

# Bimba Original Line Cylinders

## WORKING WITH BIMBA GIVES YOU:

- The Original stainless steel body cylinder company — with more sizes and options than any other manufacturer.
- Fast service — many models and sizes kept in stock for immediate delivery.
- Worldwide availability through local stocking distributors.
- Custom-design capabilities for your specific needs.

Rod threads roll-formed for high strength

Low friction Buna N "U" cup rod seal (optional High or Low temperature options)

High strength aluminum alloy porting ends

Low friction Buna N "U" cup piston seals (optional High Temperature option or Low temperature seals)

High-strength aluminum alloy piston with blow-by flats

## OUR ORIGINAL LINE CYLINDER FEATURES AND ADVANTAGES INCLUDE:

- 304 stainless steel body with mirror finish ID for long, reliable life.
- Pre-lubrication with HT-99, our specially-formulated oil compound, for extensive maintenance-free performance.
- Piston-to-rod connection is threaded, sealed and riveted in place.
- Low breakaway frictional characteristics: collapsible U-cup rod and piston seals; oil-impregnated, sintered bronze rod bushing on most sizes; and breakaway slots on each endcap for fast seal inflation.

Piston rod — high strength carbon or Type 303 stainless steel (see page 1.5 and 1.8 for more info)

Oil-impregnated rod guide bushing (except 5/16", 7/16" and 9/16" single acting)

Double rolled-in construction

Type 304 stainless steel body

Piston rod threaded, sealed and riveted

• Roll-formed rod threads on both ends for high strength.

• Blow-by flats on double acting model pistons ensures proper seal inflation.

• 250 psi rating.

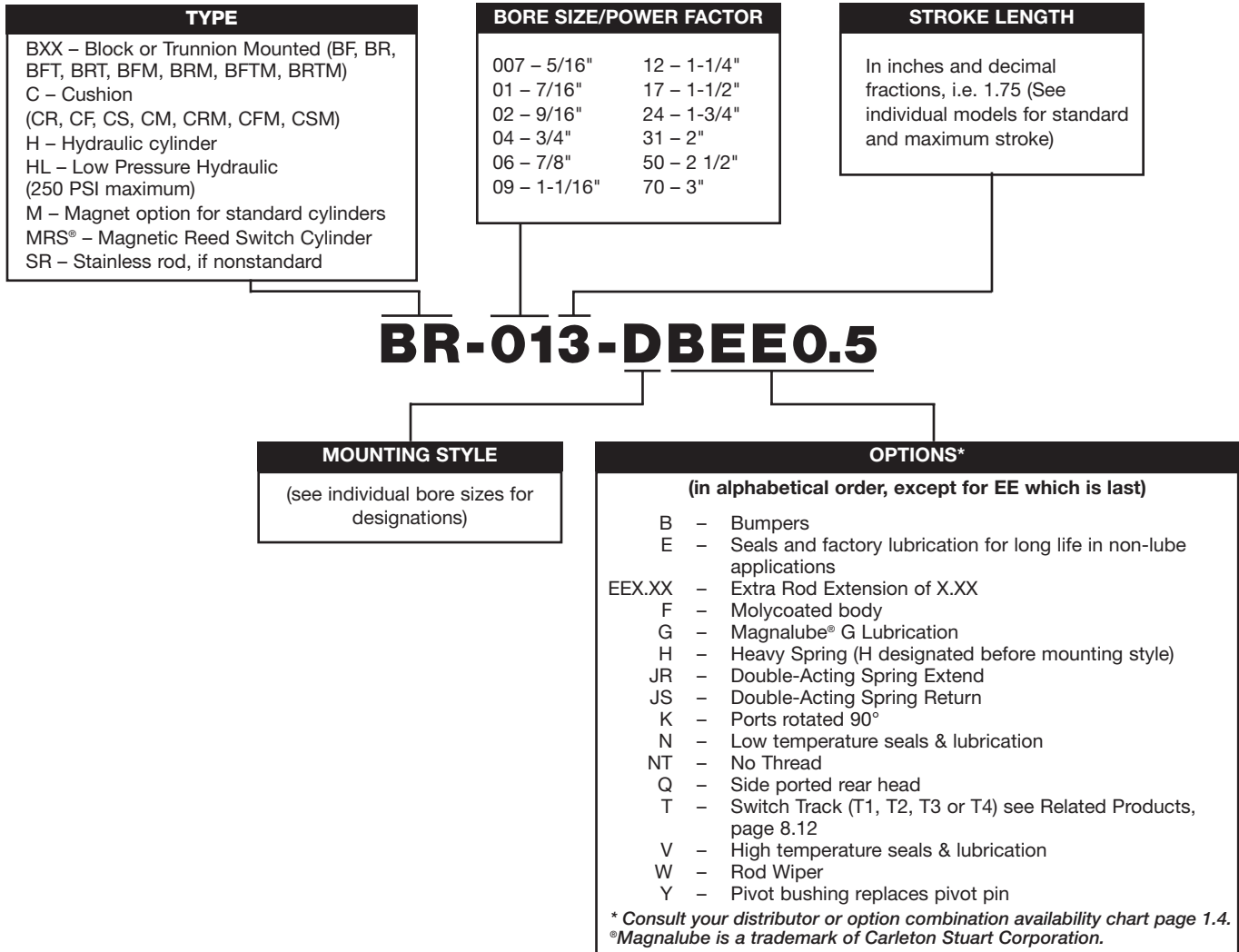
• High strength aluminum alloy porting ends, machined for minimal breakaway during initial pressurization.

# Bimba Original Line – Stainless Steel Body Air Cylinders

## How to Order

The model number of all Original Line cylinders consists of three alphanumeric clusters. These designate product type, bore size and stroke length, and mounting styles and options.

Please refer to the charts below for an example of model number BR-013-DBEE0.5. This is a rear block, 7/16" bore, 3" stroke double acting cylinder with bumpers and an extra extension of 1/2".



### Approximate Power Factors

5/16" – 0.07
7/16" – 0.15
9/16" – 0.25
3/4" – 0.4
7/8" – 0.6
1-1/16" – 0.9
1-1/4" – 1.2
1-1/2" – 1.7
1-3/4" – 2.4
2" – 3.1
2-1/2" – 5.0
3" – 7.0

$$FORCE = \frac{Airline\ Pressure}{14.7} \times Piston\ Area$$

$$PISTON\ AREA = \frac{Bimba\ Power\ Factor}{14.7}$$

$$FORCE = \frac{Airline\ Pressure}{14.7} \times Bimba\ Power\ Factor$$

Bimba has made sizing a cylinder as easy as knowing the model number. Each base model number is developed by calculating the area of the cylinder bore. This area, or Power Factor, will provide the force the cylinder will exert when multiplied by the airline pressure.

# Bimba Original Line – Stainless Steel Body Air Cylinders

## Options

Many options can be added to our standard cylinders. Options vary by bore size. See individual bore sizes for valid options, pricing and length adders for that size. Consult specific cylinder types in this catalog for options available for those cylinder types.

### Option Combination Availability Chart

Due to design or compatibility restrictions, the following options may **NOT** be ordered in combination. For example, option K (ports rotated) and option Q (side ported rear head) are not a valid combination.

Options F, NT and EE are available independently, with each other or with all other options or viable option combinations.

options size	W3 4 Wiper	B2 5 Bumper	V2 4 High Temperature	H Heavy Spring	K Ports Rotated 90°	Y Pivot Bushing	N2 Low Temperature	Q Side Ported Rear Head	G Magnalube G	E Special Lube & Seals	HL 6 Low Pressure Hydraulic
007	N/A	STD	N, E	N/A	Q	STD	V,G,E, HL	K	N, E, HL	N, G, V, HL	G,N,E,F,H
01	N/A	N, HL	N, E	N/A	Q	Q	B,V,G,E, HL	K,Y	N, E, HL	N, G, V, HL	B,G,N,E,F,H
02	N/A	N, HL	N, E	N/A	Q	STD	B,V,G,E, HL	K	N, E, HL	N, G, V, HL	B,G,N,E,F,H
04, 09, 17	H,N	N, HL	N, E	W, HL	Q	Q	W,B,V,G,E, HL	K,Y	N, E, HL	N, G, V, HL	B,G,N,E,F,H
06, 12, 24	N/A	STD, HL	N, E	N/A	Q	Q	V,G,E, HL	K,Y	N, E, HL	N, G, V, HL	B,G,N,E,F,H
31, 50	N/A	N, HL	N, E	N/A	Q	STD	B,V,G,E, HL	K	N, E, HL	N, G, V, HL	B,G,N,E,F,H
70	N/A	N, HL	N, E	N/A	Q	STD	V,G,E, HL	K	N, E, HL	N, G, V, HL	B,G,N,E,F,H

#### Notes:

- Option M is designated as a prefix, (ie M-041-DXP). When M is specified, the piston rod will be made of 303 stainless steel. Certain bore sizes and mounting styles offer the stainless rod standard.
- When bumpers are standard and high or low temperature option is specified, the bumpers are omitted and the overall length of the cylinder may decrease. When bumpers and high temperature are ordered as options on the same cylinder, the bumper material will be standard Buna N.
- Wipers are available in double acting and reverse single acting models only. Wipers may not be available with certain mounting configurations. Consult the specific bore size in this catalog for detail.
- When high temperature and the magnetic options are combined, operating temperature remains at 200°F. This combination is recommended when Fluoroelastomer seals are specified for compatibility. When specifying the high temperature and wiper options together, a standard Buna N or Urethane wiper will be provided.
- Bumpers are available in only double acting models for the 17 and 31 bores.
- Option HL applies only to Double Acting Original Line cylinders and is not available with the following series: Cushion, PC, MRS, NR, Z-Line, DNR, 500 Hydraulic and Multiple Position.

## Overall Length Reductions for Options N & V

Double Acting	
0070-DV	.08"
0070-DXPN	.08"
BF-0070-DN	.08"
060-D (V or N)	.22"
060-DXP (V or N)	.22"
060-DXDE (V or N)	.25"
120-D (V or N)	.19"
120-DP (V or N)	.19"
120-DXDE (V or N)	.25"
120-DXDEH (V or N)	.25"
240-D (V or N)	.25"
240-DP (V or N)	.25"
240-DXDE (V or N)	.25"

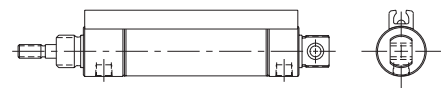
Single Acting	
0070-N	.04"
0070-XP	.04"
0070-RN	.04"
0070-RPN	.04"
060- (V or N)	.09"
060-NR (V or N)	.09"
060-RP (V or N)	.125"
060-R (V or N)	.125"
120- (V or N)	.125"
120-NR (V or N)	.125"
120-NRP (V or N)	.125"
120-P (V or N)	.125"
120-R (V or N)	.125"
120-RP (V or N)	.125"
240- (V or N)	.125"
240-NR (V or N)	.125"
240-P (V or N)	.125"
240-R (V or N)	.125"

The switch track and port orientation when ordering the "Z" (Switch Track) & "K" (Ports Rotated) options on an Original Line MRS cylinder is shown Below. Double track option Z and K cannot be ordered in combination.

#### MRS- -DXP



#### MRS- -DXPZK



\*0070 bumpers are high temperature option material and not removed when high temperature option is specified.

# Bimba Original Line – Stainless Steel Body Air Cylinders

## Accessories

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Accessories have separate catalog numbers and are shown at the end of each bore size section. Most accessories are zinc-plated carbon steel. We also offer stainless steel accessories in some bore sizes.

## Lubrication

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All BIMBA cylinders are prelubricated with our special HT-99 lubrication and sealed at the factory for extensive maintenance-free life. Cylinder life can be lengthened by providing additional lubricant with an air line mist lubricator or direct introduction of oil to the cylinder every 500 hours of operation. Both Magnalube G and HT-99 can now be purchased from your Bimba distributor.

MAG-G-3CC    \$6.10/bag  
HT-99-7CC    \$3.35/bag  
(each bag contains six ampules)

Requirements will vary depending on the application. In general, one ampule will provide 500 hours of lubrication service for one 1-1/2" bore, 12" stroke double acting cylinder.

Other recommended oils for Buna N seals are medium to heavy inhibited, nondetergent hydraulic and general purpose oil. For cylinders with high temperature seals, use Dow Corning #710. For cylinders with low temperature seals, Dow Corning #55 grease is recommended.

Magnalube G can be ordered by specifying option G. Magnalube G's non-migratory properties provide benefits in applications where migration of lubricant can be problematic for cylinder performance or the application. Molycoating is available as standard option F. It is a dry, thin film of lubricant on the cylinder wall that can reduce piston seal wear. Bimba's new option E provides a proprietary combination of seal material and lubrication for extended life in non-lubricated environments. Other types of factory lubrication are available as required.

## Piston Rod Material

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Standard models feature ground and polished, high strength carbon steel piston rod or ground and roller burnished type 303 stainless steel. Stainless steel can also be ordered as an option on most models (see models for pricing). Stainless steel is standard on the following models:

- All 5/16", 7/16" and 9/16" bore cylinders
- All cylinders with adjustable cushions
- All 9/16" through 3" bore cylinders ordered with Magnet (M) option
- MRS cylinders
- "Z" Line cylinders
- Block and Trunnion-mounted cylinders
- Universal mount, double-end rod cylinders

Hard chrome plated rod is standard on "500" Hydraulic cylinders.

## Temperature Range

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Buna N seals with a temperature range of -20° F (-29° C) to 200° F (95° C) are standard in all BIMBA air cylinders. Fluoroelastomer seals rated for higher temperature applications (up to 400° F) are available. If cylinders are operated at temperatures below 0° F for extended time periods, our low temperature seal and lubrication option (N) is recommended. This option has a temperature range of -40° F to 200° F. If cylinders are operated below -20° F with low temperature seals for extended time periods, cylinder performance will be affected by the cold temperature.



# ***Bimba Original Line – Stainless Steel Body Air Cylinders***

## **Mounting**

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Mounting should be by the threaded stud ends, pivot or bolt holes provided. Mount cylinders to provide alignment with the driven mechanism, avoiding side loads that restrict the free operation of the cylinder.

## **Free Test Cylinder**

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Since 1975, our policy has been to provide a FREE TEST CYLINDER to any qualified original equipment manufacturer. This service is provided at no obligation, but we would appreciate a copy of your test results. Contact us or your local stocking BIMBA distributor for more information.

## **Special Cylinders**

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Do you have a complicated or unusual application? BIMBA will custom-design and build the cylinder that will solve your problem. Whatever your needs—special stroke, mounting styles, rod-end configurations, seal materials, dimensional changes, etc.—contact us or your local stocking BIMBA distributor.

## **Delivery/ Availability**

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Bimba cylinders are sold through local stocking distributors. Each distributor maintains an inventory of our most popular models. At the factory, Bimba classifies cylinders as shelving and nonshelving models. More than 125,000 units of various shelving models are kept in stock for immediate delivery. Standard stroke lengths shown in blue are stocked at Bimba. (Most stocked models shown in blue do not include options.) These stroke lengths are available in limited quantities for immediate shipment. Bimba also stocks a large quantity of cylinders with options such as stainless steel rods or bumpers. Nonstocked standard models are manufactured within 5 working days.

## **Choosing the Right Cylinder**

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See Bimba handbook, “Tips for Maximizing Cylinder Performance,” for more information on choosing cylinder types, sizes, options and accessories.

## **Cylinder Life Expectancy**

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Bimba cylinders have been designed and tested for a rated life of 1400 miles of travel when properly applied and lubricated per recommendations. Bimba’s option E has been designed and tested for a rated life of 2,800 miles of travel when properly applied in an unlubricated environment.

# Bimba Original Line – Stainless Steel Body Air Cylinders

## Types of Cylinders

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Bimba manufactures several different types of Original Line cylinders for your applications. These include the basic 5/16" to 3" bore cylinders described on pages 1.10-1.64. Weights published for each cylinder are approximate. Additional styles include:

### Three-Position Cylinders

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This multi-position Original Line stainless body cylinder provides three positive stroke positions with a single cylinder.

### Cushion Cylinders

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These include adjustable air cushions that slow cylinder speed at the end of stroke, reducing impact and extending cylinder life. Cushions can be ordered on rear, front or both ends, and can be ordered in combination with magnetic pistons.

### MRS Cylinders

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These include a magnet on the piston, designed to operate Bimba switches to actuate programmable controllers, relays, solenoids, timers or other electrically operated equipment. Dimensional differences from the basic Original Line include larger mounting threads and longer overall lengths in certain bore sizes.

### Non-Rotating Cylinders

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Double acting and reverse acting non-rotating cylinders have a unique square piston rod with rounded corners. They are dimensionally interchangeable with the standard Original Line.

### PC Cylinders

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These cylinders include acetal resin end caps. They are ideal for applications and environments that require exposure to moisture, lubricants and specific solvents. All dimensions except 1½" bore nose threads are interchangeable with the Original Line.

### All Stainless Repairable Cylinders

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The new all stainless repairable Original Line cylinders are ideal for food processing, chemical, medical, pharmaceutical, offshore or marine equipment, and energy production or waste management applications. The bell ring design also offers the added benefit of full repairability without the need for hand tools by securing the body to the rod guide with a knurled, threaded nut.

### Z-line Cylinders

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For extremely tough applications, with larger diameter, two-piece piston rod, elastomer bumpers and Buna N U-cup seals for low breakaway.

### Rod Lock Cylinders

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This cylinder is a normally clamped unit that holds the piston rod in position when air pressure is not present. It is ideal for preventing drift at machine shut down.

### 500 Hydraulic Cylinders

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For hydraulic use, up to 500 psi.

### Low Pressure Hydraulic Cylinders

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Designed for use in low pressure hydraulic circuits with pressures not exceeding 250 psi. The design incorporates chrome plated piston rods and block-vee seals.

### Hole Punchers

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These are designed to punch millions of holes in thin film or plastic materials 2 to 3 mils thick.

# Bimba Original Line – Stainless Steel Body Air Cylinders

## Stroke Lengths

Standard stroke lengths and recommended maximum stroke lengths are listed in each model description. Special stroke lengths are available upon request. Stroke lengths are available in lengths longer than published, but an application review may be required. The cost per inch of stroke is listed below the base price of each cylinder. On models with 1/2" standard stroke length increments, add 1/2 of the per inch price for the 1/2" inch of stroke.

**NOTE ON ROD MATERIAL:** Bore sizes 3/4" to 1-3/4": rod lengths greater than 12" (stroke plus extra extension) require a stainless steel rod. Bore sizes 2" to 3": rod lengths greater than 6" require a stainless steel rod. Rod length equals stroke plus extension.

## Fractional Stroke Lengths

Fractional stroke lengths for single and reverse acting cylinders, both standard and nonstandard, require special calculations to determine cylinder dimensions. The following equations apply:

### Single Acting Cylinders

Calculate the length of next whole standard increment of stroke, then subtract the difference between desired stroke and next longer whole increment of stroke.

**Example: 092.75**

$$\begin{array}{r}
 \text{090 Base length} = 1.94" \\
 \text{Plus 1.56 per inch of stroke} = + 4.68" \\
 \text{1.56 X 3.0 (next longer stroke increment)} \\
 \text{093 length} = 6.62 \\
 \text{Whole stroke increment} = 3.00" \\
 \text{Minus desired stroke} = - 2.75 \\
 \text{Stroke difference} = .25 \dots - 0.25 \\
 \text{092.75 length} = 6.37"
 \end{array}$$

### Reverse Acting Cylinders

Calculate length of next longer standard increment of stroke, then subtract twice the difference between desired stroke and next longer standard increment of stroke.

**Example: 011.625-RP**

$$\begin{array}{r}
 \text{010-RP Base length} = 2.38" \\
 \text{Plus 1.44 per each 0.5" of stroke} = + 5.76" \\
 \text{1.44 X 4 (number of standard increments required for the next longer increment)} \\
 \text{012-RP length} = 8.14 \\
 \text{Standard stroke increment} = 2.000" \\
 \text{Minus desired stroke} = - 1.625 \\
 \text{Stroke difference} = .375 \\
 \text{Twice stroke difference} = .750 \dots - 0.75 \\
 \text{011.625 length} = 7.39"
 \end{array}$$

### Double Acting Cylinders

Add desired stroke length to base length of cylinder.

**Example: 041.25-D**

$$\begin{array}{r}
 \text{040-D Base Length} = 2.97" \\
 \text{Plus 1.25" stroke} = + 1.25 \\
 \text{041.25-D length} = 4.22
 \end{array}$$

**NOTE:** Additional charges may be added for small quantity orders of fractional, nonstandard stroke lengths. Consult your local stocking BIMBA distributor.

## Spring Forces (approximate)

Bore Size	Heavy Spring			
	Relaxed (lbs.)	Compressed (lbs.)	Relaxed (lbs.)	Compressed (lbs.)
5/16"	.5	1	–	–
7/16"	1	2	–	–
9/16"	2	4	–	–
3/4"	3	6	4	10
7/8"	3	6	–	–
1-1/16"	3	6	6	12
1-1/4"	7.5	15	–	–
1-1/2"	7	14	8.5	17
1-3/4"	11	24	–	–
2"	15	30	–	–

### NOTES

- Heavy spring option may increase cylinder overall length
- Spring forces listed are for whole strokes

# Bimba Original Line – Stainless Steel Body Air Cylinders

## Nose Mount Torque Values

Thread Size	Torque (IN*LB) FT*LB	Bore Size
1/4-28 UNF	(27.6) 2.3	5/16" (007)
3/8-24 UNF	(60) 5	5/16" (007) & 7/16" (01)
7/16-20 UNF	(84) 7	7/16" (01) & 9/16" (02)
1/2-20 UNF	(144) 12	3/4" (04)
5/8-18 UNF	(336) 28	3/4" (04), 7/8" (06) & 1-1/16" (09)
3/4-16 UNF	(480) 40	3/4" (04), 1-1/16" (09), 1-1/4" (12) & 1-1/2" (17)
7/8-16 UNF	(780) 65	1-1/16" (09), 1-1/4" (12) & 1-1/2" (17)
1-14 UNS	(1200) 100	1-1/2" (17) & 1-3/4" (24)
1 1/8-12 UNF	(1320) 110	1-1/2" (17) & 1-3/4" (24)
1 1/4-12 UNF	(1440) 120	2" (31)
1 3/8-12 UNF	(1560) 130	2-1/2" (50)
1 1/2-12 UNF	(1680) 140	3" (70)

## Pressure Rating

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Original Line, Cushioned Original Line, NR series, Z-line, MRS and hole punchers = 250 psi.

PC cylinder = 100 psi.

Bimba 500 Hydraulic = 500 psi hydraulic.

Reservoirs = 250 psi.

# 5/16" Bore Air Cylinders

- Ground and Roller Burnished 303 Stainless Steel Piston Rod Standard
- Force Exerted Approximately 0.07 of Air Line Pressure
- Enclosed Spring Force: .5 lb. Relaxed – 1 lb. Compressed
- Cushion Quiet Bumpers Standard on All Models

## OPTIONS:

(also see Option Combination Availability Chart Page 1.4)

- MAGNALUBE G (G) - NO CHARGE
- PORTS ROTATED (K)\* - NO CHARGE
- NO THREAD (NT) - NO CHARGE

\*Rod guide port rotated 90° clockwise in BF model.

- **SIDE PORTED REAR HEAD (Q)**  
Add .20" to nose mount overall length

### EXTRA EXTENSION (EE)

- Add \$0.65 per inch of extension

### DOUBLE ACTING FAILSAFE

- (JS = Spring Return, JR = Spring Extend)
- Add \$4.40 to base price + \$0.40 to stroke adder
- See page 1.65 for overall length adders

### LOW TEMPERATURE (N)

- Temperature Range: -40° to 200°F
- Single acting add \$0.60
- Double acting add \$1.20
- Reverse acting add \$0.90

## OPTIONS continued...

### HIGH TEMPERATURE "U" CUPS (V)

(overall length does not change)  
Temperature Range: 0° to 400°F (-18° to 205°C)

- Single acting add \$3.80
- Double acting add \$10.05
- Reverse acting add \$7.10

### ROD WIPER (W)

(not available in standard single acting)

- Add \$2.75

### MOLYCOATED BODY (F)

- Add \$2.55 per inch of stroke

### NON-LUBE SERVICE (E)

- Single acting add \$3.45
- Double acting add \$7.45


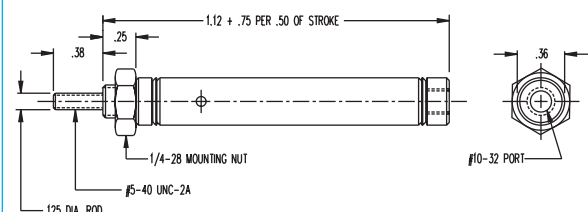

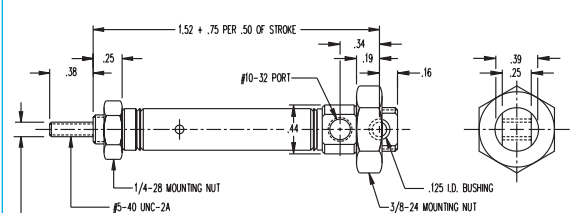

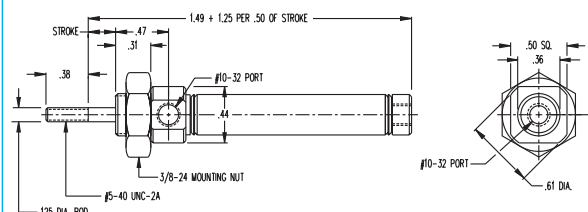
### MAGNETIC POSITION SENSING (M)

- Add \$7.10
- Add .15" to overall length
- Must specify track(s) for use with Bimba's miniature position sensing (T2, T3, T4) – Add \$2.75 per track. See Related Products, page 8.12 for details.

### LOW PRESSURE HYDRAULIC (HL)

- 250 psi maximum
- Double acting models only
- Option specified as a prefix
- Add \$8.80


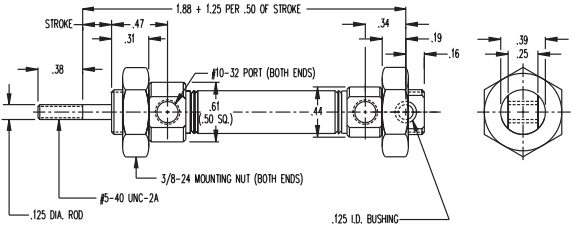

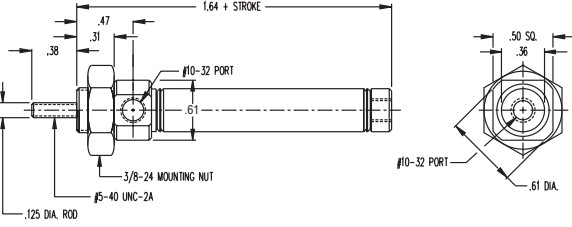

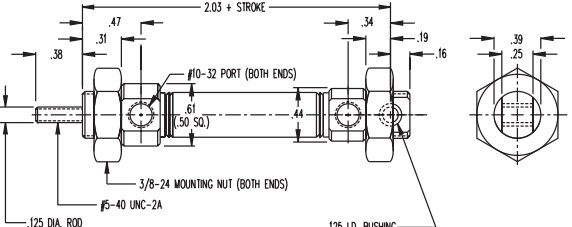

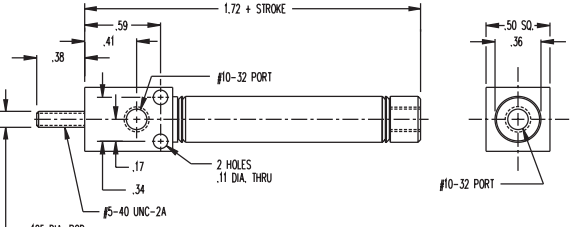
Enter Stroke Length as 4th Digit

MODEL/PRICE	DESCRIPTION/WEIGHT (lbs.)	DIMENSIONS
<p><b>007</b> <input type="checkbox"/></p>  <p><b>\$10.60</b> BASE PRICE Add \$1.85 per inch of stroke</p>	<p><b>Single Acting – Spring Return – Front Nose Mounting</b> Standard Stroke Lengths: ½", 1", 1½", 2", 2½", 3", 4" Maximum Stroke – 4" Stainless Steel Rod Standard Optional Accessory: D-26731 Mounting Bracket Base Weight: .03 Adder Per Inch of Stroke: .02</p>	
<p><b>007</b> <input type="checkbox"/>-XP</p>  <p><b>\$13.85</b> BASE PRICE Add \$1.85 per inch of stroke</p>	<p><b>Single Acting – Spring Return – Double End or Rear Pivot Mounting</b> Standard Stroke Lengths: ½", 1", 1½", 2", 2½", 3", 4" Maximum Stroke – 4" Stainless Steel Rod Standard Optional Accessories: D-26731 Mounting Bracket D-26689 Pivot Bracket D-26690 Piston Rod Clevis Base Weight: .04 Adder Per Inch of Stroke: .02</p>	
<p><b>007</b> <input type="checkbox"/>-R</p>  <p><b>\$16.20</b> BASE PRICE Add \$1.85 per inch of stroke</p>	<p><b>Reverse Single Acting – Pull Type – Rod Normally Extended – Spring Return – Front Nose Mounting</b> Standard Stroke Lengths: ½", 1", 1½", 2", 2½", 3" Maximum Stroke – 4" Stainless Steel Rod Standard Optional Accessory: D-26765 Mounting Bracket Base Weight: .05 Adder Per Inch of Stroke: .03</p>	

See page 1.8 for length calculation of fractional stroke for single acting cylinders



# 5/16" Bore Air Cylinders

MODEL/PRICE	DESCRIPTION/WEIGHT (lbs.)	DIMENSIONS
<p><b>007□-RP</b></p>  <p><b>\$20.50</b> BASE PRICE Add \$1.85 per inch of stroke</p>	<p><b>Reverse Single Acting</b> – Pivot and Pull Type – Rod Normally Extended – Spring Return – Rear Pivot Mounting  <b>Standard Stroke Lengths:</b>                      ½", 1", 1½", 2", 2½", 3"                      Maximum Stroke – 4"                      Stainless Steel Rod Standard  <b>Optional Accessories:</b>                      D-26765 Mounting Bracket                      D-26689 Pivot Bracket                      D-26690 Piston Rod Clevis  <b>Base Weight:</b> .05  <b>Adder Per Inch of Stroke:</b> .03</p>	
<p><b>007□-D</b></p>  <p><b>\$14.80</b> BASE PRICE Add \$1.30 per inch of stroke</p>	<p><b>Double Acting</b> – Air Return – Front Nose Mounting  <b>Standard Stroke Lengths:</b>                      ½", 1", 1½", 2", 2½", 3", 4"                      Maximum Stroke – 4"                      Stainless Steel Rod Standard  <b>Optional Accessory:</b>                      D-26765 Mounting Bracket  <b>Base Weight:</b> .05  <b>Adder Per Inch of Stroke:</b> .01</p>	
<p><b>007□-DXP</b></p>  <p><b>\$18.30</b> BASE PRICE Add \$1.30 per inch of stroke</p>	<p><b>Double Acting</b> – Air Return – Double End or Rear Pivot Mounting  <b>Standard Stroke Lengths:</b>                      ½", 1", 1½", 2", 2½", 3", 4"                      Maximum Stroke – 4"                      Stainless Steel Rod Standard  <b>Optional Accessories:</b>                      D-26765 Mounting Bracket                      D-26689 Pivot Bracket                      D-26690 Piston Rod Clevis  <b>Base Weight:</b> .06  <b>Adder Per Inch of Stroke:</b> .01</p>	
<p><b>BF-007□-D</b></p>  <p><b>\$22.45</b> BASE PRICE Add \$1.30 per inch of stroke</p>	<p><b>Double Acting</b> – Front Block Mounting – Air Return  <b>Standard Stroke Lengths:</b>                      ½", 1", 1½", 2", 2½", 3", 4"                      Maximum Stroke – 4"                      Stainless Steel Rod Standard  <b>Base Weight:</b> .05  <b>Adder Per Inch of Stroke:</b> .01</p>	

- Standard Air Cylinders
- Three-Position Cylinders
- Cushion Cylinders
- MRS® Cylinders
- Non-Rotating Air Cylinders
- PC Cylinders
- All Stainless Repairable
- Z Line Air Cylinders
- Rod Lock Cylinders
- 500 Hydraulic Cylinders
- Hole Punch Cylinders

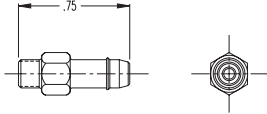
# 5/16" Bore Air Cylinders

## 5/16" Bore Accessories

**D-3229-A**

\$3.25

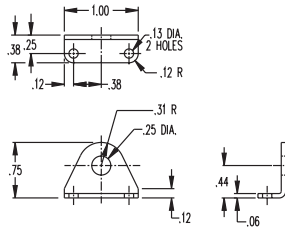
PACKAGE OF SIX



Aluminum Alloy Barbed Fitting.  
1/4" Hose (O.D.) Barbed Fitting Supplied with  
Gasket, No. 10-32 to 1/4" O.D. Tubing.

**D-26731**

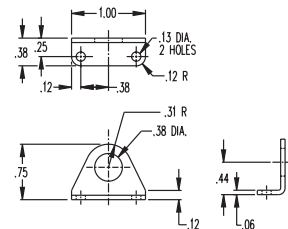
\$2.25



Mounting Bracket  
(for Single Acting Models)

**D-26765**

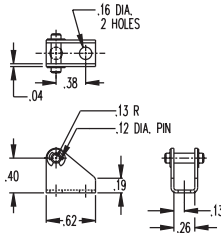
\$2.25



Mounting Bracket  
(for Double Acting Models)

**D-26689**

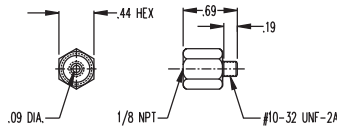
\$3.15



Pivot Bracket with Pin

**D-855-A**

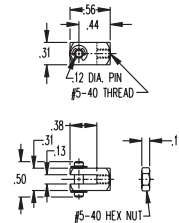
\$1.75



Adaptors (10-32 to 1/8 NPT Female)  
Supplied with Gasket

**D-26690**

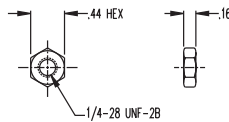
\$3.15



Piston Rod Clevis  
(with Pin)

**D-344**

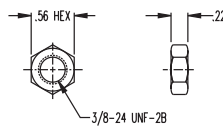
\$ .35



Mounting Nut

**D-801**

\$ .35



Mounting Nut

# 7/16" Bore Air Cylinders

- Ground and Roller Burnished 303 Stainless Steel Piston Rod Standard
- Force Exerted Approximately 0.15 of Air Line Pressure
- Enclosed Spring Force: 1 lb. Relaxed – 2 lbs. Compressed

## OPTIONS:

### NO CHARGE:

- **MAGNALUBE G (G)**
- **PORTS ROTATED (K)** (Not available in block mount)
- **NO THREAD (NT)**
- **SIDE PORTED REAR HEAD (Q)**  
Add .19" to nose mount overall length
- **PIVOT BUSHING (Y)**  
.157" ID (Use bracket D-12321-A)

### SINGLE AND REVERSE ACTING BUMPER (B)

- \$2.85 additional
- Add .062 to overall length; Reverse acting, add .125

### DOUBLE ACTING BUMPER (B)

- \$4.00 additional
- Add .188 to overall length – DXDE; add .250

### EXTRA EXTENSION (EE)

- Single, reverse and double acting, add \$0.80 per inch of extension
- DXDE, add \$1.00 per inch of extension; extension added to each end

### DOUBLE ACTING FAILSAFE

- (JS = Spring Return, JR = Spring Extend)
- Add \$4.40 to base price + \$0.40 to stroke adder
  - See page 1.65 for overall length adders

Enter Stroke Length as 3rd Digit

## OPTIONS continued...

### LOW TEMPERATURE (N)

Temperature Range: -40° to 200°F

- Single acting add \$0.60
- Reverse acting add \$0.90
- Double acting add \$1.20
- DXDE add \$1.50

### HIGH TEMPERATURE "U" CUPS (V)

Temperature Range: 0° to 400°F (-18° to 205°C)

- Single acting add \$4.00
- Double acting add \$10.35
- DXDE add \$13.75
- Reverse acting add \$7.20

### MAGNET (prefix M)

- Add \$7.65
- Add 0.25" to Double Acting overall length
- Add 0.20" to Single Acting overall length
- Must specify track(s) for use with miniature position sensing (T2, T3, T4) – add \$2.75 per track. See Related Products, page 8.12 for details.

### MOLYCOATED BODY (F)

- Add \$2.55 per inch of stroke

### NON-LUBE SERVICE (E)

- Single acting add \$3.45
- Double acting add \$8.05
- DXDE add \$11.40

### ROD WIPER (W)

(not available in standard single acting)

- Add \$2.75

### LOW PRESSURE HYDRAULIC (HL)

- 250 psi maximum
- Double acting models only
- Option specified as a prefix
- Add \$8.80

## MODEL/PRICE

## DESCRIPTION/WEIGHT (lbs.)

## DIMENSIONS

**01**



**\$11.15**

**BASE PRICE**

Add \$2.05 per inch of stroke

**Single Acting – Spring Return – Front Nose Mounting**

**Standard Stroke Lengths:**

½", 1", 1½", 2", 2½", 3", 4"

Maximum Stroke – 6"

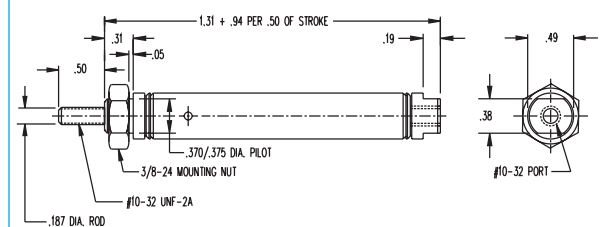
Stainless Steel Rod Standard

**Optional Accessory:**

D-775 Mounting Bracket

**Base Weight: .04**

**Adder Per Inch of Stroke: .04**



**01**  **-NR**



**\$13.80**

**BASE PRICE**

Add \$2.05 per inch of stroke

**Single Acting – Non-rotating – Hexagon Rod – Spring Return – Front Nose Mounting**

**Standard Stroke Lengths:**

½", 1", 1½", 2", 2½", 3", 4"

Maximum Stroke – 6"

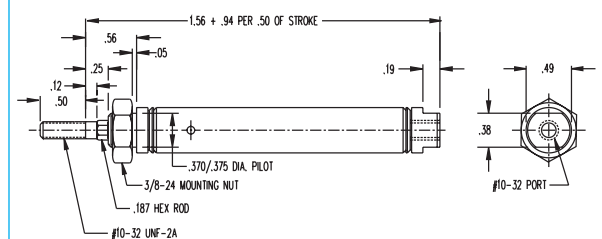
Stainless Steel Rod Standard

**Optional Accessory:**

D-775 Mounting Bracket


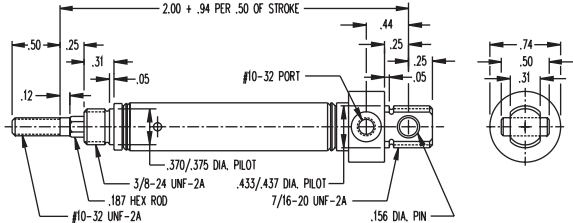

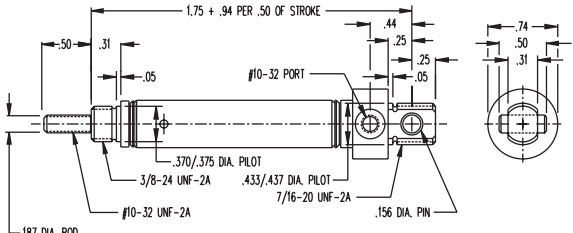

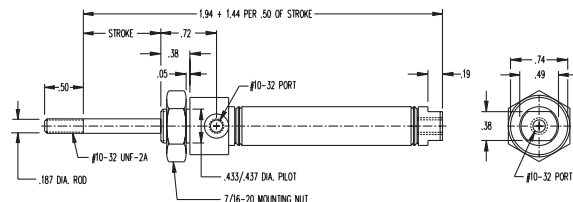

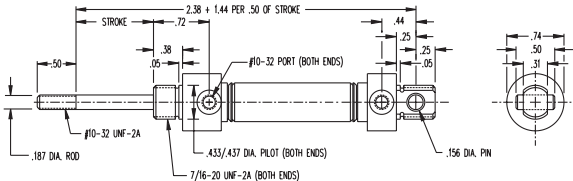

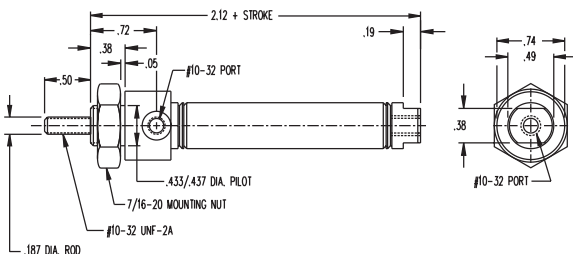
**Base Weight: .04**

**Adder Per Inch of Stroke: .04**


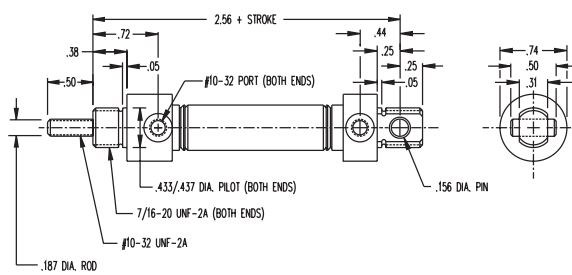

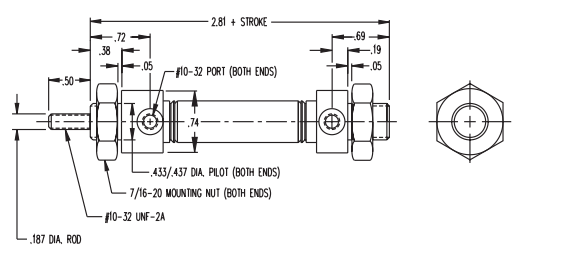

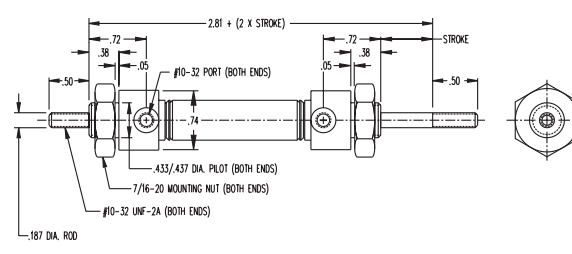


See page 1.8 for length calculation of fractional stroke for single acting cylinders

# 7/16" Bore Air Cylinders


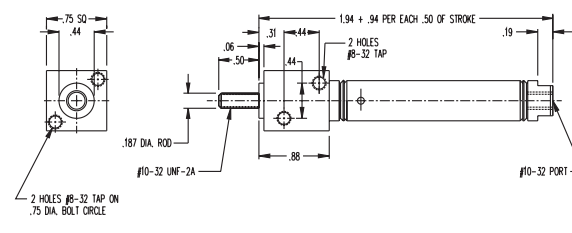

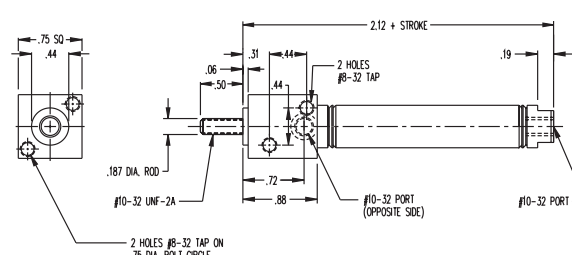
MODEL/PRICE	DESCRIPTION/WEIGHT (lbs.)	DIMENSIONS
<p><b>01□-NRP</b></p>  <p><b>\$17.20</b> BASE PRICE Add \$2.05 per inch of stroke</p>	<p><b>Single Acting – Non-rotating Hexagon Rod – Pivot Type – Spring Return – Rear Pivot Mounting</b> Standard Stroke Lengths: ½", 1", 1½", 2", 2½", 3", 4" Maximum Stroke – 6" Stainless Steel Rod Standard Optional Accessories: D-850 Rod Clevis D-780 Pivot Brackets Base Weight: .04 Adder Per Inch of Stroke: .04</p>	
<p><b>01□-P</b></p>  <p><b>\$14.65</b> BASE PRICE Add \$2.05 per inch of stroke</p>	<p><b>Single Acting – Pivot Type – Spring Return – Rear Pivot Mounting</b> Standard Stroke Lengths: ½", 1", 1½", 2", 2½", 3", 4" Maximum Stroke – 6" Stainless Steel Rod Standard Optional Accessories: D-780 Pivot Brackets D-850 Piston Rod Clevis Base Weight: .04 Adder Per Inch of Stroke: .04</p>	
<p><b>01□-R</b></p>  <p><b>\$16.95</b> BASE PRICE Add \$2.05 per inch of stroke</p>	<p><b>Reverse Single Acting – Pull Type – Rod Normally Extended – Spring Return – Front Nose Mounting</b> Standard Stroke Lengths: ½", 1", 1½", 2", 2½", 3" Maximum Stroke – 6" Stainless Steel Rod Standard Optional Accessory: D-770 Mounting Bracket Base Weight: .08 Adder Per Inch of Stroke: .03</p>	
<p><b>01□-RP</b></p>  <p><b>\$21.20</b> BASE PRICE Add \$2.05 per inch of stroke</p>	<p><b>Reverse Single Acting – Pivot and Pull Type – Rod Normally Extended – Spring Return – Rear Pivot Mounting</b> Standard Stroke Lengths: ½", 1", 1½", 2", 2½", 3" Maximum Stroke – 6" Stainless Steel Rod Standard Optional Accessories: D-780 Pivot Brackets D-850 Piston Rod Clevis Base Weight: .08 Adder Per Inch of Stroke: .03</p>	
<p><b>01□-D</b></p>  <p><b>\$15.50</b> BASE PRICE Add \$1.50 per inch of stroke</p>	<p><b>Double Acting – Air Return – Front Nose Mounting</b> Standard Stroke Lengths: ½", 1", 1½", 2", 2½", 3", 4" Maximum Stroke – 12" Stainless Steel Rod Standard Optional Accessory: D-770 Mounting Bracket Base Weight: .07 Adder Per Inch of Stroke: .02</p>	

# 7/16" Bore Air Cylinders

MODEL/PRICE	DESCRIPTION/WEIGHT (lbs.)	DIMENSIONS
<b>01□-DP</b>  <b>\$18.75</b> BASE PRICE Add \$1.50 per inch of stroke	<b>Double Acting – Pivot Type – Air Return – Rear Pivot Mounting</b> <b>Standard Stroke Lengths:</b> ½", 1", 1½", 2", 2½", 3", 4" Maximum Stroke – 12" Stainless Steel Rod Standard <b>Optional Accessories:</b> D-780 Pivot Brackets D-850 Piston Rod Clevis <b>Base Weight: .08</b> <b>Adder Per Inch of Stroke: .02</b>	
<b>01□-DX</b>  <b>\$19.15</b> BASE PRICE Add \$1.50 per inch of stroke	<b>Double Acting – Double End Mount – Air Return</b> <b>Standard Stroke Lengths:</b> ½", 1", 1½", 2", 2½", 3", 4" Maximum Stroke – 12" Stainless Steel Rod Standard <b>Optional Accessory:</b> D-770 Mounting Bracket <b>Base Weight: .11</b> <b>Adder Per Inch of Stroke: .02</b>	
<b>01□-DXDE</b>  <b>\$24.50</b> BASE PRICE Add \$1.95 per inch of stroke	<b>Double Acting – Double End Rod – Air Return – Double End Mount</b> <b>Standard Stroke Lengths:</b> ½", 1", 1½", 2", 2½", 3", 4" Maximum Stroke – 6" Stainless Steel Rod Standard <b>Optional Accessory:</b> D-770 Mounting Bracket <b>Base Weight: .14</b> <b>Adder Per Inch of Stroke: .03</b>	

- Standard Air Cylinders
- Three-Position Cylinders
- Cushion Cylinders
- MRS® Cylinders
- Non-Rotating Air Cylinders
- PC Cylinders
- All Stainless Repairable
- Z-Line Air Cylinders
- Rod Lock Cylinders
- 500 Hydraulic Cylinders
- Hole Punch Cylinders


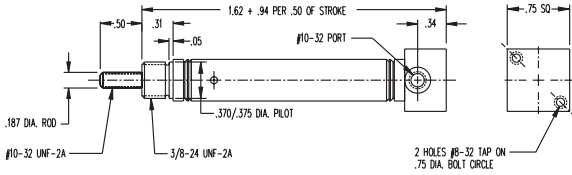

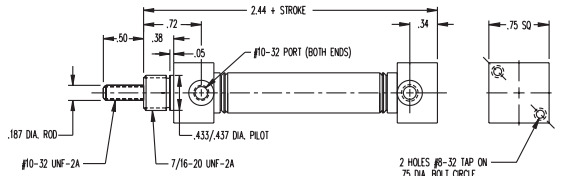
## 7/16" Bore Block Mounted Air Cylinders

MODEL/PRICE	DESCRIPTION/WEIGHT (lbs.)	DIMENSIONS
<b>BF-01□</b>  <b>\$19.90</b> BASE PRICE Add \$2.05 per inch of stroke	<b>Single Acting – Front Block Mounting – Spring Return</b> <b>Standard Stroke Lengths:</b> ½", 1", 1½", 2", 2½", 3", 4" Maximum Stroke – 6" Stainless Steel Rod Standard <b>Base Weight: .07</b> <b>Adder Per Inch of Stroke: .04</b>	
<b>BF-01□-D</b>  <b>\$24.00</b> BASE PRICE Add \$1.50 per inch of stroke	<b>Double Acting – Front Block Mounting – Air Return</b> <b>Standard Stroke Lengths:</b> ½", 1", 1½", 2", 2½", 3", 4" Maximum Stroke – 12" Stainless Steel Rod Standard <b>Base Weight: .07</b> <b>Adder Per Inch of Stroke: .02</b>	


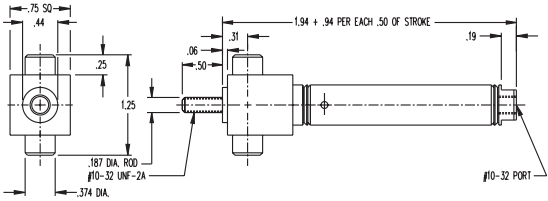

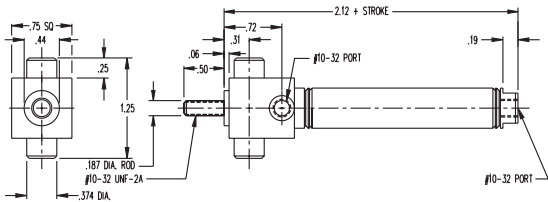

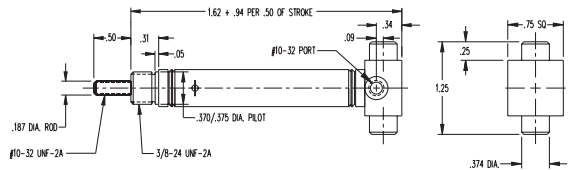


# 7/16" Bore Air Cylinders

## 7/16" Bore Block Mounted Air Cylinders (continued)



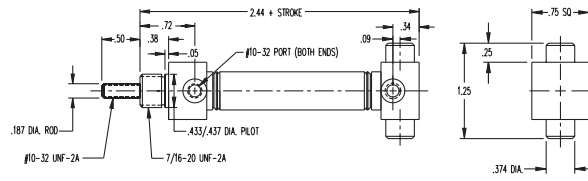
MODEL/PRICE	DESCRIPTION/WEIGHT (lbs.)	DIMENSIONS
<b>BR-01</b> <input type="checkbox"/>  <b>\$19.30</b> BASE PRICE Add \$2.05 per inch of stroke	<b>Single Acting – Rear Block Mounting for Vertical Positioning – Spring Return</b> <b>Standard Stroke Lengths:</b> ½", 1", 1½", 2", 2½", 3", 4" Maximum Stroke – 6" Stainless Steel Rod Standard <b>Base Weight:</b> .05 <b>Adder Per Inch of Stroke:</b> .04	
<b>BR-01</b> <input type="checkbox"/> -D  <b>\$23.65</b> BASE PRICE Add \$1.50 per inch of stroke	<b>Double Acting – Rear Block Mounting for Vertical Positioning – Air Return</b> <b>Standard Stroke Lengths:</b> ½", 1", 1½", 2", 2½", 3", 4" Maximum Stroke – 12" Stainless Steel Rod Standard <b>Base Weight:</b> .08 <b>Adder Per Inch of Stroke:</b> .02	

## 7/16" Bore Trunnion Mounted Air Cylinders

MODEL/PRICE	DESCRIPTION/WEIGHT (lbs.)	DIMENSIONS
<b>BFT-01</b> <input type="checkbox"/>  <b>\$27.20</b> BASE PRICE Add \$2.05 per inch of stroke	<b>Single Acting – Front Block Trunnion Mounting – Spring Return</b> <b>Standard Stroke Lengths:</b> ½", 1", 1½", 2", 2½", 3", 4" Maximum Stroke – 6" Stainless Steel Rod Standard <b>Optional Accessories:</b> TRB-1 Trunnion Brackets D-850 Rod Clevis <b>Base Weight:</b> .09 <b>Adder Per Inch of Stroke:</b> .04	
<b>BFT-01</b> <input type="checkbox"/> -D  <b>\$31.35</b> BASE PRICE Add \$1.50 per inch of stroke	<b>Double Acting – Front Block Trunnion Mounting – Air Return</b> <b>Standard Stroke Lengths:</b> ½", 1", 1½", 2", 2½", 3", 4" Maximum Stroke – 12" Stainless Steel Rod Standard <b>Optional Accessories:</b> TRB-1 Trunnion Brackets D-850 Rod Clevis <b>Base Weight:</b> .09 <b>Adder Per Inch of Stroke:</b> .02	
<b>BRT-01</b> <input type="checkbox"/>  <b>\$26.60</b> BASE PRICE Add \$2.05 per inch of stroke	<b>Single Acting – Rear Block Trunnion Mounting – Spring Return</b> <b>Standard Stroke Lengths:</b> ½", 1", 1½", 2", 2½", 3", 4" Maximum Stroke – 6" Stainless Steel Rod Standard <b>Optional Accessories:</b> TRB-1 Trunnion Brackets D-850 Rod Clevis <b>Base Weight:</b> .07 <b>Adder Per Inch of Stroke:</b> .04	

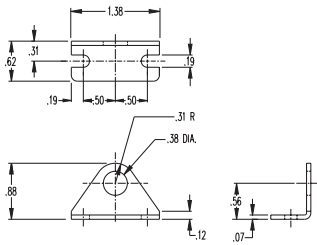
# 7/16" Bore Air Cylinders

## 7/16" Bore Trunnion Mounted Air Cylinders (continued)

MODEL/PRICE	DESCRIPTION/WEIGHT (lbs.)	DIMENSIONS
<p><b>BRT-01</b>  -D</p>  <p><b>\$30.75</b> BASE PRICE Add \$1.50 per inch of stroke</p>	<p><b>Double Acting – Rear Block Trunnion Mounting – Air Return</b>  <b>Standard Stroke Lengths:</b>            ½", 1", 1½", 2", 2½", 3", 4"  <b>Maximum Stroke – 12"</b>  <b>Stainless Steel Rod Standard</b>  <b>Optional Accessories:</b>            TRB-1 Trunnion Brackets            D-850 Rod Clevis  <b>Base Weight: .10</b>  <b>Adder Per Inch of Stroke: .02</b></p>	

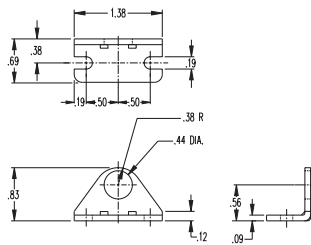
## 7/16" Bore Accessories

**D-775**  
\$2.70



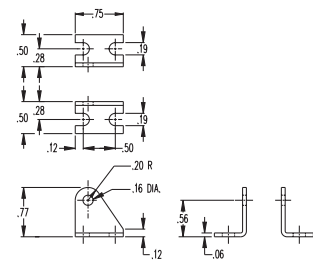
Mounting Bracket  
(for Single Acting Models)

**D-770**  
\$2.90



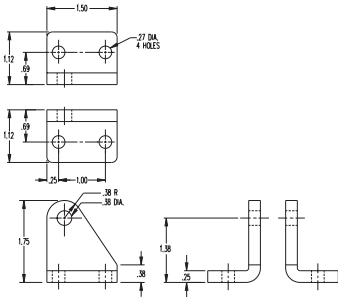
Mounting Bracket  
(for Double Acting Models)

**D-780**  
\$3.00



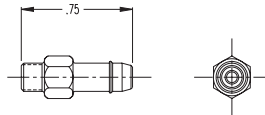
Pivot Brackets

**TRB-1**  
\$8.70



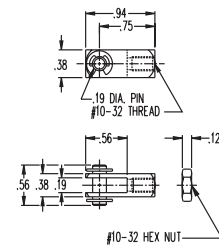
Trunnion Brackets

**D-3229-A**  
\$3.25  
PACKAGE OF SIX



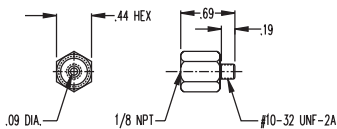
Anodized Aluminum Alloy Barbed Fitting, ¼"  
Hose (O.D.) Barbed Fitting Supplied with  
Gasket, No. 10-32 to ¼" O.D. Tubing.

**D-850**  
\$3.25



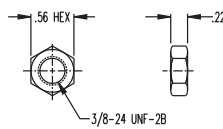
Piston Rod Clevis

**D-855-A**  
\$1.75



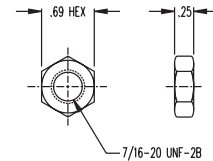
Adaptors (10-32 to 1/8 NPT Female)  
Supplied with Gasket

**D-801**  
\$.35



Mounting Nut

**D-154**  
\$.35



Mounting Nut

# 9/16" Bore Air Cylinders

- Ground and Roller Burnished 303 Stainless Steel Piston Rod Standard
- Force Exerted Approximately 0.25 of Air Line Pressure
- Enclosed Spring Force: 2 lbs. Relaxed – 4 lbs. Compressed

## OPTIONS:

### NO CHARGE:

- **MAGNALUBE G (G)**
- **PORTS ROTATED (K)**
- **NO THREAD (NT)**
- **SIDE PORTED REAR HEAD (Q)**

Add .03" to nose mount overall length

### SINGLE AND REVERSE ACTING BUMPER (B)

- \$2.85 additional
- Add .062 to overall length

### DOUBLE ACTING BUMPERS (B)

- \$4.00 additional
- Add .125 to overall length

### EXTRA EXTENSION (EE)

- Single, reverse and double acting, add \$0.80 per inch of extension
- DXDE, add \$1.05 per inch of extension; extension added to each end

### DOUBLE ACTING FAILSAFE

(JS = Spring Return, JR = Spring Extend)

- Add \$4.90 to base price + \$0.55 to stroke adder
- See page 1.65 for overall length adders

Enter Stroke Length as 3rd Digit

## OPTIONS continued...

### MAGNET (prefix M) – Add \$9.15

- Single and reverse acting add .125" to overall length
- See Related Products, page 8.12 for switch details & mounting selection
- Must specify track(s) for use with miniature position sensing (T2, T3, T4) – add \$2.75 per track. See Related Products, page 8.12 for details.

