

LP/LPM Series

- Reduces Design Height
- Light Weight
- Reduces Cylinder Overhang
- Specials Available

PISTON ROD SEAL

Buna-N quad seal provides positive sealing to keep pressure in and dirt out for less maintenance and trouble free performance.

PISTON ROD

High strength steel, hard chrome plated for reliable smooth performance, long life, and extended seal life.

CYLINDER BODY

Hard coated heavy wall aluminum alloy. The tube I.D. coating has extreme hardness, excellent wear and seizure resistance, low coefficient of friction, and high corrosion resistance. This provides excellent wear qualities and quick break-a-ways.

PISTON

Attached securely to the rod to provide maximum strength and durability.

ROD BEARING

High density iron provides maximum support for longer life.

HEADS AND CAPS

Anodized aluminum alloy for solid, lightweight, high strength performance. This provides excellent corrosion resistance, durability, and a long lasting quality appearance.

PISTON SEAL

Buna-N quad seal provides positive sealing with air.



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Compact
Pneumatic CylindersP1P
SeriesLP/LPM
Series

- Low profile design
- Flexible construction with special modification capability
- High density iron rod bearing provides maximum support for longer life
- Single and double acting versions available
- 6 mounting styles
- 8 bore sizes from 1 1/8" to 4"
- Strokes from 1/8" to 6"
- Permanent lubrication
- Non-lube service



Operating Information

Operating pressure:	145 PSIG (10 bar)
Temperature range:	LP -10°F to 200°F (-23°C to 93°C) LPM -10°F to 140°F (-23°C to 60°C)
Filtration requirements:	40 micron, dry filtered air

Ordering Information

1.50	K	N	LP	L	V	B	E	S	9	1.25"																						
Bore Size <table border="1"> <tr><td>1.12</td><td>1-1/8"</td></tr> <tr><td>1.50</td><td>1-1/2"</td></tr> <tr><td>2.00</td><td>2"</td></tr> <tr><td>2.50</td><td>2-1/2"</td></tr> <tr><td>3.00</td><td>3"</td></tr> <tr><td>4.00</td><td>4"</td></tr> </table>	1.12	1-1/8"	1.50	1-1/2"	2.00	2"	2.50	2-1/2"	3.00	3"	4.00	4"			Series <table border="1"> <tr><td>LP</td><td>Standard</td></tr> <tr><td>LPM</td><td>Magnetic Piston⁵</td></tr> </table>	LP	Standard	LPM	Magnetic Piston ⁵				Spring <table border="1"> <tr><td>Blank</td><td>None</td></tr> <tr><td>E</td><td>Spring Extended</td></tr> <tr><td>R</td><td>Spring Return</td></tr> </table>	Blank	None	E	Spring Extended	R	Spring Return			Stroke Length Specify Stroke Length Required In Inches.
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Mounting Style

N	Basic (Std.)
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Single Rod Styles

4F	Head Bolt
4R	Cap Bolt
2F	Head Trunnion ¹
2R	Cap Trunnion ¹
1	Cap Pivot Eye

Double Rod Styles

N	Basic
4r	Cap Bolt
2f	Head Trunnion

Hollow Rod Styles^{1,2,5,6}

NH	Basic
4RH	Cap Bolt
2FH	Head Trunnion

Notes:

2 Hollow rods are used on double rod cylinders. All hollow rod options require the double rod prefix "K".

3 Lipseal piston is not available on LPM Series.

4 Not available on spring extend.

5 LPM Series with hollow rod option are not available on the 1-1/8" bore sizes.

6 Not available with spring return.

Note: For sensor specifications and part numbers, please refer to the Electronic Sensors section.

Sensors
See section L for sensors.

For ordering purposes, when special options or common modifications are requested, the factory will assign a sequential part number in place of the model number.

