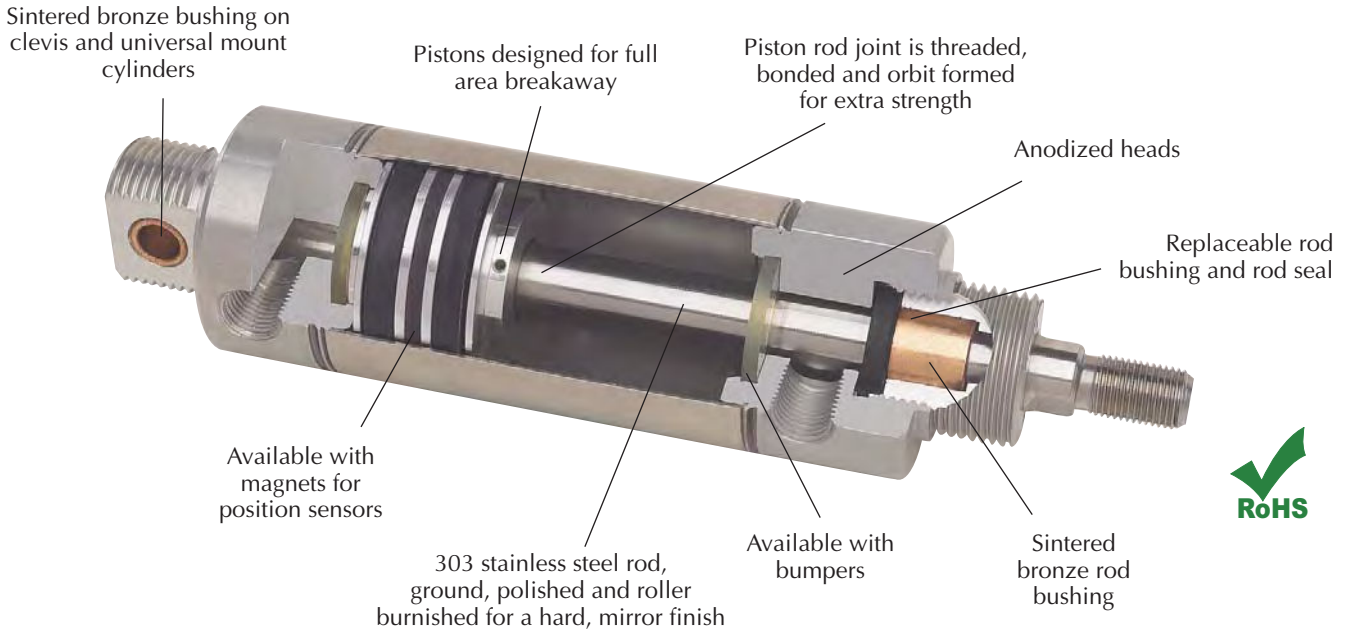
Stainless Steel Cylinder Construction

In the early 1950's, Clippard introduced miniature pneumatic cylinders and valves to industry. No other manufacturer can boast of the same experience or knowledge of miniature components.

Air cylinders have always been an integral part of the Clippard Minimatic® line. Over the years Clippard has responded to requests from cylinder users to provide additional sizes of air cylinders and auxiliary support products. While competitively priced, these products maintain the Clippard standard for quality and reliability that has been the industry standard for many years.



Features

- Polished I.D. 304 stainless steel tubes for low breakaway
- Precision rolled construction for a solid, leakproof cylinder at a reasonable price
- Machined aluminum heads are clear anodized for extra protection against corrosion
- Cylinder heads are machined from one side for better concentricity
- Sintered bronze rod bushing
- Sintered bronze clevis bushing on all clevis and universal mount cylinders
- Rods are threaded, bonded and orbit formed to pistons
- Replaceable rod seal on 28 through 48 series
- Ground, polished and roller burnished 303 stainless rods provide a smoother rod finish that protects rod seals, giving longer life
- Full piston area breakaway to assure full power from the beginning of each stroke
- Nitrile "U"-cup piston seals for full power, low friction and trouble-free performance
- Nitrile "U"-cup rod seals for leakproof operation
- Temperature range: 32 to 230˚F
- Maximum pressure: 250 psig

NUMBERING SYSTEM

❑ ❑ ❑ - ❑ - ❑ - ❑

Mounting Type
S - Stud
U - Universal
C - Clevis
F - Front Block
E - End Stud
T - Trunnion

Cylinder Type
D - Double Acting
S - Single Acting
R - Reverse Acting
F - Front Spring Bias
B - Back Spring Bias

Rod Type
D - Double Ended Rod
R - Rotating Rod
N - Non-Rotating Rod
H - Hollow Rod

Bore
5/32″ - page 9
05 - 5/16″
08 - 1/2″
09 - 9/16″
10 - 5/8″
12 - 3/4″
14 - 7/8″
17 - 1 1/16″
20 - 1 1/4″
24 - 1 1/2″
28 - 1 3/4″
32 - 2″
40 - 2 1/2″
48 - 3″

Stroke
In inches & fractions of an inch

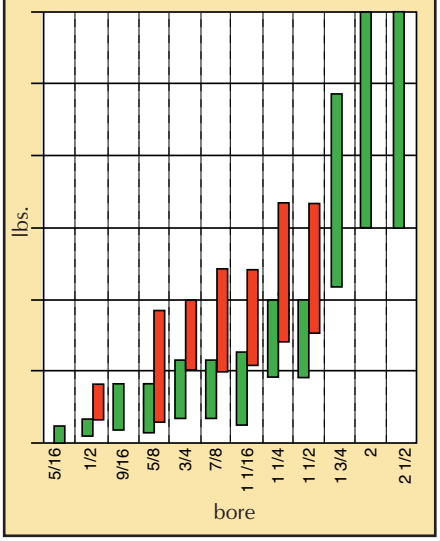
Options
C - Cushions
F - Cushion Front End
R - Cushion Rear End
M - Magnetic Piston for Position Sensors
B - Bumpers
W - Rod Wiper
V - FKM Seals
N - No Threads
S - Side Ported
H - Heavy Spring
P* - Rotated Ports
* *See page 4*
TG - PTFE Based Grease

RoHS

Not all combinations are available - consult factory

SPECIFICATIONS

STAINLESS STEEL CYLINDER
STANDARD & HEAVY SPRING FORCES

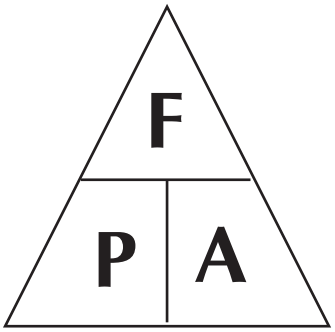


Bore Size	5/16″	1/2″	9/16″	5/8″	3/4″	7/8″	1-1/16″	1-1/4″	1-1/2″	1-3/4″	2″	2-1/2″	3″
Force Factor - Extend (Area)	0.07	0.19	0.25	0.31	0.44	0.60	0.88	1.2	1.7	2.4	3.1	4.9	7.0
Rod Size	1/8″	3/16″	3/16″	3/16″	1/4″	1/4″	5/16″	3/8″	7/16″	1/2″	5/8″	5/8″	3/4″
Rod Area	0.01	0.03	0.03	0.03	0.05	0.05	0.08	0.11	0.15	0.20	0.31	0.31	0.44
Force Factor - Retract (Area)	0.06	0.16	0.22	0.28	0.39	0.55	0.80	1.09	1.55	2.20	2.90	4.59	6.56

The force required, operating air pressure and cylinder bore are all factors that must be determined or known when sizing an air cylinder. If two are known the other is easily calculated per the formulas and triangle shown below.

Area is derived using either of the following formulas: **Diameter ^{2} x 0.7854 or Radius ^{2} x π**

F - Force or load in pounds — **F = P x A**
P - Pressure — **P = F / A**
A - Area of cylinder (square inches) — **A = F / P**



Standard Spring Forces (lbs)

Bore	5/16″	1/2″	9/16″	5/8″	3/4″	7/8″	1-1/16″	1-1/4″	1-1/2″	1-3/4″	2″	2-1/2″
At Rest	0.5	0.9	1.7	1.3	3.0	3.0	2.0	4.5	4.5	11.0	15.0	15.0
Compressed	1.0	2.0	4.0	4.0	6.0	6.0	7.0	10.0	10.0	24.0	30.0	30.0

Heavy Spring Forces (lbs)

Bore	5/16″	1/2″	9/16″	5/8″	3/4″	7/8″	1-1/16″	1-1/4″	1-1/2″	1-3/4″	2″	2-1/2″
At Rest	N/A	2.0	N/A	3.3	5.0	5.0	5.5	8.5	8.5	N/A	N/A	N/A
Compressed	N/A	4.0	N/A	9.0	10.0	10.0	13.0	17.0	17.0	N/A	N/A	N/A

OPTIONS

The following options are available with Clippard stainless steel cylinders. Available options are shown by the abbreviations noted in the information shown with each standard cylinder.

FKM Seals -V

This option is used in applications where chemical resistance, compatibility and temperature become an issue. Temperature ranges: -20 up to 400°F.

Cushions -C

(Front Cushion Only) -F

(Rear Cushion Only) -R

Clippard's cushion cylinders offer an adjustable cushion to slow the cylinder near the end of the stroke to reduce impact and prolong cylinder life. Our adjustment needle is held captive to prevent the needle from blowing out. The cushion can be adjusted to have a dead stop 1/2" from end of stroke or adjusted to have virtually no effect on the action of the cylinder. See specific cylinder specifications for availability of this option. See pages 5 and 6 for additional information.

No Rod Threads -N

Rods are provided with no threads when this option is ordered.

Magnetic Piston -M

Clippard stainless steel pneumatic cylinders that are equipped with an internal magnet can be used with the Reed Switch and GMR Sensor. By accurately sensing the magnetic field of the piston when it passes beneath the sensor, the position of the rod piston is determined, and the feedback signal is created. Use of this option may add to the overall length of the cylinder. See specific cylinder listings on the following pages for availability and details of the overall length adder.

Rod Wipers -W

Rod Wipers are added to cylinders in applications where a liquid wash could dry out the rod seals of a double acting cylinder.

Heavy Spring -H

In single acting, reverse acting or spring bias cylinders the standard spring force can be changed by ordering the -H option. The spring forces for the heavy springs are shown on page 3.

Private Label Option

Call Clippard for further information about private label options.

If you can't find a cylinder to suit your needs call your Clippard distributor to inquire about custom cylinders.

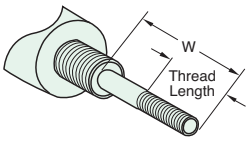
Bumpers -B

Internal polyurethane bumpers are supplied for applications where the cylinder is cycled with a light load and/or high speeds. The elastic bumpers reduce noise and shock to the load. Use of this option may add to the overall length of the cylinder. See specific cylinder listings on the following pages for availability and details of the overall length added. Maximum temperature 200˚F.

Side Ported -S

Side ported rear heads are sometimes needed when the standard cylinder has the rear port out the back. This option changes the design of the rear head so the rear port is located on the side of the cylinder. Overall length of cylinder changes with this option.

Rod Extensions

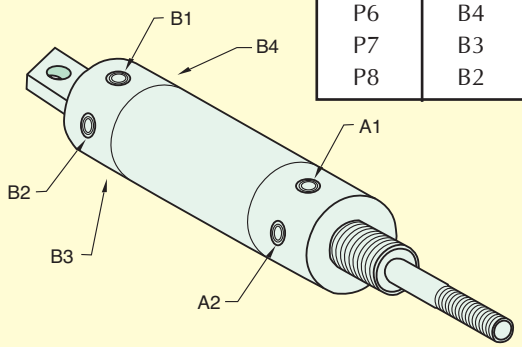


If a special rod extension is required, please refer to the drawing at left. For a special rod extension on single- or double-acting cylinders, indicate desired "W" when rod is at rest (retracted) with no pressure to either port. For reverse acting cylinders, indicate "W" when rod is at rest (extended) with no pressure to either port.

W = _____ ***Thread Length =*** _____

Rotated Ports

Option #	Rear Port	Front Port
P2	B2	A2
P3	B1	A2
P4	B4	A2
P5	B3	A2
P6	B4	A1
P7	B3	A1
P8	B2	A1



This option is used in applications where ports need to be rotated to accommodate a specific space requirement or port orientation for the fittings and tube attachments. The diagram explains the options and orientation of the ports. See the specific cylinder to find availability of these options.

CUSHIONED CYLINDERS

FEATURES

- Easily accessible, stainless steel needle for fine adjustment of cushion
- Needle cannot be removed
- Long lasting Nitrile cushion seal
- Cushions the last 1/2" of stroke
- Available at either end or both ends of the cylinder
- Available with magnetic pistons
- Bumpers included on the non-cushioned end of the 1 1/16" and 1 1/2" bore cylinders with only one cushion

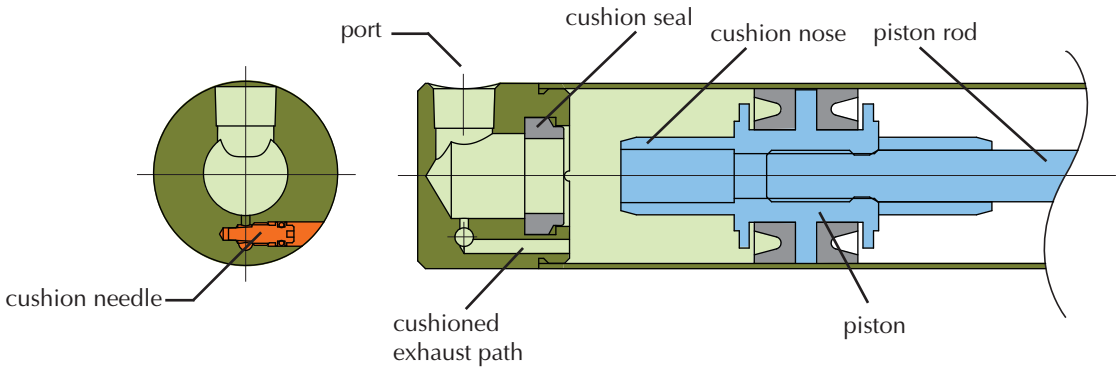
Option Suffix: "C"- Front/Rear Cushions
"F" - Front Cushion only
"R" - Rear Cushion only

Pneumatic cushions decelerate the piston and rod assembly at the end of the cylinders travel, reducing internal impact force/noise and enabling faster piston velocities. In fast cycling applications, cushioned cylinders will provide superior life and a better machine environment. Cushions cannot be added to existing cylinders because this option requires additional components and machining. A cushion nose is located on either or both sides of the piston, depending on which cushion option is selected.

The heads of a cushioned cylinder have a cushion pocket with a cushion seal. When the cushion nose enters the cushion seal, the air exiting the cylinder is trapped causing it to compress. This provides a resistance force that decelerates the piston. In this design, a needle valve in the head provides a parallel path for the air to exit, and is used to fine-tune the cushions' effectiveness. This needle design has a high flow gain, which allows the user to tune the cushion anywhere from little effect to actually stopping the cylinder. The cushion seal collapses when air coming through the adjacent port is introduced, allowing for a fast breakaway

Cushioned cylinders are not designed to decelerate machine members or take the place of shock absorbers in applications with high kinetic energy.

Note: Bumpers ("B" option) cannot be used with cushions but can be used opposite a cushion



SDR- models have side ported rear heads

Cushioned Cylinders

Following is a list of stainless steel cylinders that are available with front, rear and/or both front and rear cushions.

Option Suffix: "C"- Front/Rear Cushions
"F" - Front Cushion only
"R" - Rear Cushion only

Part No. Prefix	Mount	Bore Size	Rod Type	Cushion(s)		
				Front/Rear	Front	Rear
SDD-12-	Stud	3/4"	Double Ended	•	•	
SDH-12-	Stud	3/4"	Hollow	•	•	•
*SDR-12-	Stud	3/4"	Rotating	•	•	•
UDR-12-	Universal	3/4"	Rotating	•	•	•
SDD-14-	Stud	7/8"	Double Ended	•	•	
SDH-14-	Stud	7/8"	Hollow	•	•	
*SDR-14-	Stud	7/8"	Rotating	•	•	•
UDR-14-	Universal	7/8"	Rotating	•	•	•
SDD-17-	Stud	1 1/16"	Double Ended	•	•	
SDH-17-	Stud	1 1/16"	Hollow	•	•	•
*SDR-17-	Stud	1 1/16"	Rotating	•	•	•
UDR-17-	Universal	1 1/16"	Rotating	•	•	•
SDD-20-	Stud	1 1/4"	Double Ended	•	•	
*SDR-20-	Stud	1 1/4"	Rotating	•	•	•
UDR-20-	Universal	1 1/4"	Rotating	•	•	•
CDR-24-	Clevis	1 1/2"	Rotating	•	•	•
EDR-24-	End Stud	1 1/2"	Rotating	•	•	•
SDD-24-	Stud	1 1/2"	Double Ended	•	•	
*SDR-24-	Stud	1 1/2"	Rotating	•	•	•
SDD-28-	Stud	1 3/4"	Double Ended	•	•	
*SDR-28-	Stud	1 3/4"	Rotating	•	•	•
UDR-28-	Universal	1 3/4"	Rotating	•	•	•
SDD-32-	Stud	2"	Double Ended	•	•	
*SDR-32-	Stud	2"	Rotating	•	•	•
UDR-32-	Universal	2"	Rotating	•	•	•
SDD-40-	Stud	2 1/2"	Double Ended	•	•	
*SDR-40-	Stud	2 1/2"	Rotating	•	•	•
UDR-40-	Universal	2 1/2"	Rotating	•	•	•

** SDR- models have side ported rear heads*

STROKE LENGTHS

Standard stroke lengths for each bore size and cylinder style are listed in this catalog. Non-standard stroke lengths (not listed in the catalog) up to 24″ for single acting cylinders and 36″ for double acting cylinders are available. Stroke length should be specified in inches and fractions of an inch. Consult the factory for other requirements.

In applications, attention should be given to minimizing the side load on the rod to insure a smooth stroke without binding. Also, in applications where the cylinder rod is subjected to an unsupported column load, the load on the rod should be less than the force shown in the table below to prevent buckling of the rod.

Maximum Load (lbs) to Prevent Buckling of the Rod

Rod dia.	Rod Length								
	1″	5″	10″	15″	20″	25″	30″	35″	40″
1/8″	110	12	3	1.3					
3/16″	262	59	15	6.6	3.7				
1/4″	478	190	47	21	12	7.5			
5/16″	756	451	116	52	29	19	13		
3/8″	1091	786	240	106	60	38	27	20	
7/16″	1490	1184	444	197	111	71	49	36	28
1/2″	1950	1645	757	336	189	120	84	62	47
5/8″	3055	2750	1795	821	462	295	205	150	115
3/4″	4405	4100	3140	1700	950	613	425	312	240

Rod Thread	Bore Size	Series	Rod Size	Rod Flats
#5-40 UNC-2A	5/16″	05	1/8″	none
#10-32 UNF-2A	1/2″	08	3/16″	none
#10-32UNF-2A	9/16″	09	3/16″	none
#10-32 UNF-2A	5/8″	10	3/16″	none
1/4-28 UNF-2A	3/4″	12	1/4″	0.218
1/4-28 UNF-2A	7/8″	14	1/4″	0.218
5/16-24 UNF-2A	1 1/16″	17	5/16″	0.250
3/8-24 UNF-2A	1 1/4″	20	3/8″	0.312
7/16-20 UNF-2A	1 1/2″	24	7/16″	0.375
1/2-20 UNF-2A	1 3/4″	28	1/2″	0.437
1/2-20 UNF-2A	2″	32	5/8″	0.500
1/2-20 UNF-2A	2 1/2″	40	5/8″	0.500
5/8-18 UNF-2A	3″	48	3/4″	0.625

CUSTOM CYLINDERS

If your application requires a custom feature that you do not see in our catalog please contact our distributor in your area for assistance. We manufacture a wide variety of special cylinders. Examples of our custom cylinder capabilities would include: stroke and rod modifications, special mounting configurations and ports, seal and lubrication options, integrated valving and adjustable stroke cylinders. We also provide application based special cylinder design for those customers having unique parameters.

