

# 5/16" Bore Air Cylinders

ORDER ONLINE

- 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 5)

- **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 \$0.60 per inch of extension

### DOUBLE ACTING FAILSAFE

- (JS = Spring Return, JR = Spring Extend)
- Add \$4.00 to base price + \$0.35 to stroke adder
- See page 72 for overall length adders

Enter Stroke Length as 4th Digit

## OPTIONS continued...

### LOW TEMPERATURE (N)

Temperature Range: -40° to 200°F

- Single acting add \$0.55
- Double acting add \$1.05
- Reverse acting add \$0.80

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

(overall length does not change)

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

- Single acting add \$3.45
- Double acting add \$9.20
- Reverse acting add \$6.50

### ROD WIPER (W)

(not available in standard single acting)

- Add \$2.50

### MOLYCOATED BODY (F)


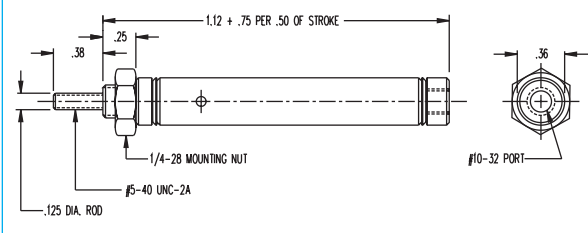

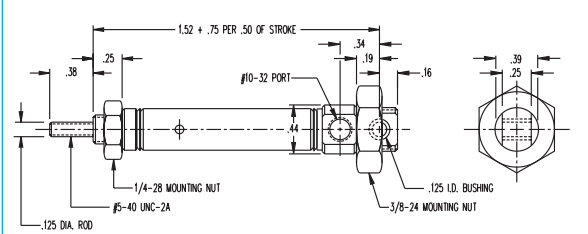

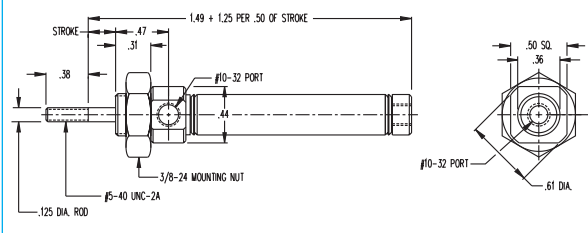
- Add \$2.30 per inch of stroke

### NON-LUBE SERVICE (E)

- Single acting add \$3.15
- Double acting add \$6.80

### MAGNETIC POSITION SENSING (M)

- Add \$6.50
- Add .15" to overall length
- Must specify track(s) for use with Bimba's miniature position sensing (T2, T3, T4) – Add \$2.50 per track. See page 140 for details.

MODEL/PRICE	DESCRIPTION/WEIGHT (lbs.)	DIMENSIONS
<p><b>007</b> <input type="checkbox"/></p>  <p><b>\$9.70</b> BASE PRICE Add \$1.70 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>\$12.65</b> BASE PRICE Add \$1.70 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>\$14.85</b> BASE PRICE Add \$1.70 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 9 for length calculation of fractional stroke for single acting cylinders

ORDER ONLINE

Flow Controls

Alignment Couplers

Original Line Cylinders

Cushion Cylinders

MRS Cylinders

Non-Rotating Cylinders

PC Cylinders

Z Line Cylinders

Rod Lock Cylinders


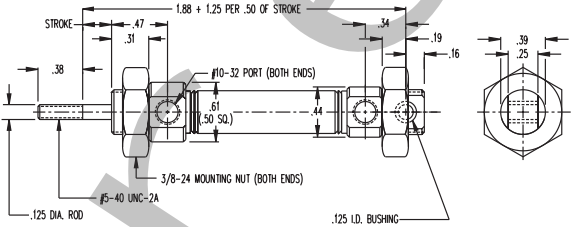

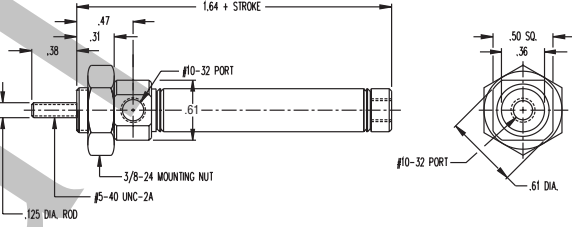

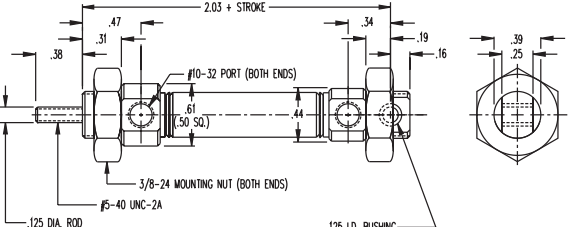

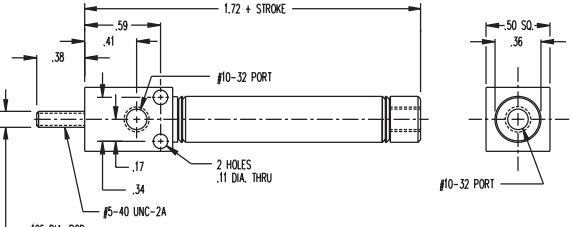
500 Hydraulic Cylinders

Hole Punchers Air Reservoirs

Position Sens Switches

ORDER  
ONLINE

# 5/16" Bore Air Cylinders

MODEL/PRICE	DESCRIPTION/WEIGHT (lbs.)	DIMENSIONS
<p><b>007□-RP</b></p>  <p><b>\$18.80</b> BASE PRICE Add \$1.70 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 – 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: .05</b>  <b>Adder Per Inch of Stroke: .03</b></p>	
<p><b>007□-D</b></p>  <p><b>\$13.55</b> BASE PRICE Add \$1.15 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 – 4"            Stainless Steel Rod Standard  <b>Optional Accessory:</b>            D-26765 Mounting Bracket  <b>Base Weight: .05</b>  <b>Adder Per Inch of Stroke: .01</b></p>	
<p><b>007□-DXP</b></p>  <p><b>\$16.75</b> BASE PRICE Add \$1.15 per inch of stroke</p>	<p><b>Double Acting – Air Return – Double End or Rear Pivot Mounting</b>  <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: .06</b>  <b>Adder Per Inch of Stroke: .01</b></p>	
<p><b>BF-007□-D</b></p>  <p><b>\$20.55</b> BASE PRICE Add \$1.15 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"            Maximum Stroke – 4"            Stainless Steel Rod Standard  <b>Base Weight: .05</b>  <b>Adder Per Inch of Stroke: .01</b></p>	

ORDER  
ONLINE

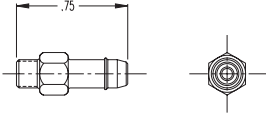
# 5/16" Bore Air Cylinders

## 5/16" Bore Accessories

**D-3229-A**

\$2.90

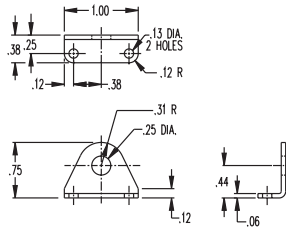
PACKAGE OF SIX



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**

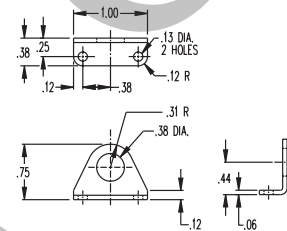
\$1.60



Mounting Bracket  
(for Single Acting Models)

**D-26765**

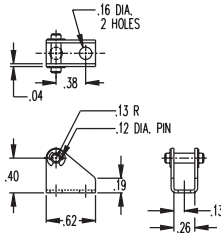
\$1.60



Mounting Bracket  
(for Double Acting Models)

**D-26689**

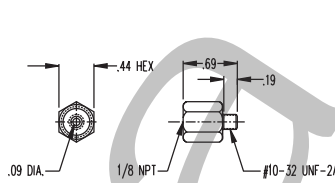
\$2.85



Pivot Bracket with Pin

**D-855-A**

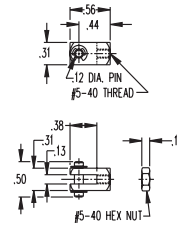
\$1.55



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

**D-26690**

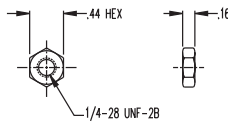
\$2.85



Piston Rod Clevis  
(with Pin)

**D-344**

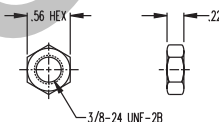
\$.25



Mounting Nut

**D-801**

\$.25



Mounting Nut

Flow  
Controls

Alignment  
Couplers

Original Line  
Cylinders

Cushion  
Cylinders

MRS  
Cylinders

Non-Rotating  
Cylinders

PC  
Cylinders

Z Line  
Cylinders

Rod Lock  
Cylinders

500 Hydraulic  
Cylinders

Hole Punchers  
Air Reservoirs

Position Sen  
Switches

# ORDER ONLINE 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)**

- \$2.60 additional
- Add .062 to overall length; Reverse acting, add .125

**DOUBLE ACTING BUMPER (B)**

- \$3.65 additional
- Add .188 to overall length – DXDE; add .250

**DOUBLE ACTING FAILSAFE**

- (JS = Spring Return, JR = Spring Extend)
- Add \$4.00 to base price + \$0.35 to stroke adder
  - See page 72 for overall length adders

### OPTIONS continued...

**EXTRA EXTENSION (EE)**

- Single, reverse and double acting, add \$0.70 per inch of extension
- DXDE, add \$0.90 per inch of extension; extension added to each end

**LOW TEMPERATURE (N)**

Temperature Range: -40° to 200°F

- Single acting add \$0.55
- Reverse acting add \$0.80
- Double acting add \$1.05
- DXDE add \$1.35

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

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

- Single acting add \$3.65
- Double acting add \$9.50
- DXDE add \$12.55
- Reverse acting add \$6.60

**MAGNET (prefix M)**

- Add \$7.00
- 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 \$2.50 per track. See page 140 for details.

**MOLYCOATED BODY (F)**

- Add \$2.30 per inch of stroke


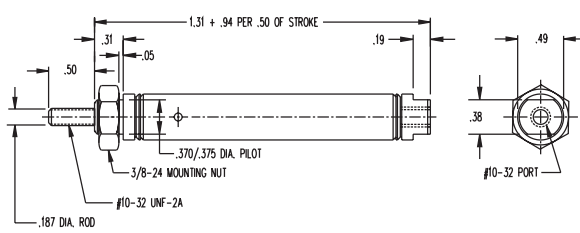

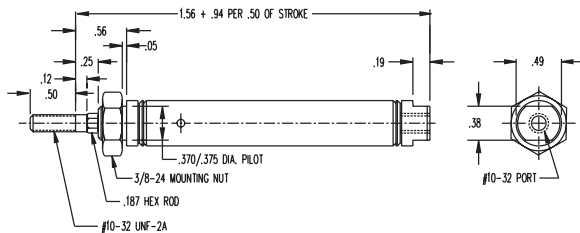
**NON-LUBE SERVICE (E)**

- Single acting add \$3.15
- Double acting add \$7.35
- DXDE add \$10.45

**ROD WIPER (W)**

- (not available in standard single acting)
- Add \$2.50


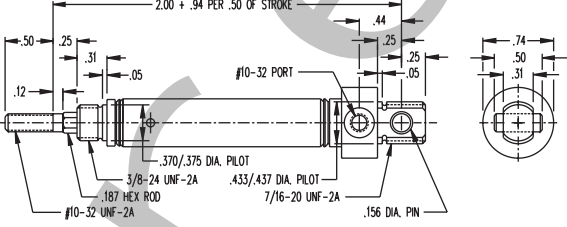

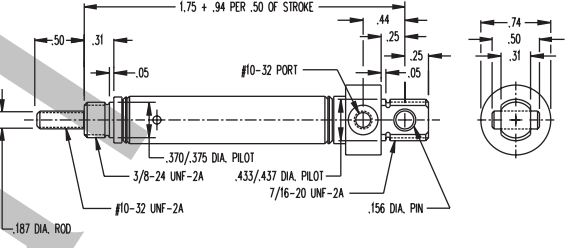

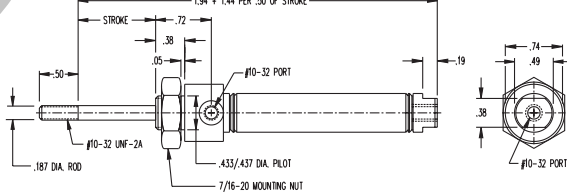

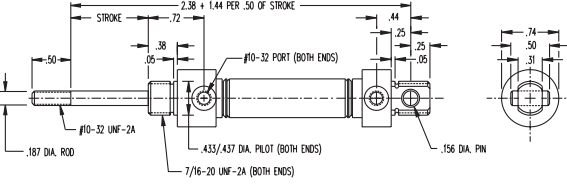

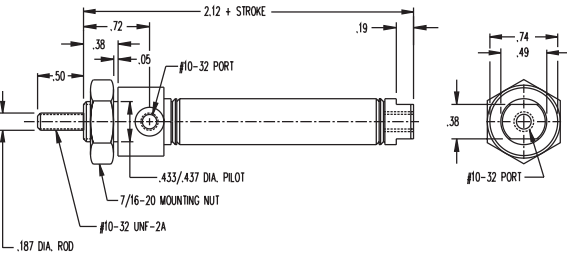
Enter Stroke Length as 3rd Digit

MODEL/PRICE	DESCRIPTION/WEIGHT (lbs.)	DIMENSIONS
<p style="font-size: 24pt; font-weight: bold;">01 <input type="checkbox"/></p>  <p style="font-size: 18pt; font-weight: bold; text-align: center;">\$10.20</p> <p style="text-align: center; font-weight: bold;">BASE PRICE</p> <p style="text-align: center;">Add \$1.90 per inch of stroke</p>	<p><b>Single Acting – Spring Return – Front Nose Mounting</b></p> <p><b>Standard Stroke Lengths:</b> ½", 1", 1½", 2", 2½", 3", 4"</p> <p>Maximum Stroke – 6" Stainless Steel Rod Standard</p> <p><b>Optional Accessory:</b> D-775 Mounting Bracket</p> <p><b>Base Weight:</b> .04 <b>Adder Per Inch of Stroke:</b> .04</p>	
<p style="font-size: 24pt; font-weight: bold;">01 <input type="checkbox"/> -NR</p>  <p style="font-size: 18pt; font-weight: bold; text-align: center;">\$12.60</p> <p style="text-align: center; font-weight: bold;">BASE PRICE</p> <p style="text-align: center;">Add \$1.90 per inch of stroke</p>	<p><b>Single Acting – Non-rotating – Hexagon Rod – Spring Return – Front Nose Mounting</b></p> <p><b>Standard Stroke Lengths:</b> ½", 1", 1½", 2", 2½", 3", 4"</p> <p>Maximum Stroke – 6" Stainless Steel Rod Standard</p> <p><b>Optional Accessory:</b> D-775 Mounting Bracket</p> <p><b>Base Weight:</b> .04 <b>Adder Per Inch of Stroke:</b> .04</p>	

See page 9 for length calculation of fractional stroke for single acting cylinders


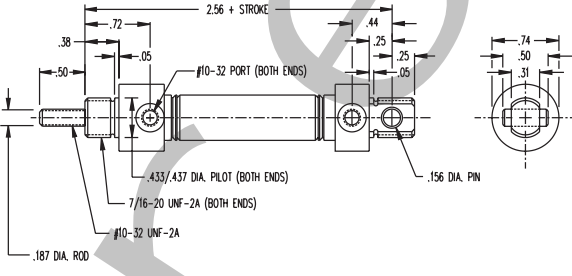

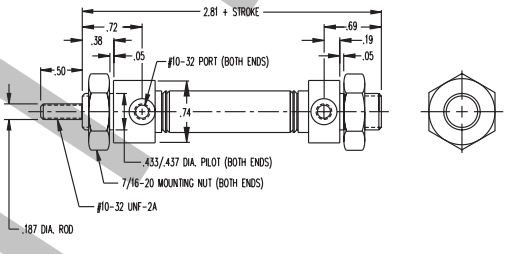

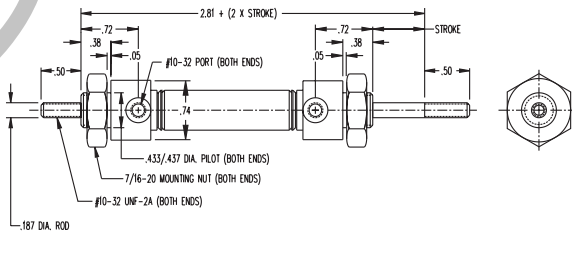
ORDER  
ONLINE

# 7/16" Bore Air Cylinders


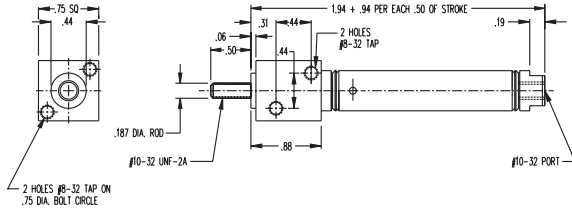

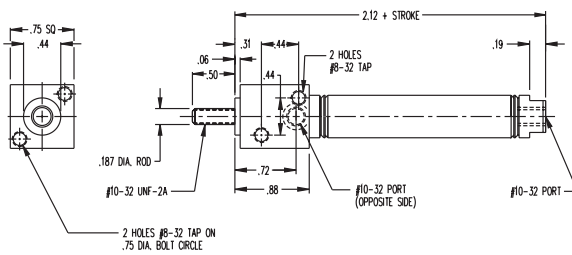
MODEL/PRICE	DESCRIPTION/WEIGHT (lbs.)	DIMENSIONS
<p><b>01□-NRP</b></p>  <p><b>\$15.75</b> BASE PRICE Add \$1.90 per inch of stroke</p>	<p><b>Single Acting – Non-rotating Hexagon Rod – Pivot Type – Spring Return – Rear Pivot Mounting</b>  <b>Standard Stroke Lengths:</b>            ½", 1", 1½", 2", 2½", 3", 4"  <b>Maximum Stroke – 6"</b>            Stainless Steel Rod Standard  <b>Optional Accessories:</b>            D-850 Rod Clevis            D-780 Pivot Brackets  <b>Base Weight: .04</b>  <b>Adder Per Inch of Stroke: .04</b></p>	
<p><b>01□-P</b></p>  <p><b>\$13.45</b> BASE PRICE Add \$1.90 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>            Stainless Steel Rod Standard  <b>Optional Accessories:</b>            D-780 Pivot Brackets            D-850 Piston Rod Clevis  <b>Base Weight: .04</b>  <b>Adder Per Inch of Stroke: .04</b></p>	
<p><b>01□-R</b></p>  <p><b>\$15.50</b> BASE PRICE Add \$1.90 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 – 6"</b>            Stainless Steel Rod Standard  <b>Optional Accessory:</b>            D-770 Mounting Bracket  <b>Base Weight: .08</b>  <b>Adder Per Inch of Stroke: .03</b></p>	
<p><b>01□-RP</b></p>  <p><b>\$19.40</b> BASE PRICE Add \$1.90 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 – 6"</b>            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: .03</b></p>	
<p><b>01□-D</b></p>  <p><b>\$14.20</b> BASE PRICE Add \$1.35 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"  <b>Maximum Stroke – 12"</b>            Stainless Steel Rod Standard  <b>Optional Accessory:</b>            D-770 Mounting Bracket  <b>Base Weight: .07</b>  <b>Adder Per Inch of Stroke: .02</b></p>	

- Flow Controls
- Alignment Couplers
- Original Line Cylinders
- Cushion Cylinders
- MRS Cylinders
- Non-Rotating Cylinders
- PC Cylinders
- Z Line Cylinders
- Rod Lock Cylinders
- 500 Hydraulic Cylinders
- Hole Punchers Air Reservoirs
- Position Sens Switches

# 7/16" Bore Air Cylinders


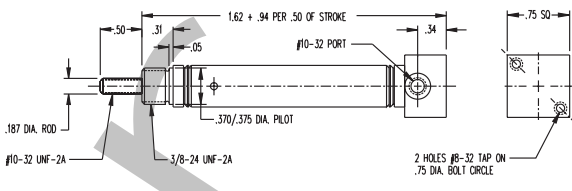

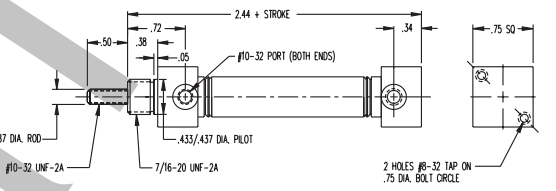
MODEL/PRICE	DESCRIPTION/WEIGHT (lbs.)	DIMENSIONS
<p><b>01□-DP</b></p>  <p><b>\$17.20</b> BASE PRICE Add \$1.35 per inch of stroke</p>	<p><b>Double Acting – Pivot Type – Air Return – Rear Pivot Mounting</b> Standard Stroke Lengths: ½", 1", 1½", 2", 2½", 3", 4" Maximum Stroke – 12" Stainless Steel Rod Standard Optional Accessories: D-780 Pivot Brackets D-850 Piston Rod Clevis Base Weight: .08 Adder Per Inch of Stroke: .02</p>	
<p><b>01□-DX</b></p>  <p><b>\$17.55</b> BASE PRICE Add \$1.35 per inch of stroke</p>	<p><b>Double Acting – Double End Mount – Air Return</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: .11 Adder Per Inch of Stroke: .02</p>	
<p><b>01□-DXDE</b></p>  <p><b>\$22.45</b> BASE PRICE Add \$1.80 per inch of stroke</p>	<p><b>Double Acting – Double End Rod – Air Return – Double End Mount</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: .14 Adder Per Inch of Stroke: .03</p>	

## 7/16" Bore Block Mounted Air Cylinders


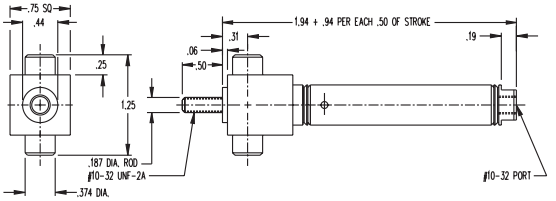

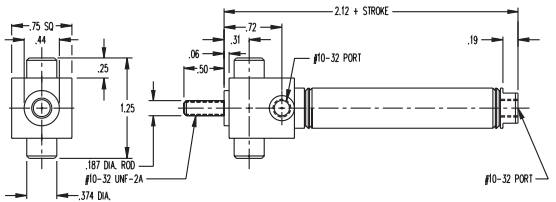

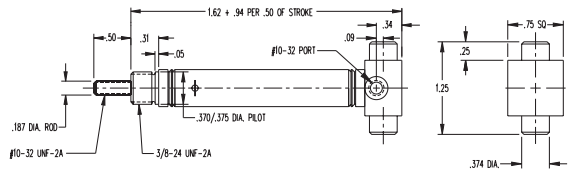
MODEL/PRICE	DESCRIPTION/WEIGHT (lbs.)	DIMENSIONS
<p><b>BF-01□</b></p>  <p><b>\$18.25</b> BASE PRICE Add \$1.90 per inch of stroke</p>	<p><b>Single Acting – Front Block Mounting – Spring Return</b> Standard Stroke Lengths: ½", 1", 1½", 2", 2½", 3", 4" Maximum Stroke – 6" Stainless Steel Rod Standard Base Weight: .07 Adder Per Inch of Stroke: .04</p>	
<p><b>BF-01□-D</b></p>  <p><b>\$22.00</b> BASE PRICE Add \$1.35 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" Maximum Stroke – 12" Stainless Steel Rod Standard Base Weight: .07 Adder Per Inch of Stroke: .02</p>	