General Specifications

- Low Profile Design
- 6 Mounting Styles
- 7 Bore Sizes from 1 1/8" to 4"
- Temperature Range: -10°F to 200°F
(LPM Series 140°F max.)
- Strokes from 1/8" to 6"
- Permanent Lubrication
- Maximum Operating Pressure: 145 PSI Air

D

Compact
Pneumatic Cylinders

P1P
Series

LP/LPM
Series

Push/Pull Forces

Bore Dia.	Rod Area	Piston Area Push/Pull		PSI					
				40	50	60	80	100	125
1-1/8		Push	0.994	40	50	60	80	99	124
	0.196	Pull	0.798	32	40	48	64	80	100
1-1/2		Push	1.767	71	88	106	141	177	221
	0.307	Pull	1.460	58	73	88	117	146	182
2		Push	3.141	126	157	188	251	314	393
	0.442	Pull	2.699	108	135	162	216	270	337
2-1/2		Push	4.908	196	245	294	393	491	613
	0.442	Pull	4.466	178	223	268	357	447	558
3		Push	7.069	283	353	424	566	707	884
	.601	Pull	6.468	259	324	389	519	649	811
4		Push	12.57	503	628	754	1006	1257	1571
	0.781	Pull	11.79	471	589	707	942	1178	1484

Weights – Basic Cylinders

Bore Dia.	Basic N Mount Weight in Ounces*	Add per 1/8" of Stroke (ounces)
1-1/8	5.0	0.2
1-1/2	8.5	0.4
2	11.7	0.5
2-1/2	18.6	0.6
3	25.1	0.7
4	51.1	1.1

* Base weight includes 1/8 inch of stroke.

Tie Rod Torque

Bore	Torque (inch pounds)
1-1/8	20 - 25
1-1/2	35 - 40
2	35 - 40
2-1/2	50 - 60
3	70 - 80
4	150 - 160



For inventory, lead times, and kit
 lookup, visit www.pdnplu.com

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 Pneumatic Division
 Wadsworth, Ohio
www.parker.com/pneumatics

Noise Dampening Bumpers

Bumpers both ends – B
 Bumpers rod end – R
 Bumper cap end – C*

Bumpers are available at either or both ends of the cylinder to reduce noise for quieter operation. Bumper material is 70 durometer nitrile.

The table shows the distance the stroke is reduced when incorporating bumpers. This varies with operating pressure as indicated in the table.

Example: 1.50 NL PB9 x 0.50" stroke. Bumpers both ends cylinder will have a working stroke of 0.43" instead of 0.50" operating at 80 psi. For special applications call the factory.

NOTES:

Bumpers shorten actual strokes and are not practical on short stroke with low operating pressure.

Bumpers on Cap End or Both Ends will add the "BC" length in chart to "C" dimension (rod extension).

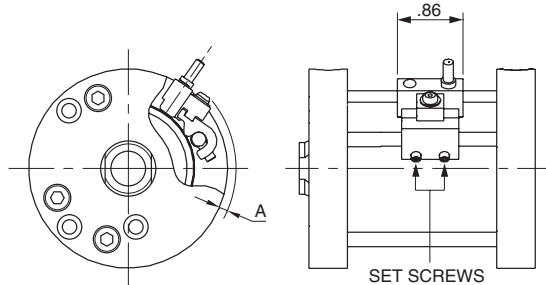
Bumpers on Double End Cylinders will add the "BR" length in chart to the "C" dimension (rod extension).

* Not available on spring extend.