### LOW TEMPERATURE (N)

Temperature Range: -40° to 200°F

- Single acting add \$0.60
- Reverse acting add \$0.90
- Double acting add \$1.20
- DXDE add \$1.50

### HIGH TEMPERATURE "U" CUPS (V)

Temperature Range: 0° to 400°F (-18° to 205°C)

- Single acting add \$4.00
- Double acting add \$10.35
- Double end rod add \$13.75
- Reverse acting add \$7.20

### MOLYCOATED BODY (F)

- Add \$2.55 per inch of stroke

### NON-LUBE SERVICE (E)

- Single acting add \$3.45
- Double acting add \$8.05
- DXDE add \$11.40

### ROD WIPER (W)

(not available in standard single acting)

- Add \$2.75

### LOW PRESSURE HYDRAULIC (HL)

- 250 psi maximum
- Double acting models only
- Option specified as a prefix
- Add \$8.80

## MODEL/PRICE

## DESCRIPTION/WEIGHT (lbs.)

## DIMENSIONS

**02**



**\$11.90**

BASE PRICE

Add \$2.05 per inch of stroke

**Single Acting – Spring Return – Front Nose Mounting**

**Standard Stroke Lengths:**

½", 1", 1½", 2", 2½", 3", 4"

Maximum Stroke – 6"

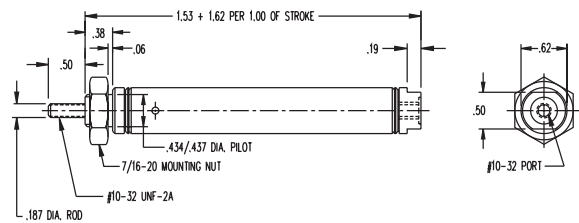
Stainless Steel Rod Standard

**Optional Accessory:**

D-770 Mounting Bracket

**Base Weight:** .06

**Adder Per Inch of Stroke:** .05



**02**  -NR



**\$14.55**

BASE PRICE

Add \$2.05 per inch of stroke

**Single Acting – Non-rotating Hexagon Rod – Spring Return – Front Nose Mounting**

**Standard Stroke Lengths:**

½", 1", 1½", 2", 2½", 3", 4"

Maximum Stroke – 6"

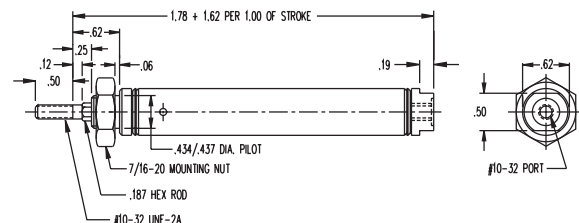
Stainless Steel Rod Standard

**Optional Accessory:**

D-770 Mounting Bracket


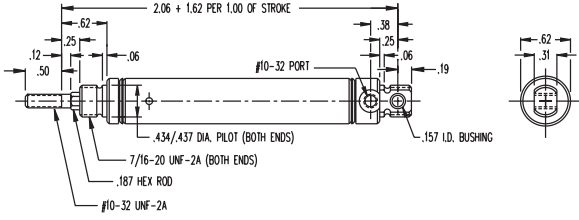

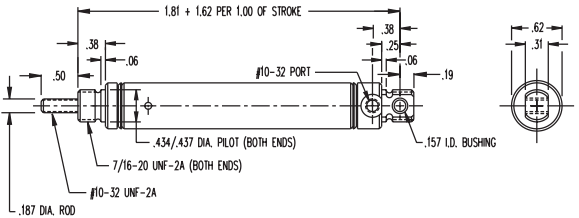

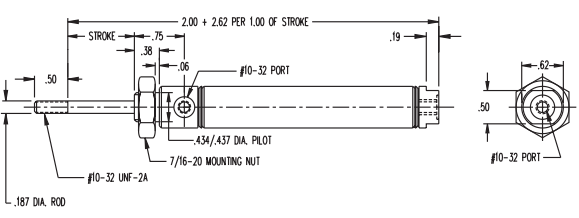

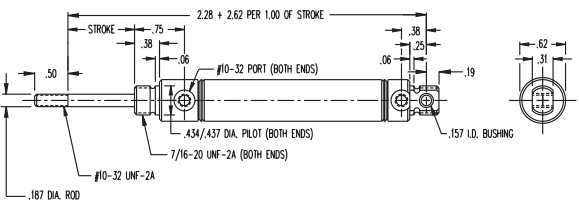

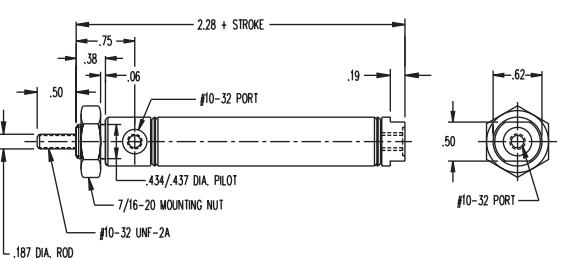
**Base Weight:** .06

**Adder Per Inch of Stroke:** .05




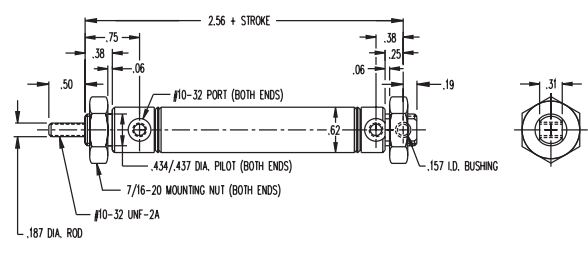

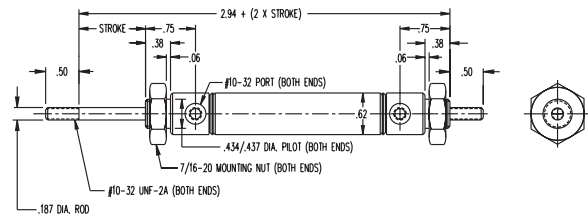
See page 1.8 for length calculation of fractional stroke for single acting cylinders

# 9/16" Bore Air Cylinders

MODEL/PRICE	DESCRIPTION/WEIGHT (lbs.)	DIMENSIONS
<p><b>02□-NRP</b></p>  <p><b>\$18.30</b> BASE PRICE Add \$2.05 per inch of stroke</p>	<p><b>Single Acting – Non-rotating Hexagon Rod – Pivot Type – Spring Return – Rear Pivot Mounting</b>  <b>Standard Stroke Lengths:</b>            ½", 1", 1½", 2", 2½", 3", 4"            Maximum Stroke – 6"            Stainless Steel Rod Standard  <b>Optional Accessories:</b>            D-850 Rod Clevis            D-12321-A Pivot Bracket  <b>Base Weight: .06</b>  <b>Adder Per Inch of Stroke: .05</b></p>	
<p><b>02□-P</b></p>  <p><b>\$15.50</b> BASE PRICE Add \$2.05 per inch of stroke</p>	<p><b>Single Acting – Pivot Type – Spring Return – Rear Pivot Mounting</b>  <b>Standard Stroke Lengths:</b>            ½", 1", 1½", 2", 2½", 3", 4"            Maximum Stroke – 6"            Stainless Steel Rod Standard  <b>Optional Accessories:</b>            D-850 Rod Clevis            D-12321-A Pivot Bracket  <b>Base Weight: .06</b>  <b>Adder Per Inch of Stroke: .05</b></p>	
<p><b>02□-R</b></p>  <p><b>\$18.00</b> BASE PRICE Add \$2.05 per inch of stroke</p>	<p><b>Reverse Single Acting – Pull Type – Rod Normally Extended – Spring Return – Front Nose Mounting</b>  <b>Standard Stroke Lengths:</b>            ½", 1", 1½", 2", 2½", 3"            Maximum Stroke – 6"            Stainless Steel Rod Standard  <b>Optional Accessory:</b>            D-770 Mounting Bracket  <b>Base Weight: .08</b>  <b>Adder Per Inch of Stroke: .04</b></p>	
<p><b>02□-RP</b></p>  <p><b>\$21.70</b> BASE PRICE Add \$2.05 per inch of stroke</p>	<p><b>Reverse Single Acting – Pivot and Pull Type – Rod Normally Extended – Spring Return – Rear Pivot Mounting</b>  <b>Standard Stroke Lengths:</b>            ½", 1", 1½", 2", 2½", 3"            Maximum Stroke – 6"            Stainless Steel Rod Standard  <b>Optional Accessories:</b>            D-850 Rod Clevis            D-12321-A Pivot Bracket  <b>Base Weight: .08</b>  <b>Adder Per Inch of Stroke: .04</b></p>	
<p><b>02□-D</b></p>  <p><b>\$15.85</b> BASE PRICE Add \$1.50 per inch of stroke</p>	<p><b>Double Acting – Air Return – Front Nose Mounting</b>  <b>Standard Stroke Lengths:</b>            ½", 1", 1½", 2", 2½", 3", 4"            Maximum Stroke – 12"            Stainless Steel Rod Standard  <b>Optional Accessory:</b>            D-770 Mounting Bracket  <b>Base Weight: .09</b>  <b>Adder Per Inch of Stroke: .02</b></p>	

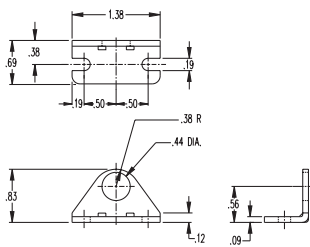
- Standard Air Cylinders
- Three-Position Cylinders
- Cushion Cylinders
- MRS® Cylinders
- Non-Rotating Air Cylinders
- PC Cylinders
- All Stainless Reparable
- Z Line Air Cylinders
- Rod Lock Cylinders
- 500 Hydraulic Cylinders
- Hole Punch Cylinders

# 9/16" Bore Air Cylinders

MODEL/PRICE	DESCRIPTION/WEIGHT (lbs.)	DIMENSIONS
<p><b>02□-DXP</b></p>  <p><b>\$19.30</b> BASE PRICE Add \$1.50 per inch of stroke</p>	<p><b>Double Acting – Double End or Rear Pivot Mounting – Air Return</b> Standard Stroke Lengths: ½", 1", 1½", 2", 2½", 3", 4" Maximum Stroke – 12" Stainless Steel Rod Standard Optional Accessories: D-770 Mounting Bracket D-850 Rod Clevis D-12321-A Pivot Bracket Base Weight: .09 Adder Per Inch of Stroke: .02</p>	
<p><b>02□-DXDE</b></p>  <p><b>\$26.05</b> BASE PRICE Add \$1.95 per inch of stroke</p>	<p><b>Double Acting – Double End Rod – Air Return – Double End Mounting</b> Standard Stroke Lengths: ½", 1", 1½", 2", 2½", 3", 4" Maximum Stroke – 6" Stainless Steel Rod Standard Optional Accessory: D-770 Mounting Bracket Base Weight: .16 Adder Per Inch of Stroke: .03</p>	

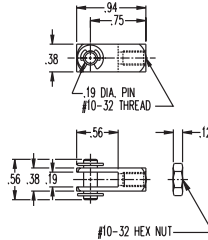
## 9/16" Bore Accessories

**D-770**  
\$2.90



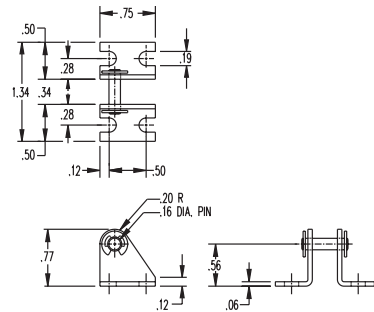
Mounting Bracket

**D-850**  
\$3.25



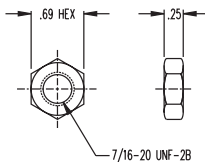
Piston Rod Clevis

**D-12321-A**  
\$3.55



Pivot Bracket with Pin

**D-154**  
\$.35



Mounting Nut

**Note:** For stainless steel accessories see page 1.99 and 1.102-1.103.



# 3/4" Bore Air Cylinders

- Ground and Polished, High Strength Carbon Steel Piston Rod Standard – 303 Stainless Steel Rod Available as an Option – Bronze Rod Guide Bushing Standard
- Force Exerted Approximately 0.4 of Air Line Pressure
- Enclosed Spring Force: 3 lbs. Relaxed – 6 lbs. Compressed
- Rod Wipers Available on D, DP, DXP and DXDE Models

## OPTIONS:

### NO CHARGE:

- **MAGNALUBE G (G)**
- **PORTS ROTATED (K)**
- **NO THREAD (NT)**
- **SIDE PORTED REAR HEAD (Q)**  
Add .44" to nose mount overall length
- **PIVOT BUSHING (Y)**  
.250" ID

### SINGLE AND REVERSE ACTING BUMPER (B)

- \$2.85 additional
- Add .125 to overall length

### DOUBLE ACTING BUMPERS (B)

- \$4.00 additional
- No change in overall length

### EXTRA EXTENSION (EE)

- Single, reverse and double acting, add \$0.80 per inch of extension
- DXDE, add \$1.00 per inch of extension; extension added to each end

### DOUBLE ACTING FAILSAFE

- (JS = Spring Return, JR = Spring Extend)
- Add \$5.50 to base price + \$0.55 to stroke adder
  - See page 1.65 for overall length adders

Enter Stroke Length as 3rd Digit

## OPTIONS continued...

**ROD WIPER (W)** (not available in standard single acting) (now available in block mount)

- Double acting, add \$2.75
- DXDE, add \$5.50

**HEAVY SPRING** (available on single acting and reverse acting) (H)

- Add \$1.20
- Spring Force: 4 lbs. relaxed – 10 lbs. compressed

**MAGNET (prefix M)** – Add \$9.15

- Single and reverse acting add .125" to overall length
- Stainless steel rod becomes standard with this option
- Must specify track(s) for use with miniature position sensing (T2, T3, T4) – add \$2.75 per track. See Related Products, page 8.12 for details.

**LOW TEMPERATURE (N)**

Temperature Range: -40° to 200°F

- Single acting add \$0.60
- Reverse acting add \$0.90
- Double acting add \$1.20
- DXDE add \$1.50

**HIGH TEMPERATURE "U" CUPS (V)**

Temperature Range: 0° to 400°F (-18° to 205°C)

- Single acting add \$4.00
- Double acting add \$10.35
- Double end rod add \$13.75
- Reverse acting add \$7.20

**MOLYCOATED BODY (F)**

- Add \$2.55 per inch of stroke

**NON-LUBE SERVICE (E)**

- Single acting add \$3.75
- Double acting add \$8.30
- DXDE add \$11.75

**STAINLESS STEEL ROD (prefix SR)**

- Add \$1.90
- Standard on M option, block mount, DXP and DXDE models

**LOW PRESSURE HYDRAULIC (HL)**

- 250 psi maximum
- Double acting models only
- Option specified as a prefix
- Add \$13.15

## MODEL/PRICE

## DESCRIPTION/WEIGHT (lbs.)

## DIMENSIONS

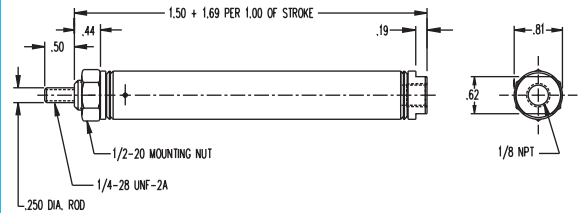
04



**\$12.35**  
BASE PRICE

Add \$2.05 per inch of stroke

**Single Acting – Spring Return – Front Nose Mounting**  
**Standard Stroke Lengths:**  
½", 1", 1½", 2", 2½", 3", 4"  
Maximum Stroke – 6"  
Optional Stainless Steel Rod  
**Optional Accessory:**  
D-226 Mounting Bracket  
**Base Weight:** .10  
**Adder Per Inch of Stroke:** .08



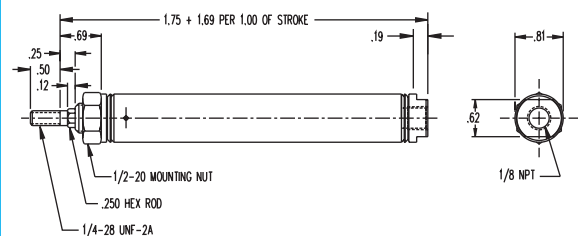
04 -NR



**\$15.05**  
BASE PRICE






Add \$2.05 per inch of stroke

**Single Acting – Non-rotating Hexagon Rod – Spring Return – Front Nose Mounting**  
**Standard Stroke Lengths:**  
½", 1", 1½", 2", 2½", 3", 4"  
Maximum Stroke – 6"  
Optional Stainless Steel Rod  
**Optional Accessory:**  
D-226 Mounting Bracket  
**Base Weight:** .10  
**Adder Per Inch of Stroke:** .08


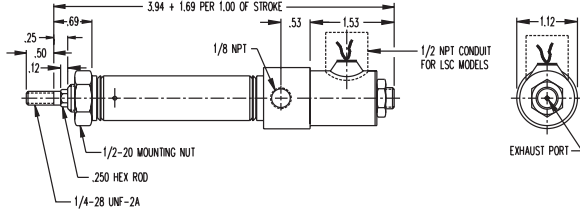

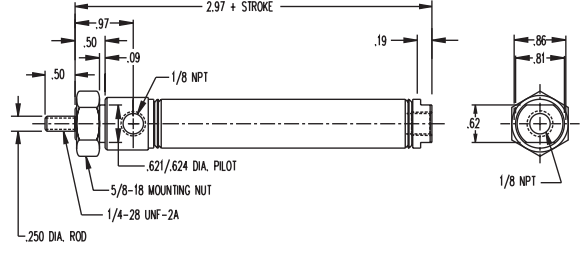

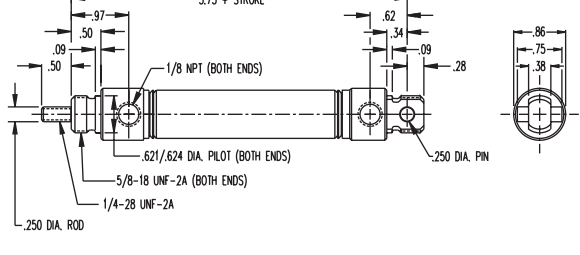

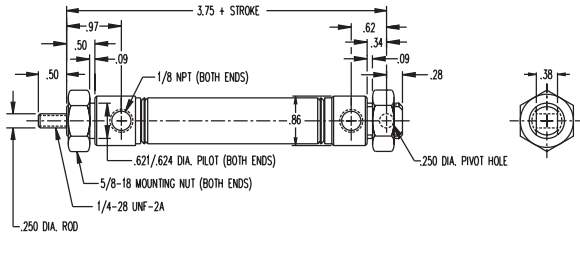


See page 1.8 for length calculation of fractional stroke for single acting cylinders

# 3/4" Bore Air Cylinders

MODEL/PRICE	DESCRIPTION/WEIGHT (lbs.)	DIMENSIONS
<p><b>04□-NRP</b></p>  <p><b>\$18.75</b> BASE PRICE Add \$2.05 per inch of stroke</p>	<p><b>Single Acting – Non-rotating Hexagon Rod – Pivot Type – Spring Return – Rear Pivot Mounting</b>  <b>Standard Stroke Lengths:</b>            ½", 1", 1½", 2", 2½", 3", 4"  <b>Maximum Stroke – 6"</b>  <b>Optional Stainless Steel Rod</b>  <b>Optional Accessories:</b>            D-166-3 Piston Rod Clevis            D-167 Pivot Brackets  <b>Base Weight: .12</b>  <b>Adder Per Inch of Stroke: .08</b></p>	
<p><b>04□-P</b></p>  <p><b>\$15.85</b> BASE PRICE Add \$2.05 per inch of stroke</p>	<p><b>Single Acting – Pivot Type – Spring Return – Rear Pivot Mounting</b>  <b>Standard Stroke Lengths:</b>            ½", 1", 1½", 2", 2½", 3", 4"  <b>Maximum Stroke – 6"</b>  <b>Optional Stainless Steel Rod</b>  <b>Optional Accessories:</b>            D-166-3 Piston Rod Clevis            D-167 Pivot Brackets  <b>Base Weight: .13</b>  <b>Adder Per Inch of Stroke: .08</b></p>	
<p><b>04□-R</b></p>  <p><b>\$18.20</b> BASE PRICE Add \$2.05 per inch of stroke</p>	<p><b>Reverse Single Acting – Pull Type – Rod Normally Extended – Spring Return – Front Nose Mounting</b>  <b>Standard Stroke Lengths:</b>            ½", 1", 1½", 2", 2½", 3", 4"  <b>Maximum Stroke – 6"</b>  <b>Optional Stainless Steel Rod</b>  <b>Optional Accessory:</b>            D-129 Mounting Bracket  <b>Base Weight: .18</b>  <b>Adder Per Inch of Stroke: .07</b></p>	
<p><b>04□-RP</b></p>  <p><b>\$21.85</b> BASE PRICE Add \$2.05 per inch of stroke</p>	<p><b>Reverse Single Acting – Pivot and Pull Type – Rod Normally Extended – Spring Return – Rear Pivot Mounting</b>  <b>Standard Stroke Lengths:</b>            ½", 1", 1½", 2", 2½", 3", 4"  <b>Maximum Stroke – 6"</b>  <b>Optional Stainless Steel Rod</b>  <b>Optional Accessories:</b>            D-166-3 Piston Rod Clevis            D-167 Pivot Brackets  <b>Base Weight: .18</b>  <b>Adder Per Inch of Stroke: .07</b></p>	
<p><b>04□-LS or LSC Conduit Outlet*</b></p>  <p><b>\$68.25</b> BASE PRICE Add \$2.05 per inch of stroke *Add \$1.95 for Conduit Outlet</p>	<p><b>Single Acting – Built-in Midget 3-Way Solenoid Operated Valve – Spring Return – Front Nose Mounting – 150 PSI, 3/8" Orifice</b>  <b>Standard Stroke Lengths:</b>            ½", 1", 1½", 2", 2½", 3", 4"  <b>Maximum Stroke – 6"</b>  <b>Optional Stainless Steel Rod</b>  <b>Standard Voltage – 115/60</b>  <b>Optional Voltages:</b>            24, 230 A.C. or 6, 12, 24 D.C.  <b>Optional Accessory:</b>            D-226 Mounting Bracket  <b>Base Weight: .38</b>  <b>Adder Per Inch of Stroke: .08</b></p>	

# 3/4" Bore Air Cylinders


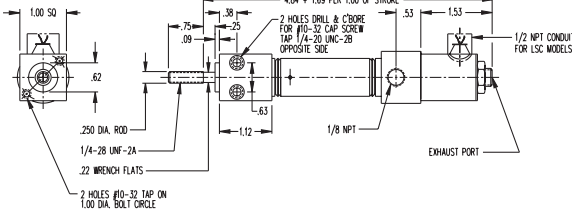

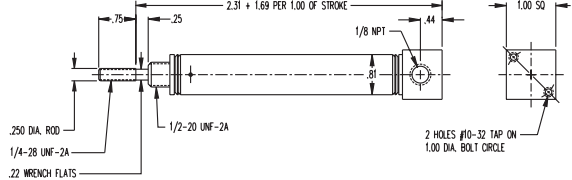

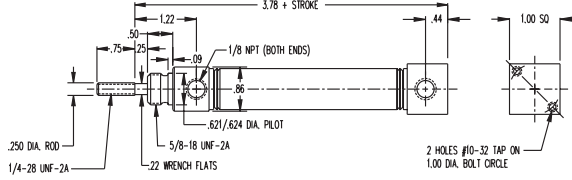

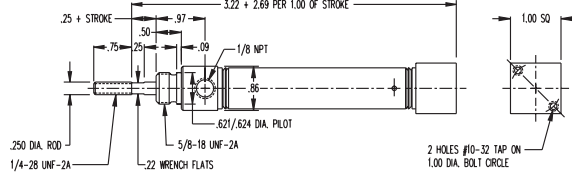
MODEL/PRICE	DESCRIPTION/WEIGHT (lbs.)	DIMENSIONS
<p><b>04□-NRLS or NRLSC Conduit Outlet*</b></p>  <p><b>\$71.30</b> BASE PRICE Add \$2.05 per inch of stroke *Add \$1.95 for Conduit Outlet</p>	<p><b>Single Acting – Non-rotating Hexagon Piston Rod – Built-in Midget 3-Way Solenoid Operated Valve – Spring Return – Front Nose Mounting – 150 PSI, 3/64" Orifice</b>  <b>Standard Stroke Lengths:</b>            1/2", 1", 1 1/2", 2", 2 1/2", 3", 4"  <b>Maximum Stroke – 6"</b>            Optional Stainless Steel Rod            Standard Voltage – 115/60  <b>Optional Voltages:</b>            24, 230 A.C. or 6, 12, 24 D.C.  <b>Optional Accessory:</b>            D-226 Mounting Bracket  <b>Base Weight: .46</b>  <b>Adder Per Inch of Stroke: .08</b></p>	
<p><b>04□-D</b></p>  <p><b>\$15.95</b> BASE PRICE Add \$1.50 per inch of stroke</p>	<p><b>Double Acting – Air Return – Front Nose Mounting</b>  <b>Standard Stroke Lengths:</b>            1/2", 1", 1 1/2", 2", 2 1/2", 3", 4", 5", 6"  <b>Maximum Stroke – 12"</b>            Optional Stainless Steel Rod            Optional Rod Wiper  <b>Optional Accessory:</b>            D-129 Mounting Bracket  <b>Base Weight: .21</b>  <b>Adder Per Inch of Stroke: .03</b></p>	
<p><b>04□-DP</b></p>  <p><b>\$19.20</b> BASE PRICE Add \$1.50 per inch of stroke</p>	<p><b>Double Acting – Pivot Type – Air Return – Rear Pivot Mounting</b>  <b>Standard Stroke Lengths:</b>            1/2", 1", 1 1/2", 2", 2 1/2", 3", 4", 5", 6", 7", 8", 9", 10", 11", 12"  <b>Maximum Stroke – 32"</b>            Optional Stainless Steel Rod            Optional Rod Wiper  <b>Optional Accessories:</b>            D-166-3 Piston Rod Clevis            D-167 Pivot Brackets  <b>Base Weight: .21</b>  <b>Adder Per Inch of Stroke: .03</b></p>	
<p><b>04□-DXP</b></p>  <p><b>\$21.30</b> BASE PRICE Add \$1.50 per inch of stroke</p>	<p><b>Double Acting – Double End or Rear Pivot Mounting – Air Return</b>  <b>Standard Stroke Lengths:</b>            1/2", 1", 1 1/2", 2", 2 1/2", 3", 4", 5", 6", 7", 8", 9", 10", 11", 12"  <b>Maximum Stroke – 32"</b>            Stainless Steel Rod Standard            Optional Rod Wiper  <b>Optional Accessories:</b>            D-129 Mounting Bracket            D-13498-A Pivot Bracket            D-166-3 Piston Rod Clevis  <b>Base Weight: .29</b>  <b>Adder Per Inch of Stroke: .03</b></p>	

- Standard Air Cylinders
- Three-Position Cylinders
- Cushion Cylinders
- MRS® Cylinders
- Non-Rotating Air Cylinders
- PC Cylinders
- All Stainless Repairable
- Z Line Air Cylinders
- Rod Lock Cylinders
- 500 Hydraulic Cylinders
- Hole Punch Cylinders



# 3/4" Bore Air Cylinders

## 3/4" Bore Block Mounted (continued)


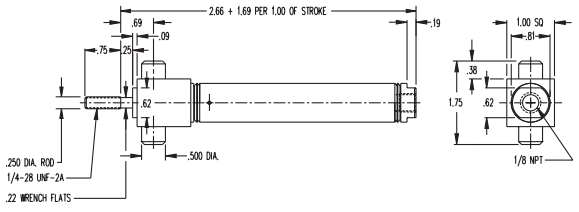

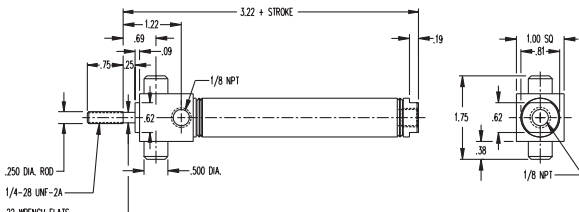

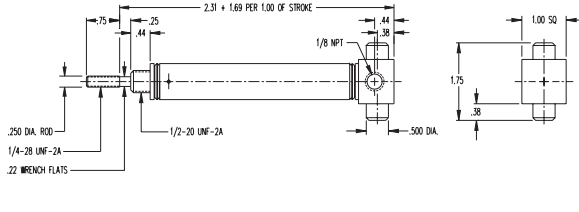

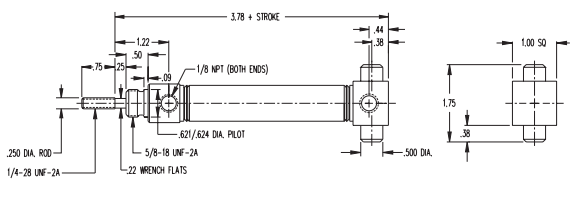
MODEL/PRICE	DESCRIPTION/WEIGHT (lbs.)	DIMENSIONS
<p><b>BF-04</b> <input type="checkbox"/> -LS or LSC*</p>  <p><b>\$77.80</b> BASE PRICE Add \$2.05 per inch of stroke *Add \$1.95 for Conduit Outlet</p>	<p><b>Built-in Midget 3-Way Solenoid Operated Valve</b> – Single Acting – Spring Return – Front Block Mounting – 150 PSI, 3/64" Orifice</p> <p><b>Standard Stroke Lengths:</b> 1/2", 1", 1 1/2", 2", 2 1/2", 3", 4" Maximum Stroke – 6"</p> <p>Stainless Steel Rod Standard Standard Voltage –115/60 <b>Optional Voltages:</b> 24, 230 A.C. or 6, 12, 24 D.C. <b>Base Weight:</b> .38 <b>Adder Per Inch of Stroke:</b> .08</p>	
<p><b>BR-04</b> <input type="checkbox"/></p>  <p><b>\$21.45</b> BASE PRICE Add \$2.05 per inch of stroke</p>	<p><b>Single Acting</b> – Rear Block Mounting for Vertical Positioning – Spring Return</p> <p><b>Standard Stroke Lengths:</b> 1/2", 1", 1 1/2", 2", 2 1/2", 3", 4" Maximum Stroke – 6"</p> <p>Stainless Steel Rod Standard <b>Base Weight:</b> .15 <b>Adder Per Inch of Stroke:</b> .08</p>	
<p><b>BR-04</b> <input type="checkbox"/> -D</p>  <p><b>\$24.70</b> BASE PRICE Add \$1.50 per inch of stroke</p>	<p><b>Double Acting</b> – Rear Block Mounting for Vertical Positioning – Air Return</p> <p><b>Standard Stroke Lengths:</b> 1/2", 1", 1 1/2", 2", 2 1/2", 3", 4", 5", 6" Maximum Stroke – 12"</p> <p>Stainless Steel Rod Standard <b>Base Weight:</b> .26 <b>Adder Per Inch of Stroke:</b> .08</p>	
<p><b>BR-04</b> <input type="checkbox"/> -R</p>  <p><b>\$27.05</b> BASE PRICE Add \$2.05 per inch of stroke</p>	<p><b>Pull Type</b> – Rear Block Mounting for Vertical Positioning – Rod Normally Extended – Reverse Single Acting – Spring Return</p> <p><b>Standard Stroke Lengths:</b> 1/2", 1", 1 1/2", 2", 2 1/2", 3", 4" Maximum Stroke – 6"</p> <p>Stainless Steel Rod Standard <b>Base Weight:</b> .15 <b>Adder Per Inch of Stroke:</b> .08</p>	

- Standard Air Cylinders
- Three-Position Cylinders
- Cushion Cylinders
- MRS® Cylinders
- Non-Rotating Air Cylinders
- PC Cylinders
- All Stainless Repairable
- Z Line Air Cylinders
- Rod Lock Cylinders
- 500 Hydraulic Cylinders
- Hole Punch Cylinders




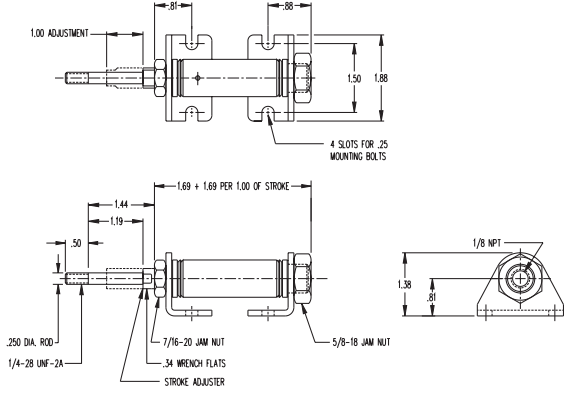

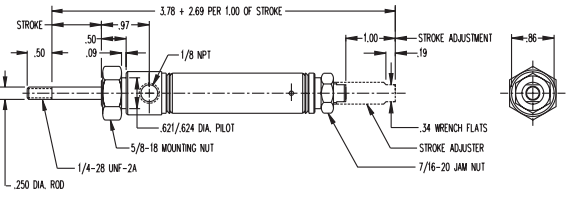

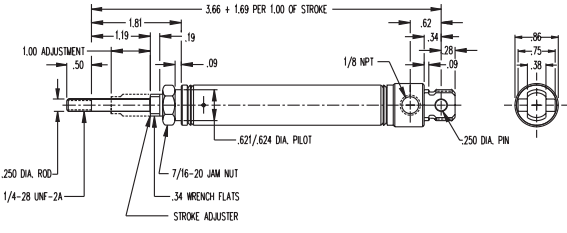
# 3/4" Bore Air Cylinders

## 3/4" Bore Trunnion Mounted

MODEL/PRICE	DESCRIPTION/WEIGHT (lbs.)	DIMENSIONS
<p><b>BFT-04</b> <input type="checkbox"/></p>  <p><b>\$29.65</b> BASE PRICE Add \$2.05 per inch of stroke</p>	<p><b>Single Acting – Front Block Trunnion Mounting – Spring Return</b> Standard Stroke Lengths: 1/2", 1", 1 1/2", 2", 2 1/2", 3", 4" Maximum Stroke – 6" Stainless Steel Rod Standard Optional Accessories: TRB-2 Trunnion Brackets D-166-3 Rod Clevis Base Weight: .24 Adder Per Inch of Stroke: .08</p>	
<p><b>BFT-04</b> <input type="checkbox"/> -D</p>  <p><b>\$33.30</b> BASE PRICE Add \$1.50 per inch of stroke</p>	<p><b>Double Acting – Front Block Trunnion Mounting – Air Return</b> Standard Stroke Lengths: 1/2", 1", 1 1/2", 2", 2 1/2", 3", 4" Maximum Stroke – 12" Stainless Steel Rod Standard Optional Accessories: TRB-2 Trunnion Brackets D-166-3 Rod Clevis Base Weight: .29 Adder Per Inch of Stroke: .03</p>	
<p><b>BRT-04</b> <input type="checkbox"/></p>  <p><b>\$27.65</b> BASE PRICE Add \$2.05 per inch of stroke</p>	<p><b>Single Acting – Rear Block Trunnion Mounting – Spring Return</b> Standard Stroke Lengths: 1/2", 1", 1 1/2", 2", 2 1/2", 3", 4" Maximum Stroke – 6" Stainless Steel Rod Standard Optional Accessories: TRB-2 Trunnion Brackets D-166-3 Rod Clevis Base Weight: .19 Adder Per Inch of Stroke: .08</p>	
<p><b>BRT-04</b> <input type="checkbox"/> -D</p>  <p><b>\$31.25</b> BASE PRICE Add \$1.50 per inch of stroke</p>	<p><b>Double Acting – Rear Block Trunnion Mounting – Air Return</b> Standard Stroke Lengths: 1/2", 1", 1 1/2", 2", 2 1/2", 3", 4" Maximum Stroke – 12" Stainless Steel Rod Standard Optional Accessories: TRB-2 Trunnion Brackets D-166-3 Rod Clevis Base Weight: .28 Adder Per Inch of Stroke: .03</p>	

# 3/4" Bore Air Cylinders

## 3/4" Bore Adjustable Stroke

MODEL/PRICE	DESCRIPTION/WEIGHT (lbs.)	DIMENSIONS
<p><b>04□-A</b></p>  <p><b>\$24.85</b> BASE PRICE Add \$2.05 per inch of stroke</p>	<p><b>Single Acting</b> – Spring Return – Adjustable Stroke – Double End Mounting – Brass Piston Rod Bearing and Stroke Adjustment in 1", 2", 3". Mounting Brackets are included.</p> <p>1" Stroke Adjusts 0" – 1", 2" Stroke 1" – 2", and 3" Stroke 2" – 3" Maximum Stroke – 6" Optional Stainless Steel Rod Base Weight: .40 Adder Per Inch of Stroke: .07</p>	
<p><b>04□-RA</b></p>  <p><b>\$25.85</b> BASE PRICE Add \$2.05 per inch of Stroke</p>	<p><b>Reverse Single Acting</b> – Pull Type – Rod Normally Extended – Nose Mounting – Stroke Adjustment in 1", 2", 3".</p> <p>1" Stroke Adjusts 0" – 1", 2" Stroke 1" – 2", and 3" Stroke 2" – 3" Maximum Stroke – 6" Optional Stainless Steel Rod Optional Accessory: D-129 Mounting Bracket Base Weight: .23 Adder Per Inch of Stroke: .07</p>	
<p><b>04□-AP</b></p>  <p><b>\$24.45</b> BASE PRICE Add \$2.05 per inch of stroke</p>	<p><b>Single Acting</b> – Pivot Type – Rear Pivot Mounting – Stroke Adjustment in 1", 2", 3".</p> <p>1" Stroke Adjusts 0" – 1", 2" Stroke 1" – 2", and 3" Stroke 2" – 3" Maximum Stroke – 6" Optional Stainless Steel Rod Optional Accessories: D-166-3 Piston Rod Clevis D-167 Pivot Brackets Base Weight: .23 Adder Per Inch of Stroke: .07</p>	

Standard Air Cylinders

Three-Position Cylinders

Cushion Cylinders

MRS® Cylinders

Non-Rotating Air Cylinders

PC Cylinders

All Stainless Repairable

Z Line Air Cylinders

Rod Lock Cylinders

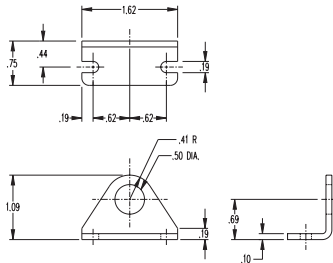
500 Hydraulic Cylinders

Hole Punch Cylinders

# 3/4" Bore Air Cylinders

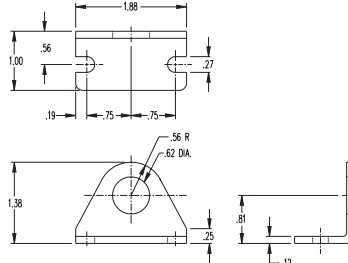
## 3/4" Bore Accessories

**D-226**  
\$2.55



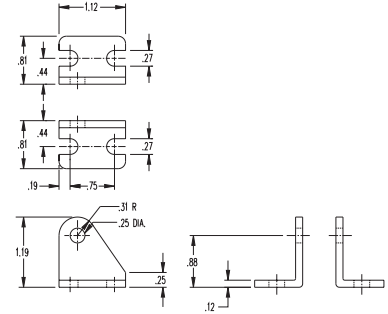
Mounting Bracket  
(for Single Acting Models)

**D-129**  
\$3.20



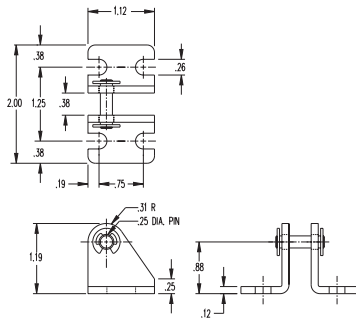
Mounting Bracket  
(for Double Acting Models)

**D-167**  
\$3.00



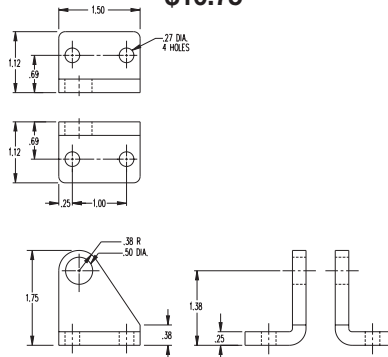
Pivot Brackets

**D-13498-A**  
\$3.50



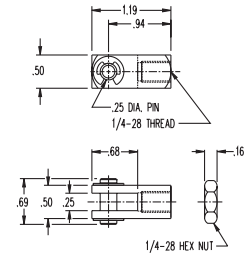
Pivot Bracket

**TRB-2**  
\$10.75



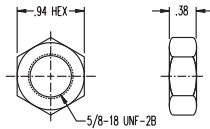
Trunnion Brackets

**D-166-3**  
\$3.50



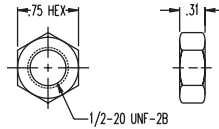
Piston Rod Clevis

**D-9**  
\$.45



Mounting Nut

**D-98**  
\$.45



Mounting Nut

**Note:** For stainless steel accessories see page 1.99 and 1.102-1.103.

# 7/8" Bore Air Cylinders

- Ground and Polished, High Strength Carbon Steel Piston Rod Standard – 303 Stainless Steel Rod Available as an Option – Bronze Rod Guide Bushing Standard
- Force Exerted Approximately 0.6 of Air Line Pressure
- Enclosed Spring Force: 3 lbs. Relaxed – 6 lbs. Compressed
- Cushion Quiet Bumpers Standard on All Models

## OPTIONS:

### NO CHARGE:

- **MAGNALUBE G (G)**
- **PORTS ROTATED (K)**
- **NO THREAD (NT)**
- **SIDE PORTED REAR HEAD (Q)**  
Add .28" to nose mount overall length
- **PIVOT BUSHING (Y)**  
.250" ID

### EXTRA EXTENSION (EE)

- Single, reverse and double acting, add \$0.80 per inch of extension
- DXDE, add \$1.00 per inch of extension; extension added to each end

### DOUBLE ACTING FAILSAFE

- (JS = Spring Return, JR = Spring Extend)
- Add \$5.50 to base price + \$0.55 to stroke adder
  - See page 1.65 for overall length adders

### MAGNET (prefix M) – Add \$9.15

- All models add .125" to overall length
- Stainless steel rod becomes standard with this option
- Must specify track(s) for use with miniature position sensing (T2, T3, T4) – add \$2.75 per track. See Related Products, page 8.12 for details.

## OPTIONS continued...

### LOW TEMPERATURE (N)

Temperature Range: -40° to 200°F

- Single acting add \$0.60
- Reverse acting add \$0.90
- Double acting add \$1.20
- DXDE add \$1.50

### HIGH TEMPERATURE "U" CUP SEALS (V)

Temperature Range: 0° to 400°F (-18° to 205°C)

- Single acting add \$4.50
- Double acting add \$11.55
- DXDE add \$14.65
- Reverse acting add \$7.70

### MOLYCOATED BODY (F)

- Add \$2.55 per inch of stroke

### NON-LUBE SERVICE (E)

- Single acting add \$3.75
- Double acting add \$8.60
- DXDE add \$12.30

### ROD WIPER (W)

(not available in standard single acting)

- Add \$2.75


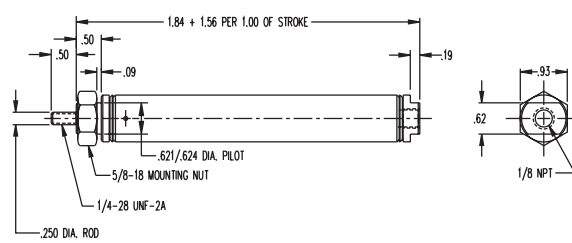

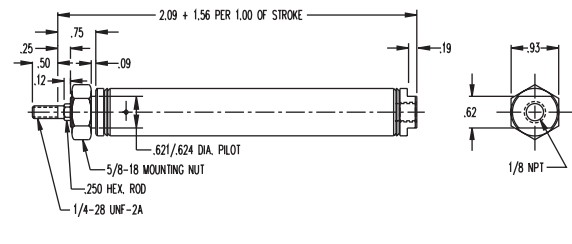
### STAINLESS STEEL ROD (prefix SR)

- Add \$1.90
- Standard on DXP, DXDE, and M option

### LOW PRESSURE HYDRAULIC (HL)

- 250 psi maximum
- Double acting models only
- Option specified as a prefix
- Add \$13.15

Enter Stroke Length as 3rd Digit

MODEL/PRICE	DESCRIPTION/WEIGHT (lbs.)	DIMENSIONS
<p><b>06</b> <input type="checkbox"/></p>  <p><b>\$13.20</b> BASE PRICE Add \$2.35 per inch of stroke</p>	<p><b>Single Acting – Spring Return – Front Nose Mounting</b> Standard Stroke Lengths: ½", 1", 1½", 2", 2½", 3", 4" Maximum Stroke – 6" Optional Stainless Steel Rod Optional Accessory: D-129 Mounting Bracket Base Weight: .17 Adder Per Inch of Stroke: .09</p>	
<p><b>06</b> <input type="checkbox"/>-NR</p>  <p><b>\$15.60</b> BASE PRICE Add \$2.35 per inch of stroke</p>	<p><b>Single Acting – Non-rotating Hexagon Rod – Spring Return – Front Nose Mounting</b> Standard Stroke Lengths: ½", 1", 1½", 2", 2½", 3", 4" Maximum Stroke – 6" Optional Stainless Steel Rod Optional Accessory: D-129 Mounting Bracket Base Weight: .17 Adder Per Inch of Stroke: .09</p>	

See page 1.8 for length calculation of fractional stroke for single acting cylinders

Standard Air Cylinders

Three-Position Cylinders

Cushion Cylinders

MRS® Cylinders

Non-Rotating Air Cylinders

PC Cylinders

All Stainless Repairable


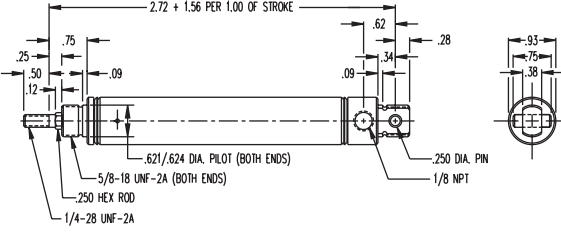

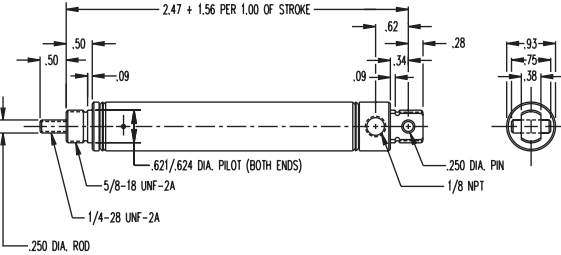

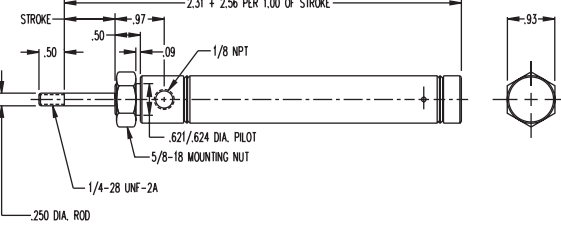

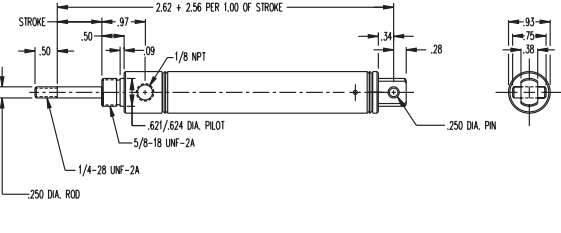

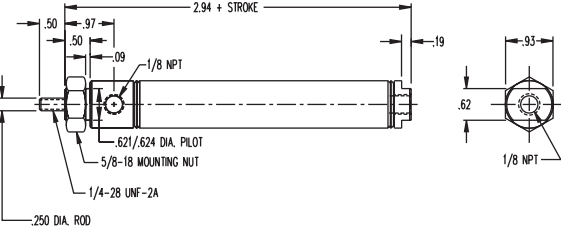
Z Line Air Cylinders

Rod Lock Cylinders


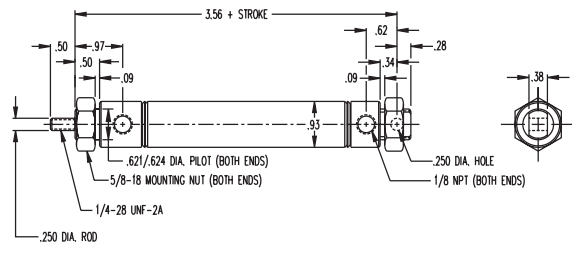

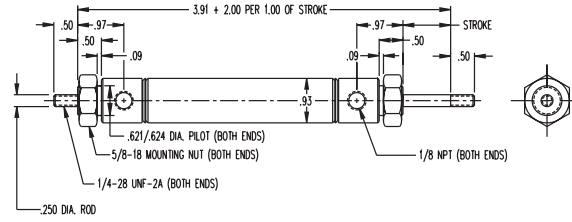
500 Hydraulic Cylinders

Hole Punch Cylinders

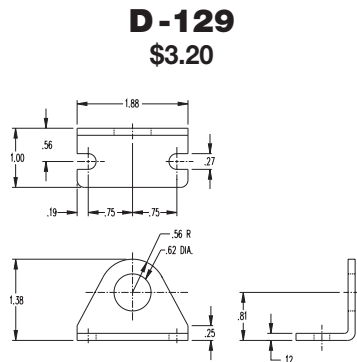
# 7/8" Bore Air Cylinders

MODEL/PRICE	DESCRIPTION/WEIGHT (lbs.)	DIMENSIONS
<p><b>06□-NRP</b></p>  <p><b>\$19.55</b> BASE PRICE Add \$2.35 per inch of stroke</p>	<p><b>Single Acting – Non-rotating Hexagon Rod – Pivot Type – Spring Return – Rear Pivot Mounting</b> Standard Stroke Lengths: ½", 1", 1½", 2", 2½", 3", 4" Maximum Stroke – 6" Optional Stainless Steel Rod Optional Accessories: D-166-3 Piston Rod Clevis D-167 Pivot Brackets Base Weight: .17 Adder Per Inch of Stroke: .09</p>	
<p><b>06□-P</b></p>  <p><b>\$16.80</b> BASE PRICE Add \$2.35 per inch of stroke</p>	<p><b>Single Acting – Pivot Type – Spring Return – Rear Pivot Mounting</b> Standard Stroke Lengths: ½", 1", 1½", 2", 2½", 3", 4" Maximum Stroke – 6" Optional Stainless Steel Rod Optional Accessories: D-166-3 Piston Rod Clevis D-167 Pivot Brackets Base Weight: .17 Adder Per Inch of Stroke: .09</p>	
<p><b>06□-R</b></p>  <p><b>\$19.50</b> BASE PRICE Add \$2.35 per inch of stroke</p>	<p><b>Reverse Single Acting – Pull Type – Rod Normally Extended – Front Nose Mounting</b> Standard Stroke Lengths: ½", 1", 1½", 2", 2½", 3", 4" Maximum Stroke – 6" Optional Stainless Steel Rod Optional Accessory: D-129 Mounting Bracket Base Weight: .20 Adder Per Inch of Stroke: .09</p>	
<p><b>06□-RP</b></p>  <p><b>\$23.05</b> BASE PRICE Add \$2.35 per inch of stroke</p>	<p><b>Reverse Single Acting – Pivot and Pull Type – Rod Normally Extended – Spring Return – Rear Pivot Mounting</b> Standard Stroke Lengths: ½", 1", 1½", 2", 2½", 3", 4" Maximum Stroke – 6" Optional Stainless Steel Rod Optional Accessories: D-166-3 Piston Rod Clevis D-167 Pivot Brackets Base Weight: .20 Adder Per Inch of Stroke: .09</p>	
<p><b>06□-D</b></p>  <p><b>\$17.50</b> BASE PRICE Add \$1.50 per inch of stroke</p>	<p><b>Double Acting – Air Return – Front Nose Mounting</b> Standard Stroke Lengths: ½", 1", 1½", 2", 2½", 3", 4", 5", 6" Maximum Stroke – 12" Optional Stainless Steel Rod Optional Accessory: D-129 Mounting Bracket Base Weight: .25 Adder Per Inch of Stroke: .03</p>	

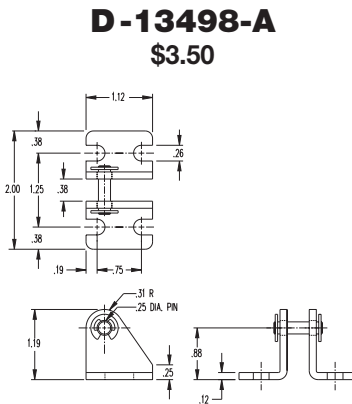
# 7/8" Bore Air Cylinders

MODEL/PRICE	DESCRIPTION/WEIGHT (lbs.)	DIMENSIONS
<p><b>06□-DXP</b></p>  <p><b>\$23.10</b> BASE PRICE Add \$1.50 per inch of stroke</p>	<p><b>Double Acting – Double End or Rear Pivot Mounting – Air Return</b> Standard Stroke Lengths: ½", 1", 1½", 2", 2½", 3", 4", 5", 6", 7", 8", 9", 10", 11", 12" Maximum Stroke – 32" Stainless Steel Rod Standard Optional Accessories: D-166-3 Piston Rod Clevis D-129 Mounting Bracket D-13498-A Pivot Bracket Base Weight: .32 Adder Per Inch of Stroke: .03</p>	
<p><b>06□-DXDE</b></p>  <p><b>\$31.30</b> BASE PRICE Add \$1.95 per inch of stroke</p>	<p><b>Double Acting – Double End Rod – Air Return – Double End Mounting</b> Standard Stroke Lengths: ½", 1", 1½", 2", 2½", 3", 4", 5", 6" Maximum Stroke – 12" Stainless Steel Rod Standard Optional Accessory: D-129 Mounting Bracket Base Weight: .39 Adder Per Inch of Stroke: .06</p>	

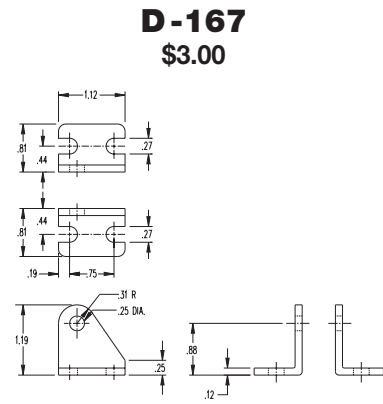
## 7/8" Bore Accessories



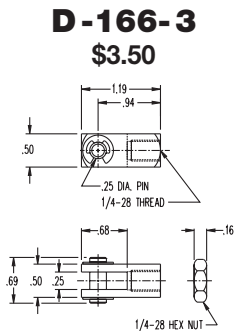
Mounting Bracket



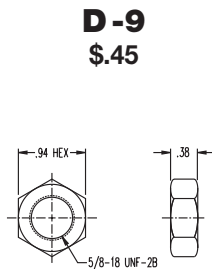
Pivot Bracket



Pivot Brackets



Rod Clevis



Mounting Nut

Standard Air Cylinders

Three-Position Cylinders

Cushion Cylinders

MRS® Cylinders

Non-Rotating Air Cylinders

PC Cylinders

All Stainless Reparable

Z Line Air Cylinders

Rod Lock Cylinders

500 Hydraulic Cylinders

Hole Punch Cylinders



# 1-1/16" Bore Air Cylinders

- Ground and Polished, High Strength Carbon Steel Piston Rod Standard – 303 Stainless Steel Rod Available as an Option – Bronze Rod Guide Bushing Standard
- Force Exerted Approximately 0.9 of Air Line Pressure
- Enclosed Spring Force: 3 lbs. Relaxed – 6 lbs. Compressed
- Rod Wipers Available on D, DP, DX and DXDE Models

## OPTIONS:

### NO CHARGE:

- MAGNALUBE G (G)
- PORTS ROTATED (K)\*

\*Front port rotated 90° on BF-090-D.

- NO THREAD (NT)
- SIDE PORTED REAR HEAD (Q)  
Add .25" to nose mount overall length
- PIVOT BUSHING (Y)  
.250" ID

### SINGLE AND REVERSE ACTING BUMPER (B)

- \$2.85 additional
- Add .125 to overall length

### DOUBLE ACTING BUMPERS (B)

- \$4.00 additional
- Add .125 to overall length
- Models DXDE and DXDEH add .500

### EXTRA EXTENSION (EE)

- Single, reverse and double acting, add \$0.80 per inch of extension
- DXDE, add \$1.05 per inch of extension; extension added to each end
- DXDE hollow rod, add \$1.50 per inch of extension; extension added to each end

### DOUBLE ACTING FAILSAFE

- (JS = Spring Return, JR = Spring Extend)
- Add \$7.65 to base price + \$1.00 to stroke adder
  - See page 1.65 for overall length adders

**HEAVY SPRINGS (H)** are standard on all single acting block front and block rear mount and -NRLSC models, and reverse acting except -RA type.

- For all other single acting, add \$1.85
- Spring Force: 6 lbs. relaxed – 12 lbs. compressed

## OPTIONS continued...

### MAGNET (prefix M) – Add \$11.40

- Single acting and DXDE add .125" to overall length
- Use bumper length adder for DXDE and DXDEH when magnet and bumper are ordered together.
- Stainless steel rod becomes standard with this option
- Must specify track(s) for use with miniature position sensing (T2, T3, T4) – add \$2.75 per track. See Related Products, page 8.12 for details.