# 7/16" Bore Air Cylinders

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

MODEL/PRICE	DESCRIPTION/WEIGHT (lbs.)	DIMENSIONS
<p><b>BR-01</b> <input type="checkbox"/></p>  <p><b>\$17.70</b> BASE PRICE Add \$1.90 per inch of stroke</p>	<p><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: .05                      Adder Per Inch of Stroke: .04</p>	
<p><b>BR-01</b> <input type="checkbox"/>-D</p>  <p><b>\$21.70</b> BASE PRICE Add \$1.35 per inch of stroke</p>	<p><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                      Base Weight: .08                      Adder Per Inch of Stroke: .02</p>	

## 7/16" Bore Trunnion Mounted Air Cylinders


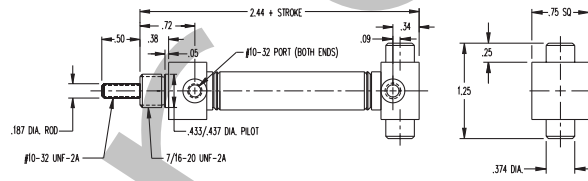
MODEL/PRICE	DESCRIPTION/WEIGHT (lbs.)	DIMENSIONS
<p><b>BFT-01</b> <input type="checkbox"/></p>  <p><b>\$24.95</b> BASE PRICE Add \$1.90 per inch of stroke</p>	<p><b>Single Acting – Front Block Trunnion Mounting – Spring Return</b>  <b>Standard Stroke Lengths:</b>                      ½", 1", 1½", 2", 2½", 3", 4"                      Maximum Stroke – 6"                      Stainless Steel Rod Standard  <b>Optional Accessories:</b>                      TRB-1 Trunnion Brackets                      D-850 Rod Clevis                      Base Weight: .09                      Adder Per Inch of Stroke: .04</p>	
<p><b>BFT-01</b> <input type="checkbox"/>-D</p>  <p><b>\$28.75</b> BASE PRICE Add \$1.35 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"                      Maximum Stroke – 12"                      Stainless Steel Rod Standard  <b>Optional Accessories:</b>                      TRB-1 Trunnion Brackets                      D-850 Rod Clevis                      Base Weight: .09                      Adder Per Inch of Stroke: .02</p>	
<p><b>BRT-01</b> <input type="checkbox"/></p>  <p><b>\$24.35</b> BASE PRICE Add \$1.90 per inch of stroke</p>	<p><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                      Base Weight: .07                      Adder Per Inch of Stroke: .04</p>	

Flow Controls  
Alignment Couplers  
Original Line Cylinders  
Cushion Cylinders  
MRS Cylinders  
Non-Rotating Cylinders  
PC Cylinders  
Z Line Cylinders  
Rod Lock Cylinders  
500 Hydraulic Cylinders  
Hole Punchers Air Reservoirs  
Position Sens Switches

ORDER  
ONLINE

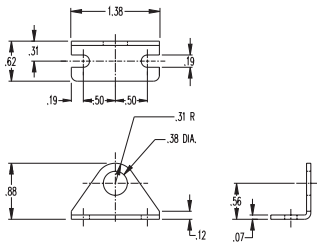
# 7/16" Bore Air Cylinders

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

MODEL/PRICE	DESCRIPTION/WEIGHT (lbs.)	DIMENSIONS
<p><b>BRT-01</b> <span style="border: 1px solid black; padding: 2px;">□</span> -D</p>  <p><b>\$28.20</b> BASE PRICE Add \$1.35 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"                      Maximum Stroke – 12"                      Stainless Steel Rod Standard  <b>Optional Accessories:</b>                      TRB-1 Trunnion Brackets                      D-850 Rod Clevis                      Base Weight: .10                      Adder Per Inch of Stroke: .02</p>	

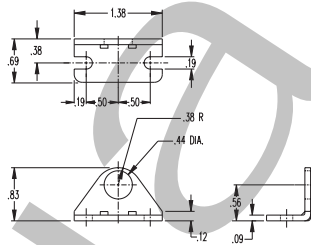
## 7/16" Bore Accessories

**D-775**  
\$1.95



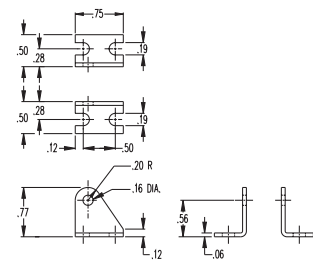
Mounting Bracket  
(for Single Acting Models)

**D-770**  
\$2.05



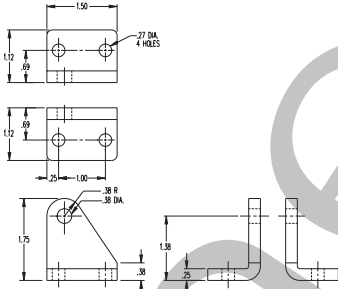
Mounting Bracket  
(for Double Acting Models)

**D-780**  
\$2.70



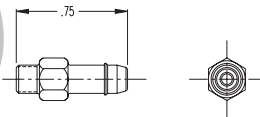
Pivot Brackets

**TRB-1**  
\$7.85



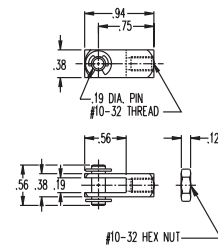
Trunnion Brackets

**D-3229-A**  
\$2.90  
PACKAGE OF SIX



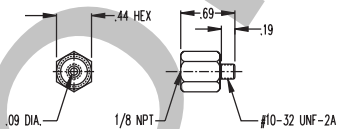
Anodized Aluminum Alloy Barbed Fitting. ¼"  
Hose (O.D.) Barbed Fitting Supplied with  
Gasket, No. 10-32 to ¼" O.D. Tubing.

**D-850**  
\$2.90



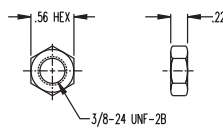
Piston Rod Clevis

**D-855-A**  
\$1.55



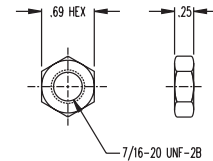
Adaptors (10-32 to 1/8" NPT Male)  
Supplied with Gasket

**D-801**  
\$.25



Mounting Nut

**D-154**  
\$.25



Mounting Nut



# ORDER ONLINE 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)

- \$2.60 additional
- Add .062 to overall length

### DOUBLE ACTING BUMPERS (B)

- \$3.65 additional
- Add .125 to overall length

### EXTRA EXTENSION (EE)

- Single, reverse and double acting, add \$0.70 per inch of extension
- DXDE, add \$0.90 per inch of extension; extension added to each end

### DOUBLE ACTING FAILSAFE

- (JS = Spring Return, JR = Spring Extend)
- Add \$4.50 to base price + \$0.50 to stroke adder
- See page 72 for overall length adders

## OPTIONS continued...

### MAGNET (prefix M) – Add \$8.40

- Single and reverse acting add .125" to overall length
- See page 131 for switch details & mounting selection
- Must specify track(s) for use with miniature position sensing (T2, T3, T4) – add \$2.50 per track. See page 140 for details.

### LOW TEMPERATURE (N)

- Temperature Range: -40° to 200°F
- Single acting add \$0.55
- Reverse acting add \$0.80
- Double acting add \$1.05
- DXDE add \$1.35

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

- Temperature Range: 0° to 400°F (-18° to 205°C)
- Single acting add \$3.65
- Double acting add \$9.50
- Double end rod add \$12.55
- Reverse acting add \$6.60

### MOLYCOATED BODY (F)

- Add \$2.30 per inch of stroke


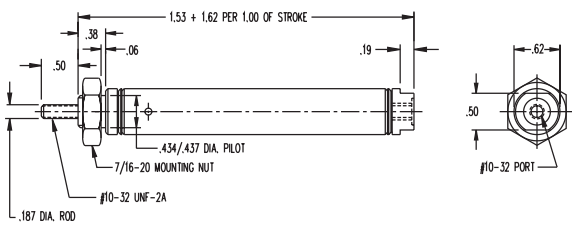

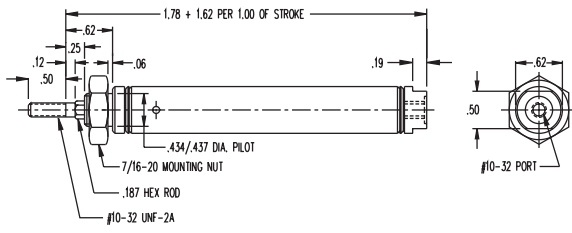
### NON-LUBE SERVICE (E)

- Single acting add \$3.15
- Double acting add \$7.35
- DXDE add \$10.45

### ROD WIPER (W)

- (not available in standard single acting)
- Add \$2.50

Enter Stroke Length as 3rd Digit


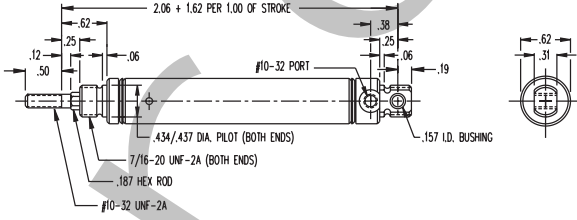

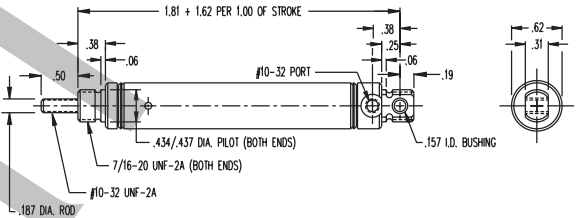

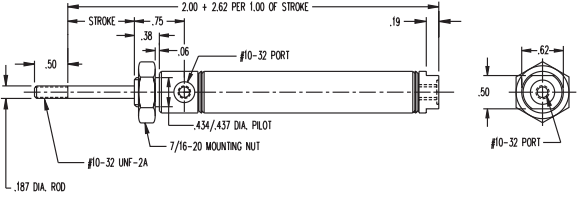

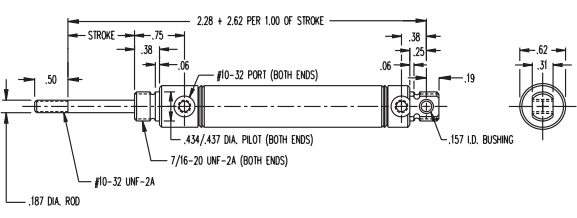

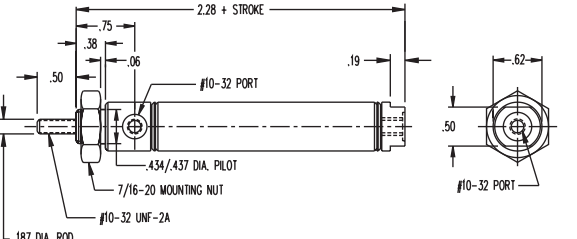
MODEL/PRICE	DESCRIPTION/WEIGHT (lbs.)	DIMENSIONS
<p style="font-size: 24pt; font-weight: bold;">02 <input type="checkbox"/></p>  <p style="font-size: 24pt; font-weight: bold; text-align: center;">\$10.90</p> <p style="text-align: center;">BASE PRICE Add \$1.90 per inch of stroke</p>	<p><b>Single Acting – Spring Return – Front Nose Mounting</b></p> <p><b>Standard Stroke Lengths:</b> ½", 1", 1½", 2", 2½", 3", 4" Maximum Stroke – 6" Stainless Steel Rod Standard</p> <p><b>Optional Accessory:</b> D-770 Mounting Bracket <b>Base Weight:</b> .06 <b>Adder Per Inch of Stroke:</b> .05</p>	
<p style="font-size: 24pt; font-weight: bold;">02 <input type="checkbox"/> -NR</p>  <p style="font-size: 24pt; font-weight: bold; text-align: center;">\$13.35</p> <p style="text-align: center;">BASE PRICE Add \$1.90 per inch of stroke</p>	<p><b>Single Acting – Non-rotating Hexagon Rod – Spring Return – Front Nose Mounting</b></p> <p><b>Standard Stroke Lengths:</b> ½", 1", 1½", 2", 2½", 3", 4" Maximum Stroke – 6" Stainless Steel Rod Standard</p> <p><b>Optional Accessory:</b> D-770 Mounting Bracket <b>Base Weight:</b> .06 <b>Adder Per Inch of Stroke:</b> .05</p>	

See page 9 for length calculation of fractional stroke for single acting cylinders


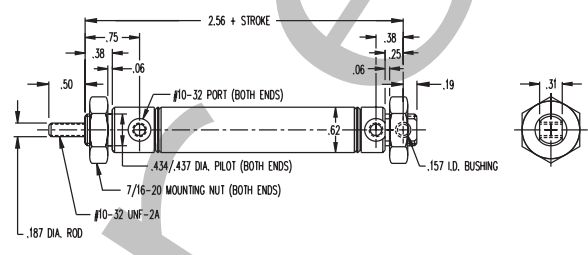

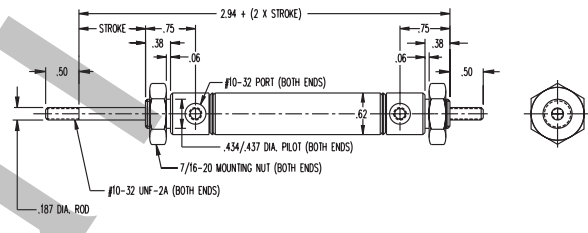
- Flow Controls
- Alignment Couplers
- Original Line Cylinders
- Cushion Cylinders
- MRS Cylinders
- Non-Rotating Cylinders
- PC Cylinders
- Z Line Cylinders
- Rod Lock Cylinders
- 500 Hydraulic Cylinders
- Hole Punchers Air Reservoirs
- Position Sens Switches

ORDER  
ONLINE

# 9/16" Bore Air Cylinders

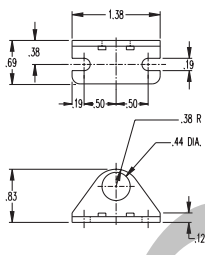
MODEL/PRICE	DESCRIPTION/WEIGHT (lbs.)	DIMENSIONS
<p><b>02□-NRP</b></p>  <p><b>\$16.75</b> BASE PRICE Add \$1.90 per inch of stroke</p>	<p><b>Single Acting – Non-rotating Hexagon Rod – Pivot Type – Spring Return – Rear Pivot Mounting</b>  <b>Standard Stroke Lengths:</b>            ½", 1", 1½", 2", 2½", 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>\$14.20</b> BASE PRICE Add \$1.90 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>\$16.45</b> BASE PRICE Add \$1.90 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>\$19.90</b> BASE PRICE Add \$1.90 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>\$14.50</b> BASE PRICE Add \$1.35 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"            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>	

# ORDER ONLINE 9/16" Bore Air Cylinders

MODEL/PRICE	DESCRIPTION/WEIGHT (lbs.)	DIMENSIONS
<p><b>02□-DXP</b></p>  <p><b>\$17.70</b> BASE PRICE Add \$1.35 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>\$23.90</b> BASE PRICE Add \$1.80 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>	

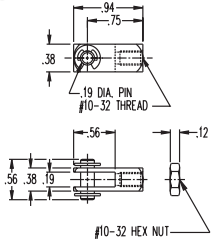
## 9/16" Bore Accessories

**D-770**  
\$2.05



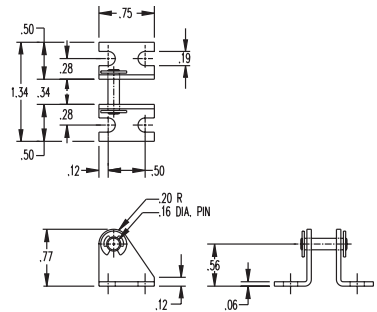
Mounting Bracket

**D-850**  
\$2.90



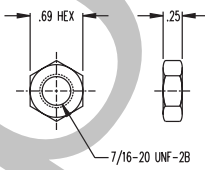
Piston Rod Clevis

**D-12321-A**  
\$3.15



Pivot Bracket with Pin

**D-154**  
\$.25



Mounting Nut

**Note:** For stainless steel accessories see page 106 and 109-110.

- Flow Controls
- Alignment Couplers
- Original Line Cylinders
- Cushion Cylinders
- MRS Cylinders
- Non-Rotating Cylinders
- PC Cylinders
- Z Line Cylinders
- Rod Lock Cylinders
- 500 Hydraulic Cylinders
- Hole Punchers Air Reservoirs
- Position Sens Switches

# 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)

- \$2.60 additional
- Add .125 to overall length

### DOUBLE ACTING BUMPERS (B)

- \$3.65 additional
- No change in overall length

### EXTRA EXTENSION (EE)

- Single, reverse and double acting, add \$0.70 per inch of extension
- DXDE, add \$0.90 per inch of extension; extension added to each end

### DOUBLE ACTING FAILSAFE

- (JS = Spring Return, JR = Spring Extend)
- Add \$5.00 to base price + \$0.50 to stroke adder
- See page 72 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 \$2.50
- DXDE, add \$5.00

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

- Add \$1.10
- Spring Force: 4 lbs. relaxed – 10 lbs. compressed

### MAGNET (prefix M) – Add \$8.40

- 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 \$2.50 per track. See page 140 for details.

### LOW TEMPERATURE (N)

Temperature Range: -40° to 200°F

- Single acting add \$0.55
- Reverse acting add \$0.80
- Double acting add \$1.05
- DXDE add \$1.35

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

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

- Single acting add \$3.65
- Double acting add \$9.50
- Double end rod add \$12.55
- Reverse acting add \$6.60

### MOLYCOATED BODY (F)

- Add \$2.30 per inch of stroke

### NON-LUBE SERVICE (E)

- Single acting add \$3.40
- Double acting add \$7.60
- DXDE add \$10.75

### STAINLESS STEEL ROD (prefix SR)

- Add \$1.75
- Standard on M option, block mount, DXP and DXDE models

## MODEL/PRICE

## DESCRIPTION/WEIGHT (lbs.)

## DIMENSIONS

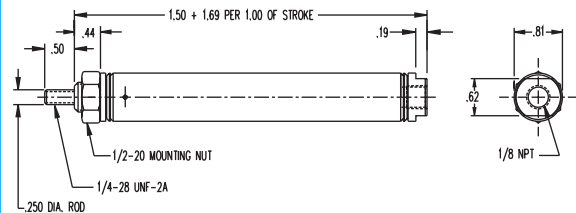
04



**\$11.30**  
BASE PRICE

Add \$1.90 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



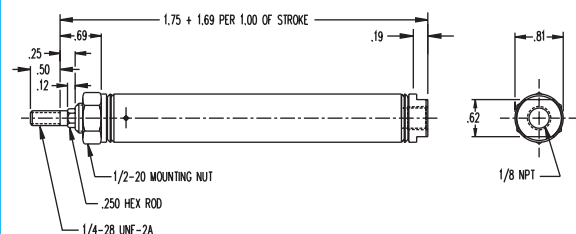
04 -NR



**\$13.80**  
BASE PRICE






Add \$1.90 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 9 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>\$17.20</b> BASE PRICE Add \$1.90 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: .12 Adder Per Inch of Stroke: .08</p>	
<p><b>04□-P</b></p>  <p><b>\$14.50</b> BASE PRICE Add \$1.90 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: .13 Adder Per Inch of Stroke: .08</p>	
<p><b>04□-R</b></p>  <p><b>\$16.65</b> BASE PRICE Add \$1.90 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 Stainless Steel Rod Optional Accessory: D-129 Mounting Bracket Base Weight: .18 Adder Per Inch of Stroke: .07</p>	
<p><b>04□-RP</b></p>  <p><b>\$20.05</b> BASE PRICE Add \$1.90 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: .18 Adder Per Inch of Stroke: .07</p>	
<p><b>04□-LS or LSC Conduit Outlet*</b></p>  <p><b>\$62.60</b> BASE PRICE Add \$1.90 per inch of stroke *Add \$1.80 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> Standard Stroke Lengths: ½", 1", 1½", 2", 2½", 3", 4" Maximum Stroke – 6" Optional Stainless Steel Rod Standard Voltage – 115/60 Optional Voltages: 24, 230 A.C. or 6, 12, 24 D.C. Optional Accessory: D-226 Mounting Bracket Base Weight: .38 Adder Per Inch of Stroke: .08</p>	

Flow Controls

Alignment Couplers

Original Line Cylinders

Cushion Cylinders

MRS Cylinders

Non-Rotating Cylinders

PC Cylinders

Z Line Cylinders


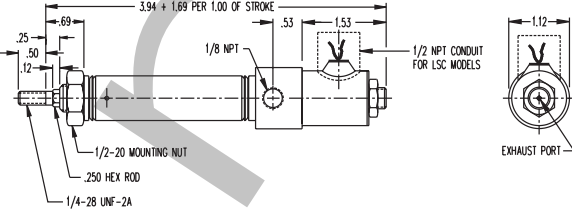

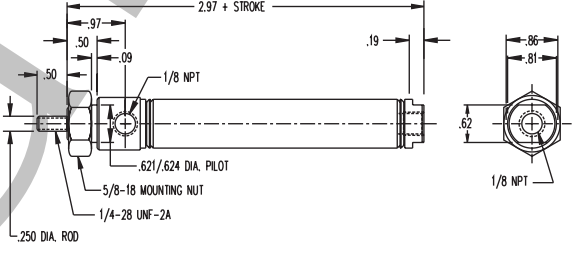

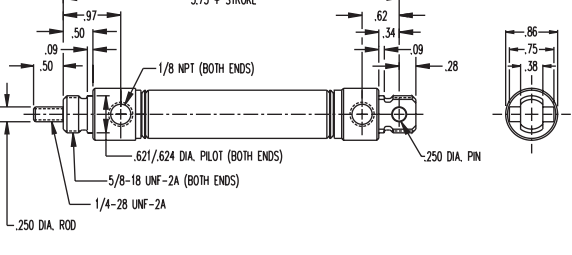

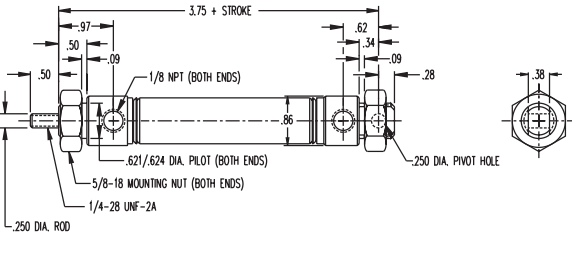
Rod Lock Cylinders

500 Hydraulic Cylinders



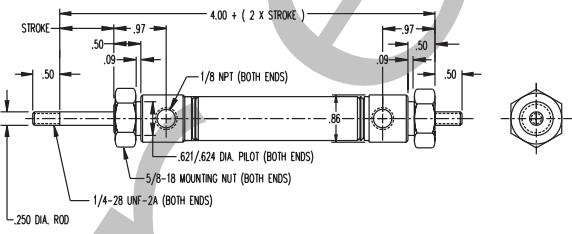
Hole Punchers Air Reservoirs

Position Sens Switches



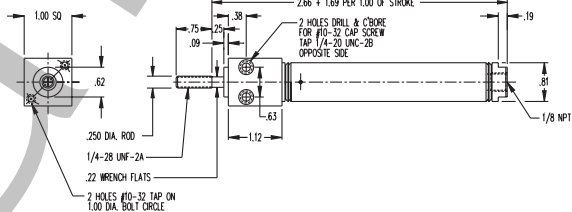


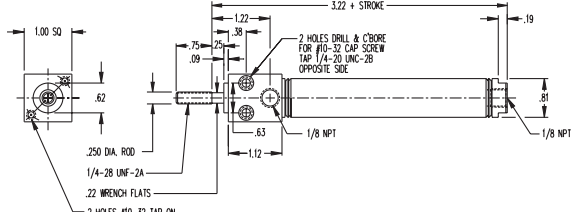


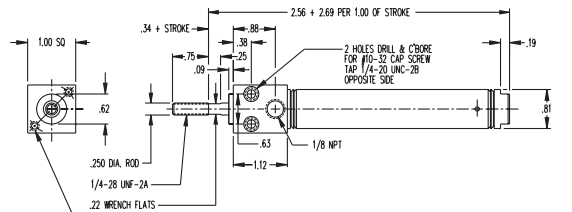
# 3/4" Bore Air Cylinders

MODEL/PRICE	DESCRIPTION/WEIGHT (lbs.)	DIMENSIONS
<p><b>04□-NRLS or NRLSC Conduit Outlet*</b></p>  <p><b>\$65.40</b> BASE PRICE Add \$1.90 per inch of stroke *Add \$1.80 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>  <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: .46</b>  <b>Adder Per Inch of Stroke: .08</b></p>	
<p><b>04□-D</b></p>  <p><b>\$14.60</b> BASE PRICE Add \$1.35 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>  <b>Optional Stainless Steel Rod</b>  <b>Optional Rod Wiper</b>  <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>\$17.60</b> BASE PRICE Add \$1.35 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>  <b>Optional Stainless Steel Rod</b>  <b>Optional Rod Wiper</b>  <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>\$19.50</b> BASE PRICE Add \$1.35 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>  <b>Stainless Steel Rod Standard</b>  <b>Optional Rod Wiper</b>  <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>	