Stroke Reduction (in.) Using Bumpers

Bore Dia.	Bumper Location	Dim.	Operating Pressure (PSI)					
			0	20	40	60	80	100
1.12	Cap End	BC	0.10	0.09	0.09	0.07	0.07	0.06
	Head End	BR	0.10	0.09	0.08	0.07	0.07	0.06
	Both Ends	BB	0.20	0.18	0.17	0.14	0.14	0.12
1.50	Cap End	BC	0.11	0.10	0.09	0.08	0.07	0.06
	Head End	BR	0.10	0.08	0.08	0.07	0.06	0.06
	Both Ends	BB	0.21	0.18	0.17	0.15	0.13	0.12
2.00	Cap End	BC	0.11	0.09	0.08	0.07	0.06	0.05
	Head End	BR	0.10	0.08	0.06	0.06	0.06	0.05
	Both Ends	BB	0.21	0.17	0.14	0.13	0.12	0.10
2.50	Cap End	BC	0.08	0.06	0.05	0.03	0.03	0.03
	Head End	BR	0.10	0.07	0.06	0.05	0.05	0.04
	Both Ends	BB	0.18	0.13	0.11	0.08	0.08	0.07
3.00	Cap End	BC	0.10	0.06	0.04	0.03	0.02	0.01
	Head End	BR	0.14	0.09	0.08	0.08	0.07	0.07
	Both Ends	BB	0.24	0.15	0.12	0.11	0.09	0.08
4.00	Cap End	BC	0.10	0.08	0.05	0.03	0.03	0.02
	Head End	BR	0.21	0.15	0.13	0.12	0.11	0.11
	Both Ends	BB	0.31	0.23	0.18	0.15	0.14	0.13

Sensor Mounting Data



To sense piston position, mount sensor along tie rod using 2 each small set screws.

Size	A	Piston Travel at Midstroke (in ±0.01) (Sensor On)	Minimum Activation Distance from End of Stroke (in)	
			Head	Cap
1-1/8	0.20	0.32	0.13	0.13
1-1/2	0.10	0.32	0.07	0.07
2	0.10	0.35	0.06	0.06
2-1/2	0.03	0.42	0.06	0.06
3	0.03	0.47	0.12	0.12
4	0.00	0.47	0.12	0.12

Seal Kits

Standard Piston

Bore Size	Rod Dia.	Single Rod Cylinders	
		Class 1 Seals Part No.	Class 5 Seals Part No.
9/16	1/4"	SKS05LP251	SKS05LP255
1-1/8	1/2"	SKS12LP501	SKS12LP505
1-1/2	5/8"	SKS15LP621	SKS15LP625
2	3/4"	SKS20LP751	SKS20LP755
2-1/2	3/4"	SKS25LP751	SKS25LP755
3	7/8"	SKS30LP871	SKS30LP875
4	1"	SKS40LP101	SKS40LP105

Lipseal Piston

Bore Size	Rod Dia.	Single Rod Cylinders	
		Class 1 Seals Part No.	Class 5 Seals Part No.
9/16	1/4"	KS05LPL251	KS05LPL255
1-1/8	1/2"	KS12LPL501	KS12LPL505
1-1/2	5/8"	KS15LPL621	KS15LPL625
2	3/4"	KS20LPL751	KS20LPL755
2-1/2	3/4"	KS25LPL751	KS25LPL755
3	7/8"	KS30LPL871	KS30LPL875
4	1"	KS40LPL101	KS40LPL105