### LOW TEMPERATURE (N)

Temperature Range: -40° to 200°F

- Single acting add \$0.90
- Reverse acting add \$1.20
- Double acting add \$1.75
- DXDE add \$2.35

### HIGH TEMPERATURE "U" CUPS (V)

Temperature Range: 0° to 400°F (-18° to 205°C)

- Single acting add \$5.20
- Double acting add \$12.45
- DXDE add \$15.75
- Reverse acting add \$8.10

### ROD WIPER (W)

(not available in standard single acting)  
(now available in block mount)

- Double acting, add \$2.75
- DXDE, add \$5.50

### MOLYCOATED BODY (F)

- Add \$2.55 per inch of stroke

### NON-LUBE SERVICE (E)

- Single acting add \$3.75
- Double acting add \$9.15
- DXDE add \$12.90


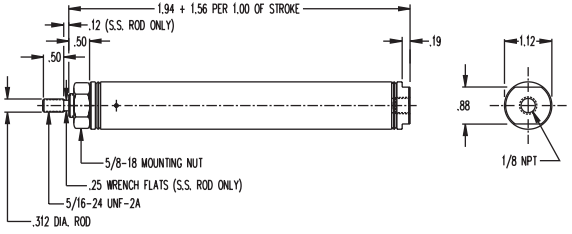

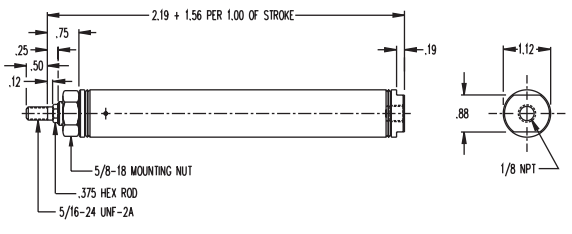
### STAINLESS STEEL ROD (prefix SR)

- Add \$1.90
- Standard on DX, DXDE, DXDEH, All block mountings and M option

### LOW PRESSURE HYDRAULIC (HL)

- 250 psi maximum
- Double acting models only
- Option specified as a prefix
- Add \$13.15


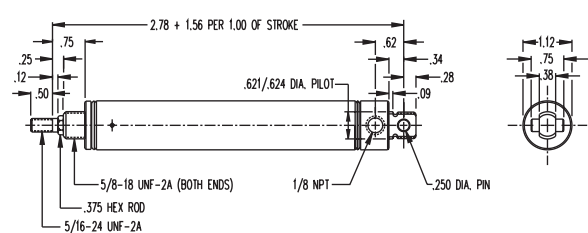

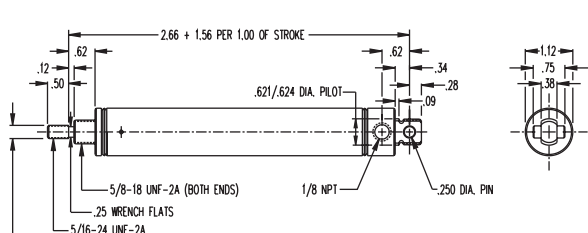

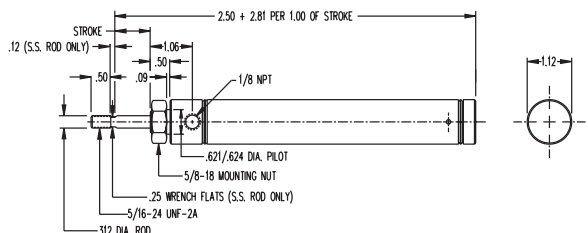

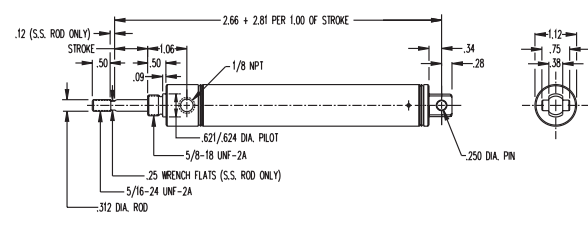
Enter Stroke Length as 3rd Digit

MODEL/PRICE	DESCRIPTION/WEIGHT (lbs.)	DIMENSIONS
<p><b>09</b> <input type="checkbox"/></p>  <p><b>\$13.85</b> BASE PRICE Add \$2.55 per inch of stroke</p>	<p><b>Single Acting – Spring Return – Front Nose Mounting</b> Standard Stroke Lengths: ½", 1", 1½", 2", 2½", 3", 4" Maximum Stroke – 6" Optional Stainless Steel Rod Optional Accessory: D-129 Mounting Bracket Base Weight: .23 Adder Per Inch of Stroke: .11</p>	
<p><b>09</b> <input type="checkbox"/>-NR</p>  <p><b>\$16.30</b> BASE PRICE Add \$2.55 per inch of stroke</p>	<p><b>Single Acting – Non-rotating Hexagon Rod – Spring Return – Front Nose Mounting</b> Standard Stroke Lengths: ½", 1", 1½", 2", 2½", 3", 4" Maximum Stroke – 6" Optional Stainless Steel Rod Optional Accessory: D-129 Mounting Bracket Base Weight: .25 Adder Per Inch of Stroke: .12</p>	

See page 1.8 for length calculation of fractional stroke for single acting cylinders


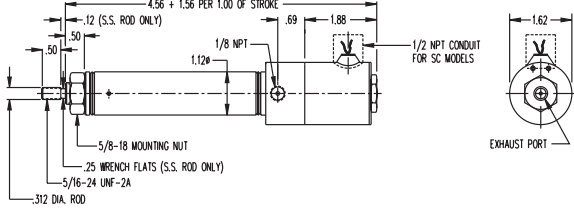

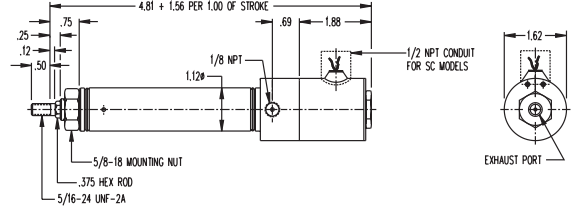

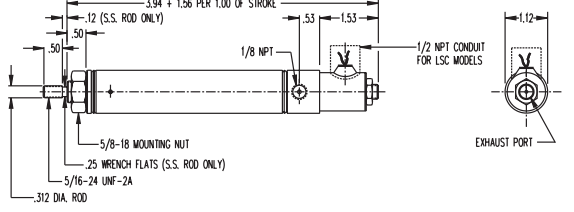
All prices are F.O.B. Monee, Illinois and are subject to change without notice

# 1-1/16" Bore Air Cylinders


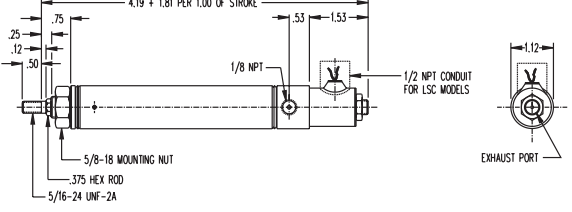

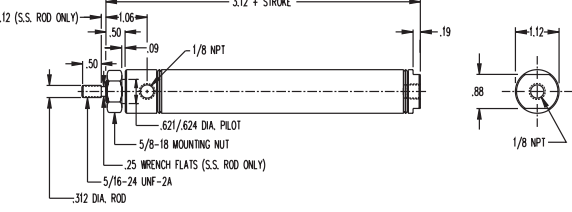

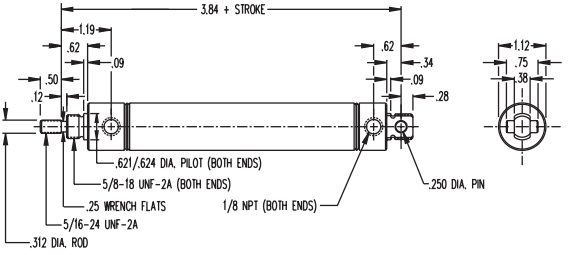

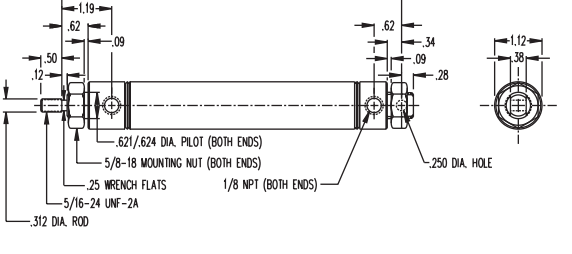
MODEL/PRICE	DESCRIPTION/WEIGHT (lbs.)	DIMENSIONS
<p><b>09□-NRP</b></p>  <p><b>\$20.10</b> BASE PRICE Add \$2.55 per inch of stroke</p>	<p><b>Single Acting – Non-rotating Hexagon Rod – Pivot Type – Spring Return – Rear Pivot Mounting</b>  <b>Standard Stroke Lengths:</b>            ½", 1", 1½", 2", 2½", 3", 4"  <b>Maximum Stroke – 6"</b>  <b>Optional Stainless Steel Rod</b>  <b>Optional Accessories:</b>            D-166-1 Piston Rod Clevis            D-167 Pivot Brackets  <b>Base Weight: .25</b>  <b>Adder Per Inch of Stroke: .12</b></p>	
<p><b>09□-P</b></p>  <p><b>\$17.30</b> BASE PRICE Add \$2.55 per inch of stroke</p>	<p><b>Single Acting – Pivot Type – Spring Return – Rear Pivot Mounting</b>  <b>Standard Stroke Lengths:</b>            ½", 1", 1½", 2", 2½", 3", 4"  <b>Maximum Stroke – 6"</b>  <b>Optional Stainless Steel Rod</b>  <b>Optional Accessories:</b>            D-166-1 Piston Rod Clevis            D-167 Pivot Brackets  <b>Base Weight: .24</b>  <b>Adder Per Inch of Stroke: .11</b></p>	
<p><b>09□-R</b></p>  <p><b>\$20.20</b> BASE PRICE Add \$2.55 per inch of stroke</p>	<p><b>Reverse Single Acting – Pull Type – Rod Normally Extended – Spring Return – Front Nose Mounting</b>  <b>Standard Stroke Lengths:</b>            ½", 1", 1½", 2", 2½", 3", 4"  <b>Maximum Stroke – 6"</b>  <b>Optional Stainless Steel Rod</b>  <b>Optional Accessory:</b>            D-129 Mounting Bracket  <b>Base Weight: .24</b>  <b>Adder Per Inch of Stroke: .16</b></p>	
<p><b>09□-RP</b></p>  <p><b>\$24.00</b> BASE PRICE Add \$2.55 per inch of stroke</p>	<p><b>Reverse Single Acting – Pivot and Pull Type – Rod Normally Extended – Spring Return – Rear Pivot Mounting</b>  <b>Standard Stroke Lengths:</b>            ½", 1", 1½", 2", 2½", 3", 4"  <b>Maximum Stroke – 6"</b>  <b>Optional Stainless Steel Rod</b>  <b>Optional Accessories:</b>            D-166-1 Piston Rod Clevis            D-167 Pivot Brackets  <b>Base Weight: .22</b>  <b>Adder Per Inch of Stroke: .16</b></p>	

- Standard Air Cylinders
- Three-Position Cylinders
- Cushion Cylinders
- MRS® Cylinders
- Non-Rotating Air Cylinders
- PC Cylinders
- All Stainless Repairable
- Z Line Air Cylinders
- Rod Lock Cylinders
- 500 Hydraulic Cylinders
- Hole Punch Cylinders

# 1-1/16" Bore Air Cylinders

MODEL/PRICE	DESCRIPTION/WEIGHT (lbs.)	DIMENSIONS
<p><b>09□-S or SC*</b></p>  <p><b>\$67.40</b> BASE PRICE Add \$2.55 per inch of stroke *Add \$2.55 for Conduit Outlet</p>	<p><b>Single Acting – Built-in 3-Way Solenoid Operated Valve – Spring Return – Front Nose Mounting – 100 PSI, 1/16" Orifice Standard – 150 PSI, 3/64" Orifice Optional</b></p> <p><b>Standard Stroke Lengths:</b> 1/2", 1", 1 1/2", 2", 2 1/2", 3", 4" Maximum Stroke – 6" Optional Stainless Steel Rod Standard Voltage – 115/60 <b>Optional Voltages:</b> 24, 230 A.C. or 6, 12, 24 D.C. <b>Optional Accessory:</b> D-129 Mounting Bracket <b>Base Weight: 1.11</b> <b>Adder Per Inch of Stroke: .11</b></p>	
<p><b>09□-NRS or NRSC*</b></p>  <p><b>\$70.25</b> BASE PRICE Add \$2.55 per inch of stroke *Add \$2.55 for Conduit Outlet</p>	<p><b>Single Acting – Built-in 3-Way Solenoid Operated Valve – Non-rotating Hexagon Piston Rod – Spring Return – Front Nose Mounting – 100 PSI, 1/16" Orifice Standard – 150 PSI, 3/64" Orifice Optional</b></p> <p><b>Standard Stroke Lengths:</b> 1/2", 1", 1 1/2", 2", 2 1/2", 3", 4" Maximum Stroke – 6" Optional Stainless Steel Rod Standard Voltage – 115/60 <b>Optional Voltages:</b> 24, 230 A.C. or 6, 12, 24 D.C. <b>Optional Accessory:</b> D-129 Mounting Bracket <b>Base Weight: 1.13</b> <b>Adder Per Inch of Stroke: .12</b></p>	
<p><b>09□-LS or LSC*</b></p>  <p><b>\$70.35</b> BASE PRICE Add \$2.55 per inch of stroke *Add \$1.95 for Conduit Outlet</p>	<p><b>Single Acting – Built-in Midget 3-Way Solenoid Operated Valve – Spring Return – Front Nose Mounting – 150 PSI, 3/64" Orifice</b></p> <p><b>Standard Stroke Lengths:</b> 1/2", 1", 1 1/2", 2", 2 1/2", 3", 4" Maximum Stroke – 6" Optional Stainless Steel Rod Standard Voltage – 115/60 <b>Optional Voltages:</b> 24, 230 A.C. or 6, 12, 24 D.C. <b>Optional Accessory:</b> D-129 Mounting Bracket <b>Base Weight: 1.20</b> <b>Adder Per Inch of Stroke: .11</b></p>	

# 1-1/16" Bore Air Cylinders

MODEL/PRICE	DESCRIPTION/WEIGHT (lbs.)	DIMENSIONS
<p><b>09□-NRLS or NRLSC*</b></p>  <p><b>\$72.85</b> BASE PRICE Add \$2.55 per inch of stroke *Add \$1.95 for Conduit Outlet</p>	<p><b>Single Acting – Non-rotating Hexagon Piston Rod – Built-in Midget 3-Way Solenoid Operated Valve – Spring Return – Front Nose Mounting – 150 PSI, 3/4" Orifice</b>  <b>Standard Stroke Lengths:</b>            1/2", 1", 1 1/2", 2", 2 1/2", 3", 4"            Maximum Stroke – 6"            Optional Stainless Steel Rod            Standard Voltage – 115/60  <b>Optional Voltages:</b>            24, 230 A.C. or 6, 12, 24 D.C.  <b>Optional Accessory:</b>            D-129 Mounting Bracket  <b>Base Weight: 1.20</b>  <b>Adder Per Inch of Stroke: .11</b></p>	
<p><b>09□-D</b></p>  <p><b>\$18.60</b> BASE PRICE Add \$1.50 per inch of stroke</p>	<p><b>Double Acting – Air Return – Front Nose Mounting</b>  <b>Standard Stroke Lengths:</b>            1/2", 1", 1 1/2", 2", 2 1/2", 3", 4", 5", 6"            Maximum Stroke – 12"            Optional Stainless Steel Rod            Optional Rod Wiper  <b>Optional Accessory:</b>            D-129 Mounting Bracket  <b>Base Weight: .33</b>  <b>Adder Per Inch of Stroke: .05</b></p>	
<p><b>09□-DP</b></p>  <p><b>\$22.30</b> BASE PRICE Add \$1.50 per inch of stroke</p>	<p><b>Double Acting – Pivot Type – Air Return – Rear Pivot Mounting</b>  <b>Standard Stroke Lengths:</b>            1/2", 1", 1 1/2", 2", 2 1/2", 3", 4", 5", 6", 7", 8", 9", 10", 11", 12"            Maximum Stroke – 32"            Optional Stainless Steel Rod            Optional Rod Wiper  <b>Optional Accessories:</b>            D-166-1 Piston Rod Clevis            D-167 Pivot Bracket  <b>Base Weight: .33</b>  <b>Adder Per Inch of Stroke: .05</b></p>	
<p><b>09□-DX</b></p>  <p><b>\$24.40</b> BASE PRICE Add \$1.50 per inch of stroke</p>	<p><b>Double Acting – Universal Mounting Pivot, or Double End Mounting – Air Return</b>  <b>Standard Stroke Lengths:</b>            1/2", 1", 1 1/2", 2", 2 1/2", 3", 4", 5", 6", 7", 8", 9", 10", 11", 12"            Maximum Stroke – 32"            Stainless Steel Rod Standard            Optional Rod Wiper  <b>Optional Accessories:</b>            D-13498-A Pivot Bracket            D-129 Mounting Bracket            D-166-1 Piston Rod Clevis  <b>Base Weight: .33</b>  <b>Adder Per Inch of Stroke: .05</b></p>	

Standard Air Cylinders

Three-Position Cylinders

Cushion Cylinders

MRS® Cylinders

Non-Rotating Air Cylinders

PC Cylinders

All Stainless Repairable

Z Line Air Cylinders

Rod Lock Cylinders

500 Hydraulic Cylinders


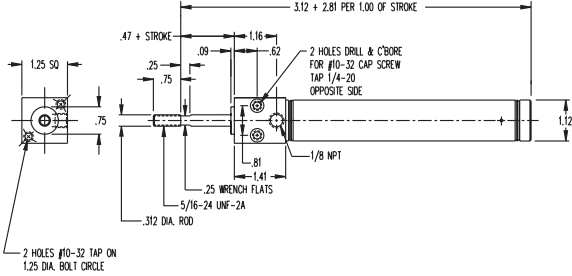

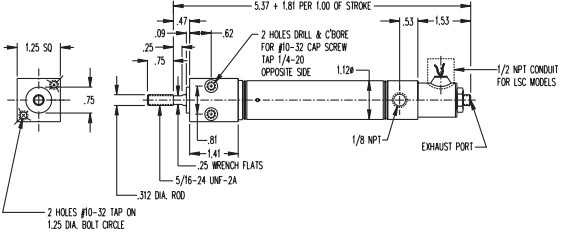

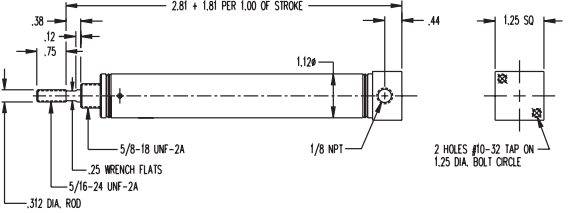

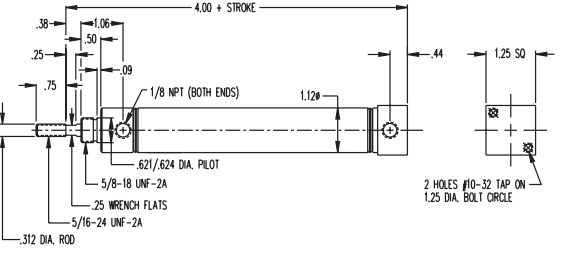

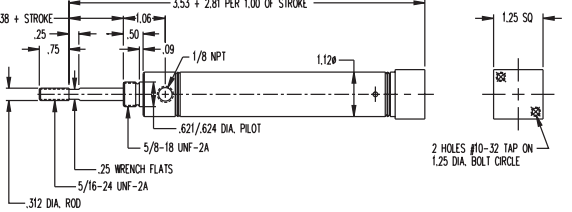
Hole Punch Cylinders





# 1-1/16" Bore Air Cylinders

## 1-1/16" Bore Block Mounted (continued)


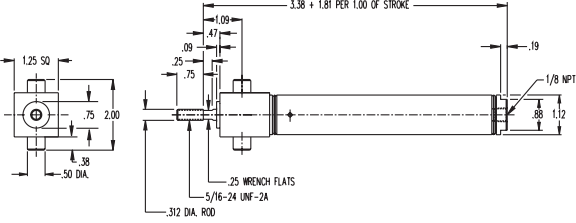

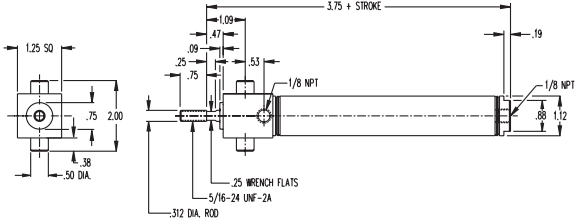

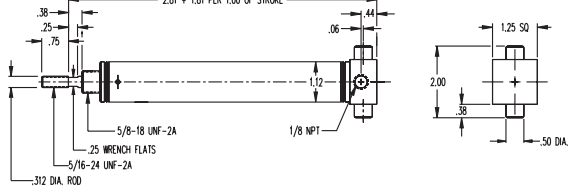

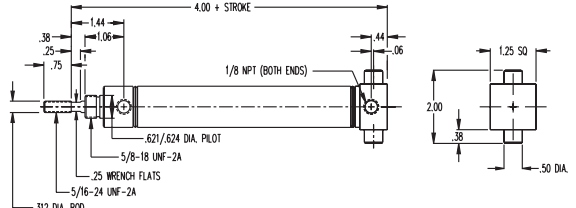
MODEL/PRICE	DESCRIPTION/WEIGHT (lbs.)	DIMENSIONS
<p><b>BF-09</b>  <b>-R</b></p> <p><b>\$31.90</b> BASE PRICE Add \$2.55 per inch of stroke</p>	<p><b>Pull Type – Front Block Mounting – Rod Normally Extended – Reverse Single Acting – Spring Return</b> Standard Stroke Lengths: ½", 1", 1½", 2", 2½", 3", 4" Maximum Stroke – 6" Stainless Steel Rod Standard Base Weight: .36 Adder Per Inch of Stroke: .16</p>	
<p><b>BF-09</b>  <b>-LS or LSC*</b></p> <p><b>\$84.30</b> BASE PRICE Add \$2.55 per inch of stroke *Add \$1.95 for Conduit Outlet</p>	<p><b>Built-in Midget 3-Way Solenoid Operated Valve – Single Acting – Spring Return – Front Block Mounting – 150 PSI, 3/64" Orifice</b> Standard Stroke Lengths: ½", 1", 1½", 2", 2½", 3", 4" Maximum Stroke – 6" Stainless Steel Rod Standard Standard Voltage – 115/60 Optional Voltages: 24, 230 A.C. or 6, 12, 24 D.C. Base Weight: 1.31 Adder Per Inch of Stroke: .11</p>	
<p><b>BR-09</b>  <b></b></p> <p><b>\$23.25</b> BASE PRICE Add \$2.55 per inch of stroke</p>	<p><b>Single Acting – Rear Block Mounting for Vertical Positioning – Spring Return</b> Standard Stroke Lengths: ½", 1", 1½", 2", 2½", 3", 4" Maximum Stroke – 6" Stainless Steel Rod Standard Base Weight: .36 Adder Per Inch of Stroke: .16</p>	
<p><b>BR-09</b>  <b>-D</b></p> <p><b>\$28.45</b> BASE PRICE Add \$1.50 per inch of stroke</p>	<p><b>Double Acting – Rear Block Mounting for Vertical Positioning – Air Return</b> Standard Stroke Lengths: ½", 1", 1½", 2", 2½", 3", 4" Maximum Stroke – 12" Stainless Steel Rod Standard Base Weight: .39 Adder Per Inch of Stroke: .05</p>	
<p><b>BR-09</b>  <b>-R</b></p> <p><b>\$28.05</b> BASE PRICE Add \$2.55 per inch of stroke</p>	<p><b>Pull Type – Rear Block Mounting for Vertical Positioning – Rod Normally Extended – Reverse Single Acting – Spring Return</b> Standard Stroke Lengths: ½", 1", 1½", 2", 2½", 3", 4" Maximum Stroke – 6" Stainless Steel Rod Standard Base Weight: .32 Adder Per Inch of Stroke: .16</p>	

- Standard Air Cylinders
- Three-Position Cylinders
- Cushion Cylinders
- MRS® Cylinders
- Non-Rotating Air Cylinders
- PC Cylinders
- All Stainless Repairable
- Z Line Air Cylinders
- Rod Lock Cylinders
- 500 Hydraulic Cylinders
- Hole Punch Cylinders




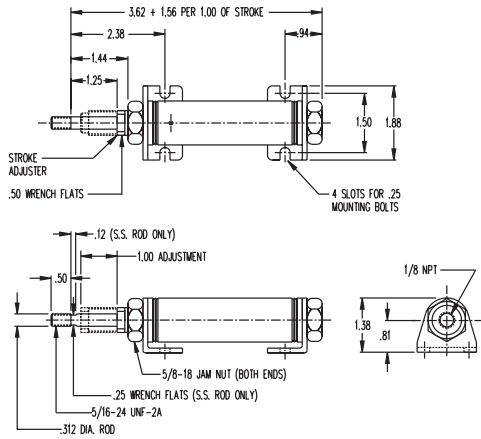

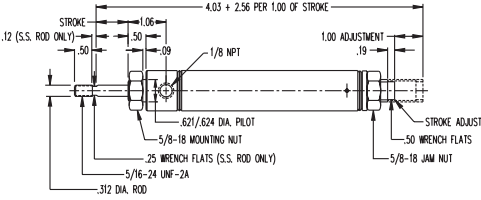

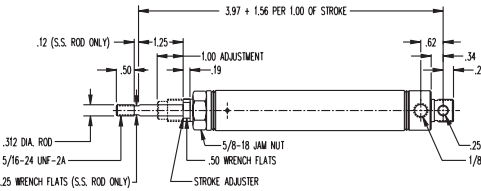
# 1-1/16" Bore Air Cylinders

1-1/16" Bore Trunnion Mounted • Spring Force: 6 lbs. Retracted, 13 lbs. Extended


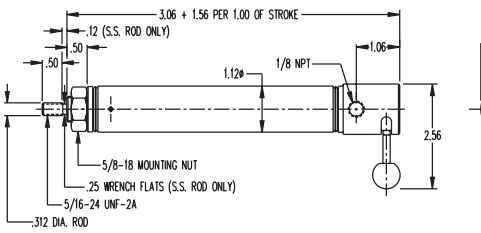
MODEL/PRICE	DESCRIPTION/WEIGHT (lbs.)	DIMENSIONS
<p><b>BFT-09</b> <input type="checkbox"/></p>  <p><b>\$35.40</b> BASE PRICE Add \$2.55 per inch of stroke</p>	<p><b>Single Acting – Front Block Trunnion Mounting – Spring Return</b> Standard Stroke Lengths: ½", 1", 1½", 2", 2½", 3", 4" Maximum Stroke – 6" Stainless Steel Rod Standard Optional Accessories: TRB-2 Trunnion Brackets D-166-1 Rod Clevis Base Weight: .45 Adder Per Inch of Stroke: .11</p>	
<p><b>BFT-09</b> <input type="checkbox"/> -D</p>  <p><b>\$37.65</b> BASE PRICE Add \$1.50 per inch of stroke</p>	<p><b>Double Acting – Front Block Trunnion Mounting – Air Return</b> Standard Stroke Lengths: ½", 1", 1½", 2", 2½", 3", 4" Maximum Stroke – 12" Stainless Steel Rod Standard Optional Accessories: TRB-2 Trunnion Brackets D-166-1 Rod Clevis Base Weight: .49 Adder Per Inch of Stroke: .05</p>	
<p><b>BRT-09</b> <input type="checkbox"/></p>  <p><b>\$31.50</b> BASE PRICE Add \$2.55 per inch of stroke</p>	<p><b>Single Acting – Rear Block Trunnion Mounting – Spring Return</b> Standard Stroke Lengths: ½", 1", 1½", 2", 2½", 3", 4" Maximum Stroke – 6" Stainless Steel Rod Standard Optional Accessories: TRB-2 Trunnion Brackets D-166-1 Rod Clevis Base Weight: .37 Adder Per Inch of Stroke: .11</p>	
<p><b>BRT-09</b> <input type="checkbox"/> -D</p>  <p><b>\$36.50</b> BASE PRICE Add \$1.50 per inch of stroke</p>	<p><b>Double Acting – Rear Block Trunnion Mounting – Air Return</b> Standard Stroke Lengths: ½", 1", 1½", 2", 2½", 3", 4" Maximum Stroke – 12" Stainless Steel Rod Standard Optional Accessories: TRB-2 Trunnion Brackets D-166-1 Rod Clevis Base Weight: .43 Adder Per Inch of Stroke: .05</p>	

# 1-1/16" Bore Air Cylinders

## 1-1/16" Bore Adjustable Stroke


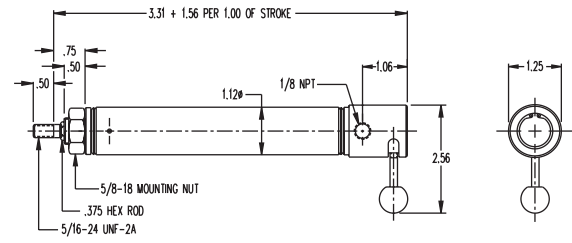
MODEL/PRICE	DESCRIPTION/WEIGHT (lbs.)	DIMENSIONS
<p><b>09□-A</b></p>  <p><b>\$28.05</b> BASE PRICE Add \$2.55 per inch of stroke</p>	<p><b>Single Acting – Spring Return – Adjustable Stroke – Double End Mounting – Brass Piston Rod Bearing and Stroke Adjustment in 1", 2", 3".</b> 1" Stroke Adjusts 0" – 1", 2" Stroke 1" – 2", and 3" Stroke 2" – 3". Mounting brackets are included. Maximum Stroke – 6" Optional Stainless Steel Rod Base Weight: .58 Adder Per Inch of Stroke: .11</p>	
<p><b>09□-RA</b></p>  <p><b>\$29.25</b> BASE PRICE Add \$2.55 per inch of stroke</p>	<p><b>Reverse Single Acting – Pull Type – Rod Normally Extended – Spring Force: 6 lbs. Retracted, 3 lbs. Extended – Nose Mounting – Stroke Adjustment in 1", 2", 3".</b> 1" Stroke Adjusts 0" – 1", 2" Stroke 1" – 2", and 3" Stroke 2" – 3". Maximum Stroke – 6" Optional Stainless Steel Rod Optional Accessory: D-129 Mounting Brackets Base Weight: .41 Adder Per Inch of Stroke: .11</p>	
<p><b>09□-AP</b></p>  <p><b>\$27.55</b> BASE PRICE Add \$2.55 per inch of stroke</p>	<p><b>Single Acting – Pivot Type – Rear Pivot Mounting – Stroke Adjustment in 1", 2", 3".</b> 1" Stroke Adjusts 0" – 1", 2" Stroke 1" – 2", and 3" Stroke 2" – 3". Maximum Stroke – 6" Optional Stainless Steel Rod Optional Accessories: D-166-1 Piston Rod Clevis D-167 Pivot Brackets Base Weight: .40 Adder Per Inch of Stroke: .11</p>	

## 1-1/16" Bore Built-in Manual Valve

MODEL/PRICE	DESCRIPTION/WEIGHT (lbs.)	DIMENSIONS
<p><b>09□-M</b></p>  <p><b>\$49.65</b> BASE PRICE Add \$2.55 per inch of stroke</p>	<p><b>Single Acting – Built-in 3-Way Manual Valve – Spring Return – Front Nose Mounting Standard Stroke Lengths: 1/2", 1", 1 1/2", 2", 2 1/2", 3", 4" Maximum Stroke – 6" Optional Stainless Steel Rod Optional Accessory: D-129 Mounting Bracket Base Weight: .45 Adder Per Inch of Stroke: .11</b></p>	

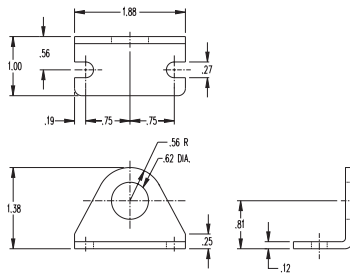
# 1-1/16" Bore Air Cylinders

## 1-1/16" Bore Built-in Manual Valve (continued)

MODEL/PRICE	DESCRIPTION/WEIGHT (lbs.)	DIMENSIONS
<b>09□-NRM</b>  <b>\$52.10</b> BASE PRICE Add \$2.55 per inch of stroke	<b>Single Acting – Built-in 3-Way Manual Valve – Non-rotating Hexagon Rod – Spring Return</b> <b>Standard Stroke Lengths:</b> ½", 1", 1½", 2", 2½", 3", 4" Maximum Stroke – 6" Optional Stainless Steel Rod Optional Accessory: D-129 Mounting Bracket Base Weight: .47 Adder Per Inch of Stroke: .12	

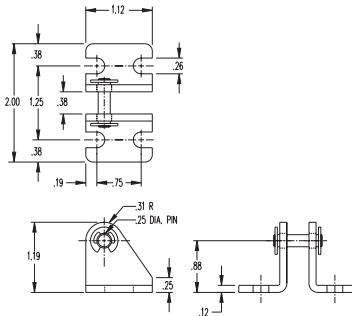
## 1-1/16" Bore Accessories

**D-129**  
\$3.20



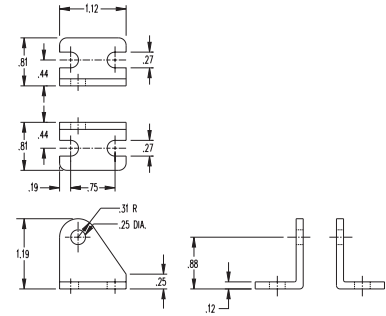
Mounting Bracket  
(for Single & Double Acting Models)

**D-13498-A**  
\$3.50



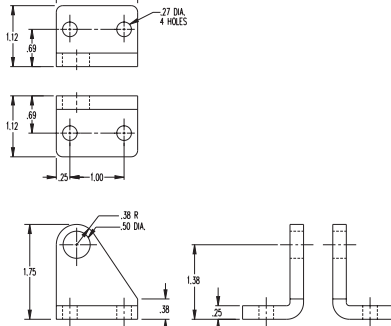
Pivot Bracket

**D-167**  
\$3.00



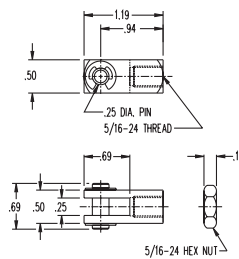
Pivot Brackets

**TRB-2**  
\$10.75



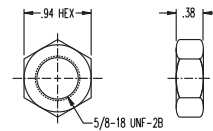
Trunnion Brackets

**D-166-1**  
\$3.50



Piston Rod Clevis

**D-9**  
\$.45



Mounting Nut

**Note:** For stainless steel accessories see pages 1.99 and 1.102-1.103.

# 1-1/4" Bore Air Cylinders

- Ground and Polished, High Strength Carbon Steel Piston Rod Standard – 303 Stainless Steel Rod Available as an Option – Bronze Rod Guide Bushing Standard
- Force Exerted Approximately 1.2 of Air Line Pressure
- Enclosed Spring Force: 7.5 lbs. Relaxed – 15 lbs. Compressed
- Cushion Quiet Bumpers Standard

## OPTIONS:

### NO CHARGE:

- **MAGNALUBE G (G)**
- **PORTS ROTATED (K)**
- **NO THREAD (NT)**
- **SIDE PORTED REAR HEAD (Q)**  
Add .31" to nose mount overall length
- **PIVOT BUSHING (Y)**  
.250" ID

### EXTRA EXTENSION (EE)

- Single, reverse and double acting, add \$1.00 per inch of extension
- DXDE, add \$1.45 per inch of extension; extension added to each end
- DXDE hollow rod, add \$1.55 per inch of extension; extension added to each end

### DOUBLE ACTING FAILSAFE

- (JS = Spring Return, JR = Spring Extend)
- Add \$7.65 to base price + \$1.00 to stroke adder
  - See page 1.65 for overall length adders

## OPTIONS continued...

### MAGNET (prefix M) – Add \$11.40

- Single and reverse acting add .125" to overall length,
- Stainless steel rod becomes standard with this option
- Must specify track(s) for use with miniature position sensing (T2, T3, T4) – add \$2.75 per track. See Related Products, page 8.12 for details.

### LOW TEMPERATURE (N)

Temperature Range: -40° to 200°F

- Single acting add \$0.90
- Reverse acting add \$1.20
- Double acting add \$1.75
- DXDE add \$2.35

### HIGH TEMPERATURE "U" CUPS (V)

Temperature Range: 0° to 400°F (-18° to 205°C)

- Single acting add \$5.50
- Double acting add \$13.75
- DXDE add \$17.55
- Reverse acting add \$9.45

### MOLYCOATED BODY (F)

- Add \$2.55 per inch of stroke

### NON-LUBE SERVICE (E)

- Single acting add \$3.75
- Double acting add \$9.15
- DXDE add \$12.90

### STAINLESS STEEL ROD (prefix SR)

- Add \$2.75
- Standard on DXDE, DXDEH and M option

### ROD WIPER (W)


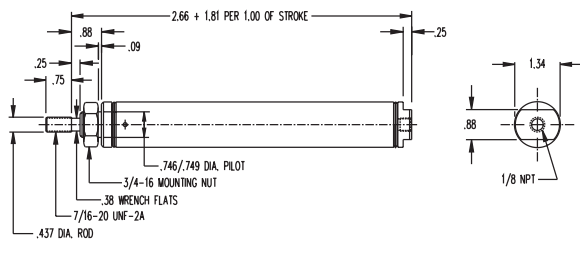

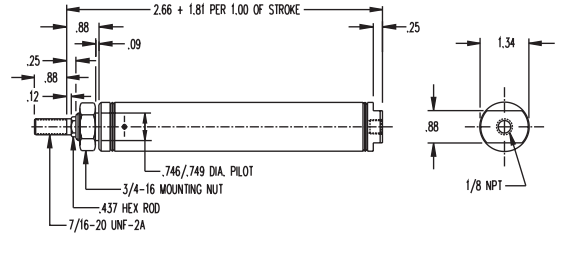
(not available in standard single acting)

- Add \$2.75

### LOW PRESSURE HYDRAULIC (HL)

- 250 psi maximum
- Double acting models only
- Option specified as a prefix
- Add \$13.15

Enter Stroke Length as 3rd Digit

MODEL/PRICE	DESCRIPTION/WEIGHT (lbs.)	DIMENSIONS
<p><b>12</b> <input type="checkbox"/></p>  <p><b>\$22.45</b> BASE PRICE Add \$3.30 per inch of stroke</p>	<p><b>Single Acting – Spring Return – Front Nose Mounting</b> Standard Stroke Lengths: ½", 1", 1½", 2", 2½", 3", 4" Maximum Stroke – 6" Optional Stainless Steel Rod Optional Accessory: D-241 Mounting Bracket Base Weight: .39 Adder Per Inch of Stroke: .21</p>	
<p><b>12</b> <input type="checkbox"/>-NR</p>  <p><b>\$25.15</b> BASE PRICE Add \$3.30 per inch of stroke</p>	<p><b>Single Acting – Non-rotating Hexagon Rod – Spring Return – Front Nose Mounting</b> Standard Stroke Lengths: ½", 1", 1½", 2", 2½", 3", 4" Maximum Stroke – 6" Optional Stainless Steel Rod Optional Accessory: D-241 Mounting Bracket Base Weight: .41 Adder Per Inch of Stroke: .20</p>	

See page 1.8 for length calculation of fractional stroke for single acting cylinders

Standard Air Cylinders

Three-Position Cylinders

Cushion Cylinders

MRS® Cylinders

Non-Rotating Air Cylinders

PC Cylinders

All Stainless Repairable


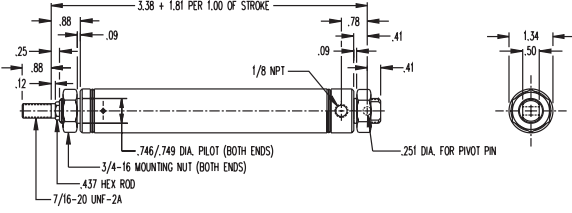

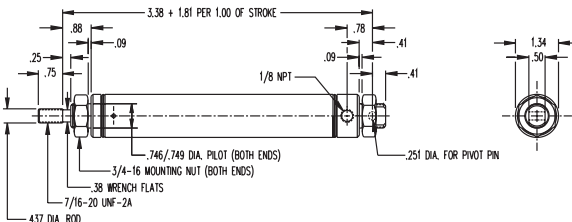

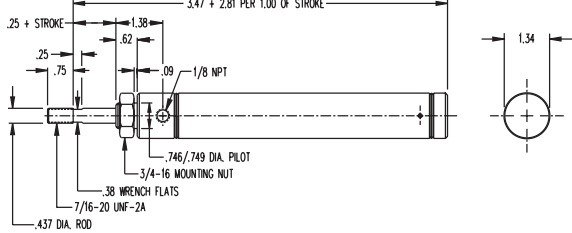

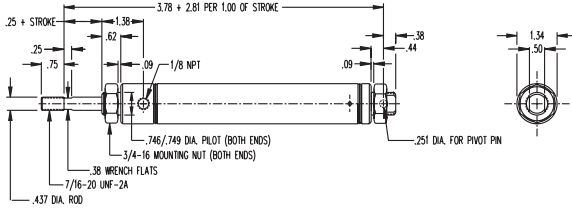
Z Line Air Cylinders

Rod Lock Cylinders

500 Hydraulic Cylinders


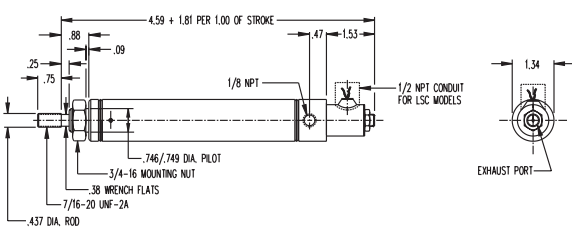

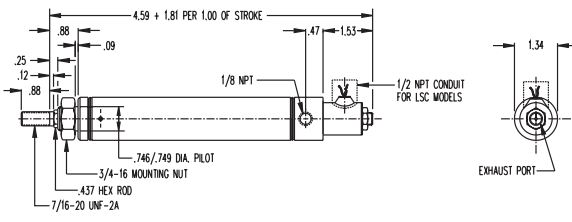

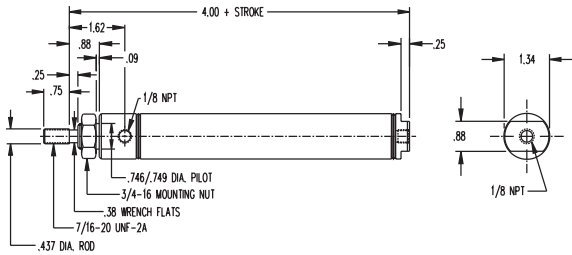

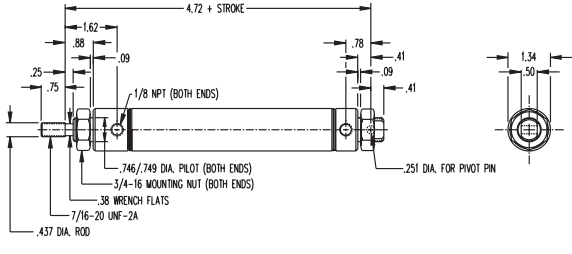
Hole Punch Cylinders

# 1 - 1/4" Bore Air Cylinders

MODEL/PRICE	DESCRIPTION/WEIGHT (lbs.)	DIMENSIONS
<p><b>12□-NRP</b></p>  <p><b>\$30.55</b> BASE PRICE Add \$3.30 per inch of stroke</p>	<p><b>Single Acting – Non-rotating Hexagon Rod – Pivot Type – Spring Return – Rear Pivot or Double End Mounting</b></p> <p><b>Standard Stroke Lengths:</b> 1/2", 1", 1 1/2", 2", 2 1/2", 3", 4" Maximum Stroke – 6" Optional Stainless Steel Rod <b>Optional Accessories:</b> D-231-1 Piston Rod Clevis D-1360 Pivot Brackets <b>Base Weight: .41</b> <b>Adder Per Inch of Stroke: .20</b></p>	
<p><b>12□-P</b></p>  <p><b>\$27.65</b> BASE PRICE Add \$3.30 per inch of stroke</p>	<p><b>Single Acting – Pivot Type – Spring Return – Rear Pivot or Double End Mounting</b></p> <p><b>Standard Stroke Lengths:</b> 1/2", 1", 1 1/2", 2", 2 1/2", 3", 4" Maximum Stroke – 6" Optional Stainless Steel Rod <b>Optional Accessories:</b> D-231-1 Piston Rod Clevis D-1360 Pivot Brackets <b>Base Weight: .53</b> <b>Adder Per Inch of Stroke: .21</b></p>	
<p><b>12□-R</b></p>  <p><b>\$29.25</b> BASE PRICE Add \$3.30 per inch of stroke</p>	<p><b>Reverse Single Acting – Pull Type – Rod Normally Extended – Spring Return – Front Nose Mounting</b></p> <p><b>Standard Stroke Lengths:</b> 1/2", 1", 1 1/2", 2", 2 1/2", 3", 4" Maximum Stroke – 6" Optional Stainless Steel Rod <b>Optional Accessory:</b> D-241 Mounting Bracket <b>Base Weight: .50</b> <b>Adder Per Inch of Stroke: .21</b></p>	
<p><b>12□-RP</b></p>  <p><b>\$31.40</b> BASE PRICE Add \$3.30 per inch of stroke</p>	<p><b>Reverse Single Acting – Pivot and Pull Type – Rod Normally Extended – Spring Return – Rear Pivot Mounting</b></p> <p><b>Standard Stroke Lengths:</b> 1/2", 1", 1 1/2", 2", 2 1/2", 3", 4" Maximum Stroke – 6" Optional Stainless Steel Rod <b>Optional Accessories:</b> D-231-1 Piston Rod Clevis D-1360 Pivot Bracket <b>Base Weight: .57</b> <b>Adder Per Inch of Stroke: .21</b></p>	



# 1-1/4" Bore Air Cylinders

MODEL/PRICE	DESCRIPTION/WEIGHT (lbs.)	DIMENSIONS
<p><b>12□-LS or LSC*</b></p>  <p><b>\$78.40</b> BASE PRICE Add \$3.30 per inch of stroke *Add \$1.95 for Conduit Outlet</p>	<p><b>Single Acting – Built-in Midget 3-Way Solenoid Operated Valve – Spring Return – Front Nose Mounting – 150 PSI, 3/64" Orifice</b>  <b>Standard Stroke Lengths:</b>            1/2", 1", 1 1/2", 2", 2 1/2", 3", 4"  <b>Maximum Stroke – 6"</b>            Optional Stainless Steel Rod            Standard Voltage – 115/60  <b>Optional Voltages:</b>            24, 230 A.C. or 6, 12, 24 D.C.  <b>Optional Accessory:</b>            D-241 Mounting Bracket  <b>Base Weight: 1.30</b>  <b>Adder Per Inch of Stroke: .21</b></p>	
<p><b>12□-NRLS or NRLSC*</b></p>  <p><b>\$81.50</b> BASE PRICE Add \$3.30 per inch of stroke *Add \$1.95 for Conduit Outlet</p>	<p><b>Single Acting – Non-rotating Hexagon Piston Rod – Built-in Midget 3-Way Solenoid Operated Valve – Spring Return – Front Nose Mounting – 150 PSI, 3/64" Orifice</b>  <b>Standard Stroke Lengths:</b>            1/2", 1", 1 1/2", 2", 2 1/2", 3", 4"  <b>Maximum Stroke – 6"</b>            Optional Stainless Steel Rod            Standard Voltage – 115/60  <b>Optional Voltages:</b>            24, 230 A.C. or 6, 12, 24 D.C.  <b>Optional Accessory:</b>            D-241 Mounting Bracket  <b>Base Weight: 1.30</b>  <b>Adder Per Inch of Stroke: .21</b></p>	
<p><b>12□-D</b></p>  <p><b>\$28.65</b> BASE PRICE Add \$1.95 per inch of stroke</p>	<p><b>Double Acting – Air Return – Front Nose Mounting</b>  <b>Standard Stroke Lengths:</b>            1/2", 1", 1 1/2", 2", 2 1/2", 3", 4", 5", 6"  <b>Maximum Stroke – 12"</b>            Optional Stainless Steel Rod  <b>Optional Accessory:</b>            D-241 Mounting Bracket  <b>Base Weight: .58</b>  <b>Adder Per Inch of Stroke: .08</b></p>	
<p><b>12□-DP</b></p>  <p><b>\$34.05</b> BASE PRICE Add \$1.95 per inch of stroke</p>	<p><b>Double Acting – Pivot Type – Air Return – Rear Pivot or Double End Mounting</b>  <b>Standard Stroke Lengths:</b>            1/2", 1", 1 1/2", 2", 2 1/2", 3", 4", 5", 6", 7", 8", 9", 10", 11", 12"  <b>Maximum Stroke – 32"</b>            Optional Stainless Steel Rod  <b>Optional Accessories:</b>            D-231-1 Piston Rod Clevis            D-1360 Pivot Brackets            D-241 Mounting Bracket  <b>Base Weight: .71</b>  <b>Adder Per Inch of Stroke: .08</b></p>	

Standard Air Cylinders

Three-Position Cylinders

Cushion Cylinders

MRS® Cylinders

Non-Rotating Air Cylinders

PC Cylinders

All Stainless Repairable

Z Line Air Cylinders


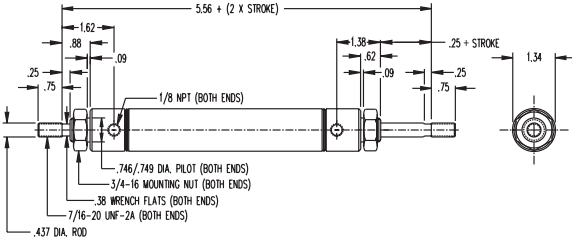

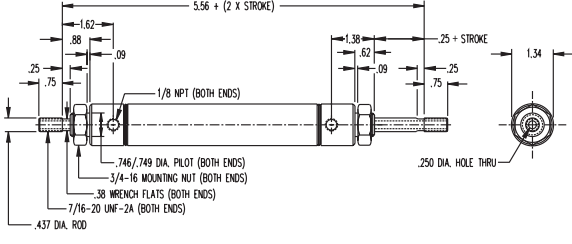
Rod Lock Cylinders

500 Hydraulic Cylinders

Hole Punch Cylinders

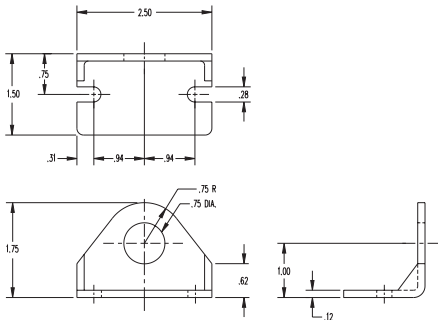


# 1-1/4" Bore Air Cylinders

MODEL/PRICE	DESCRIPTION/WEIGHT (lbs.)	DIMENSIONS
<b>12□-DXDE</b>  <b>\$48.45</b> BASE PRICE Add \$2.85 per inch of stroke	<b>Double Acting – Double End Rod – Air Return – Double End Mounting</b> <b>Standard Stroke Lengths:</b> ½", 1", 1½", 2", 2½", 3", 4", 5", 6", 7", 8", 9", 10", 11", 12" Maximum Stroke – 12" Stainless Steel Rod Standard <b>Optional Accessory:</b> D-241 Mounting Bracket <b>Base Weight: .98</b> <b>Adder Per Inch of Stroke: .12</b>	
<b>12□-DXDEH</b>  <b>\$53.65</b> BASE PRICE Add \$3.05 per inch of stroke	<b>Double Acting – Double End Hollow Rod – Air Return – Double End Mounting</b> <b>Standard Stroke Lengths:</b> ½", 1", 1½", 2", 2½", 3", 4", 5", 6" Maximum Stroke – 12" Stainless Steel Rod Standard <b>Optional Accessory:</b> D-241 Mounting Bracket <b>Base Weight: .97</b> <b>Adder Per Inch of Stroke: .12</b>	

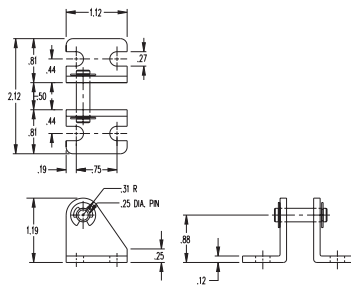
## 1-1/4" Bore Accessories

**D-241**  
\$4.95



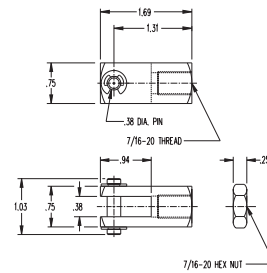
Mounting Bracket  
(for Single & Double Acting Models)

**D-1360**  
\$6.45



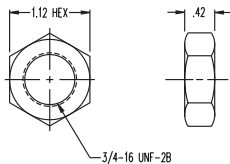
Pivot Brackets

**D-231-1**  
\$5.65



Piston Rod Clevis

**D-3556**  
\$.75



Mounting Nut

# 1-1/2" Bore Air Cylinders

- Ground and Polished, High Strength Carbon Steel Piston Rod Standard – 303 Stainless Steel Rod Optional – Bronze Rod Guide Bushing Standard
- Force Exerted Approximately 1.7 of Air Line Pressure
- Enclosed Spring Force: 7 lbs. Relaxed – 14 lbs. Compressed
- Rod Wipers Available on D, DP, DX, DXDE, and DXDEH Models

## OPTIONS:

### NO CHARGE:

- **MAGNALUBE G (G)**
- **PORTS ROTATED (K)\***

\*Front port rotated 90° on BF models.

- **NO THREAD (NT)**
- **SIDE PORTED REAR HEAD (Q)**

Add .19" to nose mount overall length and DNR; BF and BFT add .38"

- **PIVOT BUSHING (Y)**

.375" ID (use D-620-1 pivot bracket)

### SINGLE AND REVERSE ACTING BUMPERS (B)

- \$3.05 additional
- Add .125" to overall length

### DOUBLE ACTING BUMPERS (B)

- \$4.80 additional
- Add .125 to overall length

\* Front port rotated at 90° on BF model.

### EXTRA EXTENSION (EE)

- Single, reverse and double acting, add \$1.20 per inch of extension
- DXDE, add \$1.85 per inch of extension; extension added to each end
- DXDE hollow rod, add \$1.95 per inch of extension; extension added to each end

### DOUBLE ACTING FAILSAFE

(JS = Spring Return, JR = Spring Extend)

- Add \$10.95 to base price + \$1.45 to stroke adder
- See page 1.65 for overall length adders

**HEAVY SPRINGS (H)** are standard on all single acting block front and block rear mount, and all reverse acting and stroke adjust models.

For all other single acting, add \$2.20

- Spring Force: 8.5 lbs. relaxed – 17 lbs. compressed

## OPTIONS continued...

### MAGNET (prefix M) – Add \$13.75

- Single and reverse acting add .125" to overall length,
- Stainless steel rod becomes standard with this option
- Must specify track(s) for use with miniature position sensing (T2, T3, T4) – add \$2.75 per track. See Related Products, page 8.12 for details.