FREE CYLINDER SAMPLE PROGRAM

We invite competitive comparisons. If you are an OEM that uses air cylinders, Clippard will provide a free sample for your evaluation. Contact us or your local distributor and ask for the "Free Sample CILinder" request form.

POSITION SENSORS

Clippard stainless steel pneumatic cylinders that are equipped with an internal magnet can be used with the Reed Switch and GMR Sensor. By accurately sensing the magnetic field of the piston when it passes beneath the sensor, the position of the rod piston is determined, and the feedback signal is created. Use of this option may add to the overall length of the cylinder. See specific cylinder listings on the following pages for availability and details of the overall length adder.

GMR (Giant Magneto Resistive) Sensor

Clippard's GMR sensor is a solid-state device that is made up of alternating layers of conductive magnetic and non-magnetic materials. When a magnetic field is applied, there is a large drop in resistance. This decrease produces a signal that can be used to determine the location of the piston.

Some of the benefits of GMR technology include small size, high durability, high sensitivity, high response time, low power consumption and low cost. These benefits make this sensor a clear choice for piston location in pneumatic system control.

A 1/2" minimum stroke is required when multiple sensors are used.

A 1/2" minimum stroke is required when multiple sensors are used.

Reed Switch

Clippard's Reed Switch is a Single Pole, Single Throw (SPST) Normally-Open electronic switch. When the cylinder's magnet-equipped piston moves to a location where the magnet is positioned below the Reed Switch, the Switch sends a feedback signal to indicate the location of the piston.

ACCESSORIES

Mounting Hardware

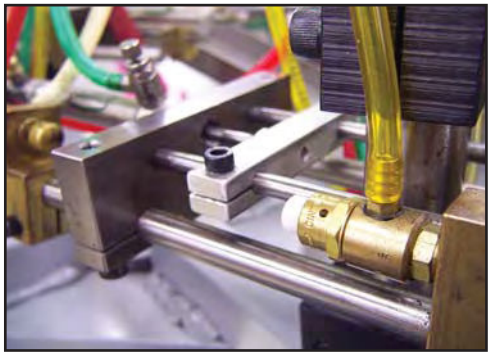
For efficient power and easy mounting, Clippard has designed and manufactured brackets suitable for each cylinder shown in this catalog.

These products are shown on the last page of each corresponding bore size and include clevis mounting brackets, foot mounting brackets, rod clevis assemblies and rod eye assemblies. Extra mounting nuts are available.

CUSTOMer solutions

If you need a product that fits your application perfectly, Clippard has the capability to design or modify one of its products to suit your exact needs. We understand that a standard catalog product may be close but not be exactly what you need. Let us know YOUR Need, and we will help to find YOUR Solution!

5/32″ Bore Stainless Steel Cylinder & Accessories



Limit Valves

A limit valve is the best way to have a mechanical limit to return air signals to control valves or circuits. Clippard offers limit valves in ports ranging from #3-56 up to 1/8″ NPT, high force and heavy duty limits as well as non-contact sensing valves. See Directional Control Valves section.

Quick Exhaust Valves

The primary function of a quick exhaust valve is to increase cylinder speed. This also enables the use of smaller directional valves and longer control lines. Offered with several port configurations from #10-32 models up to 1/4″. See pages 164 and 165.

Flow Controls

Clippard offers a large variety of flow controls and needle valves for adjusting the speed of the cylinder. Several models are available from fine adjustments to coarse adjustments in a variety of mounting configurations. See pages 157 through 160.

Pilot-Operated Check Valves

These valves provide control functions with cylinders and with other control circuits. See page 152 for a complete range of Pilot-Operated Check Valves.

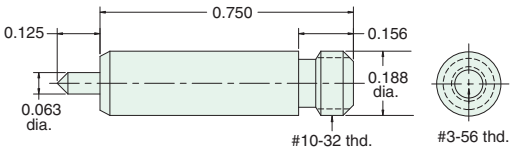
SM-2

Single Acting

Bore: 5/32″
Mount: Rear Thread
Type: Spring Return
Available Stroke Length: 1/4″
Materials: Stainless steel body, piston & rod, Nitrile U-cup, Beryllium copper spring

Did you know...

The tiny SM-2 cylinder gives 2 lbs. of force at 100 psig.



SM-3-❑

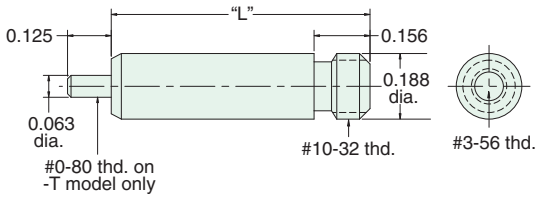
Single Acting

Bore: 5/32″
Mount: Rear Thread
Type: Spring Return

Model	SM-3-1	SM-3-2	SM-3-3	SM-3-4
Stroke	1/4″	1/2″	3/4″	1″
Length "L"	0.740	1.171	1.593	2.000

Materials: Stainless steel tube and rod, brass piston, Nitrile U-cup

To order: Add stroke length to the end of the part number



5/16″ Bore Stainless Steel Cylinder

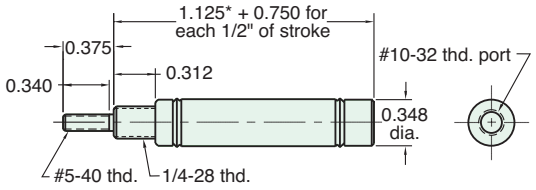
SSR-05-❑-❑

Single Acting

Mount: Stud
Type: Rotating Rod
Options: B, V, N, S

Standard Stroke Lengths: 1/2″, 1″, 1-1/2″, 2″, 3″, 4″
Spring Compressed: 1 lbs. **Spring At Rest:** 0.5 lbs.
Maximum Stroke: 29″

For B option add 0.250
For S option add 0.220



Nut included, but not shown on drawing

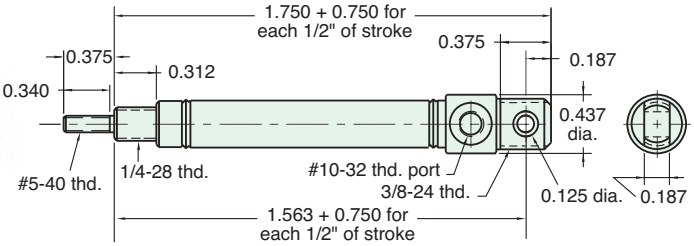
USR-05-❑-❑

Single Acting

Mount: Universal
Type: Rotating Rod
Options: B, V, N, P6

Standard Stroke Lengths: 1/2″, 1″, 1-1/2″, 2″, 3″, 4″
Spring Compressed: 1 lbs. **Spring At Rest:** 0.5 lbs.
Maximum Stroke: 29″

For B option add 0.250



Nuts included, but not shown on drawing

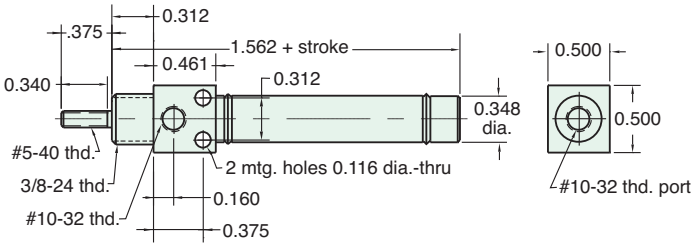
SDR-05-❑-❑

Double Acting

Mount: Stud
Type: Rotating Rod
Options: B, V, N, S, P6, P7, P8

Standard Stroke Lengths: 1/2″, 1″, 1-1/2″, 2″, 3″, 4″
Maximum Stroke: 43″

For B option add 0.250
For S option add 0.220



Nut included, but not shown on drawing

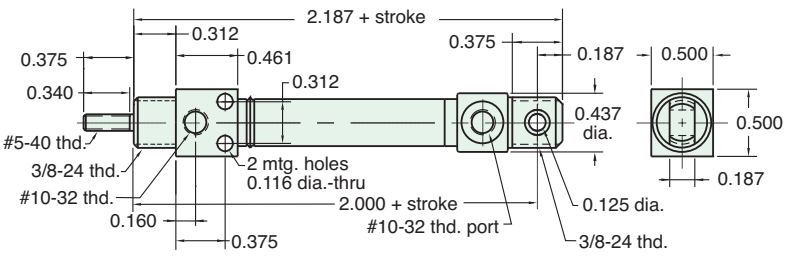
UDR-05-❑-❑

Double Acting

Mount: Universal
Type: Rotating Rod
Options: B, V, N, P2, P3, P4, P5, P6, P7, P8

Standard Stroke Lengths: 1/2″, 1″, 1-1/2″, 2″, 3″, 4″
Maximum Stroke: 43″

For B option add 0.250



Nuts included, but not shown on drawing

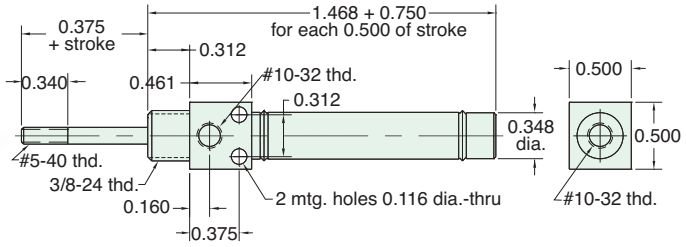
5/16″ Bore Stainless Steel Cylinder

SRR-05-❑-❑

Reverse Acting

Mount: Stud
Type: Rotating Rod
Options: B, V, N

Standard Stroke Lengths: 1/2″, 1″, 1-1/2″, 2″, 3″, 4″
Spring Compressed: 1 lbs. **Spring At Rest:** 0.5 lbs.
Maximum Stroke: 17″
For B option add 0.250



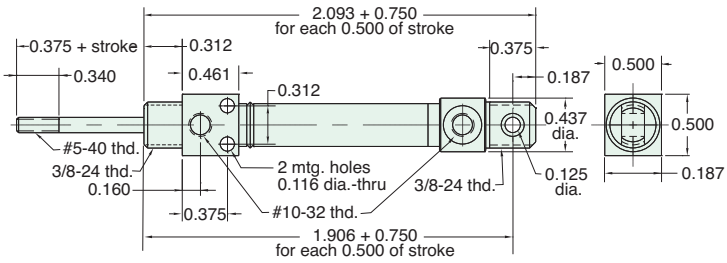
Nuts included, but not shown on drawing

URR-05-❑-❑

Reverse Acting

Mount: Universal
Type: Rotating Rod
Options: B, V, N, P2, P3, P4, P5, P6, P7, P8

Standard Stroke Lengths: 1/2″, 1″, 1-1/2″, 2″, 3″, 4″
Spring Compressed: 1 lbs. **Spring At Rest:** 0.5 lbs.
Maximum Stroke: 17″
For B option add 0.250

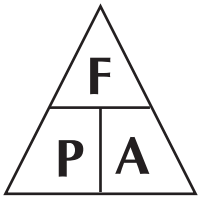


Nuts included, but not shown on drawing

Force Factor

The "force factor" is the nominal area of the cylinder bore size. The chart to the right provides theoretical forces in both the extend and retract stroke of all available bore sizes.

These values are theoretical and make no allowance for friction which varies with the bore size. It is recommended that a 25% safety factor be allowed when selecting a cylinder bore for normal load movement. In high speed applications that number should be at least 40%.

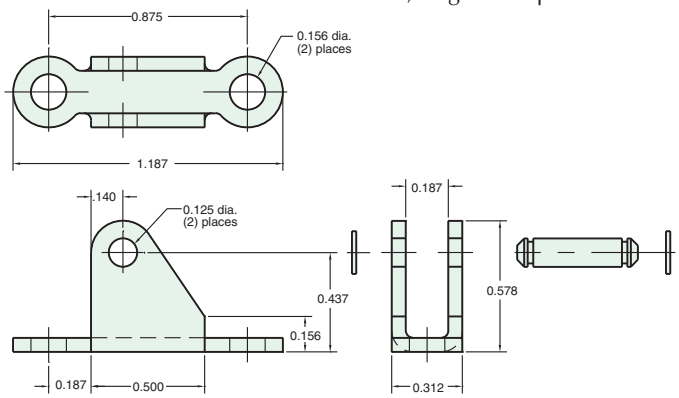


The extend and retract values differ due to the rod diameter.

Bore Size												
5/16″	1/2″	9/16″	5/8″	3/4″	7/8″	1-1/16″	1-1/4″	1-1/2″	1-3/4″	2″	2-1/2″	3″
Force Factor - Extend (area)												
0.07	0.19	0.25	0.31	0.44	0.60	0.88	1.2	1.7	2.4	3.1	4.9	7.0
Rod Size												
1/8″	3/16″	3/16″	3/16″	1/4″	1/4″	5/16″	3/8″	7/16″	1/2″	5/8″	5/8″	3/4″
Rod Area												
0.01	0.03	0.03	0.03	0.05	0.05	0.08	0.11	0.15	00.20	0.20	0.31	0.44
Force Factor - Retract (area)												
0.06	0.16	0.22	0.28	0.39	0.55	0.80	1.09	1.55	2.2	2.9	4.59	6.56
20 psig - Extend (lbs)												
1.4	3.8	4.9	6.2	8.8	12.0	17.6	24.0	34.0	48.0	62.0	98.0	140.0
20 psig - Retract (lbs)												
1.16	3.25	4.4	5.65	7.82	11.02	16.07	21.79	31.0	44.07	58.07	91.86	131.16
50 psig - Extend (lbs)												
3.5	9.5	12.4	15.5	22.0	30.0	44.0	60.0	85.0	120.0	155.0	245.0	350.0
50 psig - Retract (lbs)												
2.9	8.13	11.00	14.13	19.55	27.55	40.17	54.48	77.5	110.18	145.18	229.66	327.91
80 psig - Extend (lbs)												
5.6	15.2	19.8	24.8	35.2	48.0	70.4	96.0	136.0	192.0	248.0	392.0	560.0
80 psig - Retract (lbs)												
4.64	13.0	17.6	22.6	31.27	44.07	64.26	87.17	124.0	176.29	232.29	367.46	524.66

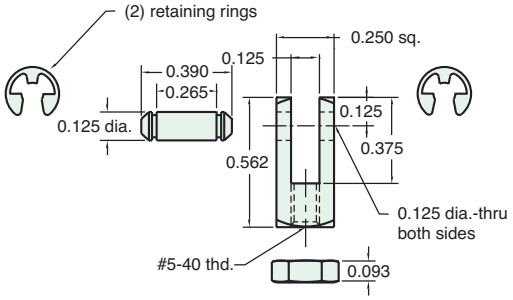
CB-0595

Clevis Bracket
Material: Steel, bright zinc plated



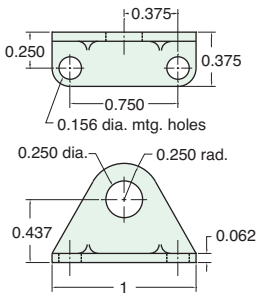
RC-0581

Rod Clevis
Material: Steel, electroless nickel plate



FB-0591

Foot Bracket
Material: Steel, bright zinc plated



Mounting Nuts

Stud Nut

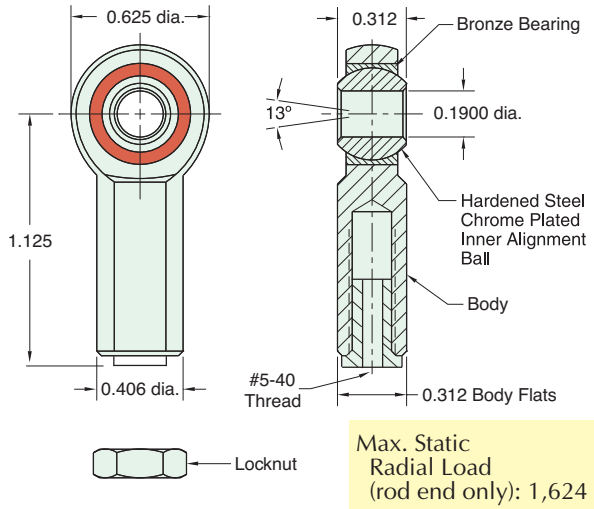
Part Number	Across Flats	Nut Thickness	Nut (Thread)
N04-28A	7/16″	5/32″	1/4-28
N04-28B	3/8″	1/8″	1/4-28
N06-24A	9/16″	7/32″	3/8-24
N06-24B	1/2″	3/32″	3/8-24

Rod Nut

Part Number	Across Flats	Nut Thickness	Nut (Thread)
N02-40	1/4″	3/32″	#5-40

RE-0585

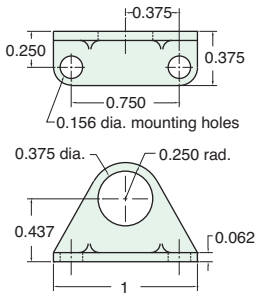
Rod End
Material: Steel, bright zinc plated body



Max. Static
Radial Load
(rod end only): 1,624 lbs.
Fits Rod Thread
Size: #5-40

FB-0592

Foot Bracket
Material: Steel, bright zinc plated



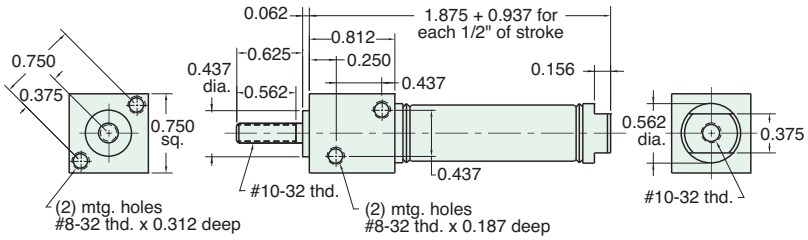
1/2″ Bore Stainless Steel Cylinder

FSR-08-❑-❑

Single Acting

Mount: Front **Standard Stroke Lengths:** 1/2″, 1″, 1-1/2″, 2″, 3″, 4″
Type: Rotating Rod **Spring Compressed:** 2 lbs. **Spring At Rest:** 0.9 lbs.
Options: M, B, W, V, N, S, H **Maximum Stroke:** 23″

For B option add 0.375
For M option add 0.312
For S option add 0.187

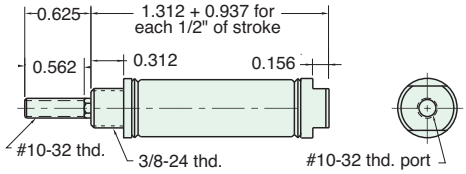


SSN-08-❑-❑

Single Acting

Mount: Stud **Standard Stroke Lengths:** 1/2″, 1″, 1-1/2″, 2″, 3″, 4″
Type: Non-Rotating Rod **Spring Compressed:** 2 lbs. **Spring At Rest:** 0.9 lbs.
Options: M, B, V, N, S, H **Maximum Stroke:** 23″

For B option add 0.500
For M option add 0.312
For S option add 0.187



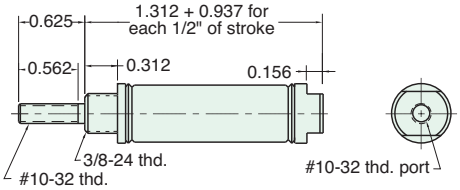
Nuts included, but not shown on drawing

SSR-08-❑-❑

Single Acting

Mount: Stud **Standard Stroke Lengths:** 1/2″, 1″, 1-1/2″, 2″, 3″, 4″
Type: Rotating Rod **Spring Compressed:** 2 lbs. **Spring At Rest:** 0.9 lbs.
Options: M, B, W, V, N, S, H **Maximum Stroke:** 23″

For B option add 0.500
For M option add 0.312
For S option add 0.187



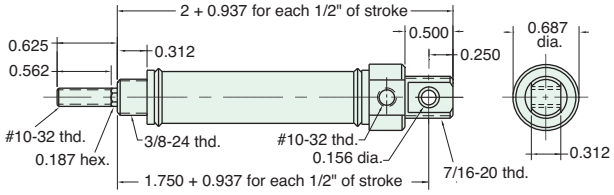
Nuts included, but not shown on drawing

USN-08-❑-❑

Single Acting

Mount: Universal **Standard Stroke Lengths:** 1/2″, 1″, 1-1/2″, 2″, 3″, 4″
Type: Non-Rotating Rod **Spring Compressed:** 2 lbs. **Spring At Rest:** 0.9 lbs.
Options: M, B, V, N, H, P6 **Maximum Stroke:** 23″

For B option add 0.500
For M option add 0.312



Furnished without nut(s). See Chart on Page 16.