For inventory, lead times, and kit lookup, visit www.pdnplu.com

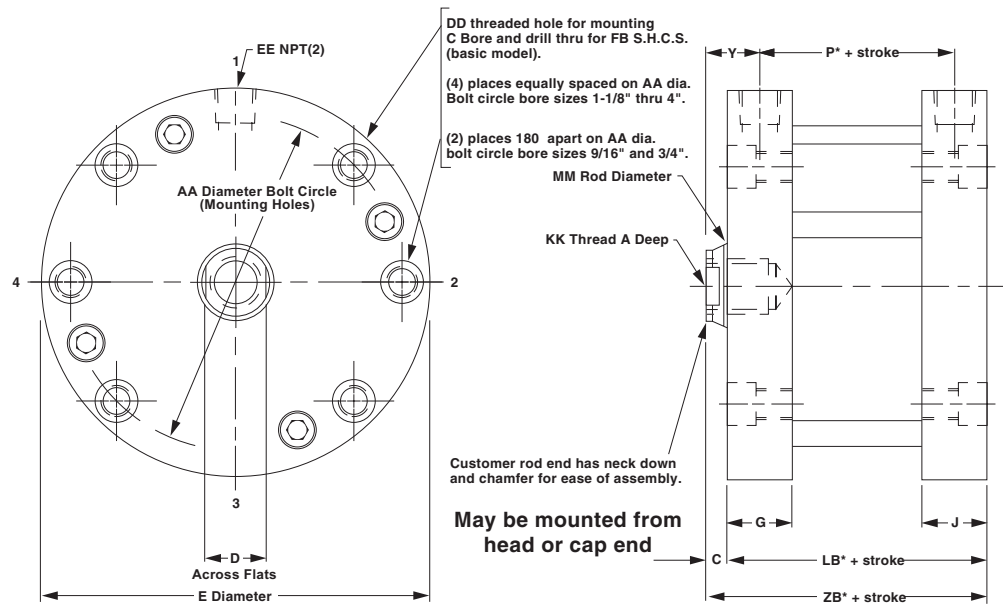
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 Pneumatic Division
 Wadsworth, Ohio
www.parker.com/pneumatics

Mounting Style N

Cylinder Dimensions
 Double Acting
 Single Rod End,
 Female Rod Style No. 9

Temperature: -10°F to 200°F
 (optional Fluorocarbon seals).
 All air cylinders are
 permanently lubricated.
 LPM Series maximum
 temperature 140°F.



Bore Size	A	C	D	E	G	J	P*	Y	AA	DD	EE	FB	KK	LB*	MM	ZB*
1-1/8	0.62	1/8	7/16	2	1/2	1/2	27/64	3/8	1.687	#10-32	1/8	#6	5/16-24	59/64	1/2	1-3/64
1-1/2	0.62	1/8	1/2	2-5/8	1/2	1/2	1/2	3/8	2.187	1/4-28	1/8	#10	3/8-24	1	5/8	1-1/8
2	0.70†	1/8	5/8	3-1/8	1/2	1/2	9/16	3/8	2.687	1/4-28	1/8	#10	1/2-20	1-1/16	3/4	1-3/16
2-1/2	0.70†	1/8	5/8	3-3/4	5/8	5/8	5/8	7/16	3.250	5/16-24	1/4	.406	1/2-20	1-1/4	3/4	1-3/8
3	0.75†	1/8	3/4	4-1/4	43/64	43/64	21/32	7/16	3.781	5/16-24	1/4	.406	5/8-18	1-9/32	7/8	1-13/32
4	0.75†	1/8	7/8	5-1/2	27/32	27/32	49/64	17/32	4.937	3/8-24	3/8	5/16	3/4-16	1-5/8	1	1-3/4

* These dimensions are for the LP Series with standard piston.

† For strokes less than 0.25", A dimension = 0.66".

Added length table for LPM or lipseal piston options

Bore Size	LPM Option*						LP with Lipseal Piston Option				
	P	LB	XD	XJ	ZB	Stroke	P	LB	XD	XJ	ZB
1-1/8†	63/64	1-31/64	2-3/8	1-23/64	1-39/64	9/16	43/64	1-11/64	2-1/16	1-3/64	1-19/64
1-1/2	1-1/8	1-5/8	2-13/16	1-1/2	1-3/4	7/16	13/16	1-5/16	2-1/2	1-3/16	1-7/16
2	1-9/32	1-25/32	3-1/32	1-21/32	1-29/32	7/16	61/64	1-29/64	2-45/64	1-21/64	1-37/64
2-1/2	1-21/64	1-61/64	3-21/64	1-3/4	2-5/64	1/2	1	1-5/8	3	1-27/64	1-3/4
3	1-27/64	2-3/64	3-53/64	1-53/64	2-11/64	1/2	1-3/32	1-23/32	3-1/2	1-1/2	1-27/32
4	1-1/2	2-23/64	4-11/64	2	2-31/64	1/2	1-11/64	2-1/32	3-27/32	1-43/64	2-5/32

