1 7/8			7 5/8	6 7/8											
	3	2	1 1/2-12	1 3/4-12	2 1/4	2			7 3/4	7											





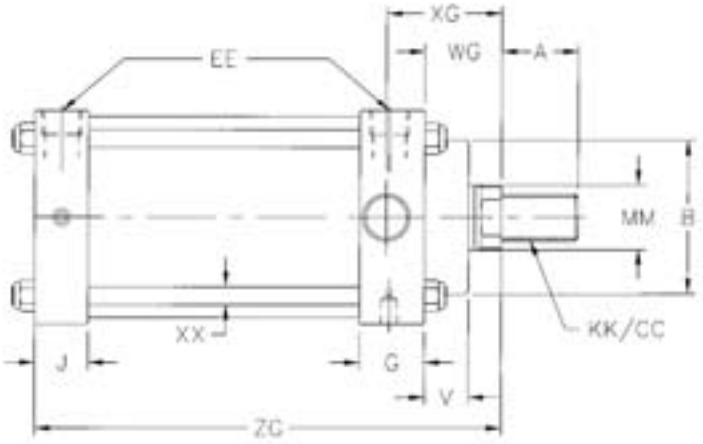
Model LB
NFPA Style MF2



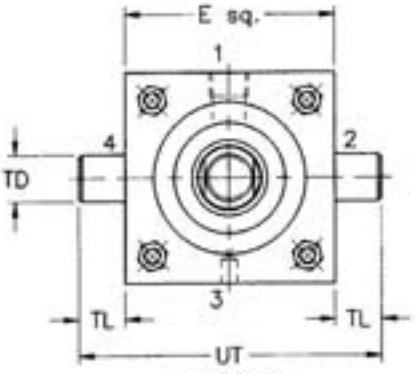


Model LBS
NFPA Style MF6

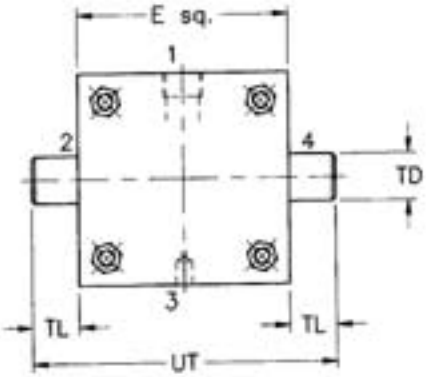
BORE	ROD	ROD DIA. MM	KK	CC	A	W	WG	B	V	XG	+ STROKE XJ	+ STROKE ZG	E	G	J	TD	TL	UT	EE NPTF	EE SAE	XX
1 ½	1	5/8	7/16-20	1/2-20	3/4	1	1 1/8	1 11/16	3/4	1 3/4	4 1/8	4 3/4	2	1 3/16	15/16	1	1	4	3/8	-	1/4
	2	1	3/4-16	7/8-14	1 1/8	1 3/8	1 1/2			2 1/8	4 1/2	5 1/8									
2	1	5/8	7/16-20	1/2-20	3/4	1	1 1/8	2 7/32	3/4	1 3/4	4 1/8	4 3/4	2 1/2	1 3/16	15/16	1	1	4 1/2	3/8	-	5/16
	2	1	3/4-16	7/8-14	1 1/8	1 3/8	1 1/2			2 1/8	4 1/2	5 1/8									
	3	1 3/8	1-14	1 1/4-12	1 5/8	1 5/8	1 3/4			2 3/8	4 3/4	5 3/8									
2 ½	1	5/8	7/16-20	1/2-20	3/4	1	1 1/8	2 5/16	13/16	1 3/4	4 1/4	4 7/8	3	1 1/4	1	1	1	5	3/8	-	5/16
	2	1	3/4-16	7/8-14	1 1/8	1 3/8	1 1/2			2 1/8	4 5/8	5 1/4									
	3	1 3/8	1-14	1 1/4-12	1 5/8	1 5/8	1 3/4			2 3/8	4 7/8	5 1/2									
3 ¼	1	1	3/4-16	7/8-14	1 1/8	1 3/8	1 1/2	2 7/8	15/16	2 1/4	5	5 3/4	3 3/4	1 11/32	1 7/32	1	1	5 3/4	1/2	-	3/8
	2	1 3/8	1-14	1 1/4-12	1 5/8	1 5/8	1 3/4			2 1/2	5 1/4	6									
	3	1 3/4	1 1/4-12	1 1/2-12	2	1 7/8	2			2 3/4	5 1/2	6 1/4									
4	1	1	3/4-16	7/8-14	1 1/8	1 3/8	1 7/16	3 1/4	15/16	2 1/4	5	5 11/16	4 1/2	1 3/8	1 1/8	1	1	6 1/2	1/2	-	3/8
	2	1 3/8	1-14	1 1/4-12	1 5/8	1 5/8	1 11/16			2 1/2	5 1/4	5 15/16									
	3	1 3/4	1 1/4-12	1 1/2-12	2	1 7/8	1 15/16			2 3/4	5 1/2	6 3/16									
5	1	1	3/4-16	7/8-14	1 1/8	1 3/8	1 7/16	3 3/4	15/16	2 1/4	5 1/4	5 15/16	5 1/2	1 3/8	1 1/4	1	1	7 1/2	1/2	-	1/2
	2	1 3/8	1-14	1 1/4-12	1 5/8	1 5/8	1 11/16			2 1/2	5 1/2	6 3/16									
	3	1 3/4	1 1/4-12	1 1/2-12	2	1 7/8	1 15/16			2 3/4	5 3/4	6 7/16									
6	1	1 3/8	1-14	1 1/4-12	1 5/8	1 9/16	1 3/4	4 1/2	1	2 5/8	5 7/8	6 3/4	6 1/2	1 5/8	1 3/8	1 3/8	1 3/8	9 1/4	3/4	-	1/2
	2	1 3/4	1 1/4-12	1 1/2-12	2	1 13/16	2			2 7/8	6 1/8	7									
	3	2	1 1/2-12	1 3/4-12	2 1/4	1 15/16	2 1/8			3	6 1/4	7 1/8									
8	1	1 3/8	1-14	1 1/4-12	1 5/8	1 1/2	1 13/16	5 3/4	5/8	2 5/8	6	6 15/16	8 1/2	1 5/8	1 9/16	1 3/8	1 3/8	11 1/4	3/4	-	5/8
	2	1 3/4	1 1/4-12	1 1/2-12	2	1 3/4	2 1/16			2 7/8	6 1/4	7 3/16									
	3	2	1 1/2-12	1 3/4-12	2 1/4	1 7/8	2 3/16			3	6 3/8	7 5/16									
10	1	1 3/4	1 1/4-12	1 1/2-12	2	1 11/16	2	6 3/8	7/8	3	7 1/4	8 3/8	10 5/8	2	1 15/16	1 3/4	1 3/4	14 1/8	1	-	3/4
	2	2	1 1/2-12	1 3/4-12	2 1/4	1 13/16	2 1/8			3 1/8	7 3/8	8 1/2									
	3	2 1/2	1 7/8-12	2 1/4-12	3	2 1/16	2 3/8			3 3/8	7 5/8	8 3/4									
12	1	2	1 1/2-12	1 3/4-12	2 1/4	1 11/16	2 1/8	6 3/4	7/8	3 1/8	7 7/8	9	12 3/4	2	1 15/16	1 3/4	1 3/4	16 1/4	1	-	3/4
	2	2 1/2	1 7/8-12	2 1/4-12	3	1 15/16	2 3/8			3 3/8	8 1/8	9 1/4									
	3	3	2 1/4-12	2 3/4-12	3 1/2	1 15/16	2 3/8			3 3/8	8 1/8	9 1/4									



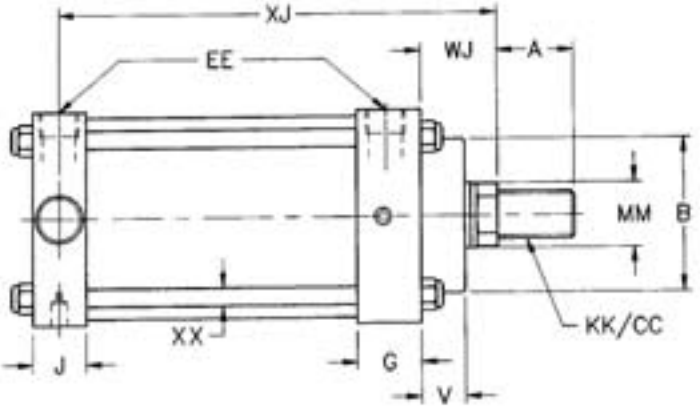
Warning: Trunnion mounted cylinders swivel in one direction and are designed to carry shear loads only. Pins must be heldrigidly and in accurate alignment. Improper mounting mayresult in failure of mount.



