

 American[®]

Low Profile Pneumatic Cylinders



American Cylinder Co., Inc.

LPC[®]

Low Profile Cylinders

Standard Catalog
9/16 inch through
2-1/2 inch bore

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HOW TO ORDER:

Example: **1 1/16" Bore Double Acting - Single Rod End Cylinder; 1" Stroke**
Magnetic Field Piston; Male Rod Thread & Tapped Front End - #6-32 Thread

Model No.: **1062LPD-1.00-4-MT-TFA**

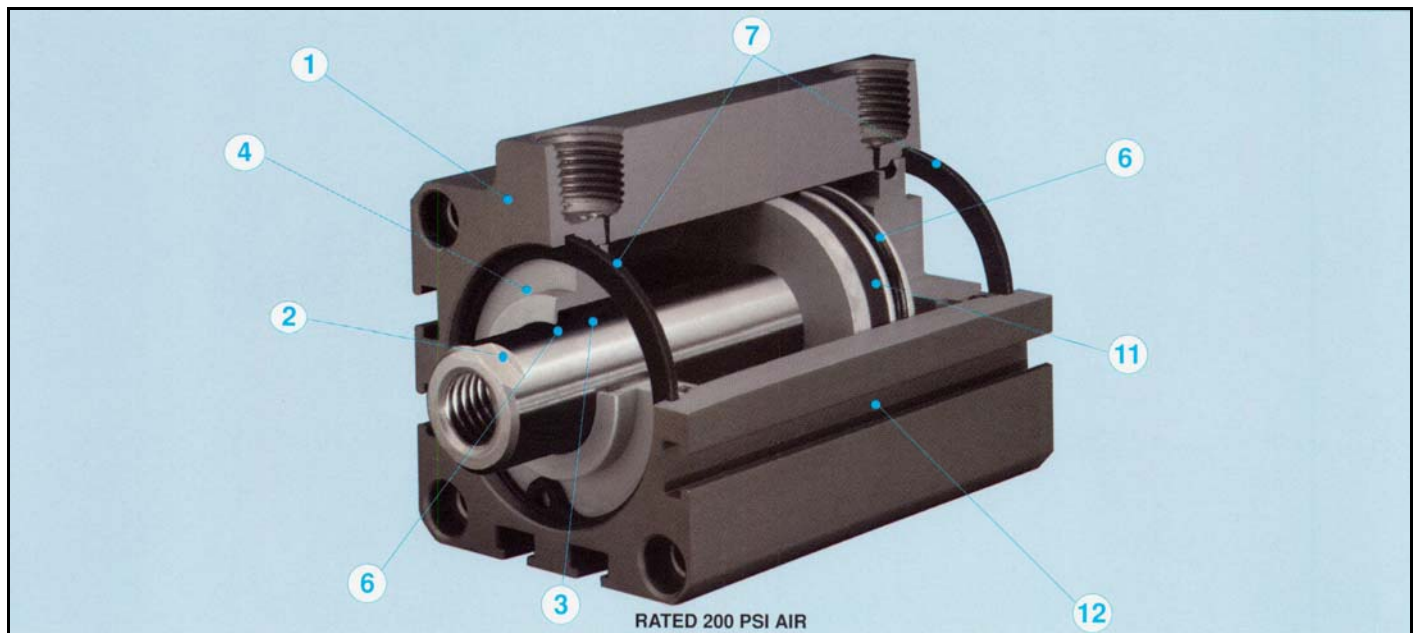
Model No.

Composition:



Bore	No.	Model Description	Model	Standard Options	No.
9/16"	562	Single Acting - Spring Return	LPS	Magnetic Field Piston (for switch actuation)	4*
3/4"	750	Reverse Acting - Spring Extend	LPR	Fluoroelastomer Seals	31
1 1/16"	1062	Double Acting - Single Rod End	LPD	Bottom Tapped (Position #3)	BT
1 1/2"	1500	Double Acting - Double Rod End	LPDE	Coarse Female Rod Threads	CFT
2"	2000			Coarse Male Rod Threads	CMT
2 1/2"	2500			Extra Rod Extension	E□.□□
				Male Rod Thread (UNF Std.)	MT
				No Rod Threads & Flats	NT
				Pivot Mount	P
				Pivot Mount (Rotated 90°)	P33
				Side Tapped (Position #2)	ST2
				Side Tapped (Position #4)	ST4
				Threaded Mtg. Holes Both Ends (Thread "A")	TBA
				Threaded Mtg. Holes Both Ends (Thread "B")	TBB
				Threaded Mtg. Holes Front End Only (Thread "A")	TFA
				Threaded Mtg. Holes Front End Only (Thread "B")	TFB
				Threaded Mtg. Holes Rear End Only (Thread "A")	TRA
				Threaded Mtg. Holes Rear End Only (Thread "B")	TRB
				* (-4) Option adds 1/4" to standard cylinder lengths	

STANDARD FEATURES AND BENEFITS



① **Body:** American Cylinder's custom designed aluminum extrusion. Machined, burnished and hardcoated inside and out to provide long life, low friction and reliable operation.