# 3/4" Bore Air Cylinders

MODEL/PRICE	DESCRIPTION/WEIGHT (lbs.)	DIMENSIONS
<p><b>04</b>  -DXDE</p>  <p><b>\$27.30</b> BASE PRICE Add \$1.80 per inch of stroke</p>	<p><b>Double Acting – Double End Rod – Air Return – Double End Mounting</b> Standard Stroke Lengths: 1/2", 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: .37 Adder Per Inch of Stroke: .04</p>	


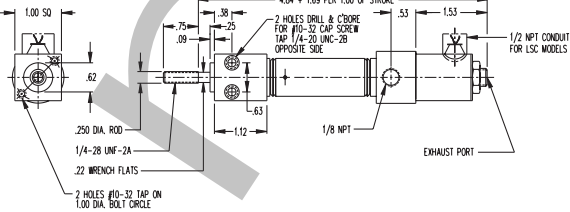

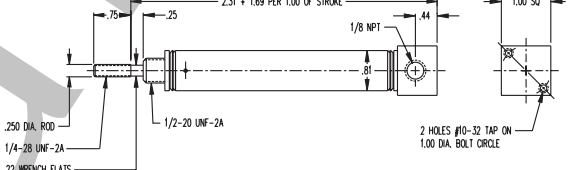

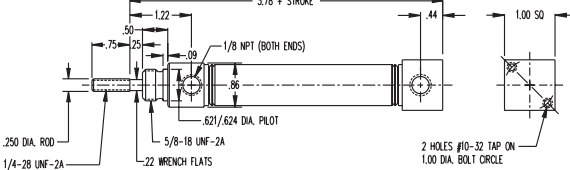

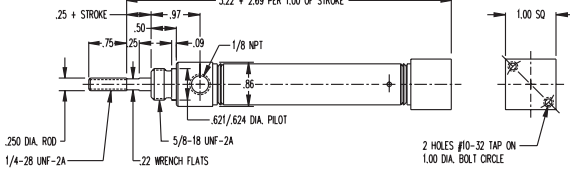
## 3/4" Bore Block Mounted

MODEL/PRICE	DESCRIPTION/WEIGHT (lbs.)	DIMENSIONS
<p><b>BF-04</b> </p>  <p><b>\$19.65</b> BASE PRICE Add \$1.90 per inch of stroke</p>	<p><b>Single Acting – Front Block 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 Base Weight: .18 Adder Per Inch of Stroke: .08</p>	
<p><b>BF-04</b>  -D</p>  <p><b>\$23.10</b> BASE PRICE Add \$1.35 per inch of stroke</p>	<p><b>Double Acting – Front Block Mounting – Air Return</b> Standard Stroke Lengths: 1/2", 1", 1 1/2", 2", 2 1/2", 3", 4", 5", 6" Maximum Stroke – 12" Stainless Steel Rod Standard Base Weight: .22 Adder Per Inch of Stroke: .03</p>	
<p><b>BF-04</b>  -R</p>  <p><b>\$24.80</b> BASE PRICE Add \$1.90 per inch of stroke</p>	<p><b>Pull Type – Front Block Mounting – Rod Normally Extended – Reverse Single Acting – 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 Base Weight: .19 Adder Per Inch of Stroke: .07</p>	

- Flow Controls
- Alignment Couplers
- Original Line Cylinders
- Cushion Cylinders
- MRS Cylinders
- Non-Rotating Cylinders
- PC Cylinders
- Z Line Cylinders
- Rod Lock Cylinders
- 500 Hydraulic Cylinders
- Hole Punchers Air Reservoirs
- Position Sens Switches

# 3/4" Bore Air Cylinders


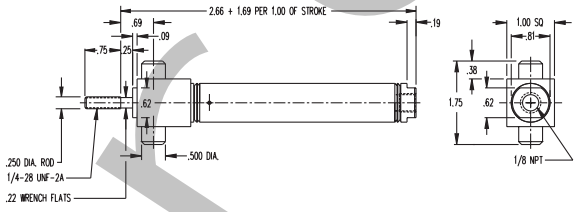

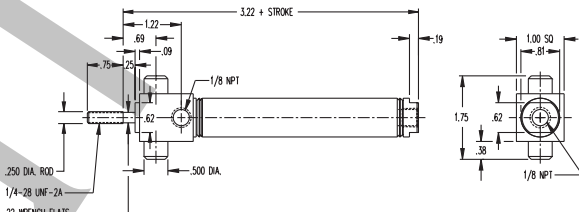

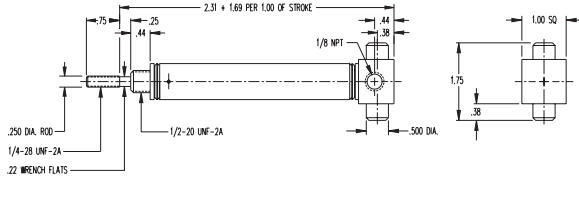

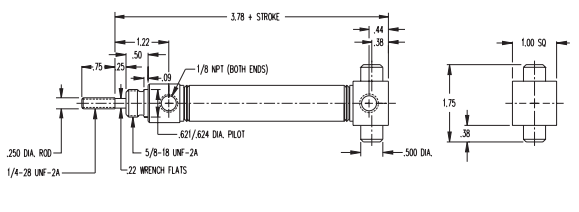
## 3/4" Bore Block Mounted (continued)

MODEL/PRICE	DESCRIPTION/WEIGHT (lbs.)	DIMENSIONS
<p><b>BF-04</b> <input type="checkbox"/> -LS or LSC*</p>  <p><b>\$71.35</b> BASE PRICE Add \$1.90 per inch of stroke *Add \$1.80 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>  <b>Standard Stroke Lengths:</b>            1/2", 1", 1 1/2", 2", 2 1/2", 3", 4"  <b>Maximum Stroke – 6"</b>  <b>Stainless Steel Rod Standard</b>  <b>Standard Voltage –115/60</b>  <b>Optional Voltages:</b>            24, 230 A.C. or 6, 12, 24 D.C.  <b>Base Weight: .38</b>  <b>Adder Per Inch of Stroke: .08</b></p>	
<p><b>BR-04</b> <input type="checkbox"/></p>  <p><b>\$19.65</b> BASE PRICE Add \$1.90 per inch of stroke</p>	<p><b>Single Acting – Rear Block Mounting for Vertical Positioning – Spring Return</b>  <b>Standard Stroke Lengths:</b>            1/2", 1", 1 1/2", 2", 2 1/2", 3", 4"  <b>Maximum Stroke – 6"</b>  <b>Stainless Steel Rod Standard</b>  <b>Base Weight: .15</b>  <b>Adder Per Inch of Stroke: .08</b></p>	
<p><b>BR-04</b> <input type="checkbox"/> -D</p>  <p><b>\$22.65</b> BASE PRICE Add \$1.35 per inch of stroke</p>	<p><b>Double Acting – Rear Block Mounting for Vertical Positioning – Air Return</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>Stainless Steel Rod Standard</b>  <b>Base Weight: .26</b>  <b>Adder Per Inch of Stroke: .08</b></p>	
<p><b>BR-04</b> <input type="checkbox"/> -R</p>  <p><b>\$24.80</b> BASE PRICE Add \$1.90 per inch of stroke</p>	<p><b>Pull Type – Rear Block Mounting for Vertical Positioning – Rod Normally Extended – Reverse Single Acting – Spring Return</b>  <b>Standard Stroke Lengths:</b>            1/2", 1", 1 1/2", 2", 2 1/2", 3", 4"  <b>Maximum Stroke – 6"</b>  <b>Stainless Steel Rod Standard</b>  <b>Base Weight: .15</b>  <b>Adder Per Inch of Stroke: .08</b></p>	



# 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>\$27.15</b> BASE PRICE Add \$1.90 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-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>\$30.55</b> BASE PRICE Add \$1.35 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-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>\$25.35</b> BASE PRICE Add \$1.90 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-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>\$28.65</b> BASE PRICE Add \$1.35 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-166-3 Rod Clevis Base Weight: .28 Adder Per Inch of Stroke: .03</p>	

Flow Controls

Alignment Couplers

Original Line Cylinders

Cushion Cylinders

MRS Cylinders

Non-Rotating Cylinders

PC Cylinders

Z Line Cylinders

Rod Lock Cylinders




500 Hydraulic Cylinders

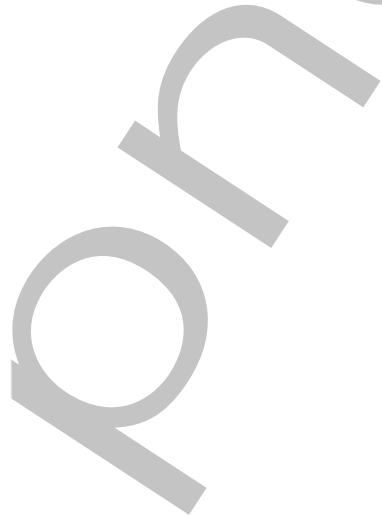
Hole Punchers Air Reservoirs

Position Sens Switches

# 3/4" Bore Air Cylinders

## 3/4" Bore Adjustable Stroke

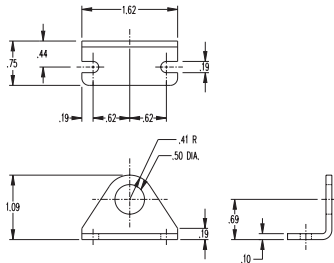
MODEL/PRICE	DESCRIPTION/WEIGHT (lbs.)	DIMENSIONS
<p><b>04□-A</b></p>  <p><b>\$22.80</b> BASE PRICE Add \$1.90 per inch of stroke</p>	<p><b>Single Acting – Spring Return – Adjustable Stroke – Double End Mounting – Brass Piston Rod Bearing and Stroke Adjustment in 1", 2", 3". Mounting Brackets are included.</b>  <b>1" Stroke Adjusts 0" – 1", 2" Stroke 1" – 2", and 3" Stroke 2" – 3"</b>                      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>\$23.70</b> BASE PRICE Add \$1.90 per inch of Stroke</p>	<p><b>Reverse Single Acting – Pull Type – Rod Normally Extended – Nose Mounting – Stroke Adjustment in 1", 2", 3".</b>  <b>1" Stroke Adjusts 0" – 1", 2" Stroke 1" – 2", and 3" Stroke 2" – 3"</b>                      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>\$22.40</b> BASE PRICE Add \$1.90 per inch of stroke</p>	<p><b>Single Acting – Pivot Type – Rear Pivot Mounting – Stroke Adjustment in 1", 2", 3".</b>  <b>1" Stroke Adjusts 0" – 1", 2" Stroke 1" – 2", and 3" Stroke 2" – 3"</b>                      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>	



# 3/4" Bore Air Cylinders

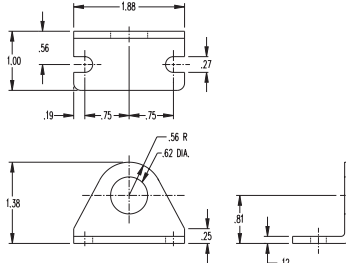
## 3/4" Bore Accessories

**D-226**  
\$1.85



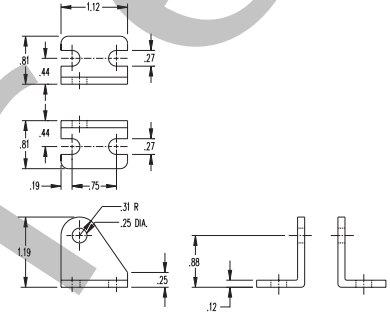
Mounting Bracket  
(for Single Acting Models)

**D-129**  
\$2.30



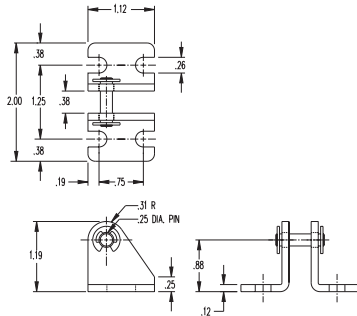
Mounting Bracket  
(for Double Acting Models)

**D-167**  
\$2.70



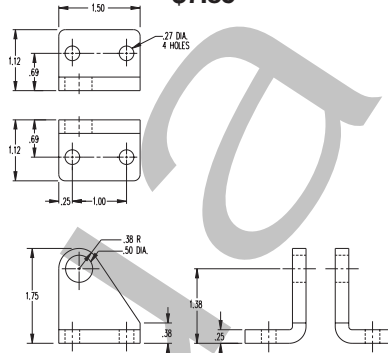
Pivot Brackets

**D-13498-A**  
\$3.10



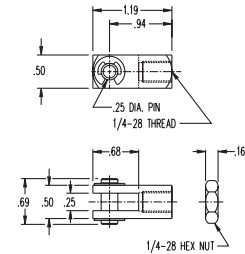
Pivot Bracket

**TRB-2**  
\$7.85



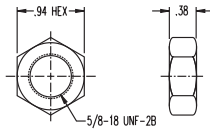
Trunnion Brackets

**D-166-3**  
\$3.10



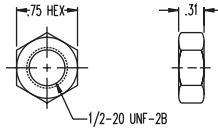
Piston Rod Clevis

**D-9**  
\$.35



Mounting Nut

**D-98**  
\$.35



Mounting Nut

**Note:** For stainless steel accessories see page 106 and 109-110.

Flow  
Controls

Alignment  
Couplers

Original Line  
Cylinders

Cushion  
Cylinders

MRS  
Cylinders

Non-Rotating  
Cylinders

PC  
Cylinders

Z Line  
Cylinders

Rod Lock  
Cylinders

500 Hydraulic  
Cylinders

Hole Punchers  
Air Reservoirs

Position Sen  
Switches

# ORDER ONLINE 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 \$0.70 per inch of extension
- DXDE, add \$0.90 per inch of extension; extension added to each end

### DOUBLE ACTING FAILSAFE

- (JS = Spring Return, JR = Spring Extend)
- Add \$5.00 to base price + \$0.50 to stroke adder
  - See page 72 for overall length adders

## OPTIONS continued...

### MAGNET (prefix M) – Add \$8.40

- 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 \$2.50 per track. See page 140 for details.

### LOW TEMPERATURE (N)

Temperature Range: -40° to 200°F

- Single acting add \$0.55
- Reverse acting add \$0.80
- Double acting add \$1.05
- DXDE add \$1.35

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

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

- Single acting add \$4.10
- Double acting add \$10.60
- DXDE add \$13.45
- Reverse acting add \$7.05

### MOLYCOATED BODY (F)

- Add \$2.30 per inch of stroke

### NON-LUBE SERVICE (E)

- Single acting add \$3.40
- Double acting add \$7.85
- DXDE add \$11.25

### ROD WIPER (W)


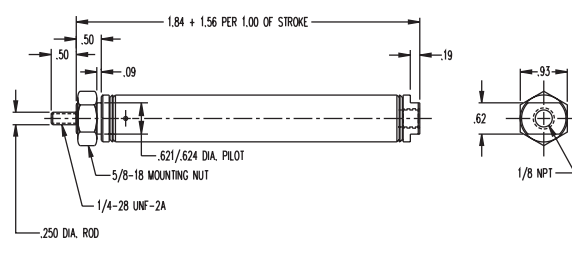

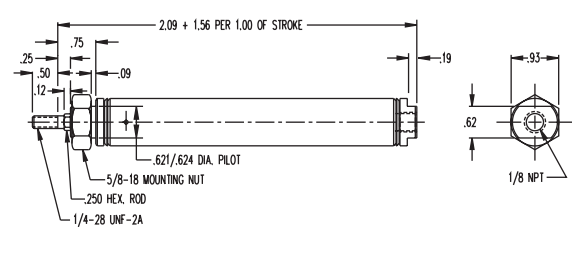
(not available in standard single acting)

- Add \$2.50

### STAINLESS STEEL ROD (prefix SR)


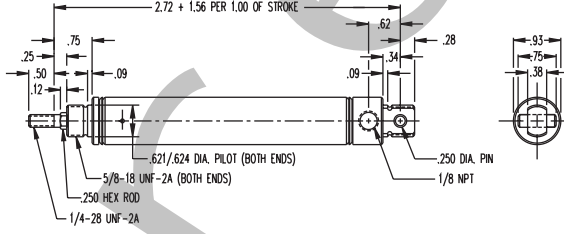

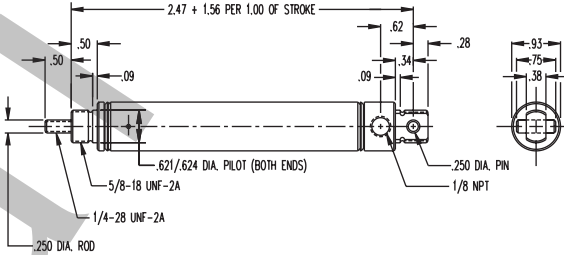

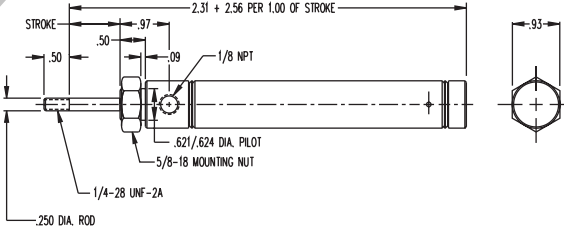

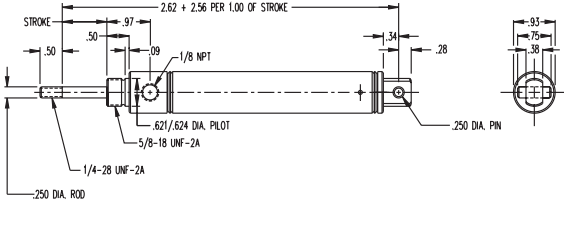

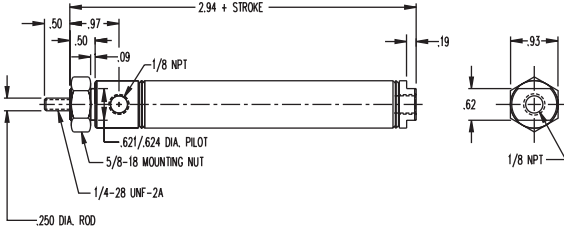
- Add \$1.75
- Standard on DXP, DXDE, and M option

Enter Stroke Length as 3rd Digit

MODEL/PRICE	DESCRIPTION/WEIGHT (lbs.)	DIMENSIONS
<p style="font-size: 24pt; font-weight: bold;">06 <input type="checkbox"/></p>  <p style="font-size: 24pt; font-weight: bold; margin-top: 20px;">\$12.10</p> <p style="font-weight: bold; margin-top: 5px;">BASE PRICE</p> <p style="margin-top: 5px;">Add \$2.10 per inch of stroke</p>	<p><b>Single Acting – Spring Return – Front Nose Mounting</b></p> <p><b>Standard Stroke Lengths:</b> ½", 1", 1½", 2", 2½", 3", 4" Maximum Stroke – 6"</p> <p>Optional Stainless Steel Rod Optional Accessory: D-129 Mounting Bracket <b>Base Weight: .17</b> <b>Adder Per Inch of Stroke: .09</b></p>	
<p style="font-size: 24pt; font-weight: bold;">06 <input type="checkbox"/> -NR</p>  <p style="font-size: 24pt; font-weight: bold; margin-top: 20px;">\$14.30</p> <p style="font-weight: bold; margin-top: 5px;">BASE PRICE</p> <p style="margin-top: 5px;">Add \$2.10 per inch of stroke</p>	<p><b>Single Acting – Non-rotating Hexagon Rod – Spring Return – Front Nose Mounting</b></p> <p><b>Standard Stroke Lengths:</b> ½", 1", 1½", 2", 2½", 3", 4" Maximum Stroke – 6"</p> <p>Optional Stainless Steel Rod Optional Accessory: D-129 Mounting Bracket <b>Base Weight: .17</b> <b>Adder Per Inch of Stroke: .09</b></p>	


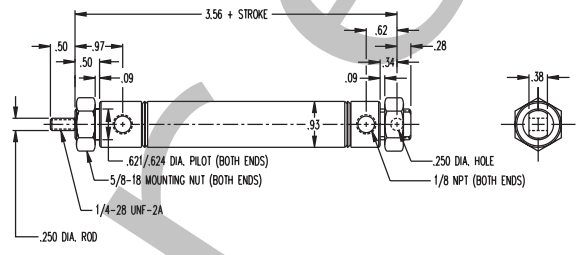

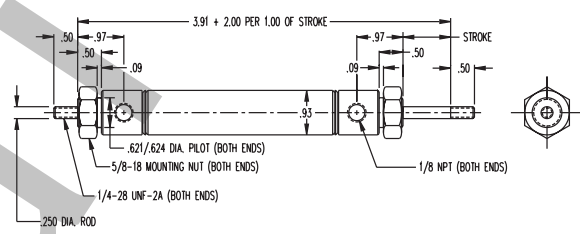
See page 9 for length calculation of fractional stroke for single acting cylinders

# 7/8" Bore Air Cylinders

MODEL/PRICE	DESCRIPTION/WEIGHT (lbs.)	DIMENSIONS
<p><b>06□-NRP</b></p>  <p><b>\$17.90</b> BASE PRICE Add \$2.10 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>\$15.40</b> BASE PRICE Add \$2.10 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>\$17.85</b> BASE PRICE Add \$2.10 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>\$21.15</b> BASE PRICE Add \$2.10 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>\$16.05</b> BASE PRICE Add \$1.35 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>	

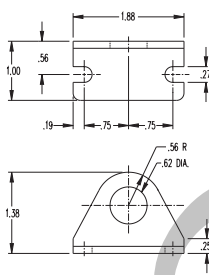
- Flow Controls
- Alignment Couplers
- Original Line Cylinders
- Cushion Cylinders
- MRS Cylinders
- Non-Rotating Cylinders
- PC Cylinders
- Z Line Cylinders
- Rod Lock Cylinders
- 500 Hydraulic Cylinders
- Hole Punchers Air Reservoirs
- Position Sens Switches

# 7/8" Bore Air Cylinders

MODEL/PRICE	DESCRIPTION/WEIGHT (lbs.)	DIMENSIONS
<p><b>06□-DXP</b></p>  <p><b>\$21.20</b> BASE PRICE Add \$1.35 per inch of stroke</p>	<p><b>Double Acting – Double End or Rear Pivot Mounting – 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 – 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>\$28.70</b> BASE PRICE Add \$1.80 per inch of stroke</p>	<p><b>Double Acting – Double End Rod – Air Return – Double End Mounting</b> Standard Stroke Lengths: 1/2", 1", 1 1/2", 2", 2 1/2", 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>	

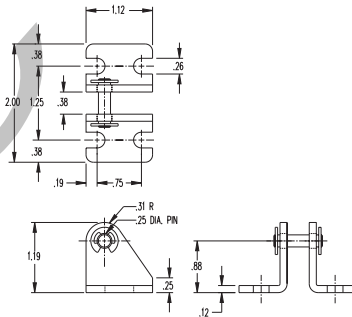
## 7/8" Bore Accessories

**D-129**  
\$2.30



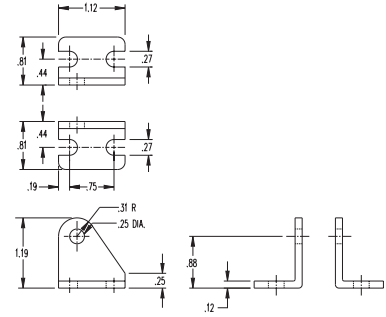
Mounting Bracket

**D-13498-A**  
\$3.10



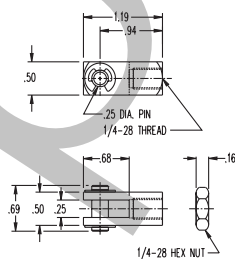
Pivot Bracket

**D-167**  
\$2.70



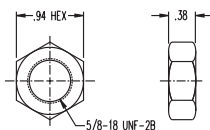
Pivot Brackets

**D-166-3**  
\$3.10



Rod Clevis

**D-9**  
\$.35



Mounting Nut

# ORDER ONLINE 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)

- \$2.60 additional
- Add .125 to overall length

### DOUBLE ACTING BUMPERS (B)

- \$3.65 additional
- Add .125 to overall length
- Models DXDE and DXDEH add .500

### EXTRA EXTENSION (EE)

- Single, reverse and double acting, add \$0.70 per inch of extension
- DXDE, add \$0.90 per inch of extension; extension added to each end
- DXDE hollow rod, add \$1.30 per inch of extension; extension added to each end

### DOUBLE ACTING FAILSAFE

- (JS = Spring Return, JR = Spring Extend)
- Add \$7.00 to base price + \$0.90 to stroke adder
- See page 72 for overall length adders

## OPTIONS continued...

**HEAVY SPRINGS (H)** are standard on all single acting block front and block rear mount, and all reverse acting. For all other single acting, add \$1.70

- Spring Force: 6 lbs. relaxed – 12 lbs. compressed

### MAGNET (prefix M) – Add \$10.45

- 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 \$2.50 per track. See page 140 for details.