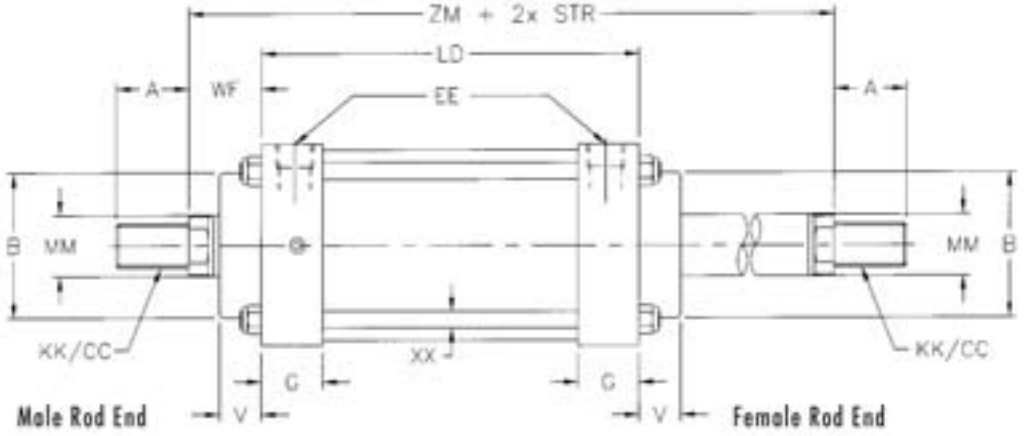
Model LTR
NFPA Style MT1



Model LTB
NFPA Style MT2

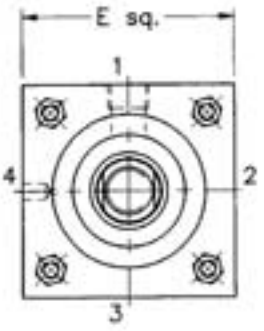


BORE	ROD	ROD DIA. MM	KK	CC	A	WF	B	V	XI (min)	BD	+ STR LD	+2xSTR ZM	E	G	J	EE NPTF	EE SAE	TD	TL	TM	TY	UM	XX
1 ½	1	5/8	7/16-20	1/2-20	3/4	1	1 11/16	3/4	2 7/8	1 1/4	3 7/8	6 1/8	2	1 3/16	15/16	3/8	-	1	1	2 1/2	2 1/4	4 1/2	1/4
	2	1	3/4-16	7/8-14	1 1/8	1 3/8			3 1/4			6 7/8											
2	1	5/8	7/16-20	1/2-20	3/4	1	2 7/32	3/4	3	1 1/2	3 7/8	6 1/8	2 1/2	1 3/16	15/16	3/8	-	1	1	3	2 3/4	5	5/16
	2	1	3/4-16	7/8-14	1 1/8	1 3/8			3 3/8			6 7/8											
	3	1 3/8	1-14	1 1/4-12	1 5/8	1 5/8			3 5/8			7 3/8											
2 ½	1	5/8	7/16-20	1/2-20	3/4	1	2 5/16	13/16	3 1/16	1 1/2	4	6 1/4	3	1 1/4	1	3/8	-	1	1	3 1/2	3 1/4	5 1/2	5/16
	2	1	3/4-16	7/8-14	1 1/8	1 3/8			3 7/16			7											
	3	1 3/8	1-14	1 1/4-12	1 5/8	1 5/8			3 11/16			7 1/2											
3 ¼	1	1	3/4-16	7/8-14	1 1/8	1 3/8	2 7/8	15/16	3 21/32	1 3/4	4 3/8	7 1/2	3 3/4	1 11/32	1 7/32	1/2	-	1	1	4 1/2	4 1/4	6 1/2	3/8
	2	1 3/8	1-14	1 1/4-12	1 5/8	1 5/8			3 29/32			8											
	3	1 3/4	1 1/4-12	1 1/2-12	2	1 7/8			4 5/32			8 1/2											
4	1	1	3/4-16	7/8-14	1 1/8	1 3/8	3 1/4	15/16	3 15/16	1 3/4	4 1/2	7 1/2	4 1/2	1 3/8	1 1/8	1/2	-	1	1	5 1/4	5	7 1/4	3/8
	2	1 3/8	1-14	1 1/4-12	1 5/8	1 5/8			3 15/16			8											
	3	1 3/4	1 1/4-12	1 1/2-12	2	1 7/8			4 3/16			8 1/2											
5	1	1	3/4-16	7/8-14	1 1/8	1 3/8	3 3/4	15/16	3 13/16	2	4 5/8	7 3/4	5 1/2	1 3/8	1 1/4	1/2	-	1	1	6 1/4	6	8 1/4	1/2
	2	1 3/8	1-14	1 1/4-12	1 5/8	1 5/8			4 3/16			8 1/4											
	3	1 3/4	1 1/4-12	1 1/2-12	2	1 7/8			4 5/16			8 3/4											
6	1	1 3/8	1-14	1 1/4-12	1 5/8	1 5/8	4 1/2	1	4 7/16	2 1/4	5 1/4	8 3/4	6 1/2	1 5/8	1 3/8	3/4	-	1 3/8	1 3/8	7 5/8	7 3/8	10 3/8	1/2
	2	1 3/4	1 1/4-12	1 1/2-12	2	1 7/8			4 11/16			9 1/4											
	3	2	1 1/2-12	1 3/4-12	2 1/4	2			4 13/16			9 1/2											
8	1	1 3/8	1-14	1 1/4-12	1 5/8	1 5/8	5 3/4	5/8	4 9/16	2 1/2	5 3/8	8 7/8	8 1/2	1 5/8	1 3/8	3/4	-	1 3/8	1 3/8	9 3/4	9 1/2	12 1/2	5/8
	2	1 3/4	1 1/4-12	1 1/2-12	2	1 7/8			4 13/16			9 3/8											
	3	2	1 1/2-12	1 3/4-12	2 1/4	2			4 15/16			9 5/8											
10	1	1 3/4	1 1/4-12	1 1/2-12	2	1 7/8	6 3/8	7/8	5 7/16	3	6 5/8	10 3/8	10 5/8	2	1 3/4	1	-	1 3/4	1 3/4	12	11 3/4	15 1/2	3/4
	2	2	1 1/2-12	1 3/4-12	2 1/4	2			5 9/16			10 5/8											
	3	2 1/2	1 7/8-12	2 1/4-12	3	2 1/4			5 13/16			11 1/8											
12	1	2	1 1/2-12	1 3/4-12	2 1/4	2	6 3/4	7/8	5 9/16	3	7 1/4	11 1/8	12 3/4	2	1 5/8	1	-	1 3/4	1 3/4	14	13 3/4	17 1/2	3/4
	2	2 1/2	1 7/8-12	2 1/4-12	3	2 1/4			5 13/16			11 5/8											
	3	3	2 1/4-12	2 3/4-12	3 1/2	2 1/4			5 13/16			11 5/8											

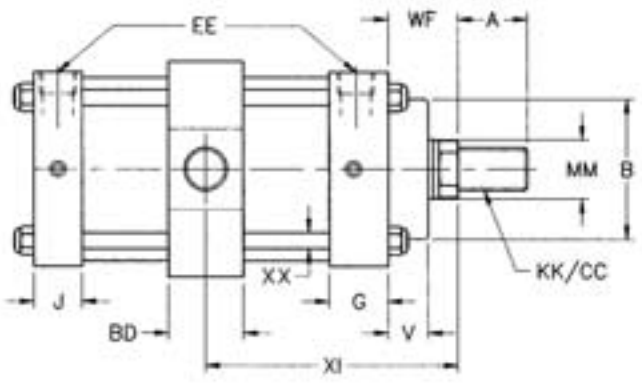


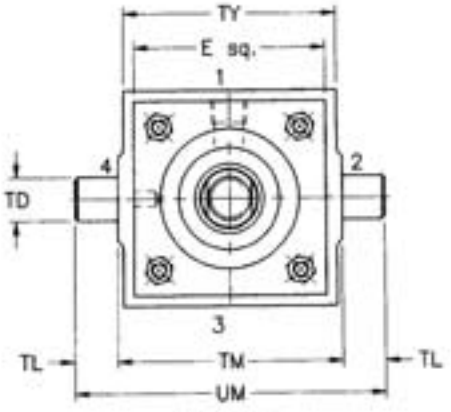
Male Rod End

Female Rod End



Model LD

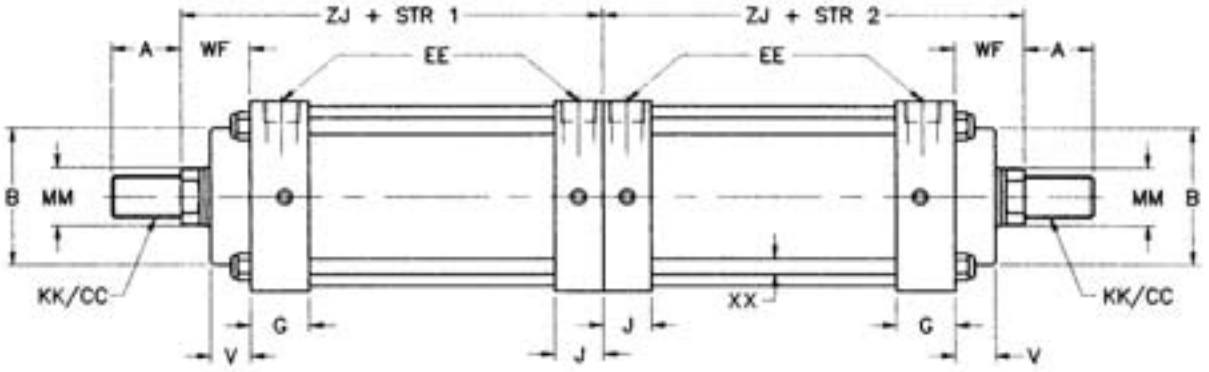




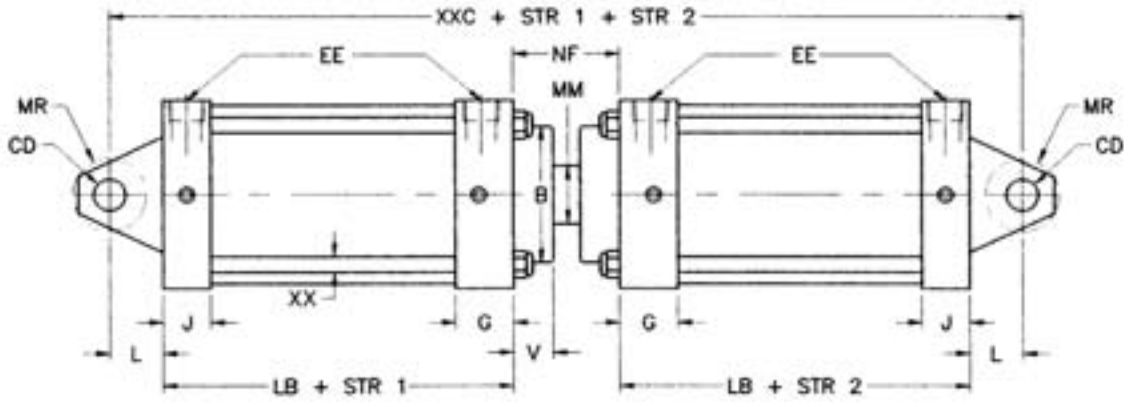
Model LT

Warning: Trunnion mounted cylinders swivel in one direction and are designed to carry shear loads only. Pins must be held rigidly and in accurate alignment. Improper mounting may result in failure of mount.