② **Rod:** Hard chrome plated Type 303 Stainless Steel provides a hard interface for the high quality Duralon® Rod Bearing.

③ **Rod Bearing:** High performance self-lubricating Duralon® Rod Bearings provide high load carrying capacity and low running friction. Unsightly dark oily residue is eliminated by using the Duralon® Bushing in conjunction with the hard chrome plated rod material.

④ **End Caps (Rod Guide & Rear Head):** High strength anodized aluminum for light weight and corrosion resistance.

⑤ **Springs:** Springs for spring action cylinders are made from music wire and designed for millions of trouble free cycles.

⑥ **Carboxylated Nitrile Rod & Piston Seals:** Special compound internally lubricated carboxylated nitrile Quad-X rod & piston seals ensure positive sealing while providing low friction and maximum resistance against seal wear.

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⑦ **Repairable:** Snap ring construction with a minimal amount of component parts offers ease of disassembly. (See Warning on page 6.)

⑧ **Prelubricated:** All cylinders are factory lubricated with a non-toxic, non-flammable, USDA listed teflon based lubricant. The non-staining, odorless, non-migratory nature of this lubricant provides lubricity for millions of trouble free cycles.

⑨ **Temperature Rating:** The standard LPC® Series seals are recommended for temperatures from -20°F to 200°F (-25°C to 95°C). Fluoroelastomer seals are available as an option for high temperature applications up to 325°F (162°C) and/or chemical compatibility. Special seal compounds and lubricants are available upon request.

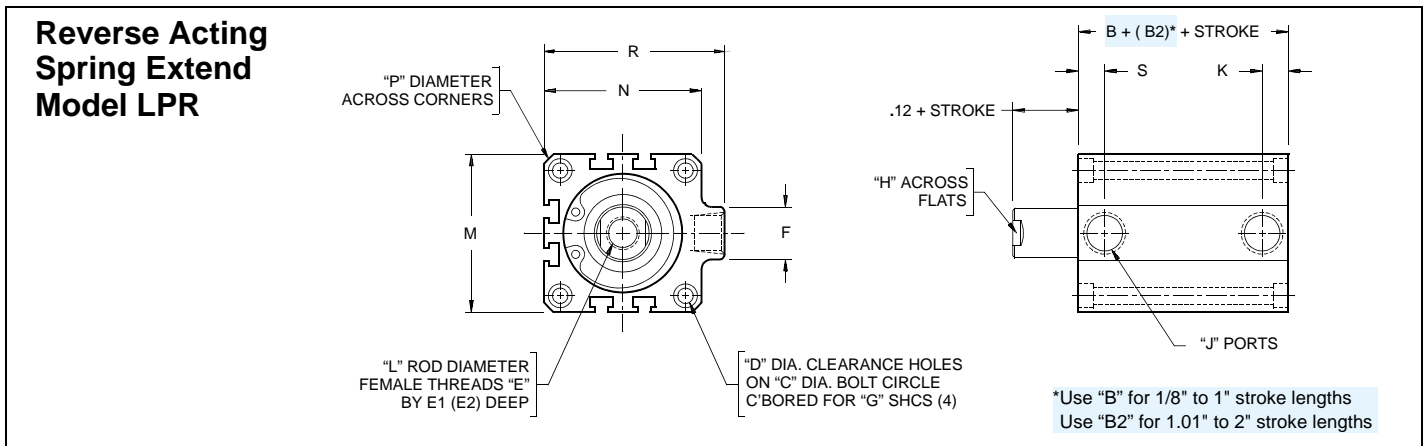
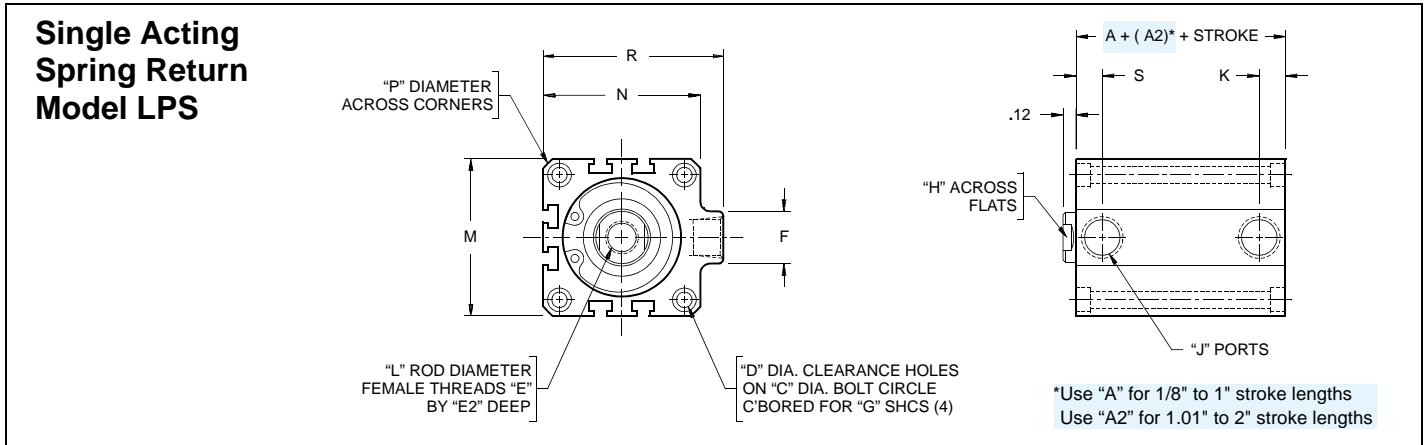
⑩ **Pre-Tested:** The quality of each cylinder is assured by testing each unit for leakage prior to shipment. Quality control provides added value to American cylinders.