### LOW TEMPERATURE (N)

Temperature Range: -40° to 200°F

- Single acting add \$0.80
- Reverse acting add \$1.05
- Double acting add \$1.60
- DXDE add \$2.10

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

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

- Single acting add \$4.75
- Double acting add \$11.40
- DXDE add \$14.45
- Reverse acting add \$7.40

### ROD WIPER (W)

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

- Double acting, add \$2.50
- DXDE, add \$5.00

### MOLYCOATED BODY (F)

- Add \$2.30 per inch of stroke


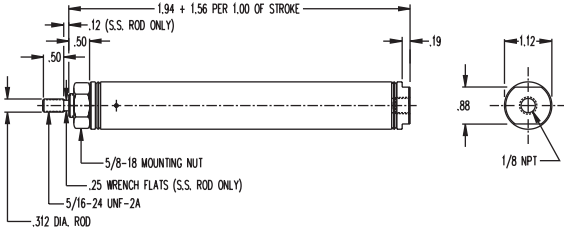

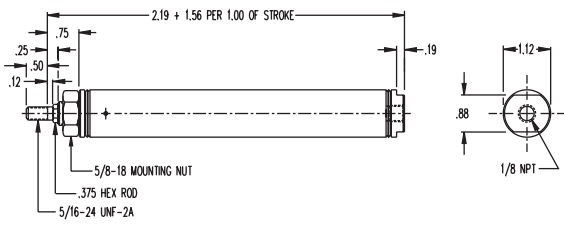
### NON-LUBE SERVICE (E)

- Single acting add \$3.40
- Double acting add \$8.40
- DXDE add \$11.80

### STAINLESS STEEL ROD (prefix SR)


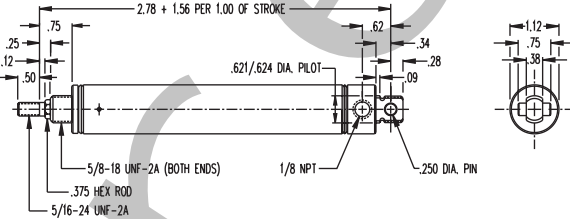

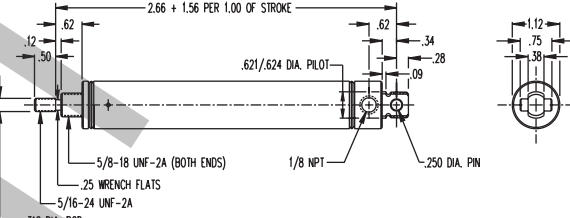

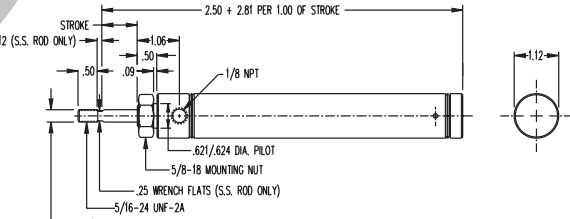

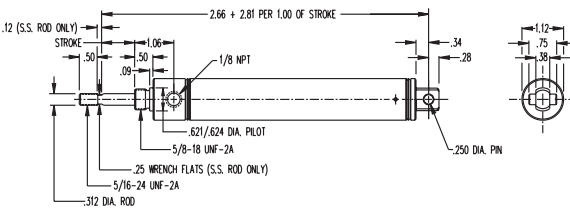
- Add \$1.75
- Standard on DX, DXDE, DXDEH, All block mountings and M option

Enter Stroke Length as 3rd Digit

MODEL/PRICE	DESCRIPTION/WEIGHT (lbs.)	DIMENSIONS
<div style="text-align: center; font-size: 24px; font-weight: bold;">09 <input type="checkbox"/></div>  <div style="text-align: center; font-weight: bold; margin-top: 10px;">\$12.65</div> <p style="text-align: center; font-size: 10px;">BASE PRICE Add \$2.30 per inch of stroke</p>	<p><b>Single Acting – Spring Return – Front Nose Mounting</b></p> <p><b>Standard Stroke Lengths:</b> ½", 1", 1½", 2", 2½", 3", 4" Maximum Stroke – 6" Optional Stainless Steel Rod <b>Optional Accessory:</b> D-129 Mounting Bracket <b>Base Weight:</b> .23 <b>Adder Per Inch of Stroke:</b> .11</p>	
<div style="text-align: center; font-size: 24px; font-weight: bold;">09 <input type="checkbox"/>-NR</div>  <div style="text-align: center; font-weight: bold; margin-top: 10px;">\$14.95</div> <p style="text-align: center; font-size: 10px;">BASE PRICE Add \$2.30 per inch of stroke</p>	<p><b>Single Acting – Non-rotating Hexagon Rod – Spring Return – Front Nose Mounting</b></p> <p><b>Standard Stroke Lengths:</b> ½", 1", 1½", 2", 2½", 3", 4" Maximum Stroke – 6" Optional Stainless Steel Rod <b>Optional Accessory:</b> D-129 Mounting Bracket <b>Base Weight:</b> .25 <b>Adder Per Inch of Stroke:</b> .12</p>	


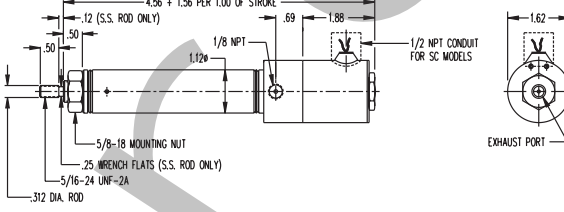

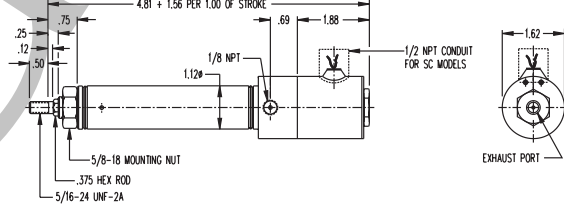

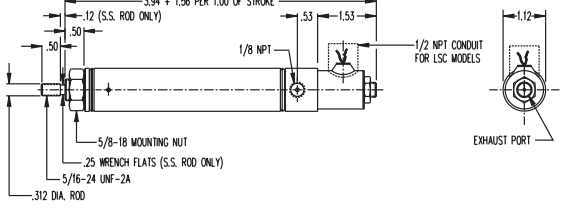
- Flow Controls
- Alignment Couplers
- Original Line Cylinders
- Cushion Cylinders
- MRS Cylinders
- Non-Rotating Cylinders
- PC Cylinders
- Z Line Cylinders
- Rod Lock Cylinders
- 500 Hydraulic Cylinders
- Hole Punchers Air Reservoirs
- Position Sens Switches

# 1-1/16" Bore Air Cylinders

MODEL/PRICE	DESCRIPTION/WEIGHT (lbs.)	DIMENSIONS
<p><b>09□-NRP</b></p>  <p><b>\$18.40</b> BASE PRICE Add \$2.30 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"                      Optional Stainless Steel Rod                      Optional Accessories:                      D-166-1 Piston Rod Clevis                      D-167 Pivot Brackets                      Base Weight: .25                      Adder Per Inch of Stroke: .12</p>	
<p><b>09□-P</b></p>  <p><b>\$15.85</b> BASE PRICE Add \$2.30 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"                      Optional Stainless Steel Rod                      Optional Accessories:                      D-166-1 Piston Rod Clevis                      D-167 Pivot Brackets                      Base Weight: .24                      Adder Per Inch of Stroke: .11</p>	
<p><b>09□-R</b></p>  <p><b>\$18.50</b> BASE PRICE Add \$2.30 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"                      Maximum Stroke – 6"                      Optional Stainless Steel Rod                      Optional Accessory:                      D-129 Mounting Bracket                      Base Weight: .24                      Adder Per Inch of Stroke: .16</p>	
<p><b>09□-RP</b></p>  <p><b>\$22.00</b> BASE PRICE Add \$2.30 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"                      Maximum Stroke – 6"                      Optional Stainless Steel Rod                      Optional Accessories:                      D-166-1 Piston Rod Clevis                      D-167 Pivot Brackets                      Base Weight: .22                      Adder Per Inch of Stroke: .16</p>	


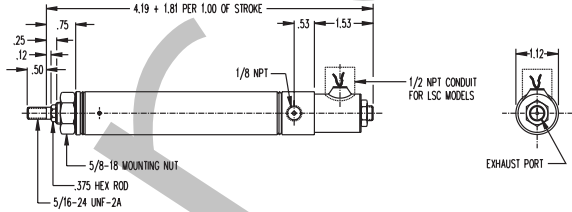

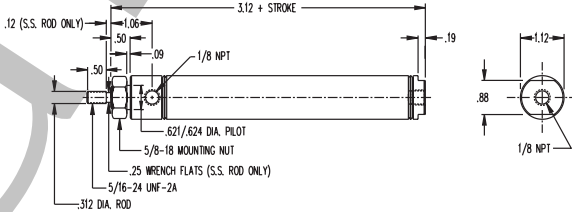

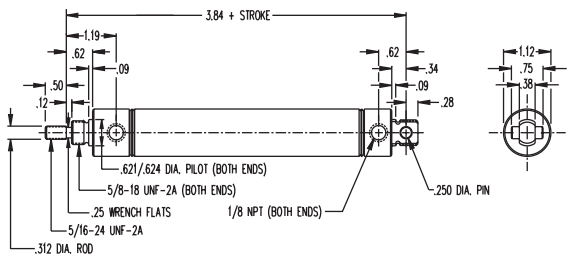

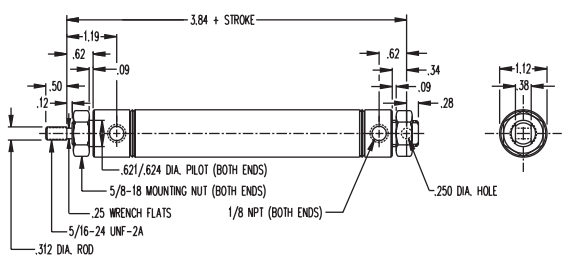


# 1-1/16" Bore Air Cylinders


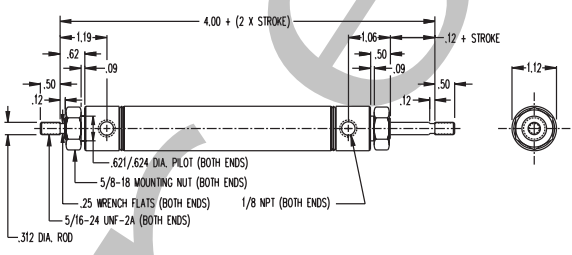

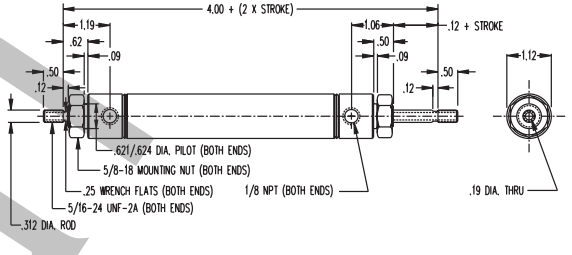
MODEL/PRICE	DESCRIPTION/WEIGHT (lbs.)	DIMENSIONS
<p><b>09□-S or SC*</b></p>  <p><b>\$61.80</b> BASE PRICE Add \$2.30 per inch of stroke *Add \$2.30 for Conduit Outlet</p>	<p><b>Single Acting – Built-in 3-Way Solenoid Operated Valve – Spring Return – Front Nose Mounting – 100 PSI, 1/16" Orifice Standard – 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>\$64.45</b> BASE PRICE Add \$2.30 per inch of stroke *Add \$2.30 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>\$64.55</b> BASE PRICE Add \$2.20 per inch of stroke *Add \$1.80 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>	

- Flow Controls
- Alignment Couplers
- Original Line Cylinders
- Cushion Cylinders
- MRS Cylinders
- Non-Rotating Cylinders
- PC Cylinders
- Z Line Cylinders
- Rod Lock Cylinders
- 500 Hydraulic Cylinders
- Hole Punchers Air Reservoirs
- Position Sens Switches


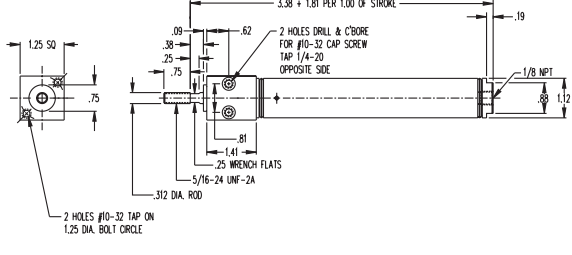

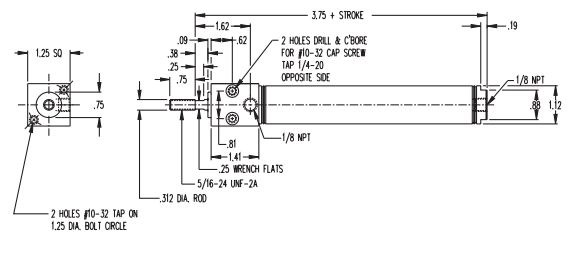
# ORDER ONLINE 1-1/16" Bore Air Cylinders

MODEL/PRICE	DESCRIPTION/WEIGHT (lbs.)	DIMENSIONS
<p><b>09□-NRLS or NRLSC*</b></p>  <p><b>\$66.80</b> BASE PRICE Add \$2.30 per inch of stroke *Add \$1.80 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></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>	
<p><b>09□-D</b></p>  <p><b>\$17.05</b> BASE PRICE Add \$1.35 per inch of stroke</p>	<p><b>Double Acting – Air Return – Front Nose Mounting</b></p> <p><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>\$20.40</b> BASE PRICE Add \$1.35 per inch of stroke</p>	<p><b>Double Acting – Pivot Type – Air Return – Rear Pivot Mounting</b></p> <p><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>\$22.35</b> BASE PRICE Add \$1.35 per inch of stroke</p>	<p><b>Double Acting – Universal Mounting Pivot, or Double End Mounting – Air Return</b></p> <p><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>	

# 1-1/16" Bore Air Cylinders

MODEL/PRICE	DESCRIPTION/WEIGHT (lbs.)	DIMENSIONS
<p><b>09□-DXDE</b></p>  <p><b>\$29.80</b> BASE PRICE Add \$1.80 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-129 Mounting Bracket Base Weight: .48 Adder Per Inch of Stroke: .07</p>	 <p>4.00 + (2 X STROKE) 1.19 .62 .09 .50 .12 1.06 .50 .09 .12 .50 1.12 .62/.624 DIA. PILOT (BOTH ENDS) 5/8-18 MOUNTING NUT (BOTH ENDS) .25 WRENCH FLATS (BOTH ENDS) 5/16-24 UNF-2A (BOTH ENDS) 1/8 NPT (BOTH ENDS) .312 DIA. ROD</p>
<p><b>09□-DXDEH</b></p>  <p><b>\$37.85</b> BASE PRICE Add \$2.60 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-129 Mounting Bracket Base Weight: .47 Adder Per Inch of Stroke: .07</p>	 <p>4.00 + (2 X STROKE) 1.19 .62 .09 .50 .12 1.06 .50 .09 .12 .50 1.12 .62/.624 DIA. PILOT (BOTH ENDS) 5/8-18 MOUNTING NUT (BOTH ENDS) .25 WRENCH FLATS (BOTH ENDS) 5/16-24 UNF-2A (BOTH ENDS) 1/8 NPT (BOTH ENDS) .312 DIA. ROD .19 DIA. THRU</p>

## 1-1/16" Bore Block Mounted · Spring Force: 6 lbs. Retracted, 12 lbs. Extended

MODEL/PRICE	DESCRIPTION/WEIGHT (lbs.)	DIMENSIONS
<p><b>BF-09□</b></p>  <p><b>\$24.80</b> BASE PRICE Add \$2.30 per inch of stroke</p>	<p><b>Single Acting – Front Block Mounting – Spring Return</b> Standard Stroke Lengths: ½", 1", 1½", 2", 2½", 3", 4" Maximum Stroke – 6" Stainless Steel Rod Standard Base Weight: .43 Adder Per Inch of Stroke: .11</p>	 <p>3.38 + 1.81 PER 1.00 OF STROKE 1.25 .50 .09 .38 .25 .75 .62 2 HOLES DRILL &amp; C'BORE FOR #10-32 CAP SCREW TAP 1/4-20 OPPOSITE SIDE .81 1.41 .25 WRENCH FLATS 5/16-24 UNF-2A 1/8 NPT 1.12 1.19 1.25 DIA. BOLT CIRCLE 2 HOLES #10-32 TAP ON 1.25 DIA. BOLT CIRCLE .312 DIA. ROD</p>
<p><b>BF-09□-D</b></p>  <p><b>\$26.60</b> BASE PRICE Add \$1.35 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" Stainless Steel Rod Standard Base Weight: .49 Adder Per Inch of Stroke: .05</p>	 <p>3.75 + STROKE 1.25 .50 .09 .38 .25 .75 1.62 2 HOLES DRILL &amp; C'BORE FOR #10-32 CAP SCREW TAP 1/4-20 OPPOSITE SIDE .81 1.41 .25 WRENCH FLATS 5/16-24 UNF-2A 1/8 NPT 1.12 1.19 1.25 DIA. BOLT CIRCLE 2 HOLES #10-32 TAP ON 1.25 DIA. BOLT CIRCLE .312 DIA. ROD</p>

Flow Controls

Alignment Couplers

Original Line Cylinders

Cushion Cylinders

MRS Cylinders

Non-Rotating Cylinders

PC Cylinders

Z Line Cylinders

Rod Lock Cylinders


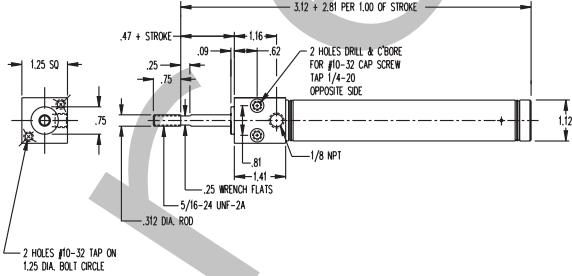

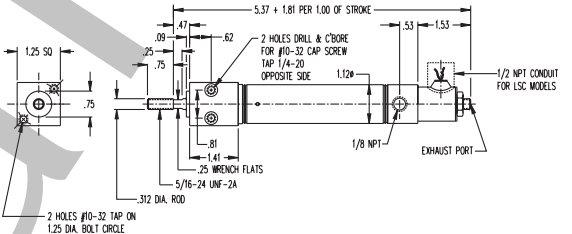

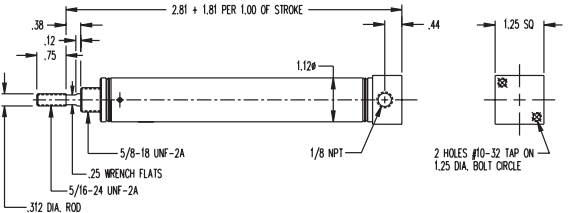

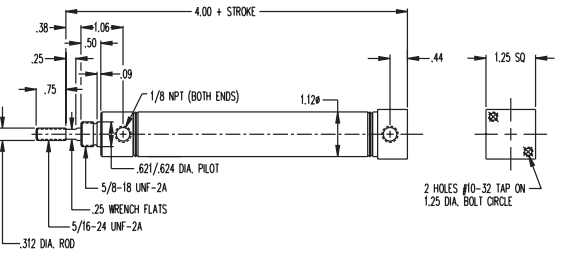

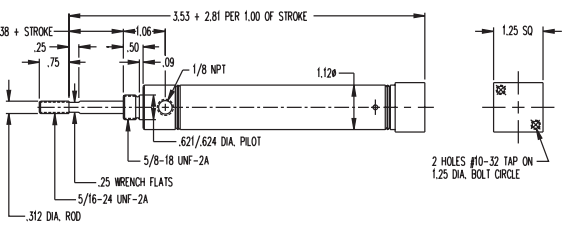
500 Hydraulic Cylinders

Hole Punchers Air Reservoirs

Position Sens Switches


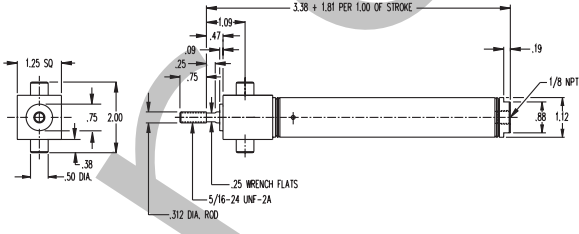

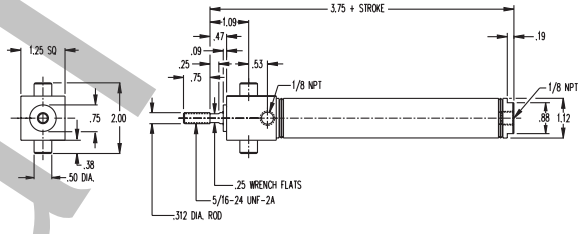

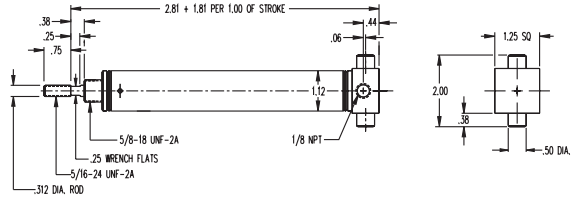

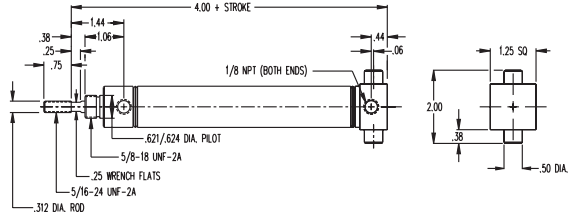
# 1-1/16" Bore Air Cylinders

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

MODEL/PRICE	DESCRIPTION/WEIGHT (lbs.)	DIMENSIONS
<p><b>BF-09</b> □ -R</p>  <p><b>\$29.25</b> BASE PRICE Add \$2.30 per inch of stroke</p>	<p><b>Pull Type</b> – Front Block Mounting – Rod Normally Extended – Reverse Single Acting – Spring Return 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> □ -LS or LSC*</p>  <p><b>\$77.30</b> BASE PRICE Add \$2.30 per inch of stroke *Add \$1.80 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 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> □</p>  <p><b>\$21.30</b> BASE PRICE Add \$2.30 per inch of stroke</p>	<p><b>Single Acting</b> – Rear Block Mounting for Vertical Positioning – Spring Return 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> □ -D</p>  <p><b>\$26.05</b> BASE PRICE Add \$1.35 per inch of stroke</p>	<p><b>Double Acting</b> – Rear Block Mounting for Vertical Positioning – Air Return 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> □ -R</p>  <p><b>\$25.70</b> BASE PRICE Add \$2.30 per inch of stroke</p>	<p><b>Pull Type</b> – Rear Block Mounting for Vertical Positioning – Rod Normally Extended – Reverse Single Acting – Spring Return 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>	