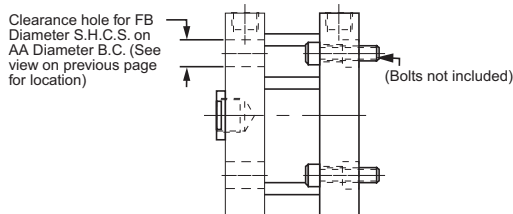
Note minimum strokes for LPM option.

† These bore sizes not available for the LPM option with the hollow rod option.

* The LPM option is only available with the standard quad seal.

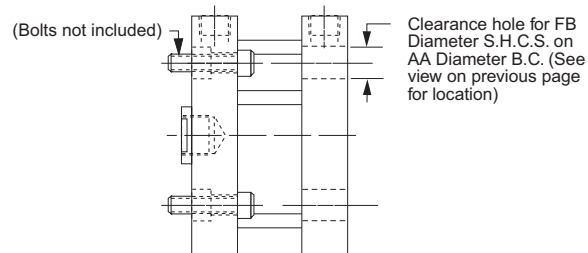
Head Bolt Clearance Holes

Mounting Style 4F
 Available Head End



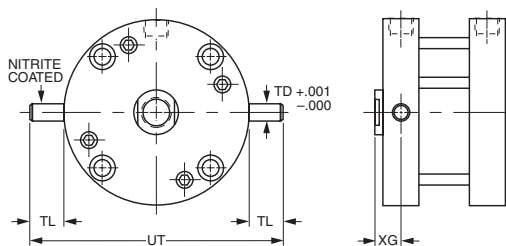
Cap Bolt Clearance Holes

Mounting Style 4R
 Available Cap End



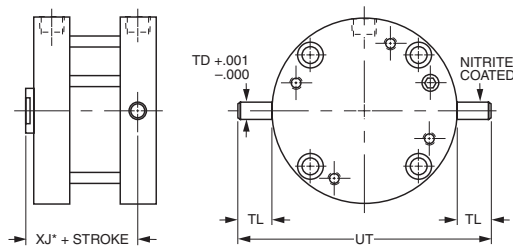
Head Trunnion

Mounting Style 2F (9/16" bore not available)



Cap Trunnion

Mounting Style 2R (9/16" bore not available)

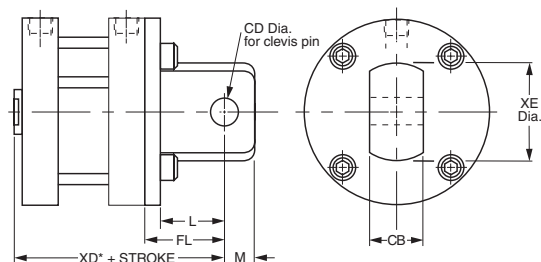


Bore Size	TD	TL	UT	XG	XJ*
1-1/8	0.250	1/2	3	3/8	51/64
1-1/2	0.250	1/2	3-5/8	3/8	7/8
2	0.250	1/2	4-1/8	3/8	15/16
2-1/2	0.312	5/8	5	29/64	1-3/64
3	0.312	5/8	5-1/2	15/32	1-1/16
4	0.375	3/4	7	35/64	1-17/64

* These dimensions are for the LP Series with standard piston.