### LOW TEMPERATURE (N)

Temperature Range: -40° to 200°F

- Single acting add \$1.20
- Reverse acting add \$1.50
- Double acting add \$2.35
- DXDE add \$2.90

### HIGH TEMPERATURE "U" CUPS (V)

Temperature Range: 0° to 400°F (-18° to 205°C)

- Single acting add \$5.50
- Double acting add \$13.75
- DXDE add \$17.55
- Reverse acting add \$9.45

**ROD WIPER (W)** (not available in standard single acting now available in block mount)

- Double acting, add \$2.75
- DXDE, add \$5.50

### MOLYCOATED BODY (F)

- Add \$2.55 per inch of stroke

### NON-LUBE SERVICE (E)

- Single acting add \$4.35
- Double acting add \$9.75
- DXDE add \$13.40

### STAINLESS STEEL ROD (prefix SR)

- Add \$2.75
- Standard on DX, DXDE, DXDEH, DNR, DXNR, All block mounts, and M option

### LOW PRESSURE HYDRAULIC (HL)

- 250 psi maximum
- Double acting models only
- Option specified as a prefix
- Add \$17.50

Enter Stroke Length as 3rd Digit

## MODEL/PRICE

## DESCRIPTION/WEIGHT (lbs.)

## DIMENSIONS

17

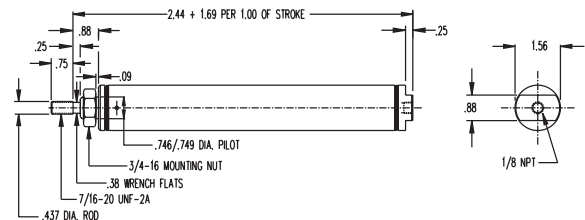


\$25.05

BASE PRICE

Add \$3.80 per inch of stroke

**Single Acting – Spring Return – Front Nose Mounting**  
**Standard Stroke Lengths:**  
 ½", 1", 1½", 2", 2½", 3", 4"  
 Maximum Stroke – 6"  
 Optional Stainless Steel Rod  
 Optional Accessory:  
 D-241 Mounting Bracket  
**Base Weight: .44**  
**Adder Per Inch of Stroke: .22**



17 -NR

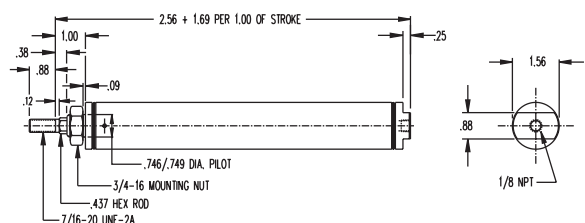


\$27.60

BASE PRICE

Add \$3.80 per inch of stroke

**Single Acting – Non-rotating Hexagon Rod – Spring Return – Front Nose Mounting**  
**Standard Stroke Lengths:**  
 ½", 1", 1½", 2", 2½", 3", 4"  
 Maximum Stroke – 6"  
 Optional Stainless Steel Rod  
 Optional Accessory:  
 D-241 Mounting Bracket  
**Base Weight: .45**  
**Adder Per Inch of Stroke: .22**



See page 1.8 for length calculation of fractional stroke for single acting cylinders

All prices are F.O.B. Monee, Illinois and are subject to change without notice

1.45

For Technical Assistance: 800-442-4622

Standard Air Cylinders

Three-Position Cylinders

Cushion Cylinders

MRS® Cylinders

Non-Rotating Air Cylinders

PC Cylinders

All Stainless Repairable


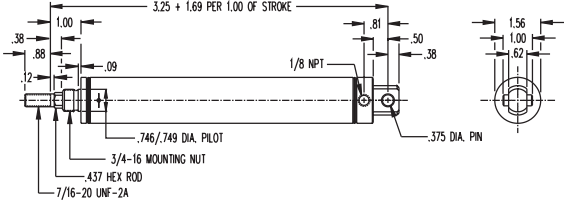

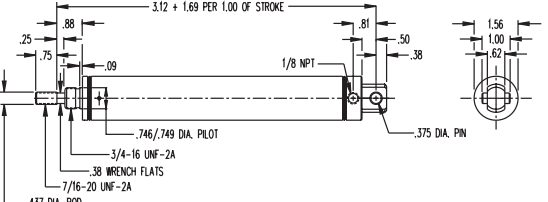

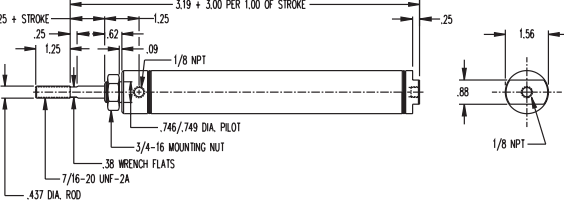

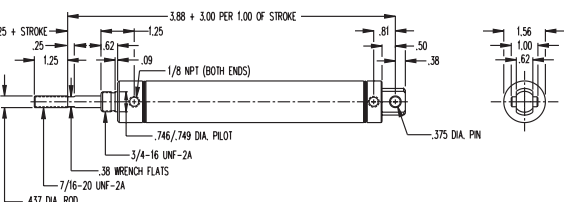
Z-Line Air Cylinders

Rod Lock Cylinders


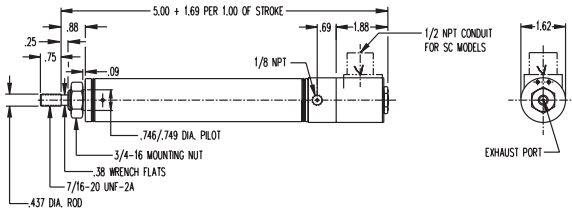

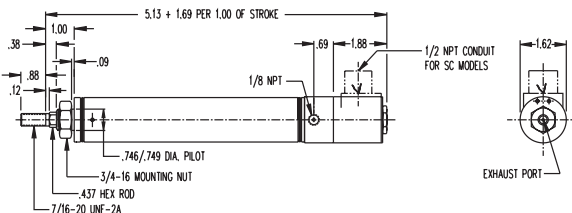

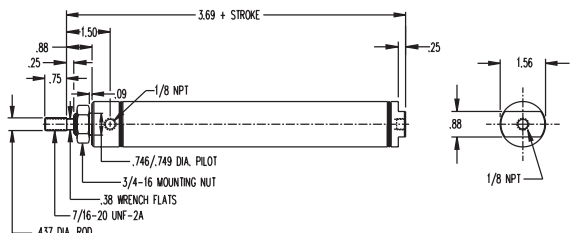

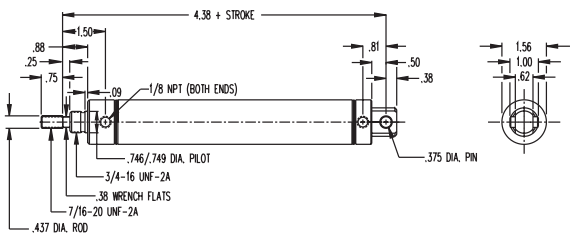
500 Hydraulic Cylinders

Hole Punch Cylinders

# 1-1/2" Bore Air Cylinders

MODEL/PRICE	DESCRIPTION/WEIGHT (lbs.)	DIMENSIONS
<p><b>17□-NRP</b></p>  <p><b>\$31.85</b> BASE PRICE Add \$3.80 per inch of stroke</p>	<p><b>Single Acting – Non-rotating Hexagon Rod – Spring Return – Rear Pivot Mounting</b>  <b>Standard Stroke Lengths:</b>            ½", 1", 1½", 2", 2½", 3", 4"  <b>Maximum Stroke – 6"</b>  <b>Optional Stainless Steel Rod</b>  <b>Optional Accessories:</b>            D-231-1 Piston Rod Clevis            D-229 Pivot Brackets  <b>Base Weight: .46</b>  <b>Adder Per Inch of Stroke: .22</b></p>	
<p><b>17□-P</b></p>  <p><b>\$29.55</b> BASE PRICE Add \$3.80 per inch of stroke</p>	<p><b>Single Acting – Pivot Type – Spring Return – Rear Pivot Mounting</b>  <b>Standard Stroke Lengths:</b>            ½", 1", 1½", 2", 2½", 3", 4"  <b>Maximum Stroke – 6"</b>  <b>Optional Stainless Steel Rod</b>  <b>Optional Accessories:</b>            D-231-1 Piston Rod Clevis            D-229 Pivot Brackets  <b>Base Weight: .45</b>  <b>Adder Per Inch of Stroke: .22</b></p>	
<p><b>17□-R</b></p>  <p><b>\$31.10</b> BASE PRICE Add \$3.80 per inch of stroke</p>	<p><b>Reverse Single Acting – Pull Type – Rod Normally Extended – Spring Return – Spring Force 8.5 lbs. Extended, 17 lbs. Retracted – Front Nose Mounting</b>  <b>Standard Stroke Lengths:</b>            ½", 1", 1½", 2", 2½", 3", 4"  <b>Maximum Stroke – 6"</b>  <b>Optional Stainless Steel Rod</b>  <b>Optional Accessory:</b>            D-241 Mounting Bracket  <b>Base Weight: .44</b>  <b>Adder Per Inch of Stroke: .22</b></p>	
<p><b>17□-RP</b></p>  <p><b>\$35.35</b> BASE PRICE Add \$3.80 per inch of stroke</p>	<p><b>Reverse Single Acting – Pivot and Pull Type – Rod Normally Extended – Spring Return – Spring Force 8.5 lbs. Extended, 17 lbs. Retracted – Rear Pivot Mounting</b>  <b>Standard Stroke Lengths:</b>            ½", 1", 1½", 2", 2½", 3", 4"  <b>Maximum Stroke – 6"</b>  <b>Optional Stainless Steel Rod</b>  <b>Optional Accessories:</b>            D-231-1 Piston Rod Clevis            D-229 Pivot Brackets  <b>Base Weight: .45</b>  <b>Adder Per Inch of Stroke: .22</b></p>	

# 1-1/2" Bore Air Cylinders

MODEL/PRICE	DESCRIPTION/WEIGHT (lbs.)	DIMENSIONS
<p><b>17□-S or SC*</b></p>  <p><b>\$81.75</b> BASE PRICE Add \$3.80 per inch of stroke *Add \$2.55 for Conduit Outlet</p>	<p><b>Single Acting</b> – Built-in 3-Way Solenoid Operated Valve – Spring Return – Front Nose Mounting – 100 PSI, 1/16" Orifice Standard – 150 PSI, 3/64" Orifice Optional  <b>Standard Stroke Lengths:</b>            1/2", 1", 1 1/2", 2", 2 1/2", 3", 4"            Maximum Stroke – 6"            Optional Stainless Steel Rod            Standard Voltage – 115/60  <b>Optional Voltages:</b>            24, 230 A.C. or 6, 12, 24 D.C.  <b>Optional Accessory:</b>            D-241 Mounting Bracket  <b>Base Weight:</b> 1.38  <b>Adder Per Inch of Stroke:</b> .22</p>	
<p><b>17□-NRS or NRSC*</b></p>  <p><b>\$84.65</b> BASE PRICE Add \$3.80 per inch of stroke *Add \$2.55 for Conduit Outlet</p>	<p><b>Single Acting</b> – Non-rotating Piston Rod – Built-in 3-Way Solenoid Operated Valve – Spring Return – Front Nose Mounting – 100 PSI, 1/16" Orifice Standard – 150 PSI, 3/64" Orifice Optional  <b>Standard Stroke Lengths:</b>            1/2", 1", 1 1/2", 2", 2 1/2", 3", 4"            Maximum Stroke – 6"            Optional Stainless Steel Rod            Standard Voltage – 115/60  <b>Optional Voltages:</b>            24, 230 A.C. or 6, 12, 24 D.C.  <b>Optional Accessory:</b>            D-241 Mounting Bracket  <b>Base Weight:</b> 1.38  <b>Adder Per Inch of Stroke:</b> .22</p>	
<p><b>17□-D</b></p>  <p><b>\$30.55</b> BASE PRICE Add \$2.35 per inch of stroke</p>	<p><b>Double Acting</b> – Air Return – Front Nose Mounting  <b>Standard Stroke Lengths:</b>            1/2", 1", 1 1/2", 2", 2 1/2", 3", 4", 5", 6"            Maximum Stroke – 12"            Optional Stainless Steel Rod            Optional Rod Wiper  <b>Optional Accessory:</b>            D-241 Mounting Bracket  <b>Base Weight:</b> .69  <b>Adder Per Inch of Stroke:</b> .08</p>	
<p><b>17□-DP</b></p>  <p><b>\$34.95</b> BASE PRICE Add \$2.35 per inch of stroke</p>	<p><b>Double Acting</b> – Pivot Type – Air Return – Rear Pivot Mounting  <b>Standard Stroke Lengths:</b>            1/2", 1", 1 1/2", 2", 2 1/2", 3", 4", 5", 6", 7", 8", 9", 10", 11", 12"            Maximum Stroke – 32"            Optional Stainless Steel Rod            Optional Rod Wiper  <b>Optional Accessories:</b>            D-231-1 Piston Rod Clevis            D-229 Pivot Brackets  <b>Base Weight:</b> .73  <b>Adder Per Inch of Stroke:</b> .08</p>	

Standard Air Cylinders

Three-Position Cylinders

Cushion Cylinders

MRS® Cylinders

Non-Rotating Air Cylinders

PC Cylinders

All Stainless Repairable


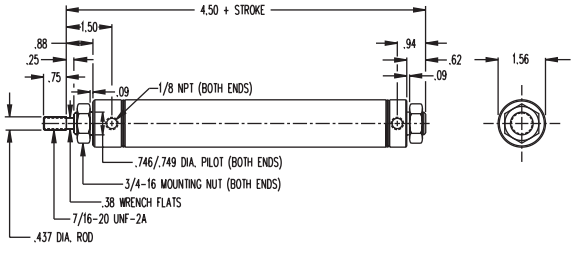

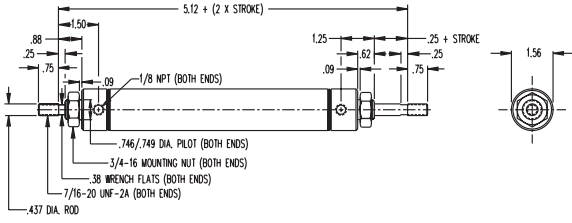

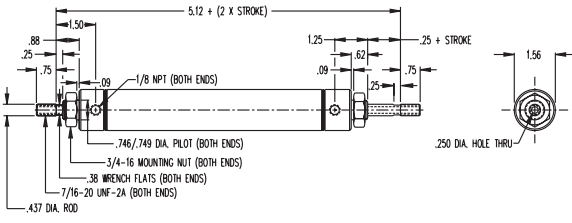
Z Line Air Cylinders

Rod Lock Cylinders

500 Hydraulic Cylinders


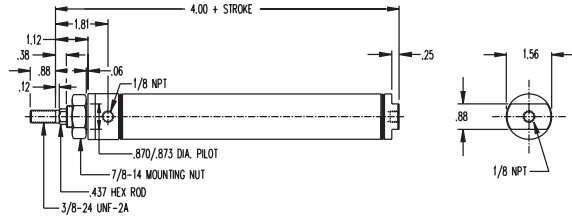
Hole Punch Cylinders

# 1-1/2" Bore Air Cylinders

MODEL/PRICE	DESCRIPTION/WEIGHT (lbs.)	DIMENSIONS
<p><b>17□-DX</b></p>  <p><b>\$37.20</b> BASE PRICE Add \$2.35 per inch of stroke</p>	<p><b>Double Acting – Double End Mounting – Air Return</b> Standard Stroke Lengths: ½", 1", 1½", 2", 2½", 3", 4", 5", 6", 7", 8", 9", 10", 11", 12" Maximum Stroke – 32" Stainless Steel Rod Standard Optional Rod Wiper Optional Accessory: D-241 Mounting Bracket Base Weight: .82 Adder Per Inch of Stroke: .08</p>	
<p><b>17□-DXDE</b></p>  <p><b>\$49.15</b> BASE PRICE Add \$3.70 per inch of stroke</p>	<p><b>Double Acting – Double End Rod – Air Return – Double End Mounting</b> Standard Stroke Lengths: ½", 1", 1½", 2", 2½", 3", 4", 5", 6" Maximum Stroke – 12" Stainless Steel Rod Standard Optional Rod Wiper Optional Accessory: D-241 Mounting Bracket Base Weight: 1.17 Adder Per Inch of Stroke: .13</p>	
<p><b>17□-DXDEH</b></p>  <p><b>\$56.70</b> BASE PRICE Add \$3.90 per inch of stroke</p>	<p><b>Double Acting – Double End Hollow Rod – Air Return – Double End Mounting</b> Standard Stroke Lengths: ½", 1", 1½", 2", 2½", 3", 4", 5", 6" Maximum Stroke – 12" Stainless Steel Rod Standard Optional Rod Wiper Optional Accessory: D-241 Mounting Bracket Base Weight: 1.16 Adder Per Inch of Stroke: .13</p>	

## 1-1/2" Bore Double Acting, Non-Rotating Rod Repair Parts


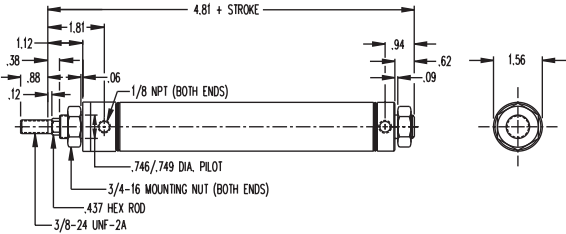

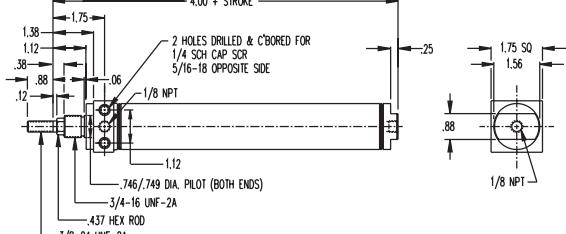

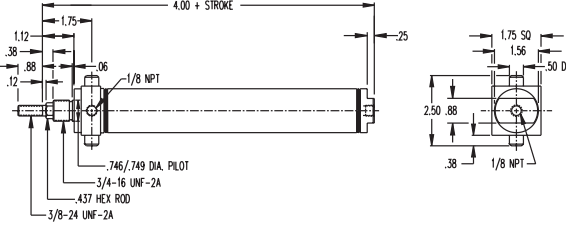
Rod Seal	Rod Bearing	DXNR Rod Guide	DNR Rod Guide 7/8-14 mounting threads
<b>D-2500</b> \$1.80	<b>D-2501</b> \$1.45	<b>D-1117</b> \$7.95	<b>D-2509</b> \$7.85

MODEL/PRICE	DESCRIPTION/WEIGHT (lbs.)	DIMENSIONS
<p><b>17□-DNR</b></p>  <p><b>\$57.50</b> BASE PRICE Add \$2.75 per inch of stroke</p>	<p><b>Double Acting – Non-rotating Hexagon Rod – Front Nose Mounting – Air Return</b> Standard Stroke Lengths: ½", 1", 1½", 2", 2½", 3", 4", 5", 6" Maximum Stroke – 12" Stainless Steel Rod Standard Optional Accessory: D-2669 Mounting Bracket Base Weight: .77 Adder Per Inch of Stroke: .09</p>	


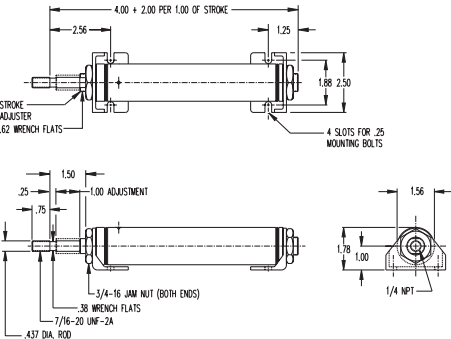


# 1-1/2" Bore Air Cylinders

## 1-1/2" Bore Double Acting, Non-Rotating Rod (continued)

MODEL/PRICE	DESCRIPTION/WEIGHT (lbs.)	DIMENSIONS
<b>17□-DXNR</b>  <b>\$63.80</b> BASE PRICE Add \$2.75 per inch of stroke	<b>Double Acting – Non-rotating Hexagon Rod – Double End Mounting – Air Return</b> <b>Standard Stroke Lengths:</b> ½", 1", 1½", 2", 2½", 3", 4", 5", 6" Maximum Stroke – 12" Stainless Steel Rod Standard <b>Optional Accessories:</b> D-241 Mounting Bracket D-8310-A Rod Clevis Base Weight: .87 Adder Per Inch of Stroke: .08	
<b>BF-17□-DNR</b>  <b>\$65.05</b> BASE PRICE Add \$2.75 per inch of stroke	<b>Double Acting – Non-rotating Hexagon Rod – Front Block Mounting – Air Return</b> <b>Standard Stroke Lengths:</b> ½", 1", 1½", 2", 2½", 3", 4", 5", 6" Maximum Stroke – 12" Stainless Steel Rod Standard <b>Optional Accessory:</b> D-8310-A Rod Clevis Base Weight: .71 Adder Per Inch of Stroke: .09	
<b>BFT-17□-DNR</b>  <b>\$73.30</b> BASE PRICE Add \$2.75 per inch of stroke	<b>Double Acting – Non-rotating Hexagon Rod – Front Trunnion Mounting – Air Return</b> <b>Standard Stroke Lengths:</b> ½", 1", 1½", 2", 2½", 3", 4", 5", 6" Maximum Stroke – 12" Stainless Steel Rod Standard <b>Optional Accessories:</b> TRB-2 Trunnion Brackets D-8310-A Rod Clevis Base Weight: .78 Adder Per Inch of Stroke: .09	


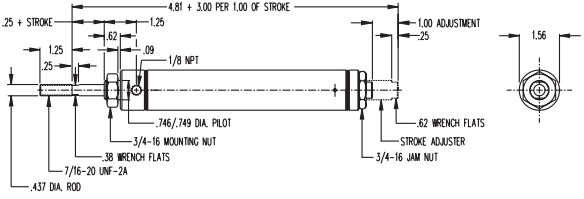

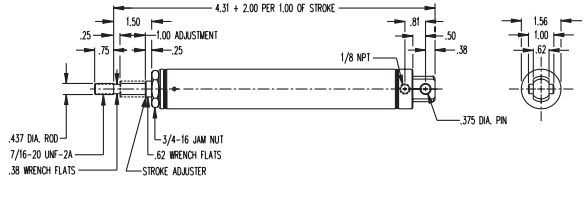
## 1-1/2" Bore Adjustable Stroke

MODEL/PRICE	DESCRIPTION/WEIGHT (lbs.)	DIMENSIONS
<b>17□-A</b>  <b>\$47.90</b> BASE PRICE Add \$3.80 per inch of stroke	<b>Single Acting – Spring Return – Adjustable Stroke – Double End Mounting – Brass Piston Rod Bearing and Stroke Adjustment in 1" increments to 3". Mounting Brackets are included.</b> 1" Stroke Adjusts 0" to 1", 2" Stroke 1" to 2", 3" Stroke 2" to 3" Maximum Stroke – 6" Optional Stainless Steel Rod Base Weight: .75 Adder Per Inch of Stroke: .25	


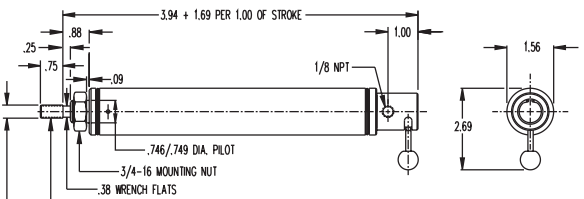

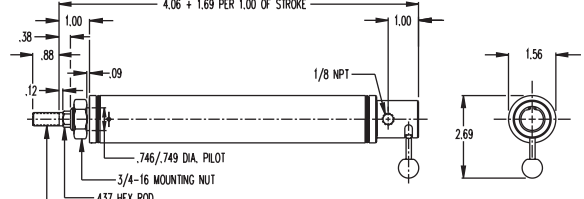
- Standard Air Cylinders
- Three-Position Cylinders
- Cushion Cylinders
- MRS® Cylinders
- Non-Rotating Air Cylinders
- PC Cylinders
- All Stainless Repairable
- 2 Line Air Cylinders
- Rod Lock Cylinders
- 500 Hydraulic Cylinders
- Hole Punch Cylinders

# 1-1/2" Bore Air Cylinders

## 1-1/2" Bore Adjustable Stroke (continued)


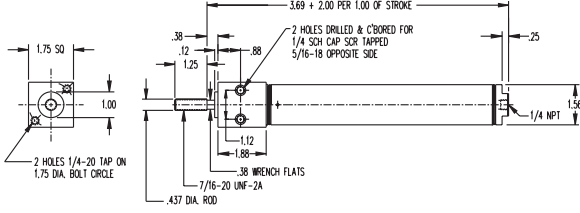

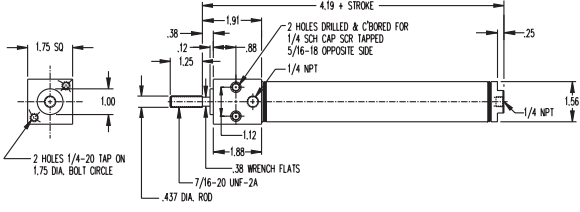

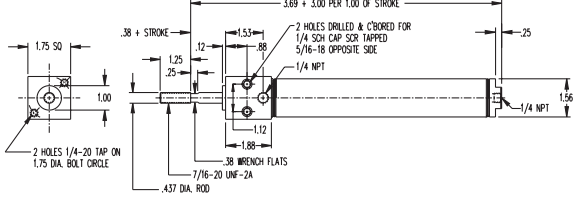

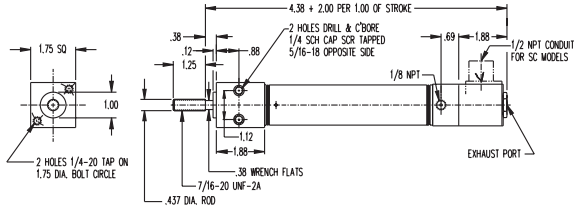

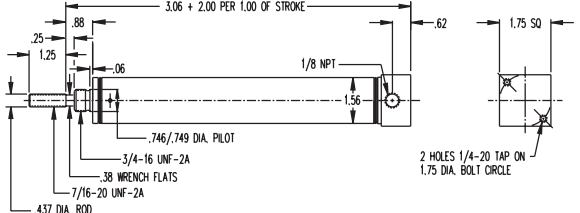
MODEL/PRICE	DESCRIPTION/WEIGHT (lbs.)	DIMENSIONS
<p><b>17□-RA</b></p>  <p><b>\$48.80</b> BASE PRICE Add \$3.80 per inch of stroke</p>	<p><b>Reverse Single Acting – Pull Type – Rod Normally Extended – Nose Mounting – Stroke Adjustment in 1" increments to 3".</b>  <b>1" Stroke Adjusts 0" to 1", 2" Stroke 1" to 2", 3" Stroke 2" to 3"</b>                      Maximum Stroke – 6"                      Optional Stainless Steel Rod                      Optional Accessory:                      D-241 Mounting Bracket                      Base Weight: .50                      Adder Per Inch of Stroke: .25</p>	
<p><b>17□-AP</b></p>  <p><b>\$46.55</b> BASE PRICE Add \$3.80 per inch of stroke</p>	<p><b>Single Acting – Pivot Type – Rear Pivot Mounting – Stroke Adjustment in 1" increments to 3".</b>  <b>1" Stroke Adjusts 0" to 1", 2" Stroke 1" to 2", 3" Stroke 2" to 3"</b>                      Maximum Stroke – 6"                      Optional Stainless Steel Rod                      Optional Accessories:                      D-231-1 Piston Rod Clevis                      D-229 Pivot Brackets                      Base Weight: .50                      Adder Per Inch of Stroke: .25</p>	

## 1-1/2" Bore Built-In Manual Valve

MODEL/PRICE	DESCRIPTION/WEIGHT (lbs.)	DIMENSIONS
<p><b>17□-M</b></p>  <p><b>\$62.50</b> BASE PRICE Add \$3.80 per inch of stroke</p>	<p><b>Single Acting – Built-in 3-Way Manual Valve – Spring Return – Front Nose Mounting</b>  <b>Standard Stroke Lengths:</b>                      1/2", 1", 1 1/2", 2", 2 1/2", 3", 4"                      Maximum Stroke – 6"                      Optional Stainless Steel Rod                      Optional Accessory:                      D-241 Mounting Bracket                      Base Weight: .75                      Adder Per Inch of Stroke: .22</p>	
<p><b>17□-NRM</b></p>  <p><b>\$65.00</b> BASE PRICE Add \$3.80 per inch of stroke</p>	<p><b>Single Acting – Built-in 3-Way Manual Valve – Non-rotating Hexagon Rod – Spring Return</b>  <b>Standard Stroke Lengths:</b>                      1/2", 1", 1 1/2", 2", 2 1/2", 3", 4"                      Maximum Stroke – 6"                      Optional Stainless Steel Rod                      Optional Accessory:                      D-241 Mounting Bracket                      Base Weight: .75                      Adder Per Inch of Stroke: .22</p>	

# 1-1/2" Bore Air Cylinders


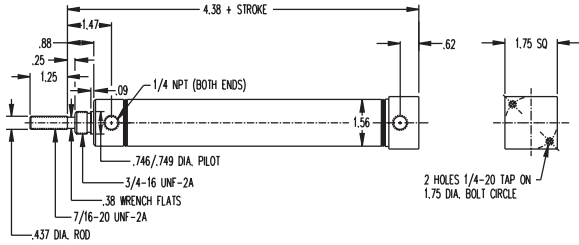

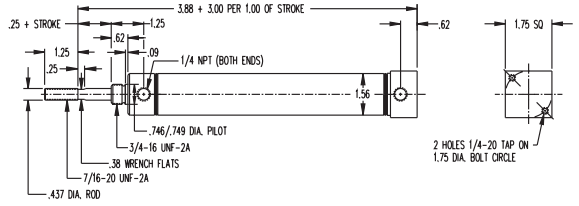
## 1-1/2" Bore Block Mounted · Spring Force: 8.5 lbs. Retracted, 17 lbs. Extended

MODEL/PRICE	DESCRIPTION/WEIGHT (lbs.)	DIMENSIONS
<b>BF-17</b>  <b>\$42.45</b> BASE PRICE Add \$3.90 per inch of stroke	<b>Single Acting – Front Block Mounting – Spring Return</b> <b>Standard Stroke Lengths:</b> ½", 1", 1½", 2", 2½", 3", 4" Maximum Stroke – 6" Stainless Steel Rod Standard Base Weight: .99 Adder Per Inch of Stroke: .22	
<b>BF-17-D</b>  <b>\$47.75</b> BASE PRICE Add \$2.35 per inch of stroke	<b>Double Acting – Front Block Mounting – Air Return</b> <b>Standard Stroke Lengths:</b> ½", 1", 1½", 2", 2½", 3", 4", 5", 6" Maximum Stroke – 12" Stainless Steel Rod Standard Base Weight: .99 Adder Per Inch of Stroke: .08	
<b>BF-17-R</b>  <b>\$47.80</b> BASE PRICE Add \$3.90 per inch of stroke	<b>Pull Type – Front Block Mounting – Rod Normally Extended – Reverse Single Acting – Spring Return</b> <b>Standard Stroke Lengths:</b> ½", 1", 1½", 2", 2½", 3", 4" Maximum Stroke – 6" Stainless Steel Rod Standard Base Weight: .96 Adder Per Inch of Stroke: .22	
<b>BF-17-S or SC*</b>  <b>\$98.80</b> BASE PRICE Add \$3.90 per inch of stroke *Add \$2.55 for conduit outlet	<b>Built-in 3-Way Solenoid Operated Valve – Single Acting – Spring Return – Front Block Mounting – 100 PSI, 1/16" Orifice Standard – 150 PSI, 3/64" Orifice Optional</b> <b>Standard Stroke Lengths:</b> ½", 1", 1½", 2", 2½", 3", 4" Maximum Stroke – 6" Stainless Steel Rod Standard Standard Voltage –115/60 Optional Voltages: 24, 230 A.C. or 6, 12, 24 D.C. Base Weight: 1.90 Adder Per Inch of Stroke: .22	
<b>BR-17</b>  <b>\$36.10</b> BASE PRICE Add \$3.90 per inch of stroke	<b>Single Acting – Rear Block Mounting for Vertical Positioning – Spring Return</b> <b>Standard Stroke Lengths:</b> ½", 1", 1½", 2", 2½", 3", 4" Maximum Stroke – 6" Stainless Steel Rod Standard Base Weight: .87 Adder Per Inch of Stroke: .08	


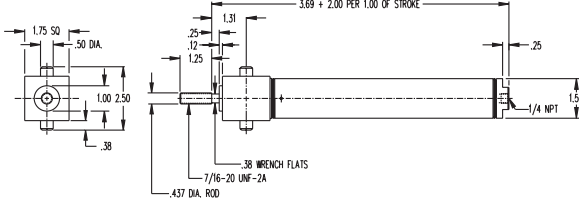

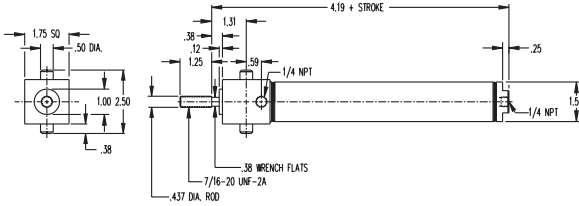

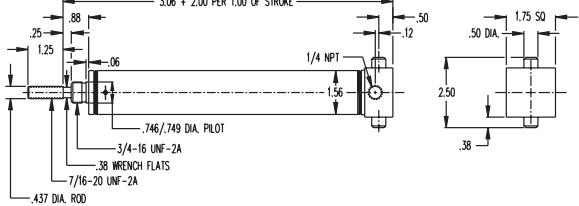
- Standard Air Cylinders
- Three-Position Cylinders
- Cushion Cylinders
- MRS® Cylinders
- Non-Rotating Air Cylinders
- PC Cylinders
- All Stainless Repairable
- Z Line Air Cylinders
- Rod Lock Cylinders
- 500 Hydraulic Cylinders
- Hole Punch Cylinders

# 1-1/2" Bore Air Cylinders

## 1-1/2" Bore Block Mounted (continued)


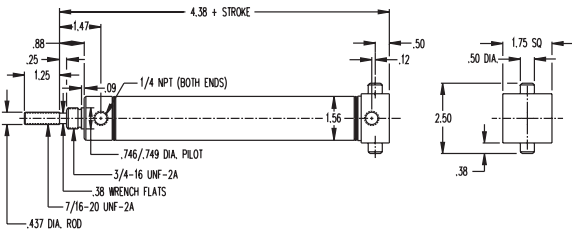
MODEL/PRICE	DESCRIPTION/WEIGHT (lbs.)	DIMENSIONS
<p><b>BR-17</b> □ -D</p>  <p><b>\$42.00</b> BASE PRICE Add \$2.35 per inch of stroke</p>	<p><b>Double Acting – Rear Block Mounting for Vertical Positioning – Air Return</b> Standard Stroke Lengths: ½", 1", 1½", 2", 2½", 3", 4", 5", 6" Maximum Stroke – 12" Stainless Steel Rod Standard Base Weight: .87 Adder Per Inch of Stroke: .08</p>	
<p><b>BR-17</b> □ -R</p>  <p><b>\$42.65</b> BASE PRICE Add \$3.90 per inch of stroke</p>	<p><b>Pull Type – Rear Block Mounting for Vertical Positioning – Rod Normally Extended – Reverse Single Acting – Spring Return</b> Standard Stroke Lengths: ½", 1", 1½", 2", 2½", 3", 4" Maximum Stroke – 6" Stainless Steel Rod Standard Base Weight: .90 Adder Per Inch of Stroke: .10</p>	

## 1-1/2" Bore Trunnion Mounted • Spring Force: 8.5 lbs. Retracted, 17 lbs. Extended

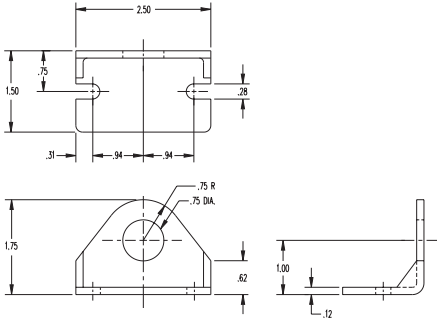
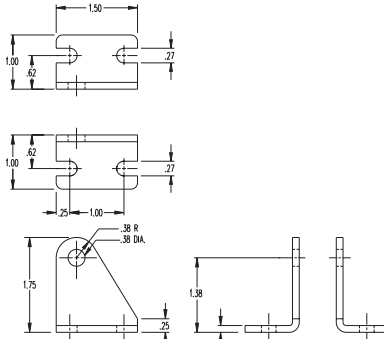
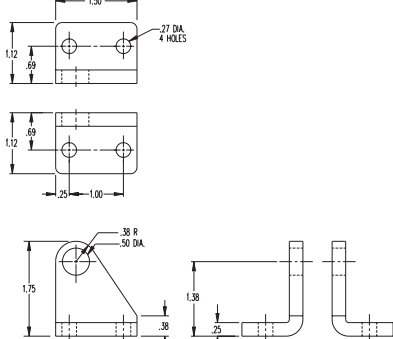
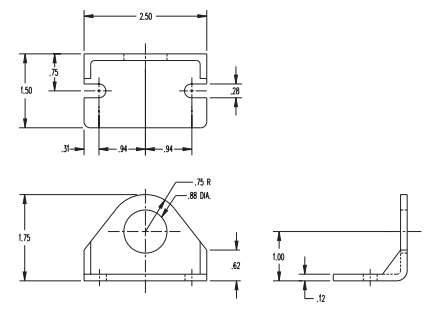
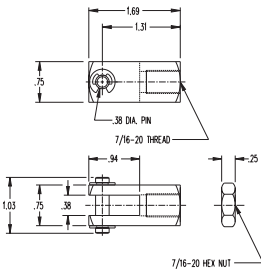
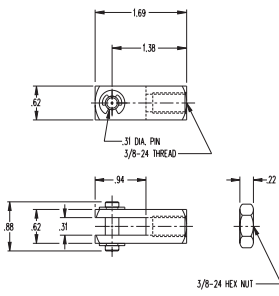
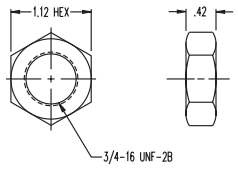
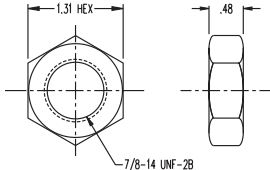
MODEL/PRICE	DESCRIPTION/WEIGHT (lbs.)	DIMENSIONS
<p><b>BFT-17</b> □</p>  <p><b>\$51.05</b> BASE PRICE Add \$3.90 per inch of stroke</p>	<p><b>Single Acting – Front Block Trunnion Mounting – Spring Return</b> Standard Stroke Lengths: ½", 1", 1½", 2", 2½", 3", 4" Maximum Stroke – 6" Stainless Steel Rod Standard Optional Accessories: TRB-2 Trunnion Brackets D-231-1 Rod Clevis Base Weight: 1.20 Adder Per Inch of Stroke: .22</p>	
<p><b>BFT-17</b> □ -D</p>  <p><b>\$56.80</b> BASE PRICE Add \$2.35 per inch of Stroke</p>	<p><b>Double Acting – Front Block Trunnion Mounting – Air Return</b> Standard Stroke Lengths: ½", 1", 1½", 2", 2½", 3", 4" Maximum Stroke – 12" Stainless Steel Rod Standard Optional Accessories: TRB-2 Trunnion Brackets D-231-1 Rod Clevis Base Weight: 1.06 Adder Per Inch of Stroke: .08</p>	
<p><b>BRT-17</b> □</p>  <p><b>\$44.25</b> BASE PRICE Add \$3.90 per inch of stroke</p>	<p><b>Single Acting – Rear Block Trunnion Mounting – Spring Return</b> Standard Stroke Lengths: ½", 1", 1½", 2", 2½", 3", 4" Maximum Stroke – 6" Stainless Steel Rod Standard Optional Accessories: TRB-2 Trunnion Brackets D-231-1 Rod Clevis Base Weight: 1.06 Adder Per Inch of Stroke: .22</p>	

# 1-1/2" Bore Air Cylinders

## 1-1/2" Bore Trunnion Mounted (continued)

MODEL/PRICE	DESCRIPTION/WEIGHT (lbs.)	DIMENSIONS
<p><b>BRT-17</b> □ -D</p>  <p><b>\$50.80</b> BASE PRICE Add \$2.35 per inch of stroke</p>	<p><b>Double Acting – Rear Block Trunnion Mounting – Air Return</b>  <b>Standard Stroke Lengths:</b>                      1/2", 1", 1 1/2", 2", 2 1/2", 3", 4"  <b>Maximum Stroke – 12"</b>                      Stainless Steel Rod Standard  <b>Optional Accessories:</b>                      TRB-2 Trunnion Brackets                      D-231-1 Rod Clevis                      Base Weight: .91                      Adder Per Inch of Stroke: .08</p>	

## 1-1/2" Bore Accessories

<p><b>D-241</b> \$4.95</p>  <p>Mounting Bracket</p>	<p><b>D-229</b> \$6.35</p>  <p>Pivot Bracket</p>	<p><b>TRB-2</b> \$10.75</p>  <p>Trunnion Brackets</p>
<p><b>D-2669</b> \$4.00</p>  <p>Mounting Bracket</p>	<p><b>D-231-1</b> \$5.65</p>  <p>Piston Rod Clevis</p>	<p><b>D-8310-A</b> \$6.25</p>  <p>Rod Clevis</p>
<p><b>D-3556</b> \$.75</p>  <p>Mounting Nut</p>	<p><b>D-2545</b> \$1.10</p>  <p>Mounting Nut</p>	

**Note:** For stainless steel accessories see page 1.99 and 1.102-1.103.  
 Mounting bracket not available in stainless steel.

Standard Air Cylinders

Three-Position Cylinders

Cushion Cylinders

MRS® Cylinders

Non-Rotating Air Cylinders

PC Cylinders

All Stainless Steel Repairable

Z Line Air Cylinders

Rod Lock Cylinders

500 Hydraulic Cylinders

Hole Punch Cylinders



# 1-3/4" Bore Air Cylinders

- Ground and Polished, High Strength Carbon Steel Piston Rod Standard – 303 Stainless Steel Rod Available as an Option – Bronze Rod Guide Bushing Standard
- Force Exerted Approximately 2.4 of Air Line Pressure
- Enclosed Spring Force: 11 lbs. Relaxed – 24 lbs. Compressed
- Cushion Quiet Bumpers Standard

## OPTIONS:

### NO CHARGE:

- **MAGNALUBE G (G)**
- **PORTS ROTATED (K)**
- **NO THREAD (NT)**
- **SIDE PORTED REAR HEAD (Q)**  
Add .56" to nose mount overall length.
- **PIVOT BUSHING (Y)**  
.375" ID

### EXTRA EXTENSION (EE)

- Single, reverse and double acting, add \$1.20 per inch of extension
- DXDE, add \$1.75 per inch of extension; extension added to each end
- DXDE hollow rod, add \$1.85 per inch of extension; extension added to each end

### DOUBLE ACTING FAILSAFE

- (JS = Spring Return, JR = Spring Extend)
- Add \$10.95 to base price + \$1.45 to stroke adder
- See page 1.65 for overall length adders

Enter Stroke Length as 3rd Digit

## OPTIONS continued...

### MAGNET (prefix M) – Add \$13.75

- Single and reverse acting add .125" to overall length,
- Stainless steel rod becomes standard with this option
- Must specify track(s) for use with miniature position sensing (T2, T3, T4) – add \$2.75 per track. See Related Products, page 8.12 for details.

### LOW TEMPERATURE (N)

Temperature Range: -40° to 200°F

- Single acting add \$1.20
- Reverse acting add \$1.50
- Double acting add \$2.35
- DXDE add \$2.90

### HIGH TEMPERATURE "U" CUPS (V)

Temperature Range: 0° to 400°F (-18° to 205°C)

- Single acting add \$7.20
- Double acting add \$17.55
- DXDE add \$23.25
- Reverse acting add \$13.10

### MOLYCOATED BODY (F)

- Add \$2.55 per inch of stroke

### NON-LUBE SERVICE (E)

- Single acting add \$4.35
- Double acting add \$9.75
- DXDE add \$13.40

### ROD WIPER (W)

(not available in standard single acting)

- Add \$2.75

### STAINLESS STEEL ROD (prefix SR)

- Add \$3.75
- Standard on DXDE, DXDEH

### LOW PRESSURE HYDRAULIC (HL)

- 250 psi maximum
- Double acting models only
- Option specified as a prefix
- Add \$17.50

## MODEL/PRICE

## DESCRIPTION/WEIGHT (lbs.)

## DIMENSIONS

24

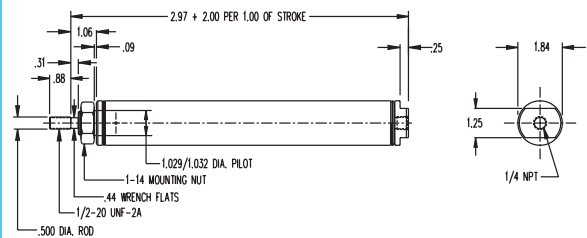


**\$39.05**

**BASE PRICE**

Add \$4.75 per inch of stroke

**Single Acting – Spring Return – Front Nose Mounting**  
**Standard Stroke Lengths:**  
 ½", 1", 1½", 2", 2½", 3", 4"  
 Maximum Stroke – 6"  
 Optional Stainless Steel Rod  
**Optional Accessory:**  
 C-1337 Mounting Bracket  
**Base Weight:** .85  
**Adder Per Inch of Stroke:** .36



24 -NR

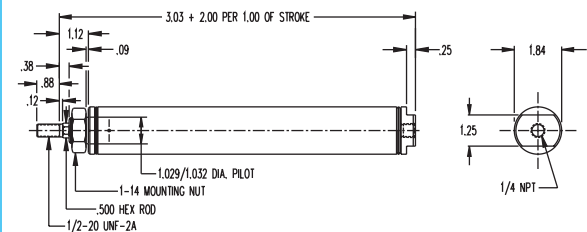


**\$42.30**

**BASE PRICE**


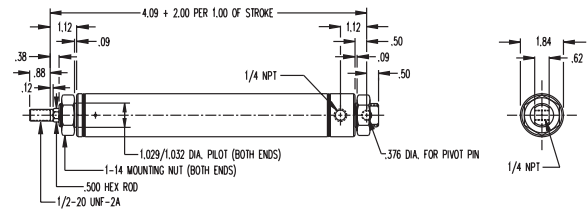

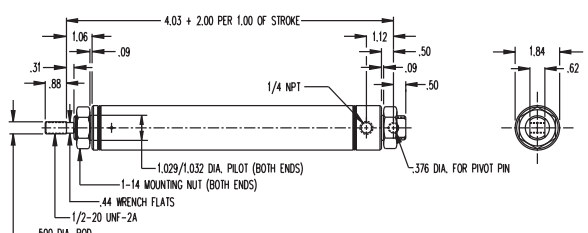

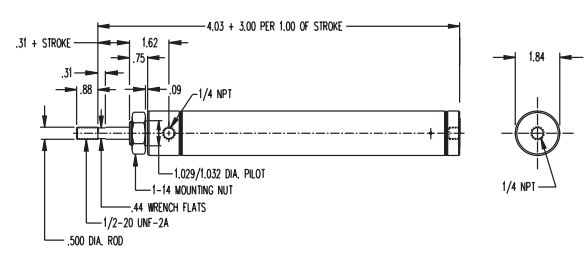

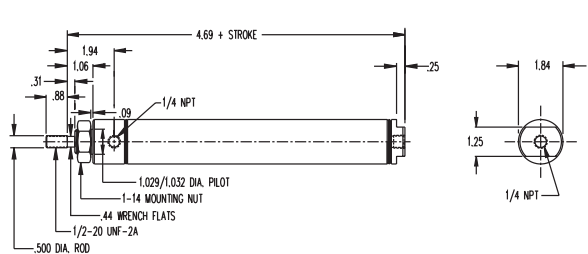
Add \$4.75 per inch of stroke

**Single Acting – Non-rotating Hexagon Rod – Spring Return – Front Nose Mounting**  
**Standard Stroke Lengths:**  
 ½", 1", 1½", 2", 2½", 3", 4"  
 Maximum Stroke – 6"  
 Optional Stainless Steel Rod  
**Optional Accessory:**  
 C-1337 Mounting Bracket  
**Base Weight:** .86  
**Adder Per Inch of Stroke:** .36



See page 1.8 for length calculation of fractional stroke for single acting cylinders

# 1-3/4" Bore Air Cylinders

MODEL/PRICE	DESCRIPTION/WEIGHT (lbs.)	DIMENSIONS
<p><b>24□-NRP</b></p>  <p><b>\$47.95</b> BASE PRICE Add \$4.75 per inch of stroke</p>	<p><b>Single Acting – Non-rotating Hexagon Rod – Pivot Type – Spring Return – Rear Pivot or Double End Mounting</b>  <b>Standard Stroke Lengths:</b>            ½", 1", 1½", 2", 2½", 3", 4"  <b>Maximum Stroke – 6"</b>  <b>Optional Stainless Steel Rod</b>  <b>Optional Accessories:</b>            D-231-3 Piston Rod Clevis            D-620-1 Pivot Brackets            C-1337 Mounting Bracket  <b>Base Weight: .86</b>  <b>Adder Per Inch of Stroke: .36</b></p>	
<p><b>24□-P</b></p>  <p><b>\$44.70</b> BASE PRICE Add \$4.75 per inch of stroke</p>	<p><b>Single Acting – Pivot Type – Spring Return – Rear Pivot or Double End Mounting</b>  <b>Standard Stroke Lengths:</b>            ½", 1", 1½", 2", 2½", 3", 4"  <b>Maximum Stroke – 6"</b>  <b>Optional Stainless Steel Rod</b>  <b>Optional Accessories:</b>            D-231-3 Piston Rod Clevis            D-620-1 Pivot Brackets            C-1337 Mounting Bracket  <b>Base Weight: .86</b>  <b>Adder Per Inch of Stroke: .36</b></p>	
<p><b>24□-R</b></p>  <p><b>\$47.15</b> BASE PRICE Add \$4.75 per inch of stroke</p>	<p><b>Reverse Single Acting – Pull Type – Rod Normally Extended – Spring Return – Front Nose Mounting</b>  <b>Standard Stroke Lengths:</b>            ½", 1", 1½", 2", 2½", 3", 4"  <b>Maximum Stroke – 6"</b>  <b>Optional Stainless Steel Rod</b>  <b>Optional Accessory:</b>            C-1337 Mounting Bracket  <b>Base Weight: 1.17</b>  <b>Adder Per Inch of Stroke: .31</b></p>	
<p><b>24□-D</b></p>  <p><b>\$47.35</b> BASE PRICE Add \$2.35 per inch of stroke</p>	<p><b>Double Acting – Air Return – Front Nose Mounting</b>  <b>Standard Stroke Lengths:</b>            ½", 1", 1½", 2", 2½", 3", 4", 5", 6"  <b>Maximum Stroke – 12"</b>  <b>Optional Stainless Steel Rod</b>  <b>Optional Accessory:</b>            C-1337 Mounting Bracket  <b>Base Weight: 1.29</b>  <b>Adder Per Inch of Stroke: .11</b></p>	

Standard Air Cylinders

Three-Position Cylinders

Cushion Cylinders

MRS® Cylinders

Non-Rotating Air Cylinders

PC Cylinders

All Stainless Repairable


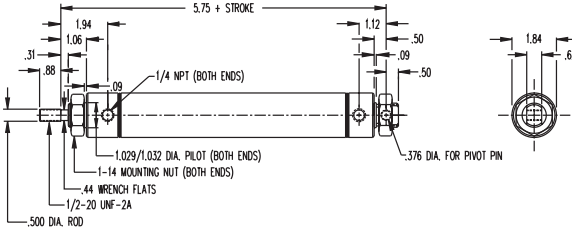

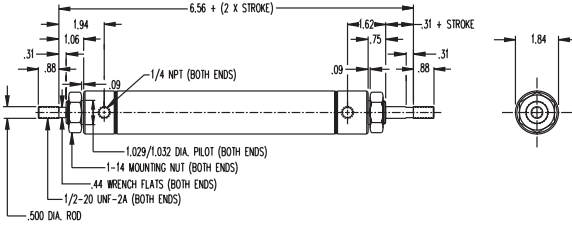

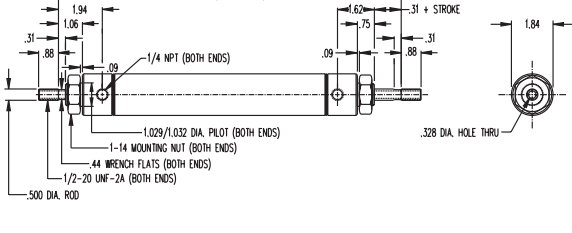
Z Line Air Cylinders

Rod Lock Cylinders

500 Hydraulic Cylinders

Hole Punch Cylinders

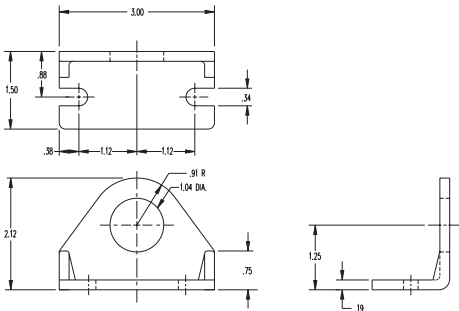
# 1-3/4" Bore Air Cylinders

MODEL/PRICE	DESCRIPTION/WEIGHT (lbs.)	DIMENSIONS
<p><b>24□-DP</b></p>  <p><b>\$53.25</b> BASE PRICE Add \$2.35 per inch of stroke</p>	<p><b>Double Acting – Pivot Type – Air Return – Rear Pivot or Double End Mounting</b>  <b>Standard Stroke Lengths:</b>            ½", 1", 1½", 2", 2½", 3", 4", 5", 6", 7", 8", 9", 10", 11", 12"  <b>Maximum Stroke – 32"</b>  <b>Optional Stainless Steel Rod</b>  <b>Optional Accessories:</b>            D-231-3 Piston Rod Clevis            D-620-1 Pivot Brackets            C-1337 Mounting Bracket  <b>Base Weight: 1.64</b>  <b>Adder Per Inch of Stroke: .11</b></p>	
<p><b>24□-DXDE</b></p>  <p><b>\$69.00</b> BASE PRICE Add \$3.45 per inch of stroke</p>	<p><b>Double Acting – Double End Rod – Air Return – Double End Mounting</b>  <b>Standard Stroke Lengths:</b>            ½", 1", 1½", 2", 2½", 3", 4", 5", 6", 7", 8", 9", 10", 11", 12"  <b>Maximum Stroke – 12"</b>  <b>Stainless Steel Rod Standard</b>  <b>Optional Accessory:</b>            C-1337 Mounting Bracket  <b>Base Weight: 1.87</b>  <b>Adder Per Inch of Stroke: .18</b></p>	
<p><b>24□-DXDEH</b></p>  <p><b>\$83.20</b> BASE PRICE Add \$3.70 per inch of stroke</p>	<p><b>Double Acting – Double End Hollow Rod – Air Return – Double End Mounting</b>  <b>Standard Stroke Lengths:</b>            ½", 1", 1½", 2", 2½", 3", 4", 5", 6"  <b>Maximum Stroke – 12"</b>  <b>Stainless Steel Rod Standard</b>  <b>Optional Accessory:</b>            C-1337 Mounting Bracket  <b>Base Weight: 1.80</b>  <b>Adder Per Inch of Stroke: .16</b></p>	

# 1-3/4" Bore Air Cylinders

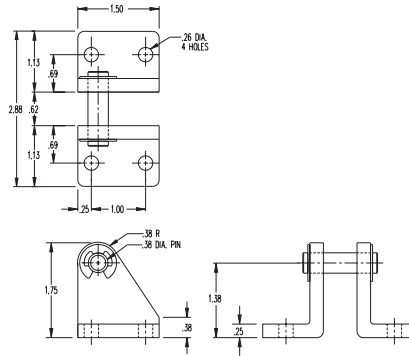
## 1-3/4" Bore Accessories

**C-1337**  
\$7.90



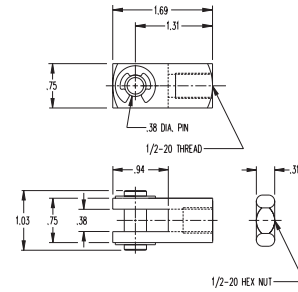
Mounting Bracket

**D-620-1**  
\$12.40



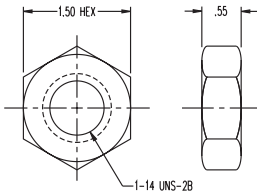
Pivot Brackets

**D-231-3**  
\$5.65



Piston Rod Clevis

**D-1331**  
\$2.20



Mounting Nut

Standard Air  
Cylinders

Three-Position  
Cylinders

Cushion  
Cylinders

MRS®  
Cylinders

Non-Rotating  
Air Cylinders

PC  
Cylinders

All Stainless  
Repairable

Z Line Air  
Cylinders

Rod Lock  
Cylinders

500 Hydraulic  
Cylinders

Hole Punch  
Cylinders

# 2" Bore Air Cylinders

- Ground and Polished, High Strength Carbon Steel Piston Rod Standard – 303 Stainless Steel Rod Available as an Option – Bronze Rod Guide Bushing Standard
- Force Exerted Approximately 3.1 of Air Line Pressure
- Enclosed Spring Force: 15 lbs. Relaxed – 30 lbs. Compressed
- Mounting Nuts Not Included

## OPTIONS:

### NO CHARGE:

- **MAGNALUBE G (G)**
- **PORTS ROTATED (K)**
- **NO THREAD (NT)**
- **SIDE PORTED REAR HEAD (Q)**  
Add .38" to nose mount overall length.

### SINGLE AND REVERSE ACTING BUMPERS (B)

- \$3.70 additional
- Add .125" to overall length

### DOUBLE ACTING BUMPERS (B)

- \$6.15 additional
- Add .250 to overall length

### EXTRA EXTENSION (EE)

- Single, reverse and double acting, add \$1.30 per inch of extension
- DXDE, add \$1.90 per inch of extension; extension added to each end

### DOUBLE ACTING FAILSAFE

- (JS = Spring Return, JR = Spring Extend)
- Add \$21.80 to base price + \$2.65 to stroke adder
- See page 1.65 for overall length adders

## OPTIONS continued...

### MAGNET (prefix M) – Add \$16.00

- Single and reverse acting add .125" to overall length,
- Stainless steel rod becomes standard with this option
- Must specify track(s) for use with miniature position sensing (T2, T3, T4) – add \$2.75 per track. See Related Products, page 8.12 for details.

### LOW TEMPERATURE (N)

Temperature Range: -40° to 200°F

- Single acting add \$1.50
- Reverse acting add \$1.75
- Double acting add \$2.90
- DXDE add \$3.15

### HIGH TEMPERATURE "U" CUPS (V)

Temperature Range: 0° to 400°F (-18° to 205°C)

- Single acting add \$7.20
- Double acting add \$17.55
- DXDE add \$23.25
- Reverse acting add \$13.10

### MOLYCOATED BODY (F)

- Add \$2.55 per inch of stroke

### NON-LUBE SERVICE (E)

- Single acting add \$5.75
- Double acting add \$14.40
- DXDE add \$17.35

### ROD WIPER (W)

(not available in standard single acting)

- Add \$5.50


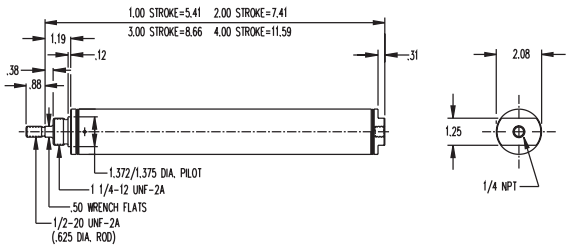

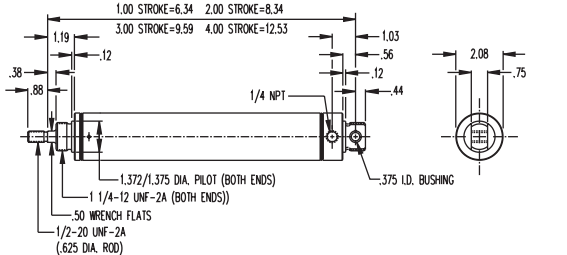
### STAINLESS STEEL ROD (prefix SR)

- Add \$3.80
- Standard on DXP, DXDE, XP, M option

### LOW PRESSURE HYDRAULIC (HL)


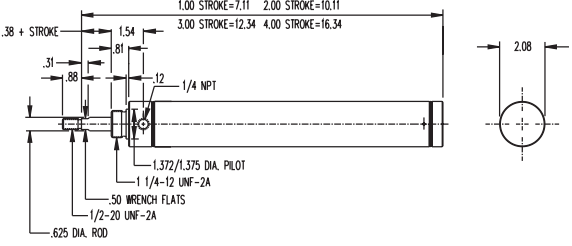

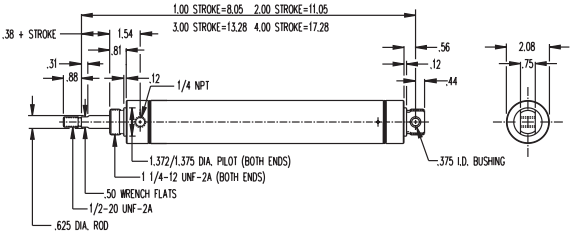

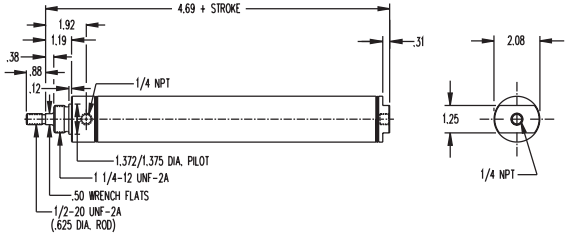

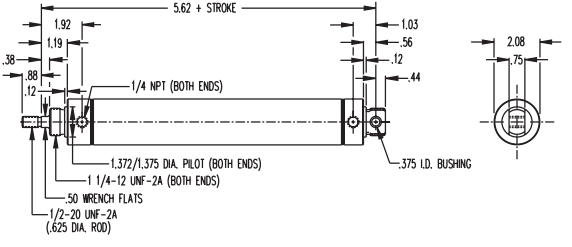
- 250 psi maximum
- Double acting models only
- Option specified as a prefix
- Add \$17.50

Enter Stroke Length as 3rd Digit

MODEL/PRICE	DESCRIPTION/WEIGHT (lbs.)	DIMENSIONS
<p><b>31</b> <input type="checkbox"/></p>  <p><b>\$51.10</b> BASE PRICE Add \$5.25 per inch of stroke</p>	<p><b>Single Acting – Spring Return – Front Nose Mounting</b> Standard Stroke Lengths: ½", 1", 1½", 2", 2½", 3", 4" Maximum Stroke – 4" Optional Stainless Steel Rod Optional Accessories: D-615 Mounting Bracket D-508 Mounting Nut Base Weight: 1.04 Adder Per Inch of Stroke: .43</p>	
<p><b>31</b> <input type="checkbox"/>-XP</p>  <p><b>\$62.35</b> BASE PRICE Add \$5.50 per inch of stroke</p>	<p><b>Single Acting – Universal Mounting Type – Nose, Pivot or Double End – Spring Return – Bronze Rod Bushing and Bronze Pivot Bushing</b> Standard Stroke Lengths: ½", 1", 1½", 2", 2½", 3", 4" Maximum Stroke – 4" Stainless Steel Rod Standard Optional Accessories: D-231-3 Piston Rod Clevis D-615 Mounting Bracket D-620 Pivot Brackets D-508 Mounting Nut Base Weight: 1.26 Adder Per Inch of Stroke: .43</p>	


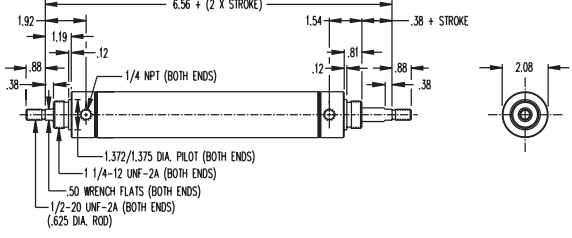


# 2" Bore Air Cylinders

MODEL/PRICE	DESCRIPTION/WEIGHT (lbs.)	DIMENSIONS
<p><b>31□-R</b></p>  <p><b>\$59.15</b> BASE PRICE Add \$5.25 per inch of stroke</p>	<p><b>Reverse Single Acting – Pull Type – Rod Normally Extended – Spring Return – Front Nose Mounting</b> Standard Stroke Lengths: ½", 1", 1½", 2", 2½", 3", 4" Maximum Stroke – 4" Optional Stainless Steel Rod Optional Accessories: D-615 Mounting Bracket D-508 Mounting Nut Base Weight: 1.24 Adder Per Inch of Stroke: .43</p>	
<p><b>31□-RP</b></p>  <p><b>\$64.70</b> BASE PRICE Add \$5.25 per inch of stroke</p>	<p><b>Reverse Single Acting – Pivot and Pull Type – Rod Normally Extended – Spring Return – Rear Pivot Mounting</b> Standard Stroke Lengths: ½", 1", 1½", 2", 2½", 3", 4" Maximum Stroke – 4" Optional Stainless Steel Rod Optional Accessories: D-231-3 Piston Rod Clevis D-620 Pivot Bracket D-508 Mounting Nut D-615 Mounting Bracket Base Weight: 1.46 Adder Per Inch of Stroke: .43</p>	
<p><b>31□-D</b></p>  <p><b>\$49.20</b> BASE PRICE Add \$2.55 per inch of stroke</p>	<p><b>Double Acting – Air Return – Front Nose Mounting</b> Standard Stroke Lengths: ½", 1", 1½", 2", 2½", 3", 4", 5", 6" Maximum Stroke – 12" Optional Stainless Steel Rod Optional Accessories: D-508 Mounting Nut D-615 Mounting Bracket Base Weight: 1.40 Adder Per Inch of Stroke: .15</p>	
<p><b>31□-DXP</b></p>  <p><b>\$59.10</b> BASE PRICE Add \$2.65 per inch of stroke</p>	<p><b>Double Acting – Universal Mounting Type – Pivot or Double End – Air Return – Bronze Pivot Bushing</b> Standard Stroke Lengths: ½", 1", 1½", 2", 2½", 3", 4", 5", 6", 7", 8", 9", 10", 11", 12", 13", 14", 15", 16", 17", 18", 19", 20", 21", 22", 23", 24" Maximum Stroke – 32" Stainless Steel Rod Standard Optional Accessories: D-231-3 Piston Rod Clevis D-615 Mounting Bracket D-620 Pivot Brackets D-508 Mounting Nut Base Weight: 1.62 Adder Per Inch of Stroke: .15</p>	

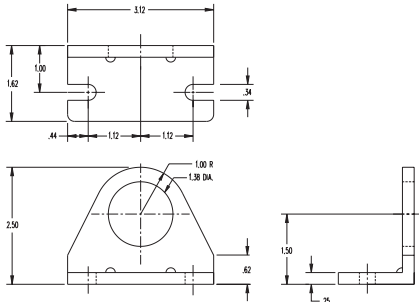
- Standard Air Cylinders
- Three-Position Cylinders
- Cushion Cylinders
- MRS® Cylinders
- Non-Rotating Air Cylinders
- PC Cylinders
- All Stainless Repairable
- Z Line Air Cylinders
- Rod Lock Cylinders
- 500 Hydraulic Cylinders
- Hole Punch Cylinders

# 2" Bore Air Cylinders

MODEL/PRICE	DESCRIPTION/WEIGHT (lbs.)	DIMENSIONS
<p><b>31□-DXDE</b></p>  <p><b>\$72.90</b> BASE PRICE Add \$3.80 per inch of stroke</p>	<p><b>Double Acting – Double End Rod – Air Return – Double End Mounting Standard Stroke Lengths:</b>            ½", 1", 1½", 2", 2½", 3", 4", 5", 6", 7", 8", 9", 10", 11", 12"  <b>Maximum Stroke – 12"</b>  <b>Stainless Steel Rod Standard</b>  <b>Optional Accessories:</b>            D-615 Mounting Bracket            D-508 Mounting Nut  <b>Base Weight: 1.97</b>  <b>Adder Per Inch of Stroke: .24</b></p>	 <p>6.56 + (2 X STROKE)            1.92, 1.19, .88, .12, 1.54, .81, .38 + STROKE, .88, .38, 2.08            1/4 NPT (BOTH ENDS)            1.372/1.375 DIA. PILOT (BOTH ENDS)            1/4-12 UNF-2A (BOTH ENDS)            .50 WRENCH FLATS (BOTH ENDS)            1/2-20 UNF-2A (BOTH ENDS) (.625 DIA. ROD)</p>

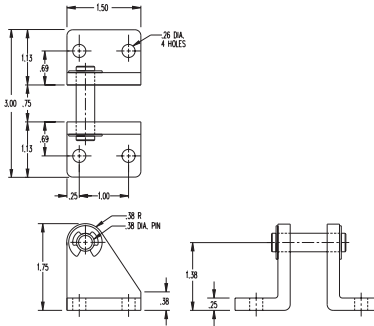
## 2" Bore Accessories

**D-615**  
\$10.95



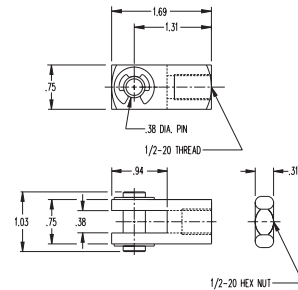
Mounting Bracket

**D-620**  
\$12.40



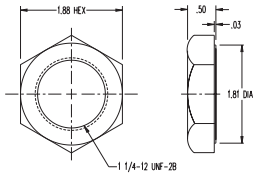
Pivot Brackets

**D-231-3**  
\$5.65



Piston Rod Clevis

**D-508**  
\$4.60



Mounting Nut

**Note:** For stainless steel accessories see page 1.99 and 1.102-1.103.

# 2-1/2" Bore Air Cylinders

- Ground and Polished, High Strength Carbon Steel Piston Rod Standard – 303 Stainless Steel Rod Available as an Option – Bronze Rod Guide Bushing Standard
- Force Exerted Approximately 5.0 of Air Line Pressure
- Double Acting Only
- Mounting Nuts Not Included

## OPTIONS:

### NO CHARGE:

- **MAGNALUBE G (G)**
- **PORTS ROTATED (K)**
- **NO THREAD (NT)**
- **SIDE PORTED REAR HEAD (Q)**  
Add .38" to nose mount overall length.