# 1-1/16" Bore Air Cylinders

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


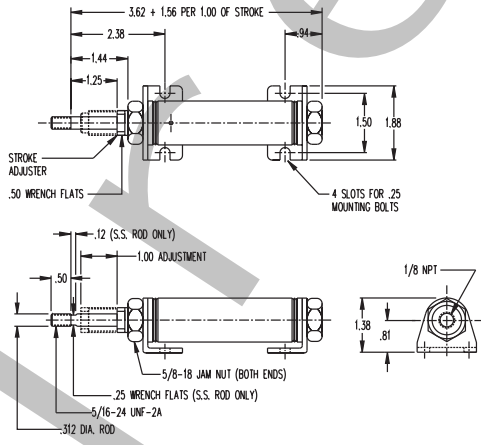

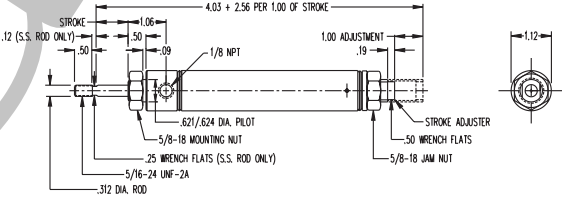

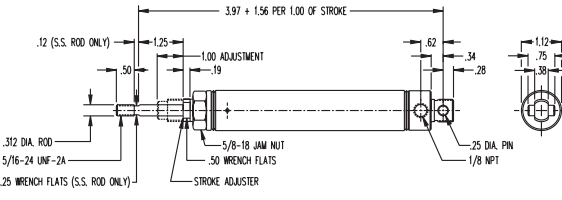
MODEL/PRICE	DESCRIPTION/WEIGHT (lbs.)	DIMENSIONS
<p><b>BFT-09</b> <input type="checkbox"/></p>  <p><b>\$32.45</b> BASE PRICE Add \$2.30 per inch of stroke</p>	<p><b>Single Acting – Front Block Trunnion Mounting – Spring Return</b> Standard Stroke Lengths: ½", 1", 1½", 2", 2½", 3", 4" Maximum Stroke – 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>\$34.55</b> BASE PRICE Add \$1.35 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-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>\$28.90</b> BASE PRICE Add \$2.30 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>\$33.50</b> BASE PRICE Add \$1.35 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>	

- Flow Controls
- Alignment Couplers
- Original Line Cylinders
- Cushion Cylinders
- MRS Cylinders
- Non-Rotating Cylinders
- PC Cylinders
- Z Line Cylinders
- Rod Lock Cylinders
- 500 Hydraulic Cylinders
- Hole Punchers Air Reservoirs
- Position Sens Switches


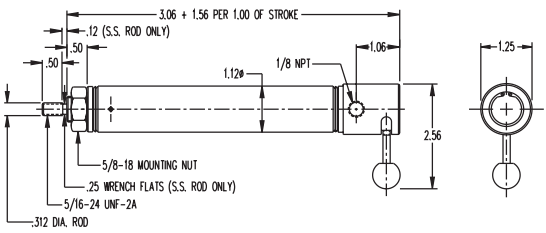
ORDER  
ONLINE

# 1-1/16" Bore Air Cylinders

## 1-1/16" Bore Adjustable Stroke


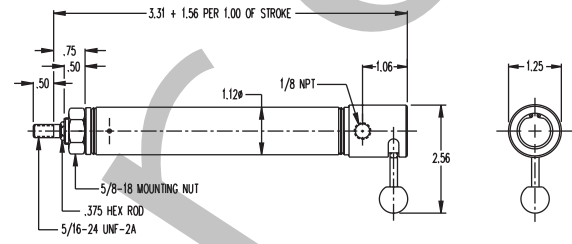
MODEL/PRICE	DESCRIPTION/WEIGHT (lbs.)	DIMENSIONS
<p style="font-size: 24pt; font-weight: bold;">09 <span style="border: 1px solid black; padding: 2px;">  </span> -A</p>  <p style="font-size: 24pt; font-weight: bold; text-align: center;">\$25.70</p> <p style="text-align: center;">BASE PRICE</p> <p style="text-align: center;">Add \$2.30 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></p> <p>1" Stroke Adjusts 0" – 1", 2" Stroke 1" – 2", and 3" Stroke 2" – 3".</p> <p>Maximum Stroke – 6"</p> <p>Optional Stainless Steel Rod</p> <p>Base Weight: .58</p> <p>Adder Per Inch of Stroke: .11</p>	
<p style="font-size: 24pt; font-weight: bold;">09 <span style="border: 1px solid black; padding: 2px;">  </span> -RA</p>  <p style="font-size: 24pt; font-weight: bold; text-align: center;">\$26.85</p> <p style="text-align: center;">BASE PRICE</p> <p style="text-align: center;">Add \$2.30 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></p> <p>1" Stroke Adjusts 0" – 1", 2" Stroke 1" – 2", and 3" Stroke 2" – 3".</p> <p>Maximum Stroke – 6"</p> <p>Optional Stainless Steel Rod</p> <p>Optional Accessory: D-129 Mounting Brackets</p> <p>Base Weight: .41</p> <p>Adder Per Inch of Stroke: .11</p>	
<p style="font-size: 24pt; font-weight: bold;">09 <span style="border: 1px solid black; padding: 2px;">  </span> -AP</p>  <p style="font-size: 24pt; font-weight: bold; text-align: center;">\$25.25</p> <p style="text-align: center;">BASE PRICE</p> <p style="text-align: center;">Add \$2.30 per inch of stroke</p>	<p><b>Single Acting – Pivot Type – Rear Pivot Mounting – Stroke Adjustment in 1", 2", 3".</b></p> <p>1" Stroke Adjusts 0" – 1", 2" Stroke 1" – 2", and 3" Stroke 2" – 3".</p> <p>Maximum Stroke – 6"</p> <p>Optional Stainless Steel Rod</p> <p>Optional Accessories: D-166-1 Piston Rod Clevis D-167 Pivot Brackets</p> <p>Base Weight: .40</p> <p>Adder Per Inch of Stroke: .11</p>	

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

MODEL/PRICE	DESCRIPTION/WEIGHT (lbs.)	DIMENSIONS
<p style="font-size: 24pt; font-weight: bold;">09 <span style="border: 1px solid black; padding: 2px;">  </span> -M</p>  <p style="font-size: 24pt; font-weight: bold; text-align: center;">\$45.50</p> <p style="text-align: center;">BASE PRICE</p> <p style="text-align: center;">Add \$2.30 per inch of stroke</p>	<p><b>Single Acting – Built-in 3-Way Manual Valve – Spring Return – Front Nose Mounting</b></p> <p>Standard Stroke Lengths: 1/2", 1", 1 1/2", 2", 2 1/2", 3", 4"</p> <p>Maximum Stroke – 6"</p> <p>Optional Stainless Steel Rod</p> <p>Optional Accessory: D-129 Mounting Bracket</p> <p>Base Weight: .45</p> <p>Adder Per Inch of Stroke: .11</p>	

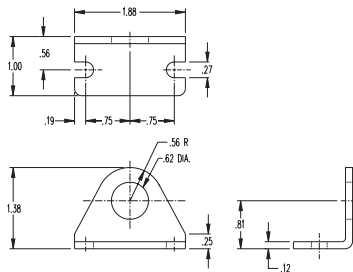
# ORDER ONLINE 1-1/16" Bore Air Cylinders

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

MODEL/PRICE	DESCRIPTION/WEIGHT (lbs.)	DIMENSIONS
<p><b>09□-NRM</b></p>  <p><b>\$47.80</b> BASE PRICE</p> <p>Add \$2.30 per inch of stroke</p>	<p><b>Single Acting – Built-in 3-Way Manual Valve – Non-rotating Hexagon Rod – Spring Return</b></p> <p><b>Standard Stroke Lengths:</b> 1/2", 1", 1 1/2", 2", 2 1/2", 3", 4"</p> <p>Maximum Stroke – 6"</p> <p>Optional Stainless Steel Rod</p> <p><b>Optional Accessory:</b> D-129 Mounting Bracket</p> <p>Base Weight: .47</p> <p>Adder Per Inch of Stroke: .12</p>	

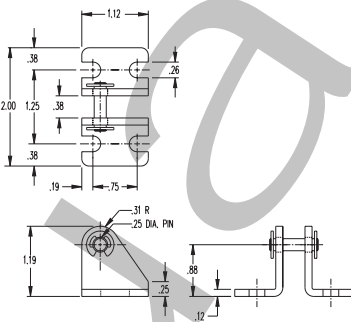
## 1-1/16" Bore Accessories

**D-129**  
\$2.30



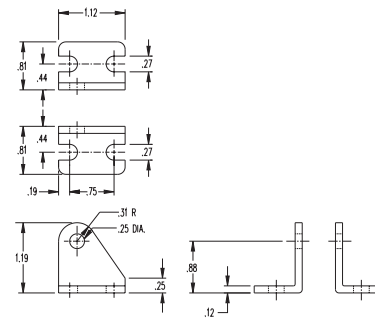
Mounting Bracket  
(for Single & Double Acting Models)

**D-13498-A**  
\$3.10



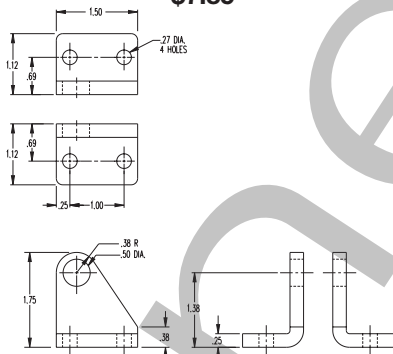
Pivot Bracket

**D-167**  
\$2.70



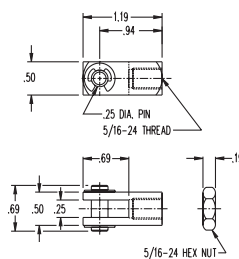
Pivot Brackets

**TRB-2**  
\$7.85



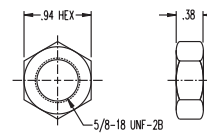
Trunnion Brackets

**D-166-1**  
\$3.10



Piston Rod Clevis

**D-9**  
\$0.35



Mounting Nut

**Note:** For stainless steel accessories see pages 106 and 109-110.

Flow Controls  
 Alignment Couplers  
 Original Line Cylinders  
 Cushion Cylinders  
 MRS Cylinders  
 Non-Rotating Cylinders  
 PC Cylinders  
 Z Line Cylinders  
 Rod Lock Cylinders  
 500 Hydraulic Cylinders  
 Hole Punchers Air Reservoirs  
 Position Sens Switches

# ORDER ONLINE 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 \$0.90 per inch of extension
- DXDE, add \$1.30 per inch of extension; extension added to each end
- DXDE hollow rod, add \$1.40 per inch of extension; extension added to each end

### DOUBLE ACTING FAILSAFE

- (JS = Spring Return, JR = Spring Extend)
- Add \$7.00 to base price + \$0.90 to stroke adder
  - See page 72 for overall length adders

## OPTIONS continued...

### MAGNET (prefix M) – Add \$10.45

- 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 \$2.50 per track. See page 140 for details.

### LOW TEMPERATURE (N)

Temperature Range: -40° to 200°F

- Single acting add \$0.80
- Reverse acting add \$1.05
- Double acting add \$1.60
- DXDE add \$2.10

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

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

- Single acting add \$5.00
- Double acting add \$12.55
- DXDE add \$16.10
- Reverse acting add \$8.65

### MOLYCOATED BODY

- Add \$2.30 per inch of stroke

### NON-LUBE SERVICE (E)

- Single acting add \$3.40
- Double acting add \$8.40
- DXDE add \$11.80


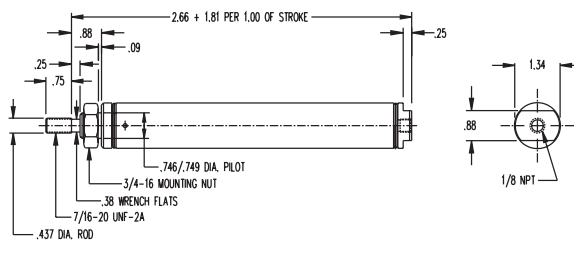

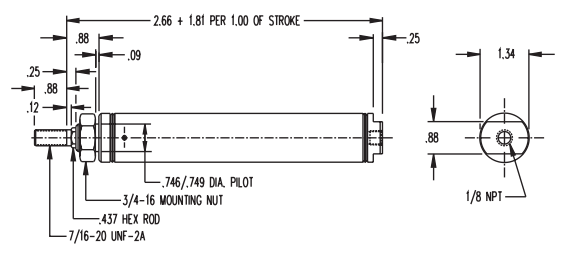
### STAINLESS STEEL ROD (prefix SR)

- Add \$2.50
- Standard on DXDE, DXDEH and M option

### ROD WIPER (W)

- (not available in standard single acting)
- Add \$2.50


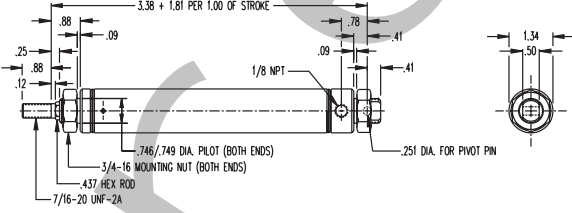

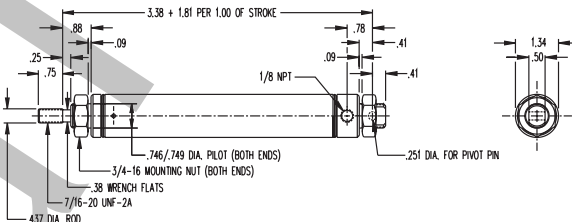

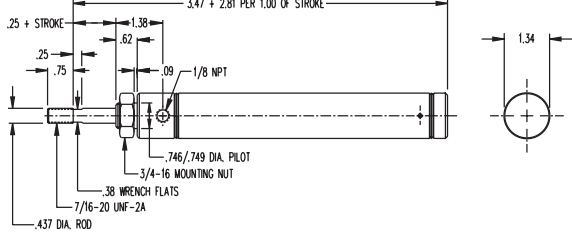

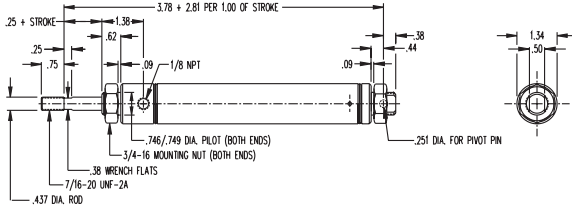
Enter Stroke Length as 3rd Digit

MODEL/PRICE	DESCRIPTION/WEIGHT (lbs.)	DIMENSIONS
<p><b>12</b> <input type="checkbox"/></p>  <p><b>\$20.55</b> BASE PRICE Add \$3.00 per inch of stroke</p>	<p><b>Single Acting – Spring Return – Front Nose Mounting</b>  <b>Standard Stroke Lengths:</b>                      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>\$23.05</b> BASE PRICE Add \$3.00 per inch of stroke</p>	<p><b>Single Acting – Non-rotating Hexagon Rod – Spring Return – Front Nose Mounting</b>  <b>Standard Stroke Lengths:</b>                      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 9 for length calculation of fractional stroke for single acting cylinders




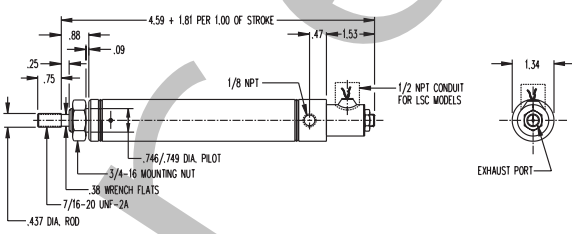

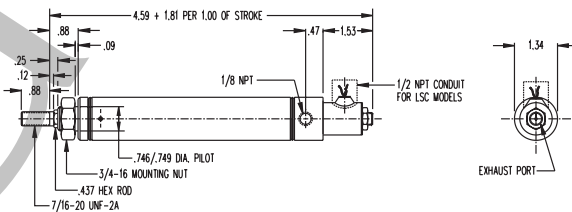

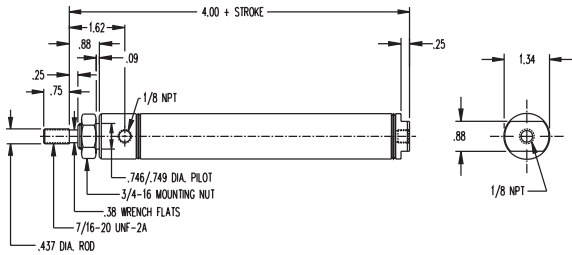

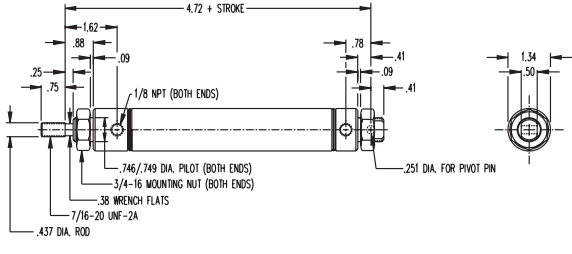
# ORDER ONLINE 1-1/4" Bore Air Cylinders

MODEL/PRICE	DESCRIPTION/WEIGHT (lbs.)	DIMENSIONS
<p><b>12□-NRP</b></p>  <p><b>\$28.00</b> BASE PRICE Add \$3.00 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> ½", 1", 1½", 2", 2½", 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>\$25.35</b> BASE PRICE Add \$3.00 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> ½", 1", 1½", 2", 2½", 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>\$26.85</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></p> <p><b>Standard Stroke Lengths:</b> ½", 1", 1½", 2", 2½", 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>\$28.80</b> BASE PRICE Add \$3.00 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> ½", 1", 1½", 2", 2½", 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>	


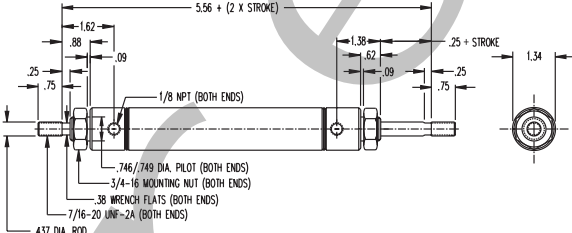

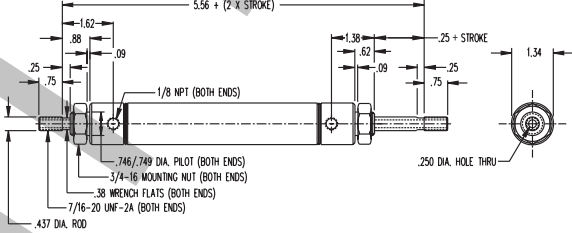
- Flow Controls
- Alignment Couplers
- Original Line Cylinders
- Cushion Cylinders
- MRS Cylinders
- Non-Rotating Cylinders
- PC Cylinders
- Z Line Cylinders
- Rod Lock Cylinders
- 500 Hydraulic Cylinders
- Hole Punchers Air Reservoirs
- Position Sens Switches

ORDER  
ONLINE

# 1-1/4" Bore Air Cylinders

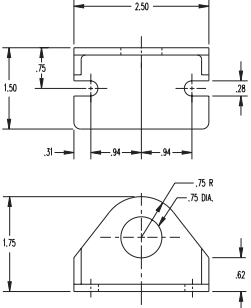
MODEL/PRICE	DESCRIPTION/WEIGHT (lbs.)	DIMENSIONS
<p style="text-align: center;"><b>12□-LS or LSC*</b></p>  <p style="text-align: center;"><b>\$71.90</b> BASE PRICE Add \$3.00 per inch of stroke *Add \$1.80 for Conduit Outlet</p>	<p><b>Single Acting – Built-in Midget 3-Way Solenoid Operated Valve – Spring 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-241 Mounting Bracket <b>Base Weight: 1.30</b> <b>Adder Per Inch of Stroke: .21</b></p>	
<p style="text-align: center;"><b>12□-NRLS or NRLSC*</b></p>  <p style="text-align: center;"><b>\$74.75</b> BASE PRICE Add \$3.00 per inch of stroke *Add \$1.80 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></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-241 Mounting Bracket <b>Base Weight: 1.30</b> <b>Adder Per Inch of Stroke: .21</b></p>	
<p style="text-align: center;"><b>12□-D</b></p>  <p style="text-align: center;"><b>\$26.25</b> BASE PRICE Add \$1.80 per inch of stroke</p>	<p><b>Double Acting – Air Return – Front Nose Mounting</b></p> <p><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 <b>Optional Accessory:</b> D-241 Mounting Bracket <b>Base Weight: .58</b> <b>Adder Per Inch of Stroke: .08</b></p>	
<p style="text-align: center;"><b>12□-DP</b></p>  <p style="text-align: center;"><b>\$31.20</b> BASE PRICE Add \$1.80 per inch of stroke</p>	<p><b>Double Acting – Pivot Type – Air 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", 5", 6", 7", 8", 9", 10", 11", 12" Maximum Stroke – 32" 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>	

# 1-1/4" Bore Air Cylinders

MODEL/PRICE	DESCRIPTION/WEIGHT (lbs.)	DIMENSIONS
<b>12□-DXDE</b>  <b>\$44.40</b> BASE PRICE Add \$2.60 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>\$49.20</b> BASE PRICE Add \$2.80 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>	

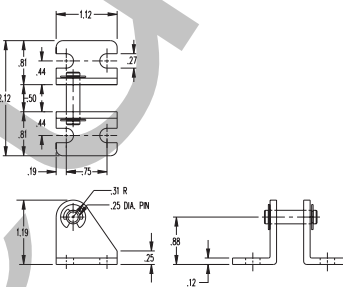
## 1-1/4" Bore Accessories

**D-241**  
**\$3.60**



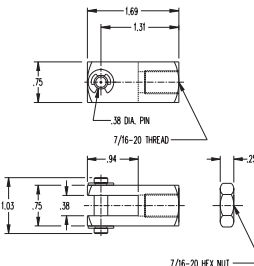
**Mounting Bracket**  
*(for Single & Double Acting Models)*

**D-1360**  
**\$5.80**



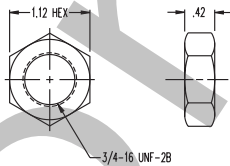
**Pivot Brackets**

**D-231-1**  
**\$5.05**



**Piston Rod Clevis**

**D-3556**  
**\$.45**



**Mounting Nut**

Flow Controls  
Alignment Couplers  
Original Line Cylinders  
Cushion Cylinders  
MRS Cylinders  
Non-Rotating Cylinders  
PC Cylinders  
Z Line Cylinders  
Rod Lock Cylinders  
500 Hydraulic Cylinders  
Hole Punchers Air Reservoirs  
Position Sens Switches

# ORDER ONLINE 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)

- \$2.80 additional
- Add .125" to overall length

### DOUBLE ACTING BUMPERS (B)

- \$4.40 additional
- Add .125 to overall length

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

### EXTRA EXTENSION (EE)

- Single, reverse and double acting, add \$1.05 per inch of extension
- DXDE, add \$1.70 per inch of extension; extension added to each end
- DXDE hollow rod, add \$1.80 per inch of extension; extension added to each end

### DOUBLE ACTING FAILSAFE

(JS = Spring Return, JR = Spring Extend)

- Add \$10.00 to base price + \$1.30 to stroke adder
- See page 72 for overall length adders

## OPTIONS continued...

**HEAVY SPRINGS (H)** are standard on all single acting block front and block rear mount, and all reverse acting. For all other single acting, add \$1.95

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

### MAGNET (prefix M) – Add \$12.55

- 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 \$2.50 per track. See page 140 for details.