Cap Pivot Eye

Mounting Style 1



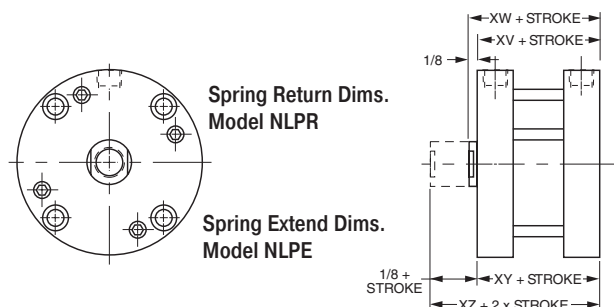
Bore Size	L	M	CB	CD	FL	XD*	XE
1-1/8	1/2	1/4	3/8	3/16	49/64	1-13/16	3/4
1-1/2	13/16	7/16	3/4	3/8	1-1/16	2-3/16	1-3/8
2	13/16	7/16	3/4	3/8	1-1/8	2-5/16	1-3/8
2-1/2	13/16	7/16	3/4	3/8	1-1/4	2-5/8	1-3/8
3	1-9/32	9/16	1	5/8	1-21/32	3-1/16	1-7/8
4	1-9/32	9/16	1	5/8	1-11/16	3-7/16	1-7/8

Order clevis pin from accessories when required.

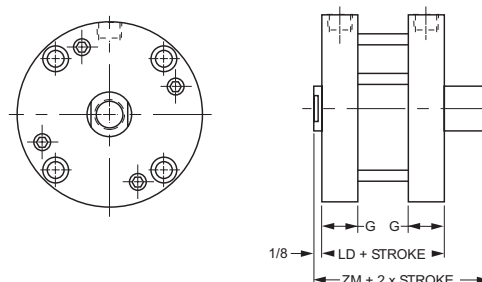
*These dimensions are for the LP Series with standard piston. See table on the previous page for dimensions for the lipseal piston or LPM options.

Dimensional Data**Compact Pneumatic Cylinders
LP/LPM Series****Spring Extend & Spring Return Cylinders**

(Available through 2" stroke)

**Double Rod Spring Extend &
Spring Return Cylinders**

(Available through 2" stroke)



Bore Size	1/8" to 1" stroke				Over 1" to 2" stroke				Add This Length to XV, XW, XY, XZ for Lipseal Piston
	XV	XW	XY	XZ	XV	XW	XY	XZ	
1-1/8	1-23/64	1-31/64	1-9/32	1-13/32	1-63/64	2-7/64	1-29/32	2-1/32	1/4
1-1/2	1-25/64	1-33/64	1-11/32	1-15/32	2-1/64	2-9/64	1-31/32	2-3/32	5/16
2	1-11/64	1-19/64	1-13/32	1-17/32	1-51/64	1-59/64	2-1/32	2-5/32	25/64
2-1/2	1-3/8	1-1/2	1-23/32	1-27/32	2	2-1/8	2-11/32	2-15/64	3/8
3	1-1/2	1-5/8	1-55/64	1-63/64	2-1/8	2-1/4	2-31/64	2-39/64	7/16
4	1-27/32	1-31/32	2-13/64	2-21/64	2-15/32	2-19/32	2-53/64	2-61/64	13/32

		Spring Return/Extend – LP					Spring Return/Extend – LPM				
		≥ 1/8", ≤ 1"			<1", ≤ 2"		≥ 1/8", >1"			>1", ≤ 2"	
Bore Size	G	LD	ZM	Min.* stroke	LD	ZM	LD	ZM	Min.* stroke	LD	ZM
1-1/8	1/2	1-1/2	1-3/4	1/8	2-1/8	2-3/8	2-1/16	2.44	1/8	2-11/16	2.94
1-1/2	1/2	1-11/16	1-15/16	1/8	2-5/16	2-9/16	2-5/16	2.56	1/4	2-15/16	3.19
2	1/2	1-31/64	1-47/64	1/8	2-7/64	2-23/64	2-13/64	2.45	1/4	2-53/64	3.08
2-1/2	5/8	1-3/4	2	1/8	2-3/8	2-5/8	2-29/64	2.70	3/16	3-5/64	3.33
3	43/64	1-29/32	2-5/32	1/8	2-17/32	2-25/32	2-43/64	2.92	1/8	3-19/64	3.55
4	27/32	2-1/4	2-1/2	1/8	2-7/8	3-1/8	2-63/64	3.23	1/8	3-39/64	3.86

* Note minimum strokes for LPM option.