### DOUBLE ACTING BUMPERS (B)

- \$6.15 additional
- Add .250 to overall length

### EXTRA EXTENSION (EE)

- Double acting, add \$1.40 per inch of extension
- DXDE, add \$2.30 per inch of extension; extension added to each end

Enter Stroke Length as 3rd Digit

## OPTIONS continued...

### MAGNET (prefix M) – Add \$16.00

- Stainless steel rod becomes standard with this option
- Must specify track(s) for use with miniature position sensing (T2, T3, T4) – add \$2.75 per track. See Related Products, page 8.12 for details.

### LOW TEMPERATURE (N)

Temperature Range: -40° to 200°F

- Double acting add \$3.45
- DXDE add \$4.60

### HIGH TEMPERATURE "U" CUPS (V)

Temperature Range: 0° to 400°F (-18° to 205°C)

- Double acting add \$17.55
- DXDE add \$23.25

### MOLYCOATED BODY (F)

- Add \$2.55 per inch of stroke

### NON-LUBE SERVICE (E)

- Double acting add \$16.70
- DXDE add \$19.65

### ROD WIPER (W)

(not available in standard single acting)

- Add \$5.50

### STAINLESS STEEL ROD (prefix SR)

- Add \$3.80
- Standard on M option, DXP, DXDE

### LOW PRESSURE HYDRAULIC (HL)

- 250 psi maximum
- Double acting models only
- Option specified as a prefix
- Add \$21.85

## MODEL/PRICE

## DESCRIPTION/WEIGHT (lbs.)

## DIMENSIONS

### 50□-D

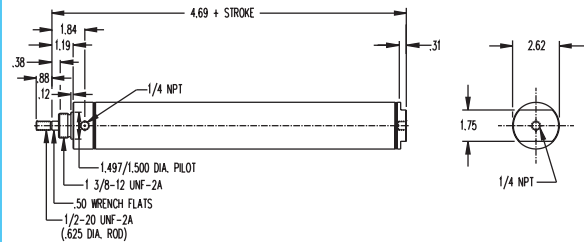


### \$70.55

**BASE PRICE**

Add \$2.75 per inch of stroke

**Double Acting – Air Return – Front Nose Mounting**  
**Standard Stroke Lengths:**  
 ½", 1", 1½", 2", 2½", 3", 4", 5", 6"  
**Maximum Stroke – 12"**  
**Optional Stainless Steel Rod**  
**Optional Accessories:**  
 D-615-1 Mounting Bracket  
 D-2540 Mounting Nut  
**Base Weight: 1.98**  
**Adder Per Inch of Stroke: .17**



### 50□-DXP

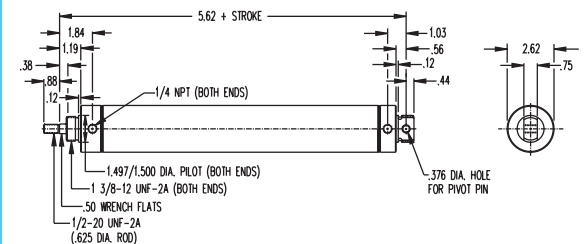


### \$82.85


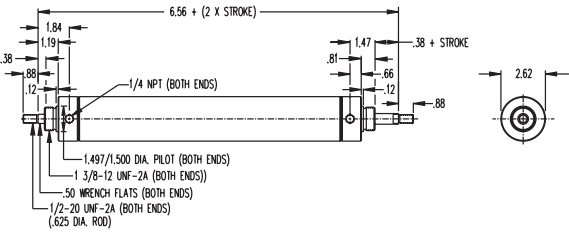
**BASE PRICE**

Add \$2.85 per inch of stroke

**Double Acting – Universal Mounting Type – Pivot or Double End – Air Return – Bronze Rod Bushing and Bronze Pivot Bushing**  
**Standard Stroke Lengths:**  
 ½", 1", 1½", 2", 2½", 3", 4", 5", 6", 7", 8", 9", 10", 11", 12", 13", 14", 15", 16", 17", 18", 19", 20", 21", 22", 23", 24"  
**Maximum Stroke – 32"**  
**Stainless Steel Rod Standard**  
**Optional Accessories:**  
 D-231-3 Piston Rod Clevis  
 D-615-1 Mounting Bracket  
 D-620 Pivot Brackets  
 D-2540 Mounting Nut  
**Base Weight: 2.27**  
**Adder Per Inch of Stroke: .17**

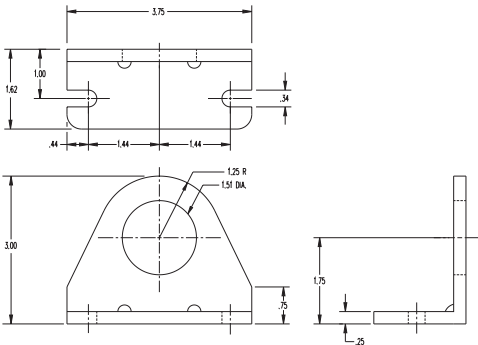


# 2-1/2" Bore Air Cylinders

MODEL/PRICE	DESCRIPTION/WEIGHT (lbs.)	DIMENSIONS
<p><b>50□-DXDE</b></p>  <p><b>\$96.60</b> BASE PRICE Add \$4.45 per inch of stroke</p>	<p><b>Double Acting – Double End Rod – Air Return – Double End Mounting Standard Stroke Lengths:</b>            1/2", 1", 1 1/2", <b>2"</b>, 2 1/2", <b>3"</b>, 4", 5", 6", 7", 8", 9", <b>10"</b>, 11", 12"  <b>Maximum Stroke – 12"</b>  <b>Stainless Steel Rod Standard</b>  <b>Optional Accessories:</b>            D-615-1 Mounting Bracket            D-2540 Mounting Nut  <b>Base Weight: 2.32</b>  <b>Adder Per Inch of Stroke: .34</b></p>	 <p>6.56 + (2 X STROKE)            1.84            1.19            .38            .88            .12            1/4 NPT (BOTH ENDS)            1.497/1.500 DIA. PILOT (BOTH ENDS)            1 3/8-12 UNF-2A (BOTH ENDS)            .50 WRENCH FLATS (BOTH ENDS)            1/2-20 UNF-2A (BOTH ENDS)            (.625 DIA. ROD)            .81            1.47            .66            .12            .38 + STROKE            .88            2.62</p>

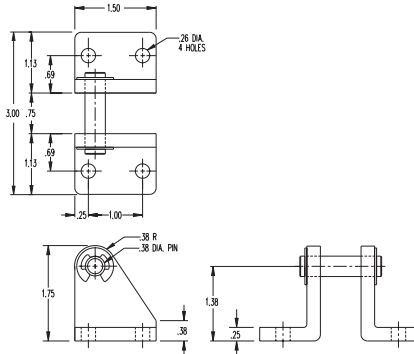
## 2-1/2" Bore Accessories

**D-615-1**  
\$11.60



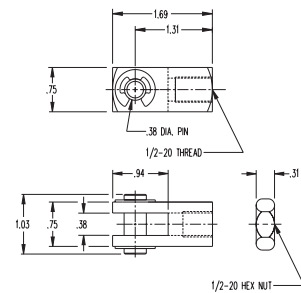
Mounting Bracket

**D-620**  
\$12.40



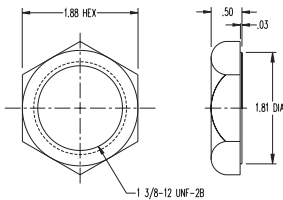
Pivot Brackets

**D-231-3**  
\$5.65



Piston Rod Clevis

**D-2540**  
\$4.10



Mounting Nut

# 3" Bore Air Cylinders

- Ground and Polished, High Strength Carbon Steel Piston Rod Standard – 303 Stainless Steel Rod Available as an Option – Bronze Rod Guide Bushing Standard
- Force Exerted Approximately 7.0 of Air Line Pressure
- Double Acting Only
- Mounting Nuts Not Included

## OPTIONS:

### NO CHARGE:

- **MAGNALUBE G (G)**
- **PORTS ROTATED (K)**
- **NO THREAD (NT)**
- **SIDE PORTED REAR HEAD (Q)**  
Add .44" to nose mount overall length.

### DOUBLE ACTING BUMPERS (B)

- \$8.05 additional
- Add .250 to the length

### EXTRA EXTENSION (EE)

- Double acting, add \$1.65 per inch of extension
- DXDE, add \$2.45 per inch of extension; extension added to each end

Enter Stroke Length as 3rd Digit

## OPTIONS continued...

### MAGNET (prefix M) – Add \$28.55

- Stainless steel rod becomes standard with this option
- Must specify track(s) for use with miniature position sensing (T2, T3, T4) – add \$2.75 per track. See Related Products, page 8.12 for details.

### LOW TEMPERATURE (N)

Temperature Range: -40° to 200°F

- Double acting add \$3.45
- DXDE add \$4.60

### HIGH TEMPERATURE "U" CUPS (V)

Temperature Range: 0° to 400°F (-18° to 205°C)

- Double acting add \$18.50
- DXDE add \$24.50

### MOLYCOATED BODY (F)

- Add \$2.55 per inch of stroke

### NON-LUBE SERVICE (E)

- Double acting add \$19.75
- DXDE add \$22.70

### ROD WIPER (W)

(not available in standard single acting)

- Add \$5.50

### STAINLESS STEEL ROD (prefix SR)

- Add \$4.60
- Standard on DXP, DXDE, and M option

### LOW PRESSURE HYDRAULIC (HL)

- 250 psi maximum
- Double acting models only
- Option specified as a prefix
- Add \$21.85

## MODEL/PRICE

## DESCRIPTION/WEIGHT (lbs.)

## DIMENSIONS

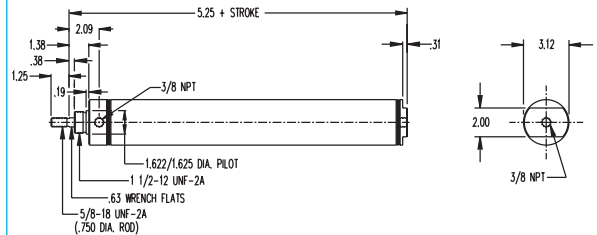
### 70□-D



**\$100.35**  
BASE PRICE

Add \$3.30 per inch of stroke

**Double Acting – Air Return – Front Nose Mounting**  
**Standard Stroke Lengths:**  
½", 1", 1½", 2", 2½", 3", 4", 5", 6"  
Maximum Stroke – 12"  
Carbon Steel Piston Rod Standard  
Optional Stainless Steel Rod  
**Optional Accessories:**  
D-19127 Mounting Bracket  
D-5379 Mounting Nut  
**Base Weight: 3.34**  
**Adder Per Inch of Stroke: .26**



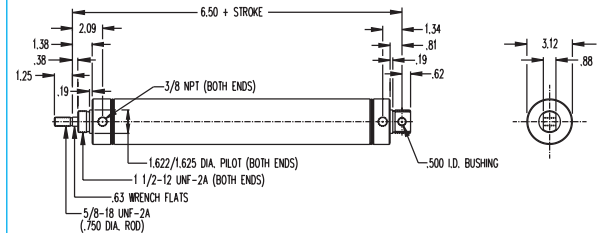
### 70□-DXP



**\$113.00**  
BASE PRICE


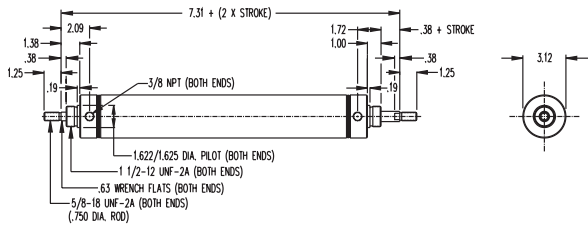
Add \$3.45 per inch of stroke

**Double Acting – Universal Mount Pivot or Double End Mounting**  
**Standard Stroke Lengths:**  
½", 1", 1½", 2", 2½", 3", 4", 5", 6", 7", 8", 9", 10", 11", 12", 13", 14", 15", 16", 17", 18", 19", 20", 21", 22", 23", 24"  
Maximum Stroke – 32"  
Stainless Steel Rod Standard  
**Optional Accessories:**  
D-13512-A Pivot Bracket  
D-19127 Mounting Bracket  
D-8314-A Rod Clevis  
D-5379 Mounting Nut  
**Base Weight: 3.87**  
**Adder Per Inch of Stroke: .26**

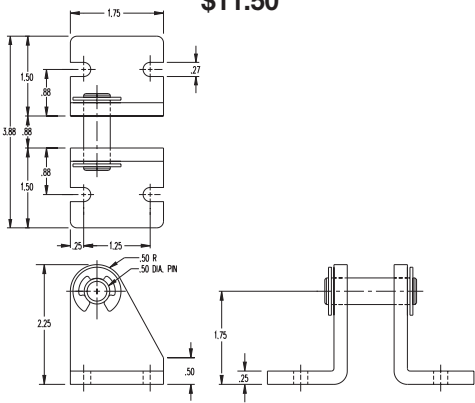
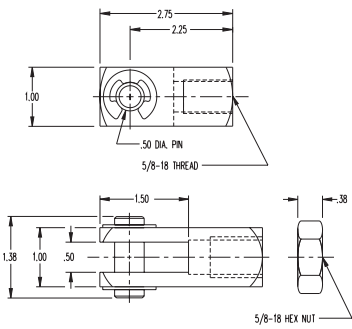
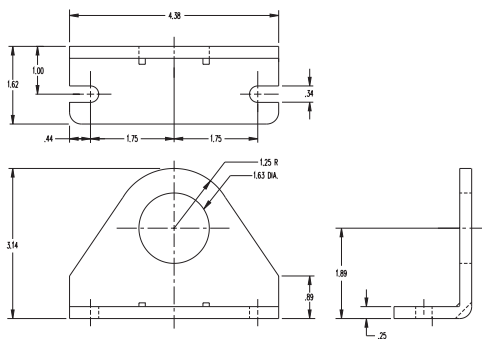




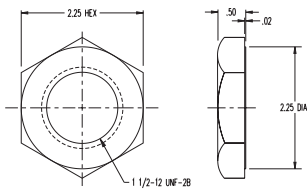
# 3" Bore Air Cylinders

MODEL/PRICE	DESCRIPTION/WEIGHT (lbs.)	DIMENSIONS
<p><b>70□-DXDE</b></p>  <p><b>\$124.95</b> BASE PRICE Add \$4.65 per inch of stroke</p>	<p><b>Double Acting – Double End Rod – Double End Mounting</b>  <b>Standard Stroke Lengths:</b>            ½", 1", 1½", 2", 2½", 3", 4", 5", 6", 7", 8", 9", 10", 11", 12"  <b>Maximum Stroke – 12"</b>  <b>Stainless Steel Rod Standard</b>  <b>Optional Accessories:</b>            D-19127 Mounting Bracket            D-5379 Mounting Nut  <b>Base Weight: 4.05</b>  <b>Adder Per Inch of Stroke: .52</b></p>	

## 3" Bore Accessories

<p><b>D-13512-A</b> \$11.50</p>  <p><i>Pivot Bracket</i></p>	<p><b>D-8314-A</b> \$11.85</p>  <p><i>Rod Clevis</i></p>	<p><b>D-19127</b> \$10.75</p>  <p><i>Mounting Bracket</i></p>
--	--	--

**D-5379**  
\$4.10



*Mounting Nut*

# Options

Spring Extend Length Adder		
Bore	Type	Overall Length Adder for -JR Option
5/16"	0070-D	1.65 + 1.25 per 0.50" of stroke
	0070-DXP	2.19 + 1.25 per 0.50" of stroke
	BF-0070-D	1.71 + 1.25 per 0.50" of stroke
7/16"	010-D, BF-010-D & BFT-010-D	2.17 + 1.44 per 0.50" of stroke
	010-DP & 010-DX	2.86 + 1.44 per 0.50" of stroke
	BR-010-D & BRT-010-D	3.36 + 1.44 per 0.50" of stroke
9/16"	020-D	2.34 + 2.63 per 1" of stroke
	020-DXP	2.81 + 2.63 per 1" of stroke
3/4"	040-D	3.03 + 2.69 per 1" of stroke
	040-DP, 040-DXP, BR-040-D & BRT-040-D	3.81 + 2.69 per 1" of stroke
	BF-040-D & BFT-040-D	3.28 + 2.69 per 1" of stroke
7/8"	060-D	3.19 (3.60 High Temp.) + 2.56 per 1" of stroke
	060-DXP	4.10 (4.50 High Temp.) + 2.56 per 1" of stroke
1-1/16"	090-D	3.38 (3.5) + 2.56 per 1" of stroke
	090-DP, 090-DX	4.38 + 2.56 per 1" of stroke
	BF-090-D, BFT-090-D	4.25 + 2.56 per 1" of stroke
	BR-090-D, BRT-090-D	4.50 + 2.56 per 1" of stroke
1-1/4"	120-D	4.38 (4.25) + 2.81 per 1" of stroke
	120-DP	5.50 (5.44) + 2.81 per 1" of stroke
1-1/2"	170-D	3.75 + 2.69 per 1" of stroke
	170-DP	4.81 + 2.69 per 1" of stroke
	170-DX	4.56 + 2.69 per 1" of stroke
	BF-170-D, BFT-170-D	4.25 + 2.69 per 1" of stroke
	BR-170-D, BRT-170-D	4.44 + 2.69 per 1" of stroke
1-3/4"	240-D	5.12 (4.99 High Temp.) = 3" per 1" of stroke
	240-DP	6.68 (6.56 High Temp.) = 3" per 1" of stroke

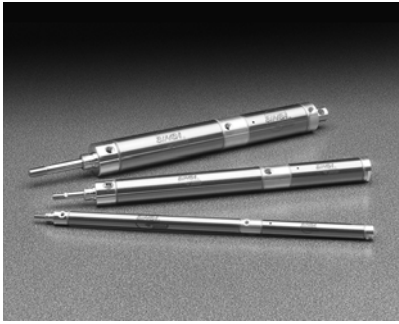
Spring Return Length Adder		
Bore	Type	Overall Length Adder for -JS Option
5/16"	0070-D	1.65 + 0.75 per 0.50" of stroke
	0070-DXP	2.19 + 0.75 per 0.50" of stroke
	BF-0070-D	1.71 + 0.75 per 0.50" of stroke
7/16"	010-D, BF-010-D & BFT-010-D	2.17 + 0.94 per 0.50" of stroke
	010-DP & 010-DX	2.86 + 0.94 per 0.50" of stroke
	BR-010-D & BRT-010-D	3.36 + 1.44 per 0.50" of stroke
9/16"	010-DXDE	2.86 + 1.44 per 0.50" of stroke
	020-D	2.34 + 1.63 per 1" of stroke
	020-DXP	2.84 + 1.63 per 1" of stroke
3/4"	020-DXDE	3.00 + 2.63 per 1" of stroke
	040-D	3.03 + 1.69 per 1" of stroke
	040-DP, 040-DXP, BR-040-D & BRT-040-D	3.81 + 1.69 per 1" of stroke
7/8"	BF-040-D & BFT-040-D	3.28 + 1.69 per 1" of stroke
	040-DXDE	4.06 + 2.69 per 1" of stroke
	060-D	3.19 (3.60 High Temp.) + 1.56 per 1" of stroke
1-1/16"	060-DXP	4.10 (4.50 High Temp.) + 1.56 per 1" of stroke
	060-DXDE	4.16 (5.03 High Temp.) + 2.56 per 1" of stroke
	090-D	3.38 (3.50) + 1.56 per 1" of stroke
	090-DP, 090-DX	4.38 + 1.56 per 1" of stroke
1-1/4"	BF-090-D, BFT-090-D	4.25 + 1.56 per 1" of stroke
	BR-090-D, BRT-090-D	4.50 + 1.56 per 1" of stroke
	090-DXDE	4.25 + 2.56 per 1" of stroke
1-1/2"	120-D	4.38 (4.25 High Temp.) + 1.81 per 1" of stroke
	120-DP	5.50 (5.44 High Temp.) + 1.81 per 1" of stroke
	120-DXDE	5.94 (5.81 High Temp.) + 2.81 per 1" of stroke
1-3/4"	170-D	3.75 + 1.69 per 1" of stroke
	170-DP	4.81 + 1.69 per 1" of stroke
	170-DX	4.56 + 1.69 per 1" of stroke
	BF-170-D, BFT-170-D	4.25 + 1.69 per 1" of stroke
	BR-170-D, BRT-170-D	4.44 + 1.69 per 1" of stroke
1-3/4"	170-DXDE	4.19 + 2.69 per 1" of stroke
	240-D	5.12 (4.99 High Temp.) = 2" per 1" of stroke
	240-DP	6.68 (6.56 High Temp.) = 2" per 1" of stroke
	240-DXDE	7.25 (6.86 High Temp.) = 3" per 1" of stroke

Spring Return Length Adder for 2" Bore					
Bore	Type	Stroke			
		1"	2"	3"	4"
2"	310-D, 310-DP	5.94 + stroke	6.94 + stroke	7.19 + stroke	9.13 + stroke
	310-DXP	7.32 + stroke	8.32 + stroke	8.57 + stroke	10.51 + stroke
	310-DXDE	7.81 + 2 x stroke	8.81 + 2 x stroke	9.06 + 2 x stroke	11.00 + 2 x stroke

Spring Extend Length Adder for 2" Bore					
Bore	Type	Stroke			
		1"	2"	3"	4"
2"	310-D, 310-DP	5.94 + 2 x stroke	6.94 + 2 x stroke	7.19 + 2 x stroke	9.13 + 2 x stroke
	310-DXP	7.32 + 2 x stroke	8.32 + 2 x stroke	8.57 + 2 x stroke	10.51 + 2 x stroke

Standard Air Cylinders  
 Three-Position Cylinders  
 Cushion Cylinders  
 MRS® Cylinders  
 Non-Rotating Cylinders  
 PC Cylinders  
 All Stainless Repairable  
 Z-Line Air Cylinders  
 Rod Lock Cylinders  
 500 Hydraulic Cylinders  
 Hole Punch Cylinders

# Three-Position Original Line Cylinders



*Bimba's Three-Position Original Line stainless steel body cylinder provides three positions with a single cylinder. Bimba offers the performance and quality of the unitized Original Line cylinder design along with its product breadth now in three positive stroke positions.*

## How to Order

The model number for all Three-Position Original Line cylinders consists of three alphanumeric clusters. These designate product type, bore size and stroke length, and options. Please refer to the charts below for an example of model number

M-043/4.5-DW. This is a 3/4" bore, with a 3" stroke for position A, plus an additional 4-1/2" stroke for position B, double acting cylinder with a rod wiper.

Product Type	Bore Sizes	Stroke A	Stroke B	Standard Stroke Lengths and Stroke Maximums
Blank – Three-position Original Line M – Magnet option for cylinders* NR – Non-rotating rod option	02 – 9/16" 04 – 3/4" 09 – 1-1/16" 17 – 1-1/2" 31 – 2"	0.5 = 1/2" 1 = 1" 1.5 = 2-1/2" 3.75 = 3-3/4" etc.	0.5 = 1/2" 1 = 1" 2.5 = 2-1/2" 3.75 = 3-3/4" etc.	Nose Mount 1" increments to 12" 2 x Stroke A + Stroke B Maximum = 12" Universal Mount 1" increments to 24" 2 x Stroke A + Stroke B Maximum = 32"

\*Magnet located on stroke B piston only.

**M - 043 / 4.5 - D W**

Mounting Options
D – Double acting, nose mount DXP – Double acting, universal mount

Options
(Enter in alphabetical order, except EE which is last) B – Bumpers E – Non-lube seals and lubrication F – Molycoated body G – Magnalube® G K – Ports rotated 90 degrees N – Low temperature seals & lubrication NT – Non-threaded rod Q – Side ported rear head (see standard Original Line information for applicable length adders by bore size) T – Switch Track (T2, T3 or T4), see Related Products, page 8.12 V – High temperature seals & lubrication W – Rod wiper EEX.XX – Extra rod extension

Note: Consult page 1.4 for option combination compatibility.

## Specifications

Expected life:	1400 miles when lubricated
Total stroke tolerance:	
9/16" – 1-1/2"	+.075/- .040
2"	+.095/- .060
Operating Medium:	Air only
Maximum Operating Pressure:	250 psi
Temperature Range:	-20°F to 200°F
Standard Lubrication:	HT-99
Endcaps, center section, and piston material:	Aluminum
Cylinder body:	304 stainless steel
Piston and rod seals:	Buna N "U" cups
Rod and pivot bushings:	Sintered bronze
Piston rod:	303 stainless steel

# Three-Position Original Line Cylinders

## List Prices

Bore	Mounting		Total combined stroke adder, per inch**
	Mounting- D List Price	-DXP List Price	
02 - 9/16"	\$31.45	\$34.80	\$1.50
04 - 3/4"	34.30	39.40	1.50
09 - 1-1/16"	39.60	45.05	1.50
17 - 1-1/2"	53.70	60.10	2.35
31 - 2"	74.35	83.75	2.65

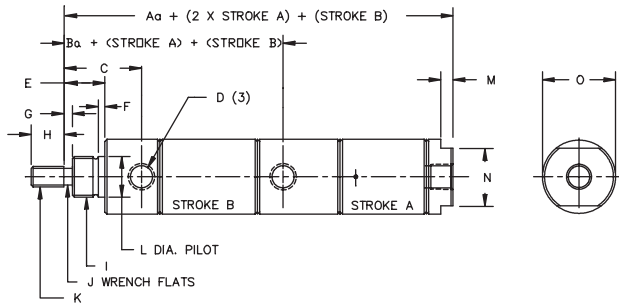
\*\*Total combined stroke = (2 X stroke A) + Stroke B

Bore	Options								
	M (Prefix) Magnetic Position Sensing	B Bumpers	E Non-lube Seals and Lubrication	F Molycoated Body per inch	N Low Temperature Seals	V High Temperature Seals and Lubrication	W Rod Wiper	EE Extra Rod Extension per inch	NR Prefix Non- rotating rod
9/16" (02)	\$9.15	\$7.95	\$16.00	\$2.55	\$2.35	\$20.65	\$2.75	\$0.80	\$16.35
3/4" (04)	9.15	7.95	16.60	2.55	2.35	20.65	2.75	0.80	16.35
1-1/16" (09)	11.40	7.95	18.30	2.55	3.45	24.85	2.75	0.80	21.80
1-1/2" (17)	13.75	9.65	19.45	2.55	4.60	27.40	2.75	1.20	21.80
2" (31)	16.00	12.35	28.75	2.55	5.75	35.10	5.50	1.30	26.25

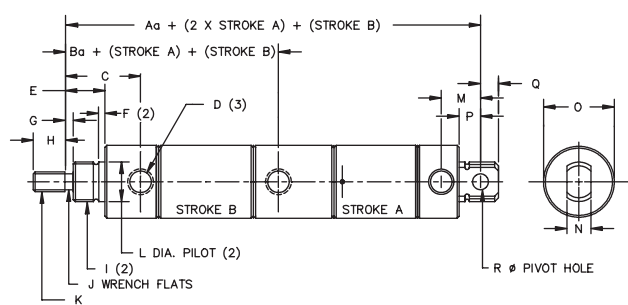
No Charge Options: G, K, NT

## Dimensions

### D Mounting Style (in.)



### DXP Mounting Style (in.)



D Model																Bumper Option	
Bore	Aa	Ba	C	D	E	F	G	H	I	J	K	L	M	N	O	Aa	Ba
9/16" (02)	4.12	2.25	0.75	#10-32	0.38	0.06	N/A	0.50	7/16-20	N/A	#10-32	.434/.437	0.19	0.50	0.62	4.31	2.31
3/4" (04)	5.47	3.12	0.97	1/8 NPT	0.50	0.09	N/A	0.50	5/8-18	N/A	1/4-28	.621/.624	0.19	0.62	0.81	5.47	3.12
1-1/16" (09)	5.97	3.25	1.19	1/8 NPT	0.62	0.09	0.12	0.50	5/8-18	0.25	5/16-24	.621/.624	0.49	0.88	1.12	6.09	3.25
1-1/2" (17)	6.5	3.69	1.50	1/8 NPT	0.88	0.09	0.25	0.75	3/4-16	0.38	7/16-20	.746/.749	0.25	0.88	1.56	6.62	3.69
2" (31)	8.25	4.78	1.92	1/4 NPT	1.19	0.12	0.38	0.88	1-1/4-12	0.50	1/2-20	1.375/1.372	0.31	1.25	2.09	8.62	4.91

DXP Model																		Bumper Option		
Bore	Aa	Ba	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	Aa	Ba
9/16" (02)	4.41	2.25	0.75	#10-32	0.38	0.06	N/A	0.50	7/16-20	N/A	#10-32	.434/.437	0.38	0.31	0.62	0.25	0.19	0.157	4.66	2.31
3/4" (04)	6.25	3.12	0.97	1/8 NPT	0.50	0.09	N/A	0.50	5/8-18	N/A	1/4-28	.621/.624	0.62	0.38	0.86	0.34	0.28	0.250	6.25	3.12
1-1/16" (09)	6.56	3.25	1.19	1/8 NPT	0.62	0.09	0.12	0.50	5/8-18	0.25	5/16-24	.621/.624	0.62	0.38	1.12	0.34	0.28	0.250	6.68	3.25
1-1/2" (17)	7.18	3.69	1.50	1/8 NPT	0.63	0.09	0.25	0.75	3/4-16	0.38	7/16-20	.746/.749	0.81	0.62	1.56	0.50	0.38	0.375	7.31	3.69
2" (31)	9.19	4.78	1.92	1/4 NPT	1.19	0.12	0.38	0.88	1-1/4-12	0.50	1/2-20	1.375/1.372	1.03	0.75	2.08	0.56	0.44	0.375	9.56	4.91

# Air Cylinders with Adjustable Cushions\*

- Readily Accessible Cushion Needle For Easy Adjustment
- Double Acting Models
- Rated 250 PSI
- 304 Stainless Steel Body – Mirror Finish I.D.
- High Strength Aluminum Alloy Porting Ends
- Ground and Roller Burnished 303 Stainless Steel Piston Rod Standard
- Buna N “U” Cup Seals
- Low Breakaway Friction – Less Than 5 PSI
- Special Stroke Lengths Available on Request

## OPTIONS FOR EACH BORE SIZE:

### NO CHARGE:

- **MAGNALUBE G (G)**
- **NO THREAD (NT)**  
(Available on 3/4", 1 1/8" and 1 1/2" bores)

### EXTRA EXTENSION (EE)

- *Double acting, per inch of extension:*  
3/4" Bore, add \$0.80  
1 1/8" Bore, add \$0.80  
1 1/2" Bore, add \$1.00  
2" Bore, add \$1.30  
2 1/2" Bore, add \$1.40  
3" Bore, add \$1.65

### HIGH TEMPERATURE SEALS (V)

	Double Acting	DXDE
04 Bore	\$17.00	\$20.30
09 Bore	\$19.55	\$22.85
17 Bore	\$20.75	\$26.70
31 Bore	\$30.45	\$35.90

- **Cylinders** are supplied with adjustable cushions on both ends. To order cushion on one end only, specify CF (front head cushion only), or CR (rear head cushion only), or CS (one end only) and deduct from base price as shown.  
(ex: 3/4" bore, cushion on front head only – CF-04□-D;  
3/4" bore, cushion on rear head only – CR-04□-D;  
3/4" DXDE model, cushion on one side only – CS-04-D).

Enter Stroke Length as 3rd Digit

## OPTIONS FOR EACH BORE SIZE: continued...

50 Bore	\$33.15	\$38.60
70 Bore	\$36.05	\$42.40

### EXTRA EXTENSION (EE)

- *DXDE, per inch of extension:*  
(added to each end)  
3/4" Bore, add \$1.00  
1 1/8" Bore, add \$1.00  
1 1/2" Bore, add \$1.85  
2" Bore, add \$1.90  
2 1/2" Bore, add \$2.30  
3" Bore, add \$2.40

### PORTS ROTATED (K)\*

(Rotates ports and cushion screw location 90° clockwise)

### MAGNETIC PISTON (prefix M)

- 3/4" Bore, add \$9.20
- 1 1/8" Bore, add \$11.40
- 1 1/2" Bore, add \$13.75
- 2" Bore, add \$16.05
- 2 1/2" Bore, add \$16.05
- 3" Bore, add \$28.60

### MINI SWITCH TRACKS on all bore sizes

Must specify track(s) for use with Bimba's miniature position sensing (T2, T3, T4 – Add \$2.75 per track. See Related Products, page 8.12 for details.

### ROD WIPER (W) (Available on 3/4", 1 1/8" and 1 1/2" bores)

- Double acting, add \$2.75
- DXDE, add \$5.50

### PIVOT BUSHING (Y)\*

### MOLYCOATED BODY (F)

- Add \$2.55 per inch of stroke

### NON-LUBE SERVICE (E)

See corresponding standard Original Line bore size catalog page for pricing.

\*Consult local distributor for pricing.

## 3/4" Bore Air Cylinders with Adjustable Cushions

### MODEL/PRICE

### DESCRIPTION/WEIGHT (lbs.)

### DIMENSIONS

## C-04□-D



**\$30.95**

**BASE PRICE**

Add \$1.50 per inch of stroke  
Cushion one end only,  
deduct \$5.75 from base price.

CF-04□-D (Front only)

CR-04□-D (Rear only)

**Double Acting – Air Return –  
Front Nose Mounting**

**Standard Stroke Lengths:**

**1", 1 1/2", 2", 2 1/2", 3", 4", 5", 6"**

Maximum Stroke – 12"

Stainless Steel Rod Standard

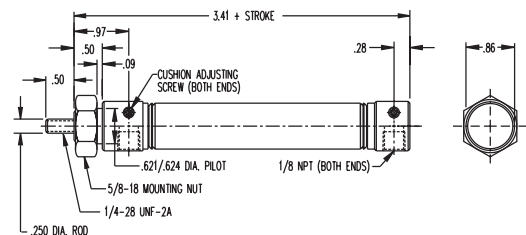
Optional Rod Wiper

Optional Accessory:

D-129 Mounting Bracket

Base Weight: .24

Adder Per Inch of Stroke: .03


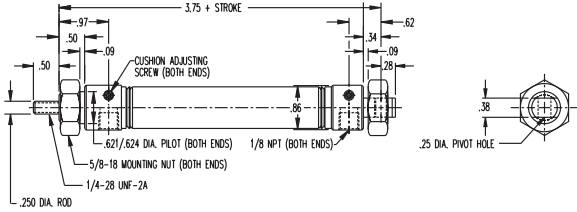

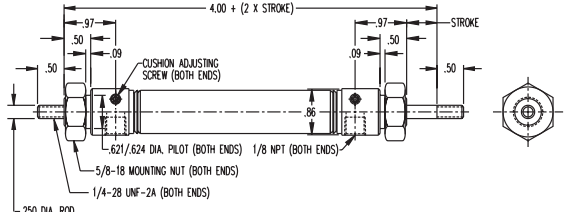


\*U.S. Patent nos. 4,794,681 and 4,862,786


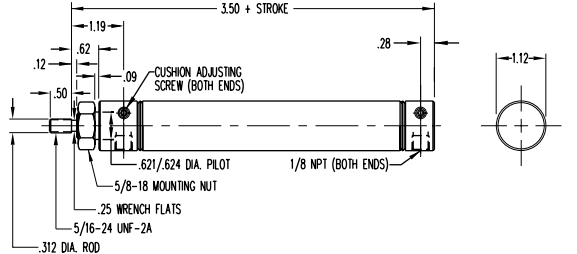


# Air Cylinders with Adjustable Cushions

## 3/4" Bore Air Cylinders with Adjustable Cushions (continued)


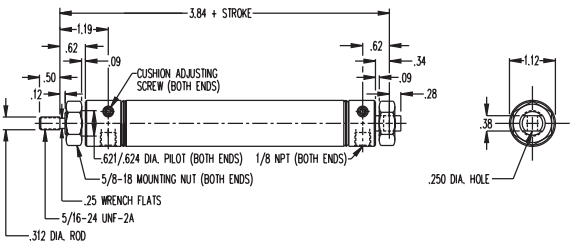

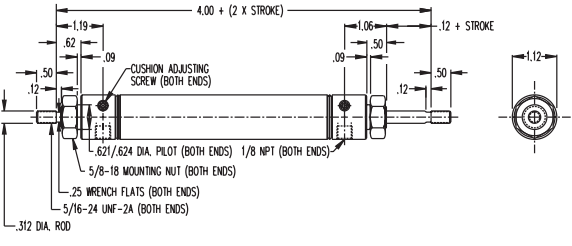
MODEL/PRICE	DESCRIPTION/WEIGHT (lbs.)	DIMENSIONS
<p><b>C-04□-DXP</b></p>  <p><b>\$37.05</b> BASE PRICE Add \$1.50 per inch of stroke Cushion one end only, deduct \$5.75 from base price. CF-04□-DXP (Front only) CR-04□-DXP (Rear only)</p>	<p><b>Double Acting – Double End or Rear Pivot Mounting – Air Return</b> Standard Stroke Lengths: 1", 1½", 2", 2½", 3", 4", 5", 6", 7", 8", 9", 10", 11", 12" Maximum Stroke – 32" Stainless Steel Rod Standard Optional Rod Wiper Optional Accessories: D-129 Mounting Bracket D-13498-A Pivot Bracket D-166-3 Piston Rod Clevis Base Weight: .29 Adder Per Inch of Stroke: .03</p>	
<p><b>C-04□-DXDE</b></p>  <p><b>\$45.40</b> BASE PRICE Add \$1.95 per inch of stroke Cushion one end only, deduct \$5.75 from base price. CS-04□-DXDE (One end only)</p>	<p><b>Double Acting – Double End Rod – Air Return – Double End Mounting</b> Standard Stroke Lengths: 1", 2", 3", 4", 5", 6" Maximum Stroke – 12" Stainless Steel Rod Standard Optional Rod Wiper Optional Accessory: D-129 Mounting Bracket Base Weight: .30 Adder Per Inch of Stroke: .06</p>	

## 1-1/16" Bore Air Cylinders with Adjustable Cushions


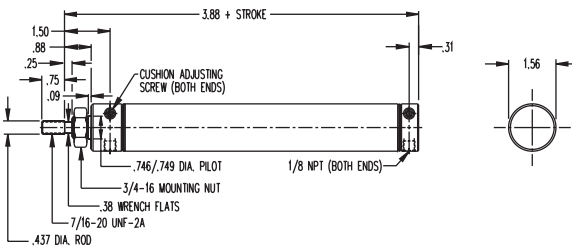
MODEL/PRICE	DESCRIPTION/WEIGHT (lbs.)	DIMENSIONS
<p><b>C-09□-D</b></p>  <p><b>\$35.35</b> BASE PRICE Add \$1.50 per inch of stroke Cushion one end only, deduct \$6.30 from base price. CF-09□-D (Front only) CR-09□-D (Rear only)</p>	<p><b>Double Acting – Air Return – Front Nose Mounting</b> Standard Stroke Lengths: 1", 1½", 2", 2½", 3", 4", 5", 6" Maximum Stroke – 12" Stainless Steel Rod Standard Optional Rod Wiper Optional Accessory: D-129 Mounting Bracket Base Weight: .38 Adder Per Inch of Stroke: .04</p>	

# Air Cylinders with Adjustable Cushions

## 1-1/16" Bore Air Cylinders with Adjustable Cushions (continued)


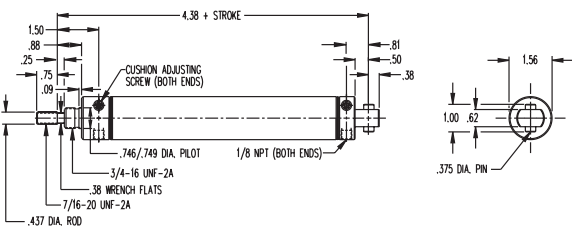

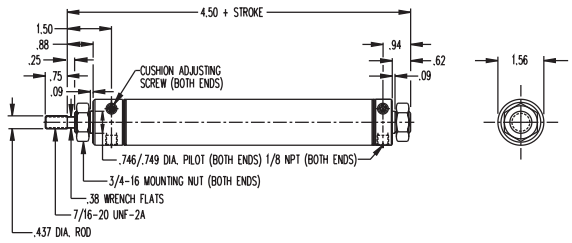

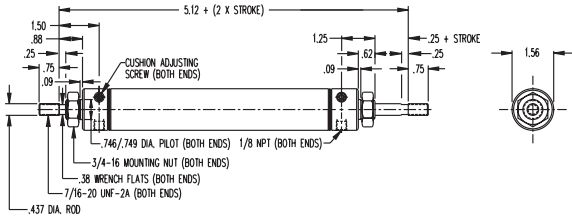
MODEL/PRICE	DESCRIPTION/WEIGHT (lbs.)	DIMENSIONS
<p><b>C-09□-DXP</b></p>  <p><b>\$41.70</b> BASE PRICE Add \$1.50 per inch of stroke Cushion one end only, deduct \$6.30 from base price. CF-09□-DXP (Front only) CR-09□-DXP (Rear only)</p>	<p><b>Double Acting – Universal Mounting Pivot, or Double End Mounting – Air Return</b> <b>Standard Stroke Lengths:</b> 1", 1½", 2", 2½", 3", 4", 5", 6", 7", 8", 9", 10", 11", 12" Maximum Stroke – 32" Stainless Steel Rod Standard Optional Rod Wiper <b>Optional Accessories:</b> D-13498-A Pivot Bracket D-129 Mounting Bracket D-166-1 Piston Rod Clevis <b>Base Weight:</b> .44 <b>Adder Per Inch of Stroke:</b> .04</p>	 <p>Technical drawing showing dimensions and components for the C-09□-DXP air cylinder. Key dimensions include: 3.84 + STROKE (total length), 1.19 (rod length), .62 (rod diameter), .09 (rod diameter), .50 (rod diameter), .12 (rod diameter), .62 (rod diameter), .34 (rod diameter), .09 (rod diameter), .28 (rod diameter), .112 (rod diameter), .250 DIA. HOLE (rod diameter), .621/.624 DIA. PILOT (BOTH ENDS), 1/8 NPT (BOTH ENDS), 5/8-18 MOUNTING NUT (BOTH ENDS), .25 WRENCH FLATS, 5/16-24 UNF-2A, .312 DIA. ROD.</p>
<p><b>C-09□-DXDE</b></p>  <p><b>\$50.10</b> BASE PRICE Add \$1.95 per inch of stroke Cushion one end only, deduct \$6.30 from base price. CS-09□-DXDE (One end only)</p>	<p><b>Double Acting – Double End Rod – Air Return – Double End Mounting</b> <b>Standard Stroke Lengths:</b> 1", 2", 3", 4", 5", 6" Maximum Stroke – 12" Stainless Steel Rod Standard Optional Rod Wiper <b>Optional Accessory:</b> D-129 Mounting Bracket <b>Base Weight:</b> .46 <b>Adder Per Inch of Stroke:</b> .08</p>	 <p>Technical drawing showing dimensions and components for the C-09□-DXDE air cylinder. Key dimensions include: 4.00 + (2 X STROKE) (total length), 1.19 (rod length), .62 (rod diameter), .09 (rod diameter), .50 (rod diameter), .12 (rod diameter), 1.06 (rod diameter), .12 + STROKE (rod diameter), .12 (rod diameter), .50 (rod diameter), .112 (rod diameter), .621/.624 DIA. PILOT (BOTH ENDS), 1/8 NPT (BOTH ENDS), 5/8-18 MOUNTING NUT (BOTH ENDS), .25 WRENCH FLATS (BOTH ENDS), 5/16-24 UNF-2A (BOTH ENDS), .312 DIA. ROD.</p>

## 1-1/2" Bore Air Cylinders with Adjustable Cushions

MODEL/PRICE	DESCRIPTION/WEIGHT (lbs.)	DIMENSIONS
<p><b>C-17□-D</b></p>  <p><b>\$52.65</b> BASE PRICE Add \$2.35 per inch of stroke Cushion one end only, deduct \$7.35 from base price. CF-17□-D (Front only) CR-17□-D (Rear only)</p>	<p><b>Double Acting – Air Return – Front Nose Mounting</b> <b>Standard Stroke Lengths:</b> 1", 1½", 2", 2½", 3", 4", 5", 6" Maximum Stroke – 12" Stainless Steel Rod Standard Optional Rod Wiper <b>Optional Accessory:</b> D-241 Mounting Bracket <b>Base Weight:</b> .76 <b>Adder Per Inch of Stroke:</b> .09</p>	 <p>Technical drawing showing dimensions and components for the C-17□-D air cylinder. Key dimensions include: 3.88 + STROKE (total length), 1.50 (rod length), .88 (rod diameter), .25 (rod diameter), .75 (rod diameter), .09 (rod diameter), .31 (rod diameter), 1.56 (rod diameter), .746/.749 DIA. PILOT, 1/8 NPT (BOTH ENDS), 3/4-16 MOUNTING NUT, .38 WRENCH FLATS, 7/16-20 UNF-2A, .437 DIA. ROD.</p>

# Air Cylinders with Adjustable Cushions

## 1-1/2" Bore Air Cylinders with Adjustable Cushions (continued)

MODEL/PRICE	DESCRIPTION/WEIGHT (lbs.)	DIMENSIONS
<p><b>C-17□-DP</b></p>  <p><b>\$57.55</b> BASE PRICE Add \$2.35 per inch of stroke Cushion one end only, deduct \$7.35 from base price. CF-17□-DP (Front only) CR-17□-DP (Rear only)</p>	<p><b>Double Acting – Pivot Type – Air Return – Rear Pivot Mounting</b> Standard Stroke Lengths: 1", 1½", 2", 2½", 3", 4", 5", 6", 7", 8", 9", 10", 11", 12" Maximum Stroke – 32" Stainless Steel Rod Standard Optional Rod Wiper Optional Accessories: D-231-1 Piston Rod Clevis D-229 Pivot Brackets Base Weight: .77 Adder Per Inch of Stroke: .09</p>	
<p><b>C-17□-DX</b></p>  <p><b>\$60.70</b> BASE PRICE Add \$2.35 per inch of stroke Cushion one end only, deduct \$7.35 from base price. CF-17□-DX (Front only) CR-17□-DX (Rear only)</p>	<p><b>Double Acting – Double End Mounting – Air Return</b> Standard Stroke Lengths: 1", 1½", 2", 2½", 3", 4", 5", 6", 7", 8", 9", 10", 11", 12" Maximum Stroke – 32" Stainless Steel Rod Standard Optional Rod Wiper Optional Accessory: D-241 Mounting Bracket Base Weight: .84 Adder Per Inch of Stroke: .09</p>	
<p><b>C-17□-DXDE</b></p>  <p><b>\$77.25</b> BASE PRICE Add \$3.70 per inch of stroke Cushion one end only, deduct \$7.35 from base price. CS-17□-DXDE (One end only)</p>	<p><b>Double Acting – Double End Rod – Air Return – Double End Mounting</b> Standard Stroke Lengths: 1", 2", 3", 4", 5", 6", 7", 8", 9", 10", 11", 12" Maximum Stroke – 12" Stainless Steel Rod Standard Optional Rod Wiper Optional Accessory: D-241 Mounting Bracket Base Weight: .90 Adder Per Inch of Stroke: .18</p>	

Standard Air Cylinders

Three-Position Cylinders

Cushion Cylinders

MRS® Cylinders

Non-Rotating Cylinders

PC Cylinders

All Stainless Repairable

Z Line Air Cylinders


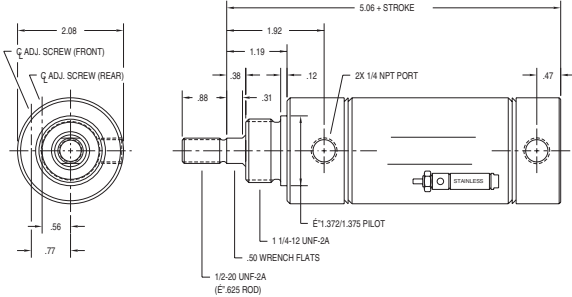

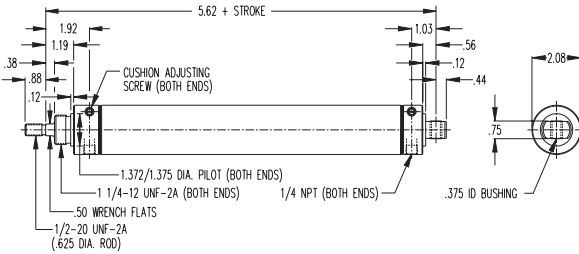

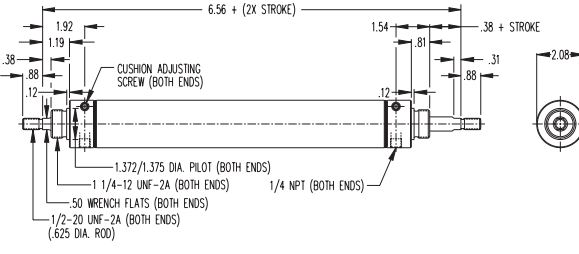
Rod Lock Cylinders

500 Hydraulic Cylinders

Hole Punch Cylinders

# Air Cylinders with Adjustable Cushions


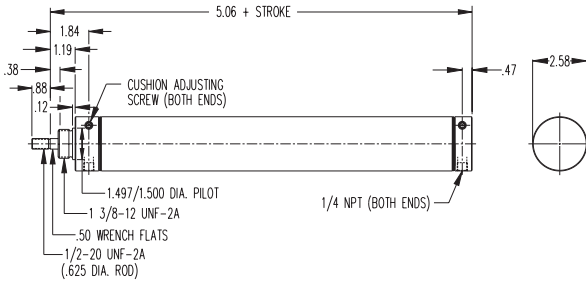

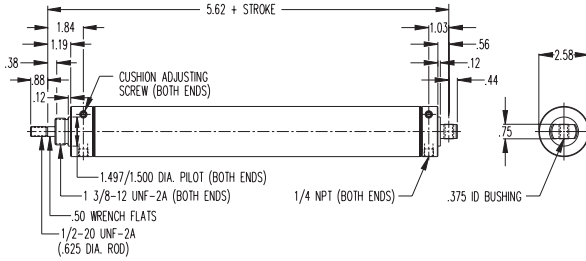

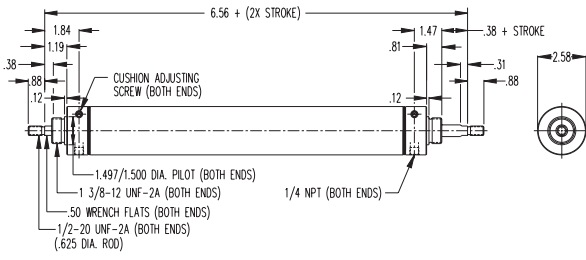
## 2" Bore Air Cylinders with Adjustable Cushions

MODEL/PRICE	DESCRIPTION/WEIGHT (lbs.)	DIMENSIONS
<p><b>C-31□-D</b></p>  <p><b>\$88.95</b> BASE PRICE Add \$2.65 per inch of stroke Cushion one end only, deduct \$12.00 from base price. CF-31□-D (Front only) CR-31□-D (Rear only)</p>	<p><b>Double Acting – Air Return – Front Nose Mounting</b> Standard Stroke Lengths: 1", 1½", 2", 2½", 3", 4", 5", 6" Maximum Stroke – 12" Stainless Steel Rod Standard Optional Accessories: D-615 Mounting Bracket D-508 Mounting Nut Base Weight: 1.64 Adder Per Inch of Stroke: .15</p>	
<p><b>C-31□-DXP</b></p>  <p><b>\$108.25</b> BASE PRICE Add \$2.65 per inch of stroke Cushion one end only, deduct \$12.00 from base price. CF-31□-DXP (Front only) CR-31□-DXP (Rear only)</p>	<p><b>Double Acting – Double End or Rear Pivot Mounting – Air Return</b> Standard Stroke Lengths: 1", 1½", 2", 2½", 3", 4", 5", 6", 7", 8", 9", 10", 11", 12" Maximum Stroke – 32" Stainless Steel Rod Standard Optional Accessories: D-615 Mounting Bracket D-620 Pivot Bracket D-231-3 Piston Rod Clevis D-508 Mounting Nut Base Weight: 1.68 Adder Per Inch of Stroke: .15</p>	
<p><b>C-31□-DXDE</b></p>  <p><b>\$134.80</b> BASE PRICE Add \$3.80 per inch of stroke Cushion one end only, deduct \$12.00 from base price. CS-31□-DXDE (One end only)</p>	<p><b>Double Acting – Double End Rod – Air Return – Double End Mounting</b> Standard Stroke Lengths: 1", 2", 3", 4", 5", 6" Maximum Stroke – 12" Stainless Steel Rod Standard Optional Accessories: D-615 Mounting Bracket D-508 Mounting Nut Base Weight: 1.99 Adder Per Inch of Stroke: .24</p>	

\*U.S. Patent nos. 4,794,681 and 4,862,786

# Air Cylinders with Adjustable Cushions

## 2-1/2" Bore Air Cylinders with Adjustable Cushions

MODEL/PRICE	DESCRIPTION/WEIGHT (lbs.)	DIMENSIONS
<p><b>C-50□-D</b></p>  <p><b>\$110.05</b> BASE PRICE Add \$2.85 per inch of stroke Cushion one end only, deduct \$15.00 from base price. CF-50□-D (Front only) CR-50□-D (Rear only)</p>	<p><b>Double Acting – Air Return – Front Nose Mounting</b> Standard Stroke Lengths: 1", 1½", 2", 2½", 3", 4", 5", 6" Maximum Stroke – 12" Stainless Steel Rod Standard Optional Accessories: D-615-1 Mounting Bracket D-2540 Mounting Nut Base Weight: 2.21 Adder Per Inch of Stroke: .17</p>	
<p><b>C-50□-DXP</b></p>  <p><b>\$125.15</b> BASE PRICE Add \$2.85 per inch of stroke Cushion one end only, deduct \$15.00 from base price. CF-50□-DXP (Front only) CR-50□-DXP (Rear only)</p>	<p><b>Double Acting – Universal Mounting Pivot, or Double End Mounting – Air Return</b> Standard Stroke Lengths: 1", 1½", 2", 2½", 3", 4", 5", 6", 7", 8", 9", 10", 11", 12" Maximum Stroke – 32" Stainless Steel Rod Standard Optional Accessories: D-615-1 Mounting Bracket D-620 Pivot Bracket D-231-3 Piston Rod Clevis D-2540 Mounting Nut Base Weight: 2.33 Adder Per Inch of Stroke: .17</p>	
<p><b>C-50□-DXDE</b></p>  <p><b>\$165.55</b> BASE PRICE Add \$4.45 per inch of stroke Cushion one end only, deduct \$15.00 from base price. CS-50□-DXDE (One end only)</p>	<p><b>Double Acting – Double End Rod – Air Return – Double End Mounting</b> Standard Stroke Lengths: 1", 2", 3", 4", 5", 6" Maximum Stroke – 12" Stainless Steel Rod Standard Optional Accessories: D-615-1 Mounting Bracket D-2540 Mounting Nut Base Weight: 2.38 Adder Per Inch of Stroke: .34</p>	

Standard Air Cylinders

Three-Position Cylinders

Cushion Cylinders

MRS® Cylinders

Non-Rotating Cylinders

PC Cylinders

All Stainless Repairable

Z Line Air Cylinders

Rod Lock Cylinders


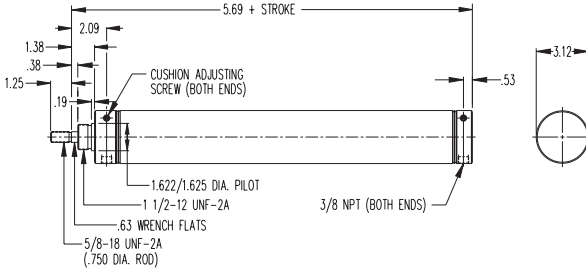

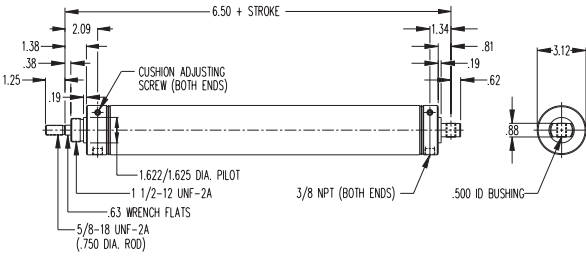

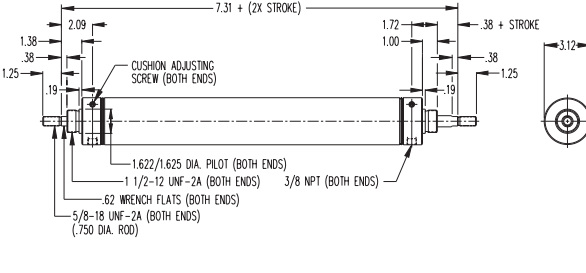
500 Hydraulic Cylinders

Hole Punch Cylinders



# Air Cylinders with Adjustable Cushions

## 3" Bore Air Cylinders with Adjustable Cushions

MODEL/PRICE	DESCRIPTION/WEIGHT (lbs.)	DIMENSIONS
<p><b>C-70□-D</b></p>  <p><b>\$144.55</b> BASE PRICE</p> <p>Add \$3.50 per inch of stroke Cushion one end only, deduct \$17.00 from base price. CF-70□-D (Front only) CR-70□-D (Rear only)</p>	<p><b>Double Acting – Air Return – Front Nose Mounting</b> Standard Stroke Lengths: 1", 1½", 2", 2½", 3", 4", 5", 6" Maximum Stroke – 12" Stainless Steel Rod Standard Optional Accessories: D-19127 Mounting Bracket D-5379 Mounting Nut Base Weight: 3.81 Adder Per Inch of Stroke: .26</p>	
<p><b>C-70□-DXP</b></p>  <p><b>\$162.50</b> BASE PRICE</p> <p>Add \$3.50 per inch of stroke Cushion one end only, deduct \$17.00 from base price. CF-70□-DXP (Front only) CR-70□-DXP (Rear only)</p>	<p><b>Double Acting – Pivot Type – Air Return – Rear Pivot Mounting</b> Standard Stroke Lengths: 1", 1½", 2", 2½", 3", 4", 5", 6", 7", 8", 9", 10", 11", 12" Maximum Stroke – 32" Stainless Steel Rod Standard Optional Accessories: D-8314-A Piston Rod Clevis D-13512-A Pivot Brackets D-5379 Mounting Nut Base Weight: 3.97 Adder Per Inch of Stroke: .26</p>	
<p><b>C-70□-DXDE</b></p>  <p><b>\$180.30</b> BASE PRICE</p> <p>Add \$4.65 per inch of stroke Cushion one end only, deduct \$17.00 from base price. CS-70□-DXDE (One end only)</p>	<p><b>Double Acting – Double End Rod – Air Return – Double End Mounting</b> Standard Stroke Lengths: 1", 2", 3", 4", 5", 6", 7", 8", 9", 10", 11", 12" Maximum Stroke – 12" Stainless Steel Rod Standard Optional Accessories: D-19127 Mounting Bracket D-5379 Mounting Nut Base Weight: 4.15 Adder Per Inch of Stroke: .52</p>	

• **Accessories** – For ¾" bore, see page 1.28. For 1½" bore, see page 1.40. For 1½" bore, see page 1.53. For 2" bore, see page 1.60. For 2½" bore, see page 1.62. For 3" bore, see page 1.64.