### LOW TEMPERATURE (N)

Temperature Range: -40° to 200°F

- Single acting add \$1.05
- Reverse acting add \$1.35
- Double acting add \$2.10
- DXDE add \$2.65

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

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

- Single acting add \$5.00
- Double acting add \$12.55
- DXDE add \$16.10
- Reverse acting add \$8.65

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

- Double acting, add \$2.50
- DXDE, add \$5.00

### MOLYCOATED BODY (F)

- Add \$2.30 per inch of stroke

### NON-LUBE SERVICE (E)

- Single acting add \$3.95
- Double acting add \$8.90
- DXDE add \$12.30

### STAINLESS STEEL ROD (prefix SR)

- Add \$2.50
- Standard on DX, DXDE, DXDEH, DNR, DXNR, All block mounts, and M option

Enter Stroke Length as 3rd Digit

## MODEL/PRICE

## DESCRIPTION/WEIGHT (lbs.)

## DIMENSIONS

# 17



## \$23.00

**BASE PRICE**

Add \$3.45 per inch of stroke

**Single Acting – Spring Return –**

**Front Nose Mounting**

**Standard Stroke Lengths:**

½", 1", 1½", 2", 2½", 3", 4"

Maximum Stroke – 6"

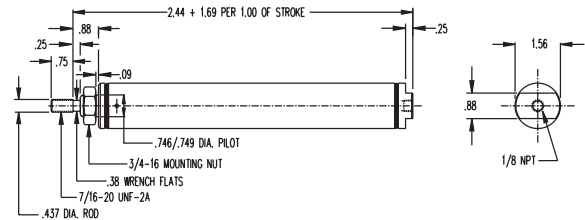
Optional Stainless Steel Rod

Optional Accessory:

D-241 Mounting Bracket

Base Weight: .44

Adder Per Inch of Stroke: .22



# 17-NR



## \$25.30

**BASE PRICE**

Add \$3.45 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"

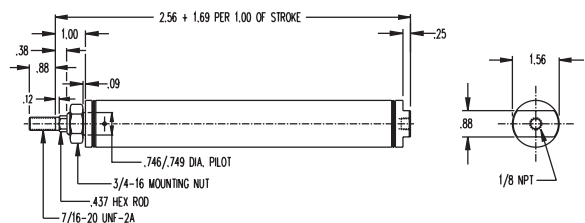
Optional Stainless Steel Rod

Optional Accessory:


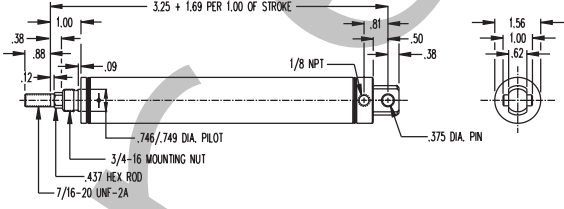

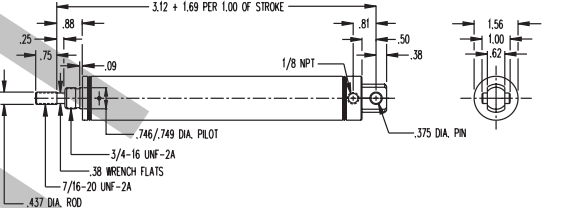

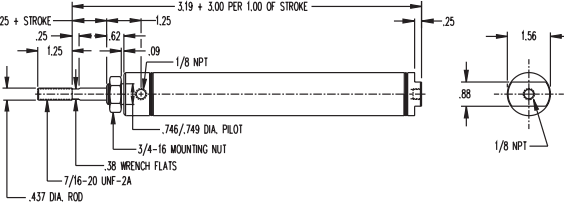

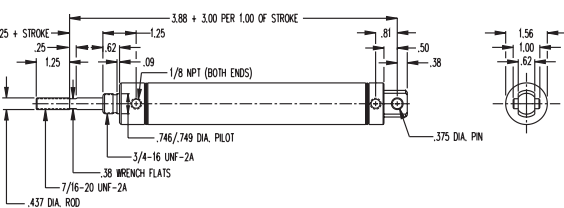
D-241 Mounting Bracket

Base Weight: .45

Adder Per Inch of Stroke: .22


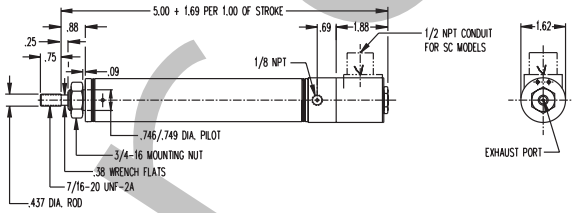

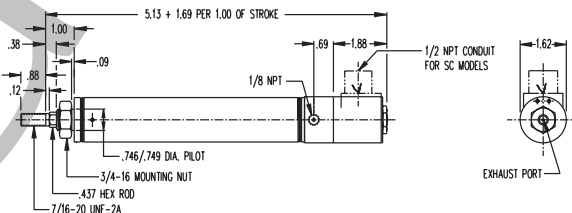

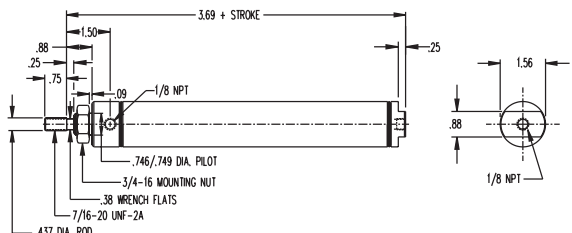

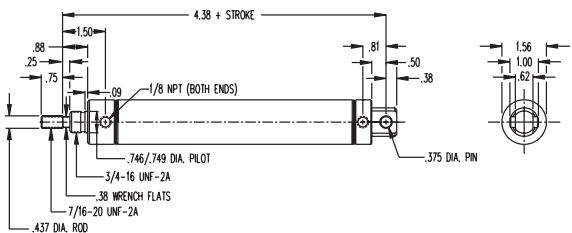


# ORDER ONLINE 1-1/2" Bore Air Cylinders


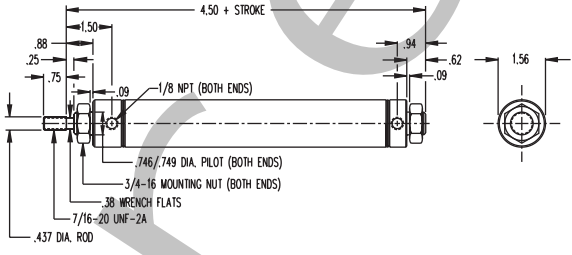

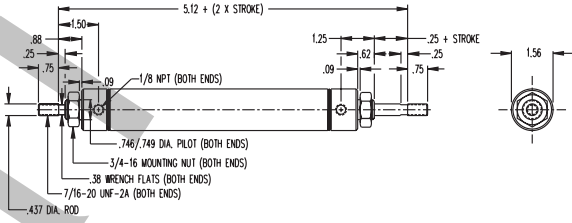

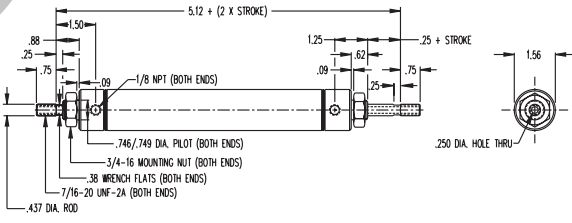
MODEL/PRICE	DESCRIPTION/WEIGHT (lbs.)	DIMENSIONS
<p><b>17□-NRP</b></p>  <p><b>\$29.20</b> BASE PRICE Add \$3.45 per inch of stroke</p>	<p><b>Single Acting – Non-rotating Hexagon Rod – Spring Return – Rear Pivot Mounting</b>  <b>Standard Stroke Lengths:</b>                      ½", 1", 1½", 2", 2½", 3", 4"                      Maximum Stroke – 6"                      Optional Stainless Steel Rod  <b>Optional Accessories:</b>                      D-231-1 Piston Rod Clevis                      D-229 Pivot Brackets  <b>Base Weight:</b> .46  <b>Adder Per Inch of Stroke:</b> .22</p>	
<p><b>17□-P</b></p>  <p><b>\$27.05</b> BASE PRICE Add \$3.45 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"                      Optional Stainless Steel Rod  <b>Optional Accessories:</b>                      D-231-1 Piston Rod Clevis                      D-229 Pivot Brackets  <b>Base Weight:</b> .45  <b>Adder Per Inch of Stroke:</b> .22</p>	
<p><b>17□-R</b></p>  <p><b>\$28.50</b> BASE PRICE Add \$3.45 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"                      Maximum Stroke – 6"                      Optional Stainless Steel Rod  <b>Optional Accessory:</b>                      D-241 Mounting Bracket  <b>Base Weight:</b> .44  <b>Adder Per Inch of Stroke:</b> .22</p>	
<p><b>17□-RP</b></p>  <p><b>\$32.40</b> BASE PRICE Add \$3.45 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"                      Maximum Stroke – 6"                      Optional Stainless Steel Rod  <b>Optional Accessories:</b>                      D-231-1 Piston Rod Clevis                      D-229 Pivot Brackets  <b>Base Weight:</b> .45  <b>Adder Per Inch of Stroke:</b> .22</p>	

- Flow Controls
- Alignment Couplers
- Original Line Cylinders
- Cushion Cylinders
- MRS Cylinders
- Non-Rotating Cylinders
- PC Cylinders
- Z Line Cylinders
- Rod Lock Cylinders
- 500 Hydraulic Cylinders
- Hole Punchers Air Reservoirs
- Position Sens Switches

# ORDER ONLINE 1-1/2" Bore Air Cylinders


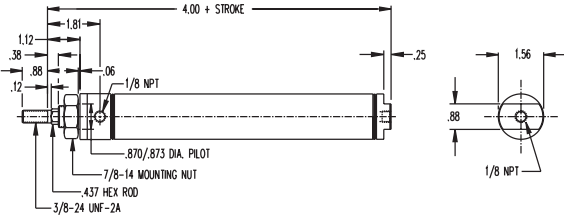
MODEL/PRICE	DESCRIPTION/WEIGHT (lbs.)	DIMENSIONS
<p style="font-size: 24pt; font-weight: bold;">17□-S or SC*</p>  <p style="font-size: 24pt; font-weight: bold; text-align: center;">\$75.00</p> <p style="text-align: center;">BASE PRICE</p> <p>Add \$3.45 per inch of stroke *Add \$2.30 for Conduit Outlet</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</p> <p><b>Standard Stroke Lengths:</b> 1/2", 1", 1 1/2", 2", 2 1/2", 3", 4"</p> <p>Maximum Stroke – 6"</p> <p>Optional Stainless Steel Rod</p> <p>Standard Voltage – 115/60</p> <p><b>Optional Voltages:</b> 24, 230 A.C. or 6, 12, 24 D.C.</p> <p><b>Optional Accessory:</b> D-241 Mounting Bracket</p> <p><b>Base Weight:</b> 1.38 <b>Adder Per Inch of Stroke:</b> .22</p>	
<p style="font-size: 24pt; font-weight: bold;">17□-NRS or NRSC*</p>  <p style="font-size: 24pt; font-weight: bold; text-align: center;">\$77.65</p> <p style="text-align: center;">BASE PRICE</p> <p>Add \$3.45 per inch of stroke *Add \$2.30 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</p> <p><b>Standard Stroke Lengths:</b> 1/2", 1", 1 1/2", 2", 2 1/2", 3", 4"</p> <p>Maximum Stroke – 6"</p> <p>Optional Stainless Steel Rod</p> <p>Standard Voltage – 115/60</p> <p><b>Optional Voltages:</b> 24, 230 A.C. or 6, 12, 24 D.C.</p> <p><b>Optional Accessory:</b> D-241 Mounting Bracket</p> <p><b>Base Weight:</b> 1.38 <b>Adder Per Inch of Stroke:</b> .22</p>	
<p style="font-size: 24pt; font-weight: bold;">17□-D</p>  <p style="font-size: 24pt; font-weight: bold; text-align: center;">\$28.00</p> <p style="text-align: center;">BASE PRICE</p> <p>Add \$2.10 per inch of stroke</p>	<p><b>Double Acting</b> – Air Return – Front Nose Mounting</p> <p><b>Standard Stroke Lengths:</b> 1/2", 1", 1 1/2", 2", 2 1/2", 3", 4", 5", 6"</p> <p>Maximum Stroke – 12"</p> <p>Optional Stainless Steel Rod</p> <p>Optional Rod Wiper</p> <p><b>Optional Accessory:</b> D-241 Mounting Bracket</p> <p><b>Base Weight:</b> .69 <b>Adder Per Inch of Stroke:</b> .08</p>	
<p style="font-size: 24pt; font-weight: bold;">17□-DP</p>  <p style="font-size: 24pt; font-weight: bold; text-align: center;">\$32.05</p> <p style="text-align: center;">BASE PRICE</p> <p>Add \$2.10 per inch of stroke</p>	<p><b>Double Acting</b> – Pivot Type – Air Return – Rear Pivot Mounting</p> <p><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"</p> <p>Maximum Stroke – 32"</p> <p>Optional Stainless Steel Rod</p> <p>Optional Rod Wiper</p> <p><b>Optional Accessories:</b> D-231-1 Piston Rod Clevis D-229 Pivot Brackets</p> <p><b>Base Weight:</b> .73 <b>Adder Per Inch of Stroke:</b> .08</p>	

# ORDER ONLINE 1-1/2" Bore Air Cylinders

MODEL/PRICE	DESCRIPTION/WEIGHT (lbs.)	DIMENSIONS
 <p><b>17□-DX</b></p> <p><b>\$34.10</b> BASE PRICE Add \$2.10 per inch of stroke</p>	<p><b>Double Acting – Double End 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 – 32"            Stainless Steel Rod Standard            Optional Rod Wiper  <b>Optional Accessory:</b>            D-241 Mounting Bracket  <b>Base Weight:</b> .82  <b>Adder Per Inch of Stroke:</b> .08</p>	
 <p><b>17□-DXDE</b></p> <p><b>\$45.10</b> BASE PRICE Add \$3.35 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"            Maximum Stroke – 12"            Stainless Steel Rod Standard            Optional Rod Wiper  <b>Optional Accessory:</b>            D-241 Mounting Bracket  <b>Base Weight:</b> 1.17  <b>Adder Per Inch of Stroke:</b> .13</p>	
 <p><b>17□-DXDEH</b></p> <p><b>\$52.00</b> BASE PRICE Add \$3.55 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"            Maximum Stroke – 12"            Stainless Steel Rod Standard            Optional Rod Wiper  <b>Optional Accessory:</b>            D-241 Mounting Bracket  <b>Base Weight:</b> 1.16  <b>Adder Per Inch of Stroke:</b> .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> \$1.60	<b>D-2501</b> \$1.25	<b>D-1117</b> \$7.15	<b>D-2509</b> \$6.70


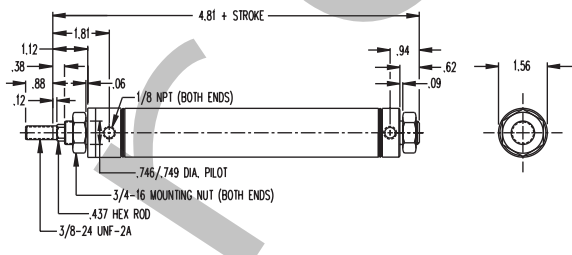

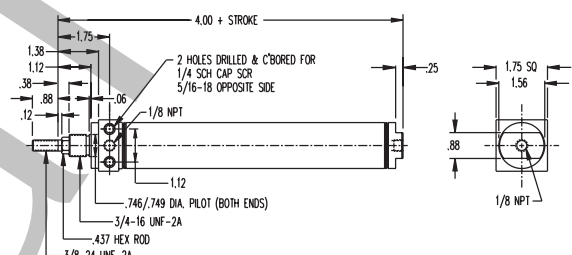

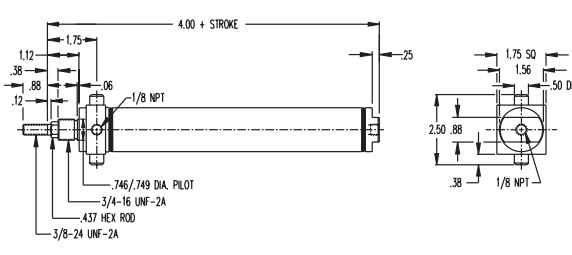
MODEL/PRICE	DESCRIPTION/WEIGHT (lbs.)	DIMENSIONS
 <p><b>17□-DNR</b></p> <p><b>\$52.75</b> BASE PRICE Add \$2.50 per inch of stroke</p>	<p><b>Double Acting – Non-rotating Hexagon Rod – Front Nose Mounting – Air Return</b>  <b>Standard Stroke Lengths:</b>            ½", 1", 1½", 2", 2½", 3", 4", 5", 6"            Maximum Stroke – 12"            Stainless Steel Rod Standard  <b>Optional Accessory:</b>            D-2669 Mounting Bracket  <b>Base Weight:</b> .77  <b>Adder Per Inch of Stroke:</b> .09</p>	

Flow Controls  
 Alignment Couplers  
 Original Line Cylinders  
 Cushion Cylinders  
 MRS Cylinders  
 Non-Rotating Cylinders  
 PC Cylinders  
 Z Line Cylinders  
 Rod Lock Cylinders  
 500 Hydraulic Cylinders  
 Hole Punchers Air Reservoirs  
 Position Sens Switches


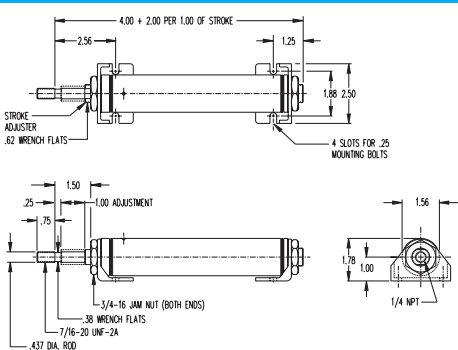
ORDER  
ONLINE

# 1-1/2" Bore Air Cylinders

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

MODEL/PRICE	DESCRIPTION/WEIGHT (lbs.)	DIMENSIONS
 <p style="text-align: center;"><b>17□-DXNR</b></p> <p style="text-align: center;"><b>\$58.55</b> BASE PRICE Add \$2.50 per inch of stroke</p>	<p><b>Double Acting – Non-rotating Hexagon Rod – Double End Mounting – Air Return</b></p> <p><b>Standard Stroke Lengths:</b> 1/2", 1", 1 1/2", 2", 2 1/2", 3", 4", 5", 6" Maximum Stroke – 12" Stainless Steel Rod Standard</p> <p><b>Optional Accessories:</b> D-241 Mounting Bracket D-8310-A Rod Clevis <b>Base Weight: .87</b> <b>Adder Per Inch of Stroke: .08</b></p>	
 <p style="text-align: center;"><b>BF-17□-DNR</b></p> <p style="text-align: center;"><b>\$59.70</b> BASE PRICE Add \$2.50 per inch of stroke</p>	<p><b>Double Acting – Non-rotating Hexagon Rod – Front Block Mounting – Air Return</b></p> <p><b>Standard Stroke Lengths:</b> 1/2", 1", 1 1/2", 2", 2 1/2", 3", 4", 5", 6" Maximum Stroke – 12" Stainless Steel Rod Standard</p> <p><b>Optional Accessory:</b> D-8310-A Rod Clevis <b>Base Weight: .71</b> <b>Adder Per Inch of Stroke: .09</b></p>	
 <p style="text-align: center;"><b>BFT-17□-DNR</b></p> <p style="text-align: center;"><b>\$67.25</b> BASE PRICE Add \$2.50 per inch of stroke</p>	<p><b>Double Acting – Non-rotating Hexagon Rod – Front Trunnion Mounting – Air Return</b></p> <p><b>Standard Stroke Lengths:</b> 1/2", 1", 1 1/2", 2", 2 1/2", 3", 4", 5", 6" Maximum Stroke – 12" Stainless Steel Rod Standard</p> <p><b>Optional Accessories:</b> TRB-2 Trunnion Brackets D-8310-A Rod Clevis <b>Base Weight: .78</b> <b>Adder Per Inch of Stroke: .09</b></p>	



## 1-1/2" Bore Adjustable Stroke

MODEL/PRICE	DESCRIPTION/WEIGHT (lbs.)	DIMENSIONS
 <p style="text-align: center;"><b>17□-A</b></p> <p style="text-align: center;"><b>\$43.95</b> BASE PRICE Add \$3.45 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" increments to 3". Mounting Brackets are included.</b></p> <p><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 <b>Base Weight: .75</b> <b>Adder Per Inch of Stroke: .25</b></p>	





# ORDER ONLINE 1-1/2" Bore Air Cylinders

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

MODEL/PRICE	DESCRIPTION/WEIGHT (lbs.)	DIMENSIONS
<p style="font-size: 24pt; font-weight: bold;">17□-RA</p>  <p style="font-size: 24pt; font-weight: bold; text-align: center;">\$44.75</p> <p style="text-align: center;">BASE PRICE</p> <p style="text-align: center;">Add \$3.45 per inch of stroke</p>	<p><b>Reverse Single Acting – Pull Type</b> – Rod Normally Extended – Nose Mounting – Stroke Adjustment in 1" increments to 3". 1" Stroke Adjusts 0" to 1", 2" Stroke 1" to 2", 3" Stroke 2" to 3" Maximum Stroke – 6" Optional Stainless Steel Rod <b>Optional Accessory:</b> D-241 Mounting Bracket Base Weight: .50 Adder Per Inch of Stroke: .25</p>	
<p style="font-size: 24pt; font-weight: bold;">17□-AP</p>  <p style="font-size: 24pt; font-weight: bold; text-align: center;">\$42.70</p> <p style="text-align: center;">BASE PRICE</p> <p style="text-align: center;">Add \$3.45 per inch of stroke</p>	<p><b>Single Acting – Pivot Type – Rear Pivot Mounting</b> – Stroke Adjustment in 1" increments to 3". 1" Stroke Adjusts 0" to 1", 2" Stroke 1" to 2", 3" Stroke 2" to 3" Maximum Stroke – 6" Optional Stainless Steel Rod <b>Optional Accessories:</b> 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