BORE	ROD	ROD DIA. MM	KK	CC	A	WF	V	B	ADD STROKE ZJ	ADD STROKE LB	+2xSTROKE XXC	CD	G	J	L	EE NPTF	EE SAE	MR	NF	XX
1 ½	1	5/8	7/16-20	1/2-20	3/4	1	3/4	1 11/16	4 5/8	3 5/8	10 3/8	1/2	1 3/16	15/16	3/4	3/8	-	1/2	1 5/8	1/4
	2	1	3/4-16	7/8-14	1 1/8	1 3/8			5											
2	1	5/8	7/16-20	1/2-20	3/4	1	3/4	2 7/32	4 5/8	3 5/8	10 1/2	1/2	1 3/16	15/16	3/4	3/8	-	1/2	1 3/4	5/16
	2	1	3/4-16	7/8-14	1 1/8	1 3/8			5											
	3	1 3/8	1-14	1 1/4-12	1 5/8	1 5/8			5 1/4											
2 ½	1	5/8	7/16-20	1/2-20	3/4	1	13/16	2 5/16	4 3/4	3 3/4	10 3/4	1/2	1 1/4	1	3/4	3/8	-	1/2	1 3/4	5/16
	2	1	3/4-16	7/8-14	1 1/8	1 3/8			5 1/8											
	3	1 3/8	1-14	1 1/4-12	1 5/8	1 5/8			5 3/8											
3 ¼	1	1	3/4-16	7/8-14	1 1/8	1 3/8	15/16	2 7/8	5 5/8	4 1/4	13 1/2	3/4	1 11/32	1 7/32	1 1/4	1/2	-	3/4	2 1/2	3/8
	2	1 3/8	1-14	1 1/4-12	1 5/8	1 5/8			5 7/8											
	3	1 3/4	1 1/4-12	1 1/2-12	2	1 7/8			6 1/8											
4	1	1	3/4-16	7/8-14	1 1/8	1 3/8	15/16	3 1/4	5 5/8	4 1/4	13 1/2	3/4	1 3/8	1 1/8	1 1/4	1/2	-	3/4	2 1/2	3/8
	2	1 3/8	1-14	1 1/4-12	1 5/8	1 5/8			5 7/8											
	3	1 3/4	1 1/4-12	1 1/2-12	2	1 7/8			6 1/8											
5	1	1	3/4-16	7/8-14	1 1/8	1 3/8	15/16	3 3/4	5 7/8	4 1/2	14 1/4	3/4	1 3/8	1 1/4	1 1/4	1/2	-	3/4	2 3/4	1/2
	2	1 3/8	1-14	1 1/4-12	1 5/8	1 5/8			6 1/8											
	3	1 3/4	1 1/4-12	1 1/2-12	2	1 7/8			6 3/8											
6	1	1 3/8	1-14	1 1/4-12	1 5/8	1 5/8	1	4 1/2	6 5/8	5	16	1	1 5/8	1 3/8	1 1/2	3/4	-	1	3	1/2
	2	1 3/4	1 1/4-12	1 1/2-12	2	1 7/8			6 7/8											
	3	2	1 1/2-12	1 3/4-12	2 1/4	2			7											
8	1	1 3/8	1-14	1 1/4-12	1 5/8	1 5/8	5/8	5 3/4	6 3/4	5 1/8	16 15/16	1	1 5/8	1 3/8	1 1/2	3/4	-	1	3 11/16	5/8
	2	1 3/4	1 1/4-12	1 1/2-12	2	1 7/8			7											
	3	2	1 1/2-12	1 3/4-12	2 1/4	2			7 1/8											
10	1	1 3/4	1 1/4-12	1 1/2-12	2	1 7/8	7/8	6 3/8	8 1/4	6 3/8	20 11/16	1 3/8	2	1 3/4	2 1/8	1	-	1 3/8	3 11/16	3/4
	2	2	1 1/2-12	1 3/4-12	2 1/4	2			8 3/8											
	3	2 1/2	1 7/8-12	2 1/4-12	3	2 1/4			8 5/8											
12	1	2	1 1/2-12	1 3/4-12	2 1/4	2	7/8	6 3/4	8 7/8	6 7/8	21 15/16	1 3/4	2	1 5/8	2 1/4	1	-	1 3/4	3 11/16	3/4
	2	2 1/2	1 7/8-12	2 1/4-12	3	2 1/4			9 1/8											
	3	3	2 1/4-12	2 3/4-12	3 1/2	2 1/4			9 1/8											

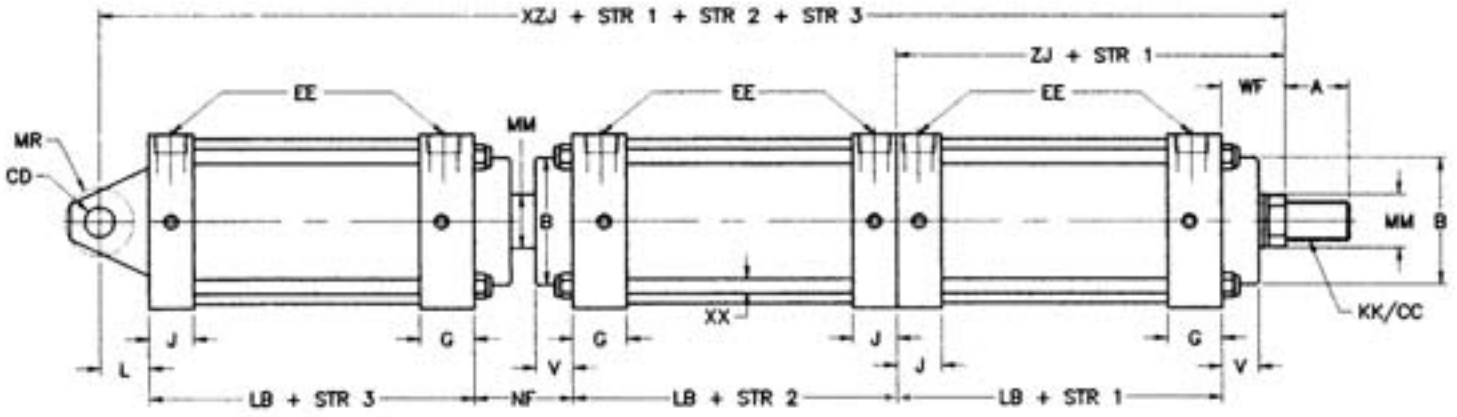


Model LCH



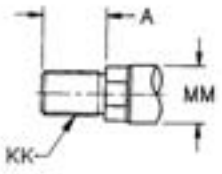
Model LCR

BORE	ROD	ROD DIA. MM	KK	CC	A	WF	V	B	ADD STROKE ZJ	ADD STROKE LB	+2xSTROKE XZJ	CD	G	J	L	EE NPTF	EE SAE	MR	NF	XX
1 ½	1	5/8	7/16-20	1/2-20	3/4	1	3/4	1 11/16	4 5/8	3 5/8	14 1/4	1/2	1 3/16	15/16	3/4	3/8	-	1/2	1 5/8	1/4
	2	1	3/4-16	7/8-14	1 1/8	1 3/8			5		14 5/8									
2	1	5/8	7/16-20	1/2-20	3/4	1	3/4	2 7/32	4 5/8	3 5/8	14 3/8	1/2	1 3/16	15/16	3/4	3/8	-	1/2	1 3/4	5/16
	2	1	3/4-16	7/8-14	1 1/8	1 3/8			5		14 3/4									
	3	1 3/8	1-14	1 1/4-12	1 5/8	1 5/8			5 1/4		15									
2 ½	1	5/8	7/16-20	1/2-20	3/4	1	13/16	2 5/16	4 3/4	3 3/4	14 3/4	1/2	1 1/4	1	3/4	3/8	-	1/2	1 3/4	5/16
	2	1	3/4-16	7/8-14	1 1/8	1 3/8			5 1/8		15 1/8									
	3	1 3/8	1-14	1 1/4-12	1 5/8	1 5/8			5 3/8		15 3/8									
3 ¼	1	1	3/4-16	7/8-14	1 1/8	1 3/8	15/16	2 7/8	5 5/8	4 1/4	17 7/8	3/4	1 11/32	1 7/32	1 1/4	1/2	-	3/4	2 1/2	3/8
	2	1 3/8	1-14	1 1/4-12	1 5/8	1 5/8			5 7/8		18 1/8									
	3	1 3/4	1 1/4-12	1 1/2-12	2	1 7/8			6 1/8		18 3/8									
4	1	1	3/4-16	7/8-14	1 1/8	1 3/8	15/16	3 1/4	5 5/8	4 1/4	17 7/8	3/4	1 3/8	1 1/8	1 1/4	1/2	-	3/4	2 1/2	3/8
	2	1 3/8	1-14	1 1/4-12	1 5/8	1 5/8			5 7/8		18 1/8									
	3	1 3/4	1 1/4-12	1 1/2-12	2	1 7/8			6 1/8		18 3/8									
5	1	1	3/4-16	7/8-14	1 1/8	1 3/8	15/16	3 3/4	5 7/8	4 1/2	18 7/8	3/4	1 3/8	1 1/4	1 1/4	1/2	-	3/4	2 3/4	1/2
	2	1 3/8	1-14	1 1/4-12	1 5/8	1 5/8			6 1/8		19 1/8									
	3	1 3/4	1 1/4-12	1 1/2-12	2	1 7/8			6 3/8		19 3/8									
6	1	1 3/8	1-14	1 1/4-12	1 5/8	1 5/8	1	4 1/2	6 5/8	5	21 1/8	1	1 5/8	1 3/8	1 1/2	3/4	-	1	3	1/2
	2	1 3/4	1 1/4-12	1 1/2-12	2	1 7/8			6 7/8		21 3/8									
	3	2	1 1/2-12	1 3/4-12	2 1/4	2			7		21 1/2									
8	1	1 3/8	1-14	1 1/4-12	1 5/8	1 5/8	5/8	5 3/4	6 3/4	5 1/8	22 3/16	1	1 5/8	1 3/8	1 1/2	3/4	-	1	3 11/16	5/8
	2	1 3/4	1 1/4-12	1 1/2-12	2	1 7/8			7		22 7/16									
	3	2	1 1/2-12	1 3/4-12	2 1/4	2			7 1/8		22 9/16									
10	1	1 3/4	1 1/4-12	1 1/2-12	2	1 7/8	7/8	6 3/8	8 1/4	6 3/8	26 13/16	1 3/8	2	1 3/4	2 1/8	1	-	1 3/8	3 11/16	3/4
	2	2	1 1/2-12	1 3/4-12	2 1/4	2			8 3/8		26 15/16									
	3	2 1/2	1 7/8-12	2 1/4-12	3	2 1/4			8 5/8		27 3/16									
12	1	2	1 1/2-12	1 3/4-12	2 1/4	2	7/8	6 3/4	8 7/8	6 7/8	28 9/16	1 3/4	2	1 5/8	2 1/4	1	-	1 3/4	3 11/16	3/4
	2	2 1/2	1 7/8-12	2 1/4-12	3	2 1/4			9 1/8		28 13/16									
	3	3	2 1/4-12	2 3/4-12	3 1/2	2 1/4			9 1/8		28 13/16									