# Air Cylinders with Adjustable Cushions

## Cushion Energy Absorption

Cylinders with air cushions provide a possible solution to destructive energies. The air cushion traps a small amount of exhaust air at the end of stroke, providing an air pocket that decelerates the load. This reduces the potentially destructive energy being transmitted to the cylinder and other components. The following is a brief explanation on how to determine the energy level of your application and decide if an air cushion can provide adequate energy absorption. For a more detailed description, consult the factory at 1-800-44-BIMBA.

- Step 1. Determine the load to be stopped by the cylinder.
- Step 2. Determine the velocity at which the load impacts the cylinder endcap.
- Step 3. Calculate the energy the cylinder generates. Use the following equation:

$$\text{energy (e)} = \left(\frac{W}{64} \times v^2\right) + (p \times k)$$

w = weight of the load (lbs.)

V = velocity of the cylinder as the piston impacts the endcap (feet per second)

p = driving pressure (psi)

k = bore constant

Example: C-316-D at 80 psi with total load of 8 lbs.  
 driving pressure (p) = 80 psi  
 total load (w) = 8 lbs.  
 bore constant (k) = .24  
 maximum velocity (v) = 6 fps

$$= (8/64) \times (6^2) + (80 \times .24) = 23.7 \text{ ft. lbs.}$$

**Maximum Energy Calculation Data**

Bore	Max Energy (ft-lbs)	k
04	4.47	0.03
09	10.40	0.05
17	18.80	0.11
31	27.60	0.24
50	40.11	0.37
70	77.72	0.58

Cushion Lengths
0.75"
0.75"
0.75"
0.90"
0.90"
0.99"

Standard Air Cylinders

Three-Position Cylinders

Cushion Cylinders

MRS® Cylinders

Non-Rotating Cylinders

PC Cylinders

All Stainless Repairable

Z-Line Air Cylinders

Rod Lock Cylinders

500 Hydraulic Cylinders

Hole Punch Cylinders

# MRS® Magnetic Reed Switch Air Cylinders

Specifically designed to operate Bimba position sensing switches to actuate programmable controllers, relays, solenoids, timers, or any other electrically operated equipment. MRS cylinders have an additional groove in the piston to accommodate a magnet. They differ from the Moption because they combine features of the "Z" line with Original Line construction; check dimensional drawings for each size for more specific information. Type 303 stainless steel rods are standard.

See Related Products, page 8.3 for information on Bimba position sensing switches.

## OPTIONS:

### NO CHARGE:

- MAGNALUBE G (G)
- NO THREAD (NT)

### SWITCH TRACK for Standard Reed Switches

- Must specify Z for one track, ZTT for 2 tracks – add \$2.75 per track. See Related Products, page 8.12 for details.

Enter Stroke Length as 3rd Digit

## OPTIONS continued...

### DOUBLE ACTING BUMPERS (B)

- $\frac{1}{16}$ " add \$4.00 and .125" to length
- $\frac{3}{4}$ " and  $1\frac{1}{16}$ " add \$4.00 and .250" to length
- $1\frac{1}{4}$ " and  $1\frac{1}{2}$ " add \$4.85 and .250" to length
- $1\frac{3}{4}$ ", 2" and  $2\frac{1}{2}$ " add \$6.20 and .250" to length

### MOLYCOATED BODY (F)

- Add \$2.55 per inch of stroke

### EXTRA EXTENSION (EE)

- Double acting, per inch of extension:

$\frac{1}{16}$ " Bore, add \$0.80

$1\frac{1}{4}$ " Bore, add \$1.00

$1\frac{1}{2}$ " and  $1\frac{3}{4}$ " Bore, add \$1.20

2" Bore, add \$1.35

$2\frac{1}{2}$ " Bore, add \$1.45

- DXDE, per inch of extension:

(added to both ends)

$\frac{1}{16}$ " Bore, add \$1.00

$1\frac{1}{4}$ " Bore, add \$1.45

$1\frac{1}{2}$ " and  $1\frac{3}{4}$ " Bore, add \$1.85

2" Bore, add \$1.90

$2\frac{1}{2}$ " Bore, add \$2.30

### PORTS ROTATED 90° (K)\*

### SIDE PORTED REAR HEAD (Q)\*

### NON-LUBE SERVICE (E)

### FLUOROELASTOMER/HIGH TEMPERATURE SEAL (V)


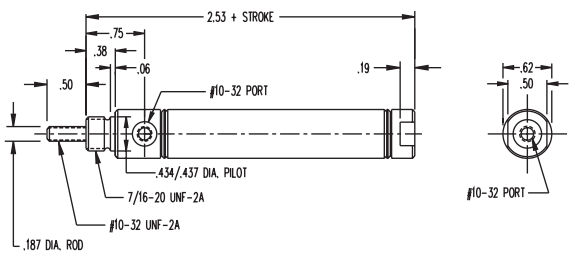

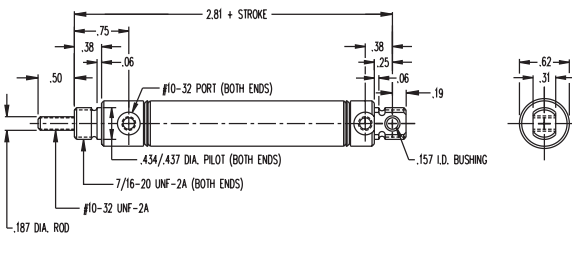
See corresponding standard Original Line bore size catalog page for pricing of options E and V.

\*Consult local distributor for pricing.

### SWITCH TRACK for Miniature Switches (T2, T3, T4)


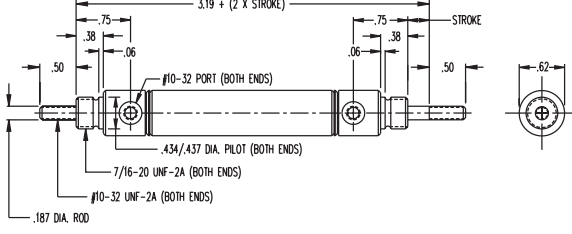
- Must specify track(s) for use with miniature position sensing (T2, T3, T4) – add \$2.75 per track. See Related Products, page 8.12 for details.

## 9/16" Bore MRS Air Cylinders


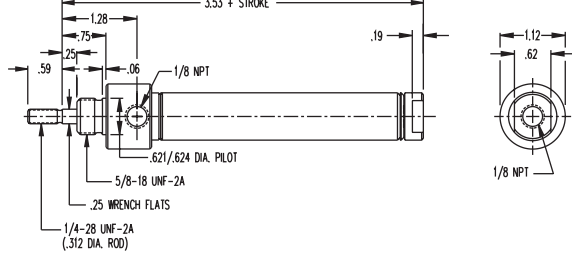

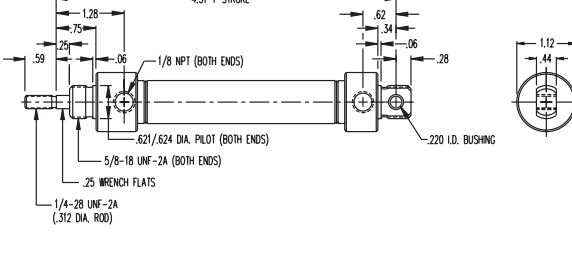

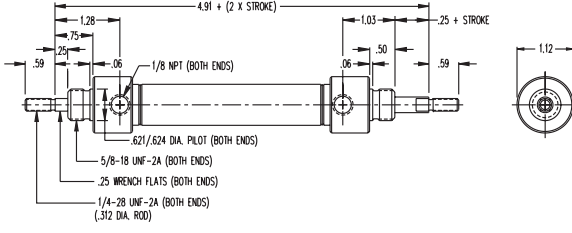
MODEL/PRICE	DESCRIPTION/WEIGHT (lbs.)	DIMENSIONS
<p><b>MRS-02□-D</b></p>  <p><b>\$24.75</b> BASE PRICE Add \$1.50 per inch of stroke</p>	<p><b>Nose Mount</b> Standard Stroke Lengths: <math>\frac{1}{2}</math>", 1", <math>1\frac{1}{2}</math>", 2", <math>2\frac{1}{2}</math>", 3", 4", 5", 6" Maximum Stroke – 12" Optional Accessory: D-770 Mounting Bracket Base Weight: .10 Adder Per Inch of Stroke: .01</p>	
<p><b>MRS-02□-DXP</b></p>  <p><b>\$28.10</b> BASE PRICE Add \$1.50 per inch of stroke</p>	<p><b>Double End or Rear Pivot Mounting</b> Standard Stroke Lengths: <math>\frac{1}{2}</math>", 1", <math>1\frac{1}{2}</math>", 2", <math>2\frac{1}{2}</math>", 3", 4", 5", 6", 7", 8", 9", 10", 11", 12" Maximum Stroke – 12" Optional Accessories: D-12321-A Pivot Bracket D-770 Mounting Bracket D-850 Rod Clevis Base Weight: .10 Adder Per Inch of Stroke: .01</p>	

# MRS® Magnetic Reed Switch Air Cylinders

## 9/16" Bore MRS Air Cylinders (continued)

MODEL/PRICE	DESCRIPTION/WEIGHT (lbs.)	DIMENSIONS
<b>MRS-02</b>  <b>\$35.00</b> BASE PRICE Add \$1.95 per inch of stroke	<b>Double End Rod – Double End Mounting</b> <b>Standard Stroke Lengths:</b> ½", 1", 1½", 2", 2½", 3", 4", 5", 6" Maximum Stroke – 12" <b>Optional Accessory:</b> D-770 Mounting Bracket <b>Base Weight:</b> .14 <b>Adder Per Inch of Stroke:</b> .02	



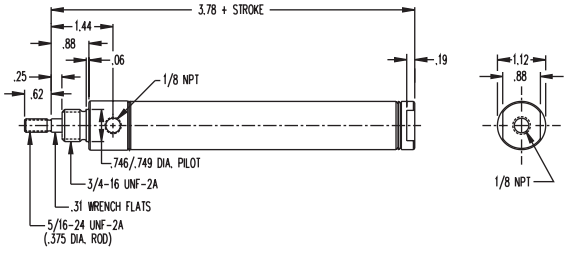


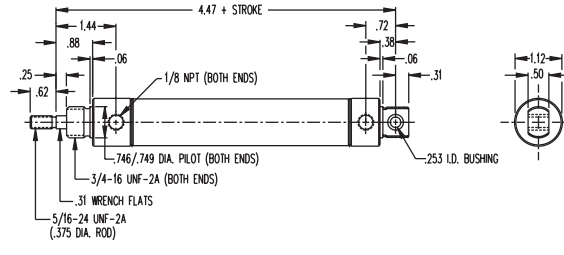


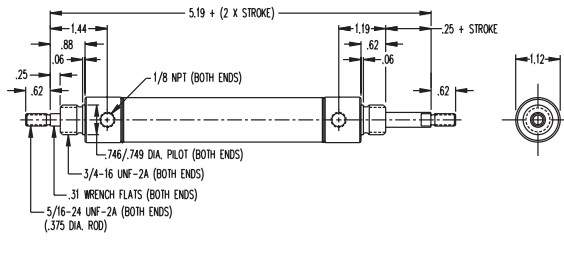
## 3/4" Bore MRS Air Cylinders

MODEL/PRICE	DESCRIPTION/WEIGHT (lbs.)	DIMENSIONS
<b>MRS-04</b>  <b>\$25.80</b> BASE PRICE Add \$1.50 per inch of stroke	<b>Nose Mount</b> <b>Standard Stroke Lengths:</b> ½", 1", 1½", 2", 2½", 3", 4", 5", 6" Maximum Stroke – 12" <b>Optional Accessory:</b> D-129 Mounting Bracket <b>Base Weight:</b> .24 <b>Adder Per Inch of Stroke:</b> .04	
<b>MRS-04</b>  <b>\$28.70</b> BASE PRICE Add \$1.50 per inch of stroke	<b>Double End or Rear Pivot Mounting</b> <b>Standard Stroke Lengths:</b> ½", 1", 1½", 2", 2½", 3", 4", 5", 6", 7", 8", 9", 10", 11", 12" Maximum Stroke – 32" <b>Optional Accessories:</b> D-10131-A Pivot Bracket D-129 Mounting Bracket D-10139-A Rod Clevis <b>Base Weight:</b> .30 <b>Adder Per Inch of Stroke:</b> .06	
<b>MRS-04</b>  <b>\$38.25</b> BASE PRICE Add \$1.95 per inch of stroke	<b>Double End Rod – Double End Mounting</b> <b>Standard Stroke Lengths:</b> ½", 1", 1½", 2", 2½", 3", 4", 5", 6" Maximum Stroke – 12" <b>Optional Accessory:</b> D-129 Mounting Bracket <b>Base Weight:</b> .41 <b>Adder Per Inch of Stroke:</b> .06	



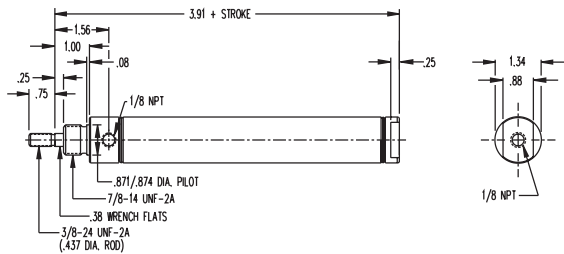
Standard Air Cylinders  
 Three-Position Cylinders  
 Cushion Cylinders  
 MRS Cylinders  
 Non-Rotating Cylinders  
 PC Cylinders  
 All Stainless Repairable  
 Z Line Air Cylinders  
 Rod Lock Cylinders  
 500 Hydraulic Cylinders  
 Hole Punch Cylinders

# MRS<sup>®</sup> Magnetic Reed Switch Air Cylinders

## 1-1/16" Bore MRS Air Cylinders

MODEL/PRICE	DESCRIPTION/WEIGHT (lbs.)	DIMENSIONS
<b>MRS-09</b>  -D  <b>\$31.05</b> BASE PRICE Add \$1.50 per inch of stroke	<b>Nose Mount</b> <b>Standard Stroke Lengths:</b> ½", 1", 1½", 2", 2½", 3", 4", 5", 6" Maximum Stroke – 12" <b>Optional Accessory:</b> D-8315 Mounting Bracket <b>Base Weight:</b> .37 <b>Adder Per Inch of Stroke:</b> .05	
<b>MRS-09</b>  -DXP  <b>\$34.35</b> BASE PRICE Add \$1.50 per inch of stroke	<b>Double End or Rear Pivot Mounting</b> <b>Standard Stroke Lengths:</b> ½", 1", 1½", 2", 2½", 3", 4", 5", 6", 7", 8", 9", 10", 11", 12" Maximum Stroke – 32" <b>Optional Accessories:</b> D-8321-A Pivot Bracket D-8315 Mounting Bracket D-8309-A Rod Clevis <b>Base Weight:</b> .42 <b>Adder Per Inch of Stroke:</b> .05	
<b>MRS-09</b>  DXDE  <b>\$41.05</b> BASE PRICE Add \$1.95 per inch of stroke	<b>Double End Rod – Double End Mounting</b> <b>Standard Stroke Lengths:</b> ½", 1", 1½", 2", 2½", 3", 4", 5", 6" Maximum Stroke – 12" <b>Optional Accessory:</b> D-8315 Mounting Bracket <b>Base Weight:</b> .60 <b>Adder Per Inch of Stroke:</b> .08	


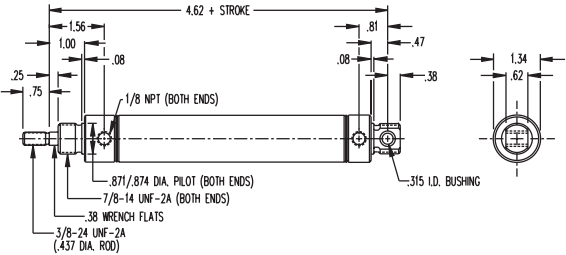

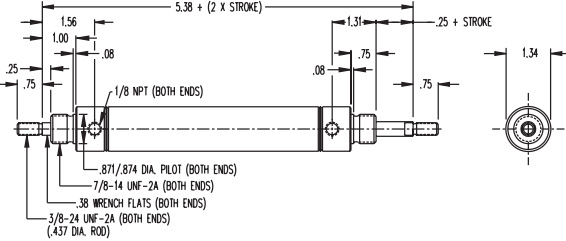
## 1-1/4" Bore MRS Air Cylinders

MODEL/PRICE	DESCRIPTION/WEIGHT (lbs.)	DIMENSIONS
<b>MRS-12</b>  -D  <b>\$38.65</b> BASE PRICE Add \$1.95 per inch of stroke	<b>Nose Mount</b> <b>Standard Stroke Lengths:</b> ½", 1", 1½", 2", 2½", 3", 4", 5", 6" Maximum Stroke – 12" <b>Optional Accessory:</b> D-8316 Mounting Bracket <b>Base Weight:</b> .51 <b>Adder Per Inch of Stroke:</b> .07	


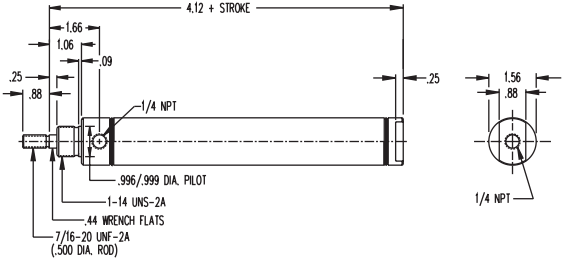

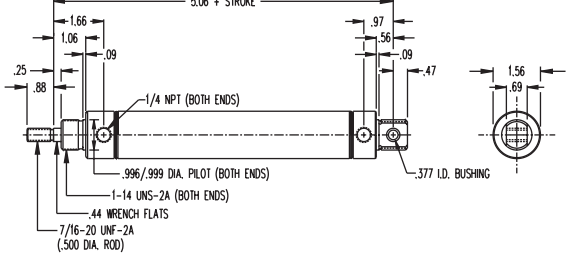


# MRS® Magnetic Reed Switch Air Cylinders

## 1-1/4" Bore MRS Air Cylinders (continued)


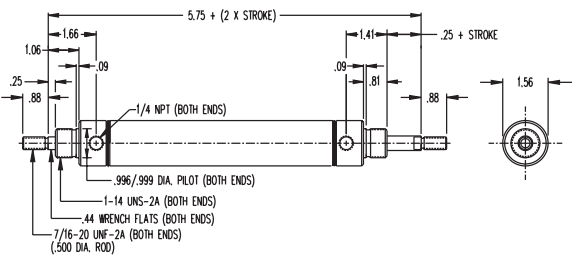
MODEL/PRICE	DESCRIPTION/WEIGHT (lbs.)	DIMENSIONS
<b>MRS-12□-DXP</b>  <b>\$42.95</b> BASE PRICE Add \$1.95 per inch of stroke	<b>Double End or Rear Pivot Mounting</b> <b>Standard Stroke Lengths:</b> ½", 1", 1½", 2", 2½", 3", 4", 5", 6", 7", 8", 9", 10", 11", 12" <b>Maximum Stroke – 32"</b> <b>Optional Accessories:</b> D-8322-A Pivot Bracket D-8316 Mounting Bracket D-8310-A Rod Clevis <b>Base Weight: .61</b> <b>Adder Per Inch of Stroke: .05</b>	
<b>MRS-12□DXDE</b>  <b>\$54.35</b> BASE PRICE Add \$2.85 per inch of stroke	<b>Double End Rod – Double End Mounting</b> <b>Standard Stroke Lengths:</b> ½", 1", 1½", 2", 2½", 3", 4", 5", 6" <b>Maximum Stroke – 12"</b> <b>Optional Accessory:</b> D-8316 Mounting Bracket <b>Base Weight: .70</b> <b>Adder Per Inch of Stroke: .14</b>	

## 1-1/2" Bore MRS Air Cylinders


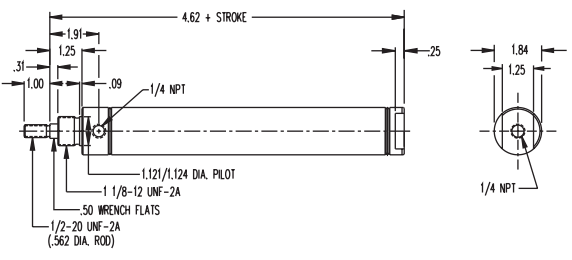

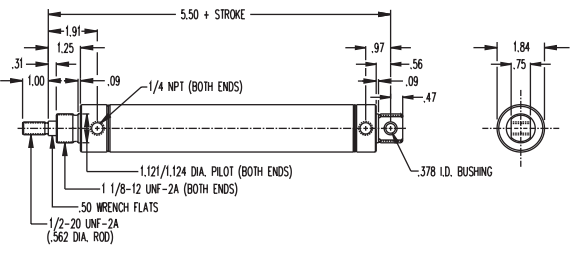

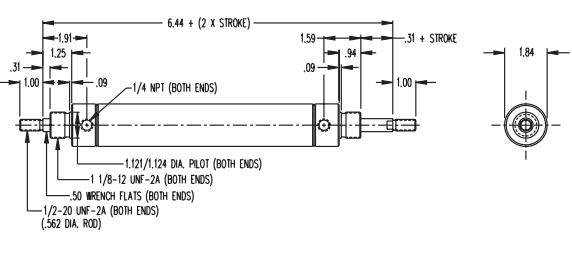
MODEL/PRICE	DESCRIPTION/WEIGHT (lbs.)	DIMENSIONS
<b>MRS-17□-D</b>  <b>\$46.05</b> BASE PRICE Add \$2.35 per inch of stroke	<b>Nose Mount</b> <b>Standard Stroke Lengths:</b> ½", 1", 1½", 2", 2½", 3", 4", 5", 6" <b>Maximum Stroke – 12"</b> <b>Optional Accessory:</b> D-8317 Mounting Bracket <b>Base Weight: .74</b> <b>Adder Per Inch of Stroke: .10</b>	
<b>MRS-17□-DXP</b>  <b>\$50.25</b> BASE PRICE Add \$2.35 per inch of stroke	<b>Double End or Rear Pivot Mounting</b> <b>Standard Stroke Lengths:</b> ½", 1", 1½", 2", 2½", 3", 4", 5", 6", 7", 8", 9", 10", 11", 12" <b>Maximum Stroke – 32"</b> <b>Optional Accessories:</b> D-8323-A Pivot Bracket D-8317 Mounting Bracket D-8311-A Rod Clevis <b>Base Weight: .87</b> <b>Adder Per Inch of Stroke: .10</b>	

# MRS® Magnetic Reed Switch Air Cylinders

## 1-1/2" Bore MRS Air Cylinders (continued)


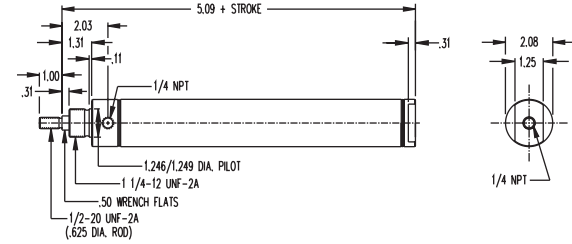

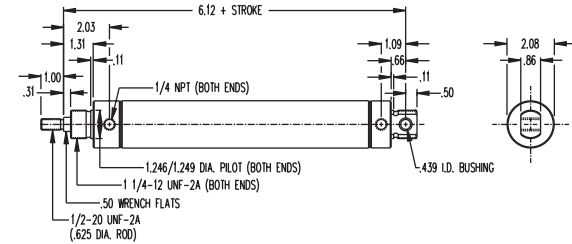

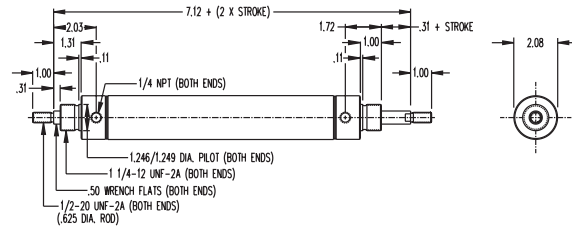
MODEL/PRICE	DESCRIPTION/WEIGHT (lbs.)	DIMENSIONS
<b>MRS-17</b>  <b>\$57.95</b> BASE PRICE Add \$3.70 per inch of stroke	<b>Double End Rod – Double End Mounting</b> <b>Standard Stroke Lengths:</b> ½", 1", 1½", 2", 2½", 3", 4", 5", 6" <b>Maximum Stroke – 12"</b> <b>Optional Accessory:</b> D-8317 Mounting Bracket <b>Base Weight: .94</b> <b>Adder Per Inch of Stroke: .20</b>	

## 1-3/4" Bore MRS Air Cylinders


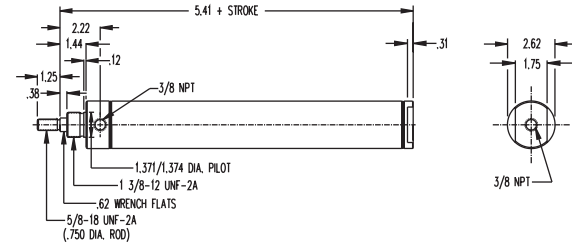
MODEL/PRICE	DESCRIPTION/WEIGHT (lbs.)	DIMENSIONS
<b>MRS-24</b>  <b>\$53.05</b> BASE PRICE Add \$2.35 per inch of stroke	<b>Nose Mount</b> <b>Standard Stroke Lengths:</b> ½", 1", 1½", 2", 2½", 3", 4", 5", 6" <b>Maximum Stroke – 12"</b> <b>Optional Accessory:</b> D-8318 Mounting Bracket <b>Base Weight: 1.14</b> <b>Adder Per Inch of Stroke: .13</b>	
<b>MRS-24</b>  <b>\$58.35</b> BASE PRICE Add \$2.35 per inch of stroke	<b>Double End or Rear Pivot Mounting</b> <b>Standard Stroke Lengths:</b> ½", 1", 1½", 2", 2½", 3", 4", 5", 6", 7", 8", 9", 10", 11", 12" <b>Maximum Stroke – 32"</b> <b>Optional Accessories:</b> D-8324-A Pivot Bracket D-8318 Mounting Bracket D-8312-A Rod Clevis <b>Base Weight: 1.30</b> <b>Adder Per Inch of Stroke: .13</b>	
<b>MRS-24</b>  <b>\$73.00</b> BASE PRICE Add \$3.70 per inch of stroke	<b>Double End Rod – Double End Mounting</b> <b>Standard Stroke Lengths:</b> ½", 1", 1½", 2", 2½", 3", 4", 5", 6" <b>Maximum Stroke – 12"</b> <b>Optional Accessory:</b> D-8318 Mounting Bracket <b>Base Weight: 1.40</b> <b>Adder Per Inch of Stroke: .26</b>	

# MRS® Magnetic Reed Switch Air Cylinders

## 2" Bore MRS Air Cylinders


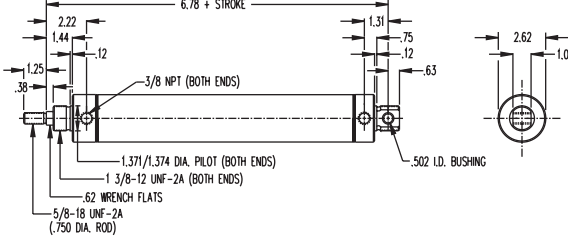

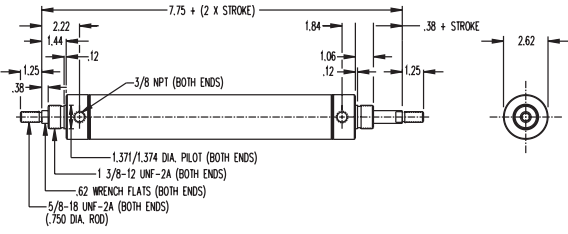
MODEL/PRICE	DESCRIPTION/WEIGHT (lbs.)	DIMENSIONS
<b>MRS-31</b> □ -D  <b>\$59.95</b> BASE PRICE Add \$2.65 per inch of stroke	<b>Nose Mount</b> <b>Standard Stroke Lengths:</b> ½", 1", 1½", 2", 2½", 3", 4", 5", 6" Maximum Stroke - 12" <b>Optional Accessory:</b> D-8319 Mounting Bracket <b>Base Weight: 1.55</b> <b>Adder Per Inch of Stroke: .15</b>	
<b>MRS-31</b> □ -DXP  <b>\$65.80</b> BASE PRICE Add \$2.65 per inch of stroke	<b>Double End or Rear Pivot Mounting</b> <b>Standard Stroke Lengths:</b> ½", 1", 1½", 2", 2½", 3", 4", 5", 6", 7", 8", 9", 10", 11", 12" Maximum Stroke - 32" <b>Optional Accessories:</b> D-8325-A Pivot Bracket D-8319 Mounting Bracket D-8313-A Rod Clevis <b>Base Weight: 1.80</b> <b>Adder Per Inch of Stroke: .15</b>	
<b>MRS-31</b> □ DXDE  <b>\$78.35</b> BASE PRICE Add \$3.80 per inch of stroke	<b>Double End Rod - Double End Mounting</b> <b>Standard Stroke Lengths:</b> ½", 1", 1½", 2", 2½", 3", 4", 5", 6" Maximum Stroke - 12" <b>Optional Accessory:</b> D-8319 Mounting Bracket <b>Base Weight: 1.90</b> <b>Adder Per Inch of Stroke: .30</b>	

## 2-1/2" Bore MRS Air Cylinders

MODEL/PRICE	DESCRIPTION/WEIGHT (lbs.)	DIMENSIONS
<b>MRS-50</b> □ -D  <b>\$76.10</b> BASE PRICE Add \$2.85 per inch of stroke	<b>Nose Mount</b> <b>Standard Stroke Lengths:</b> ½", 1", 1½", 2", 2½", 3", 4", 5", 6" Maximum Stroke - 12" <b>Optional Accessory:</b> D-8320 Mounting Bracket <b>Base Weight: 2.48</b> <b>Adder Per Inch of Stroke: .20</b>	

# MRS<sup>®</sup> Magnetic Reed Switch Air Cylinders

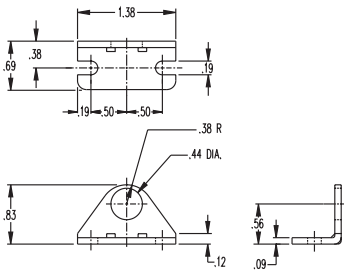
## 2-1/2" Bore MRS Air Cylinders (continued)

MODEL/PRICE	DESCRIPTION/WEIGHT (lbs.)	DIMENSIONS
<p><b>MRS-50□-DXP</b></p>  <p><b>\$84.75</b> BASE PRICE Add \$2.85 per inch of stroke</p>	<p><b>Double End or Rear Pivot Mounting</b>  <b>Standard Stroke Lengths:</b>            1/2", 1", 1 1/2", 2", 2 1/2", 3", 4", 5", 6", 7", 8", 9", 10", 11", 12"  <b>Maximum Stroke – 32"</b>  <b>Optional Accessories:</b>            D-8326-A Pivot Bracket            D-8320 Mounting Bracket            D-8314-A Rod Clevis  <b>Base Weight: 2.90</b>  <b>Adder Per Inch of Stroke: .20</b></p>	
<p><b>MRS-50□DXDE</b></p>  <p><b>\$99.60</b> BASE PRICE Add \$4.45 per inch of stroke</p>	<p><b>Double End Rod – Double End Mounting</b>  <b>Standard Stroke Lengths:</b>            1/2", 1", 1 1/2", 2", 2 1/2", 3", 4", 5", 6"  <b>Maximum Stroke – 12"</b>  <b>Optional Accessory:</b>            D-8320 Mounting Bracket  <b>Base Weight: 3.15</b>  <b>Adder Per Inch of Stroke: .40</b></p>	

## MRS Accessories

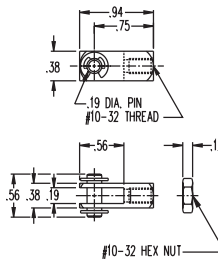
### 9/16" Bore Accessories

**D-770**  
\$2.90



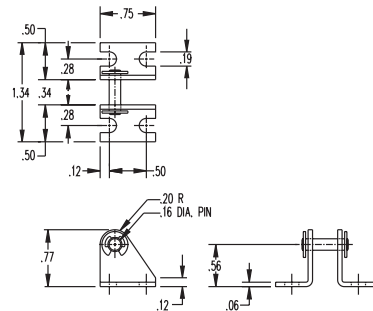
Mounting Bracket

**D-850**  
\$3.25



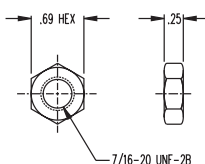
Rod Clevis

**D-12321-A**  
\$3.55



Pivot Bracket

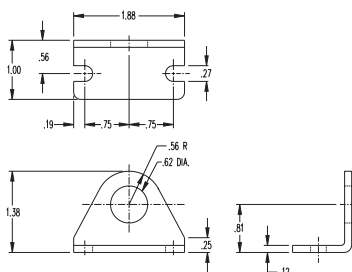
**D-154**  
\$.35



Mounting Nut

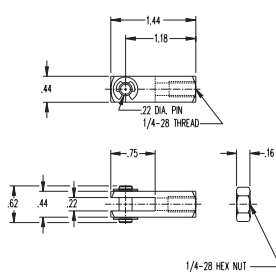
## 3/4" Bore Accessories

**D-129**  
\$3.20



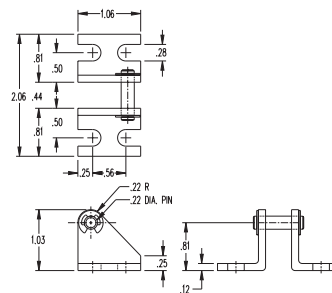
Mounting Bracket

**D-10139-A**  
\$6.20



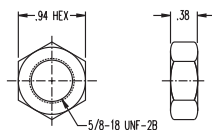
Rod Clevis

**D-10131-A**  
\$3.55



Pivot Bracket

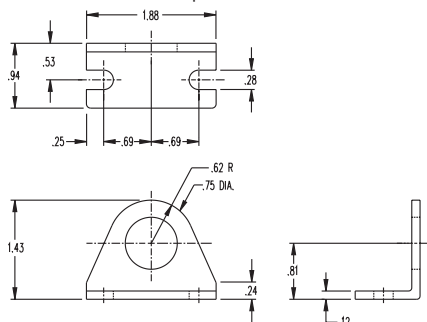
**D-9**  
\$.45



Mounting Nut

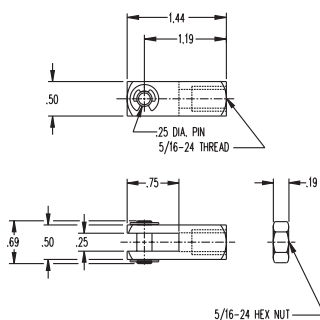
## 1-1/16" Bore Accessories

**D-8315**  
\$3.15



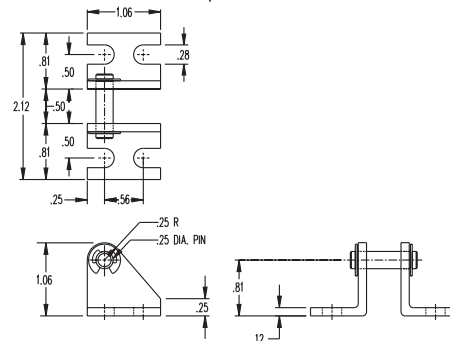
Mounting Bracket

**D-8309-A**  
\$6.30



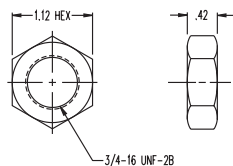
Rod Clevis

**D-8321-A**  
\$4.75



Pivot Bracket

**D-3556**  
\$.75



Mounting Nut

Standard Air  
Cylinders

Three-Position  
Cylinders

Cushion  
Cylinders

MRS  
Cylinders

Non-Rotating  
Cylinders

PC  
Cylinders

All Stainless  
Repairable

Z Line Air  
Cylinders

Rod Lock  
Cylinders

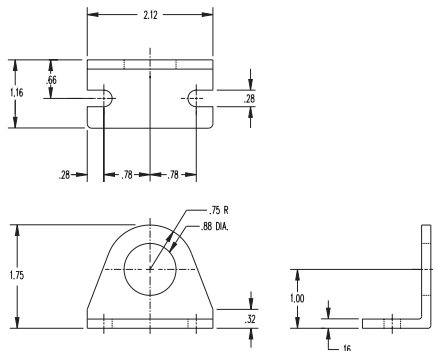
500 Hydraulic  
Cylinders

Hole Punch  
Cylinders



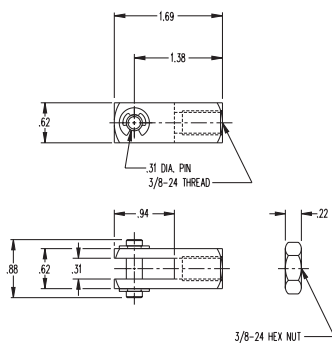
## 1-1/4" Bore Accessories

**D-8316**  
\$4.25



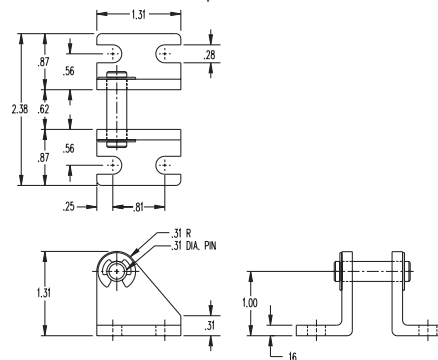
Mounting Bracket

**D-8310-A**  
\$6.25



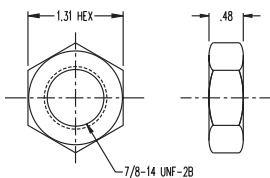
Rod Clevis

**D-8322-A**  
\$6.70



Pivot Bracket

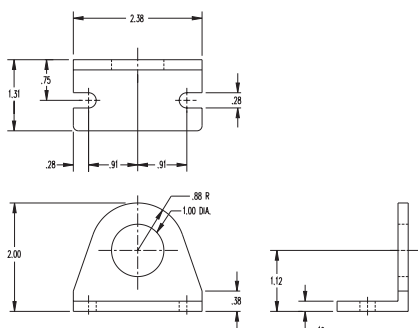
**D-2545**  
\$1.10



Mounting Nut

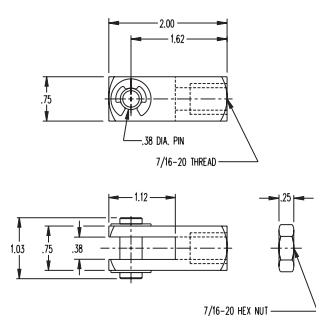
## 1-1/2" Bore Accessories

**D-8317**  
\$5.50



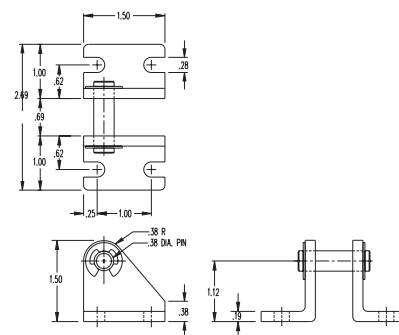
Mounting Bracket

**D-8311-A**  
\$7.35



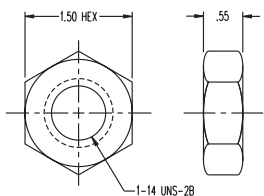
Rod Clevis

**D-8323-A**  
\$6.85



Pivot Bracket

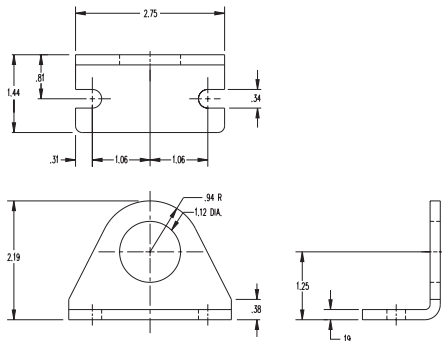
**D-1331**  
\$2.20



Mounting Nut

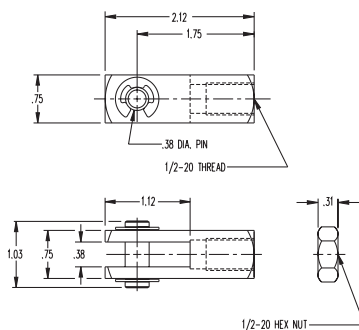
## 1-3/4" Bore Accessories

**D-8318**  
\$6.50



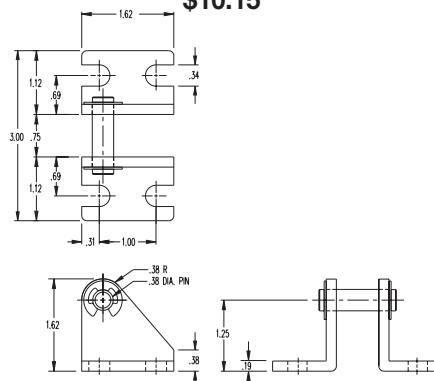
Mounting Bracket

**D-8312-A**  
\$8.00



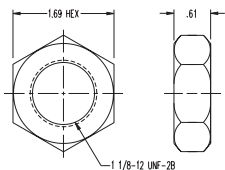
Rod Clevis

**D-8324-A**  
\$10.15



Pivot Bracket

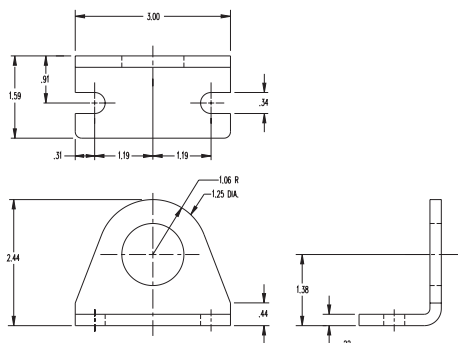
**D-8484**  
\$4.60



Mounting Nut

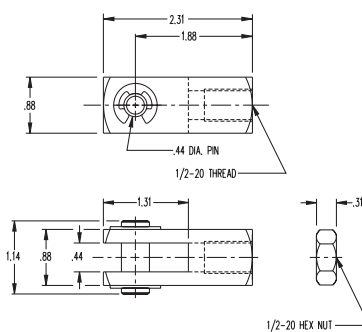
## 2" Bore Accessories

**D-8319**  
\$7.15



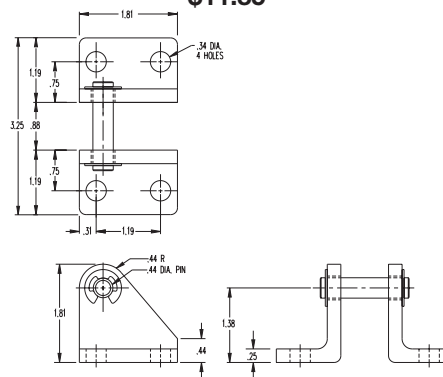
Mounting Bracket

**D-8313-A**  
\$10.50



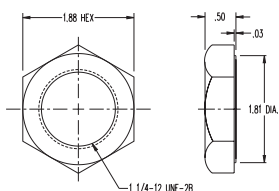
Rod Clevis

**D-8325-A**  
\$11.85



Pivot Bracket

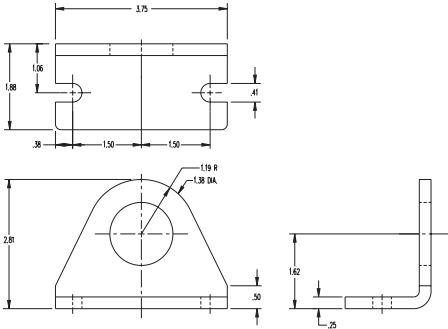
**D-508**  
\$4.60



Mounting Nut

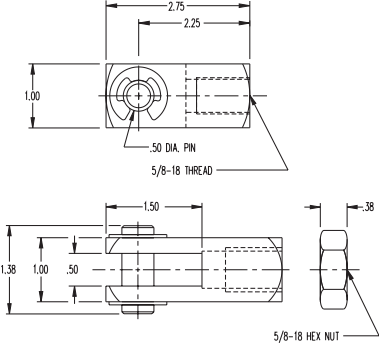
## 2-1/2" Bore Accessories

**D-8320**  
\$7.55



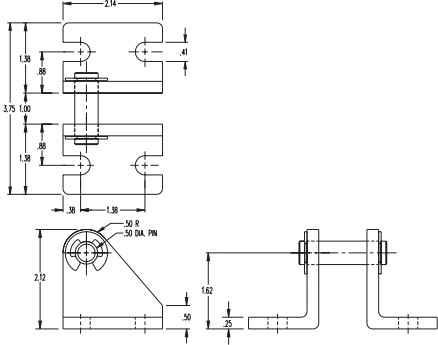
Mounting Bracket

**D-8314-A**  
\$11.85



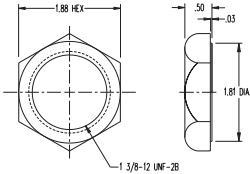
Rod Clevis

**D-8326-A**  
\$10.75



Pivot Bracket

**D-2540**  
\$4.10



Mounting Nut

# Non-Rotating Original Line Air Cylinders

Bimba's new Non-Rotating Original Line stainless steel body air cylinder design consists of a unique square piston rod with rounded corners. The square rod prevents rotation better than other rod configurations, and the rounded corners provide longer seal life than conventional hexagon rods. The unusual geometry of the square rod also provides superior rotation control. All bore sizes have a rotational control of less than or equal to  $\pm 3$  degrees. The special high strength aluminum alloy rod guide provides high load carrying capability and abrasion resistance. The urethane-based rod seal provides excellent seal life and leak-free service. The Non-Rotating Original Line cylinder is dimensionally interchangeable with the standard Original Line stainless steel cylinder.

## 9/16" Bore Non-Rotating Air Cylinders

- New! Stainless Steel Piston Rod Standard.
- Unique Square Piston Rod with Rounded Corners.
- High Strength Aluminum Alloy Rod Guide.
- Urethane-based Rod Seal.
- Buna N "U" Cup Piston Seal.
- Pressure Rating - 250 PSI Maximum (Air only)
- Available in Double Acting and Reverse Acting Models.
- Enclosed Spring Force: 2 lbs. Relaxed - 4 lbs. Compressed.
- Standard Buna N Seals Temperature Range of -20°F (-25°C) to 200°F (95°C)

Enter Stroke Length as 3rd Digit

### OPTIONS

#### NO CHARGE:

- MAGNALUBE® G (G)
- SIDE PORTED REAR HEAD (Q)
- PORTS ROTATED (K)

#### REVERSE ACTING BUMPERS (B)

- \$3.05 additional
- Add .062 to overall length

#### DOUBLE ACTING BUMPERS (B)

- \$4.25 additional
- Add .125 to overall length

#### MOLYCOATED BODY (F)

- Add \$2.65 per inch of stroke

#### EXTRA EXTENSION (EE)

- Add \$0.90 per inch of extension

#### MAGNET (prefix M) - Add \$9.70

- Reverse acting add .125" to overall length
- Must specify track(s) for use with miniature position sensing (T2, T3, T4) – add \$2.75 per track. See Related Products, page 8.12 for details.

#### HIGH TEMPERATURE SEALS (V)

Temperature Range : 0° to 400°F (-18° to 205°C)

- Double acting, add \$11.00
- Reverse acting, add \$7.65

### MODEL/PRICE

### DESCRIPTION/WEIGHT (lbs.)

### DIMENSIONS

**NR-02**  -D

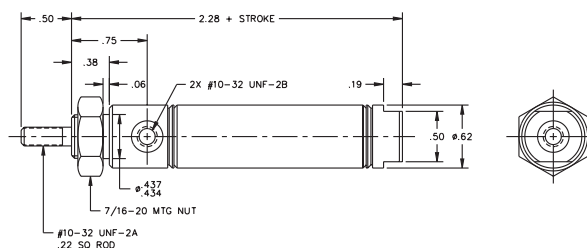


**\$24.30**

**BASE PRICE**

Add \$1.80 per inch of stroke

**Double Acting – Air Return-Front Nose Mounting**  
**Standard Stroke Lengths:**  
 ½", 1", 1½", 2", 2½", 3", 4"  
**Maximum Stroke 10"**  
**Optional Accessory:**  
 D-770 Mounting Bracket  
**Base Weight: .09**  
**Adder Per Inch of Stroke: .02**



®Magnalube is a registered trademark of the Carleton-Stuart Corporation.

Standard Air Cylinders

Three-Position Cylinders

Cushion Cylinders

MRS® Cylinders

Non-Rotating Cylinders

PC Cylinders

All Stainless Repairable

Z Line Air Cylinders


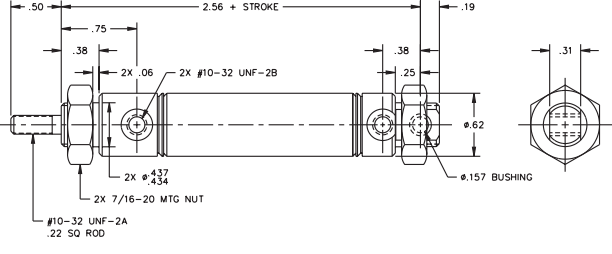

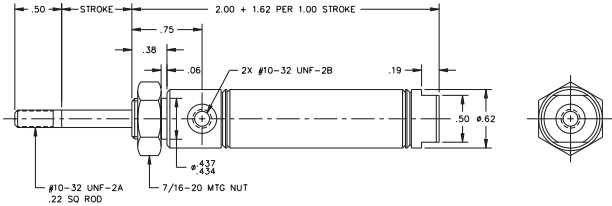

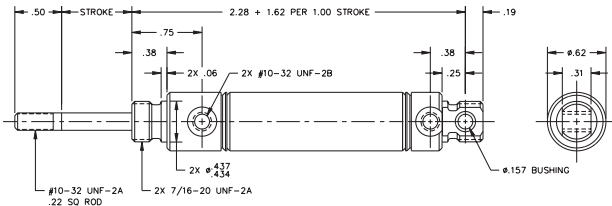
Rod Lock Cylinders

500 Hydraulic Cylinders

Hole Punch Cylinders

# 9/16" Bore Non-Rotating Air Cylinders

## 9/16" Bore Non-Rotating Air Cylinders (continued)

MODEL/PRICE	DESCRIPTION/WEIGHT (lbs.)	DIMENSIONS
<p><b>NR-02□-DXP</b></p>  <p><b>\$32.15</b> BASE PRICE Add \$1.80 per inch of stroke</p>	<p><b>Double Acting – Double End or Rear Pivot Mounting – Air Return</b>  <b>Standard Stroke Lengths:</b>            ½", 1", 1½", 2", 2½", 3", 4"  <b>Maximum Stroke 10"</b>  <b>Optional Accessories:</b>            D-770 Mounting Nut            D-850 Rod Clevis            D-12321-A Pivot Bracket  <b>Base Weight: .09</b>  <b>Adder Per Inch of Stroke: .02</b></p>	
<p><b>NR-02□-R</b></p>  <p><b>\$27.80</b> BASE PRICE Add \$2.40 per inch of stroke</p>	<p><b>Reverse Single Acting – Pull Type – Rod Normally Extended – Spring Return – Front Nose Mounting</b>  <b>Standard Stroke Lengths:</b>            ½", 1", 1½", 2", 2½", 3"  <b>Maximum Stroke 4"</b>  <b>Optional Accessory:</b>            D-770 Mounting Bracket  <b>Base Weight: .08</b>  <b>Adder Per Inch of Stroke: .04</b></p>	
<p><b>NR-02□-RP</b></p>  <p><b>\$35.50</b> BASE PRICE Add \$2.40 per inch of stroke</p>	<p><b>Reverse Single Acting – Pivot and Pull Type – Rod Normally Extended – Spring Return – Rear Pivot Mounting</b>  <b>Standard Stroke Lengths:</b>            ½", 1", 1½", 2", 2½", 3"  <b>Maximum Stroke 4"</b>  <b>Optional Accessories:</b>            D-850 Rod Clevis            D-12321-A Pivot Bracket  <b>Base Weight: .08</b>  <b>Adder Per Inch of Stroke: .04</b></p>	



# 3/4" Bore Non-Rotating Air Cylinders

- New! Stainless Steel Piston Rod Standard.
- Unique Square Piston Rod with Rounded Corners.
- High Strength Aluminum Alloy Rod Guide.
- Urethane-based Rod Seal.
- Buna N "U" Cup Piston Seal.
- Pressure Rating – 250 PSI Maximum (Air only)
- Available in Double Acting and Reverse Acting Models.
- Enclosed Spring Force: 3 lbs. Relaxed – 6 lbs. Compressed.
- Standard Buna N Seals Temperature Range of -20°F (-25°C) to 200°F (95°C)

Enter Stroke Length as 3rd Digit

## OPTIONS

### NO CHARGE:

- **MAGNALUBE® G (G)**
- **PORTS ROTATED (K)**
- **SIDE PORTED REAR HEAD (Q)**
- **PIVOT BUSHING (Y)**

### REVERSE ACTING BUMPERS (B)

- \$3.05 additional
- Add .062 to overall length

### DOUBLE ACTING BUMPERS (B)

- \$4.25 additional
- Add .125 to overall length

### MOLYCOATED BODY (F)

- Add \$2.65 per inch of stroke

### EXTRA EXTENSION (EE)

- Add \$0.95 per inch of extension

### MAGNET (prefix M) - Add \$9.70

- Reverse acting add .125" to overall length
- Must specify track(s) for use with miniature position sensing (T2, T3, T4) – add \$2.75 per track. See Related Products, page 8.12 for details.

### HIGH TEMPERATURE SEALS (V)

Temperature Range : 0° to 400°F (-18° to 205°C)

- Reverse acting, add \$7.65
- Double acting, add \$11.00

Standard Air Cylinders

Three-Position Cylinders

Cushion Cylinders

MRS® Cylinders

Non-Rotating Cylinders

PC Cylinders


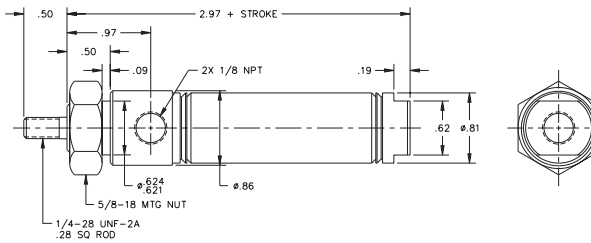

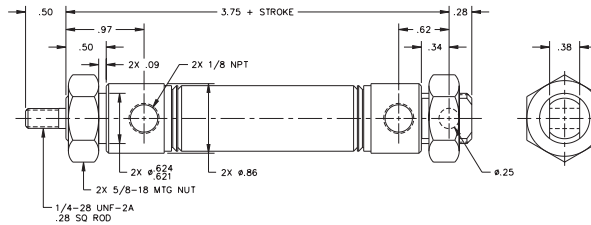
All Stainless Repairable

Z Line Air Cylinders

Rod Lock Cylinders


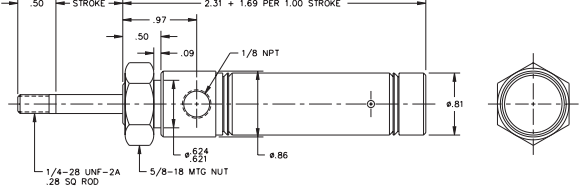

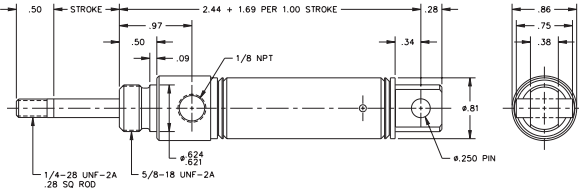

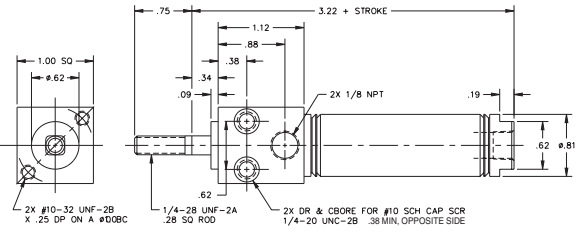

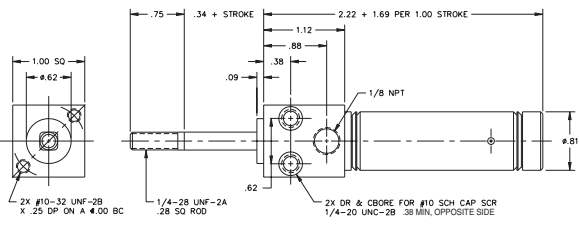

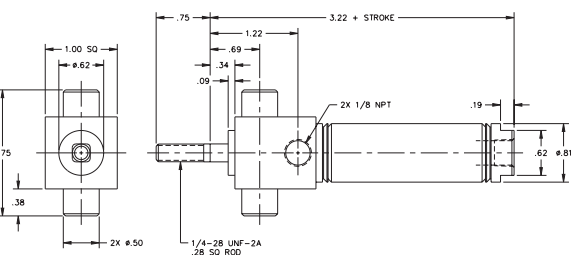
500 Hydraulic Cylinders

Hole Punch Cylinders

MODEL/PRICE	DESCRIPTION/WEIGHT (lbs.)	DIMENSIONS
<p><b>NR-04□-D</b></p>  <p><b>\$25.50</b> BASE PRICE Add \$1.85 per inch of stroke</p>	<p><b>Double Acting – Air Return – Front Nose Mounting</b>  <b>Standard Stroke Lengths:</b>                      ½", 1", 1½", 2", 2½", 3", 4", 5", 6"                      Maximum Stroke 12"  <b>Option Accessory:</b>                      D-129 Mounting Bracket                      Base Weight : .21                      Adder Per Inch of Stroke: .03</p>	
<p><b>NR-04□-DXP</b></p>  <p><b>\$33.10</b> BASE PRICE Add \$1.85 per inch of stroke</p>	<p><b>Double Acting – Double End or Rear Pivot Mounting – Air Return</b>  <b>Standard Stroke Lengths:</b>                      ½", 1", 1½", 2", 2½", 3", 4", 5", 6", 7", 8", 9", 10", 11", 12"                      Maximum Stroke 24"  <b>Optional Accessories:</b>                      D-129 Mounting Bracket                      D-166-3 Rod Clevis                      D-13498-A Pivot Bracket                      Base Weight: .29                      Adder Per Inch of Stroke: .03</p>	

# 3/4" Bore Non-Rotating Air Cylinders

## 3/4" Bore Non-Rotating Air Cylinders (continued)

MODEL/PRICE	DESCRIPTION/WEIGHT (lbs.)	DIMENSIONS
<p><b>NR-04</b> □ -R</p>  <p><b>\$28.05</b> BASE PRICE Add \$2.40 per inch of stroke</p>	<p><b>Reverse Single Acting – Pull Type – Rod Normally Extended – Spring Return – Front Nose Mounting</b> Standard Stroke Lengths: ½", 1", 1½", 2", 2½", 3", 4" Maximum Stroke 6" Optional Accessory: D-129 Mounting Bracket Base Weight: .18 Adder Per Inch of Stroke: .07</p>	
<p><b>NR-04</b> □ -RP</p>  <p><b>\$36.25</b> BASE PRICE Add \$2.40 per inch of stroke</p>	<p><b>Reverse Single Acting – Pull Type – Rod Normally Extended – Spring Return – Rear Pivot Mounting</b> Standard Stroke Lengths: ½", 1", 1½", 2", 2½", 3", 4" Maximum Stroke 6" Optional Accessories: D-167 Mounting Brackets D-166-3 Piston Rod Clevis Base Weight: .18 Adder Per Inch of Stroke: .07</p>	
<p><b>BFNR-04</b> □ -D</p>  <p><b>\$42.00</b> BASE PRICE Add \$1.85 per inch of stroke</p>	<p><b>Double Acting – Front Block Mounting – Air Return</b> Standard Stroke Lengths: ½", 1", 1½", 2", 2½", 3", 4", 5", 6" Maximum Stroke 12" Base Weight: .22 Adder Per Inch of Stroke: .03</p>	
<p><b>BFNR-04</b> □ -R</p>  <p><b>\$45.25</b> BASE PRICE Add \$2.40 per inch of stroke</p>	<p><b>Pull Type – Front Block Mounting Rod Normally Extended – Reverse Single Acting – Spring Return</b> Standard Stroke Lengths: ½", 1", 1½", 2", 2½", 3", 4" Maximum Stroke 6" Base Weight: .19 Adder per inch of stroke: .07</p>	
<p><b>BFTNR-04</b> □ -D</p>  <p><b>\$55.40</b> BASE PRICE Add \$1.85 per inch of stroke</p>	<p><b>Double Acting – Front Block Trunnion Mounting – Air Return</b> Standard Stroke Lengths: ½", 1", 1½", 2", 2½", 3", 4" Maximum Stroke 12" Optional Accessories: TRB-2 Trunnion Brackets D-166-3 Rod Clevis Base Weight: .29 Adder Per Inch of Stroke: .03</p>	

# 1-1/16" Bore Non-Rotating Air Cylinders

- New! Stainless Steel Piston Rod Standard.
- Unique Square Piston Rod with Rounded Corners.
- High Strength Aluminum Alloy Rod Guide.
- Urethane-based Rod Seal.
- Buna N "U" Cup Piston Seal.
- Pressure Rating – 250 PSI Maximum (Air only)
- Available in Double Acting and Reverse Acting Models.
- Enclosed Spring Force: 6 lbs. Relaxed – 12 lbs. Compressed.
- Standard Buna N Seals Temperature Range of -20°F (-25°C) to 200° F (95°C)

Enter Stroke Length as 3rd Digit

## OPTIONS

### NO CHARGE:

- MAGNALUBE® G (G)
- PORTS ROTATED (K)
- SIDE PORTED REAR HEAD (Q)
- PIVOT BUSHING (Y)

### REVERSE ACTING BUMPERS (B)

- \$3.05 additional
- Add .062 to overall length

### DOUBLE ACTING BUMPERS (B)

- \$4.25 additional
- Add .125 to overall length

### MOLYCOATED BODY (F)

- Add \$2.65 per inch of stroke

### EXTRA EXTENSION (EE)

- Add \$0.95 per inch of extension

### MAGNET (prefix M) - Add \$12.05

- Reverse acting add .125" to overall length
- Must specify track(s) for use with miniature position sensing (T2, T3, T4) – add \$2.75 per track. See Related Products, page 8.12 for details.