⑪ **Magnet for Sensing Switch Actuation:** American Cylinder's custom internal magnet designed to actuate American's Low Profile Reed or Solid State Switches. (Optional, Refer to page 1 Standard Options.)

⑫ **Body Grooved T Slots:** Designed to accept American's Low Profile Reed or Solid State Switches. (See pages 7 and 8 for specification data on switches.)

Product enhancements resulting from our quality improvement program may necessitate changes in specifications without notice.

SPRING ACTION MODELS



Dimension																			Spring Data				
Bore	A	A2	B	B2	C	D	E	E1*	E2*	F	G	H	J	K	L	M	N	P	R	S	Max. Force (lbs.)	Spring Rate (lbs/in)	
																						0.01" to 1.00"	1.01" to 2.00"
9/16"	1.06	1.43	1.00	1.37	0.87	.11	#8-32	.46	.46	---	#4	.21	#10-32	.14	.25	1.03	1.03	1.12	1.03	.23	5.25	3.25	1.62
3/4"	1.06	1.43	1.00	1.37	1.21	.14	#10-32	.46	.46	.43	#6	.25	#10-32	.14	.31	1.25	1.21	1.50	1.35	.23	10.00	7.00	3.50
1 1/16"	1.37	1.75	1.31	1.68	1.68	.14	5/16-24	.43	.70	.50	#6	.43	1/8 NPT	.25	.50	1.50	1.50	2.00	1.71	.25	11.50	6.00	3.00
1 1/2"	1.37	1.75	1.31	1.68	2.18	.20	3/8-24	.62*	.70	.62	#10	.50	1/8 NPT	.25	.62	2.00	2.00	2.62	2.25	.25	13.00	5.50	2.75
2"	1.43	1.81	1.37	1.75	2.68	.20	1/2-20	.50	.70	.62	#10	.62	1/8 NPT	.25	.75	2.50	2.50	3.12	2.75	.34	13.00	5.50	2.75
2 1/2"	1.81	2.18	1.81	2.18	3.25	.26	1/2-20	.50	.70	.75	1/4	.62	1/4 NPT	.35	.75	3.18	3.18	3.75	3.42	.351	25.00	6.50	3.25

Notes: *Use E1 for reverse acting stroke lengths less than 1/2" and E2 for reverse acting stroke lengths 1/2" & up. All single acting stroke lengths use E2.
 * .50 for stroke lengths less than 1/4".