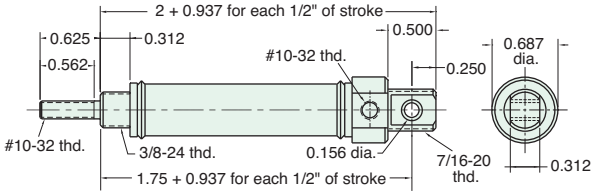
1/2″ Bore Stainless Steel Cylinder

USR-08-❑-❑

Single Acting

Mount: Universal **Standard Stroke Lengths:** 1/2″, 1″, 1-1/2″, 2″, 3″, 4″
Type: Rotating Rod **Spring Compressed:** 2 lbs. **Spring At Rest:** 0.9 lbs.
Options: M, B, W, V, N, H, P6 **Maximum Stroke:** 23″

For B option add 0.500
For M option add 0.312



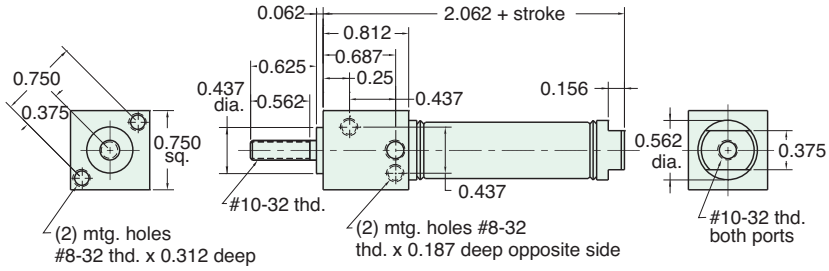
Furnished without nut(s). See Chart on Page 16.

FDR-08-❑-❑

Double Acting

Mount: Front **Standard Stroke Lengths:** 1/2″, 1″, 1-1/2″, 2″, 3″, 4″
Type: Rotating Rod **Maximum Stroke:** 43″
Options: M, B, W, V, N, S, P6, P7, P8

For B option add 0.500
For M option add 0.312
For S option add 0.187

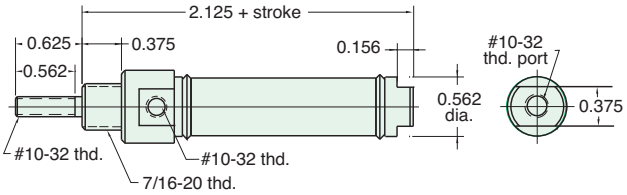


SDR-08-❑-❑

Double Acting

Mount: Stud **Standard Stroke Lengths:** 1/2″, 1″, 1-1/2″, 2″, 3″, 4″
Type: Rotating Rod **Maximum Stroke:** 43″
Options: M, B, W, V, N, S, P6, P7, P8

For B option add 0.500
For M option add 0.312
For S option add 0.187



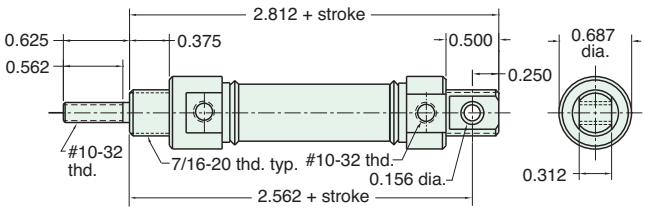
Nut included, but not shown on drawing

UDR-08-❑-❑

Double Acting

Mount: Universal **Standard Stroke Lengths:** 1/2″, 1″, 1-1/2″, 2″, 3″, 4″
Type: Rotating Rod **Maximum Stroke:** 42″
Options: M, B, W, V, N, P2, P3, P4, P5, P6, P7, P8

For B option add 0.500
For M option add 0.312



Furnished without nut(s). See Chart on Page 16.

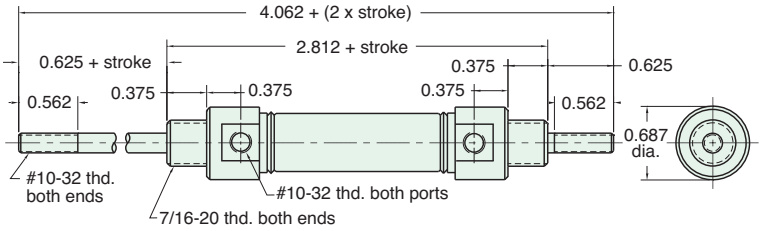
1/2″ Bore Stainless Steel Cylinder

SDD-08-❑-❑

Double Acting

Mount: Stud **Standard Stroke Lengths:** 1/2″, 1″, 1-1/2″, 2″, 3″, 4″
Type: Double Rod **Maximum Stroke:** 20″
Options: M, B, W, V, N, P6, P7, P8

For B option add 0.500
For M option add 0.312



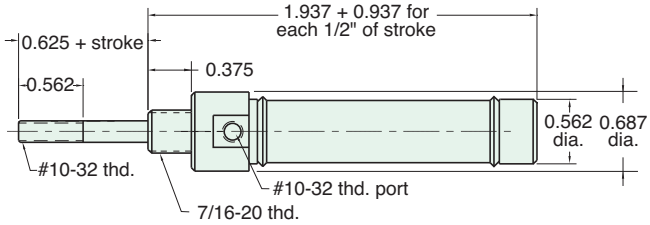
Nuts included, but not shown on drawing

SRR-08-❑-❑

Reverse Acting

Mount: Stud **Standard Stroke Lengths:** 1/2″, 1″, 1-1/2″, 2″, 3″, 4″
Type: Rotating Rod **Spring Compressed:** 2 lbs. **Spring At Rest:** 0.9 lbs.
Options: M, B, W, V, N, H **Maximum Stroke:** 15″

For B option add 0.500
For M option add 0.312



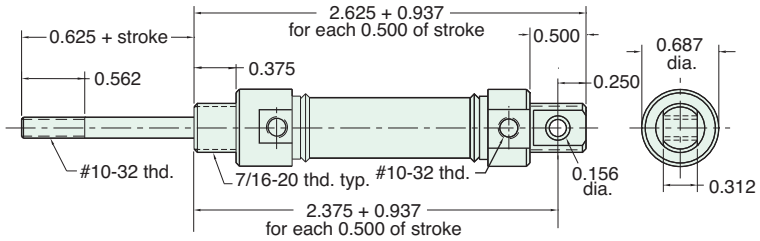
Nut included, but not shown on drawing

URR-08-❑-❑

Reverse Acting

Mount: Universal **Standard Stroke Lengths:** 1/2″, 1″, 1-1/2″, 2″, 3″, 4″
Type: Rotating Rod **Spring Compressed:** 2 lbs. **Spring At Rest:** 0.9 lbs.
Options: M, B, W, V, N, H, P2, P3, P4, P5, P6, P7, P8 **Maximum Stroke:** 15″

For B option add 0.500
For M option add 0.312

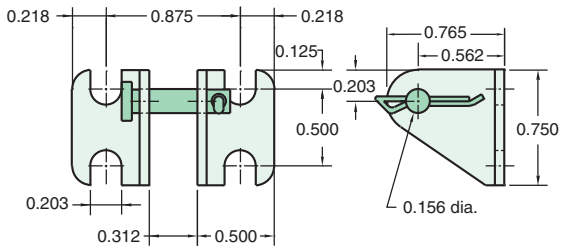


Furnished without nut(s). See Chart on Page 16.

Did you know that all Clippard Cylinders are 100% tested.

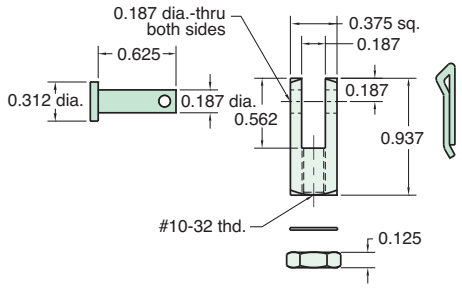
CB-0895

Clevis Bracket
Material: Steel, bright zinc plated



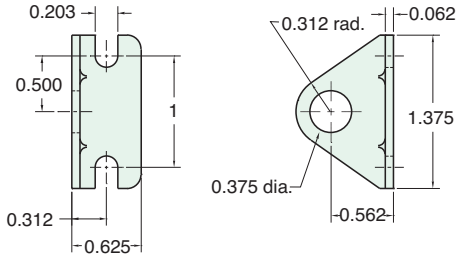
RC-0881

Rod Clevis
Material: Steel, electroless nickel plate



FB-0891

Foot Bracket
Material: Steel, bright zinc plated



Mounting Nuts

Stud Nut

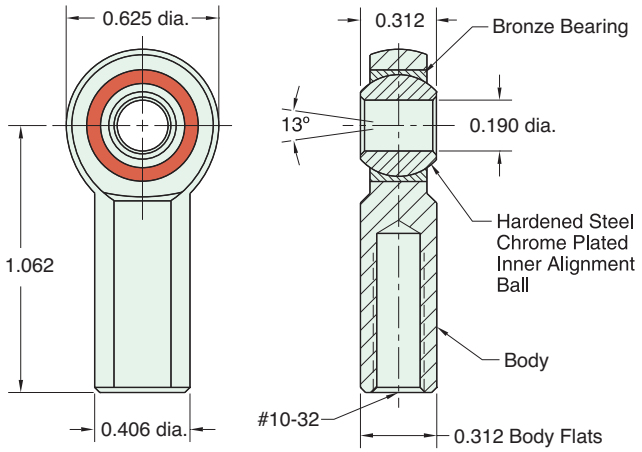
Part Number	Across Flats	Nut Thickness	Nut (Thread)
N06-24A	9/16"	7/32"	3/8-24
N06-24B	1/2"	3/32"	3/8-24
N07-20	11/16"	1/4"	7/16-20

Rod Nut

Part Number	Across Flats	Nut Thickness	Nut (Thread)
N03-32	3/8"	1/8"	#10-32

RE-0885

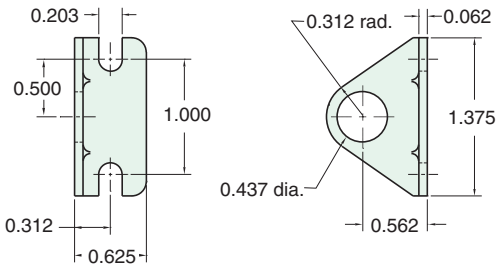
Rod End
Material: Steel, bright zinc plated body



Max. Static Radial Load (rod end only): 1,624 lbs.
Fits Rod Thread Size: #10-32

FB-0892

Foot Bracket
Material: Steel, bright zinc plated



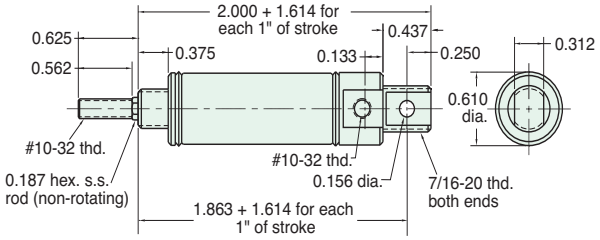
9/16″ Bore Stainless Steel Cylinder

USN-09-❑-❑

Single Acting

Mount: Universal **Standard Stroke Lengths:** 1/2″, 1″, 1-1/2″, 2″, 3″, 4″
Type: Non-Rotating Rod **Spring Compressed:** 4 lbs. **Spring At Rest:** 1.7 lbs.
Options: M, B, V, N, P6 **Maximum Stroke:** 23″

For B option add 0.063
For M option add 0.125
For MB combination add 0.125



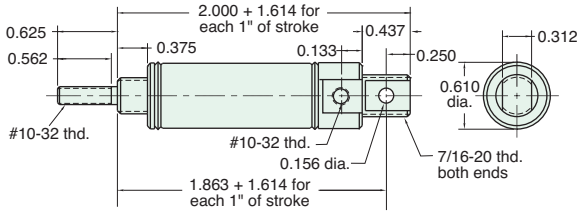
Furnished without nut(s). See Chart on Page 19.

USR-09-❑-❑

Single Acting

Mount: Universal **Standard Stroke Lengths:** 1/2″, 1″, 1-1/2″, 2″, 3″, 4″
Type: Rotating Rod **Spring Compressed:** 4 lbs. **Spring At Rest:** 1.7 lbs.
Options: M, B, V, N, P6 **Maximum Stroke:** 23″

For B option add 0.063
For M option add 0.125
For MB combination add 0.125



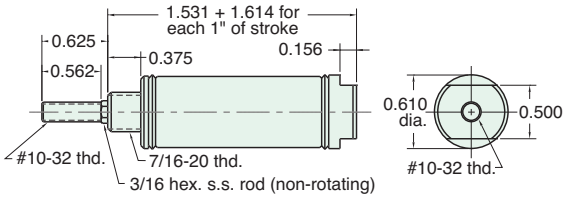
Furnished without nut(s). See Chart on Page 19.

SSN-09-❑-❑

Single Acting

Mount: Stud **Standard Stroke Lengths:** 1/2″, 1″, 1-1/2″, 2″, 3″, 4″
Type: Non-Rotating Rod **Spring Compressed:** 4 lbs. **Spring At Rest:** 1.7 lbs.
Options: M, B, V, N **Maximum Stroke:** 23″

For B option add 0.063
For M option add 0.125
For MB combination add 0.125



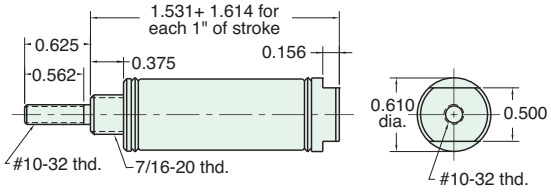
Nut included, but not shown on drawing

SSR-09-❑-❑

Single Acting

Mount: Stud **Standard Stroke Lengths:** 1/2″, 1″, 1-1/2″, 2″, 3″, 4″
Type: Rotating Rod **Spring Compressed:** 4 lbs. **Spring At Rest:** 1.7 lbs.
Options: M, B, V, N **Maximum Stroke:** 23″

For B option add 0.063
For M option add 0.125
For MB combination add 0.125



Nut included, but not shown on drawing

9/16″ Bore Stainless Steel Cylinder

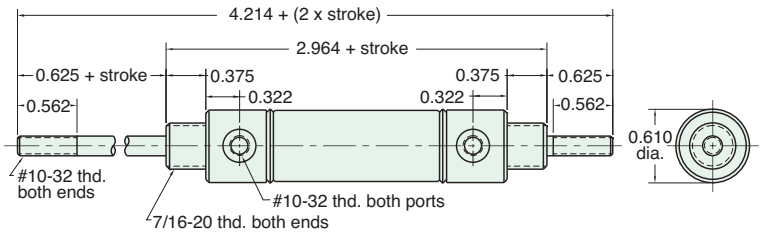
SDD-09-❑-❑

Double Acting

Mount: Stud
Type: Double Rod
Options: M, B, V, N, P6, P7, P8

Standard Stroke Lengths: 1/2″, 1″, 1-1/2″, 2″, 3″, 4″
Maximum Stroke: 20″

For B option add 0.125



Nuts included, but not shown on drawing

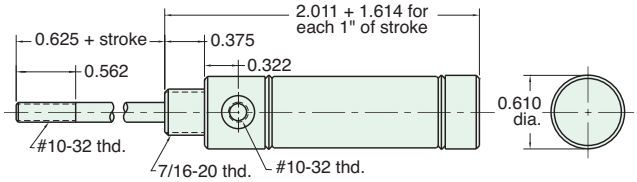
SRR-09-❑-❑

Reverse Acting

Mount: Stud
Type: Rotating Rod
Options: M, B, V, N

Standard Stroke Lengths: 1/2″, 1″, 1-1/2″, 2″, 3″, 4″
Spring Compressed: 4 lbs. **Spring At Rest:** 1.7 lbs.
Maximum Stroke: 15″

For B option add 0.063
For M option add 0.125
For MB combination add 0.125



Nut included, but not shown on drawing

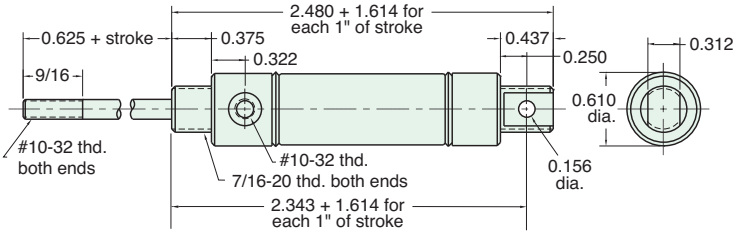
URR-09-❑-❑

Reverse Acting

Mount: Universal
Type: Rotating Rod
Options: M, B, V, N, P2

Standard Stroke Lengths: 1/2″, 1″, 1-1/2″, 2″, 3″, 4″
Spring Compressed: 4 lbs. **Spring At Rest:** 1.7 lbs.
Maximum Stroke: 14″

For B option add 0.063
For M option add 0.125
For MB combination add 0.125



Furnished without nut(s). See Chart on Page 19.