### HIGH TEMPERATURE SEALS (V)

Temperature Range : 0° to 400°F (-18° to 205°C)

- Reverse acting, add \$8.55
- Double acting, add \$13.15

Standard Air Cylinders

Three-Position Cylinders

Cushion Cylinders

MRS® Cylinders

Non-Rotating Cylinders

PC Cylinders


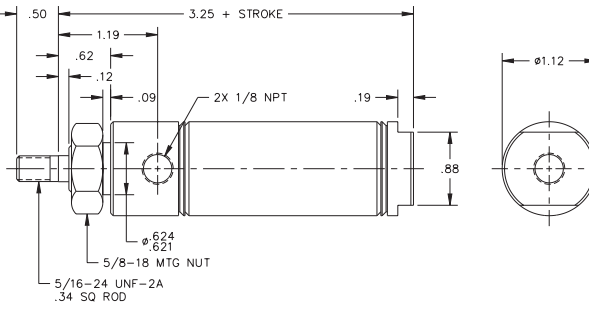

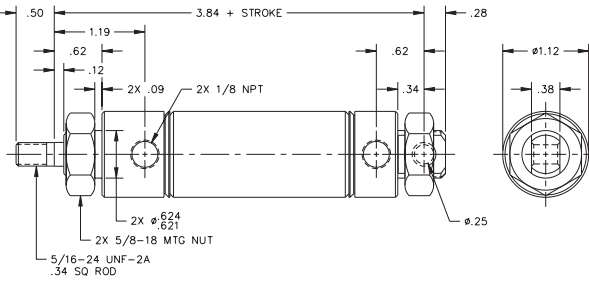

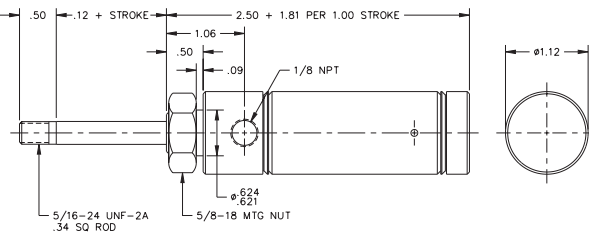
All Stainless Repairable

Z Line Air Cylinders

Rod Lock Cylinders


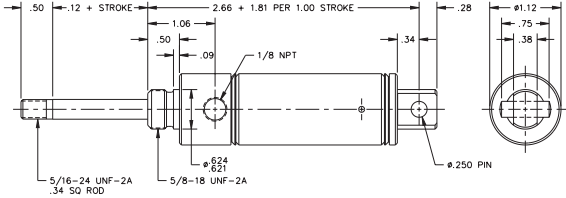

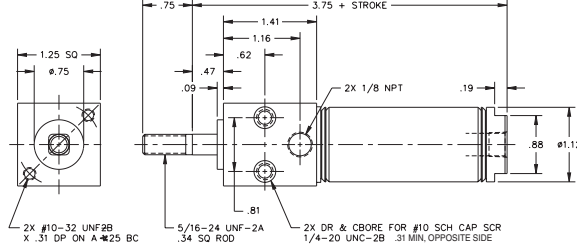

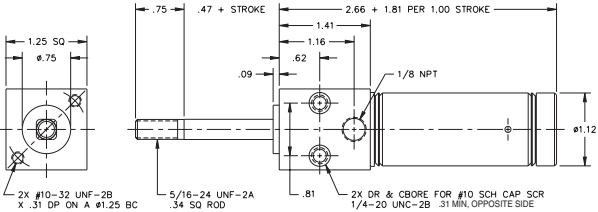

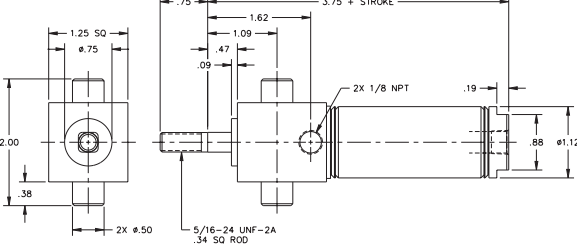
500 Hydraulic Cylinders

Hole Punch Cylinders

MODEL/PRICE	DESCRIPTION/WEIGHT (lbs.)	DIMENSIONS
<p><b>NR-09□-D</b></p>  <p><b>\$28.90</b> BASE PRICE Add \$1.85 per inch of stroke</p>	<p><b>Double Acting – Air Return – Front Nose Mounting</b> Standard Stroke Lengths: ½", 1", 1½", 2", 2½", 3", 4", 5", 6" Maximum Stroke 12" Option Accessory: D-129 Mounting Bracket Base Weight : .33 Adder Per Inch of Stroke: .05</p>	
<p><b>NR-09□-DXP</b></p>  <p><b>\$39.25</b> BASE PRICE Add \$1.85 per inch of stroke</p>	<p><b>Double Acting – Double End or Rear Pivot Mounting – Air Return</b> Standard Stroke Lengths: ½", 1", 1½", 2", 2½", 3", 4", 5", 6", 7", 8", 9", 10", 11", 12" Maximum Stroke 24" Optional Accessories: D-129 Mounting Bracket D-166-1 Rod Clevis D-13498-A Pivot Bracket Base Weight: .33 Adder Per Inch of Stroke: .05</p>	
<p><b>NR-09□-R</b></p>  <p><b>\$31.35</b> BASE PRICE Add \$3.00 per inch of stroke</p>	<p><b>Reverse Single Acting – Pull Type – Rod Normally Extended – Spring Return – Front Nose Mounting</b> Standard Stroke Lengths: ½", 1", 1½", 2", 2½", 3", 4" Maximum Stroke 6" Optional Accessory: D-129 Mounting Bracket Base Weight: .24 Adder Per Inch of Stroke: .16</p>	

# 1-1/16" Bore Non-Rotating Air Cylinders

## 1-1/16" Bore Non-Rotating Air Cylinders (continued)


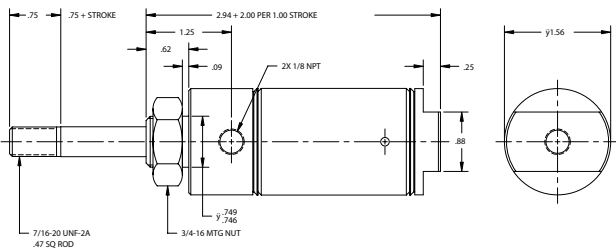

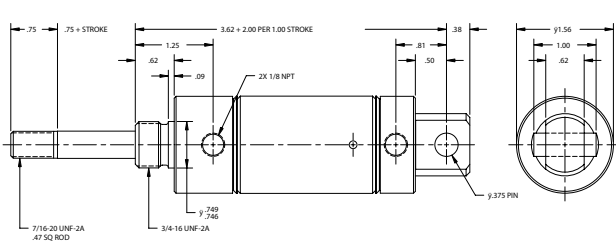

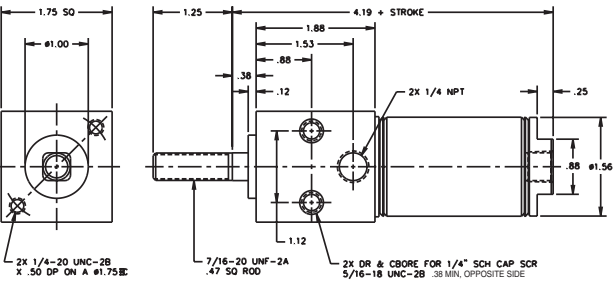

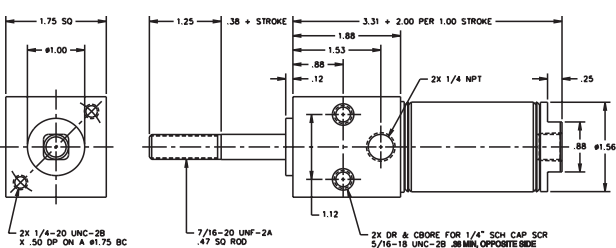

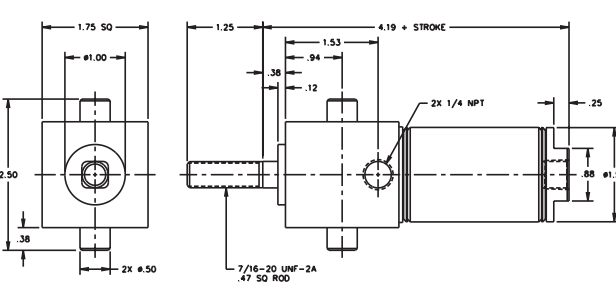
MODEL/PRICE	DESCRIPTION/WEIGHT (lbs.)	DIMENSIONS
<p><b>NR-09</b>  <b>-RP</b></p> <p><b>\$37.25</b> BASE PRICE Add \$3.00 per inch of stroke</p>	<p><b>Reverse Single Acting – Pivot or Pull Type – Rod Normally Extended Spring Return – Rear Pivot Mounting</b>  <b>Standard Stroke Lengths:</b>            ½", 1", 1½", 2", 2½", 3", 4"  <b>Maximum Stroke 6"</b>  <b>Optional Accessories:</b>            D-166-1 Piston Rod Clevis            D-167 Mounting Bracket  <b>Base Weight: .22</b>  <b>Adder Per Inch of Stroke: .16</b></p>	
<p><b>BFNR-09</b>  <b>-D</b></p> <p><b>\$46.85</b> BASE PRICE Add \$1.85 per inch of stroke</p>	<p><b>Double Acting – Front Block Mounting – Air Return</b>  <b>Standard Stroke Lengths:</b>            ½", 1", 1½", 2", 2½", 3", 4", 5", 6"  <b>Maximum Stroke 12"</b>  <b>Base Weight: .49</b>  <b>Adder Per Inch of Stroke: .05</b></p>	
<p><b>BFNR-09</b>  <b>-R</b></p> <p><b>\$51.25</b> BASE PRICE Add \$3.00 per inch of stroke</p>	<p><b>Reverse Single Acting – Front Block Mounting – Rod Normally Extended – Reverse Single Acting – Spring Return</b>  <b>Standard Stroke Lengths:</b>            ½", 1", 1½", 2", 2½", 3", 4"  <b>Maximum Stroke 6"</b>  <b>Base Weight: .36</b>  <b>Adder Per Inch of Stroke: .16</b></p>	
<p><b>BFTNR-09</b>  <b>-D</b></p> <p><b>\$56.95</b> BASE PRICE Add \$1.85 per inch of stroke</p>	<p><b>Double Acting – Front Block Trunnion Mounting – Air Return</b>  <b>Standard Stroke Lengths:</b>            ½", 1", 1½", 2", 2½", 3", 4"  <b>Maximum Stroke 12"</b>  <b>Optional Accessories:</b>            TRB-2 Trunnion Brackets            D-166-1 Rod Clevis  <b>Base Weight: .49</b>  <b>Adder Per Inch of Stroke: .05</b></p>	





# 1-1/2" Bore Non-Rotating Air Cylinders

## 1-1/2" Bore Non-Rotating Air Cylinders (continued)

MODEL/PRICE	DESCRIPTION/WEIGHT (lbs.)	DIMENSIONS
<p><b>NR-17</b> □ -R</p>  <p><b>\$51.65</b> BASE PRICE Add \$4.25 per inch of stroke</p>	<p><b>Reverse Single Acting – Pull Type – Rod Normally Extended Spring Return – Spring force 8.5 lbs. relaxed, 17 lbs. compressed – Front Nose Mounting</b> Standard Stroke Lengths: ½", 1", 1½", 2", 2½", 3", 4" Maximum Stroke 6" Optional Accessory: D-241 Mounting Bracket Base Weight: .44 Adder Per Inch of Stroke: .22</p>	
<p><b>NR-17</b> □ -RP</p>  <p><b>\$58.85</b> BASE PRICE Add \$4.25 per inch of stroke</p>	<p><b>Reverse Single Acting – Pivot and Pull Type – Rod Normally Extended – Spring Return – Spring Force 8.5 lbs. relaxed, 17 lbs. compressed – Rear Pivot Mounting</b> Standard Stroke Lengths: ½", 1", 1½", 2", 2½", 3", 4" Maximum Stroke 6" Optional Accessories: D-231-1 Piston Rod Clevis D-229 Mounting Bracket Base Weight: .45 Adder Per Inch of Stroke: .22</p>	
<p><b>BFNR-17</b> □ -D</p>  <p><b>\$74.05</b> BASE PRICE Add \$2.70 per inch of stroke</p>	<p><b>Double Acting – Front Block Mounting – Air Return</b> Standard Stroke Lengths: ½", 1", 1½", 2", 2½", 3", 4", 5", 6" Maximum Stroke 12" Base Weight: .99 Adder Per Inch of Stroke: .08</p>	
<p><b>BFNR-17</b> □ -R</p>  <p><b>\$76.90</b> BASE PRICE Add \$4.25 per inch of stroke</p>	<p><b>Pull Type – Front Block Mounting – Rod Normally Extended – Reverse Single Acting – Spring Return</b> Standard Stroke Lengths: ½", 1", 1½", 2", 2½", 3", 4" Maximum Stroke 6" Base Weight: .96 Adder Per Inch of Stroke: .22</p>	
<p><b>BFTNR-17</b> □ -D</p>  <p><b>\$85.25</b> BASE PRICE Add \$2.70 per inch of stroke</p>	<p><b>Double Acting – Front Block Trunnion Mounting – Spring Return</b> Standard Stroke Lengths: ½", 1", 1½", 2", 2½", 3", 4" Maximum Stroke 12" Optional Accessories: TRB-2 Trunnion Brackets D-231-1 Rod Clevis Base Weight: 1.06 Adder Per Inch of Stroke: .08</p>	

# 2" Bore Non-Rotating Air Cylinders

- New! Stainless Steel Piston Rod Standard.
- Unique Square Piston Rod with Rounded Corners.
- High Strength Aluminum Alloy Rod Guide.
- Urethane-based Rod Seal.
- Buna N "U" Cup Piston Seal.
- Pressure Rating – 250 PSI Maximum (Air only)
- Available in Double Acting and Reverse Acting models.
- Enclosed Spring Force: 15 lbs. Relaxed – 30 lbs. Compressed.
- Standard Buna N Seals Temperature Range of -20°F (-25°C) to 200°F (95°C)

Enter Stroke Length as 3rd Digit

## OPTIONS

### NO CHARGE:

- **MAGNALUBE® G (G)**
- **PORTS ROTATED (K)**
- **SIDE PORTED REAR HEAD (Q)**

### REVERSE ACTING BUMPERS (B)

- \$3.85 additional
- Add .062 to overall length

### DOUBLE ACTING BUMPERS (B)

- \$6.55 additional
- Add .125 to overall length

### MOLYCOATED BODY (F)

- Add \$2.65 per inch of stroke

### EXTRA EXTENSION (EE)

- Add \$1.55 per inch of extension


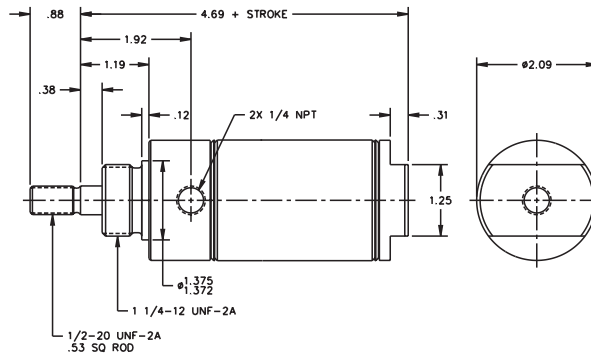

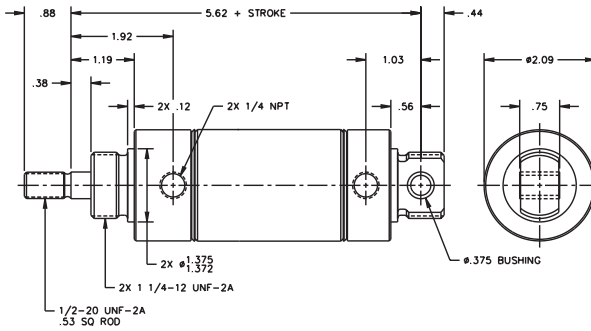
### MAGNET (prefix M) – Add \$16.95

- Reverse acting add .125" to overall length
- Must specify track(s) for use with miniature position sensing (T2, T3, T4) – add \$2.75 per track. See Related Products, page 8.12 for details.

### HIGH TEMPERATURE SEALS (V)

Temperature Range : 0° to 400°F (-18° to 205°C)

- Reverse acting, add \$13.90
- Double acting, add \$18.60

MODEL/PRICE	DESCRIPTION/WEIGHT (lbs.)	DIMENSIONS
 <p><b>NR-31-D</b></p> <p><b>\$76.30</b> BASE PRICE Add \$3.15 per inch of stroke</p>	<p><b>Double Acting – Air Return Front Nose Mounting</b> Standard Stroke Lengths: ½", 1", 1½", 2", 2½", 3", 4", 5", 6" Maximum Stroke 12" Optional Accessories: D-615 Mounting Bracket D-508 Mounting Nut Base Weight: 1.40 Adder Per Inch of Stroke: .15</p>	
 <p><b>NR-31-DXP</b></p> <p><b>\$91.50</b> BASE PRICE Add \$3.15 per inch of stroke</p>	<p><b>Double Acting – Universal Mounting Type – Pivot or Double End – Air Return</b> Standard Stroke Lengths: ½", 1", 1½", 2", 2½", 3", 4", 5", 6", 7", 8", 9", 10", 11", 12" Maximum Stroke 24" Optional Accessories: D-615 Mounting Bracket D-231-3 Rod Clevis D-620 Pivot Bracket D-508 Mounting Nut Base Weight: 1.62 Adder Per Inch of Stroke: .15</p>	

Standard Air Cylinders

Three-Position Cylinders

Cushion Cylinders

MRS® Cylinders

Non-Rotating Cylinders

PC Cylinders

All Stainless Repairable

Z Line Air Cylinders


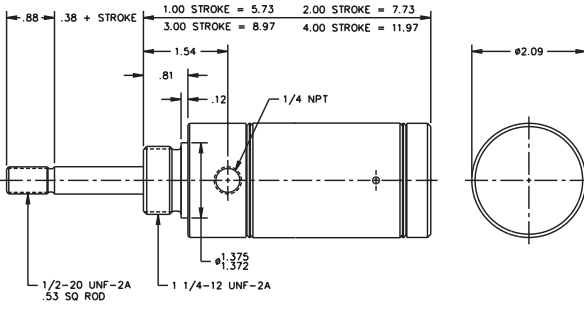

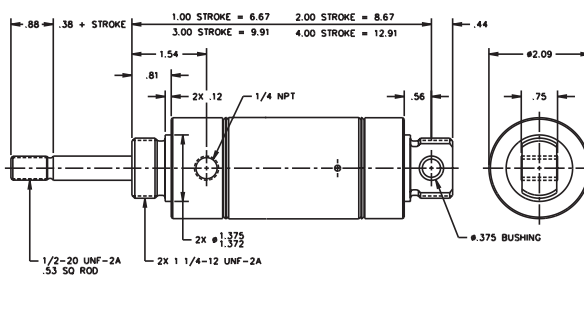
Rod Lock Cylinders

500 Hydraulic Cylinders

Hole Punch Cylinders

# 2" Bore Non-Rotating Air Cylinders

## 2" Bore Non-Rotating Air Cylinders (continued)

MODEL/PRICE	DESCRIPTION/WEIGHT (lbs.)	DIMENSIONS
<p><b>NR-31 □ -R</b></p>  <p><b>\$91.65</b> BASE PRICE Add \$5.85 per inch of stroke</p>	<p><b>Reverse Single Acting – Pull Type – Rod Normally Extended – Spring Return – Front Nose Mounting</b></p> <p><b>Standard Stroke Lengths:</b> ½", 1", 1½", 2", 2½", 3", 4" Maximum Stroke 4"</p> <p><b>Optional Accessories:</b> D-129 Mounting Bracket D-508 Mounting Nut <b>Base Weight: 1.24</b> <b>Adder Per Inch of Stroke: .43</b></p>	 <p>Technical drawing showing dimensions for NR-31 □ -R. Stroke lengths: 1.00 STROKE = 5.73, 2.00 STROKE = 7.73, 3.00 STROKE = 8.97, 4.00 STROKE = 11.97. Dimensions include .88, .38 + STROKE, 1.54, .81, .12, 1/4 NPT, 1.375, 1.372, 1/2-20 UNF-2A .53 SQ ROD, and 1 1/4-12 UNF-2A. Cross-section shows a diameter of 2.09.</p>
<p><b>NR-31 □ -RP</b></p>  <p><b>\$100.35</b> BASE PRICE Add \$5.85 per inch of stroke</p>	<p><b>Reverse Single Acting – Pivot or Pull Type – Rod Normally Extended Spring Return – Rear Pivot Mounting</b></p> <p><b>Standard Stroke Lengths:</b> ½", 1", 1½", 2", 2½", 3", 4" Maximum Stroke 4"</p> <p><b>Optional Accessories:</b> D-231-3 Piston Rod Clevis D-620 Pivot Bracket D-508 Mounting Nut D-615 Mounting Bracket <b>Base Weight: 1.46</b> <b>Adder Per Inch of Stroke: .43</b></p>	 <p>Technical drawing showing dimensions for NR-31 □ -RP. Stroke lengths: 1.00 STROKE = 6.67, 2.00 STROKE = 8.67, 3.00 STROKE = 9.91, 4.00 STROKE = 12.91. Dimensions include .88, .38 + STROKE, 1.54, .81, .12, 1/4 NPT, 1.375, 1.372, 1/2-20 UNF-2A .53 SQ ROD, 2X 1 1/4-12 UNF-2A, .56, .44, 2.09, and .75. Cross-section shows a diameter of 2.09 and a bushing diameter of .75.</p>

# 2-1/2" Bore Non-Rotating Air Cylinders

- New! Stainless Steel Piston Rod Standard.
- Unique Square Piston Rod with Rounded Corners.
- High Strength Aluminum Alloy Rod Guide.
- Urethane-based Rod Seal.
- Buna N "U" Cup Piston Seal.
- Pressure Rating – 250 PSI Maximum (Air only)
- Available in Double Acting.
- Standard Buna N Seals Temperature Range of -20°F (-25°C) to 200° F (95°C)

Enter Stroke Length as 3rd Digit

## OPTIONS

### NO CHARGE:

- **MAGNALUBE® G (G)**
- **PORTS ROTATED (K)**
- **SIDE PORTED REAR HEAD (Q)**

### DOUBLE ACTING BUMPERS (B)

- \$6.55 additional
- Add .125 to overall length

### MOLYCOATED BODY (F)

- Add \$2.65 per inch of stroke

### EXTRA EXTENSION (EE)

- Add \$1.80 per inch of extension

### MAGNET (prefix M) – Add \$16.95

- Must specify track(s) for use with miniature position sensing (T2, T3, T4) – add \$2.75 per track. See Related Products, page 8.12 for details.

### HIGH TEMPERATURE SEALS (V)

- Temperature Range : 0° to 400°F (-18° to 205°C)
- Double acting, add \$18.60

Standard Air Cylinders

Three-Position Cylinders

Cushion Cylinders

MRS® Cylinders

Non-Rotating Cylinders

PC Cylinders


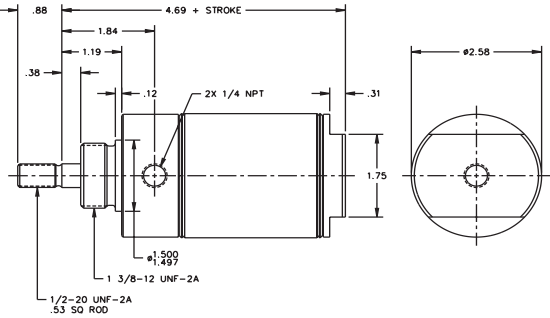

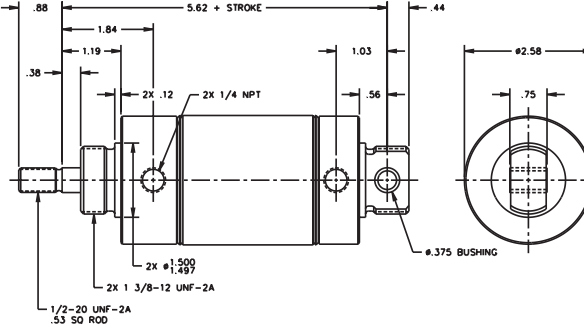
All Stainless Repairable

2 Line Air Cylinders

Rod Lock Cylinders

500 Hydraulic Cylinders

Hole Punch Cylinders

MODEL/PRICE	DESCRIPTION/WEIGHT (lbs.)	DIMENSIONS
 <p><b>NR-50-D</b></p> <p><b>\$109.55</b> BASE PRICE Add \$3.50 per inch of stroke</p>	<p><b>Double Acting – Air Return Front Nose Mounting</b> Standard Stroke Lengths: 1/2", 1", 1 1/2", 2", 2 1/2", 3", 4", 5", 6" Maximum Stroke 12" Optional Accessories: D-615-1 Mounting Bracket D-2540 Mounting Nut Base Weight: 1.98 Adder Per Inch of Stroke: .17</p>	
 <p><b>NR-50-DXP</b></p> <p><b>\$121.95</b> BASE PRICE Add \$3.50 per inch of stroke</p>	<p><b>Double Acting – Universal Mounting Type – Pivot or Double End – Air Return</b> Standard Stroke Lengths: 1/2", 1", 1 1/2", 2", 2 1/2", 3", 4", 5", 6", 7", 8", 9", 10", 11", 12" Maximum Stroke 24" Optional Accessories: D-615-1 Mounting Bracket D-231-3 Rod Clevis D-620 Pivot Bracket D-2540 Mounting Nut Base Weight: 2.27 Adder Per Inch of Stroke: .17</p>	

## • Accessories –

- For 9/16" bore, see page 1.20.
- For 3/4" bore, see page 1.28.
- For 1-1/16" bore, see page 1.40.
- For 1-1/2" bore, see page 1.53.
- For 2" bore, see page 1.60.
- For 2-1/2" bore, see page 1.62.

# PC Cylinders



The Bimba PC Cylinder has a stainless steel body, stainless steel rod and acetal resin end caps. It is ideal for applications and environments that require exposure to moisture, lubricants and specific solvents.

## How to Order

The model number of all PC Cylinders consists of three alphanumeric clusters. These designate product type, bore size and stroke length, and options. Please refer

to the charts below for an example of model number PC-096-DXPW. This is an 1-1/16" bore, 6" stroke PC cylinder with a universal mount and rod wiper.

## PC - 09 6 - DXP W

**Delrin End Cap Cylinder**

Bore Size	
02	9/16"
04	3/4"
09	1-1/16"
17	1-1/2"
31	2"

Standard Stroke Lengths
All models: 1/2", 1", 1-1/2", 2", 2-1/2", 3", 4", 5", 6"
DXP & DXDE models: 7", 8", 9", 10", 11", 12"
Consult your local distributor for price and availability of nonstandard strokes

Mounting	
D	Nose Mount
DXP	Universal Mount
DXDE	Double Ended Rod

Options	
B	Bumpers
C	Air Cushions, both ends
C1	Air Cushion, front end only
C2	Air Cushion, rear head only
E	Non-Lube Service
EEX.XX	Extra Extension
F	Molycoated Body
G	Magnalube® G
K	Pivot 90° (DXP model only)
M	Magnetic Piston
NT	No Thread
Q	Side Ported Rear Head
T	Switch Track (T2, T3 or T4, see Related Products, pg. 8.12)
V	Fluoroelastomer Seals (for compatibility only)
W	Rod Wiper (not available for 9/16" bore)

### Approximate Power Factors

9/16"	=	0.2
3/4"	=	0.4
1-1/16"	=	0.9
1-1/2"	=	1.7
2"	=	3.1

For example, a PC-096-DXPW will exert a force of 0.9 times the air line pressure; a PC-173-D will exert a force of 1.7 times the air pressure, etc.

# PC Cylinders

## List Prices

Bore	Mounting		Stroke Adder*	Options											
	D	DXP		B Bumpers	C	C1 or C2	C with V D & DXP	C1V or C2V** D & DXP	EE Extra Extension per inch	F Molycoated Body per inch	K Pivot 90° (DXP only)	M Magnetic Piston	T Switch Track (T2,T3,T4)	V Fluoro-elastomer Seals	W Rod Wiper
9/16" (02)	\$29.70	\$31.65	\$1.50	\$4.00	N/A	N/A	N/A	N/A	\$0.80	\$2.55	N/C	\$9.20	\$2.75 per Track	\$10.40	N/A
3/4" (04)	31.50	33.85	1.50	4.00	\$15.10	\$7.60	\$32.05	\$24.55	.80	2.55		9.20		10.40	\$2.75
1-1/16" (09)	33.15	35.90	1.50	4.00	16.60	8.30	36.15	27.85	.80	2.55		11.40		12.45	2.75
1-1/2" (17)	42.40	46.45	2.35	4.85	19.35	9.70	40.10	30.40	1.20	2.55		13.75		13.75	2.75
2" (31)	66.50	71.90	2.55	6.20	31.45	15.75	61.90	46.20	1.30	2.55		16.05		17.60	2.75

Bore	Mounting		Stroke Adder*	Options										
	DXDE			B Bumpers	C	C with V**	C1V	EE Extra Extension per inch	F Molycoated Body per inch	M Magnetic Piston	T Switch Track (T2,T3,T4)	V Fluoro-elastomer Seals	W Rod Wiper	
9/16" (02)	\$41.45		\$1.95	\$4.00	N/A	N/A	N/A	\$1.00	\$2.55	\$9.20	\$2.75 per Track	\$13.75	N/A	
3/4" (04)	46.40		1.95	4.00	\$15.10	\$35.65	\$27.80	1.00	2.55	9.20		13.75	\$5.50	
1-1/16" (09)	48.95		1.95	4.00	16.60	39.35	31.05	1.00	2.55	11.40		15.85	5.50	
1-1/2" (17)	64.05		3.70	4.85	19.35	46.00	36.35	1.85	2.55	13.75		17.60	5.50	
2" (31)	93.20		3.80	6.20	31.45	67.35	51.65	1.90	2.55	16.05		23.30	5.50	

**\*Nonstandard fractional strokes are priced to the next full inch increment.**

**\*\*Price adder includes the cushion and the fluoroelastomer seals.**

**No charge Option - G, NT, Q**

**NOTE: See Original Line portion of the catalog for option E pricing.**

## Stainless Steel Accessory Prices

Bore	Rod End Clevis		Mounting Nut	
	Model	Price	Model	Price
9/16" (02)	D-850-SS	\$18.80	D-154-SS	\$1.20
3/4" (04)	D-54565-SS	20.70	D-9-SS	1.80
1-1/16" (09)	D-54564-SS	23.50	D-9-SS	1.80
1-1/2" (17)	D-54562-SS	28.85	D-1331-SS	2.95
2" (31)	D-54563-SS	34.10	D-508-SS	6.20

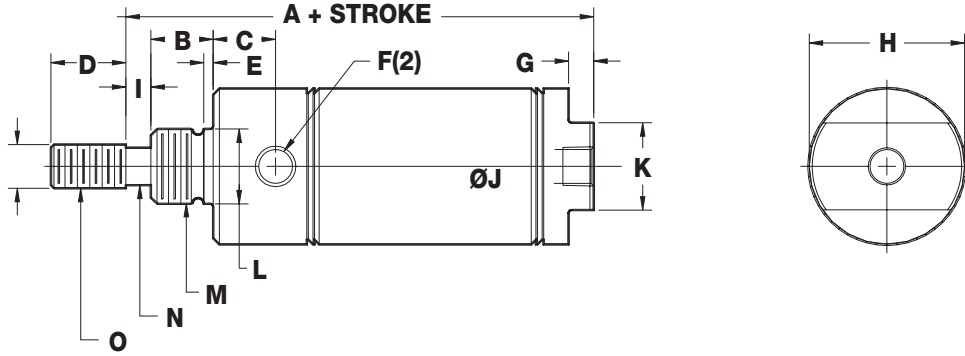
Bore	Foot Bracket		Pivot Bracket	
	Model	Price	Model	Price
9/16" (02)	D-770-SS	\$5.30	D-55202-SS	\$13.20
3/4" (04)	D-129-SS	5.80	D-55203-SS	16.05
1-1/16" (09)	D-129-SS	5.80	D-55203-SS	16.05
1-1/2" (17)	D-61288-SS	12.00	D-55204-SS	20.00
2" (31)	D-615-SS	25.70	D-55205-SS	24.90



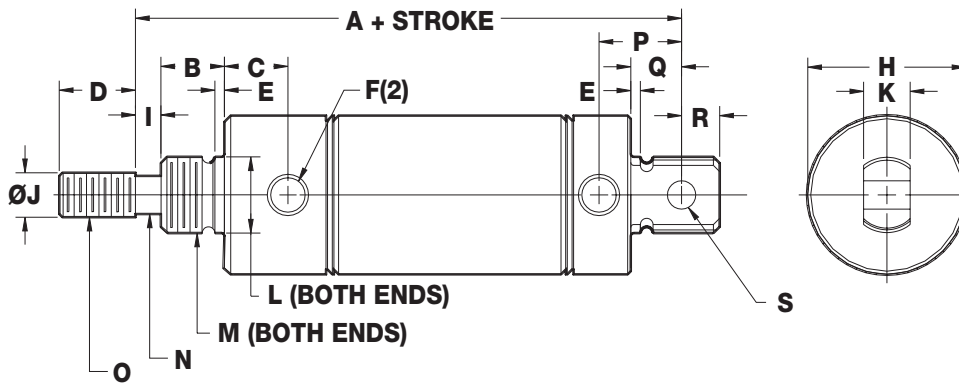
# PC Cylinders

## Dimensions

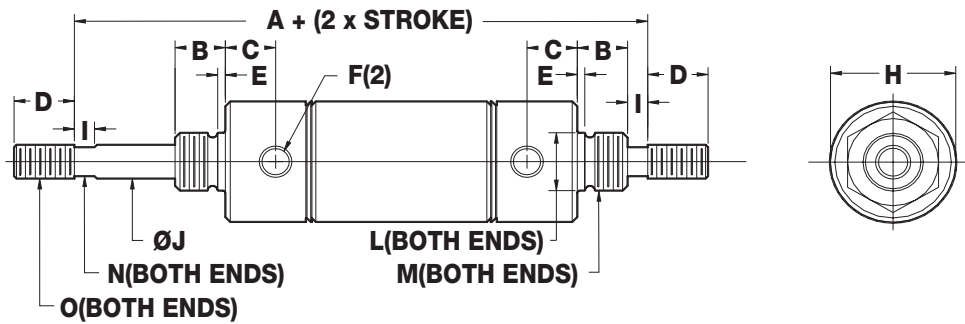
### D Mounting Style



### DXP Mounting Style



### DXDE Mounting



# PC Cylinders

## Dimensions

### D Mounting Style

Bore	A	A (cushion or Q option)	B	C	D	E	F	G	H	H (cushion option)	I	J	K	L	M	N	O
9/16" (02)	2.28	--	0.38	0.38	0.50	0.06	#10-32	0.19	0.61	--	--	0.19	0.50	.434/.437	7/16-20	--	#10-32
3/4" (04)	2.97	3.44	0.50	0.47	0.50	0.09	1/8 NPT	0.19	0.81	0.96	--	0.25	0.63	.621/.624	5/8-18	--	1/4-28
1-1/16" (09)	3.25	3.50	0.50	0.56	0.50	0.09	1/8 NPT	0.19	1.13	1.13	0.13	0.31	0.88	.621/.624	5/8-18	0.25	5/16-24
1-1/2" (17)	3.69	3.88	0.63	0.63	0.75	0.09	1/8 NPT	0.25	1.56	1.56	0.25	0.44	0.88	.996/.999	1-14	0.38	7/16-20
2" (31)	4.69	5.27	0.81	0.72	0.88	0.13	1/4 NPT	0.31	2.08	2.08	0.38	0.63	1.25	1.372/1.375	1-1/4-12	0.50	1/2-20

**Magnetic Piston Length Adder: 0.125" for 1-1/16" and 1-1/2", all other sizes 0.250"**

### DXP Mounting Style

Bore	A	B	C	D	E	F	H	H (cushion option)	I	J
9/16" (02)	2.56	0.38	0.38	0.50	0.06	#10-32	0.61	--	--	0.19
3/4" (04)	3.75	0.50	0.47	0.50	0.09	1/8 NPT	0.86	0.96	--	0.25
1-1/16" (09)	3.84	0.50	0.56	0.50	0.09	1/8 NPT	1.13	1.13	0.13	0.31
1-1/2" (17)	4.38	0.63	0.63	0.75	0.09	1/8 NPT	1.56	1.56	0.25	0.44
2" (31)	5.63	0.81	0.73	0.88	0.13	1/4 NPT	2.08	2.08	0.38	0.63

Bore	K	L	M	N	O	P	Q	R	S
9/16" (02)	0.31	.434/.437	7/16-20	--	#10-32	0.38	0.25	0.19	0.16
3/4" (04)	0.38	.621/.624	5/8-18	--	1/4-28	0.63	0.34	0.28	0.25
1-1/16" (09)	0.38	.621/.624	5/8-18	0.25	5/16-24	0.63	0.34	0.28	0.25
1-1/2" (17)	0.63	.996/.999	1-14	0.38	7/16-20	0.81	0.50	0.38	0.38
2" (31)	0.74	1.372/1.375	1-1/4-12	0.50	1/2-20	1.03	0.56	0.44	0.38

**Magnetic Piston Length Adder: 0.125" for 1-1/16" and 1-1/2", all other sizes 0.250"**

### DXDE Mounting

Bore	A	B	C	D	E	F	H	H (cushion option)	I	J	L	M	N	O
9/16" (02)	2.94	0.38	0.38	0.50	0.06	#10-32	0.61	--	--	0.19	.434/.437	7/16-20	--	#10-32
3/4" (04)	4.00	0.50	0.47	0.50	0.09	1/8 NPT	0.86	0.96	--	0.25	.621/.624	5/8-18	--	1/4-28
1-1/16" (09)	4.00	0.50	0.56	0.50	0.09	1/8 NPT	1.13	1.13	0.13	0.31	.621/.624	5/8-18	0.25	5/16-24
1-1/2" (17)	5.13	0.63	0.63	0.75	0.09	1/8 NPT	1.56	1.56	0.25	0.44	.996/.999	1-14	0.38	7/16-20
2" (31)	6.56	0.81	0.73	0.88	0.13	1/4 NPT	2.08	2.08	0.38	0.63	1.372/1.375	1-1/4-12	0.50	1/2-20

**Magnetic Piston Length Adder: 0.250"**

### Bumper Length Adder

9/16" (02)	3/4" (04)	1-1/16" (09)	1-1/2" (17)	2" (31)
0.125	0	0.125*	0.125	0.250

**\*For DXDE model, add 0.500"**

Standard Air Cylinders

Three-Position Cylinders

Cushion Cylinders

MRS® Cylinders

Non-Rotating Cylinders

PC Cylinders

All Stainless Repairable

Z-Line Air Cylinders

Rod Lock Cylinders

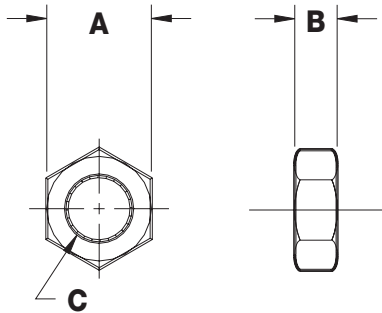
500 Hydraulic Cylinders

Hole Punch Cylinders

# PC Cylinders

## Dimensions

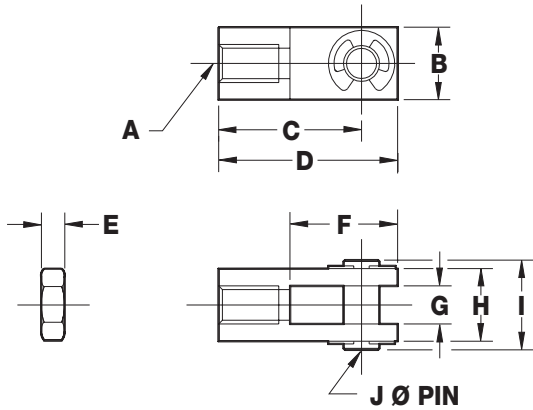
### Stainless Steel Mounting Nut\*



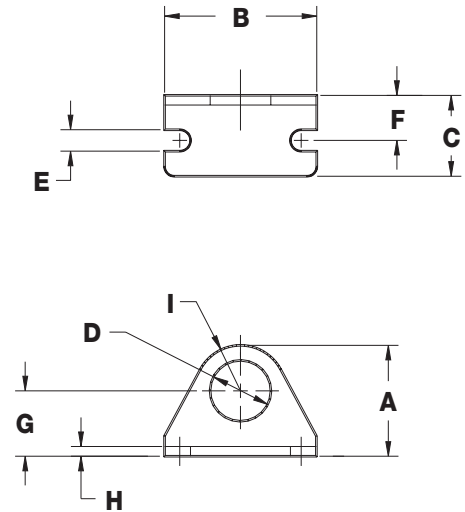
Bore	Model	A	B	C
9/16" (02)	D-154-SS	0.69	0.25	7/16-20
3/4" (04)	D-9-SS	0.94	0.38	5/8-18
1-1/16" (09)	D-9-SS	0.94	0.38	5/8-18
1-1/2" (17)	D-1331-SS	1.50	0.55	1-14
2" (31)	D-508-SS	1.88	0.50	1-1/4-12

\*See page 1.103 for torque specifications

### Stainless Steel Rod End Clevis (includes nut)



### Stainless Steel Foot Bracket



### Stainless Steel Rod End Clevis (includes nut)

Bore	Model	A	B	C	D	E	F	G	H	I	J
9/16" (02)	D-850-SS	#10-32	0.38	0.75	0.94	0.13	0.56	0.19	0.38	0.56	0.19
3/4" (04)	D-54565-SS	1/4-28	0.50	0.94	1.19	0.16	0.69	0.25	0.50	0.69	0.25
1-1/16" (09)	D-54564-SS	5/16-24	0.50	0.94	1.19	0.19	0.69	0.25	0.50	0.69	0.25
1-1/2" (17)	D-54562-SS	7/16-20	0.75	1.31	1.69	0.25	0.94	0.38	0.75	1.03	0.38
2" (31)	D-54563-SS	1/2-20	0.75	1.31	1.69	0.31	0.94	0.38	0.75	1.03	0.38

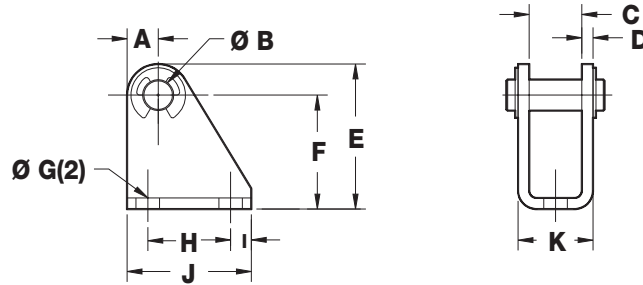
### Stainless Steel Foot Bracket

Bore	Model	A	B	C	D	E	F	G	H	I
9/16" (02)	D-770-SS	0.84	1.38	0.69	0.44	0.19	0.38	0.56	0.09	0.38
3/4" (04)	D-129-SS	1.38	1.88	1.00	0.63	0.27	0.56	0.81	0.12	0.56
1-1/16" (09)	D-129-SS	1.38	1.88	1.00	0.63	0.27	0.56	0.81	0.12	0.56
1-1/2" (17)	D-61288-SS	1.75	2.50	1.50	1.03	0.28	0.75	1.00	0.12	0.75
2" (31)	D-615-SS	2.50	3.13	1.63	1.38	0.34	1.00	1.50	0.25	1.00

# PC Cylinders

## Dimensions

### Stainless Steel Pivot Bracket



Bore	Model	A	B	C	D	E	F	G	H	I	J	K
9/16" (02)	D-55202-SS	0.20	0.16	0.31	0.06	0.76	0.56	0.20	0.50	0.13	0.75	0.44
3/4" (04)	D-55203-SS	0.31	0.25	0.38	0.12	1.19	0.88	0.22	0.75	0.19	1.13	0.63
1-1/16" (09)	D-55203-SS	0.31	0.25	0.38	0.12	1.19	0.88	0.22	0.75	0.19	1.13	0.63
1-1/2" (17)	D-55204-SS	0.38	0.38	0.63	0.13	1.75	1.38	0.28	1.00	0.25	1.50	0.91
2" (31)	D-55205-SS	0.38	0.38	0.75	0.25	1.75	1.38	0.28	1.00	0.25	1.50	1.25

## Specifications

Pressure Rating: 100 psi (Air)

Temperature Range: 32°F to 160°F (0°C to 72°C)

Delrin End Caps

304 Stainless Steel Body

303 Stainless Steel Rod

Anodized Aluminum Alloy Piston

Options: Buna N Bumpers

Polyurethane Wiper

Fluoroelastomer Seals (for compatibility only,  
not high temperature)

CYLINDER WEIGHT (lbs.)					
Bore	Base Weight			Adder per 1"	
	D	DXP	DXDE	D & DXP	DXDE
9/16" (02)	0.05	0.06	0.07	0.02	0.03
3/4" (04)	0.13	0.15	0.18	0.03	0.05
1-1/16" (09)	0.21	0.25	0.3	0.05	0.07
1-1/2" (17)	0.46	0.48	0.6	0.08	0.13
2" (31)	1.08	1.17	1.48	0.15	0.24

MOUNTING NUT Torque Specifications		
Bore Size	Thread Size	Max Torque (in- lbs.)
9/16" (02)	7/16-20	4.0
3/4" (04) 1-1/16" (09)	5/8-18	12.0
1-1/2" (17)	1-14	30.0
2" (31)	1 1/4-12	45.0

# All Stainless Steel Repairable (Bell Ring Style) Original Line Cylinders



The new all stainless repairable Original Line cylinders are ideal for food processing, chemical, medical, pharmaceutical, offshore or marine equipment, and energy production or waste management applications. The bell ring design also offers the added benefit of full repairability without the need for hand tools by securing the body to the rod guide with a knurled, threaded nut.

## 3/4" Bore

MODEL/PRICE	DESCRIPTION/ACCESSORIES	DIMENSIONS (inch)
<b>D-4161-A-</b> <input type="checkbox"/>  Base Price: \$157.75 Add \$1.50 per inch of stroke (12" max. stroke)	<b>Double-Acting</b> - Air Return - Front Nose Mounting <i>Optional Stainless Steel Accessories:</i> D-129-SS Foot Bracket D-9-SS Mounting Nut D-54565-SS Rod Clevis	
<b>D-4231-A-</b> <input type="checkbox"/>  Base Price: \$197.25 Add \$1.50 per inch of stroke (24" max. stroke)	<b>Double-Acting</b> - Universal Mounting - Pivot, or Double End Mounting - Air Return <i>Optional Stainless Steel Accessories:</i> D-129-SS Foot Bracket D-55203-SS Pivot Bracket D-9-SS Mounting Nut D-54565-SS Rod Clevis	

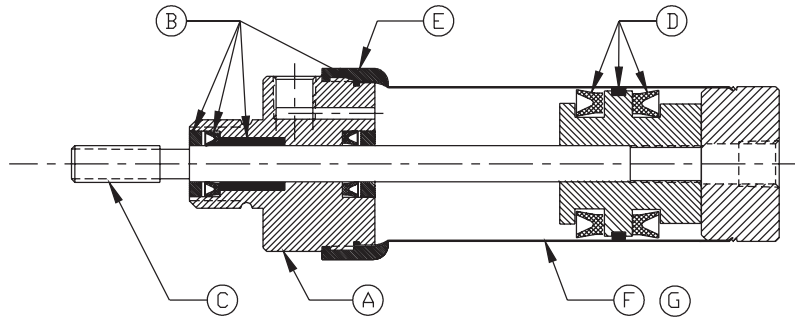
## 1-1/16" Bore

MODEL/PRICE	DESCRIPTION/ACCESSORIES	DIMENSIONS (inch)
<b>D-4173-A-</b> <input type="checkbox"/>  Base Price: \$163.40 Add \$1.50 per inch of stroke (12" max. stroke)	<b>Double-Acting</b> - Air Return - Front Nose Mounting <i>Optional Stainless Steel Accessories:</i> D-241-SS Foot Bracket D-3556-SS Mounting Nut D-54564-SS Rod Clevis	
<b>D-4232-A-</b> <input type="checkbox"/>  Base Price: \$212.45 Add \$1.50 per inch of stroke (24" max. stroke)	<b>Double-Acting</b> - Universal Mounting - Pivot, or Double End Mounting - Air Return <i>Optional Stainless Steel Accessories:</i> D-241-SS Foot Bracket D-55203-SS Pivot Bracket D-3556-SS Mounting Nut D-54564-SS Rod Clevis	

Enter Stroke Length as 4th Digit

# All Stainless Steel Repairable (Bell Ring Style) Original Line Cylinders

## Cylinder Assemblies and Component List



**3/4" Bore**

**1-1/16" Bore**

ITEM PART NO.	DESCRIPTION	LIST	ITEM PART NO.	DESCRIPTION	LIST
A D-4485-A	ROD GUIDE ASSEMBLY (Includes Rod Guide and D-4530 Kit)	48.65	A D-4489-A	ROD GUIDE ASSEMBLY (Includes Rod Guide and D-4533 Kit)	88.20
B D-4530-A	ROD SEAL KIT (Includes Seals, Bushing, Seal Retainer and Body Seal)	21.35	B D-4533-A	ROD SEAL KIT (Includes Seals, Bushing, Seal Retainer and Body Seal)	22.45
C D-4486-A-□	PISTON ROD ASSEMBLY (Includes Rod, Piston and D-4531 Kit)	24.35 + 1.50/in.	C D-4490-A-□	PISTON ROD ASSEMBLY (Includes Rod, Piston and D-4534 Kit)	31.75 + 1.50/in.
D D-4531-A	PISTON SEAL KIT (Includes Piston Seals and Piston Guide Ring)	5.65	D D-4534-A	PISTON SEAL KIT (Includes Piston Seals and Piston Guide Ring)	7.45
E D-3961-SS	BELL RING	13.45	E D-1778-SS	BELL RING	14.90
F D-4487-A-□	REAR HEAD AND BODY ASSEMBLY (Nose Mount)	28.55 + 1.50/in.	F D-4491-A-□	REAR HEAD AND BODY ASSEMBLY (Nose Mount)	31.25 + 1.50/in.
G D-4488-A-□	REAR HEAD AND BODY ASSEMBLY (Universal Mount)	35.60 + 1.50/in.	G D-4492-A-□	REAR HEAD AND BODY ASSEMBLY (Universal Mount)	68.05 + 1.50/in.

### SOLID STAINLESS ACCESSORIES (in.)

#### 3/4" Bore

<p><b>D-129-SS</b> Foot Bracket \$5.80</p>	<p><b>D-54565-SS</b> Rod Clevis \$20.70</p>	<p><b>D-55203-SS</b> Pivot Bracket \$16.05</p>	<p><b>D-9-SS</b> Mounting Nut \$1.80</p>
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#### 1-1/16" Bore

<p><b>D-241-SS</b> Foot Bracket \$21.15</p>	<p><b>D-54564-SS</b> Rod Clevis \$23.50</p>	<p><b>D-55203-SS</b> Pivot Bracket \$16.05</p>	<p><b>D-3556-SS</b> Mounting Nut \$2.65</p>
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## Engineering Specifications

- 304 Stainless steel body
- Low friction Buna N "U" Cup seals and rod wiper
- 303 Stainless steel endcaps, piston rod, and bell ring nut
- Pressure Rating: 250 psi (air)
- Composite FDA approved rod bearing and FDA approved lubricant

Standard Air Cylinders

Three-Position Cylinders

Cushion Cylinders

MRS® Cylinders

Non-Rotating Cylinders

PC Cylinders

All Stainless Repairable

Z Line Air Cylinders

Rod Lock Cylinders

500 Hydraulic Cylinders

Hole Punch Cylinders



# Z Line Air Cylinders

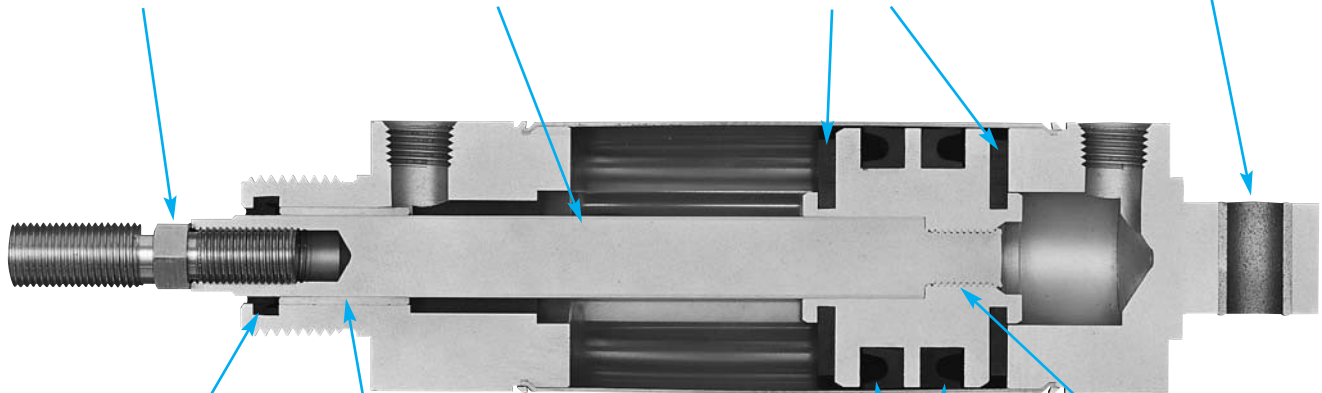
## For extremely tough applications

HEX-STUD® rod end heat treated alloy steel easily removed in case of failure

Piston rod ground and polished type 303 stainless steel

CUSHION-QUIET elastomer bumpers for smooth, quiet operation

Sintered bronze pivot bushing



Buna N "U" cup piston rod wiper seal (1 1/16" - 1 1/2" - 2" models only)

Sintered bronze rod bushing

Type 304 stainless steel body

Buna N "U" cup piston seals

Piston rod — piloted, threaded and riveted into piston

The Z-Line air cylinder has the rolled-in construction of the Original Line but features the following:

- Larger diameter, two-piece 303 stainless steel piston rod
- HEX-STUD rod end thread of heat treated alloy steel — easily removed in case of failure due to overload
- CUSHION QUIET elastomer bumpers

### OPTIONS:

#### NO CHARGE:

- **MAGNALUBE G (G)**

#### EXTRA EXTENSION (EE), PER INCH OF EXTENSION:

- 3/4" Bore, add \$0.90
- 1 1/16" Bore, add \$1.10
- 1 1/2" Bore, add \$1.30
- 2" Bore, add \$1.45

#### MOLYCOATED BODY (F)

- Add \$2.65 per inch of stroke

#### MAGNET (prefix M)

- 3/4" Bore, add \$9.65
- 1 1/16" Bore, add \$11.95
- 1 1/2" Bore, add \$14.40
- 2" Bore, add \$16.80
- Must specify track(s) for use with miniature position sensing (T2, T3, T4) — add \$2.75 per track. See Related Products, page 8.12 for details.