Standard Stroke Lengths: 1/8", 1/4", 3/8", 1/2", 5/8", 3/4", 7/8", 1", 1 1/4", 1 1/2", 1 3/4", & 2"

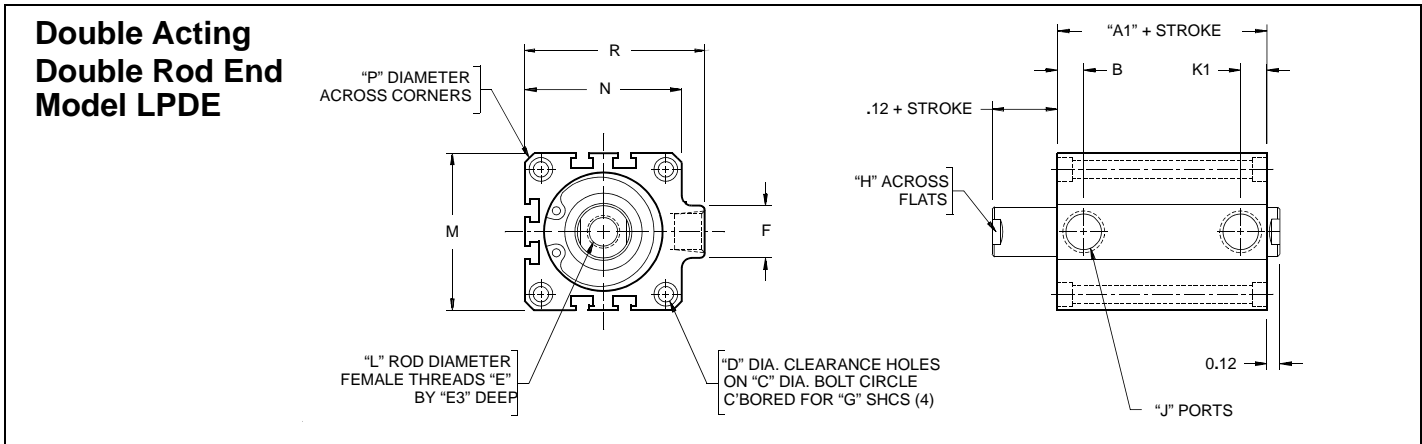
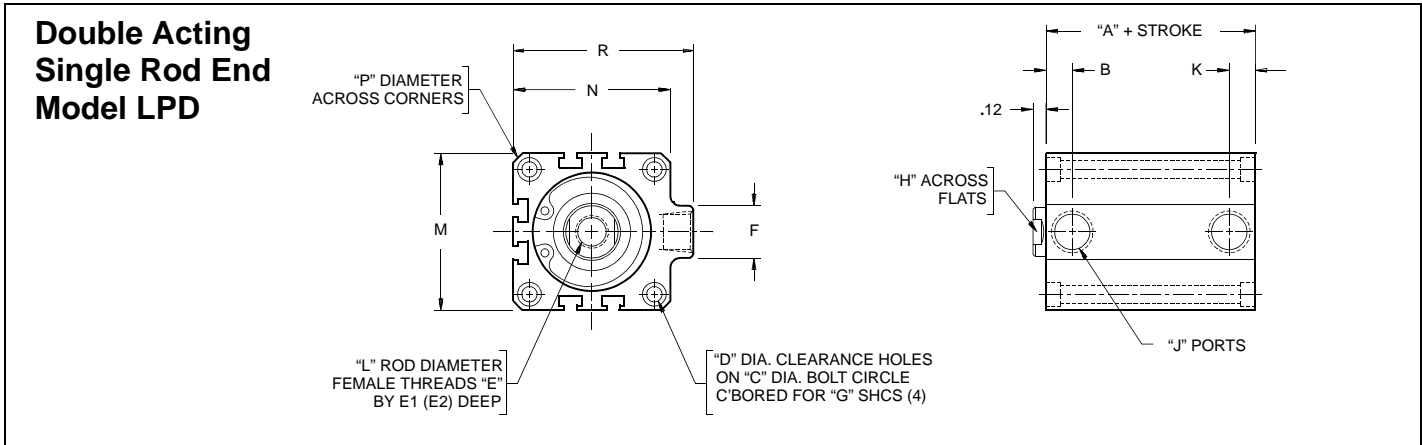
SPECIAL DESIGN CYLINDERS

American Cylinder engineers and our Specials Department can design and manufacture special cylinders to meet the needs of your unusual or difficult applications. Contact your American Cylinder Distributor or the factory direct with your special requirements.

American Cylinder Distributors are located in every major industrial market.
 Contact American Cylinder Co. to find a distributor for your area.

Product enhancements resulting from our continuing quality improvements may necessitate changes in specifications without notice.