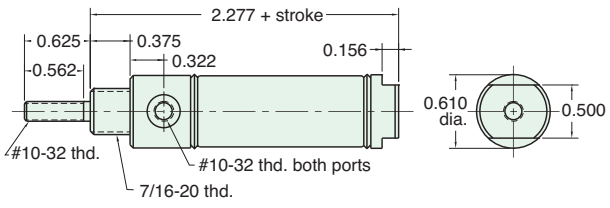
SDR-09-❑-❑

Double Acting

Mount: Stud
Type: Rotating Rod
Options: M, B, V, N, P6, P7, P8

Standard Stroke Lengths: 1/2″, 1″, 1-1/2″, 2″, 3″, 4″
Maximum Stroke: 43″

For B option add 0.125
For MB combination add 0.125



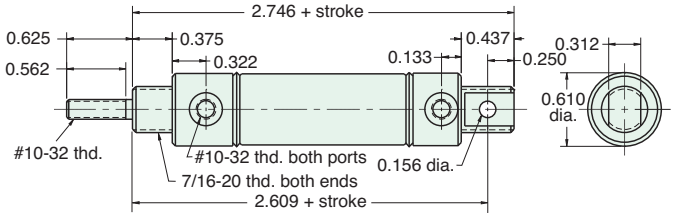
Nut included, but not shown on drawing

9/16″ Bore Stainless Steel Cylinder

UDR-09-❑-❑

Double Acting

Mount: Universal **Standard Stroke Lengths:** 1/2″, 1″, 1-1/2″, 2″, 3″, 4″
Type: Rotating Rod **Maximum Stroke:** 43″
Options: M, B, V, N, P2, P3, P4, P5, P6, P7, P8 For B option add 0.125



Furnished without nut(s). See Chart below.

Mounting Nuts

Stud Nut

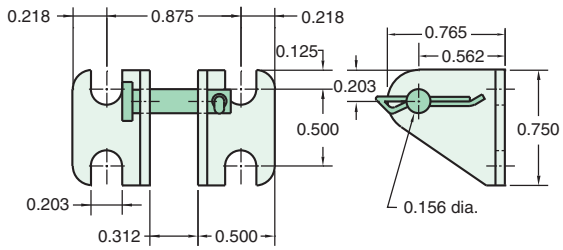
Part Number	Across Flats	Nut Thickness	Nut (Thread)
N07-20	11/16″	1/4″	7/16-20

Rod Nut

Part Number	Across Flats	Nut Thickness	Nut (Thread)
N03-32	3/8″	1/8″	#10-32

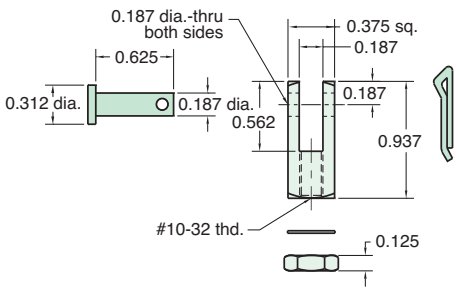
CB-0895

Clevis Bracket
Material: Steel, bright zinc plated



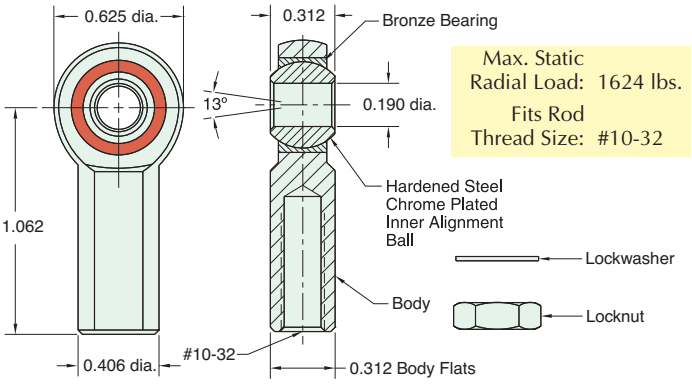
RC-0881

Rod Clevis
Material: Steel, electroless nickel plate



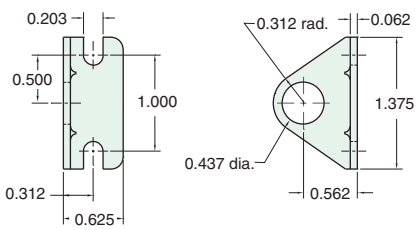
RE-0885

Rod End
Material: Steel, bright zinc plated body



FB-0892

Foot Bracket
Material: Steel, bright zinc plated



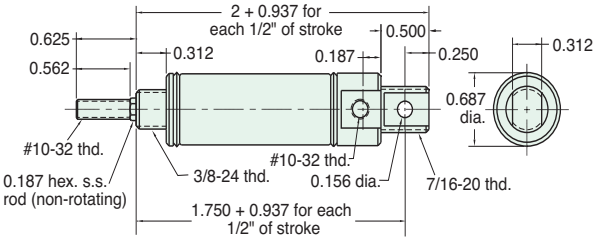
5/8″ Bore Stainless Steel Cylinder

USN-10-❑-❑

Single Acting

Mount: Universal **Standard Stroke Lengths:** 1/2″, 1″, 1-1/2″, 2″, 3″, 4″
Type: Non-Rotating Rod **Spring Compressed:** 4 lbs. **Spring At Rest:** 1.3 lbs.
Options: M, B, V, N, H, P6 **Maximum Stroke:** 23″

For B option add 0.500
For M option add 0.312



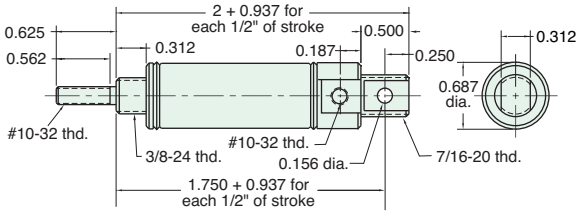
Furnished without nut(s). See Chart on Page 23.

USR-10-❑-❑

Single Acting

Mount: Universal **Standard Stroke Lengths:** 1/2″, 1″, 1-1/2″, 2″, 3″, 4″
Type: Rotating Rod **Spring Compressed:** 4 lbs. **Spring At Rest:** 1.3 lbs.
Options: M, B, V, N, H, P6 **Maximum Stroke:** 23″

For B option add 0.500
For M option add 0.312



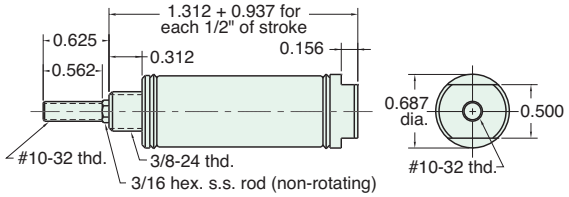
Furnished without nut(s). See Chart on Page 23.

SSN-10-❑-❑

Single Acting

Mount: Stud **Standard Stroke Lengths:** 1/2″, 1″, 1-1/2″, 2″, 3″, 4″
Type: Non-Rotating Rod **Spring Compressed:** 4 lbs. **Spring At Rest:** 1.3 lbs.
Options: M, B, V, N, S, H **Maximum Stroke:** 23″

For B option add 0.500
For M option add 0.312



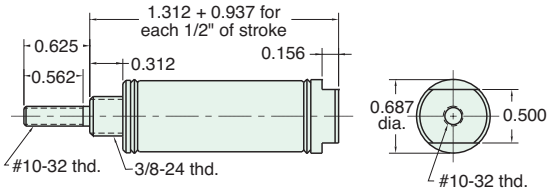
Nut included, but not shown on drawing

SSR-10-❑-❑

Single Acting

Mount: Stud **Standard Stroke Lengths:** 1/2″, 1″, 1-1/2″, 2″, 3″, 4″
Type: Rotating Rod **Spring Compressed:** 4 lbs. **Spring At Rest:** 1.3 lbs.
Options: M, B, W, V, N, S, H **Maximum Stroke:** 23″

For B option add 0.500
For M option add 0.312



Nut included, but not shown on drawing

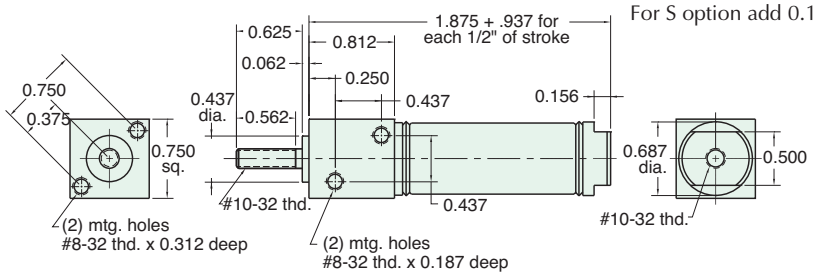
5/8″ Bore Stainless Steel Cylinder

FSR-10-❑-❑

Single Acting

Mount: Front **Standard Stroke Lengths:** 1/2″, 1″, 1-1/2″, 2″, 3″, 4″
Type: Rotating Rod **Spring Compressed:** 4 lbs. **Spring At Rest:** 1.3 lbs.
Options: M, B, W, V, N, S, H **Maximum Stroke:** 13″

For B option add 0.375
For M option add 0.312
For S option add 0.187

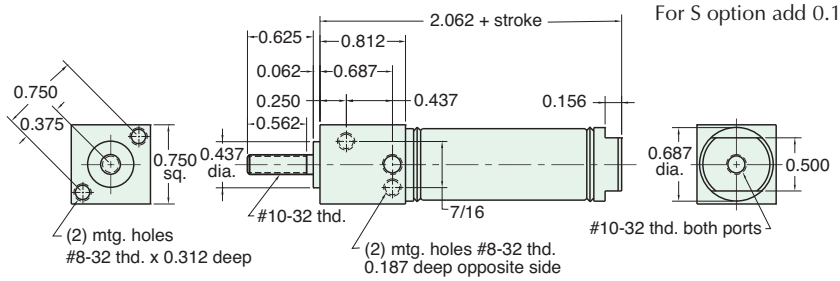


FDR-10-❑-❑

Double Acting

Mount: Front **Standard Stroke Lengths:** 1/2″, 1″, 1-1/2″, 2″, 3″, 4″
Type: Rotating Rod **Maximum Stroke:** 43″
Options: M, B, W, V, N, S, P6, P7, P8

For B option add 0.500
For M option add 0.312
For S option add 0.187

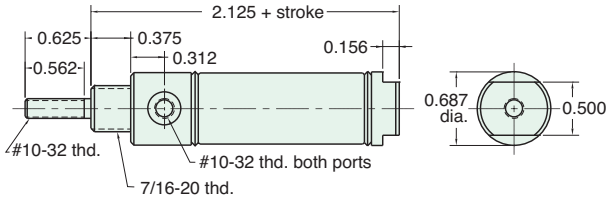


SDR-10-❑-❑

Double Acting

Mount: Stud **Standard Stroke Lengths:** 1/2″, 1″, 1-1/2″, 2″, 3″, 4″
Type: Rotating Rod **Maximum Stroke:** 43″
Options: M, B, W, V, N, S, P6, P7, P8

For B option add 0.500
For M option add 0.312
For S option add 0.187



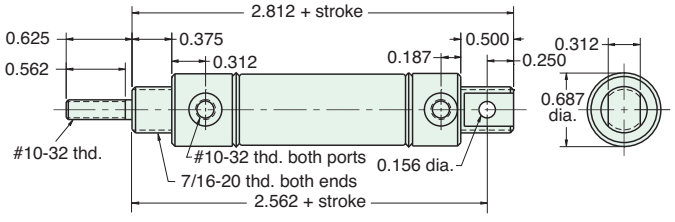
Nut included, but not shown on drawing

UDR-10-❑-❑

Double Acting

Mount: Universal **Standard Stroke Lengths:** 1/2″, 1“, 1-1/2″, 2″, 3″, 4″
Type: Rotating Rod **Maximum Stroke:** 43″
Options: M, B, W, V, N, P2, P3, P4, P5, P6, P7, P8

For B option add 0.500
For M option add 0.312



Furnished without nut(s). See Chart on Page 23.

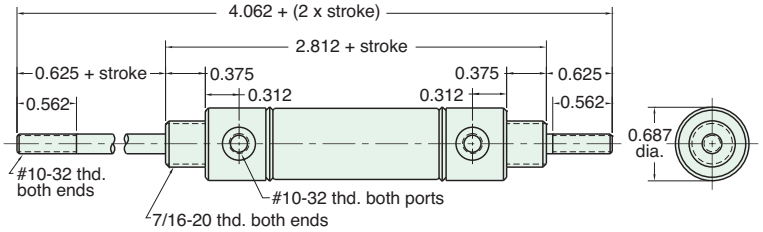
5/8″ Bore Stainless Steel Cylinder

SDD-10-❑-❑

Double Acting

Mount: Stud **Standard Stroke Lengths:** 1/2″, 1″, 1-1/2″, 2″, 3″, 4″
Type: Double Rod **Maximum Stroke:** 20″
Options: M, B, W, V, N, P6, P7, P8

For B option add 0.500
For M option add 0.312



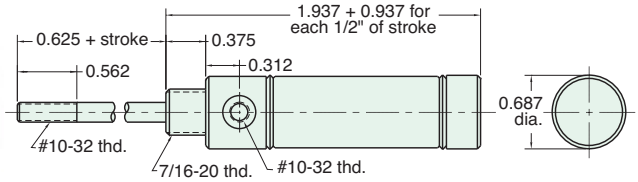
Nuts included, but not shown on drawing

SRR-10-❑-❑

Reverse Acting

Mount: Stud **Standard Stroke Lengths:** 1/2″, 1″, 1-1/2″, 2″, 3″, 4″
Type: Rotating Rod **Spring Compressed:** 4 lbs. **Spring At Rest:** 1.3 lbs.
Options: M, B, W, V, N, H **Maximum Stroke:** 15″

For B option add 0.500
For M option add 0.312



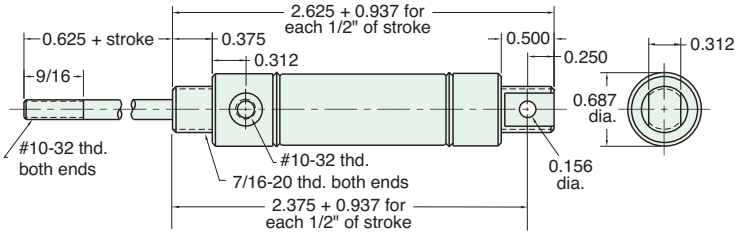
Nut included, but not shown on drawing

URR-10-❑-❑

Reverse Acting

Mount: Universal **Standard Stroke Lengths:** 1/2″, 1″, 1-1/2″, 2″, 3″, 4″
Type: Rotating Rod **Spring Compressed:** 4 lbs. **Spring At Rest:** 1.3 lbs.
Options: M, B, W, V, N, H, P2 **Maximum Stroke:** 14″

For B option add 0.375
For M option add 0.312

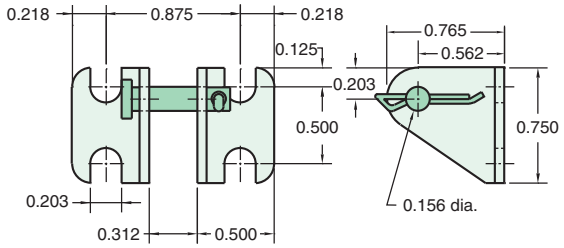


Furnished without nut(s). See Chart on Page 23.

For harsh environments, refer to page 72 for Clippard's Corrosion-Resistant Stainless Steel 5/8″ cylinders.

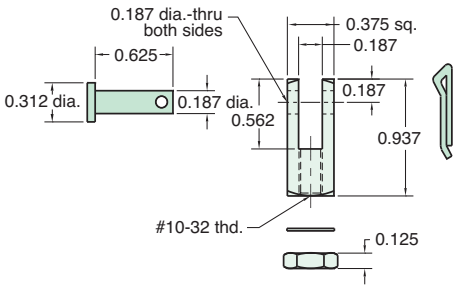
CB-0895

Clevis Bracket
Material: Steel, bright zinc plated



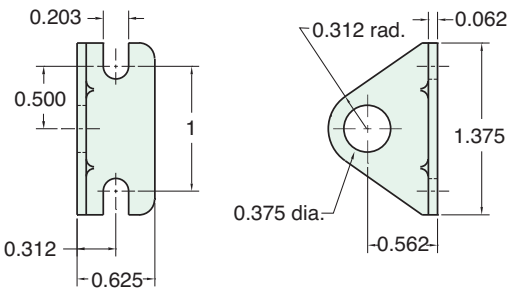
RC-0881

Rod Clevis
Material: Steel, electroless nickel plate



FB-0891

Foot Bracket
Material: Steel, bright zinc plated



Mounting Nuts

Stud Nut

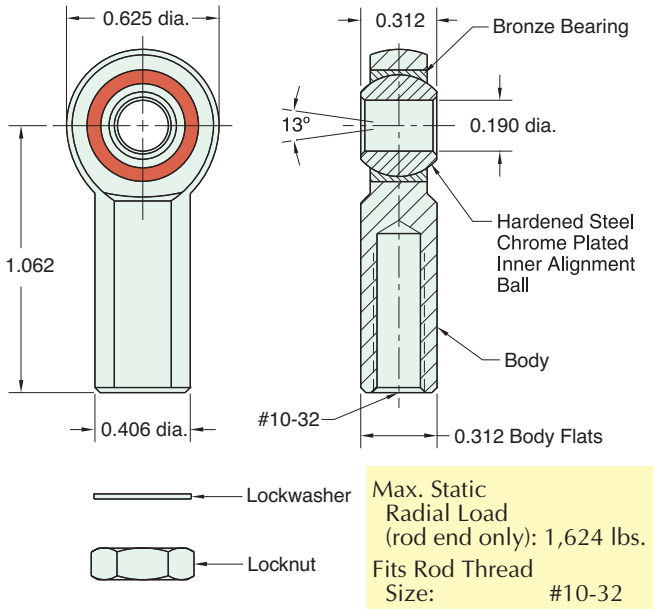
Part Number	Across Flats	Nut Thickness	Nut (Thread)
N06-24A	9/16″	7/32″	3/8-24
N06-24B	1/2″	3/32″	3/8-24
N07-20	11/16″	1/4″	7/16-20

Rod Nut

Part Number	Across Flats	Nut Thickness	Nut (Thread)
N03-32	3/8″	1/8″	#10-32

RE-0885

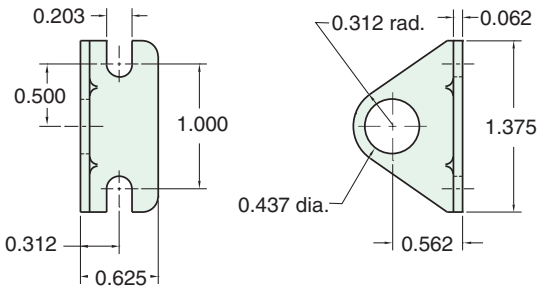
Rod End
Material: Steel, bright zinc plated body



Max. Static Radial Load (rod end only): 1,624 lbs.
Fits Rod Thread Size: #10-32

FB-0892

Foot Bracket
Material: Steel, bright zinc plated



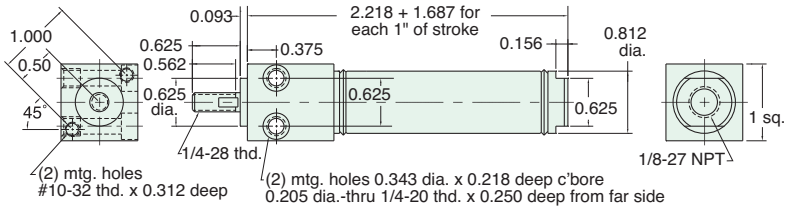
3/4" Bore Stainless Steel Cylinder

FSR-12-❑-❑

Single Acting

Mount: Front **Standard Stroke Lengths:** 1/2", 1", 1-1/2", 2", 3", 4"
Type: Rotating Rod **Spring Compressed:** 6 lbs. **Spring At Rest:** 3 lbs.
Options: M, B, W, V, N, S, H **Maximum Stroke:** 25"