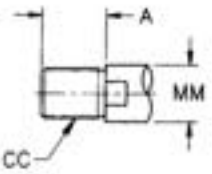


Model LCHR

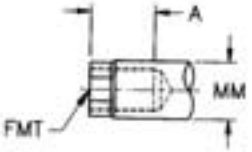
Rod End Styles



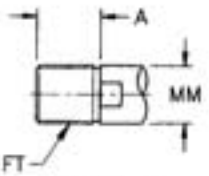
Standard Male Thread
NFPA Style SM



Oversize Male Thread
NFPA Style IM



Female Thread
NFPA Style SF



Full Thread
NFPA Style FM

Accessories for Rod End

BORE			ROD DIA. MM	THREAD SIZE	ROD CLEVIS	LUG MOUNTING BRACKET	PIVOT PIN	ROD EYE	CLEVIS MOUNTING BRACKET	SELF ALIGNING ROD EYE	SELF ALIGNING MOUNTING BRACKET	SELF ALIGNING PIVOT PIN
1 1/2	3 1/4	2	5/8	7/16-20	HC1S	HM1S	P3	HE1S	HCM1S	HWE1S	HWM1S	HWP1S
			5/8	1/2-20	HC1SC	HM1S	P3	HE1SC	HCM1S	N/A	N/A	N/A
		2 1/2	1	3/4-16	HC2	HM2S	P4	HE2	HCM2	HWE2	HWM2	HWP2
			1	7/8-14	HC2C	HM32	P6	HE2C	HCM32	N/A	N/A	N/A
	4		1 3/8	1-14	HC32	HM32	P6	HE32	HCM32	HWE32	HWM32	HWP32
6			1 3/8	1 1/4-12	HC4	HM4	HP4	HE4	HCM4	HWE4	HWM4	HWP4
	5		1 3/4	1 1/4-12	HC4	HM4	HP4	HE4	HCM4	HWE4	HWM4	HWP4
			1 3/4	1 1/2-12	HC5	HM5	P12	HE5	HCM5	HWE5	HWM5	HWP5
			2	1 1/2-12	HC5	HM5	P12	HE5	HCM5	HWE5	HWM5	HWP5
			2	1 3/4-12	HC5C	HM6	HP6	HE5C	HCM6	N/A	N/A	N/A

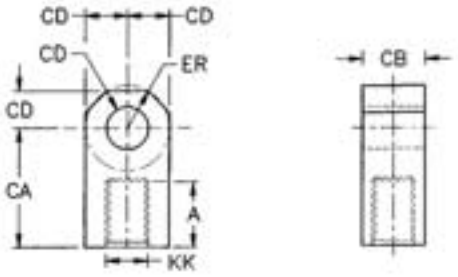
Accessories for Blind End

BORE			MOUNTING BRACKET model LC	MOUNTING BRACKET model LE	PIVOT PIN	SELF ALIGNING MOUNTING BRACKET	SELF ALIGNING PIVOT PIN
1 1/2	2	2 1/2	HM1S	HCM1S	P3	HWM1S	HWP1S
3 1/4	4	5	HM2S	HCM2	P4	HWM2	HWP2
	6	8	HM32	HCM32	P6	HWM32	HWP32
		10	HM4	HCM4	HP4	HWM4	HWP4
		12	HM5	HCM5	P12	HWM5	HWP5

Rod Eye

Adapts to HCM clevis-type mounting bracket

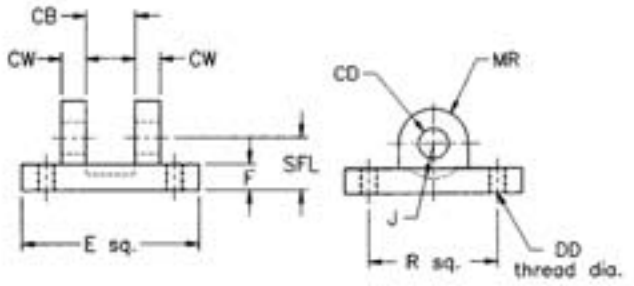
PART	HE1S	HE1SC	HE2	HE2C	HE32	HE4	HE5	HE5C	HE6	HE7	HE7C	HE8
A	3/4	3/4	1 1/8	1 1/8	1 5/8	2	2 1/4	2 1/4	3	3 1/2	3 5/8	3 1/2
CA	1/2	1/2	2 1/16	2 3/8	2 13/16	3 7/16	4	4 3/8	5	5 13/16	6 1/2	6 1/8
CB	3/4	3/4	1 1/4	1 1/2	1 1/2	2	2 1/2	2 1/2	2 1/2	3	3 1/2	3
CD	1/2	1/2	3/4	1	1	1 3/8	1 3/4	2	2	2 1/2	3	3
ER	5/8	5/8	7/8	1 1/8	1 3/16	1 9/16	2	2 7/8	2 1/2	2 13/16	3 1/4	3 1/4
KK	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 3/4-12	2 1/2-12



Detachable Clevis - MP-1 Mount (NFPA)

Mounts on cylinder and adapts to HM eye-type mounting bracket

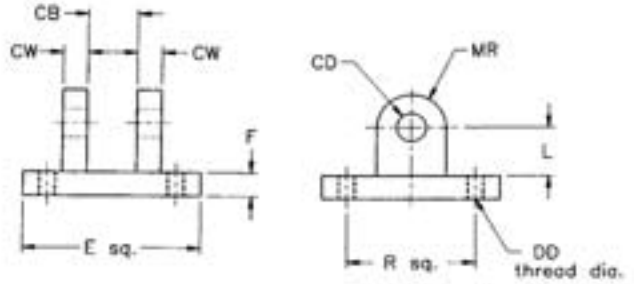
PART	LMP1-15	LMP1-2	LMP1-25	LMP1-32	LMP1-4	LMP1-5	LMP1-6
CB	0.76	0.76	0.76	1.26	1.26	1.26	1.51
CD	1/2	1/2	1/2	3/4	3/4	3/4	1
CW	1/2	1/2	1/2	5/8	5/8	5/8	3/4
DD	1/4-28	5/16-24	5/16-24	3/8-24	3/8-24	1/2-20	1/2-20
E	2	2 1/2	3	3 3/4	4 1/2	5 1/2	6 1/2
F	3/8	3/8	3/8	5/8	5/8	5/8	3/4
J	5/8	5/8	5/8	7/8	7/8	7/8	1 1/8
SFL	3/4	3/4	3/4	1 1/4	1 1/4	1 1/4	1 1/2
MR	5/8	5/8	5/8	7/8	7/8	7/8	1 1/8
R	1.43	1.84	2.19	2.76	3.32	4.10	4.88



Detachable Clevis - MP-2 Mount (NFPA)

Mounts on cylinder and adapts to HM eye-type mounting bracket

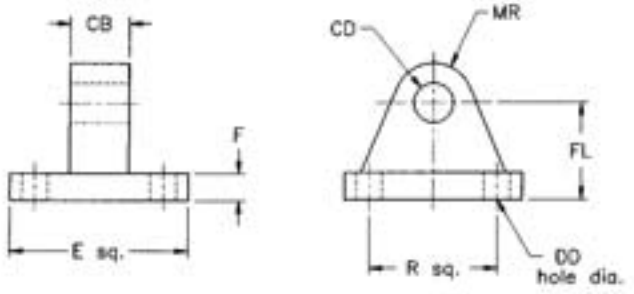
PART	LMP2-15	LMP2-2	LMP2-25	LMP2-32	LMP2-4	LMP2-5
CB	0.76	0.76	0.76	1.26	1.26	1.26
CD	1/2	1/2	1/2	3/4	3/4	3/4
CW	1/2	1/2	1/2	5/8	5/8	5/8
DD	1/4-28	5/16-24	5/16-24	3/8-24	3/8-24	1/2-20
E	2	2 1/2	3	3 3/4	4 1/2	5 1/2
F	3/8	3/8	3/8	5/8	5/8	5/8
L	3/4	3/4	3/4	1 1/4	1 1/4	1 1/4
MR	5/8	5/8	5/8	7/8	7/8	7/8
R	1.43	1.84	2.19	2.76	3.32	4.10



Eye Type Mounting Bracket

Adapts to LC mount cylinder or HC rod clevis

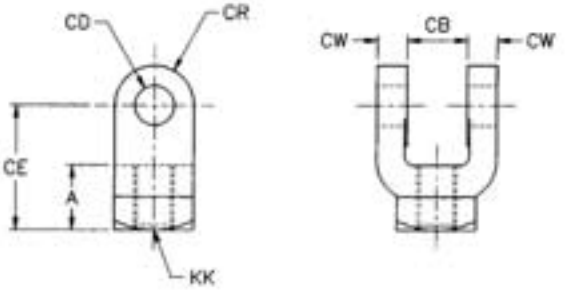
PART	HM15	HM25	HM32	HM4	HM5	HM6
CB	3/4	1 1/4	1 1/2	2	2 1/2	2 1/2
CD	1/2	3/4	1	1 3/8	1 3/4	2
DD	13/32	17/32	21/32	25/32	29/32	1 1/16
E	2 1/2	3 1/2	4 1/2	5	6 1/2	7 1/2
F	3/8	5/8	3/4	7/8	7/8	1
FL	1 1/8	1 7/8	2 1/4	3	3 1/8	3 1/2
MR	1/2	3/4	1	1 3/8	1 3/4	2
R	1.63	2.56	3.25	3.81	4.95	5.75



Rod Clevis

Adapts to male thread on piston rod

PART	HC1S	HC1SC	HC2	HC2C	HC32	HC4	HC5	HC5C
A	3/4	3/4	1 1/8	1 5/8	1 5/8	2	2 1/4	3
CB	0.765	0.765	1.265	1.515	1.515	2.032	2.531	2.531
CD	1/2	1/2	3/4	1	1	1 3/8	1 3/4	2
CE	1 1/2	1 1/2	2 3/8	3 1/8	3 1/8	4 1/8	4 1/2	5 1/2
CW	1/2	1/2	5/8	3/4	3/4	1	1 1/4	1 1/4
CR	1/2	1/2	3/4	1	1	1 3/8	1 3/4	2
KK	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



Pivot Pin

Comes complete with cotter pins

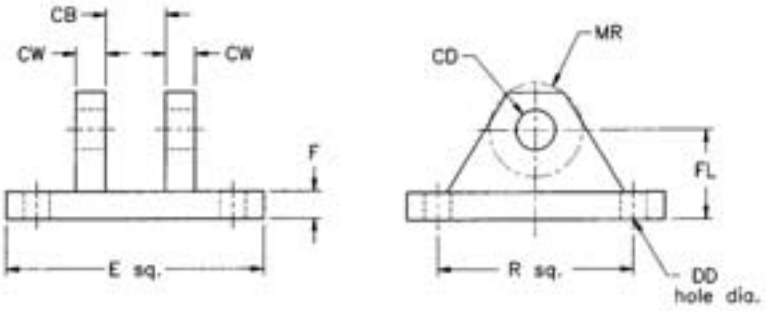
Adapts to HC rod clevis or HCM clevis-type mounting bracket