Spring Force Data

1/8" to 1" stroke			Over 1" to 2" stroke		
Bore Size	Max. Spring Force (lbs)	Spring Rate (lb/in)	Bore Dia.	Max. Spring Force (lbs)	Spring Rate (lb/in)
1-1/8	10	6	1-1/8	10	2.5
1-1/2	13	5.5	1-1/2	12	2.25
2	13	5.5	2	12	2.25
2-1/2	17.5	6	2-1/2	16	2.5
3 & 4	24	6.5	3 & 4	23	2.75

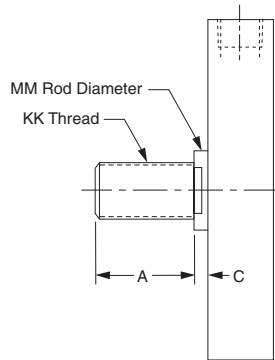
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Optional Male Rod End

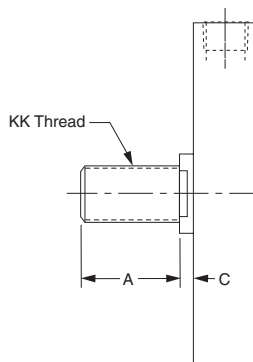
Specify #4



Bore Size	A	C	KK	MM
1-1/8	0.50	1/8	5/16-24	1/2
1-1/2	0.50	1/8	3/8-24	5/8
2	0.62	1/8	1/2-20	3/4
2-1/2	0.62	1/8	1/2-20	3/4
3	0.75	1/8	5/8-18	7/8
4	0.75	1/8	3/4-16	1

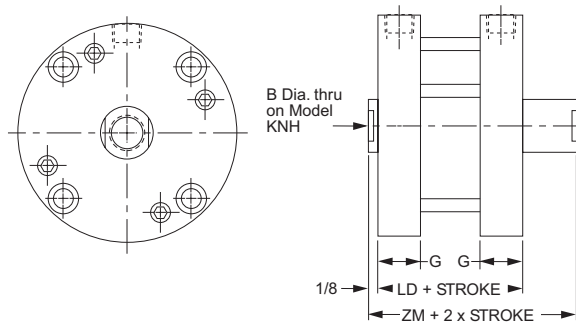
Non-standard Rods

For non-standard rod ends, please specify rod thread style 3 and provide the KK, A, and C dimensions as needed.



Double or Hollow Rod Cylinders

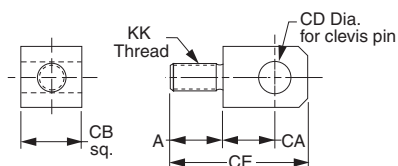
Note:
 Cylinders with hollow rod option should not be bottomed out during stroke.



LP double or hollow rod option, LPM, lipseal piston

Bore Size	B	G	Standard Double Rod End Or With Hollow Rod		LPM Option		LP with Lipseal Piston Option	
			LD	ZM	LD	ZM	LD	ZM
1-1/8	7/32	1/2	1-3/16	1-7/16	1-3/4	2.00	1-7/16	1-11/16
1-1/2	9/32	1/2	1-19/64	1-35/64	1-59/64	2.19	1-39/64	1-55/64
2	3/8	1/2	1-3/8	1-5/8	2-3/32	2.34	1-49/64	2-1/64
2-1/2	3/8	5/8	1-5/8	1-7/8	2-21/64	2.58	2	2-1/4
3	7/16	43/64	1-11/16	1-15/16	2-29/64	2.70	2-1/8	2-3/8
4	1/2	27/32	2-1/32	2-9/32	2-49/64	3.01	2-7/16	2-11/16