For B option add 0.375
For M option add 0.125
For S option add 0.437

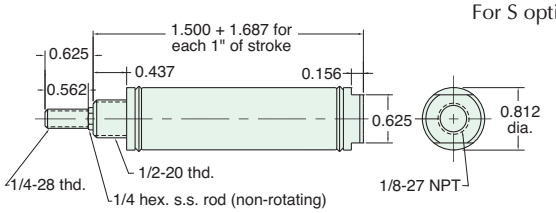


SSN-12-❑-❑

Single Acting

Mount: Stud **Standard Stroke Lengths:** 1/2", 1", 1-1/2", 2", 3", 4"
Type: Non-Rotating Rod **Spring Compressed:** 6 lbs. **Spring At Rest:** 3 lbs.
Options: M, B, V, N, S, H **Maximum Stroke:** 26"

For B option add 0.500
For M option add 0.125
For S option add 0.437



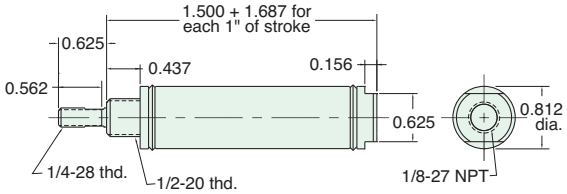
Nut included, but not shown on drawing

SSR-12-❑-❑

Single Acting

Mount: Stud **Standard Stroke Lengths:** 1/2", 1", 1-1/2", 2", 3", 4"
Type: Rotating Rod **Spring Compressed:** 6 lbs. **Spring At Rest:** 3 lbs.
Options: M, B, W, V, N, S, H **Maximum Stroke:** 26"

For B option add 0.500
For M option add 0.125
For S option add 0.437



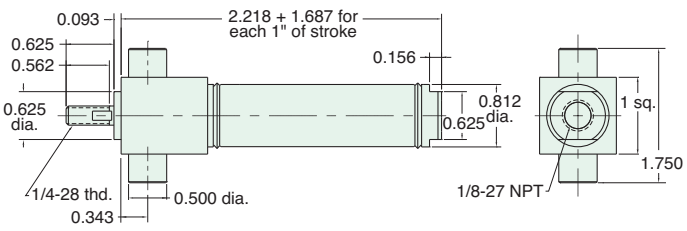
Nut included, but not shown on drawing

TSR-12-❑-❑

Single Acting

Mount: Trunnion **Standard Stroke Lengths:** 1/2", 1", 1-1/2", 2", 3", 4"
Type: Rotating Rod **Spring Compressed:** 6 lbs. **Spring At Rest:** 3 lbs.
Options: M, B, V, N, S, H **Maximum Stroke:** 25"

For B option add 0.500
For M option add 0.125
For S option add 0.437



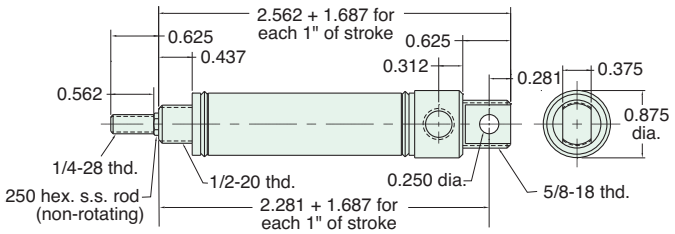
3/4″ Bore Stainless Steel Cylinder

USN-12-❑-❑

Single Acting

Mount: Universal **Standard Stroke Lengths:** 1/2″, 1″, 1-1/2″, 2″, 3″, 4″
Type: Non-Rotating Rod **Spring Compressed:** 6 lbs. **Spring At Rest:** 3 lbs.
Options: M, B, V, N, H, P6 **Maximum Stroke:** 25″

For B option add 0.500
For M option add 0.125



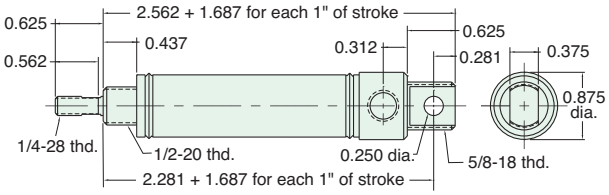
Furnished without nut(s). See Chart on Page 29.

USR-12-❑-❑

Single Acting

Mount: Universal **Standard Stroke Lengths:** 1/2″, 1″, 1-1/2″, 2″, 3″, 4″
Type: Rotating Rod **Spring Compressed:** 6 lbs. **Spring At Rest:** 3 lbs.
Options: M, B, W, V, N, H, P6 **Maximum Stroke:** 25″

For B option add 0.500
For M option add 0.125



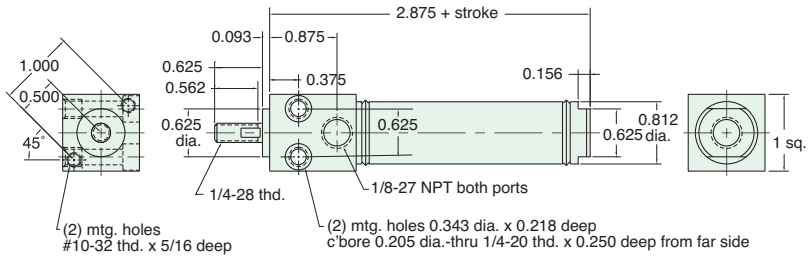
Furnished without nut(s). See Chart on Page 29.

FDR-12-❑-❑

Double Acting

Mount: Front **Standard Stroke Lengths:** 1/2″, 1″, 1-1/2″, 2″, 3″, 4″, 5″, 6″
Type: Rotating Rod **Maximum Stroke:** 42″
Options: M, B, W, V, N, S, P6, P7, P8

For B option add 0.500
For S option add 0.437

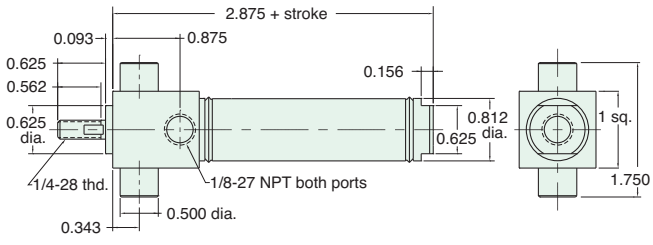


TDR-12-❑-❑

Double Acting

Mount: Trunnion **Standard Stroke Lengths:** 1/2″, 1″, 1-1/2″, 2″, 3″, 4″, 5″, 6″
Type: Rotating Rod **Maximum Stroke:** 42″
Options: M, B, W, V, N, S, P6, P7, P8

For B option add 0.500
For S option add 0.437

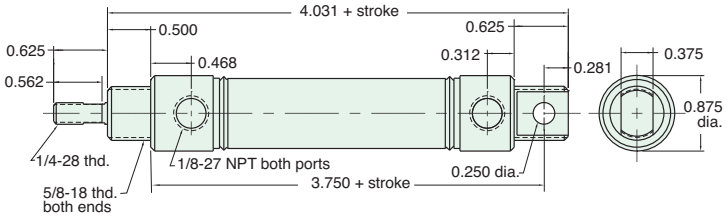


3/4″ Bore Stainless Steel Cylinder

UDR-12-❑-❑

Double Acting

Mount: Universal **Standard Stroke Lengths:** 1/2″, 1″, 1-1/2″, 2″, 3″, 4″, 5″, 6″, 8″, 10″, 12″
Type: Rotating rod **Maximum Stroke:** 41″
Options: C, F, R, M, B, W, V, N, P2, P3, P4, P5, P6, P7, P8 For B option add 0.500

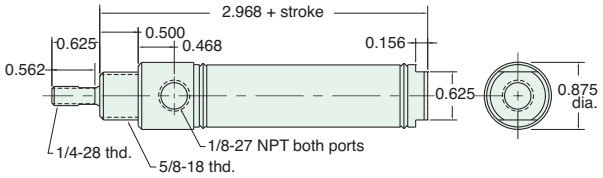


Furnished without nut(s). See Chart on Page 29.

SDR-12-❑-❑

Double Acting

Mount: Stud **Standard Stroke Lengths:** 1/2″, 1″, 1-1/2″, 2″, 3″, 4″, 5″, 6″
Type: Rotating Rod **Maximum Stroke:** 42″
Options: C, F, R, M, B, W, V, N, S, P6, P7, P8 For B option add 0.500
For C, F, R & S options add 0.437



For harsh environments, refer to pages 64 through 69 for Clippard's Corrosion-Resistant Stainless Steel 3/4″ cylinders.

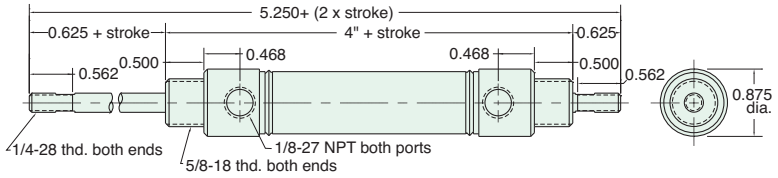
Nuts included, but not shown on drawing
C, F, & R options use side ported rear head

SDD-12-❑-❑

Double Acting

Mount: Stud **Standard Stroke Lengths:** 1″, 2″, 3″, 4″, 5″, 6″
Type: Double Rod **Maximum Stroke:** 20″
Options: C, F, M, B, W, V, N, P6, P7, P8 For B option add 0.500

NEW All Stainless Steel line now available!
See pages 66 - 70

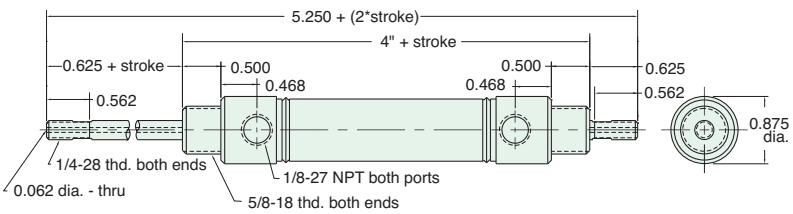


Nuts included, but not shown on drawing

SDH-12-❑-❑

Double Acting

Mount: Stud **Standard Stroke Lengths:** 1″, 2″, 3″, 4″, 5″, 6″
Type: Hollow Rod **Maximum Stroke:** 20″
Options: C, F, R, M, B, W, V, N, P6, P7, P8 For B option add 0.500



Nuts included, but not shown on drawing

3/4″ Bore Stainless Steel Cylinder

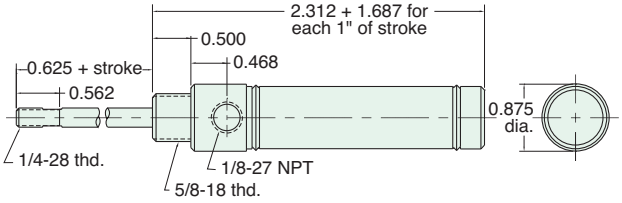
SRR-12-❑-❑

Reverse Acting

Mount: Stud
Type: Rotating Rod
Options: M, B, W, V, N, H

Standard Stroke Lengths: 1/2″, 1″, 1-1/2″, 2″, 3″, 4″
Spring Compressed: 6 lbs. **Spring At Rest:** 3 lbs.
Maximum Stroke: 16″

For B option add 0.375
For M option add 0.125



Nut included, but not shown on drawing

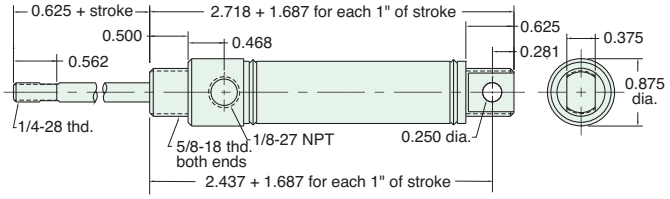
URR-12-❑-❑

Reverse Acting

Mount: Universal
Type: Rotating Rod
Options: M, B, W, V, N, H, P2

Standard Stroke Lengths: 1/2″, 1″, 1-1/2″, 2″, 3″, 4″
Spring Compressed: 6 lbs. **Spring At Rest:** 3 lbs.
Maximum Stroke: 15″

For B option add 0.500
For M option add 0.125



Furnished without nut(s). See Chart on Page 29.

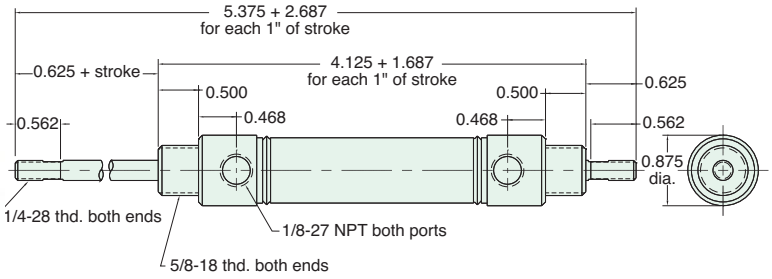
SFD-12-❑-❑

Double Acting, Spring Bias

Mount: Stud
Type: Double Rod
Options: M, B, W, V, N, H, P6, P7, P8

Standard Stroke Lengths: 1/2″, 1″, 1-1/2″, 2″, 3″, 4″
Spring Compressed: 6 lbs. **Spring At Rest:** 3 lbs.
Maximum Stroke: 15″

For B option add 0.375



Nuts included, but not shown on drawing

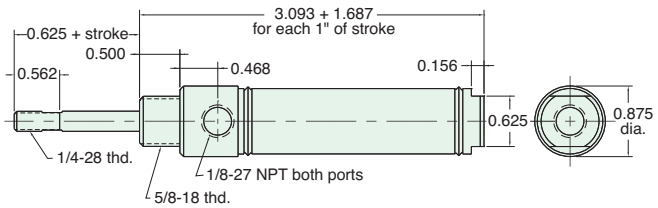
SBR-12-❑-❑

Double Acting, Rear Spring Bias

Mount: Stud
Type: Rotating Rod
Options: M, B, W, V, N, S, H, P6, P7, P8

Standard Stroke Lengths: 1/2″, 1″, 1-1/2″, 2″, 3″, 4″
Spring Compressed: 6 lbs. **Spring At Rest:** 3 lbs.
Maximum Stroke: 15″

For B option add 0.375
For S option add 0.437



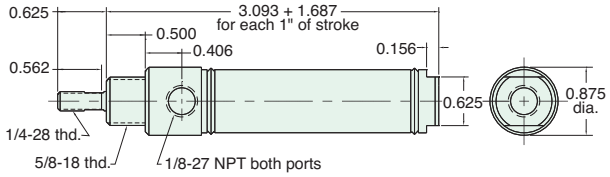
Nut included, but not shown on drawing

3/4″ Bore Stainless Steel Cylinder

SFR-12-❑-❑

Double Acting, Front Spring Bias

Mount: Stud **Standard Stroke Lengths:** 1/2″, 1″, 1-1/2″, 2″, 3″, 4″
Type: Rotating Rod **Spring Compressed:** 6 lbs. **Spring At Rest:** 3 lbs.
Options: M, B, W, V, N, S, H, P6, P7, P8 **Maximum Stroke:** 25″
For B option add 0.375
For S option add 0.437

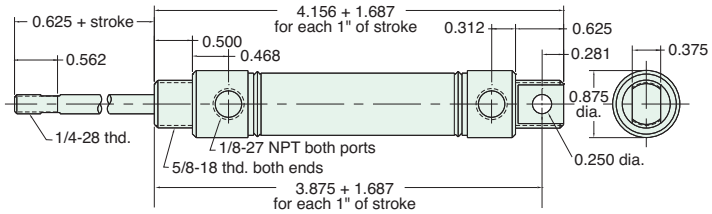


Nut included, but not shown on drawing

UBR-12-❑-❑

Double Acting, Rear Spring Bias

Mount: Universal **Standard Stroke Lengths:** 1/2″, 1″, 1-1/2″, 2″, 3″, 4″
Type: Rotating Rod **Spring Compressed:** 6 lbs. **Spring At Rest:** 3 lbs.
Options: M, B, W, V, N, H, P2, P3, P4, P5, P6, P7, P8 **Maximum Stroke:** 15″
For B option add 0.375

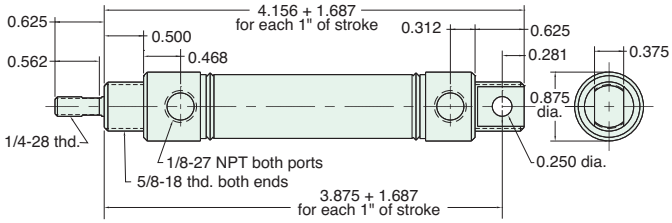


Furnished without nut(s). See Chart on Page 29.

UFR-12-❑-❑

Double Acting, Front Spring Bias

Mount: Universal **Standard Stroke Lengths:** 1/2″, 1″, 1-1/2″, 2″, 3″, 4″
Type: Rotating Rod **Spring Compressed:** 6 lbs. **Spring At Rest:** 3 lbs.
Options: M, B, W, V, N, H, P2, P3, P4, P5, P6, P7, P8 **Maximum Stroke:** 24″
For B option add 0.375



Furnished without nut(s). See Chart on Page 29.