PART	P3	P4	P6	HP4	P12	HP6
CD	1/2	3/4	1	1 3/8	1 3/4	2
CL	1 3/4	2 1/2	3	4	4 7/8	5 1/8
CP	2 5/16	3 1/8	3 3/4	4 13/16	6 1/8	6

Clevis Type Mounting Bracket

Adapts to LE mount cylinder or HE rod eye

PART	HCM15	HCM2	HCM32	HCM4	HCM5	HCM6
CB	25/32	1 9/32	1 17/32	2 1/32	2 9/16	2 9/16
CD	1/2	3/4	1	1 3/8	1 3/4	2
CW	1/2	5/8	3/4	1	1 1/4	1 1/4
DD	13/32	17/32	21/32	21/32	15/16	1 1/16
E	3 1/2	5	6 1/2	7 1/2	9 1/2	12 3/4
F	1/2	5/8	3/4	7/8	7/8	1
FL	1 1/2	1 7/8	2 1/4	3	3 5/8	4 1/4
MR	1/2	3/4	1	1 3/8	1 3/4	2
R	2.55	3.82	4.95	5.73	7.50	9.40



Pivot Pin for Self-Aligning Rod Eye

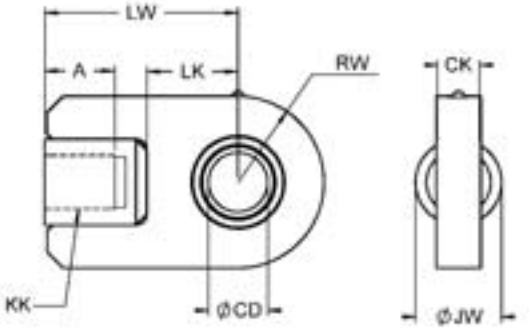
Comes complete with cotter pins
Adapts to HWM mounting bracket

PART	HWP15	HWP2	HWP32	HWP4	HWP5
CD	1/2	3/4	1	1 3/8	1 3/4
CL	1 5/16	2	2 17/32	3 3/32	3 7/16
CP	1 7/8	2 9/16	3 3/16	3 3/4	4 3/16

Self-Aligning Rod Eye - Female

Adapts to male thread on piston rod

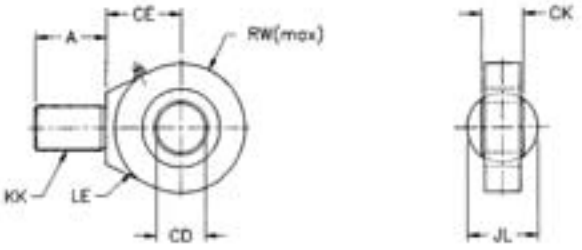
PART	HWE15	HWE2	HWE32	HWE4	HWE5
A	3/4	1 1/8	1 5/8	2	2 1/4
CD	1/2	3/4	1	1 3/8	1 3/4
CK	7/16	21/32	7/8	1 3/16	1 17/32
JW	3/4	1 3/8	1 1/2	2	2 1/2
KK	7/16-20	3/4-16	1-14	1 1/4-12	1 1/2-12
LW	1 3/4	2 3/4	3 5/8	4 1/2	5 5/8
RW	7/8	1 1/4	1 1/2	2	2 3/4
LK	5/8	1 1/4	1 5/8	2 1/8	2 5/8



Self-Aligning Rod Eye - Male

Adapts to female thread on piston rod

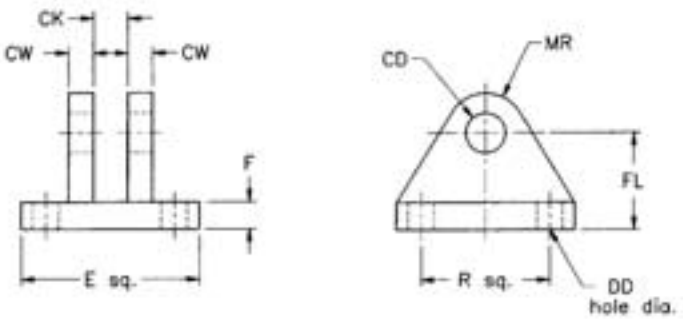
PART	HRES-1	HRES-2	HRES-3	HRES-4	HRES-5	HRES-6
A	11/16	1	1 1/2	2	2 1/8	2 7/8
CD	1/2	3/4	1	1 3/8	1 3/4	2
CE	7/8	1 1/4	1 7/8	2 1/8	2 1/2	2 3/4
CK	7/16	21/32	7/8	1 3/16	1 17/32	1 3/4
JL	7/8	1 5/16	1 1/2	2	2 1/4	2 3/4
KK	7/16-20	3/4-16	1-14	1 1/4-12	1 1/2-12	1 7/8-12
LE	3/4	1 1/16	1 7/16	1 7/8	2 1/8	2 1/2
RW	7/8	1 1/4	1 3/8	1 13/16	2 3/16	2 5/8



Mounting Bracket for Self-Aligning Rod Eye

Adapts to LW mount cylinder, HWE and HRES rod eye

PART	HWM15	HWM2	HWM32	HWM4	HWM5	HWM6
CD	1/2	3/4	1	1 3/8	1 3/4	2
CK	7/16	21/32	7/8	1 3/16	1 17/32	1 3/4
CW	5/16	1/2	5/8	3/4	3/4	7/8
DD	13/32	17/32	21/32	21/32	15/16	1 1/16
E	2 1/2	3 1/2	4 1/2	5	6 1/2	7 1/2
F	3/8	9/16	11/16	13/16	15/16	15/16
FL	1 1/2	2 1/16	2 7/16	3 1/16	3 15/16	4 3/16
MR	1/2	3/4	1	1 3/8	1 3/4	2
R	1.63	2.55	3.25	3.82	4.95	5.73



L-SERIES PARTS LIST

	BORE >	1 1/2		2			2 1/2			3 1/4			4			5			6		
	ROD SIZE >	5/8	1	5/8	1	1 3/8	5/8	1	1 3/8	1	1 3/8	1 3/4	1	1 3/8	1 3/4	1	1 3/8	1 3/4	1 3/8	2 3/4	2
No.	DESCRIPTION	QTY																			
1	PISTON	1	1L15		1L20			1L25			1L32			1L40			1L50			1L60	
3	CUSHION SLEEVE	1	N/A	N/A	3L20	N/A	N/A	3L25	3L25	3L2513	3L32			3L40			3L40			3L60	
4	ROD - MALE	1	4L1506-	4L1510-	4L2006-	4L2010-	4L2013-	4L2506-	4L2510-	4L2513-	4L3210-	4L3213-	4L3217-	4L4010-	4L4013-	4L4017-	4L5010-	4L5013-	4L5017-	4L6013-	4L6017-	4L6020-
26	ROD - FEMALE	1	26L1506-	26L1510-	26L2006-	26L2010-	26L2013-	26L2506-	26L2510-	26L2513-	26L3210-	26L3213-	26L3217-	26L4010-	26L4013-	26L4017-	26L5010-	26L5013-	26L5017-	26L6013-	26L6017-	26L6020-
88	ROD - COMMON	1	88L1506-	88L1510-	88L2006-	88L2010-	88L2013-	88L2506-	88L2510-	88L2513-	88L3210-	88L3213-	88L3217-	88L4010-	88L4013-	88L4017-	88L5010-	88L5013-	88L5017-	88L6013-	88L6017-	88L6020-
5	BARREL (NITROTEC STEEL)	1	SLN15-		SLN20-			SLN25-			SLN32-			SLN40-			SLN50-			SLN60-		
5	BARREL (CHROMED STEEL)	1	SLSB15-		SLSB20-			SLSB25-			SLSB32-			SLSB40-			SLSB50-			SLSB60-		
5	BARREL (ALUMINUM)	1	SLAL15-		SLAL20-			SLAL25-			SLAL32-			SLAL40-			SLAL50-			SLAL60-		
5	BARREL (ARMALGON)	1	SLAM15-		SLAM20-			SLAM25-			SLAM32-			SLAM40-			SLAM50-			SLAM60-		
6	GLAND BUSHING	1	6L1562	6L1510	6L2062	6L2010	6L2013	6L2062	6L2010	6L2013	6L3210	6L3213	6L3217	6L3210	6L3213	6L3217	6L3210	6L3213	6L3217	6L6013	6L6017	6L6020
** 7	NEEDLE VALVE	2	* 7L344		7L344	* 7L344	* 7L344	7L344			7L344			7L344			7L344			7A912		
8	TIE ROD	4	8L_154-		8L_205-			8L_255-			8L_326-			8L_406-			8L_506-			8L_608-		
8	TIE ROD, MODEL LT ONLY ***	4	8LTA154-	8LTB154-	8LTA205-	8LTB205-	8LTC205-	8LTA255-	8LTB255-	8LTC255-	8LTA326-	8LTB326-	8LTC326-	8LTA406-	8LTB406-	8LTC406-	8LTA506-	8LTB506-	8LTC506-	8LTA608-	8LTB608-	8LTC608-
9	PISTON SEAL, INTERNAL	1	9A511		9A513			9A311			9A230			9A211			9A211			9A216		
** 9	CUSHION SLEEVE SEAL	1	N/A		N/A			N/A	N/A	9A120	N/A			N/A			N/A			N/A		
** 10	PISTON SEAL	1	10A755-15		10A755-2			10A755-25			10A755-325			10A755-4			10A755-5			10A755-6		
** 11	CHECK SEAL-GLAND END(CG or CBE)	1	N/A		11J122	N/A	N/A	11J132	11J132	N/A	11J150			11J150			11J150			11J160		
** 11A	CHECK SEAL-BLIND END(CB or CBE)	1	11J110		11J110			11J110			11J116			11J116			11J116			11J122		
** 12	GLAND BUSHING SEAL	1	9A123		9A223			9A223			9A227			9A227			9A227			9A230		
** 13	ROD SEAL	1	13A08H	13J10H	13A08H	13J10H	13A13H	13A08H	13J10H	13A13H	13J10H	13A13H	13A17H	13J10H	13A13H	13A17H	13J10H	13A13H	13A17H	13A13H	13A17H	13J20H
** 14	ROD WIPER	1	14H62	14H10-1	14H62	14H10	14H13	14H62	14H10	14H13	14H10	14H13	14H17	14H10	14H13	14H17	14H10	14H13	14H17	14H13	14H17	14H20
15	GLAND BUSHING RETAINER	1	15A137		15A187			15A187			15A237			15A237			15A237			15A275		
** 16	NEEDLE VALVE SEAL	2	* 9A009		9A009	* 9A009	* 9A009	9A009			9A009			9A009			9A113			9A113		
17	LOCK NUT - TIE ROD (BLIND END)	4	19A004		19A005			19A005			19A006			19A006			19A008			19A008		
17A	LOCK NUT - TIE ROD (GLAND END)	4	19D004		19D005			19A005			19A006			19A006			19A008			19A008		
19	PISTON LOCKNUT (or NUT/SPEAR)	1	***** 19L007		***** 19L007			***** 19L007			19J012			19J012			19J012			19J016		
20	JAM NUT (OPTIONAL)	1	20R007	20R012	20R007	20R012	20R016	20R007	20R012	20R016	20R012	20R016	20R020	20R012	20R016	20R020	20R012	20R016	20R020	20R016	20R020	20R024
** 21	BARREL SEAL	2	9A125		9A224			9A228			9A258			9A240			9A248			9A256		
22	HEAD (BLIND END)	1	L_15B-C		L_20B-C			L_25B-C			L_32B-C			L_40B-C			L_50B-C			L_60B-C		
23	HEAD (GLAND END)	1	L_15G-		L_20G-	L_20G-	L_20G-	L_25G2-	L_25G-	L_25G13C	L_32G-			L_40G-			L_50G-			L_60G-		
24	TRUNNION-INTERMEDIATE	1	LT15		LT20			LT25			LT32			LT40			LT50			LT60		
** 33	CHECK BALL	1	N/A		N/A			N/A	N/A	33E25	N/A			N/A			N/A			N/A		
** 35	CHECK PLUG	1	N/A		N/A			N/A	N/A	35H04	N/A			N/A			N/A			N/A		
38	FRONT PLATE-RECTANGULAR	1	FP15R		FP20R			FP25R			FP32R			FP40R			FP50R			FP60R		
38	FRONT PLATE-SQUARE	1	FP15S		FP20S			FP25S			FP32S			FP40S			FP50S			FP60S		
38	FRONT PLATE-THICK (RECT.)	1	FP15RU		FP20RU			FP25RU			FP32RU			FP40RU			FP50RU			FP60RU		
38	FRONT PLATE-THICK (SQUARE)	1	FP15SU		FP20SU			FP25SU			FP32SU			FP40SU			FP50SU			FP60SU		
38	SPACER PLATE (model option "F")	1	FP15F		FP20F			FP25F			FP32F			FP40F			FP50F			FP60F		
38	BACK PLATE-RECTANGULAR	1	BP15R		BP20R			BP25R			BP32R			BP40R			BP50R			BP60R		
38	BACK PLATE-SQUARE	1	BP15S		BP20S			BP25S			BP32S			BP40S			BP50S			BP60S		
** 40	PISTON WEAR RING	1	40H1525		40H2037			40H2537			40H3237			40H4037			40H5037			40H6037		
42	DETACHABLE CLEVIS - MP1	1	LMP1-15		LMP1-2			LMP1-25			LMP1-32			LMP1-4			LMP1-5			LMP1-6		
43	DETACHABLE CLEVIS - MP2	1	LMP2-15		LMP2-2			LMP2-25			LMP2-32			LMP2-4			LMP2-5			LMP2-6		
	SEAL KIT (PNEUMATIC)	1	KL1562A	KL1510A	KL2062A	KL2010A	KL2013A	KL2562A	KL2510A	KL2513A	KL3210A	KL3213A	KL3217A	KL4010A	KL4013A	KL4017A	KL5010A	KL5013A	KL5017A	KL6013A	KL6017A	KL6020A