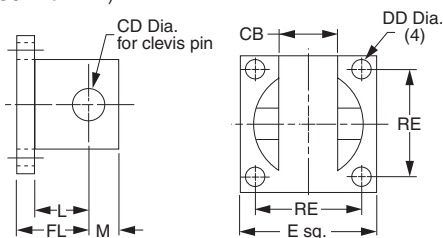
Rod Eye



Bore Size	A	CA	CB	CD	CE	KK	Part Number
1-1/8	9/16	15/32	3/8	3/16	1-9/32	5/16-24	L073810020
1-1/2	5/8	23/32	3/4	3/8	1-25/32	3/8-24	L073810024
2-2-1/2	21/32	23/32	3/4	3/8	1-27/32	1/2-20	L073810032
3	21/32	1	1	5/8	2-3/8	5/8-18	L073810040
4	21/32	1	1	5/8	2-3/8	3/4-16	L073810048

Clevis Bracket

(Supplied with Pin)



E	L	M	CB	CD	DD	FL	RE	Part Number
1	13/32	7/32	25/64	3/16	9/64	9/16	3/4	L073820012
1-3/4	25/32	13/32	49/64	3/8	11/64	15/16	1-3/8	L073820024
2-1/2	1	9/16	1-1/64	5/8	17/64	1-1/4	2	L073820040

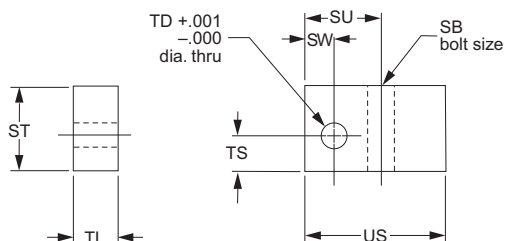
Use L073820012 on 9/16", 3/4" and 1-1/8" bore.

Use L073820024 on 1-1/2", 2" and 2-1/2" bore.

Use L073820040 on 3" and 4" bore.

Note: The Clevis Bracket is an accessory for the rod eye or the cap pivot eye and cannot be mounted directly to the cylinder.

Trunnion Bracket

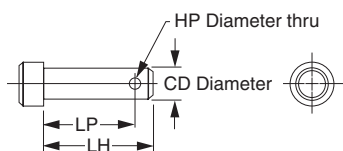


SB	ST	SU	SW	TD	TL	TS	US	Part Number
5/16	1	15/16	3/8	.314	5/8	29/64	1-5/8	L073840020
3/8	1-1/4	1-1/16	7/16	.377	3/4	35/64	1-7/8	L073840024

Use L073840020 on 2-1/2" and 3" bore.

Use L073840024 on 4" bore.

Clevis Pin



CD	HP	LH	LP	Part Number
3/16	3/32	1	29/32	L073830012
3/8	5/32	1-5/8	1-15/32	L073830024
5/8	5/32	2	1-27/32	L073830040

Service Kits

Bore Size	Rod Dia.	Standard Piston, Single Rod Cylinders		Lip Seal Piston, Single Rod Cylinders	
		Class 1 Seals Part Number	Class 5 Seals Part Number	Class 1 Seals Part Number	Class 5 Seals Part Number
1-1/8	1/2"	SKS12LP501	SKS12LP505	KS12LPL501	KS12LPL505
1-1/2	5/8"	SKS15LP621	SKS15LP625	KS15LPL621	KS15LPL625
2	3/4"	SKS20LP751	SKS20LP755	KS20LPL751	KS20LPL755
2-1/2	3/4"	SKS25LP751	SKS25LP755	KS25LPL751	KS25LPL755
3	7/8"	SKS30LP871	SKS30LP875	KS30LPL871	KS30LPL875
4	1"	SKS40LP101	SKS40LP105	KS40LPL101	KS40LPL105