DOUBLE ACTING MODELS



Dimension																			
Bore	A	A1	B	C	D	E	E1 [▲]	E2 [▲]	F	G	H	J	K	K1	L	M	N	P	R
9/16"	.56	.68	.23	0.87	.11	#8-32	.46	.46	---	#4	.21	#10-32	.14	.26	.25	1.03	1.03	1.12	1.03
3/4"	.56	.68	.23	1.21	.14	#10-32	.46	.46	.43	#6	.25	#10-32	.14	.26	.31	1.25	1.21	1.50	1.35
1 1/16"	.87	.93	.25	1.68	.14	5/16-24	.43	.70	.50	#6	.43	1/8 NPT	.25	.25	.50	1.50	1.50	2.00	1.71
1 1/2"	.87	1.00	.25	2.18	.20	3/8-24	.62*	.70	.62	#10	.50	1/8 NPT	.25	.25	.62	2.00	2.00	2.62	2.25
2"	.93	1.06	.34	2.68	.20	1/2-20	.50	.70	.62	#10	.62	1/8 NPT	.25	.37	.75	2.50	2.50	3.12	2.75
2 1/2"	1.18	1.31	.51	3.25	.26	1/2-20	.50	.70	.75	1/4	.62	1/4 NPT**	.35	.35	.75	3.18	3.18	3.75	3.42

Notes
 ▲ Use E1 for stroke lengths less than 1/2" and E2 for stroke lengths 1/2" & up.
 * .50 for LPD stroke lengths less than 1/4".
 ** 1/8" NPT on LPD strokes < 3/8" and LPDE strokes < 1/4" (1/4" NPT on all models with (-4) option).

LPDE Stroke Lengths	Dim. E3 Bore Size				
	9/16"	3/4"	1 1/16"	1 1/2"	2"
< 1/4"	.28	.39	.43	.37	.50
1/4" - < 3/8"	.28	.39	.43	.50	.50
3/8" - < 1/2"	.46	.46	.43	.50	.50
1/2" & up	.46	.46	.70	.70	.70

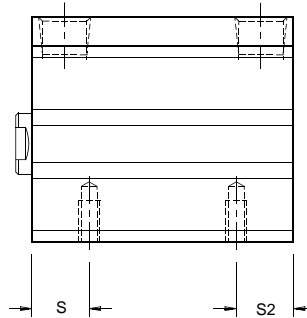
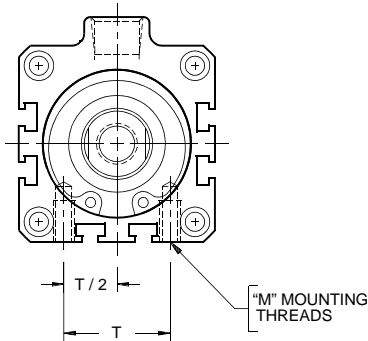
Standard Stroke Lengths: 1/8", 1/4", 3/8", 1/2", 5/8", 3/4", 7/8", 1", 1 1/4", 1 1/2", 1 3/4", 2", 2 1/2", 3, 3 1/2", & 4"

SPECIAL DESIGN CYLINDERS

American Cylinder engineers and our Specials Department can design and manufacture special cylinders to meet the needs of your unusual or difficult applications. Contact your American Cylinder Distributor or the factory direct with your special requirements.

MOUNTING OPTIONS: Dimensional Data

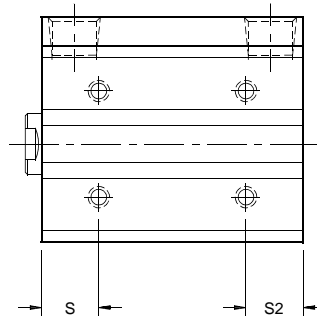
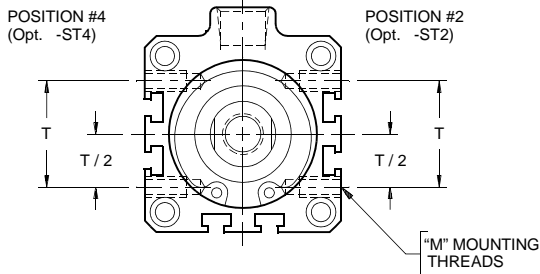
Bottom Tap (Option -BT)



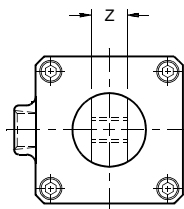
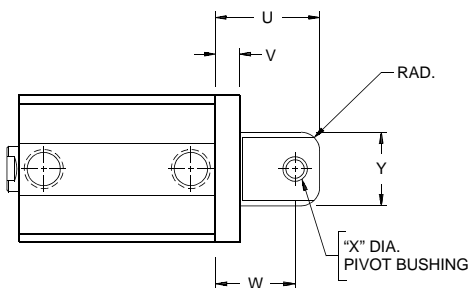
Bore	Dimension				
	S	S2*	T	M	Thread Depth
9/16"	N/A	N/A	N/A	N/A	N/A
3/4"	.31	.31	0.75	#6-32 UNC	.28
1 1/16"	.37	.37	1.00	#8-32 UNC	.31
1 1/2"	.31	.31	1.37	#10-24 UNC	.40
2"	.50	.50	1.75	1/4-20 UNC	.43
2 1/2"	.62	.56	1.75	5/16-18 UNC	.43

Notes * Stroke lengths less than 1/2" have front set of mounting threads only.