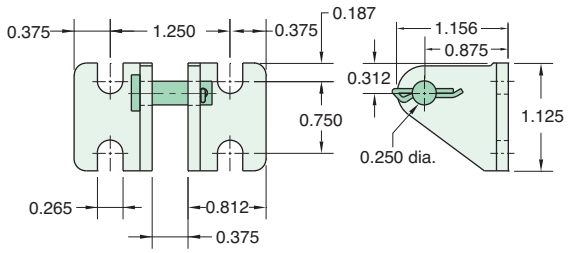
CAD 2D & 3D Models Available

2D & 3D CAD models of all Clippard stainless steel cylinders are available via www.clippard.com/cylinders/. A wide range of formats are offered for your convenience. Clippard's on-line, state-of-the-art cylinder configurator allows users to build their own cylinder exactly to the required specifications, and then view the details, drawings, CAD models, pricing and much more!

www.clippard.com/cylinders/

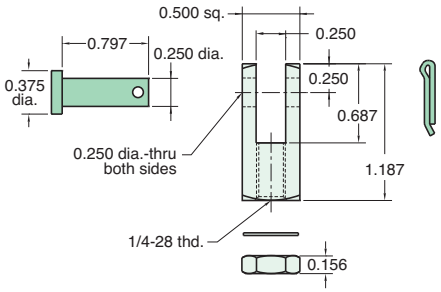
CB-1795

Clevis Bracket
Material: Steel, bright zinc plated



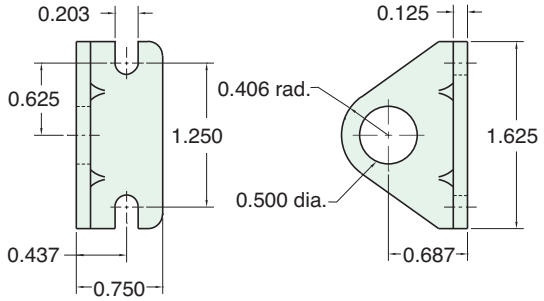
RC-1281

Rod Clevis
Material: Steel, electroless nickel plate



FB-1291

Foot Bracket
Material: Steel, bright zinc plated



Mounting Nuts

Stud Nut

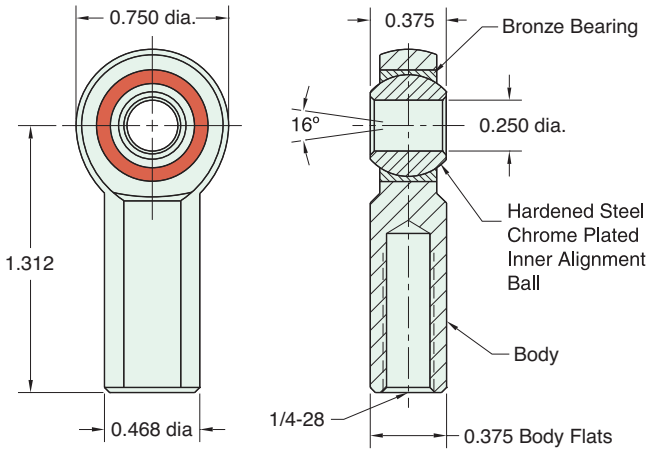
Part Number	Across Flats	Nut Thickness	Nut (Thread)
N08-20	3/4″	5/16″	1/2-20
N10-18	15/16″	3/8″	5/8-18

Rod Nut

Part Number	Across Flats	Nut Thickness	Nut (Thread)
N04-28A	7/16″	5/32″	1/4-28
N04-28B	3/8″	1/8″	1/4-28

RE-1285

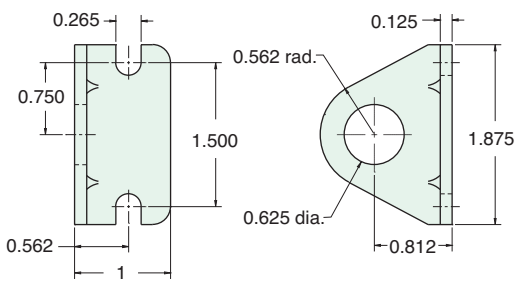
Rod End
Material: Steel, bright zinc plated body



Max. Static Radial Load (rod end only): 2,545 lbs.
Fits Rod Thread Size: 1/4-28

FB-1791

Foot Bracket
Material: Steel, bright zinc plated



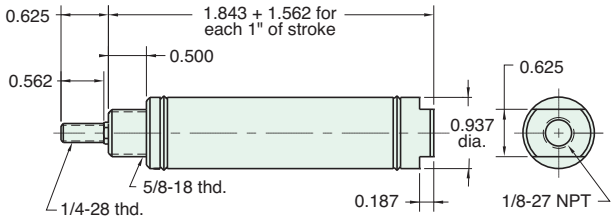
7/8″ Bore Stainless Steel Cylinder

SSN-14-❑-❑

Single Acting

Mount: Stud **Standard Stroke Lengths:** 1/2″, 1″, 1-1/2″, 2″, 3″, 4″
Type: Non-Rotating Rod **Spring Compressed:** 6 lbs. **Spring At Rest:** 3 lbs.
Options: M, V, H, S, N **Maximum Stroke:** 27″

Bumpers are standard
For M option add 0.125
For S option add 0.281



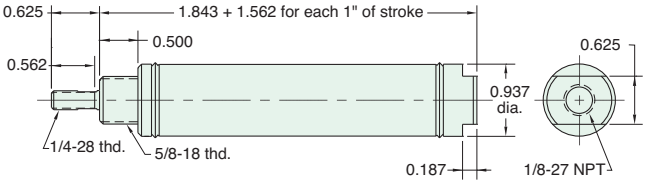
Nut included, but not shown on drawing

SSR-14-❑-❑

Single Acting

Mount: Stud **Standard Stroke Lengths:** 1/2″, 1″, 1-1/2″, 2″, 3″, 4″
Type: Rotating Rod **Spring Compressed:** 6 lbs. **Spring At Rest:** 3 lbs.
Options: M, W, V, N, S, H **Maximum Stroke:** 27″

Bumpers are standard
For M option add 0.125
For S option add 0.281



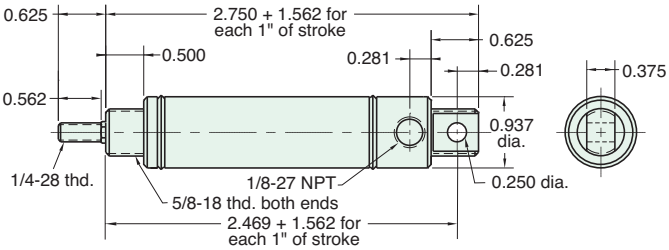
Nut included, but not shown on drawing

USN-14-❑-❑

Single Acting

Mount: Universal **Standard Stroke Lengths:** 1/2″, 1″, 1-1/2″, 2″, 3″, 4″
Type: Non-Rotating Rod **Spring Compressed:** 6 lbs. **Spring At Rest:** 3 lbs.
Options: M, V, N, H, P6 **Maximum Stroke:** 27″

Bumpers are standard
For M option add 0.125



Furnished without nut(s). See Chart on Page 33.

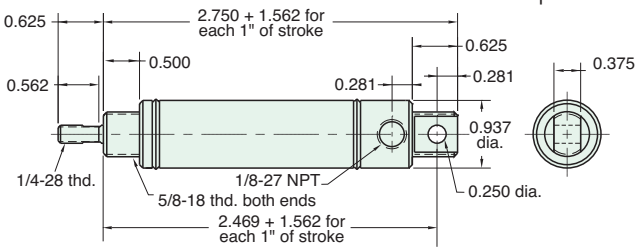
USR-14-❑-❑

Single Acting

Mount: Universal **Standard Stroke Lengths:** 1/2″, 1″, 1-1/2″, 2″, 3″, 4″
Type: Rotating Rod **Spring Compressed:** 6 lbs. **Spring At Rest:** 3 lbs.
Options: M, W, V, N, H, P6 **Maximum Stroke:** 27″

Furnished without nut(s)
See chart on page 28

Bumpers are standard
For M option add 0.125



Furnished without nut(s). See Chart on Page 33.

7/8″ Bore Stainless Steel Cylinder

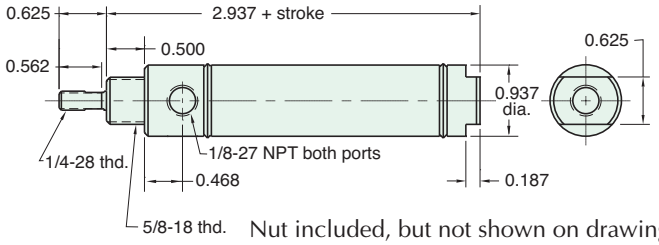
SDR-14-❑-❑

Double Acting

Mount: Stud
Type: Rotating Rod
Options: C, F, R, M, W, V, N, S, P6, P7, P8

Standard Stroke Lengths: 1/2″, 1″, 1-1/2″, 2″, 3″, 4″, 5″, 6″
Maximum Stroke: 42″

Bumpers are standard
For M option add 0.125
For C, F, R and S option add 0.281
For CM, FM, RM and SM option add 0.593



Nut included, but not shown on drawing
C, F, & R options use side ported rear head

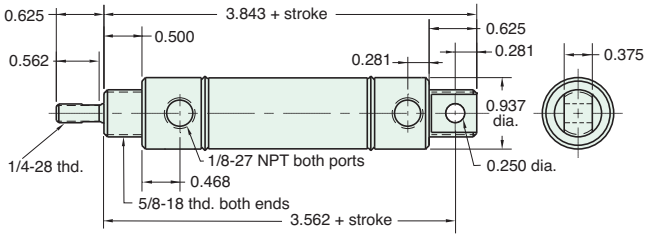
UDR-14-❑-❑

Double Acting

Mount: Universal
Type: Rotating Rod
Options: C, F, R, M, W, V, N, P2, P3, P4, P5, P6, P7, P8

Standard Stroke Lengths: 1/2″, 1″, 1-1/2″, 2″, 3″, 4″, 5″, 6″
Maximum Stroke: 41″

Bumpers are standard
For M option add 0.125
For CM, FM and RM option add 0.312



Furnished without nut(s). See Chart on Page 33.

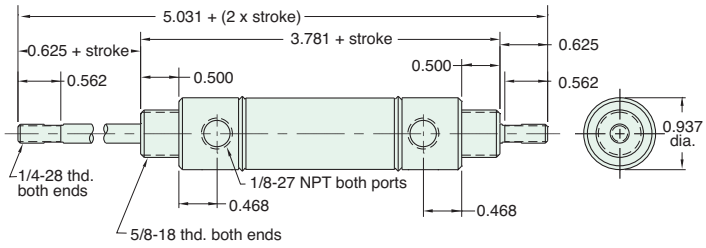
SDD-14-❑-❑

Double Acting

Mount: Stud
Type: Double Rod
Options: C, F, M, W, V, N, P6, P7, P8

Standard Stroke Lengths: 1″, 2″, 3″, 4″, 5″, 6″
Maximum Stroke: 20″

Bumpers are standard
For M option add 0.125
For CM, FM and RM option add 0.312



Nuts included, but not shown on drawing

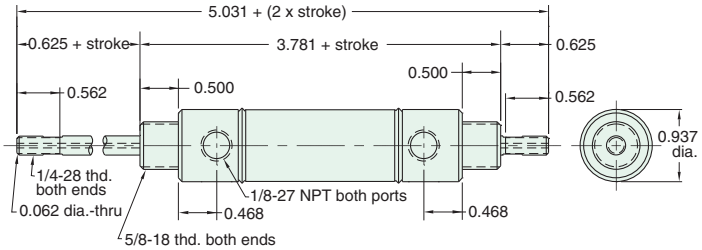
SDH-14-❑-❑

Double Acting

Mount: Stud
Type: Hollow Rod
Options: C, F, M, W, V, N, P6, P7, P8

Standard Stroke Lengths: 1″, 2″, 3″, 4″, 5″, 6″
Maximum Stroke: 20″

Bumpers are standard
For M option add 0.125
For CM, FM and RM option add 0.312



Nuts included, but not shown on drawing

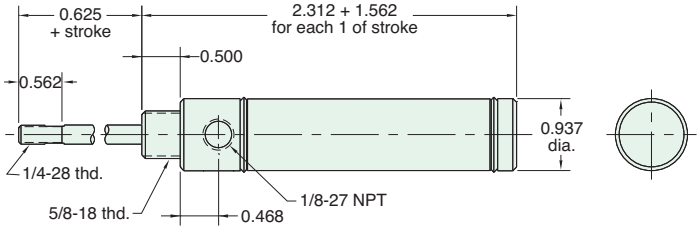
7/8″ Bore Stainless Steel Cylinder

SRR-14-❑-❑

Reverse Acting

Mount: Stud **Standard Stroke Lengths:** 1/2″, 1″, 1-1/2″, 2″, 3″, 4″
Type: Rotating Rod **Spring Compressed:** 6 lbs. **Spring At Rest:** 3 lbs.
Options: M, W, V, N, H **Maximum Stroke:** 16″ **Bumpers are standard**

For M option add 0.125



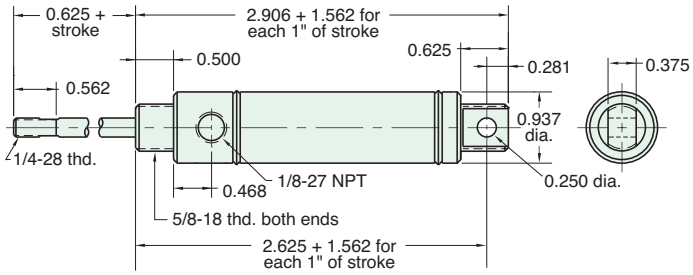
Nut included, but not shown on drawing

URR-14-❑-❑

Reverse Acting

Mount: Universal **Standard Stroke Lengths:** 1/2″, 1″, 1-1/2″, 2″, 3″, 4″
Type: Rotating Rod **Spring Compressed:** 6 lbs. **Spring At Rest:** 3 lbs.
Options: M, W, V, H, N, P2 **Maximum Stroke:** 16″ **Bumpers are standard**

For M option add 0.125



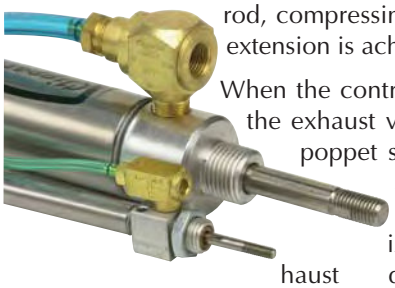
Furnished without nut(s). See Chart on Page 33.

7/8″ bore cylinders are also available in heavy-duty brass. See pages 99 and 100.

J-Series Exhaust Valve

In a typical application the exhaust valve is installed in the inlet of a spring return or double acting pneumatic cylinder. Supply air from a control valve is directed into the inlet port of the exhaust valve. The Nitrile poppet seals the exhaust port and allows air to flow from the outlet port of the valve into the cylinder.

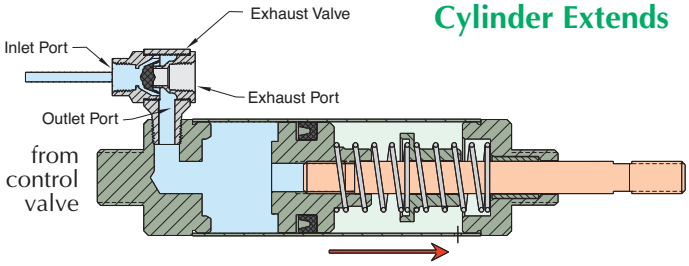
The pressurized air pushes against the piston and extends the rod, compressing the spring, until full rod extension is achieved.



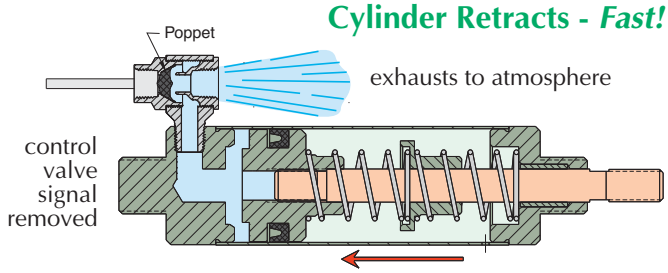
When the control valve exhausts air from the exhaust valve inlet port, the Nitrile poppet shifts to seal the inlet port and open the exhaust port to the cylinder. The pressurized air is allowed to exhaust directly through the exhaust valve to atmosphere.

Normally the air must travel back through the long air line to the control valve to exhaust. By mounting the exhaust valve directly on the cylinder, the piston retracts quickly since the distance to atmosphere is very short and unrestricted.

Cylinder Extends

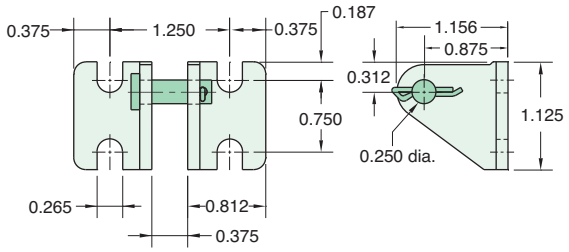


Cylinder Retracts - *Fast!*



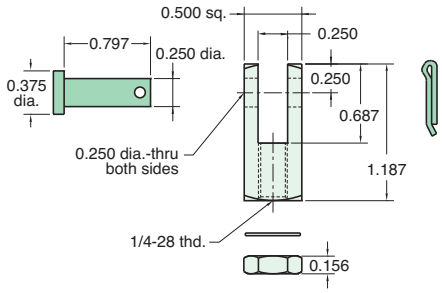
CB-1795

Clevis Bracket
Material: Steel, bright zinc plated



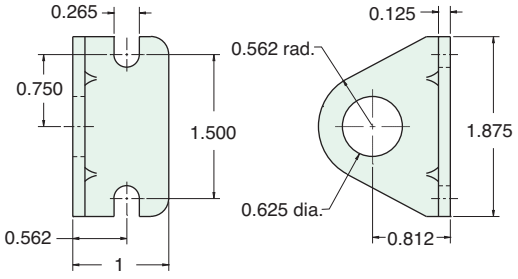
RC-1281

Rod Clevis
Material: Steel, electroless nickel plate



FB-1791

Foot Bracket
Material: Steel, bright zinc plated



Mounting Nuts

Stud Nut

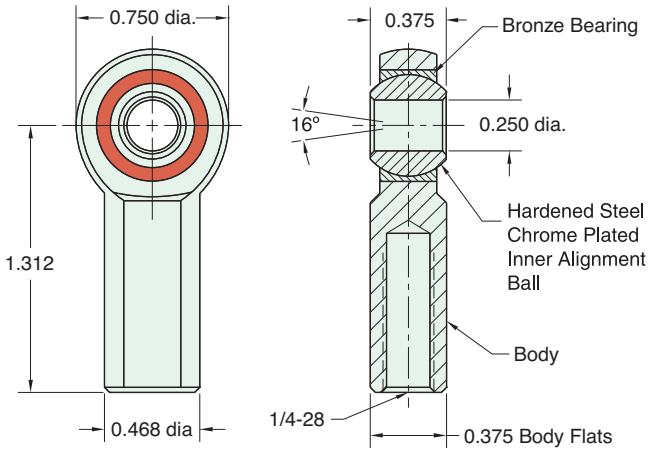
Part Number	Across Flats	Nut Thickness	Nut (Thread)
N10-18	15/16″	3/8″	5/8-18

Rod Nut

Part Number	Across Flats	Nut Thickness	Nut (Thread)
N04-28A	7/16″	5/32″	1/4-28
N04-28B	3/8″	1/8″	1/4-28

RE-1285

Rod End
Material: Steel, bright zinc plated body



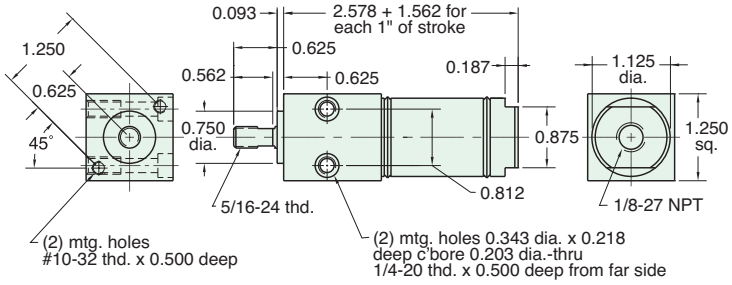
Max. Static Radial Load (rod end only): 2,545 lbs.
Fits Rod Thread Size: 1/4-28

1 1/16″ Bore Stainless Steel Cylinder

FSR-17-❑-❑

Single Acting

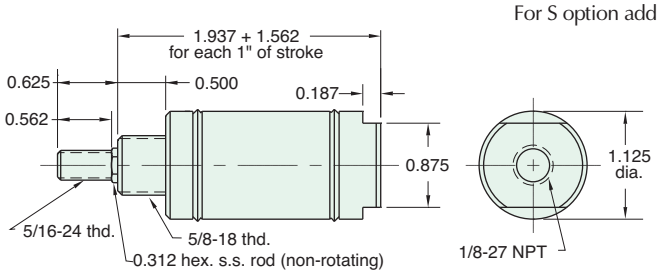
Mount: Front **Standard Stroke Lengths:** 1/2″, 1″, 1-1/2″, 2″, 3″, 4″
Type: Rotating Rod **Spring Compressed:** 7 lbs. **Spring At Rest:** 2 lbs.
Options: M, B, W, V, N, S, H **Maximum Stroke:** 27″ For M option add 0.125
For S option add 0.250



SSN-17-❑-❑

Single Acting

Mount: Stud **Standard Stroke Lengths:** 1/2″, 1″, 1-1/2″, 2″, 3″, 4″
Type: Non-Rotating Rod **Spring Compressed:** 7 lbs. **Spring At Rest:** 2 lbs.
Options: M, B, V, N, S, H **Maximum Stroke:** 27″ For M option add 0.125
For S option add 0.250