Enter Stroke Length as 3rd Digit

## 3/4" Bore Z Line Air Cylinders

Push Force = .441 x psi • Pull Force = .365 x psi

### MODEL/PRICE

### DESCRIPTION/WEIGHT (lbs.)

### DIMENSIONS

04  -DBZ

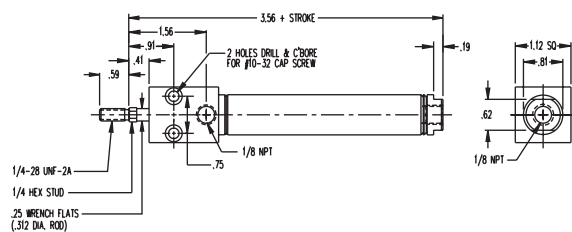


**\$42.30**

BASE PRICE

Add \$1.65 per inch of stroke


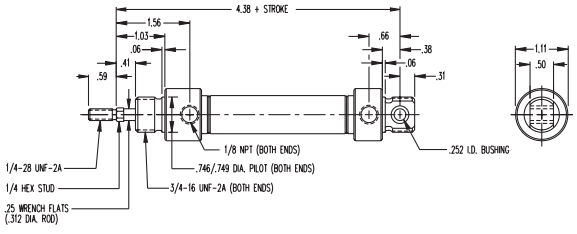

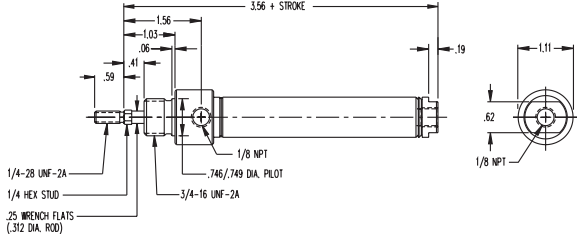
**Block Mount** — Double Acting — Two bolt holes are provided for positive mounting to a base.  
**Standard Stroke Lengths:**  
 1", 2", 3", 4", 5", 6"  
**Maximum Stroke** — 12"  
**Base Weight:** .30  
**Adder Per Inch of Stroke:** .04



# Z Line Air Cylinders


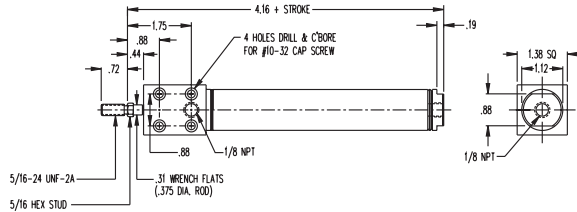

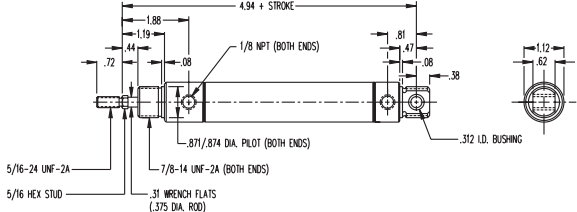
## 3/4" Bore Z Line Air Cylinders (continued)

Push Force = .441 x psi • Pull Force = .365 x psi

MODEL/PRICE	DESCRIPTION/WEIGHT (lbs.)	DIMENSIONS
<p><b>04□-DUZ</b></p>  <p><b>\$36.40</b> BASE PRICE Add \$1.65 per inch of stroke</p>	<p><b>Universal Mount – Double Acting –</b> For double end mounting use D-8315 mounting bracket. For rear pivot mounting use D-8321-A pivot bracket. Use D-10139-A rod clevis. Standard Stroke Lengths: 1", 2", 3", 4", 5", 6", 7", 8", 9", 10", 11", 12" Maximum Stroke – 32" Base Weight: .30 Adder Per Inch of Stroke: .04</p>	 <p>4.38 + STROKE 1.56 1.03 .06 .59 .41 1/8 NPT (BOTH ENDS) .746/.749 DIA. PILOT (BOTH ENDS) 1/4-28 UNF-2A 1/4 HEX STUD .75 WRENCH FLATS (.312 DIA. ROD) 1/8 NPT .252 I.D. BUSHING 1.11 .50</p>
<p><b>04□-DZ</b></p>  <p><b>\$32.65</b> BASE PRICE Add \$1.65 per inch of stroke</p>	<p><b>Nose Mount – Double Acting –</b> Use D-8315 mounting bracket. Standard Stroke Lengths: 1", 2", 3", 4", 5", 6" Maximum Stroke – 12" Base Weight: .27 Adder Per Inch of Stroke: .04</p>	 <p>3.56 + STROKE 1.56 1.03 .06 .59 .41 1/8 NPT .746/.749 DIA. PILOT 1/4-28 UNF-2A 1/4 HEX STUD .75 WRENCH FLATS (.312 DIA. ROD) 1/8 NPT .19 .62 1/8 NPT 1.11</p>

## 1-1/16" Bore Z Line Air Cylinders


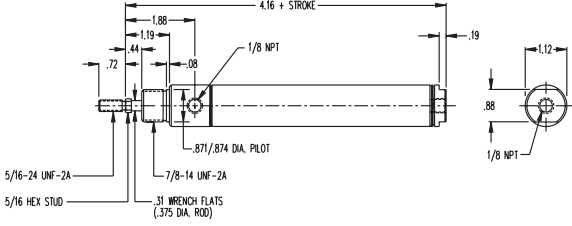
Push Force = .886 x psi • Pull Force = .776 x psi

MODEL/PRICE	DESCRIPTION/WEIGHT (lbs.)	DIMENSIONS
<p><b>09□-DBZ</b></p>  <p><b>\$56.25</b> BASE PRICE Add \$2.20 per inch of stroke</p>	<p><b>Block Mount – Double Acting –</b> Four bolt holes are provided for positive mounting to a base. Standard Stroke Lengths: 1", 2", 3", 4", 5", 6" Maximum Stroke – 12" Base Weight: .55 Adder Per Inch of Stroke: .06</p>	 <p>4.16 + STROKE 1.75 .88 .44 .72 4 HOLES DRILL &amp; C'BORE FOR #10-32 CAP SCREW 1/8 NPT .88 .31 WRENCH FLATS (.375 DIA. ROD) 5/16-24 UNF-2A 5/16 HEX STUD 1.38 SQ 1.12 .88 1/8 NPT .19</p>
<p><b>09□-DUZ</b></p>  <p><b>\$43.20</b> BASE PRICE Add \$2.20 per inch of stroke</p>	<p><b>Universal Mount – Double Acting –</b> For double end mounting use D-8316 mounting bracket. For rear pivot mounting use D-8322-A pivot bracket. Use D-8309-A rod clevis. Standard Stroke Lengths: 1", 2", 3", 4", 5", 6", 7", 8", 9", 10", 11", 12" Maximum Stroke – 32" Base Weight: .45 Adder Per Inch of Stroke: .06</p>	 <p>4.94 + STROKE 1.88 1.19 .44 .72 1/8 NPT (BOTH ENDS) .08 .81 .47 .38 .871/.874 DIA. PILOT (BOTH ENDS) 1/8 NPT .312 I.D. BUSHING 5/16-24 UNF-2A 5/16 HEX STUD .778-14 UNF-2A (BOTH ENDS) .31 WRENCH FLATS (.375 DIA. ROD) 1.12 .62</p>

# Z Line Air Cylinders


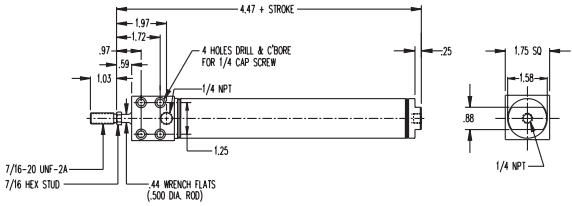

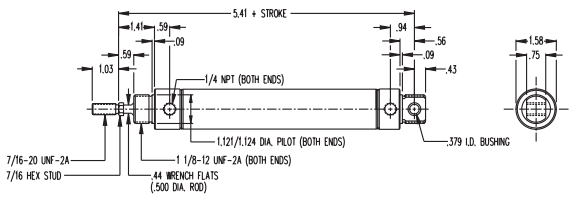

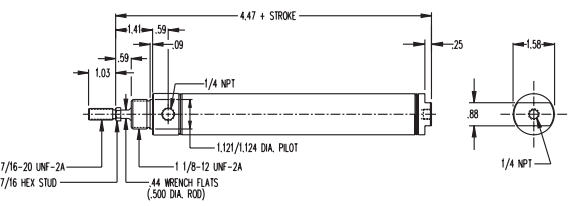
## 1-1/16" Bore Z Line Air Cylinders (continued)

Push Force = .886 x psi • Pull Force = .776 x psi

MODEL/PRICE	DESCRIPTION/WEIGHT (lbs.)	DIMENSIONS
<p><b>09□-DZ</b></p>  <p><b>\$38.30</b> BASE PRICE Add \$2.20 per inch of stroke</p>	<p><b>Nose Mount – Double Acting –</b> Use D-8316 mounting bracket. Standard Stroke Lengths: 1", 2", 3", 4", 5", 6" Maximum Stroke – 12" Base Weight: .38 Adder Per Inch of Stroke: .06</p>	 <p>4.16 + STROKE 1.88 1.19 44 1.08 1/8 NPT 1.12 1/8 NPT 1.12 1/8 NPT 5/16-24 UNF-2A 7/8-14 UNF-2A 31 WRENCH FLATS (.375 DIA. ROD) 5/16 HEX STUD</p>

## 1-1/2" Bore Z Line Air Cylinders


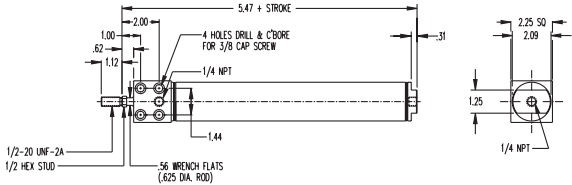

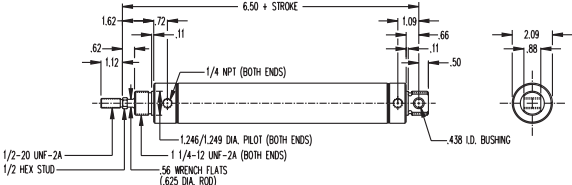

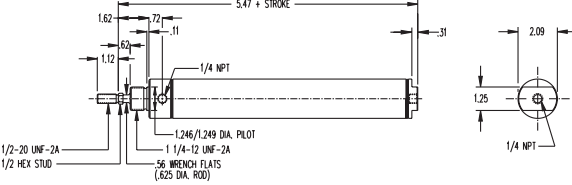
Push Force = 1.77 x psi • Pull Force = 1.57 x psi

MODEL/PRICE	DESCRIPTION/WEIGHT (lbs.)	DIMENSIONS
<p><b>17□-DBZ</b></p>  <p><b>\$77.75</b> BASE PRICE Add \$2.55 per inch of stroke</p>	<p><b>Block Mount – Double Acting –</b> Four bolt holes are provided for positive mounting to a base. Standard Stroke Lengths: 1", 2", 3", 4", 5", 6" Maximum Stroke – 12" Base Weight: 1.00 Adder Per Inch of Stroke: .10</p>	 <p>4.47 + STROKE 1.97 1.72 97 59 1.03 4 HOLES DRILL &amp; C'BORE FOR 1/4 CAP SCREW 1/4 NPT 1.25 7/16-20 UNF-2A 7/16 HEX STUD 44 WRENCH FLATS (.500 DIA. ROD)</p>
<p><b>17□-DUZ</b></p>  <p><b>\$65.75</b> BASE PRICE Add \$2.55 per inch of stroke</p>	<p><b>Universal Mount – Double Acting –</b> For double end mounting use D-8318 mounting bracket. For rear pivot mounting use D-8324-A pivot bracket. Use D-8311-A rod clevis. Standard Stroke Lengths: 1", 2", 3", 4", 5", 6", 7", 8", 9", 10", 11", 12" Maximum Stroke – 32" Base Weight: .92 Adder Per Inch of Stroke: .10</p>	 <p>5.41 + STROKE 1.41 59 1.03 59 1.03 1/4 NPT (BOTH ENDS) 1.12/1.124 DIA. PILOT (BOTH ENDS) 1 1/8-12 UNF-2A (BOTH ENDS) 44 WRENCH FLATS (.500 DIA. ROD) 1.58 75 1.58 1/4 NPT 7/16-20 UNF-2A 7/16 HEX STUD 1.12/1.124 DIA. PILOT (BOTH ENDS) 1 1/8-12 UNF-2A (BOTH ENDS) 44 WRENCH FLATS (.500 DIA. ROD) 1.58 75 1.58 1/4 NPT</p>
<p><b>17□-DZ</b></p>  <p><b>\$60.10</b> BASE PRICE Add \$2.55 per inch of stroke</p>	<p><b>Nose Mount – Double Acting –</b> Use D-8318 mounting bracket. Standard Stroke Lengths: 1", 2", 3", 4", 5", 6" Maximum Stroke – 12" Base Weight: .78 Adder Per Inch of Stroke: .10</p>	 <p>4.47 + STROKE 1.41 59 1.03 59 1.03 1/4 NPT 1.12/1.124 DIA. PILOT 1 1/8-12 UNF-2A 44 WRENCH FLATS (.500 DIA. ROD) 1.58 75 1.58 1/4 NPT 7/16-20 UNF-2A 7/16 HEX STUD 1.12/1.124 DIA. PILOT 1 1/8-12 UNF-2A 44 WRENCH FLATS (.500 DIA. ROD)</p>

# Z Line Air Cylinders

## 2" Bore Z Line Air Cylinders

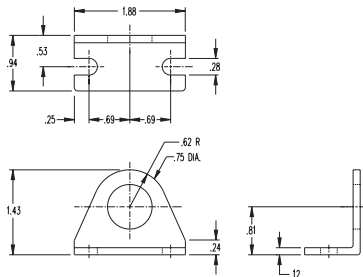
Push Force = 3.14 x psi • Pull Force = 2.83 x psi

MODEL/PRICE	DESCRIPTION/WEIGHT (lbs.)	DIMENSIONS
 <p><b>31-DBZ</b></p> <p><b>\$102.45</b> BASE PRICE Add \$2.85 per inch of stroke</p>	<p><b>Block Mount – Double Acting –</b> Four bolt holes are provided for positive mounting to a base. Standard Stroke Lengths: 1", 2", 3", 4", 5", 6" Maximum Stroke – 12" Base Weight: 2.03 Adder Per Inch of Stroke: .15</p>	
 <p><b>31-DUZ</b></p> <p><b>\$86.05</b> BASE PRICE Add \$2.85 per inch of stroke</p>	<p><b>Universal Mount – Double Acting –</b> For double end mounting use D-8319 mounting bracket. For rear pivot mounting use D-8325-A pivot bracket. Use D-8313-A rod clevis. Standard Stroke Lengths: 1", 2", 3", 4", 5", 6", 7", 8", 9", 10", 11", 12" Maximum Stroke – 32" Base Weight: 2.15 Adder Per Inch of Stroke: .15</p>	
 <p><b>31-DZ</b></p> <p><b>\$78.85</b> BASE PRICE Add \$2.85 per inch of stroke</p>	<p><b>Nose Mount – Double Acting –</b> Use D-8319 mounting bracket. Standard Stroke Lengths: 1", 2", 3", 4", 5", 6" Maximum Stroke – 12" Base Weight: 1.91 Adder Per Inch of Stroke: .15</p>	

## Z Line Accessories

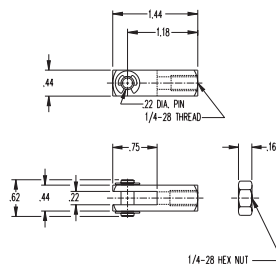
### 3/4" Bore Accessories

**D-8315**  
\$3.15



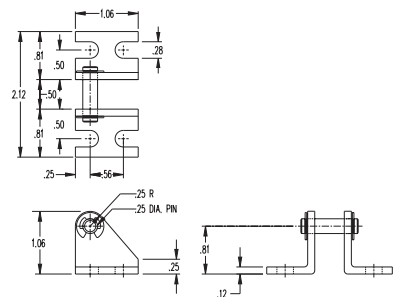
Mounting Bracket

**D-10139-A**  
\$6.20



Rod Clevis

**D-8321-A**  
\$4.75

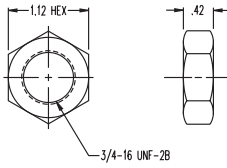


Pivot Bracket

# Z Line Accessories continued

## 3/4" Bore Accessories (continued)

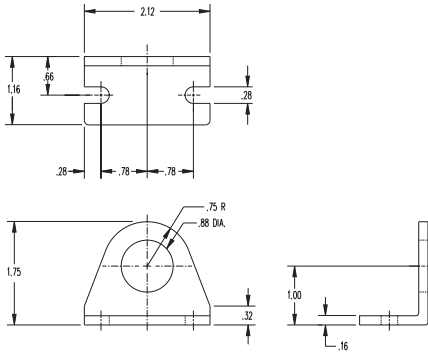
**D-3556**  
\$.75



Mounting Nut

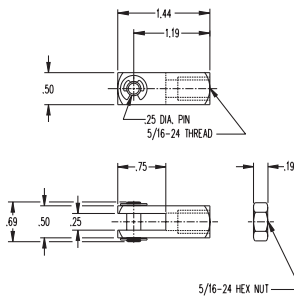
## 1-1/16" Bore Accessories

**D-8316**  
\$4.25



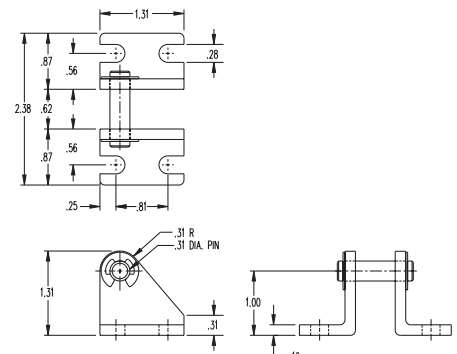
Mounting Bracket

**D-8309-A**  
\$6.30



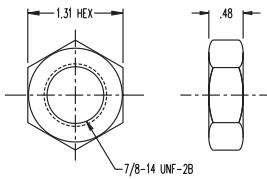
Rod Clevis

**D-8322-A**  
\$6.70



Pivot Bracket

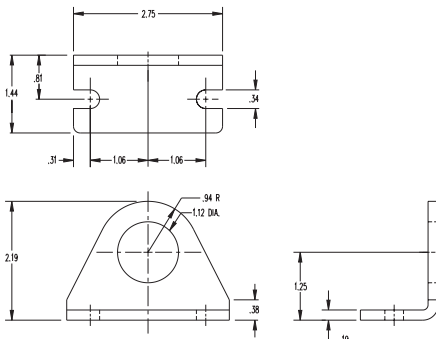
**D-2545**  
\$1.10



Mounting Nut

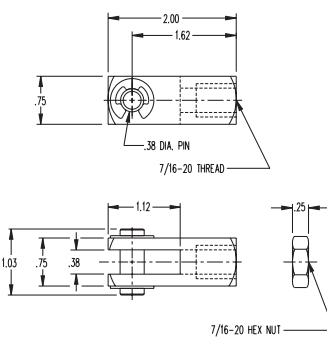
## 1-1/2" Bore Accessories

**D-8318**  
\$6.50



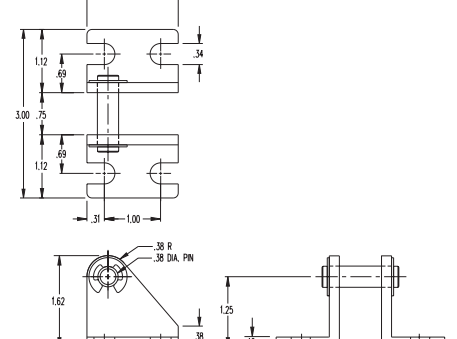
Mounting Bracket

**D-8311-A**  
\$7.35



Rod Clevis

**D-8324-A**  
\$10.15

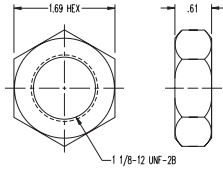


Pivot Bracket

# Z Line Accessories continued

## 1-1/2" Bore Accessories (continued)

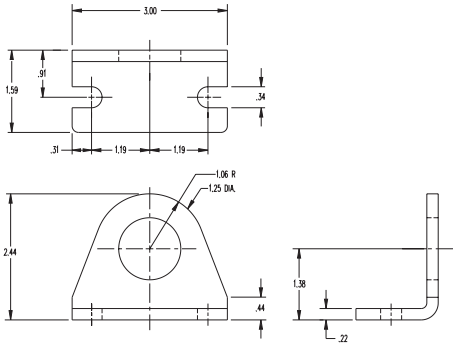
**D-8484**  
\$4.60



Mounting Nut

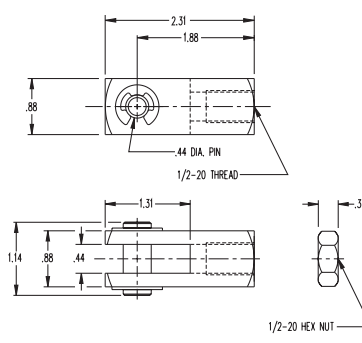
## 2" Bore Accessories

**D-8319**  
\$7.15



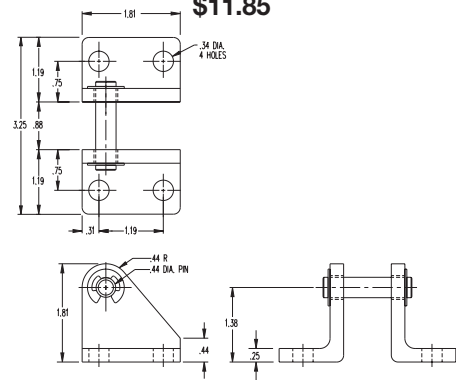
Mounting Bracket

**D-8313-A**  
\$10.50



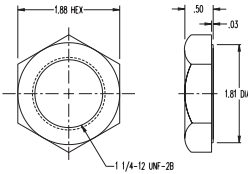
Rod Clevis

**D-8325-A**  
\$11.85



Pivot Bracket

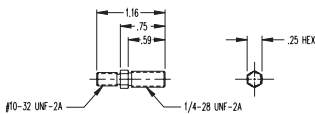
**D-508**  
\$4.60



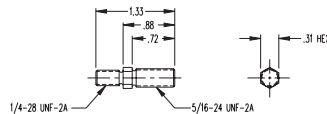
Mounting Nut

## Hex-Stud

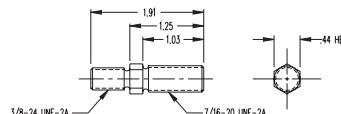
**3/4" BORE**  
**D-9868**  
\$3.65



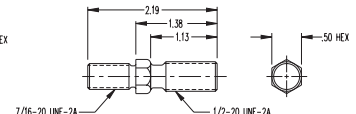
**1 1/16" BORE**  
**D-6583**  
\$4.05



**1 1/2" BORE**  
**D-6636**  
\$6.30

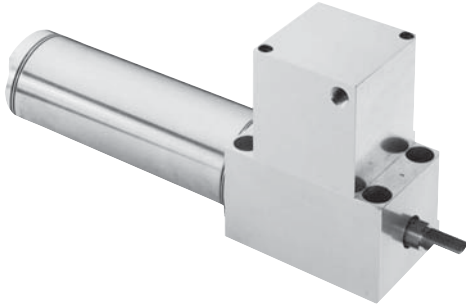


**2" BORE**  
**D-6637**  
\$7.80





# Rod Lock Cylinders

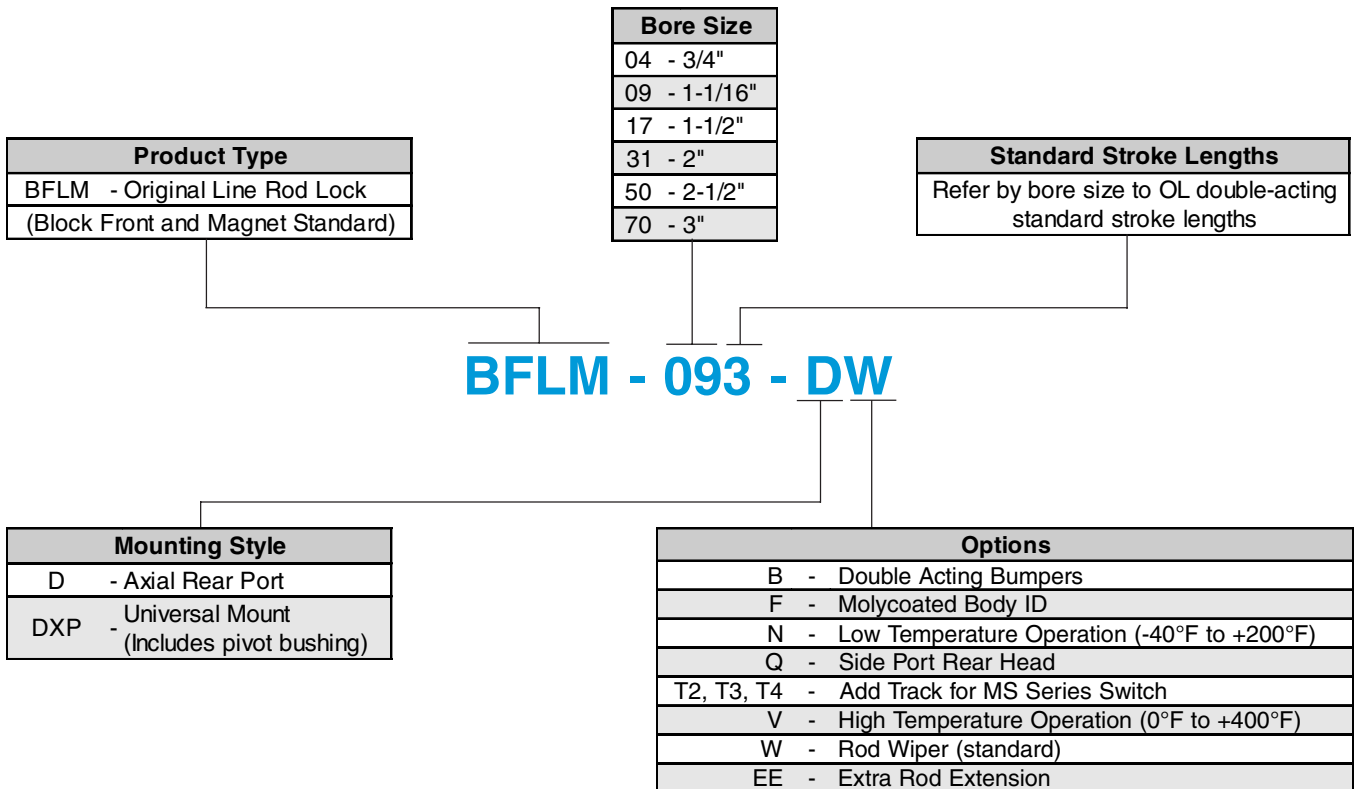


*The Bimba Original Line Rod Lock Cylinder is a normally clamped unit that holds the piston rod in position when air pressure is not present. It is ideal for preventing drift at machine shut down.*

## How to Order

The model number for all Original Line Rod Lock cylinders consists of three alphanumeric clusters. These designate product type, bore size and stroke length, and options.

Please note the following features are standard, and are included in all model numbers: **BFLM** (Block Front with Magnet) and **W** (Rod Wiper).

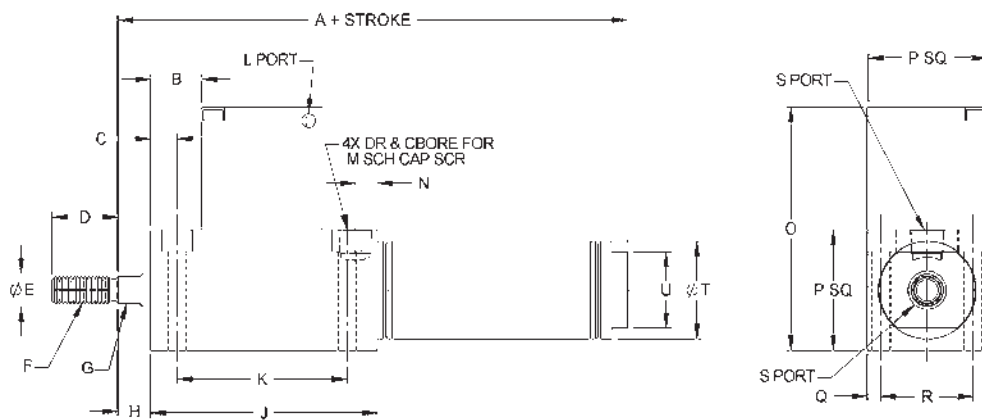


# Rod Lock Cylinders

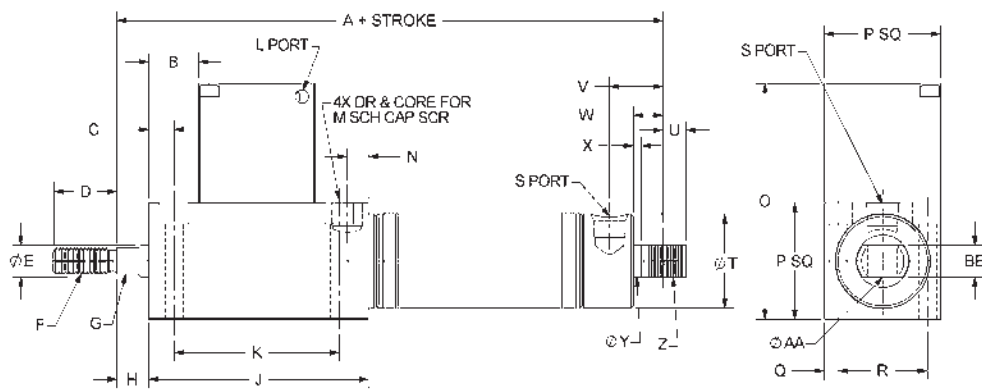
## List Prices

Bore	Mounting Style		Add per 1" Stroke	Bumpers	Molycoat	Low Temp	Switch Track	High Temp	Extra Extension
	D	DXP		B	F (per inch)	N	T2, T3, T4 (per track)	V	EE (per inch)
3/4" (04)	\$101.00	\$105.75	\$1.90	\$4.40	\$2.80	\$2.20	\$3.00	\$14.40	\$1.05
1-1/16" (09)	127.65	132.45	2.10	4.40	2.80	2.45	3.00	17.10	1.05
1-1/2" (17)	164.65	170.65	3.00	5.30	2.80	3.95	3.00	18.90	1.85
2" (31)	233.75	240.25	3.50	7.40	3.00	5.25	3.25	26.25	2.35
2-1/2" (50)	291.65	307.25	3.85	7.40	3.00	6.90	3.25	26.25	2.60
3" (70)	379.85	395.45	3.85	9.60	3.00	9.15	3.25	27.65	2.60

## Dimensions D Mounting Style



## DXP Mounting Style



# Rod Lock Cylinders

## Dimensions (in.) D Model

Bore	A	B	C	D	E	F	G	H	J	K	L
3/4" (04)	4.48	0.72	0.37	0.75	0.31	1/4-28 UNF-2A	0.25	0.25	2.48	1.83	#10-32 UNF-2B
1-1/16" (09)	4.84	0.61	0.31	0.75	0.38	5/16-24 UNF-2A	0.31	0.38	2.6	1.95	#10-32 UNF-2B
1-1/2" (17)	5.47	0.82	0.32	1.25	0.5	7/16-20 UNF-2A	0.43	0.38	3.37	2.75	1/8 NPT
2" (31)	6.84	0.88	0.44	1.25	0.62	1/2-20 UNF-2A	0.56	0.38	3.97	3.13	1/8 NPT
2-1/2" (50)	7.48	0.87	0.43	1.25	0.75	1/2-20 UNF-2A	0.62	0.38	4.61	3.62	1/4 NPT
3" (70)	8.22	0.92	0.46	1.25	0.75	5/8-16 UNF-2A	0.62	0.38	5.15	4.17	1/4 NPT

Bore	M	N	O	P	Q	R	S	T	U
3/4" (04)	#10	0.25	2.32	1.12	0.16	0.81	1/8 NPT	0.80	0.62
1-1/16" (09)	#10	0.25	2.78	1.38	0.16	1.06	1/8 NPT	1.12	0.87
1-1/2" (17)	1/4	0.32	3.38	1.75	0.25	1.25	1/4 NPT	1.56	0.88
2" (31)	3/8	0.39	4.45	2.25	0.31	1.62	1/4 NPT	2.08	1.24
2-1/2" (50)	7/16	0.42	5.67	2.75	0.44	1.88	1/4 NPT	2.58	1.74
3" (70)	1/2	0.42	6.28	3.25	0.5	2.25	3/8 NPT	3.13	1.99

## DXP Model

Bore	A	U	V	W	X	Y	Z	AA	BB
3/4" (04)	5.26	0.28	0.62	0.35	0.09	0.62	5/8-18 UNF-2A	0.25	0.37
1-1/16" (09)	5.44	0.28	0.62	0.34	0.09	0.62	5/8-18 UNF-2A	0.25	0.37
1-1/2" (17)	6.68	0.47	0.97	0.56	0.09	1.00	1-14 UNF-2A	0.38	0.68
2" (31)	7.78	0.44	1.03	0.56	0.13	1.37	1-1/4-12 UNF-2A	0.38	0.72
2-1/2" (50)	8.42	0.44	1.03	0.56	0.12	1.50	1-3/8-12 UNF-2A	0.38	0.72
3" (70)	9.47	0.63	1.34	0.81	0.19	1.62	1-1/2-12 UNF-2A	0.50	0.85

## Options

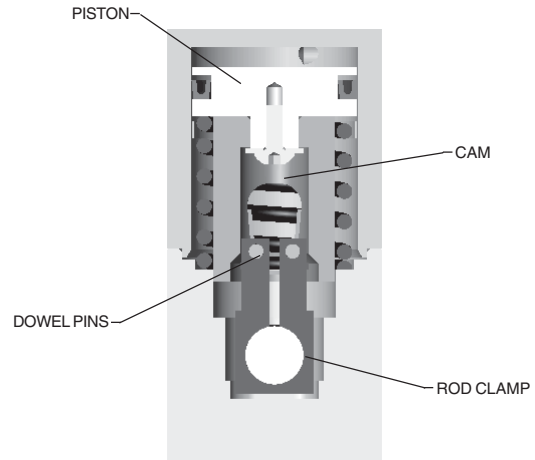
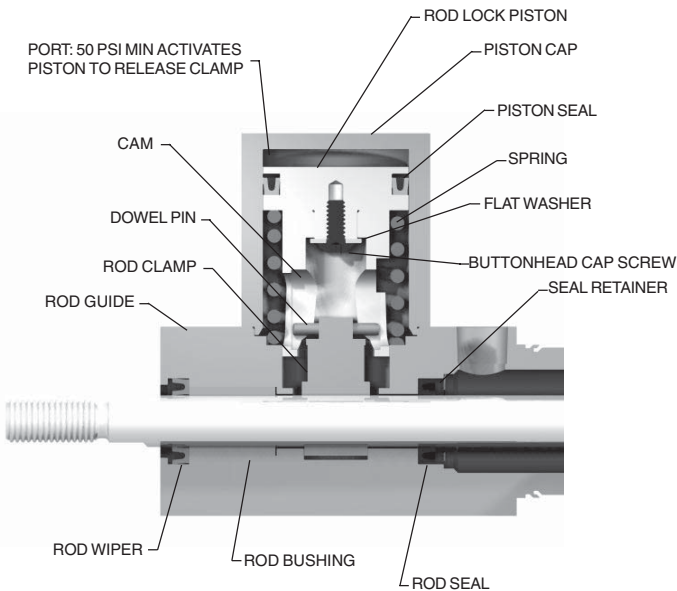
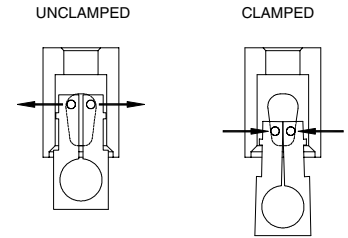
### Dimensional Deviations from Standard

Option	Dimensional Deviation
Q - Side Port Rear Head	Use DXP model, omit rear pivot tang
B - Bumpers	04 - no adder
	09 - .13"
Add to Overall Length by Bore Size:	17 - .13"
	31 - .25"
	50 - .25"
	70 - .25"

# Rod Lock Cylinders

## How It Works

- Dowel pins ride in the cam groove.
- When air pressure is present, piston actuates and dowel pins follow cam to open position, allowing piston rod to travel freely through clamp.
- In absence of pressure, the spring actuates piston and dowels follow to closed position, activating the rod clamp.



## Engineering Specifications

Operating Medium:	Air
Operating Pressure:	50 psi minimum (to actuate lock piston) 125 psi maximum
Temperature Range:	-20 to +200 degrees F
Lubrication:	HT-99
Cylinder body:	304 stainless steel
Rod Guide, Rear Head:	Aluminum
Cap:	Anodized aluminum
Piston & Rod Seal:	Buna-N
Rod & Pivot Bushing:	Sintered bronze
Piston Rod:	Hard chrome plated stainless steel
Expected Service Life:	5 million cylinder actuations 1 million lock actuations

### Rod Lock Holding Forces

Bore	Holding Force (Pounds)
3/4" (04)	40
1-1/16" (09)	90
1-1/2" (17)	170
2" (31)	310
2-1/2" (50)	500
3" (70)	700

### Operating Guidelines/Product Precautions

- The Rod Lock is not a safety device.
- Do not use for intermediate stopping; the cylinder is designed to prevent drift from a stationary position.
- Load weight must not exceed the stated holding force for the cylinder.

Standard Air Cylinders

Three-Position Cylinders

Cushion Cylinders

MRS® Cylinders

Non-Rotating Cylinders

PC Cylinders

All Stainless Repairable

Z-Line Air Cylinders

Rod Lock Cylinders

500 Hydraulic Cylinders

Hole Punch Cylinders



## Hydraulic Cylinders

HEX-STUD® made from heat treated alloy steel. In case of failure due to overload, the hexagon portion will remain in rod and can be easily removed

Sintered bronze piston rod guide bushing

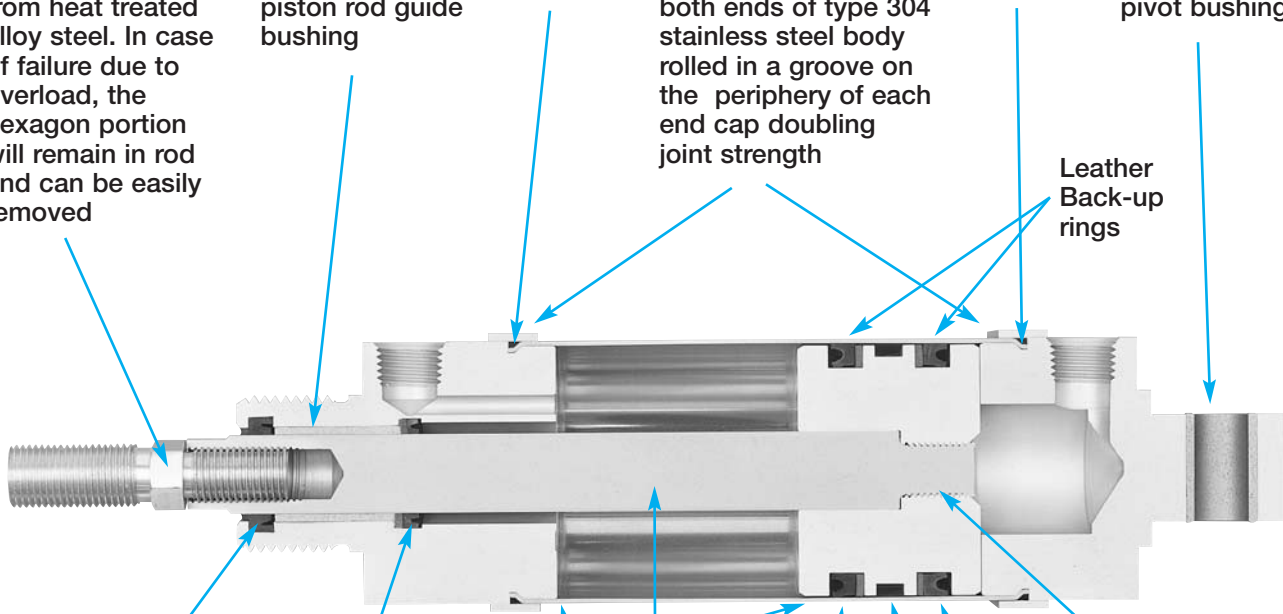
“O” ring

TIE-BANDS reinforce both ends of type 304 stainless steel body rolled in a groove on the periphery of each end cap doubling joint strength

“O” ring

Sintered bronze pivot bushing

Leather Back-up rings



Buna N rod wiper seal assures dry drip free piston rod

Block V seal with back up washer

High strength aluminum alloy endcaps & piston

Piston rod — hard chrome plated 85,000 to 100,000 psi min. yield steel

Filled PTFE bearing

Piston rod piloted into piston — threaded and riveted

Buna N block V seals with back up washers

The Bimba “500” is a precision built, compact, lightweight hydraulic cylinder designed specifically for hydraulic use only, at pressures up to 500 psi.

- Rated 500 PSI Hydraulic (non-shock), Double Acting

### OPTIONS:

#### EXTRA EXTENSION (EE), PER INCH OF EXTENSION:

- 1/16" Bore, add \$1.00 per inch
- 1/2" Bore, add \$1.30 per inch
- 2" Bore, add \$1.50 per inch

PORTS ROTATED 90 DEGREES (K) (no charge)

Enter Stroke Length as 3rd Digit

### OPTIONS continued...

#### MAGNET (prefix M)

Example: HM-096-DZ

- 4" stroke or greater required
- Overall length increases by 0.25"
- 1/16" Bore, add \$11.40
- 1/2" Bore, add \$13.75
- 2" Bore, add \$16.05


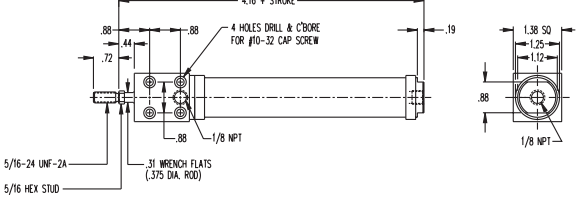

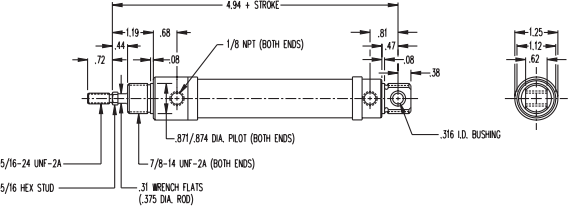

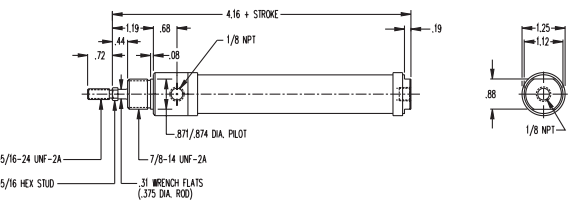
#### FLUOROELASTOMER SEALS (V)

- Specify for compatibility
- 1/16" Bore, add \$21.85
- 1/2" Bore, add \$27.30
- 2" Bore, add \$32.80

# "500" Hydraulic Cylinders

## 1-1/16" Bore "500" Hydraulic Cylinders

Push Force = .886 x psi • Pull Force = .776 x psi

MODEL/PRICE	DESCRIPTION/WEIGHT (lbs.)	DIMENSIONS
<b>H-09□-DBZ</b>  <b>\$59.05</b> BASE PRICE Add \$1.95 per inch of stroke	<b>Front Block Mount</b> Standard Stroke Lengths: 1", 2", 3", 4", 5", 6" Maximum Stroke - 12" Base Weight: .57 Adder Per Inch of Stroke: .06	
<b>H-09□-DUZ</b>  <b>\$52.85</b> BASE PRICE Add \$1.95 per inch of stroke	<b>Universal Mount - Double End or Rear Pivot</b> Standard Stroke Lengths: 1", 2", 3", 4", 5", 6", 7", 8", 9", 10", 11", 12" Maximum Stroke - 32" Optional Accessories: D-8316 Mounting Bracket D-8322-A Pivot Bracket D-8309-A Clevis Base Weight: .50 Adder Per Inch of Stroke: .06	
<b>H-09□-DZ</b>  <b>\$48.40</b> BASE PRICE Add \$1.95 per inch of stroke	<b>Nose Mount</b> Standard Stroke Lengths: 1", 2", 3", 4", 5", 6", 7" Maximum Stroke - 12" Optional Accessory: D-8316 Mounting Bracket Base Weight: .43 Adder Per Inch of Stroke: .06	

Standard Air Cylinders

Three-Position Cylinders

Cushion Cylinders

MRS® Cylinders

Non-Rotating Cylinders

PC Cylinders

All Stainless Repairable

Z Line Air Cylinders


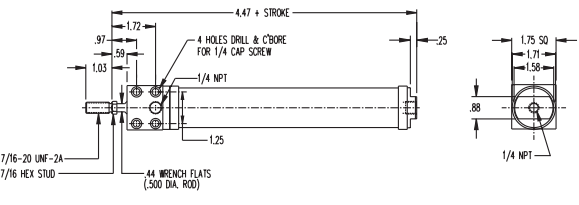
Rod Lock Cylinders

500 Hydraulic Cylinders

Hole Punch Cylinders

## 1-1/2" Bore "500" Hydraulic Cylinders

Push Force = 1.77 x psi • Pull Force = 1.57 x psi


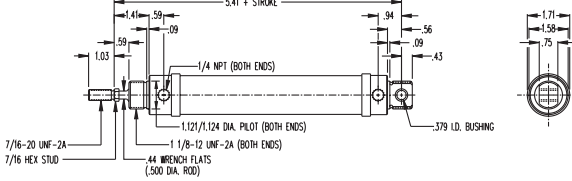

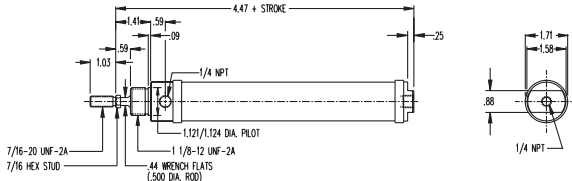
MODEL/PRICE	DESCRIPTION/WEIGHT (lbs.)	DIMENSIONS
<b>H-17□-DBZ</b>  <b>\$85.55</b> BASE PRICE Add \$2.55 per inch of stroke	<b>Front Block Mount</b> Standard Stroke Lengths: 1", 2", 3", 4", 5", 6" Maximum Stroke - 12" Base Weight: 1.00 Adder Per Inch of Stroke: .10	



# "500" Hydraulic Cylinders


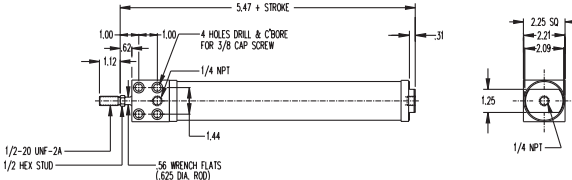

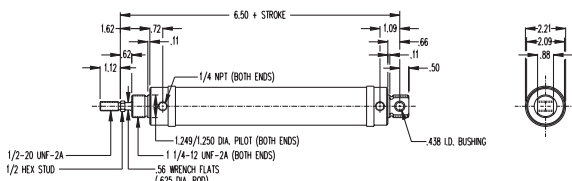
## 1-1/2" Bore "500" Hydraulic Cylinders (continued)

Push Force = 1.77 x psi • Pull Force = 1.57 x psi

MODEL/PRICE	DESCRIPTION/WEIGHT (lbs.)	DIMENSIONS
<p><b>H-17□-DUZ</b></p>  <p><b>\$78.90</b> BASE PRICE Add \$2.55 per inch of stroke</p>	<p><b>Universal Mount - Double End or Rear Pivot</b> Standard Stroke Lengths: 1", 2", 3", 4", 5", 6", 7", 8", 9", 10", 11", 12" Maximum Stroke - 32" Optional Accessories: D-8318 Mounting Bracket D-8324-A Pivot Bracket D-8311-A Clevis Base Weight: .95 Adder Per Inch of Stroke: .10</p>	
<p><b>H-17□-DZ</b></p>  <p><b>\$73.85</b> BASE PRICE Add \$2.55 per inch of stroke</p>	<p><b>Nose Mount</b> Standard Stroke Lengths: 1", 2", 3", 4", 5", 6", 7", 8", 9", 10", 11", 12" Maximum Stroke - 12" Optional Accessory: D-8318 Mounting Bracket Base Weight: .84 Adder Per Inch of Stroke: .10</p>	

## 2" Bore "500" Hydraulic Cylinders


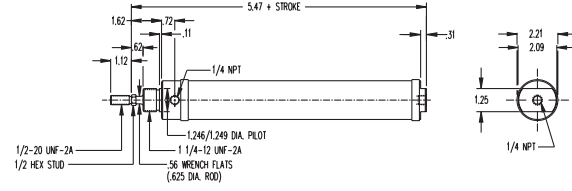
Push Force = 3.14 x psi • Pull Force = 2.83 x psi

MODEL/PRICE	DESCRIPTION/WEIGHT (lbs.)	DIMENSIONS
<p><b>H-31□-DBZ</b></p>  <p><b>\$111.70</b> BASE PRICE Add \$2.90 per inch of stroke</p>	<p><b>Front Block Mount</b> Standard Stroke Lengths: 1", 2", 3", 4", 5", 6" Maximum Stroke - 12" Base Weight: 1.90 Adder Per Inch of Stroke: .24</p>	
<p><b>H-31□-DUZ</b></p>  <p><b>\$104.55</b> BASE PRICE Add \$2.90 per inch of stroke</p>	<p><b>Universal Mount - Double End or Rear Pivot</b> Standard Stroke Lengths: 1", 2", 3", 4", 5", 6", 7", 8", 9", 10", 11", 12" Maximum Stroke - 32" Optional Accessories: D-8319 Mounting Bracket D-8325-A Pivot Bracket D-8313-A Clevis Base Weight: 1.75 Adder Per Inch of Stroke: .24</p>	

# "500" Hydraulic Cylinders

## 2" Bore "500" Hydraulic Cylinders (continued)

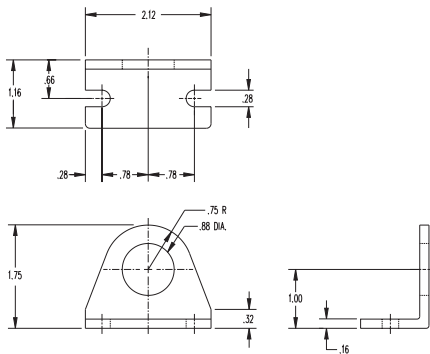
Push Force = 3.14 x psi • Pull Force = 2.83 x psi

MODEL/PRICE	DESCRIPTION/WEIGHT (lbs.)	DIMENSIONS
<p><b>H-31</b> □ <b>-DZ</b></p>  <p><b>\$97.65</b> BASE PRICE Add \$2.90 per inch of stroke</p>	<p><b>Nose Mount</b> Standard Stroke Lengths: 1", 2", 3", 4", 5", 6" Maximum Stroke - 12" Optional Accessory: D-8319 Mounting Bracket Base Weight: 1.63 Adder Per Inch of Stroke: .24</p>	 <p>5.47" + STROKE 1.62 1.12 1.246/1.249 DIA. PLEOT 1/4 NPT 1/2-20 UNF-2A 1/2 HEX 5100 1/4 NPT 1.25 2.21 2.09 1/4 NPT 1/4-12 UNF-2A .55 WRENCH FLATS (625 DIA. ROD)</p>

## "500" Hydraulic Cylinder Accessories

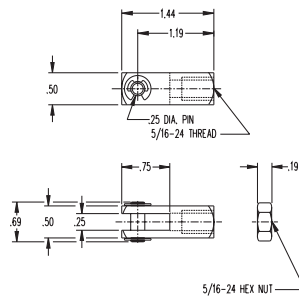
### 1-1/16" Bore Accessories

**D-8316**  
\$4.25



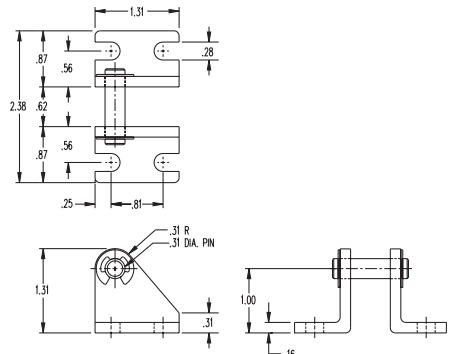
Mounting Bracket

**D-8309-A**  
\$6.30



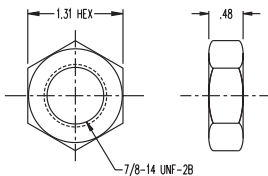
Rod Clevis

**D-8322-A**  
\$6.70



Pivot Bracket

**D-2545**  
\$1.10

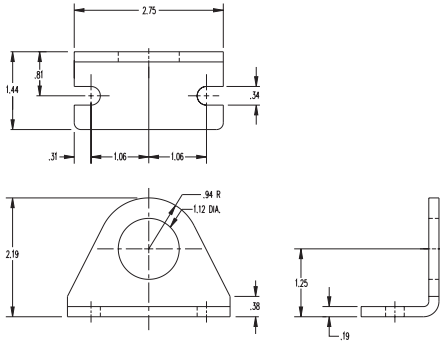


Mounting Nut

# "500" Hydraulic Cylinder Accessories continued

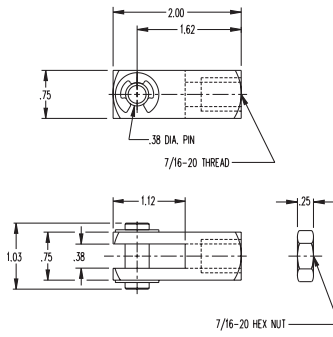
## 1-1/2" Bore Accessories

**D-8318**  
\$6.50



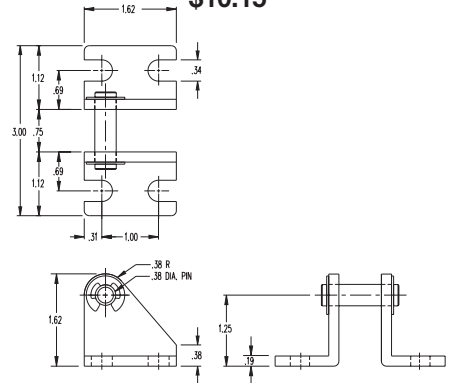
Mounting Bracket

**D-8311-A**  
\$7.35



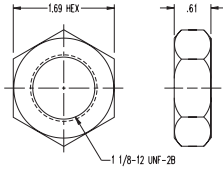
Rod Clevis

**D-8324-A**  
\$10.15



Pivot Bracket

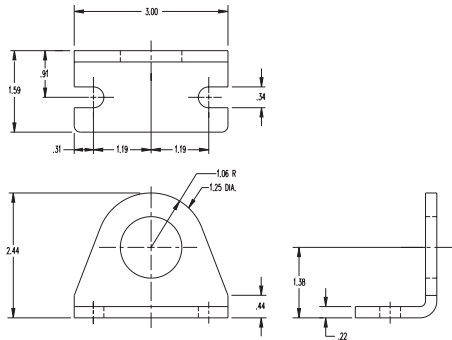
**D-8484**  
\$4.60



Mounting Nut

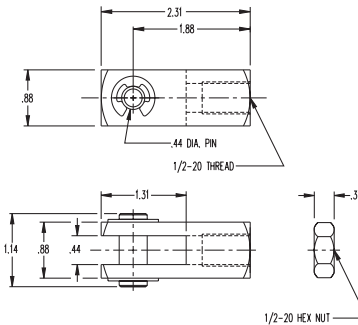
## 2" Bore Accessories

**D-8319**  
\$7.15



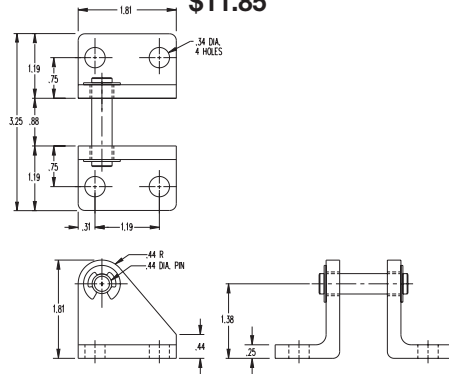
Mounting Bracket

**D-8313-A**  
\$10.50



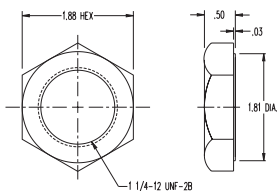
Rod Clevis

**D-8325-A**  
\$11.85



Pivot Bracket

**D-508**  
\$4.60

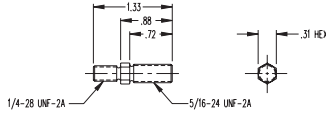


Mounting Nut

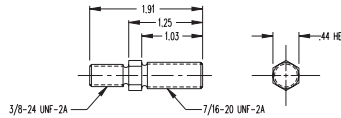
# "500" Hydraulic Cylinder Accessories continued

## Hex-Stud

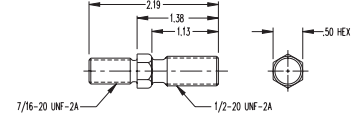
**1 1/16" BORE**  
**D-6583**  
**\$4.05**



**1 1/2" BORE**  
**D-6636**  
**\$6.30**



**2" BORE**  
**D-6637**  
**\$7.80**



Standard Air  
Cylinders

Three-Position  
Cylinders

Cushion  
Cylinders

MRS®  
Cylinders

Non-Rotating  
Cylinders

PC  
Cylinders

All Stainless  
Repairable

Z Line Air  
Cylinders

Rod Lock  
Cylinders

500 Hydraulic  
Cylinders

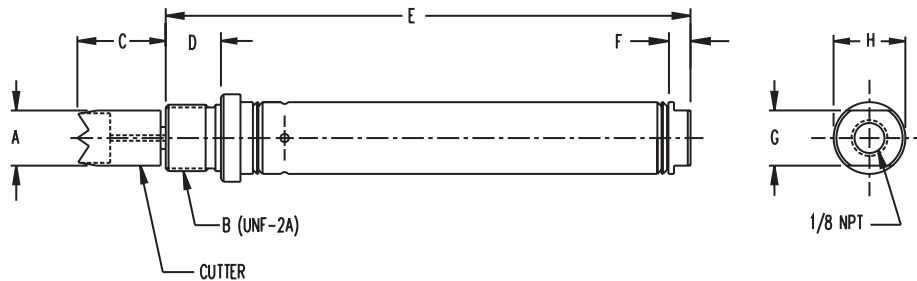
Hole Punch  
Cylinders

# Hole Punch Cylinders

Designed to punch millions of holes in plastic or other thin sheet materials 2 to 3 mils thick, the long-life BIMBA Pneumatic Hole Puncher will give you more cycles per penny. The hardened steel cutter with ground razor sharp edges is an integral part of the

cylinder. A small air jet ejects the slugs from the cutter preventing slug build up, and Elastomer Bumpers insure Cushion Quiet operation. Less than 1" in diameter, several cylinders can be closely mounted. Available in seven hole cutter sizes from 1/4" to 5/8".

This stainless steel body, single acting spring return cylinder has a 3/4" bore and 1" stroke. A nickel plated steel rod guide is threaded for easy nose mounting, and a 1/8" NPT air inlet is conveniently located in the rear head. Prelubricated with HT-99, the cylinder can be operated with ordinary shop air at pressures up to 250 psi.



MODEL NO.	HOLE SIZE	A	B	C	D	E	F	G	H	PRICE
<b>D-11840-A</b> Base Weight: .18	1/4"	.250"	1/2-20	.50	.44	3.44	.19	.62	.81	<b>\$33.10</b>
<b>D-9846-A*</b> Base Weight: .19	N/A	N/A	1/2-20	.50	.44	3.44	.19	.62	.81	<b>\$31.50</b>
<b>D-11811-A</b> Base Weight: .20	5/16"	.312"	1/2-20	1.00	.44	3.44	.19	.62	.81	<b>\$41.40</b>
<b>D-11618-A</b> Base Weight: .21	3/8"	.375"	1/2-20	1.00	.44	3.44	.19	.62	.81	<b>\$41.40</b>
<b>D-11998-A</b> Base Weight: .23	7/16"	.438"	5/8-18	1.00	.50	3.50	.19	.62	.81	<b>\$47.60</b>
<b>D-11999-A</b> Base Weight: .24	1/2"	.500"	5/8-18	1.00	.50	3.50	.19	.62	.81	<b>\$47.60</b>
<b>D-12107-A</b> Base Weight: .29	9/16"	.562"	3/4-16	1.00	.63	3.63	.19	.62	.99	<b>\$51.55</b>
<b>D-12108-A</b> Base Weight: .29	5/8"	.625"	3/4-16	1.00	.63	3.63	.19	.62	.99	<b>\$51.55</b>

\* The Pneumatic Hole Puncher Cylinder may be ordered without the cutter under model number D-9846-A. This cylinder has the same features and dimensions as the Hole Puncher except 1/4-28 UNF-2A by 0.50 long rod threads are provided so you may attach your own cutter.