Side Tapped (Options -ST2, -ST4)



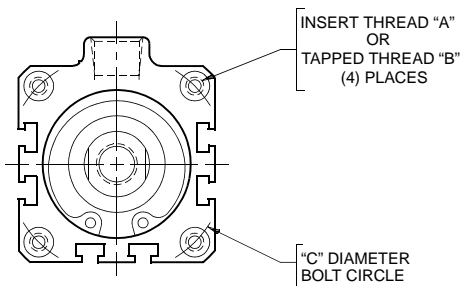
Pivot Mount (Options -P, -P33)



Bore	Dimension						
	U	V	W	X	Y	Z	Rad.
9/16"	1.00	.18	0.75	.19	0.62	.37	.18
3/4"	1.00	.18	0.75	.19	0.75	.37	.18
1 1/16"	1.06	.25	0.81	.19	0.75	.37	.18
1 1/2"	1.62	.25	1.18	.38	1.37	.75	.37
2"	1.68	.31	1.25	.38	1.37	.75	.37
2 1/2"	1.75	.37	1.31	.38	1.37	.75	.37

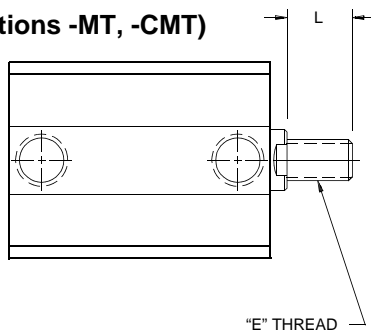
MOUNTING OPTIONS: Dimensional Data (continued)

Tapped End (Options -TBA, -TBB, -TFA, -TFB, -TRA, -TRB)



Dimension			
Bore	Insert Thd. A	Tapped Thd B	C
9/16"	#4-40 UNC	#6-32 UNC	0.87
3/4"	#6-32 UNC	#8-32 UNC	1.21
1 1/16"	#6-32 UNC	#8-32 UNC	1.68
1 1/2"	#10-24 UNC	1/4-20 UNC	2.18
2"	#10-24 UNC	1/4-20 UNC	2.68
2 1/2"	1/4-20 UNC	5/16-18 UNC	3.25

MT (Options -MT, -CMT)



Dimension			
Bore	L	"E" Thd. Option (-MT)	"E" Thd. Option (-CMT)
9/16"	.37	#8-32 UNC	N/A
3/4"	.37	#10-32 UNF	#10-24 UNC
1 1/16"	.50	5/16-24 UNF	5/16-18 UNC
1 1/2"	.50	3/8-24 UNF	3/8-16 UNC
2"	.62	1/2-20 UNF	1/2-13 UNC
2 1/2"	.62	1/2-20 UNF	1/2-13 UNC

Lubrication

All cylinders are factory lubricated with a non-toxic, non-flammable, USDA listed teflon based lubricant. The non-staining, odorless, non-migratory nature of this lubricant provides lubricity for millions of trouble free cycles.

Temperature

The standard LPC® Series seals are recommended for temperatures from -20°F to 200°F (-25°C to 95°C). Fluoroelastomer seals are available as an option for high temperature applications up to 325°F (162°C) and/or chemical compatibility. Special seal compounds and lubricants are available upon request.

WARNING:

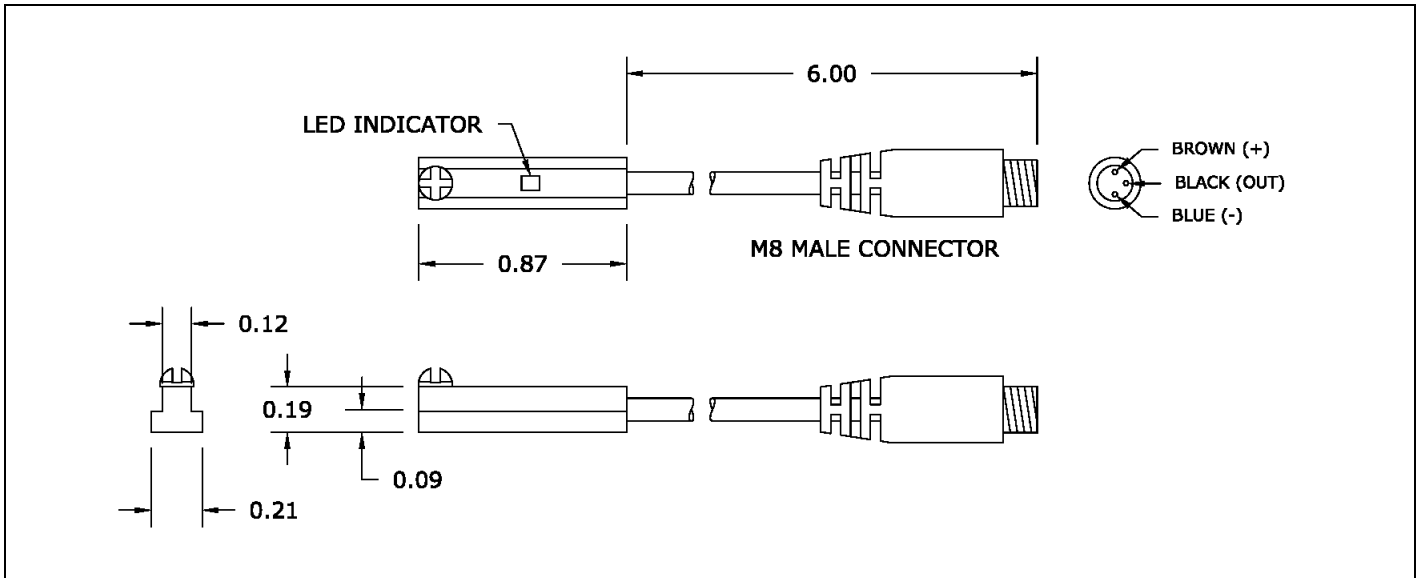
LPC® Series Low Profile Cylinders are intended for use in industrial compressed air systems only. Do not exceed the pressures and temperatures as listed in the technical specifications section.

Disassembly of LPC® cylinders should only be performed by knowledgeable and qualified personnel. Some components are pre-loaded and can inflict bodily injury if proper disassembly precautions are not observed.

OPTIONAL SENSING SWITCHES

All cylinders ordered with the Magnetic Field Piston (Option No. 4) can be used in conjunction with American's Reed or Solid State switches for position sensing. Switches install easily by simply sliding them into "T" slots located on three sides of the cylinder and tightening a single screw. Each switch has a 5" pigtail lead with M8 male connector. Switches must be ordered as a separate accessory item.

SWITCH DIMENSIONAL DATA



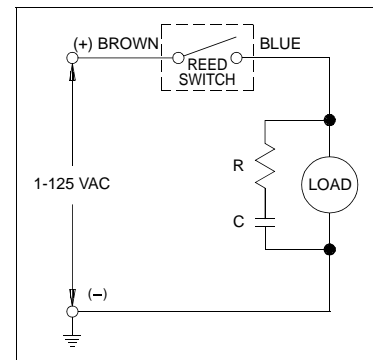
Reed Switches (AC or DC)

American's Reed Switches have a power rating of 10 watts and can be used on either AC or DC applications. In order to avoid premature contact deterioration, always operate within switch specifications listed below. Switch life can be maximized by implementing protection circuits as indicated.

Reed Switch Specifications - LPR-6

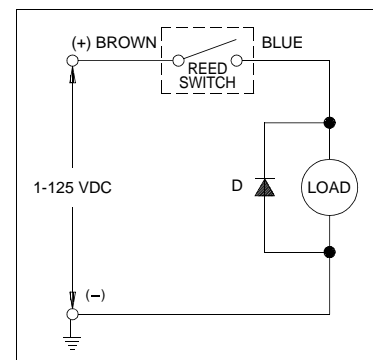
Switching Logic	Normally Open
Contact Type	Single Pole Single Throw
Contact Rating:	
Power	10 Watts
Voltage	100VDC/120VAC
Switching Current	20mA to 250mA
Breakdown Voltage	220 Volts DC
Ambient Temperature	(Normal operating) -4°F to 158°F (Storage) -67°F to 212°F
Indicator	Red LED
Lead Wire Length	(Gray) 5 in. w/M8 Molded Connector
Enclosure Rating	IEC Standard IP67
DC Polarity	Pos. (brown) Neg. (blue)

AC OPERATION



LOAD MUST NOT EXCEED 10 WATT SWITCH RATING
R = RESISTOR (Under 601 OHM)
C = CAPACITOR (0.01 Microfarad)

DC OPERATION



LOAD MUST NOT EXCEED 10 WATT SWITCH RATING
D = DIODE MATCHED TO LOAD VOLTAGE & CURRENT

OPTIONAL SENSING SWITCHES (Continued)

Solid State Switches (DC only)