SEE PAGE BEHIND PARTS DRAWING FOR 8" BORE THROUGH 12" BORE PARTS

NOTES:
Cushioning is supplied as standard on all cylinders unless ordered otherwise.
A part no. having an underscore indicates a model letter code is required. See tables below.
Parts for a non-cushioned cylinder are the same as for cushioned except the check seals are not installed. For the 2 1/2" bore, 1 3/8" rod cylinder on the blind end, remove the check seal; on the gland end remove the cushion sleeve and cushion sleeve seal.
Part numbers terminating in a dash must have the stroke value added immediately afterward.
* Contact the factory for cushioning options on the gland end of the 1 1/2" bore (both rod sizes), and the 2" bore (1" and 1 3/8" only rod sizes). For these cylinders, the quantity of needle valves and needle valve seals must be halved.
** These parts are in the seal kit.
*** Tie-rod part numbers for mode ICT only have a stroke value suffix followed by a dash and then the required "XI" value (see explanation following).
***** If cylinder is specified as non cushioned then supply 19.0007 for piston lock nut.

HEAD PART NOS. ARE MADE AS FOLLOWS:
1) SERIES - "L"
2) Use table (to right) to select head mounting style.
3) BORE eg 3-1/4" bore use 32, 4" bore use 4.
4) LOCATION; B=Blind G=Gland or Rod end.
5) CUSHIONED = "C"
(All heads are manufactured as cushioned.)

eg. Cyl. Model "LRS", 3-1/4" Bore, Cushioned
Gland end head "L32GC"
Blind end head "LRS32BC"

CYLINDER MODEL	GLAND HEAD	BLIND HEAD
LC	C	C
LE	C	E
LD	C	n/a
LR	C	R
LBS	C	B
LR	C	R
LRS	C	B
LNW&BC	C	B
LTR	T	R
LTB	C	T
LT	C	R
LF	F	F
LG	BSH	BSH
LH	BSH	BSH
LW	C	W
LMP	C	B

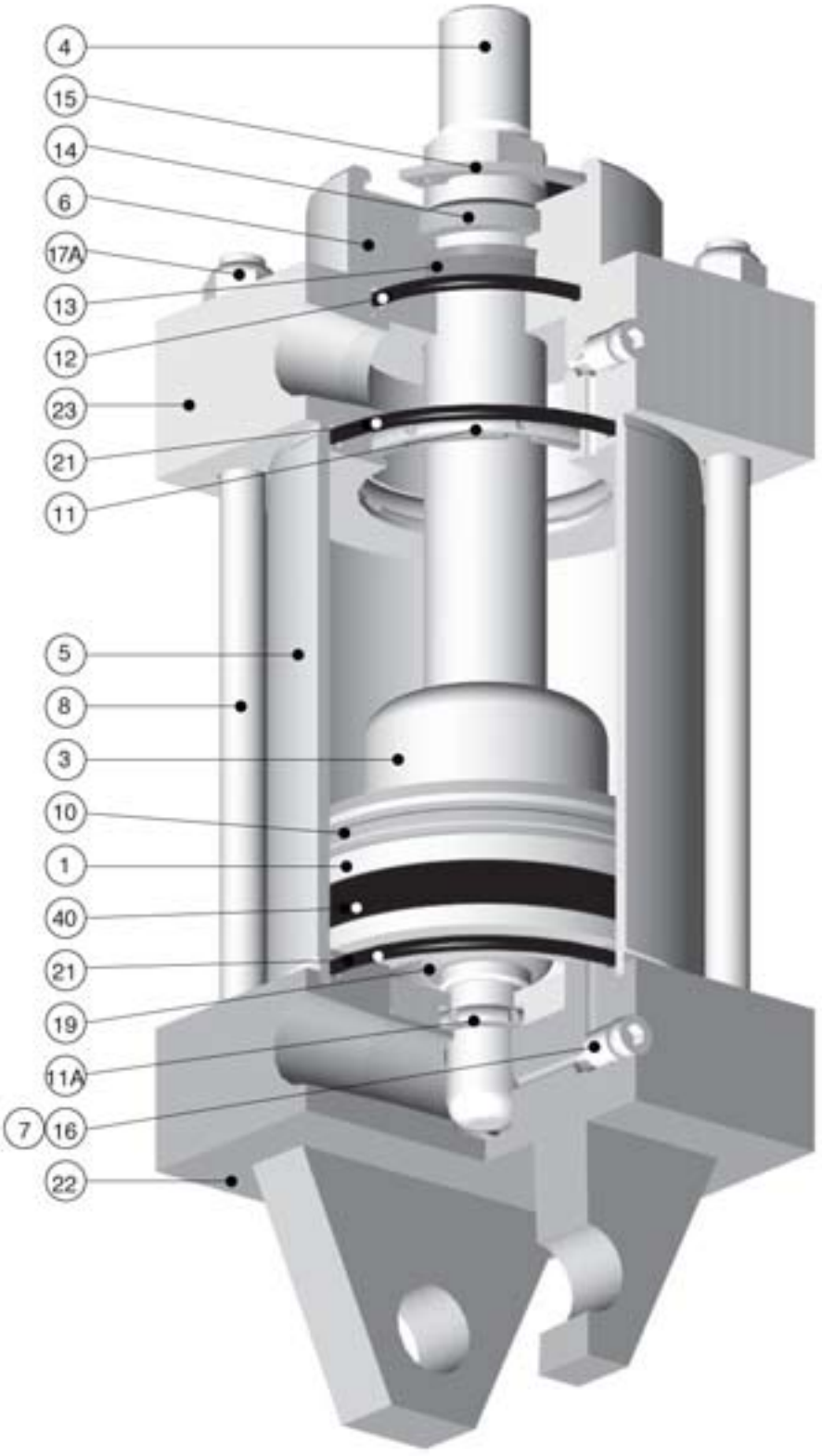
ROD PART NUMBER STRUCTURE:
1) COMPONENT No - "4"
2) SERIES - "L"
3) THE CYLINDER BORE eg 3-1/4" bore use 32, 4" bore use 40
4) ROD SIZE; 2 digits long as follows: eg. 1-3/4" rod = 17,
1" rod = 10, 5/8" rod = 06
5) OPTIONS: "CC"=CC thread, "FT"=Full thread, "F"=Female thread, "U"=Rod Extension for thicker Mtg. Flange Plate (LR and LRS only), "T"= Rod End Trunnion, "TB" = Blind End Trunnion, "D"= Male Rod of Double-Rod cylinder, "S"= Side-tapped Mount.
6) STROKE VALUE, (to be preceeded by a dash "-").
eg. 7" stroke..."-7"

eg. 3-1/4" bore 1-3/8" rod, 8" stroke; "4L3213-8"
eg. 4" bore 1" rod, CC thread, 8" stroke; "4L4010CC-8"
Note: all piston rods are made cushioned.