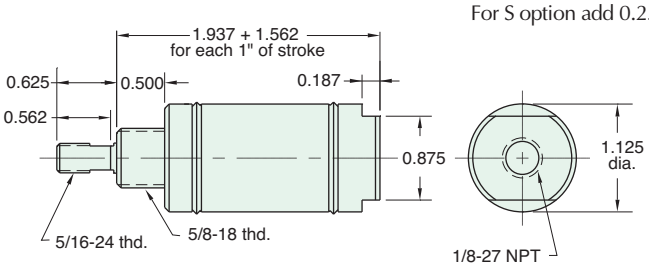


Nut included, but not shown on drawing

SSR-17-❑-❑

Single Acting

Mount: Stud **Standard Stroke Lengths:** 1/2″, 1″, 1-1/2″, 2″, 3″, 4″
Type: Rotating Rod **Spring Compressed:** 7 lbs. **Spring At Rest:** 2 lbs.
Options: M, B, W, V, N, S, H **Maximum Stroke:** 27″ For M option add 0.125
For S option add 0.250

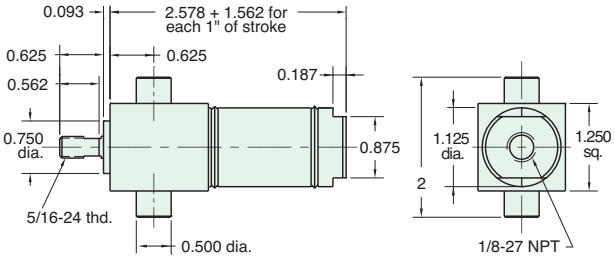


Nut included, but not shown on drawing

TSR-17-❑-❑

Single Acting

Mount: Trunnion **Standard Stroke Lengths:** 1/2″, 1″, 1-1/2″, 2″, 3″, 4″
Type: Rotating Rod **Spring Compressed:** 7 lbs. **Spring At Rest:** 2 lbs.
Options: M, B, W, V, N, S, H **Maximum Stroke:** 26″ For M option add 0.125
For S option add 0.250

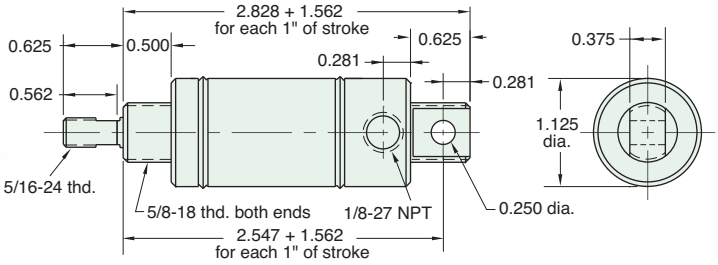


1 1/16″ Bore Stainless Steel Cylinder

USN-17-❑-❑

Single Acting

Mount: Universal **Standard Stroke Lengths:** 1/2″, 1″, 1-1/2″, 2″, 3″, 4″
Type: Non-Rotating Rod **Spring Compressed:** 7 lbs. **Spring At Rest:** 2 lbs.
Options: M, B, V, N, H, P6 **Maximum Stroke:** 27″
For M option add 0.125

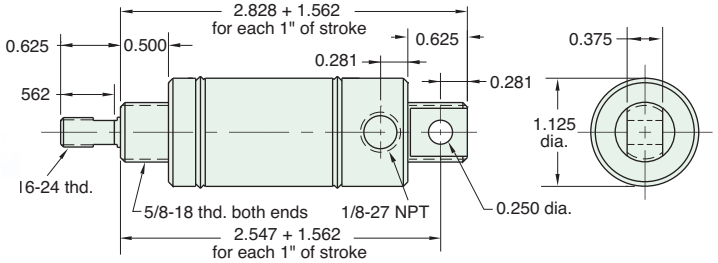


Furnished without nut(s). See Chart on Page 39

USR-17-❑-❑

Single Acting

Mount: Universal **Standard Stroke Lengths:** 1/2″, 1″, 1-1/2″, 2″, 3″, 4″
Type: Rotating Rod **Spring Compressed:** 7 lbs. **Spring At Rest:** 2 lbs.
Options: M, B, W, V, N, H, P6 **Maximum Stroke:** 27″
For M option add 0.125

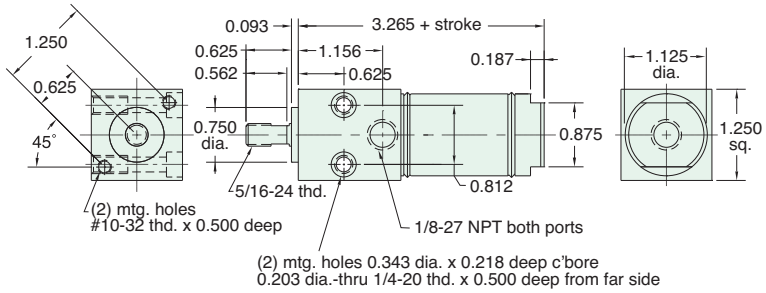


Furnished without nut(s). See Chart on Page 39.

FDR-17-❑-❑

Double Acting

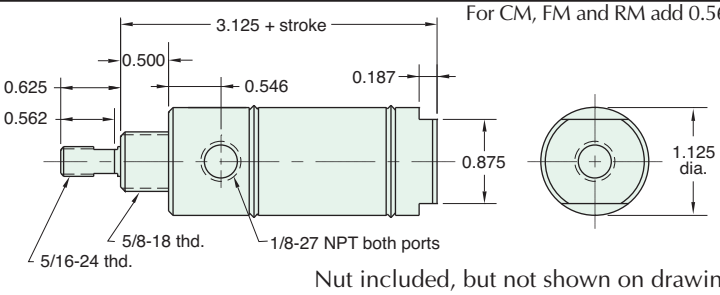
Mount: Front **Standard Stroke Lengths:** 1/2″, 1″, 1-1/2″, 2″, 3″, 4″, 5″, 6″
Type: Rotating Rod **Maximum Stroke:** 42″
Options: M, B, W, V, N, S, P6, P7, P8
For S option add 0.250



SDR-17-❑-❑

Double Acting

Mount: Stud **Standard Stroke Lengths:** 1/2″, 1″, 1-1/2″, 2″, 3″, 4″, 5″, 6″
Type: Rotating Rod **Maximum Stroke:** 42″
Options: C, F, R, M, B, W, V, N, S, P6, P7, P8
For C, F, R or S option add 0.250
For CM, FM and RM add 0.562



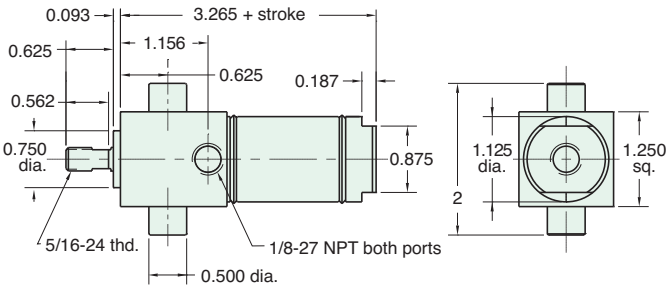
Nut included, but not shown on drawing
C, F, & R options use side ported rear head

1 1/16″ Bore Stainless Steel Cylinder

TDR-17-❑-❑

Double Acting

Mount: Trunnion **Standard Stroke Lengths:** 1/2″, 1″, 1-1/2″, 2″, 3″, 4″, 5″, 6″
Type: Rotating Rod **Maximum Stroke:** 42″
Options: M, B, W, V, N, S, P6, P7, P8 For S option add 0.250

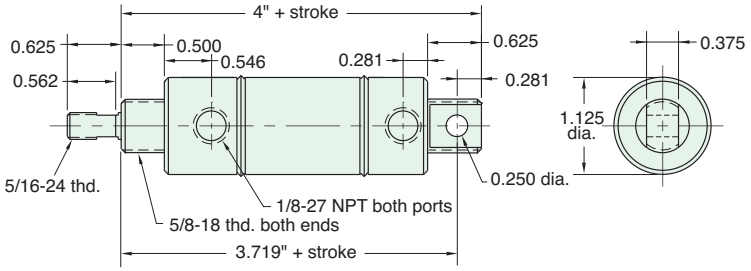


UDR-17-❑-❑

Double Acting

Mount: Universal **Standard Stroke Lengths:** 1/2″, 1″, 1-1/2″, 2″, 3″, 4″, 5″, 6″, 8″, 10″, 12″
Type: Rotating Rod **Maximum Stroke:** 41″
Options: C, F, R, M, B, W, V, N, P2, P3, P4, P5, P6, P7, P8 For CM, FM and RM add 0.312

NEW! All Stainless Steel line now available!
See pages 66 - 70

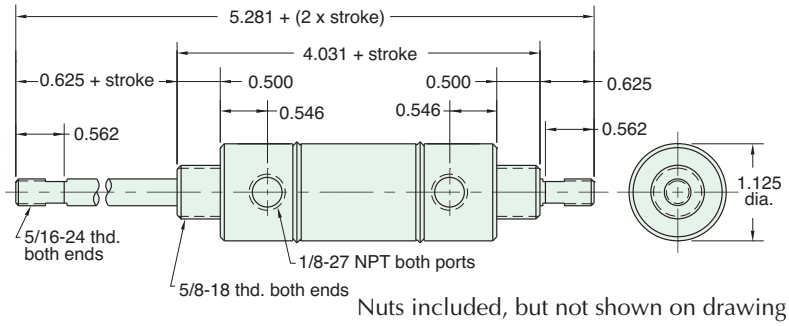


Furnished without nut(s). See Chart on Page 39.

SDD-17-❑-❑

Double Acting

Mount: Stud **Standard Stroke Lengths:** 1″, 2″, 3″, 4″, 5″, 6″
Type: Double Rod **Maximum Stroke:** 20″
Options: C, F, M, B, W, V, N, P6, P7, P8 For CM, FM and RM add 0.312

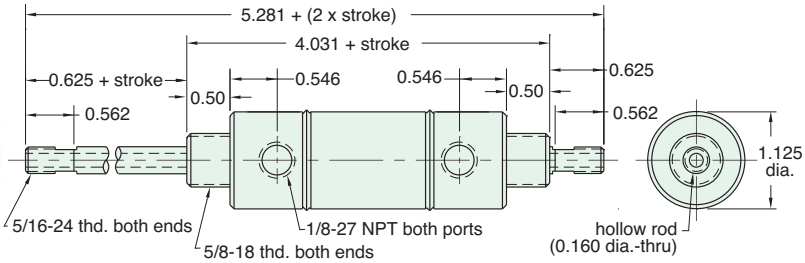


Nuts included, but not shown on drawing

SDH-17-❑-❑

Double Acting

Mount: Stud **Standard Stroke Lengths:** 1″, 2″, 3″, 4″, 5″, 6″
Type: Hollow Rod **Maximum Stroke:** 20″
Options: C, F, R, M, B, W, V, N, P6, P7, P8



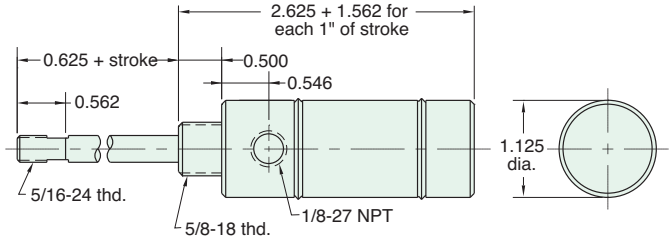
Nuts included, but not shown on drawing

1 1/16″ Bore Stainless Steel Cylinder

SRR-17-❑-❑

Reverse Acting

Mount: Stud **Standard Stroke Lengths:** 1/2″, 1″, 1-1/2″, 2″, 3″, 4″
Type: Rotating Rod **Spring Compressed:** 7 lbs. **Spring At Rest:** 2 lbs.
Options: M, B, W, V, N, H **Maximum Stroke:** 16″ For M option add 0.125

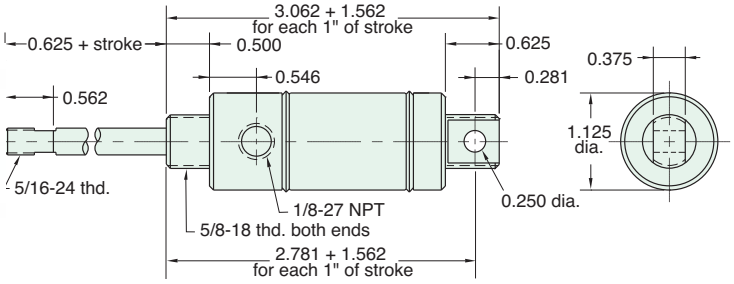


Nuts included, but not shown on drawing

URR-17-❑-❑

Reverse Acting

Mount: Universal **Standard Stroke Lengths:** 1/2″, 1″, 1-1/2″, 2″, 3″, 4″
Type: Rotating Rod **Spring Compressed:** 7 lbs. **Spring At Rest:** 2 lbs.
Options: M, B, W, V, N, H, P2 **Maximum Stroke:** 16″ For M option add 0.125

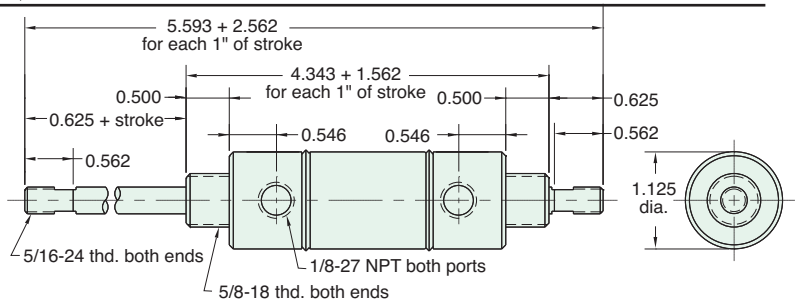


Furnished without nut(s). See Chart on Page 39.

SFD-17-❑-❑

Spring Bias

Mount: Stud **Standard Stroke Lengths:** 1/2″, 1″, 1-1/2″, 2″, 3″, 4″
Type: Double Rod **Spring Compressed:** 7 lbs. **Spring At Rest:** 2 lbs.
Options: M, B, W, V, N, H, P6, P7, P8 **Maximum Stroke:** 15″

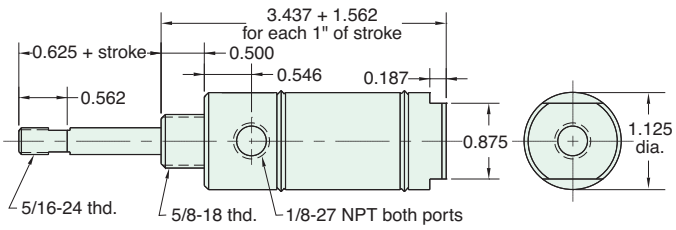


Nuts included, but not shown on drawing

SBR-17-❑-❑

Double Acting Rear Spring Bias

Mount: Stud **Standard Stroke Lengths:** 1/2″, 1″, 1-1/2″, 2″, 3″, 4″
Type: Rotating Rod **Spring Compressed:** 7 lbs. **Spring At Rest:** 2 lbs.
Options: M, B, W, V, N, H, P6, P7, P8, S **Maximum Stroke:** 16″ For S option add 0.250



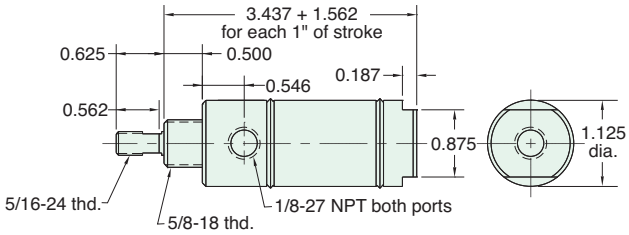
Nut included, but not shown on drawing

1 1/16″ Bore Stainless Steel Cylinder

SFR-17-❑-❑

Double Acting, Spring Bias

Mount: Stud **Standard Stroke Lengths:** 1/2″, 1″, 1-1/2″, 2″, 3″, 4″
Type: Rotating Rod **Spring Compressed:** 7 lbs. **Spring At Rest:** 2 lbs.
Options: M, B, W, V, N, S, H, P6, P7, P8 **Maximum Stroke:** 26″
For S option add 0.250

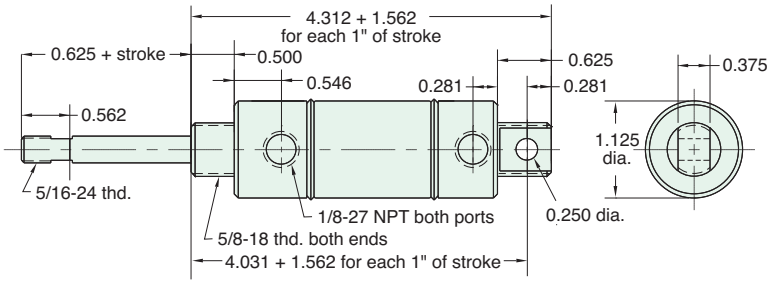


Nut included, but not shown on drawing

UBR-17-❑-❑

Double Acting, Rear Spring Bias

Mount: Universal **Standard Stroke Lengths:** 1/2″, 1″, 1-1/2″, 2″, 3″, 4″
Type: Rotating Rod **Spring Compressed:** 7 lbs. **Spring At Rest:** 2 lbs.
Options: M, B, W, V, N, H, P2, P3, P4, P5, P6, P7, P8 **Maximum Stroke:** 16″

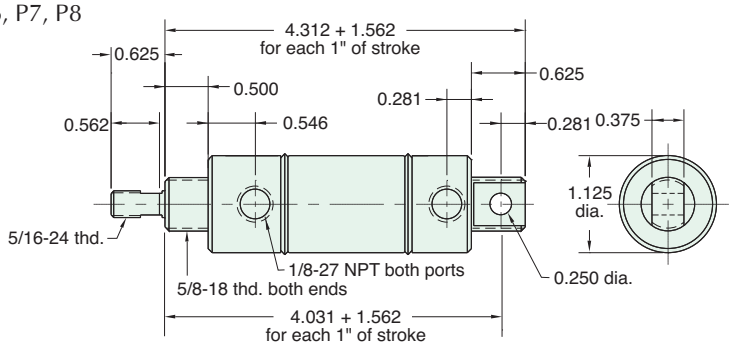


Furnished without nut(s). See Chart on Page 39.

UFR-17-❑-❑

Double Acting Front Spring Bias

Mount: Universal **Standard Stroke Lengths:** 1/2″, 1″, 1-1/2″, 2″, 3″, 4″
Type: Rotating Rod **Spring Compressed:** 7 lbs. **Spring At Rest:** 2 lbs.
Options: M, B, W, V, N, H, P2, P3, P4, P5, P6, P7, P8 **Maximum Stroke:** 26″



Furnished without nut(s). See Chart on Page 39.

For harsh environments, refer to page 74 for Clippard's Corrosion-Resistant Stainless Steel 1/16″ cylinders.