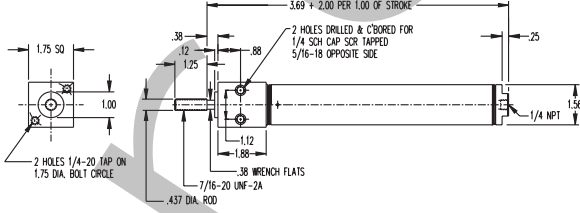


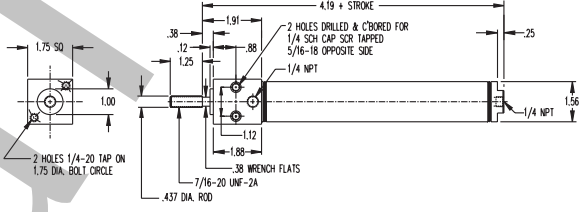


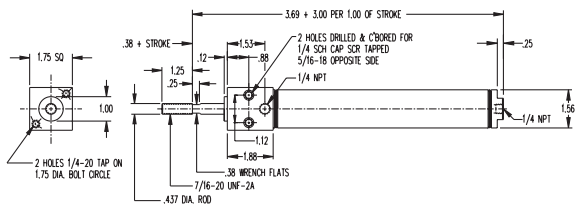


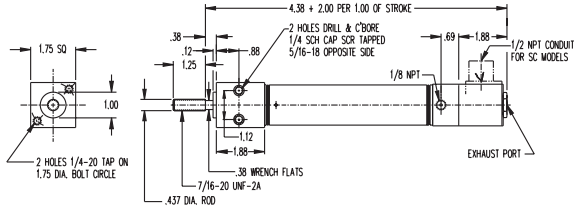


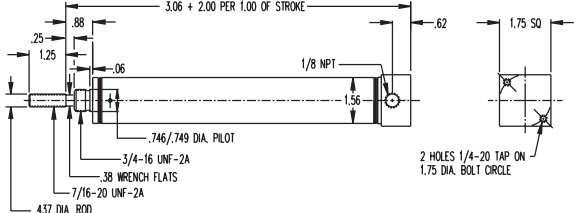
MODEL/PRICE	DESCRIPTION/WEIGHT (lbs.)	DIMENSIONS
<p style="font-size: 24pt; font-weight: bold;">17□-M</p>  <p style="font-size: 24pt; font-weight: bold; text-align: center;">\$57.30</p> <p style="text-align: center;">BASE PRICE</p> <p style="text-align: center;">Add \$3.45 per inch of stroke</p>	<p><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 <b>Optional Accessory:</b> D-241 Mounting Bracket Base Weight: .75 Adder Per Inch of Stroke: .22</p>	
<p style="font-size: 24pt; font-weight: bold;">17□-NRM</p>  <p style="font-size: 24pt; font-weight: bold; text-align: center;">\$59.65</p> <p style="text-align: center;">BASE PRICE</p> <p style="text-align: center;">Add \$3.45 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 <b>Optional Accessory:</b> D-241 Mounting Bracket Base Weight: .75 Adder Per Inch of Stroke: .22</p>	

- Flow Controls
- Alignment Couplers
- Original Line Cylinders
- Cushion Cylinders
- MRS Cylinders
- Non-Rotating Cylinders
- PC Cylinders
- Z Line Cylinders
- Rod Lock Cylinders
- 500 Hydraulic Cylinders
- Hole Punchers Air Reservoirs
- Position Sens Switches

ORDER  
ONLINE

# 1-1/2" Bore Air Cylinders


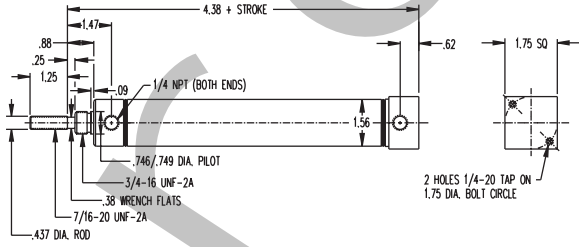

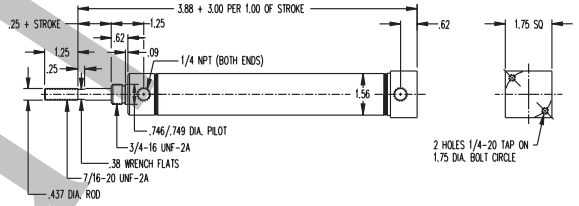
## 1-1/2" Bore Block Mounted · Spring Force: 8.5 lbs. Retracted, 17 lbs. Extended

MODEL/PRICE	DESCRIPTION/WEIGHT (lbs.)	DIMENSIONS
<p><b>BF-17</b> </p>  <p><b>\$38.90</b> BASE PRICE Add \$3.55 per inch of stroke</p>	<p><b>Single Acting – Front Block 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 Base Weight: .99 Adder Per Inch of Stroke: .22</p>	
<p><b>BF-17</b> </p>  <p><b>\$43.80</b> BASE PRICE Add \$2.10 per inch of stroke</p>	<p><b>Double Acting – Front Block Mounting – Air Return</b> Standard Stroke Lengths: 1/2", 1", 1 1/2", 2", 2 1/2", 3", 4", 5", 6" Maximum Stroke – 12" Stainless Steel Rod Standard Base Weight: .99 Adder Per Inch of Stroke: .08</p>	
<p><b>BF-17</b> </p>  <p><b>\$43.85</b> BASE PRICE Add \$3.55 per inch of stroke</p>	<p><b>Pull Type – Front Block Mounting – Rod Normally Extended – Reverse Single Acting – Spring Return</b> Standard Stroke Lengths: 1/2", 1", 1 1/2", 2", 2 1/2", 3", 4" Maximum Stroke – 6" Stainless Steel Rod Standard Base Weight: .96 Adder Per Inch of Stroke: .22</p>	
<p><b>BF-17</b>  <b>-S</b> <b>or SC*</b></p>  <p><b>\$90.60</b> BASE PRICE Add \$3.55 per inch of stroke *Add \$2.30 for conduit outlet</p>	<p><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> Standard Stroke Lengths: 1/2", 1", 1 1/2", 2", 2 1/2", 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</p>	
<p><b>BR-17</b> </p>  <p><b>\$33.10</b> BASE PRICE Add \$3.55 per inch of stroke</p>	<p><b>Single Acting – Rear Block Mounting for Vertical Positioning – 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 Base Weight: .87 Adder Per Inch of Stroke: .08</p>	


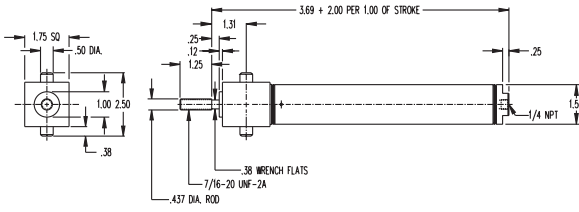

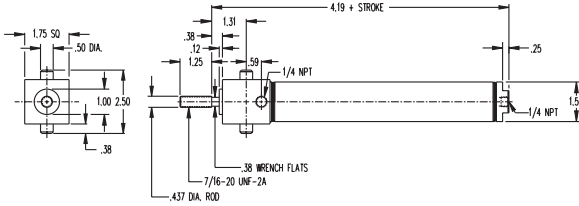

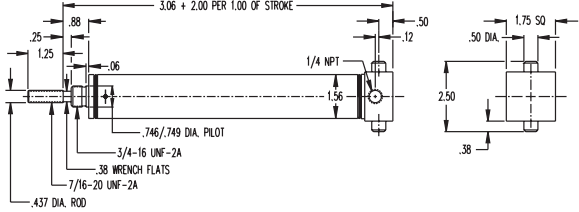
ORDER  
ONLINE

# 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>\$38.55</b> BASE PRICE Add \$2.10 per inch of stroke</p>	<p><b>Double Acting – Rear Block Mounting for Vertical Positioning – Air Return</b> Standard Stroke Lengths: 1/2", 1", 1 1/2", 2", 2 1/2", 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>\$39.10</b> BASE PRICE Add \$3.55 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: 1/2", 1", 1 1/2", 2", 2 1/2", 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


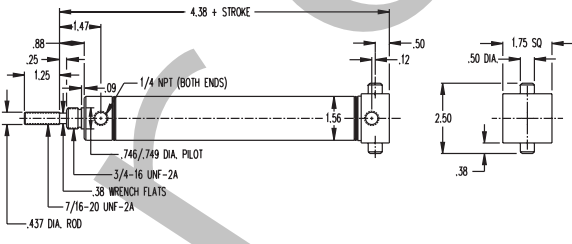
MODEL/PRICE	DESCRIPTION/WEIGHT (lbs.)	DIMENSIONS
<p><b>BFT-17</b> □</p>  <p><b>\$46.80</b> BASE PRICE Add \$3.55 per inch of stroke</p>	<p><b>Single Acting – Front Block Trunnion Mounting – Spring Return</b> Standard Stroke Lengths: 1/2", 1", 1 1/2", 2", 2 1/2", 3", 4" Maximum Stroke – 6" Stainless Steel Rod Standard Optional Accessories: TRB-2 Trunnion Brackets D-231-1 Rod Clevis Base Weight: 1.20 Adder Per Inch of Stroke: .22</p>	
<p><b>BFT-17</b> □ -D</p>  <p><b>\$52.05</b> BASE PRICE Add \$2.10 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-231-1 Rod Clevis Base Weight: 1.06 Adder Per Inch of Stroke: .08</p>	
<p><b>BRT-17</b> □</p>  <p><b>\$40.55</b> BASE PRICE Add \$3.55 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-231-1 Rod Clevis Base Weight: 1.06 Adder Per Inch of Stroke: .22</p>	

- Flow Controls
- Alignment Couplers
- Original Line Cylinders
- Cushion Cylinders
- MRS Cylinders
- Non-Rotating Cylinders
- PC Cylinders
- Z Line Cylinders
- Rod Lock Cylinders
- 500 Hydraulic Cylinders
- Hole Punchers Air Reservoirs
- Position Sens Switches

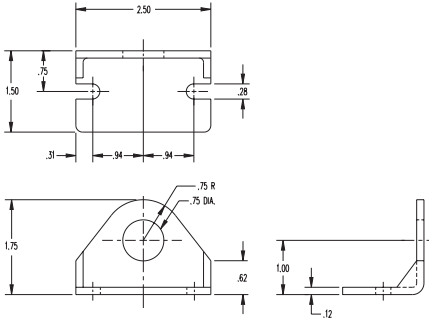
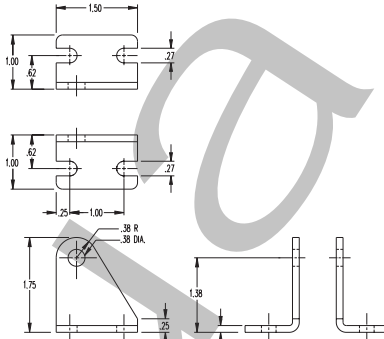
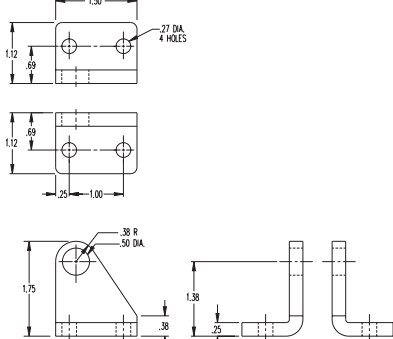
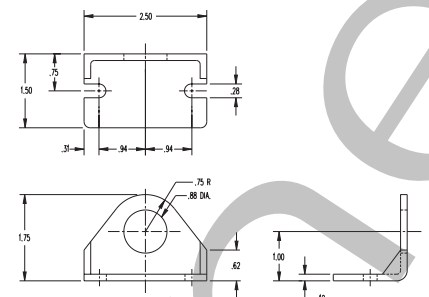
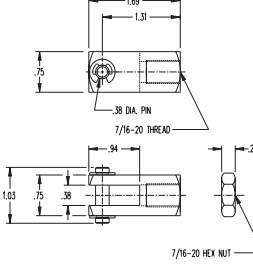
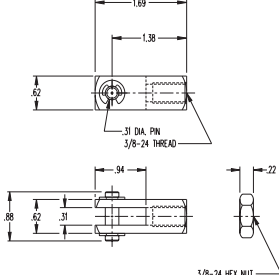
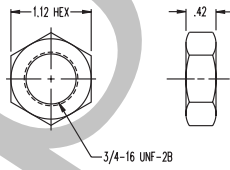
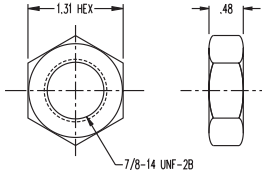
ORDER  
ONLINE

# 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>\$46.60</b> BASE PRICE Add \$2.10 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"                      Maximum Stroke – 12"                      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> <b>\$3.60</b></p>  <p style="text-align: center;"><i>Mounting Bracket</i></p>	<p><b>D-229</b> <b>\$4.60</b></p>  <p style="text-align: center;"><i>Pivot Bracket</i></p>	<p><b>TRB-2</b> <b>\$7.85</b></p>  <p style="text-align: center;"><i>Trunnion Brackets</i></p>
<p><b>D-2669</b> <b>\$3.60</b></p>  <p style="text-align: center;"><i>Mounting Bracket</i></p>	<p><b>D-231-1</b> <b>\$5.05</b></p>  <p style="text-align: center;"><i>Piston Rod Clevis</i></p>	<p><b>D-8310-A</b> <b>\$5.65</b></p>  <p style="text-align: center;"><i>Rod Clevis</i></p>
<p><b>D-3556</b> <b>\$.45</b></p>  <p style="text-align: center;"><i>Mounting Nut</i></p>	<p><b>D-2545</b> <b>\$.80</b></p>  <p style="text-align: center;"><i>Mounting Nut</i></p>	

**Note:** For stainless steel accessories see page 106 and 109-110.  
 Mounting bracket not available in stainless steel.

# ORDER ONLINE 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 \$1.05 per inch of extension
- DXDE, add \$1.60 per inch of extension; extension added to each end
- DXDE hollow rod, add \$1.70 per inch of extension; extension added to each end

**DOUBLE ACTING FAILSAFE**

- (JS = Spring Return, JR = Spring Extend)
- Add \$15.00 to base price + \$2.00 to stroke adder
  - See page 72 for overall length adders

Enter Stroke Length as 3rd Digit

### OPTIONS continued...

**MAGNET (prefix M) – Add \$12.55**

- 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 \$2.50 per track. See page 140 for details.

**LOW TEMPERATURE (N)**

Temperature Range: -40° to 200°F

- Single acting add \$1.05
- Reverse acting add \$1.35
- Double acting add \$2.10
- DXDE add \$2.65

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

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

- Single acting add \$6.60
- Double acting add \$16.10
- DXDE add \$21.30
- Reverse acting add \$12.00

**MOLYCOATED BODY (F)**

- Add \$2.30 per inch of stroke

**NON-LUBE SERVICE (E)**

- Single acting add \$3.95
- Double acting add \$8.90
- DXDE add \$12.30


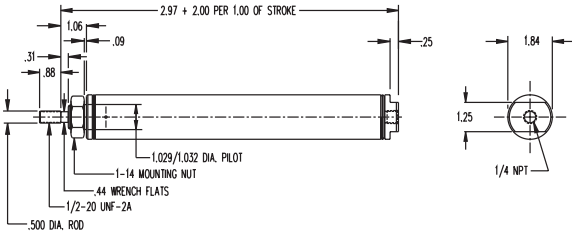

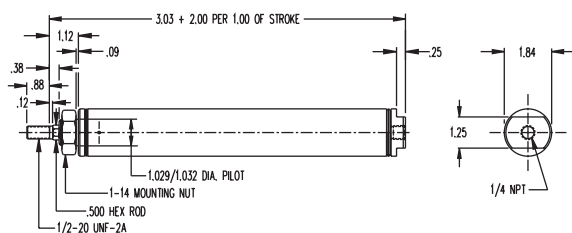
**ROD WIPER (W)**

(not available in standard single acting)

- Add \$2.50

**STAINLESS STEEL ROD (prefix SR)**


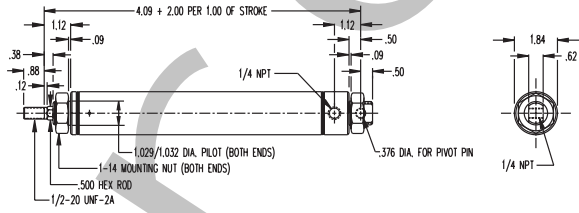

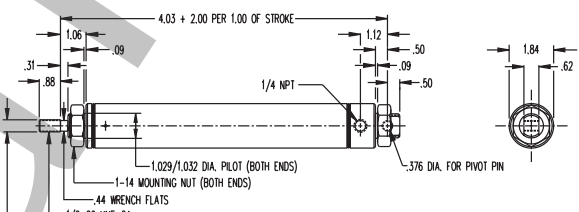

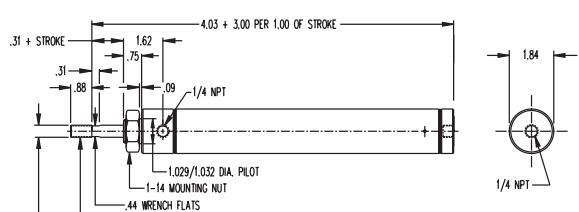

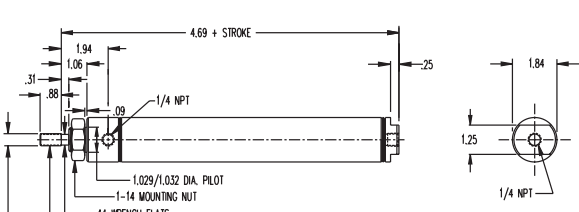
- Add \$3.40
- Standard on DXDE, DXDEH

MODEL/PRICE	DESCRIPTION/WEIGHT (lbs.)	DIMENSIONS
<p style="font-size: 24pt; font-weight: bold; text-align: center;">24 <input type="checkbox"/></p>  <p style="text-align: center; font-weight: bold; font-size: 18pt;">\$35.80 BASE PRICE</p> <p style="text-align: center;">Add \$4.35 per inch of stroke</p>	<p><b>Single Acting – 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"</p> <p>Optional Stainless Steel Rod Optional Accessory: C-1337 Mounting Bracket Base Weight: .85 Adder Per Inch of Stroke: .36</p>	
<p style="font-size: 24pt; font-weight: bold; text-align: center;">24 <input type="checkbox"/> -NR</p>  <p style="text-align: center; font-weight: bold; font-size: 18pt;">\$38.80 BASE PRICE</p> <p style="text-align: center;">Add \$4.30 per inch of stroke</p>	<p><b>Single Acting – Non-rotating Hexagon Rod – 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"</p> <p>Optional Stainless Steel Rod Optional Accessory: C-1337 Mounting Bracket Base Weight: .86 Adder Per Inch of Stroke: .36</p>	


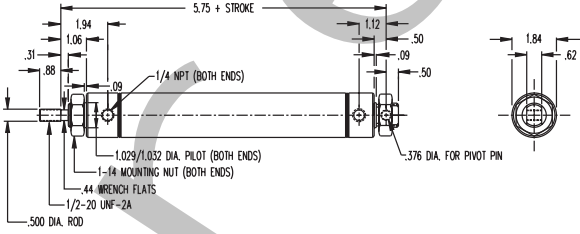

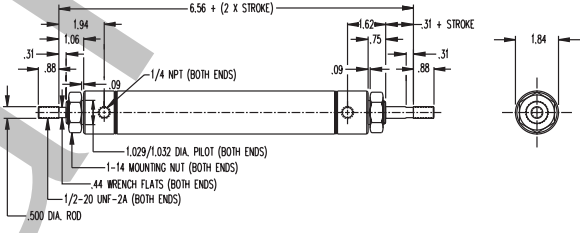

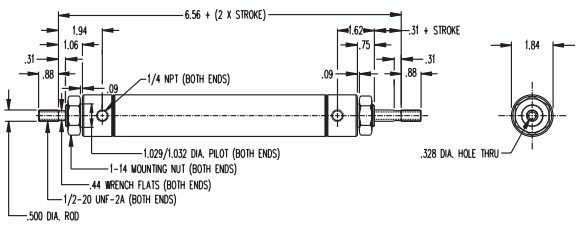
See page 9 for length calculation of fractional stroke for single acting cylinders

- Flow Controls
- Alignment Couplers
- Original Line Cylinders
- Cushion Cylinders
- MRS Cylinders
- Non-Rotating Cylinders
- PC Cylinders
- Z Line Cylinders
- Rod Lock Cylinders
- 500 Hydraulic Cylinders
- Hole Punchers Air Reservoirs
- Position Sens Switches

# ORDER ONLINE 1-3/4" Bore Air Cylinders

MODEL/PRICE	DESCRIPTION/WEIGHT (lbs.)	DIMENSIONS
<p><b>24□-NRP</b></p>  <p><b>\$44.00</b> BASE PRICE Add \$4.35 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"</p> <p>Optional Stainless Steel Rod <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>\$41.00</b> BASE PRICE Add \$4.35 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"</p> <p>Optional Stainless Steel Rod <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>\$43.25</b> BASE PRICE Add \$4.35 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"</p> <p>Optional Stainless Steel Rod <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>\$43.40</b> BASE PRICE Add \$2.10 per inch of stroke</p>	<p><b>Double Acting – Air Return – Front Nose Mounting</b></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>Optional Stainless Steel Rod <b>Optional Accessory:</b> C-1337 Mounting Bracket <b>Base Weight: 1.29</b> <b>Adder Per Inch of Stroke: .11</b></p>	

# ORDER ONLINE 1-3/4" Bore Air Cylinders

MODEL/PRICE	DESCRIPTION/WEIGHT (lbs.)	DIMENSIONS
<p style="text-align: center;"><b>24□-DP</b></p>  <p style="text-align: center;"><b>\$48.85</b> BASE PRICE Add \$2.10 per inch of stroke</p>	<p><b>Double Acting – Pivot Type – Air Return – Rear Pivot or Double End Mounting</b></p> <p><b>Standard Stroke Lengths:</b> ½", 1", 1½", 2", 2½", 3", 4", 5", 6", 7", 8", 9", 10", 11", 12"</p> <p>Maximum Stroke – 32"</p> <p>Optional Stainless Steel Rod</p> <p><b>Optional Accessories:</b> D-231-3 Piston Rod Clevis D-620-1 Pivot Brackets C-1337 Mounting Bracket</p> <p><b>Base Weight: 1.64</b> <b>Adder Per Inch of Stroke: .11</b></p>	
<p style="text-align: center;"><b>24□-DXDE</b></p>  <p style="text-align: center;"><b>\$63.30</b> BASE PRICE Add \$3.15 per inch of stroke</p>	<p><b>Double Acting – Double End Rod – Air Return – Double End Mounting</b></p> <p><b>Standard Stroke Lengths:</b> ½", 1", 1½", 2", 2½", 3", 4", 5", 6", 7", 8", 9", 10", 11", 12"</p> <p>Maximum Stroke – 12"</p> <p>Stainless Steel Rod Standard</p> <p><b>Optional Accessory:</b> C-1337 Mounting Bracket</p> <p><b>Base Weight: 1.87</b> <b>Adder Per Inch of Stroke: .18</b></p>	
<p style="text-align: center;"><b>24□-DXDEH</b></p>  <p style="text-align: center;"><b>\$76.30</b> BASE PRICE Add \$3.35 per inch of stroke</p>	<p><b>Double Acting – Double End Hollow Rod – Air Return – Double End Mounting</b></p> <p><b>Standard Stroke Lengths:</b> ½", 1", 1½", 2", 2½", 3", 4", 5", 6"</p> <p>Maximum Stroke – 12"</p> <p>Stainless Steel Rod Standard</p> <p><b>Optional Accessory:</b> C-1337 Mounting Bracket</p> <p><b>Base Weight: 1.80</b> <b>Adder Per Inch of Stroke: .16</b></p>	

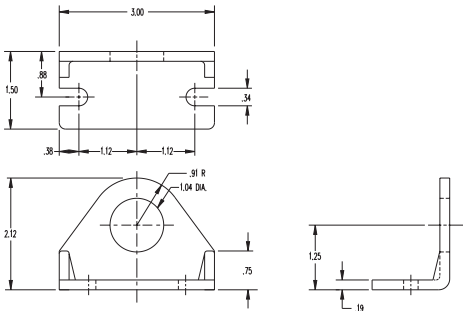
- Flow Controls
- Alignment Couplers
- Original Line Cylinders
- Cushion Cylinders
- MRS Cylinders
- Non-Rotating Cylinders
- PC Cylinders
- Z Line Cylinders
- Rod Lock Cylinders
- 500 Hydraulic Cylinders
- Hole Punchers Air Reservoirs
- Position Sens Switches

RORNE

ORDER  
ONLINE  
**1-3/4" Bore Air Cylinders**

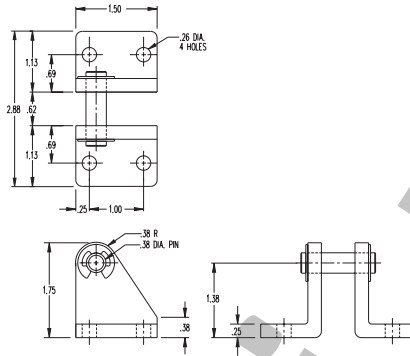
**1-3/4" Bore Accessories**

**C-1337**  
\$5.75



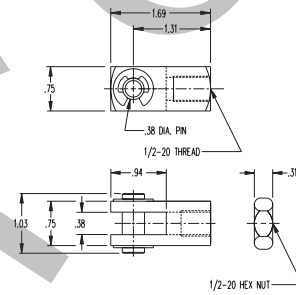
*Mounting Bracket*

**D-620-1**  
\$11.20



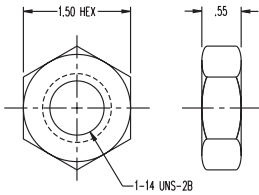
*Pivot Brackets*

**D-231-3**  
\$5.05



*Piston Rod Clevis*

**D-1331**  
\$1.95



*Mounting Nut*



# ORDER ONLINE 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)

- \$3.35 additional
- Add .125" to overall length

#### DOUBLE ACTING BUMPERS (B)

- \$5.65 additional
- Add .250 to overall length

#### EXTRA EXTENSION (EE)

- Single, reverse and double acting, add \$1.15 per inch of extension

#### DOUBLE ACTING FAILSAFE

- (JS = Spring Return, JR = Spring Extend)
- Add \$20.00 to base price + \$2.40 to stroke adder
- See page 72 for overall length adders

Enter Stroke Length as 3rd Digit

### OPTIONS continued...

- **DXDE**, add \$1.75 per inch of extension; extension added to each end

#### MAGNET (prefix M) – Add \$14.65

- 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 \$2.50 per track. See page 140 for details.