TIE-ROD PART NUMBER STRUCTURE:
1) COMPONENT No. - "8"
2) SERIES - "L"
3) CYL. MODEL - use table (to right) to select letter code
Note, some cyl. models use a common code.
4) ROD SIZE - FOR LT MODEL ONLY! "A", "B" or "C"
A = R1 Rod size, B = R2, and C = Rod 3.
5) CYLINDER BORE (2 digits) ie. 20 = 2" bore
6) TIE-ROD DIA. in 16ths of an inch
ie. 5 = 5/16" 12 = 3/4"
7) STROKE VALUE, preceeded by a dash
8) XI DIMENSION, preceeded by a dash. For Models LT only.

CYLINDER MODELS	LETTER CODE
LNA	A
LNB,LNC	B
LC,LE,LW	C
LD	D
LF,LTR,LTB,LNM	F
LCH	H
LMP,LB,LBS	P
LR,LRS	R
LT	T

eg. 4" bore, model LTB, 12" stroke; 8LF406-12
eg. 2 1/2" bore, model LT, 1 3/8" rod (R3), 8" stroke, XI = 5"; 8LTC255-8,5
Note for LT models the two-piece tie-rods are sold as a unit (one half may be a capscrew, depending on trunnion position).
Note: if there is a Piston Rod Extension, the XI value in the Tie-Rod Part Number is reduced equally. For the above example with a 1" Rod Extn, 8LTC255-8,5 would become 8LTC255-8,4


4
15
14
6
17A
13
12
23
21
11
5
8
3
10
1
40
21
19
11A
7
16
22

L-SERIES PARTS LIST

	BORE >	8			10			12		
	ROD SIZE >	1 3/8	1 3/4	2	1 3/4	2	2 1/2	2	2 1/2	3
No.	DESCRIPTION	QTY								
1	PISTON	1	1L80			1L100			1L120	
3	CUSHION SLEEVE	1	3L80			3L100			3L120	
4	ROD - MALE	1	4L8013-	4L8017-	4L8020-	4L10017-	4L10020-	4L10025-	4L12020-	4L12025-	4L12030-
26	ROD - FEMALE	1	26L8013-	26L8017-	26L8020-	26L10017-	26L10020-	26L10025-	26L12020-	26L12025-	26L12030-
44	ROD - COMMON	1	44L8013-	44L8017-	44L8020-	44L10017-	44L10020-	44L10025-	44L12020-	44L12025-	44L12030-
5	BARREL (NITROTEC STEEL)	1	5LN80-			5LN100-			5LN120-		
5	BARREL (CHROMED STEEL)	1	5LSB80-			5LSB100-			5LSB120-		
5	BARREL (ALUMINUM)	1	5LAL80-			5LAL100-			5LAL120-		
5	BARREL (AMALGON)	1	5LAM80-			5LAM100-			5LAM120-		
6	GLAND BUSHING	1	6L8013	6L8017	6L8020	6L10017	6L10020	6L10025	6L12020	6L12025	6L12030
** 7	NEEDLE VALVE	2	7A912			7A916			7A916		
8	TIE ROD	4	8L_8010-			8L_10012-			8L_12012-		
8	TIE-ROD, MODEL LT ONLY ***	4	8LTA8010-	8LTB8010-	8LTC8010-	8LTA10012-	8LTB10012-	8LTC10012-	8LTA12012-	8LTB12012-	8LTC12012-
9	PISTON SEAL, INTERNAL	1	9A216			9A220			9A223		
** 10	PISTON SEAL	2	10A980H			10A9100H			10A9120H		
** 11	CHECK SEAL-GLAND END(CG or CBE)	1	11J170			11J1100			11J1100		
** 11A	CHECK SEAL-BLIND END(CB or CBE)	1	11J122			11J128			11J132		
** 12	GLAND BUSHING SEAL	1	9A236			9A242			9A245		
** 13	ROD SEAL	1	13A13H	13A17H	13J20H	13A17H	13J20H	13J25H	13J20H	13J25H	13J30H
** 14	ROD WIPER	1	14H13	14H17	14H20	14H17	14H20	14H25	14H20	14H25	14H30
** 16	NEEDLE VALVE SEAL	2	9A113			9A210			9A210		
17	LOCK NUT - TIE ROD	8	19A010			19A012			19A012		
19	PISTON LOCKNUT	1	19J016			19H020			19J024		
20	JAM NUT (OPTIONAL)	1	20R016	20R020	20R024	20R020	20R024	20R030	20R024	20R030	20R036
** 21	BARREL SEAL	2	9A265			9A273			9A452		
22	HEAD BLIND END	1	L_8BC			L_10BC			L_12BC		
23	HEAD GLAND END	1	L_8GC			L_10GC			L_12GC		
24	TRUNNION-INTERMEDIATE	1	LT80			LT100			LT120		
25	CAPSCREW (GLAND BUSH. RETAINER)	4	25A1007			25A1008			25A1008		
27	LOCKWASHER (GL. BUSH. RETAINER)	4	9972			9972			9972		
38	GLAND BUSHING RETAINER	1	38L8			38L10			38L12		
** 40	PISTON WEAR RING	1	40H8037			40H107			40H127		
	SEAL KIT (PNEUMATIC)	1	KL8013A	KL8017A	KL8020A	KL10017A	KL10020A	KL10025A	KL1220A	KL1225A	KL1230A

NOTES:
Cushioning is supplied as standard on all cylinders unless ordered otherwise.
A part no. having an underscore indicates a model letter code is required. See tables below.
Parts for a non-cushioned cylinder are the same as for cushioned except the check seals are not installed. For the 2 1/2" bore, 1 3/8" rod cylinder on the blind end, remove the check seal; on the gland end remove the cushion sleeve.
Part numbers terminating in a dash must have the stroke value added immediately afterward.
*Contact the factory for cushioning options on the gland end of the 1 1/2" bore (both rod sizes), and the 2" bore (1" and 1 3/8 " only rod sizes). For these cylinders, the quantity of needle valves and needle valve seals must be halved.
**These parts are in the seal kit.
***Tie-rod part numbers for model LT only have a stroke value suffix followed by a dash and then the required "XI" value (see explanation following).

CYLINDER PRESSURE TABLE

BORE	AIR	HYDRAULIC ALL EXCEPT LB, LR	HYDRAULIC MODELS LB, LR
1 1/2	250	1500	750
2	250	1500	500
2 1/2	250	1000	300
3 1/4	250	1000	400
4	250	900	350
5	250	700	350
6	250	600	250
8	250	600	-
10	250	600	-
12	250	500	-

HEAD PART NUMBER STRUCTURE:
1) SERIES - "L"
2) Use table (to right) to select head mounting style.
3) BORE eg.3-1/4" bore use 32, 4" bore use 4.
4) LOCATION: B=Blind G=Gland or Rod end.
5) CUSHIONED = "C"
(All heads are manufactured as cushioned.)

eg. Cyl. Model "LR5", 3-1/4" Bore, Cushioned
Gland end head "LC32GC"
Blind end head "LR32BC"

CYLINDER MODEL	GLAND HEAD	BLIND HEAD
LC	C	C
LE	C	E
LD	C	H/4
LB	C	B
LBS	C	B
LR	C	B
LRS	C	B
LNM/A/B/C	C	B
LTB	T	B
LTB	C	T
LT	C	B
LF	F	F
LG	RSH	RSH
LH	BSH	BSH
LW	C	W
LMP	C	B

ROD PART NUMBER STRUCTURE:
1) COMPONENT No. - "4"
2) SERIES - "L"
3) THE CYLINDER BORE eg.3-1/4" bore use 32, 4" bore use 40
4) ROD SIZE; 2 digits long as follows:
eg. 1-3/4" rod = 17, 1" rod = 10, 5/8" rod = 06
5) OPTIONS: "CC"=CC thread, "FT"=Full thread, "F"=Female thread, "U"=Rod Extension for thicker Mtg. Flange Plate(LB and LRS only)
6) STROKE VALUE, (to be preceeded by a dash "-").
eg. 7 "stroke" - 7"

eg. 3-1/4" bore 1-3/8" rod, 8" stroke; "4L3213-8"
eg. 4" bore 1" rod, CC thread, 8" stroke; "4L4010CC-8"
Note: all piston rods are made cushioned.

TIE-ROD PART NUMBER STRUCTURE:
1) COMPONENT No. - "8"
2) SERIES - "L"
3) CYL. MODEL - use table (to right) to select letter code
Note, some cyl. models use a common code.
4) ROD SIZE - FOR LT MODEL ONLY: "A", "B" or "C"
A = R1 Rod size, B = R2, and C = Rod 3.
5) CYLINDER BORE (2 digits) ie. 20 = 2" bore
6) TIE-ROD DIA. in 16ths of an inch
ie. 5 = 5/16"12 = 3/4"
7) STROKE VALUE, preceeded by a dash
8) x(X) DIMENSION, preceeded by a dash. For Models LT only.
eg. 4" bore, model LT8, 12" stroke; 8LF406-12
eg. 2 1/2" bore, model LT, 1 3/8" rod (R3), 8" stroke, XI = 5"; 8LTC255-8.5
Note: for LT models the two-piece tie-rods are sold as a unit (one half may be a capscrew, depending on trunnion position).
Note: if there is a Piston Rod Extension, the XI value in the Tie-Rod Part Number is reduced equally. For the above example with a 1" Rod Extn, 8LTC255-8.5 would become 8LTC255-8.4

CYLINDER MODELS	LETTER CODE
LNA	A
LNB,LNC	B
LC,LE,LW	C
LD	D
LF,LTR,LTB,LNM	F
LCH	H
LMP,LB,LBS	P
LR,LRS	R
LT	T

Published Design Data

Westcoast Cylinders Inc. reserves the right to change specifications and other information included in this catalogue without notice. All information, data and dimension tables in this catalogue have been carefully compiled and thoroughly checked. However, no responsibility for possible errors or omissions can be assumed.

Mac Valves Pacific warranties the material and workmanship of our cylinders for one full year when used under normal conditions, subject to factory inspection. MVP will repair or replace, at no cost for defective parts or cylinders. MVP will not incur expenses incurred in the field, pertaining to such repairs or replacements except upon written authority. For a complete statement of terms and warranty contact Mac Valves Pacific.