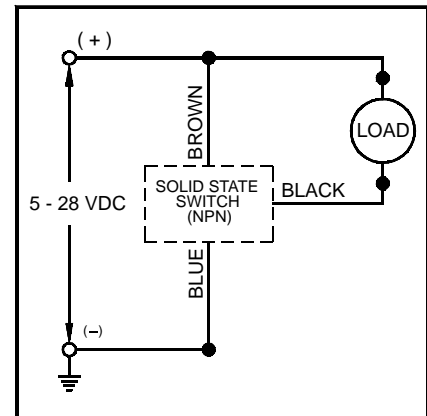
American's Solid State Switches are solid state devices designed for DC applications only. With no mechanical parts to wear out or arc, the solid state circuitry provides a compact, reliable positioning switch for extended service life when used within the specified parameters.

Solid State Switch Specifications

Sinking (NPN) - LPH-6

Switching Logic.....	Normally Open
Switching Voltage.....	5 VDC to 28 VDC
Switching Current.....	50mA Max. @ 5 VDC
	115mA Max. @ 12 VDC
	215mA Max. @ 24 VDC
Current Consumption.....	6mA Max. @ 5 VDC
	6.5mA Max. @ 12 VDC
	6.75mA Max. @ 24 VDC
Ambient Temperature.....	(Normal operating) -4°F to 185°F
	(Storage) -67°F to 212°F
Indicator	Red LED
Lead Wire Length.....	(Black) 5 in. w/ M8 Molded Connector
Enclosure Rating.....	IEC Standard IP67

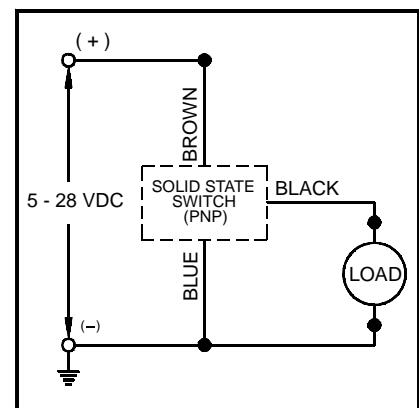
SINKING CIRCUIT



Sourcing (PNP) - LPHP-6

Switching Logic.....	Normally Open
Switching Voltage.....	5 VDC to 28 VDC
Switching Current.....	50mA Max. @ 5 VDC
	110mA Max. @ 12 VDC
	220mA Max. @ 24 VDC
Current Consumption.....	6mA Max. @ 5 VDC
	6.35mA Max. @ 12 VDC
	6.70mA Max. @ 24 VDC
Ambient Temperature.....	(Normal operating) -4°F to 185°F
	(Storage) -67°F to 212°F
Indicator	Green LED
Lead Wire Length.....	(Black) 5 in. w/ M8 Molded Connector
Enclosure Rating.....	IEC Standard IP67

SOURCING CIRCUIT



Special Notes:

- All switches are pretested before leaving the factory. American Cylinder Co. will not replace any switch after its package has been opened.
- The use of an ohmmeter is recommended whenever field testing is required. Do not use an incandescent light bulb or any other testing device which may subject the switches to inrush loads beyond their ratings.
- Use integral circuits as described to maximize Reed Switch life.
- The Reed Switch requires a minimum current flow of 10mA for LED illumination.
- Polarity must be observed when the Reed Switch and the Solid State Switch are used in DC applications.
- Solid State Switches have DC capability only.
- Contact your local distributor or the factory for special modifications or applications.



American Cylinder Co., Inc.

American Cylinder Co., Inc.
Peotone, Illinois 60468-9116
708/258-3935
FAX 708/258-3980

ON THE INTERNET

<http://www.americancylinder.com>
E-MAIL: amcyl@americancylinder.com

Warranty

American Cylinder Co., Inc. warrants its products to be free from defects in material and workmanship under normal wear and service for a period of 3 years from date of shipment of the order. American Cylinder Company shall have no liability under this warranty if: 1) The product is used other than in accordance with specifications. 2) The product is subjected to abuse, negligence, accident, misapplication, or unintended use. 3) The product is manufactured to buyer's specifications.

Manufacturer's liability shall be limited to allowance of credit or replacement of defective product. American Cylinder Company shall not be liable or responsible for injuries or damages to persons or property arising out of the use or operation of American Cylinder products.

THIS WARRANTY IS EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, LIABILITY FOR LOST PROFIT OR FOR INDIRECT, INCIDENTAL, CONSEQUENTIAL OR COMMERCIAL LOSSES, AND OF ALL OTHER OBLIGATIONS OR LIABILITIES.

These conditions subject to change without notice.