#### LOW TEMPERATURE (N)

Temperature Range: -40° to 200°F

- Single acting add \$1.35
- Reverse acting add \$1.60
- Double acting add \$2.65
- DXDE add \$2.90

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

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

- Single acting add \$6.60
- Double acting add \$16.10
- DXDE add \$21.30
- Reverse acting add \$12.00

#### MOLYCOATED BODY (F)

- Add \$2.30 per inch of stroke

#### NON-LUBE SERVICE (E)

- Single acting add \$5.25
- Double acting add \$13.20
- DXDE add \$15.90


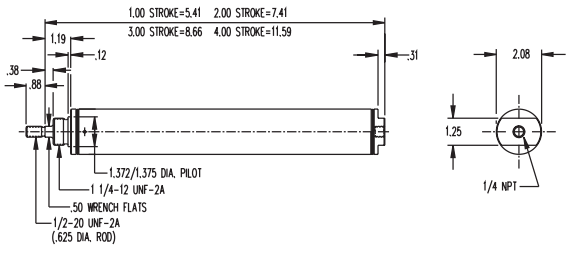

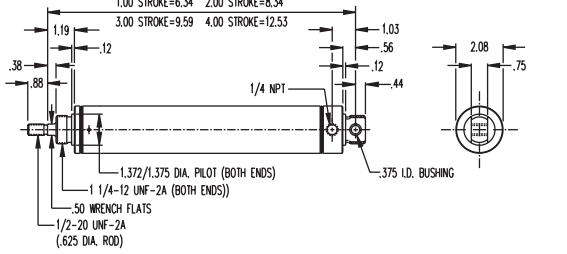
#### ROD WIPER (W)

(not available in standard single acting)

- Add \$5.00





#### STAINLESS STEEL ROD (prefix SR)

- Add \$3.45
- Standard on DXP, DXDE, XP, M option


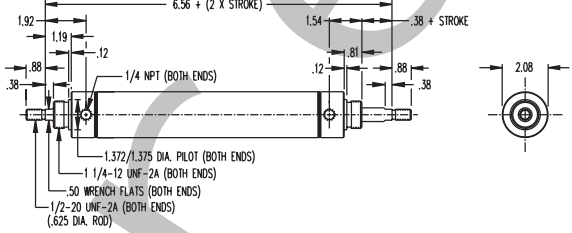
MODEL/PRICE	DESCRIPTION/WEIGHT (lbs.)	DIMENSIONS
<b>31</b> <input type="checkbox"/>  <b>\$46.85</b> <b>BASE PRICE</b> Add \$4.80 per inch of stroke	<b>Single Acting – Spring Return – Front Nose Mounting</b> <b>Standard Stroke Lengths:</b> ½", 1", 1½", 2", 2½", 3", 4" Maximum Stroke – 4" Optional Stainless Steel Rod <b>Optional Accessories:</b> D-615 Mounting Bracket D-508 Mounting Nut <b>Base Weight: 1.04</b> <b>Adder Per Inch of Stroke: .43</b>	
<b>31</b> <input type="checkbox"/> -XP  <b>\$57.20</b> <b>BASE PRICE</b> Add \$5.00 per inch of stroke	<b>Single Acting – Universal Mounting Type – Nose, Pivot or Double End – Spring Return – Bronze Rod Bushing and Bronze Pivot Bushing</b> <b>Standard Stroke Lengths:</b> ½", 1", 1½", 2", 2½", 3", 4" Maximum Stroke – 4" Stainless Steel Rod Standard <b>Optional Accessories:</b> D-231-3 Piston Rod Clevis D-615 Mounting Bracket D-620 Pivot Brackets D-508 Mounting Nut <b>Base Weight: 1.26</b> <b>Adder Per Inch of Stroke: .43</b>	

- Flow Controls
- Alignment Couplers
- Original Line Cylinders
- Cushion Cylinders
- MRS Cylinders
- Non-Rotating Cylinders
- PC Cylinders
- Z Line Cylinders
- Rod Lock Cylinders
- 500 Hydraulic Cylinders
- Hole Punchers Air Reservoirs
- Position Sens Switches

# ORDER ONLINE 2" Bore Air Cylinders

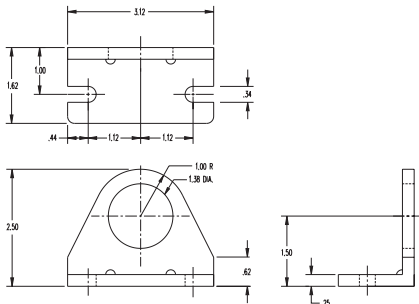
MODEL/PRICE	DESCRIPTION/WEIGHT (lbs.)	DIMENSIONS
<p style="font-size: 24pt; font-weight: bold;">31□-R</p>  <p style="font-size: 24pt; font-weight: bold; text-align: center;">\$54.25</p> <p style="text-align: center;">BASE PRICE</p> <p style="text-align: center;">Add \$4.80 per inch of stroke</p>	<p><b>Reverse Single Acting – Pull Type</b> – Rod Normally Extended – Spring Return – Front Nose Mounting</p> <p><b>Standard Stroke Lengths:</b> ½", 1", 1½", 2", 2½", 3", 4" Maximum Stroke – 4" Optional Stainless Steel Rod</p> <p><b>Optional Accessories:</b> D-615 Mounting Bracket D-508 Mounting Nut <b>Base Weight: 1.24</b> <b>Adder Per Inch of Stroke: .43</b></p>	
<p style="font-size: 24pt; font-weight: bold;">31□-RP</p>  <p style="font-size: 24pt; font-weight: bold; text-align: center;">\$59.35</p> <p style="text-align: center;">BASE PRICE</p> <p style="text-align: center;">Add \$4.80 per inch of stroke</p>	<p><b>Reverse Single Acting – Pivot and Pull Type</b> – Rod Normally Extended – Spring Return – Rear Pivot Mounting</p> <p><b>Standard Stroke Lengths:</b> ½", 1", 1½", 2", 2½", 3", 4" Maximum Stroke – 4" Optional Stainless Steel Rod</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 style="font-size: 24pt; font-weight: bold;">31□-D</p>  <p style="font-size: 24pt; font-weight: bold; text-align: center;">\$45.15</p> <p style="text-align: center;">BASE PRICE</p> <p style="text-align: center;">Add \$2.30 per inch of stroke</p>	<p><b>Double Acting – Air Return – Front Nose Mounting</b></p> <p><b>Standard Stroke Lengths:</b> ½", 1", 1½", 2", 2½", 3", 4", 5", 6" Maximum Stroke – 12" Optional Stainless Steel Rod</p> <p><b>Optional Accessories:</b> D-508 Mounting Nut D-615 Mounting Bracket <b>Base Weight: 1.40</b> <b>Adder Per Inch of Stroke: .15</b></p>	
<p style="font-size: 24pt; font-weight: bold;">31□-DXP</p>  <p style="font-size: 24pt; font-weight: bold; text-align: center;">\$54.20</p> <p style="text-align: center;">BASE PRICE</p> <p style="text-align: center;">Add \$2.40 per inch of stroke</p>	<p><b>Double Acting – Universal Mounting Type – Pivot or Double End – Air Return – Bronze Pivot Bushing</b></p> <p><b>Standard Stroke Lengths:</b> 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</p> <p><b>Optional Accessories:</b> D-231-3 Piston Rod Clevis D-615 Mounting Bracket D-620 Pivot Brackets D-508 Mounting Nut <b>Base Weight: 1.62</b> <b>Adder Per Inch of Stroke: .15</b></p>	

# ORDER ONLINE 2" Bore Air Cylinders

MODEL/PRICE	DESCRIPTION/WEIGHT (lbs.)	DIMENSIONS
<b>31□-DXDE</b>  <b>\$66.85</b> BASE PRICE Add \$3.45 per inch of stroke	<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" Maximum Stroke – 12" Stainless Steel Rod Standard <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>	

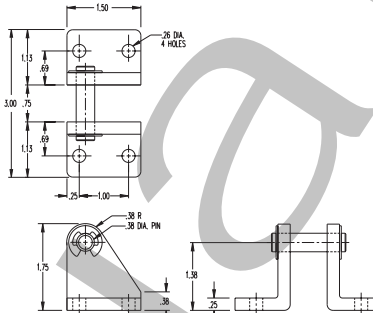
## 2" Bore Accessories

**D-615**  
**\$8.00**



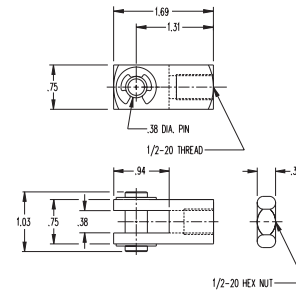
Mounting Bracket

**D-620**  
**\$11.20**



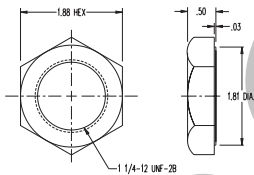
Pivot Brackets

**D-231-3**  
**\$5.05**



Piston Rod Clevis

**D-508**  
**\$2.90**



Mounting Nut

**Note:** For stainless steel accessories see page 106 and 109-110.

- Flow Controls
- Alignment Couplers
- Original Line Cylinders
- Cushion Cylinders
- MRS Cylinders
- Non-Rotating Cylinders
- PC Cylinders
- Z Line Cylinders
- Rod Lock Cylinders
- 500 Hydraulic Cylinders
- Hole Punchers Air Reservoirs
- Position Sens Switches

# ORDER ONLINE 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)

- \$5.65 additional
- Add .250 to overall length

Enter Stroke Length as 3rd Digit

## OPTIONS continued...

### EXTRA EXTENSION (EE)

- Double acting, add \$1.25 per inch of extension
- DXDE, add \$2.05 per inch of extension; extension added to each end

### MAGNET (prefix M) – Add \$14.65

- Stainless steel rod becomes standard with this option
- Must specify track(s) for use with miniature position sensing (T2, T3, T4) – add \$2.50 per track. See page 140 for details.

### LOW TEMPERATURE (N)

Temperature Range: -40° to 200°F

- Double acting add \$3.15
- DXDE add \$4.20

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

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

- Double acting add \$16.10
- DXDE add \$21.30

### MOLYCOATED BODY (F)

- Add \$2.30 per inch of stroke

### NON-LUBE SERVICE (E)

- Double acting add \$15.30
- DXDE add \$18.00

### ROD WIPER (W)

(not available in standard single acting)

- Add \$5.00

### STAINLESS STEEL ROD (prefix SR)

- Add \$3.45
- Standard on M option, DXP, DXDE

## MODEL/PRICE

## DESCRIPTION/WEIGHT (lbs.)

## DIMENSIONS

### 50□-D

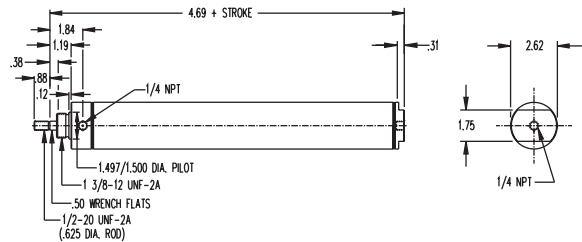


### \$64.70

**BASE PRICE**

Add \$2.50 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

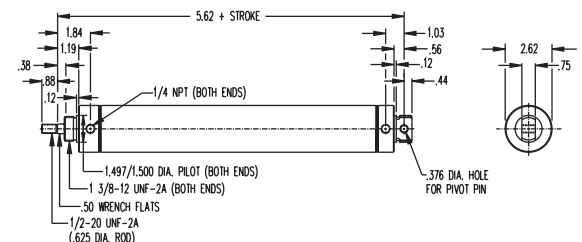


### \$76.00


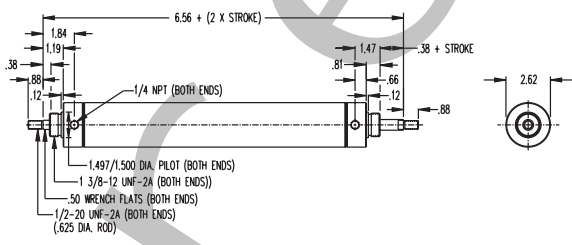
**BASE PRICE**

Add \$2.60 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**

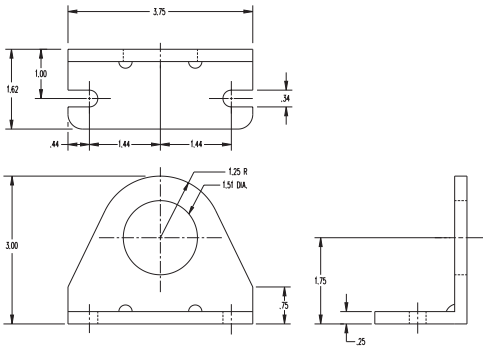


# ORDER ONLINE 2-1/2" Bore Air Cylinders

MODEL/PRICE	DESCRIPTION/WEIGHT (lbs.)	DIMENSIONS
<b>50□-DXDE</b>    <b>\$88.65</b> BASE PRICE Add \$4.05 per inch of stroke	<b>Double Acting – Double End Rod – Air Return – Double End Mounting</b> <b>Standard Stroke Lengths:</b> ½", 1", 1½", <b>2"</b> , 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-615-1 Mounting Bracket D-2540 Mounting Nut <b>Base Weight: 2.32</b> <b>Adder Per Inch of Stroke: .34</b>	

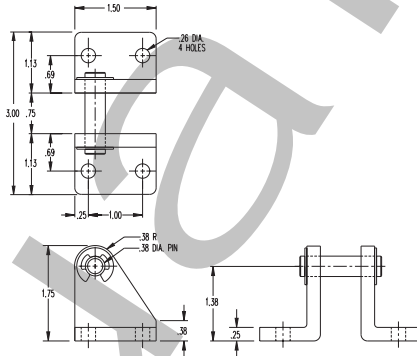
## 2-1/2" Bore Accessories

**D-615-1**  
\$8.45



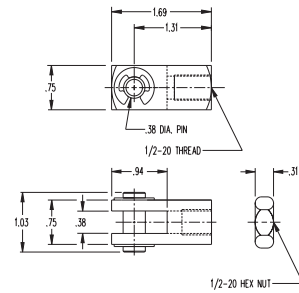
Mounting Bracket

**D-620**  
\$11.20



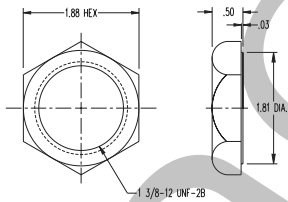
Pivot Brackets

**D-231-3**  
\$5.05



Piston Rod Clevis

**D-2540**  
\$3.70



Mounting Nut

- Flow Controls
- Alignment Couplers
- Original Line Cylinders
- Cushion Cylinders
- MRS Cylinders
- Non-Rotating Cylinders
- PC Cylinders
- ZLine Cylinders
- Rod Lock Cylinders
- 500 Hydraulic Cylinders
- Hole Punchers Air Reservoirs
- Position Sens Switches

# 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)

- \$7.35 additional
- Add .250 to the length

Enter Stroke Length as 3rd Digit

## OPTIONS continued...

### EXTRA EXTENSION (EE)

- Double acting, add \$1.50 per inch of extension
- DXDE, add \$2.15 per inch of extension; extension added to each end

### MAGNET (prefix M) – Add \$26.15

- Stainless steel rod becomes standard with this option
- Must specify track(s) for use with miniature position sensing (T2, T3, T4) – add \$2.50 per track. See page 140 for details.

### LOW TEMPERATURE (N)

Temperature Range: -40° to 200°F

- Double acting add \$3.15
- DXDE add \$4.20

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

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

- Double acting add \$16.95
- DXDE add \$22.45

### MOLYCOATED BODY (F)

- Add \$2.30 per inch of stroke

### NON-LUBE SERVICE (E)

- Double acting add \$18.10
- DXDE add \$20.80

### ROD WIPER (W)

(not available in standard single acting)

- Add \$5.00

### STAINLESS STEEL ROD (prefix SR)

- Add \$4.20
- Standard on DXP, DXDE, and M option

## MODEL/PRICE

## DESCRIPTION/WEIGHT (lbs.)

## DIMENSIONS

### 70□-D

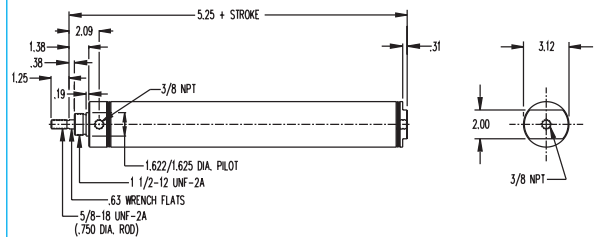


**\$92.05**

**BASE PRICE**

Add \$3.00 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

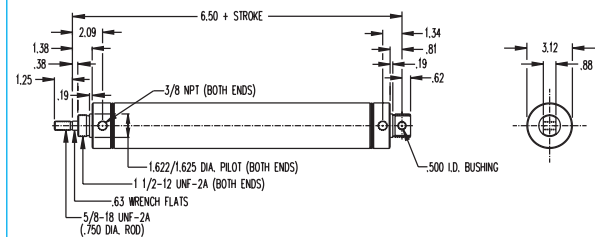


**\$103.65**


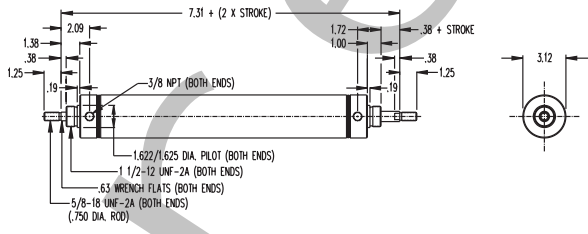
**BASE PRICE**

Add \$3.15 per inch of stroke

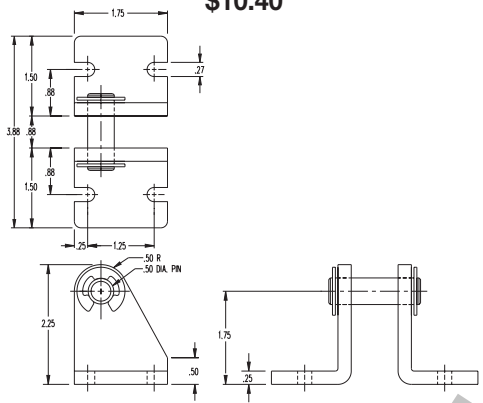
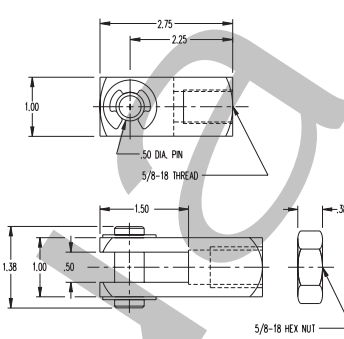
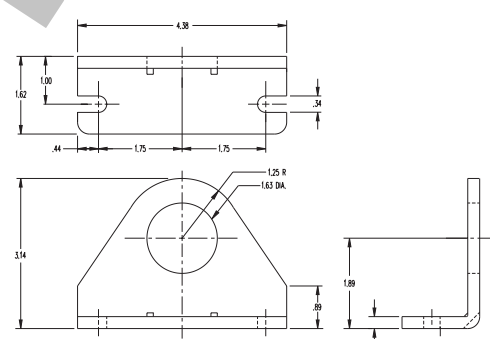
**Double Acting – Universal Mount Pivot or Double End Mounting**  
**Standard Stroke Lengths:**  
 ½", 1", 1½", 2", 2½", 3", 4", 5", 6", 7", 8", 9", 10", 11", 12", 13", 14", 15", 16", 17", 18", 19", 20", 21", 22", 23", 24"  
 Maximum Stroke – 32"  
 Stainless Steel Rod Standard  
**Optional Accessories:**  
 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**

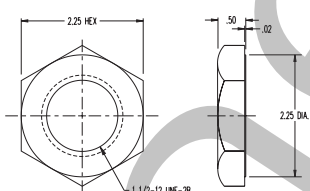


# ORDER ONLINE 3" Bore Air Cylinders

MODEL/PRICE	DESCRIPTION/WEIGHT (lbs.)	DIMENSIONS
<p><b>70□-DXDE</b></p>  <p><b>\$114.65</b> BASE PRICE Add \$4.25 per inch of stroke</p>	<p><b>Double Acting – Double End Rod – Double End Mounting</b> Standard Stroke Lengths: ½", 1", 1½", 2", 2½", 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: 4.05 Adder Per Inch of Stroke: .52</p>	

## 3" Bore Accessories

<p><b>D-13512-A</b> \$10.40</p>  <p>Pivot Bracket</p>	<p><b>D-8314-A</b> \$10.70</p>  <p>Rod Clevis</p>	<p><b>D-19127</b> \$7.85</p>  <p>Mounting Bracket</p>
---	---	--

<p><b>D-5379</b> \$3.70</p>  <p>Mounting Nut</p>
---

- Flow Controls
- Alignment Couplers
- Original Line Cylinders
- Cushion Cylinders
- MRS Cylinders
- Non-Rotating Cylinders
- PC Cylinders
- ZLine Cylinders
- Rod Lock Cylinders
- 500 Hydraulic Cylinders
- Hole Punchers Air Reservoirs
- Position Sens Switches

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