Cylinder Developed Force

		DEVELOPED FORCE (lbs) @ DIFFERENTIAL PRESSURE (psi)											
		60		80		100		150		200		250	
BORE	ROD DIA.	PUSH	PULL	PUSH	PULL	PUSH	PULL	PUSH	PULL	PUSH	PULL	PUSH	PULL
1 ½	5/8	106	88	141	117	177	146	265	219	353	292	442	365
	1	106	59	141	79	177	98	265	147	353	196	442	245
2	5/8	188	170	251	227	314	283	471	425	628	567	785	709
	1	188	141	251	188	314	236	471	353	628	471	785	589
	1 3/8	188	99	251	133	314	166	471	249	628	331	785	414
2 ½	5/8	295	276	393	368	491	460	736	690	982	920	1227	1150
	1	295	247	393	330	491	412	736	619	982	825	1227	1031
	1 3/8	295	205	393	274	491	342	736	514	982	685	1227	856
3 ¼	1	498	479	664	639	830	799	1244	1198	1659	1598	2074	1997
	1 3/8	498	451	664	601	830	751	1244	1127	1659	1502	2074	1878
	1 3/4	498	409	664	545	830	681	1244	1022	1659	1362	2074	1703
4	1	754	707	1005	942	1257	1178	1885	1767	2513	2356	3142	2945
	1 3/8	754	665	1005	887	1257	1108	1885	1662	2513	2216	3142	2770
	1 3/4	754	610	1005	813	1257	1016	1885	1524	2513	2032	3142	2540
5	1	1178	1131	1571	1508	1963	1885	2945	2827	3927	3770	4909	4712
	1 3/8	1178	1089	1571	1452	1963	1815	2945	2723	3927	3630	4909	4538
	1 3/4	1178	1034	1571	1378	1963	1723	2945	2584	3927	3446	4909	4307
6	1 3/8	1696	1607	2262	2143	2827	2679	4241	4018	5655	5358	7069	6697
	1 3/4	1696	1552	2262	2070	2827	2587	4241	3880	5655	5174	7069	6467
	2	1696	1508	2262	2011	2827	2513	4241	3770	5655	5027	7069	6283
8	1 3/8	3016	2927	4021	3902	5027	4878	7540	7317	10053	9756	12566	12195
	1 3/4	3016	2872	4021	3829	5027	4786	7540	7179	10053	9572	12566	11965
	2	3016	2827	4021	3770	5027	4712	7540	7069	10053	9425	12566	11781
10	1 3/4	4712	4568	6283	6091	7854	7613	11781	11420	15708	15227	19635	19034
	2	4712	4524	6283	6032	7854	7540	11781	11310	15708	15080	19635	18850
	2 1/2	4712	4418	6283	5890	7854	7363	11781	11045	15708	14726	19635	18408
12	2	6786	6597	9048	8796	11310	10996	16965	16493	22619	21991	28274	27489
	2 1/2	6786	6491	9048	8655	11310	10819	16965	16228	22619	21638	28274	27047
	3	6786	6362	9048	8482	11310	10603	16965	15904	22619	21206	28274	26507

Warning

These products are intended for industrial use only. Do not use these products in applications where the pressure and temperature exceeds the values listed below.

Through misuse, age or malfunction, components used in fluidpower systems can fail. A designer utilizing these products must consider all modes of failure when designing machines and provide safeguards or warn the end user of possible modes of failure.

Cylinder Pressure and Temperature Ratings

L-Series cylinders are rated to 250 psig pneumatic pressure.

Temperature ratings for cylinders are limited to the maximum published temperature range of the least resistant seal component. In most cases that would be the standard buna-n o-ringseals. For higher temperatures specify a high temperature seal such as Viton.
Buna-N temperature ratings: -30°F to 200°F(-34°C to 93°C).

Bearing Load

Side loads on piston rods should be kept to a minimum to obtainmaximum life from the cylinder gland bushing. To accomplish this, cylinders should not be used as an equipment support when mounted horizontally.

Breakaway Pressure

Cylinder breakaway pressures vary between 5 and 10 psi depending on the bore size and mounting angle. Breakway pressures will reduce after a break-in period.

Cylinder Sizing

An air cylinder must generate sufficient force to move a load and overcome friction losses. System pressure losses must also be considered. The Cylinder Developed Force Table does not take into account friction or pressure losses. In addition, an air cylinder must be overpowered due to the compressibility of air. Therefore, the following general guidelines apply for sizing an air cylinder when using theoretical cylinder developed force values:

Multiply your load by one of the load factors below to get effective load.

Application Load factor
Normal Speed1.25
Intermediate Speed1.5
High Speed2

Load x Load factor = Effective load

Typically, pneumatic cylinder applications require flow controls to limit cylinder speeds. Flow control is done by controlling the flow of air as it exits the cylinder. This is done to ensure accurate cylinder speeds under all loads. The flow controls however do affect cylinder performance by maintaining back pressure on the piston. As a general rule, allow 20 psi pressure loss through flow control for good speed regulation.

System pressure – 20 psi = Effective pressure

SPECIFYING AN "X" IN ANY FIELD REQUIRES AN EXPLANATION IN THE SPECIAL NOTES FIELD.

	SERIES	SERVICE	BORE	STYLE	STROKE	ROD MATERIAL	ROD SIZE	THREAD	CUSHIONS	BARREL	PORT LOC'N	PORT SIZE	OPTIONS	CUSTOM	SPECIAL NOTES
	L														
EXAMPLE	L		4	C	12.188	A	1	A	1	A	1	A			

SERVICE	
HYDRAULIC SERVICE >	H
OMIT "H" FOR PNEUMATIC	
SEE PAGE 20	
FOR PRESSURE RATING	

BORE	
1 1/2"	15
2"	2
2 1/2"	25
3 1/4"	32
4"	4
5"	5
6"	6
8"	8
10"	10
12"	12

STYLE	
*END ANGLES (MS1)	A
BLIND END RECT. FLANGE (MF2)	B
BLIND END SQUARE FLANGE (MF6)	BS
FIXED CLEVIS (MP1)	C
COMMON HEAD	CH
COMMON HEAD/COMMON ROD	CHR
COMMON ROD	CR
DOUBLE ROD (MD)	D
PIVOT EYE (MP3)	E
FOOT MOUNT (MS2)	F
END LUG FOOT MOUNT (MS7)	FA
*GLAND END SQUARE MOUNTING (ME-3)	G
*BLIND END SQUARE MOUNTING (ME-4)	H
DETACHABLE B/E CLEVIS (MP-1)	MB
DETACHABLE B/E CLEVIS (MP-2)	MP
EXTENDED TIE RODS BOTH ENDS (MX1)	NA
EXTENDED TIE RODS BLIND END (MX2)	NB
EXTENDED TIE RODS GLAND END (MX3)	NC
NO MOUNT (MX0)	NM
ROD END RECTANGULAR FLANGE (MF1)	R
ROD END SQUARE FLANGE (MF5)	RS
**SIDE TAPPED (MS4)	S
MID-TRUNNION (MT4)	T
BLIND END TRUNNION (MT2)	TB
ROD END TRUNNION (MT1)	TR
SELF ALIGNING EYE (MPU3)	W

STROKE	
inches	

ROD MATERIAL	
NITROTEC TREATED	A
CHROME PLATED STEEL	C
CHROME PLATED STAINLESS STEEL	E
OTHER-SPECIFY	X

ROD SIZE	
ROD #1	1
ROD #2	2
ROD #3	3
OTHER-SPECIFY	X

THREAD	
A	STANDARD THREAD, KK
B	OVERSIZE THREAD, CC
C	FULL THREAD
D	FEMALE THREAD
E	NO THREAD
F	ROD END COUPLER
G	ROD STUD (KK ONLY)
X	NON STANDARD MALE THREAD
Y	NON STANDARD FEMALE THREAD
S	SPECIAL-SPECIFY

CUSHIONS	
1	BOTH ENDS
2	NON CUSHIONED (STANDARD)
3	BLIND END ONLY
4	ROD END ONLY
X	OTHER-SPECIFY

BARREL	
A	NITROTEC TREATED (STANDARD)
C	CHROME ID STEEL
D	BRASS
E	STAINLESS STEEL
F	AMALGON
H	MICRO-HONED STEEL
X	OTHER-SPECIFY

PORT LOC'N	
1	POS #1 (STANDARD)
2	POS #2
3	POS #3
4	POS #4
X	OTHER-SPECIFY

PORT SIZE	
A	NPTF PIPE (STANDARD)
B	OVERSIZE PORT
C	SAE PORT
D	TRANSITION MANIFOLD PORT
X	OTHER-SPECIFY

OPTIONS	
A	THREAD LENGTH
D	BRASS ROD SCRAPER
F	SPACER PLATE (Models LNA and LNC only)
G	WEAR RING IN GLAND BUSHING
L	LOW FRICTION OPTION
M	MAGNET IN PISTON
N1	NEEDLE VALVE @ POS. #1
N2	NEEDLE VALVE @ POS. #2
N3	NEEDLE VALVE @ POS. #3
PS	PISTON STOP
S	STAINLESS STEEL TIE RODS AND LOCK NUTS
U	THICKER MOUNTING FLANGE PLATE (Models LR and LRS only)
V	HIGH TEMPERATURE SEALS
WT	ROD EXTENSION
X	OTHER OPTIONS-SPECIFY
Z	ZINC ALLOY GLAND BUSHING

CUSTOM	
X	- ASSIGNED BY WESTCOAST CYLINDERS

EXAMPLE "L4C12.188A1A1A1A"

*Contact Mac Valves Pacific for mounting dimensions.

An "X" in any field requires an explanation in special notes.

Consult MVP for options not shown.

L1.5C
1 1/2" Rear Clevis.
Fillet stacker, Stick ejector.

L2.5NM
2 1/2" Bore Cylinder with Stainless Steel P-Rod & Tie Rods.
Aggressive environment applications. Custom rear clevis assembly.

L3.25CH
3 1/4" Common Head (back to back) Cylinders.
Carriage pull-backs, moving linebars.

L4E
4" Board Turner/Loader Cylinder.

L4TR
4" Front Trunnion, c/w extended P-Rod.
Edger, Press-roll.

L4TR
4" Front Trunnion.
Gangsaw, Press-roll.

L5T
5" Centre Trunnion with Trunnion mounted off the front of the Gland End Head, to provide a 'Drop In' replacement solution.
Edgers, gangsaws, sawboxes.

L5TR
5" Front Trunnion, c/w Extended P-Rod.
Press rolls, Sawboxes.

L6NB
6" Extended Tie Rod Cylinder.
Lift chains, flippers, waste gates, Extended tie rod bolts onto a custom mounting.

L6TR
6" Front Trunnion.
Gangsaw, Press-roll.

HYDRAULIC

H1.5C
$1^{1/2"}$ Hydraulic Cylinders.

H2.5C
$2^{1/2"}$ Hydraulic Cylinders.
Comes with female heavy duty Rod End.