Mounting Nuts

Stud Nut

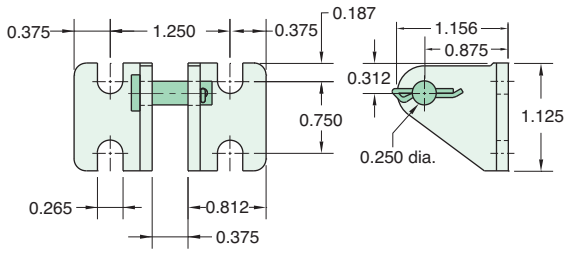
Part Number	Across Flats	Nut Thickness	Nut (Thread)
N10-18	15/16″	3/8″	5/8-18

Rod Nut

Part Number	Across Flats	Nut Thickness	Nut (Thread)
N05-24	1/2″	3/16″	5/16-24

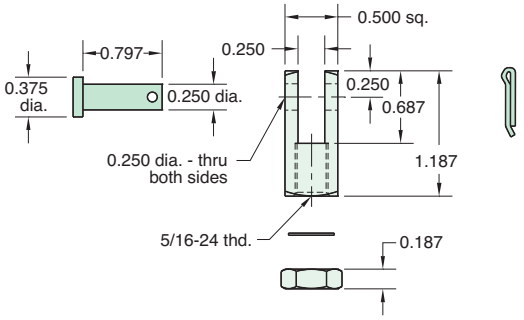
CB-1795

Clevis Bracket
Material: Steel, bright zinc plated



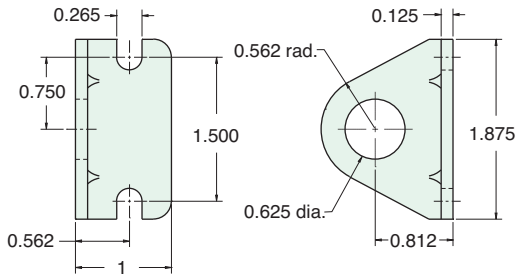
RC-1781

Rod Clevis
Material: Steel, electroless nickel plate



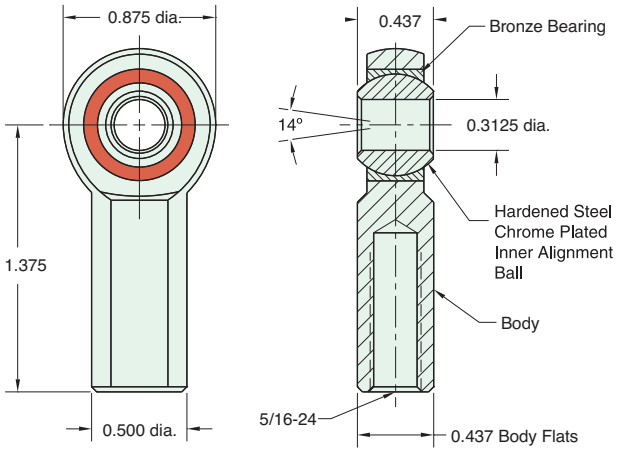
FB-1791

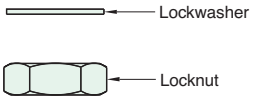
Foot Bracket
Material: Steel, bright zinc plated



RE-1785

Rod End
Material: Steel, bright zinc plated body





Max. Static
Radial Load
(rod end only): 3,200 lbs.
Fits Rod Thread
Size: 5/16-24

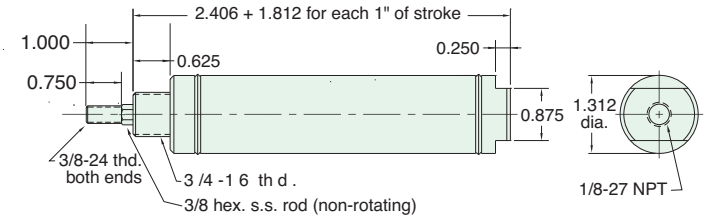
1 1/4″ Bore Stainless Steel Cylinder

Note: The 1 1/4″ bore is also available with a 7/16-20 threaded rod. Order -LR option.

SSN-20-❑-❑

Single Acting

Mount: Stud **Standard Stroke Lengths:** 1/2″, 1″, 1-1/2″, 2″, 3″, 4″
Type: Non-Rotating Rod **Spring Compressed:** 10 lbs. **Spring At Rest:** 4.5 lbs.
Options: M, B, V, N, S, H **Maximum Stroke:** 23″
For M option add 0.125
For S option add 0.312

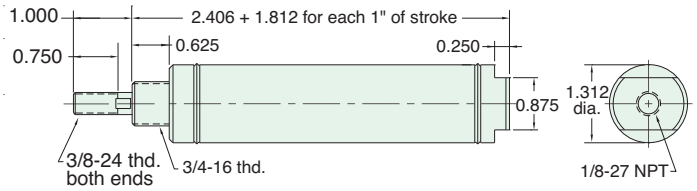


Nut included, but not shown on drawing

SSR-20-❑-❑

Single Acting

Mount: Stud **Standard Stroke Lengths:** 1/2″, 1″, 1-1/2″, 2″, 3″, 4″
Type: Rotating Rod **Spring Compressed:** 10 lbs. **Spring At Rest:** 4.5 lbs.
Options: M, B, V, N, S, H **Maximum Stroke:** 23″
For M option add 0.125
For S option add 0.312

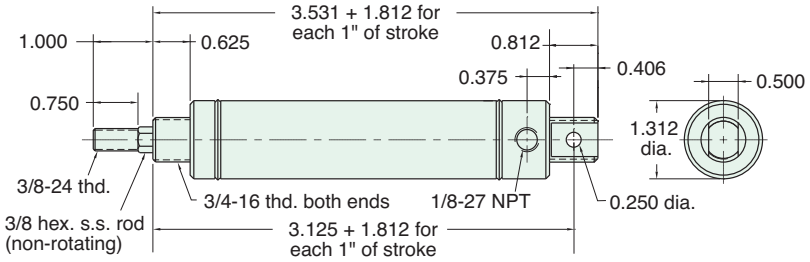


Nut included, but not shown on drawing

USN-20-❑-❑

Single Acting

Mount: Universal **Standard Stroke Lengths:** 1/2″, 1″, 1-1/2″, 2″, 3″, 4″
Type: Non-Rotating Rod **Spring Compressed:** 10 lbs. **Spring At Rest:** 4.5 lbs.
Options: M, B, V, N, H, P6 **Maximum Stroke:** 22″
For M option add 0.125

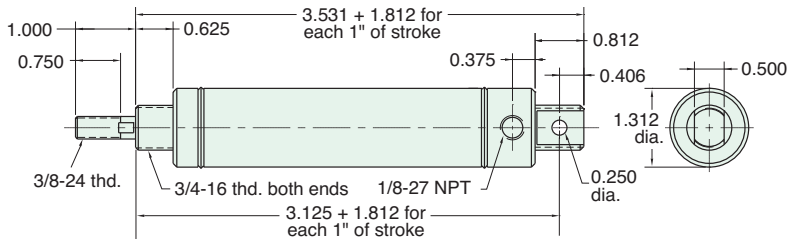


Furnished without nut(s). See Chart on Page 43.

USR-20-❑-❑

Single Acting

Mount: Universal **Standard Stroke Lengths:** 1/2″, 1″, 1-1/2″, 2″, 3″, 4″
Type: Rotating Rod **Spring Compressed:** 10 lbs. **Spring At Rest:** 4.5 lbs.
Options: M, B, V, N, H, P6 **Maximum Stroke:** 22″
For M option add 0.125



Furnished without nut(s). See Chart on Page 43.

1 1/4″ Bore Stainless Steel Cylinder

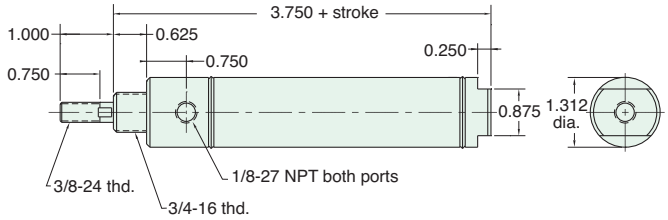
Note: The 1 1/4″ bore is also available with a 7/16-20 threaded rod. Order -LR option.

SDR-20-❑-❑

Double Acting

Mount: Stud **Standard Stroke Lengths:** 1/2″, 1″, 1-1/2″, 2″, 3″, 4″, 5″, 6″
Type: Rotating Rod **Maximum Stroke:** 41″
Options: C, F, R, M, B, W, V, N, S, P6, P7, P8

For C, F, R and S option add 0.312
For CM, FM, RM and SM options add 0.625



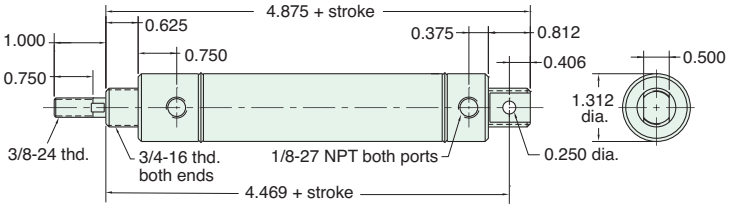
Nut included, but not shown on drawing
C, F, & R options use side ported rear head

UDR-20-❑-❑

Double Acting

Mount: Universal **Standard Stroke Lengths:** 1/2″, 1″, 1-1/2″, 2″, 3″, 4″, 6″, 8″, 10″, 12″
Type: Rotating Rod **Maximum Stroke:** 40″
Options: C, F, R, M, B, W, V, N, P2, P3, P4, P5, P6, P7, P8

For CM, FM and RM options add 0.312



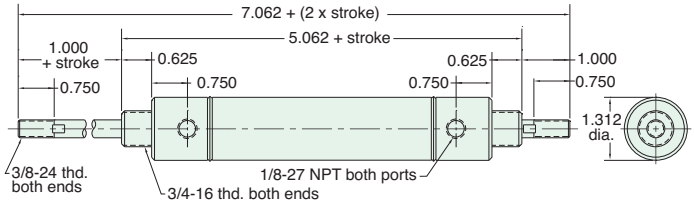
Furnished without nut(s). See Chart on Page 43.

SDD-20-❑-❑

Double Acting

Mount: Stud **Standard Stroke Lengths:** 1″, 2″, 3″, 4″, 5″, 6″
Type: Double Rod **Maximum Stroke:** 19″
Options: C, F, M, B, W, V, N, P6, P7, P8

For CM and FM options add 0.312



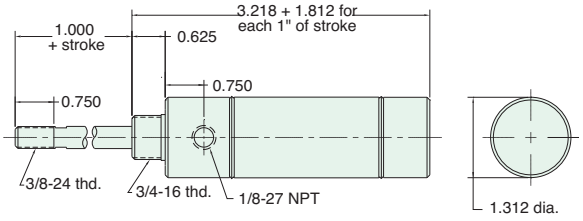
Nuts included, but not shown on drawing

SRR-20-❑-❑

Reverse Acting

Mount: Stud **Standard Stroke Lengths:** 1/2″, 1″, 1-1/2″, 2″, 3″, 4″
Type: Rotating Rod **Spring Compressed:** 10 lbs. **Spring At Rest:** 4.5 lbs.
Options: M, B, W, V, N, H **Maximum Stroke:** 14″

For M option add 0.125



Nuts included, but not shown on drawing

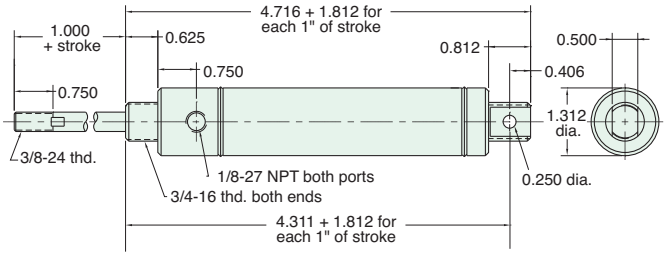
1 1/4″ Bore Stainless Steel Cylinder

Note: The 1 1/4″ bore is also available with a 7/16-20 threaded rod. Order -LR option.

URR-20-❑-❑

Reverse Acting

Mount: Universal
Type: Rotating Rod
Options: M, B, W, V, N, H, P2
Standard Stroke Lengths: 1/2″, 1″, 1-1/2″, 2″, 3″, 4″
Spring Compressed: 10 lbs. **Spring At Rest:** 4.5 lbs.
Maximum Stroke: 14″
For M option add 0.125



Furnished without nut(s). See Chart on Page 43.

For harsh environments, refer to page 75 for Clippard's Corrosion-Resistant Stainless Steel 1 1/4″ cylinders.

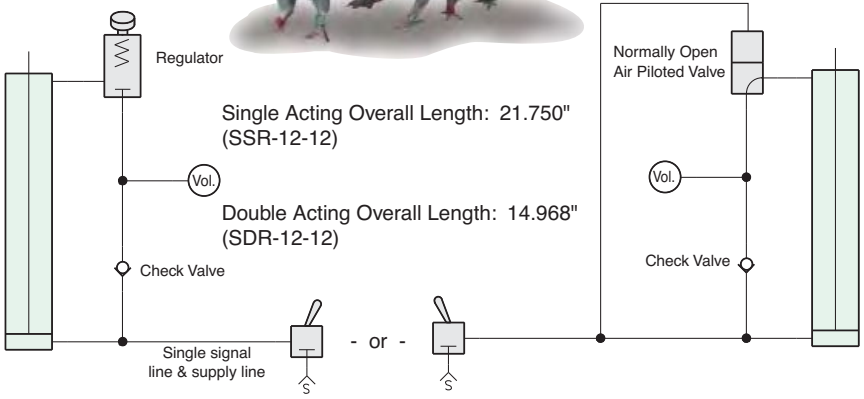
Application Story

ap·pli·ca·tion \ap-l ə'kâ-sh ən\ n 1 : the act of applying 2 : assiduous attention 3 : REQUEST; also : a form used in making a request 4 : something placed or spread on a surface 5 : capacity for use

Clippard Applications Have Gone to the Birds

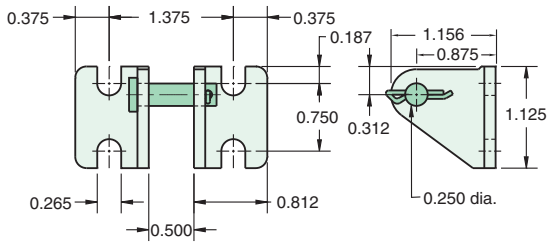
Pneumatic automation plays a role on the roof tops of Clippard. Over time, pigeons become unruffled by the presence of a motionless plastic owl. By automating several owls throughout the area to pop up out of 8″ PVC pipes, the pigeon problem has flown away.

While this application only requires a single acting cylinder, they tend to be longer than double acting cylinders of the same stroke. To fit the cylinder inside of the owl and have enough stroke to raise it fully, these wise old birds used double acting cylinders with a little circuitry to make them act like single acting cylinders.



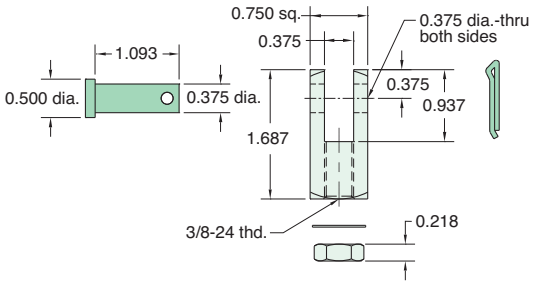
CB-2095

Clevis Bracket
Material: Steel, bright zinc plated



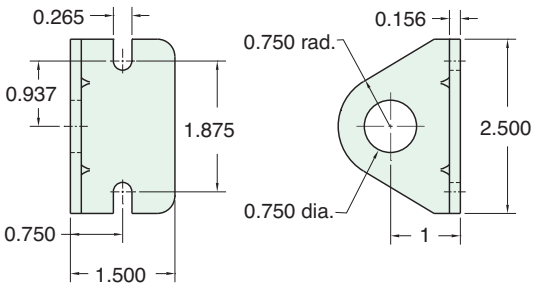
RC-2081

Rod Clevis
Material: Steel, electroless nickel plate



FB-2491

Foot Bracket
Material: Steel, bright zinc plated



Mounting Nuts

Stud Nut

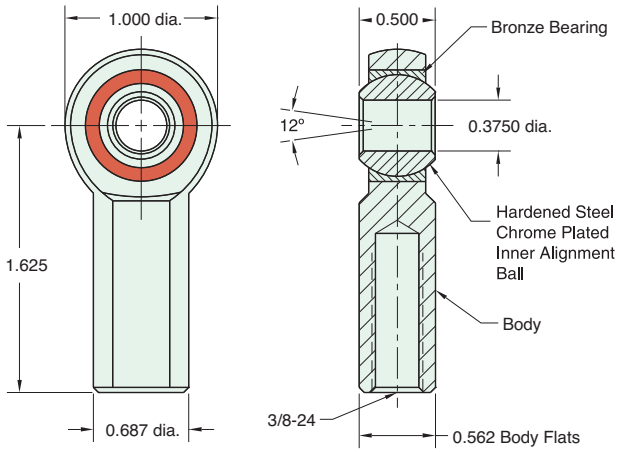
Part Number	Across Flats	Nut Thickness	Nut (Thread)
N12-16	1 3/32″	27/64″	3/4-16

Rod Nut

Part Number	Across Flats	Nut Thickness	Nut (Thread)
N06-24A	9/16″	7/32″	3/8-24
N06-24B	1/2″	3/32″	3/8-24

RE-2085

Rod End
Material: Steel, bright zinc plated body



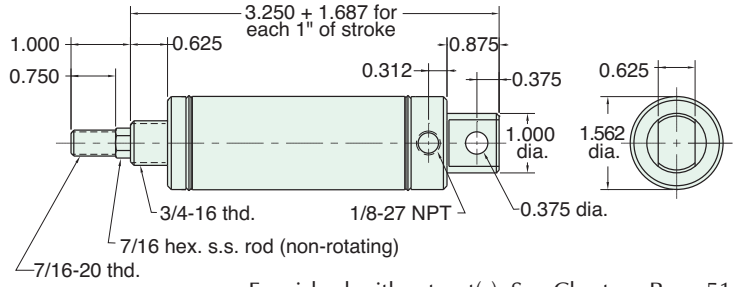
Max. Static Radial Load (rod end only): 3,950 lbs.
Fits Rod Thread Size: 3/8-24

1 1/2″ Bore Stainless Steel Cylinder

CSN-24-❑-❑

Single Acting

Mount: Clevis **Standard Stroke Lengths:** 1/2″, 1″, 1-1/2″, 2″, 3″, 4″
Type: Non-Rotating Rod **Spring Compressed:** 10 lbs. **Spring At Rest:** 4 1/2 lbs.
Options: M, B, V, N, H, P6 **Maximum Stroke:** 24″ For M option add 0.125

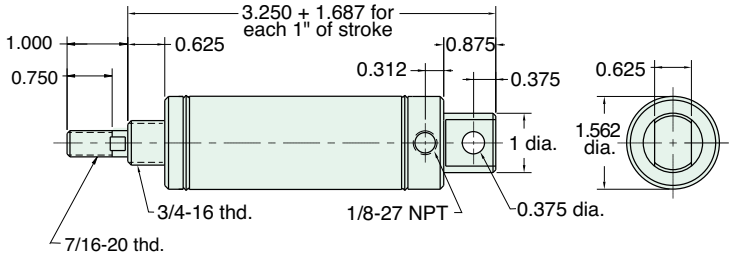


Furnished without nut(s). See Chart on Page 51.

CSR-24-❑-❑

Single Acting

Mount: Clevis **Standard Stroke Lengths:** 1/2″, 1″, 1-1/2″, 2″, 3″, 4″
Type: Rotating Rod **Spring Compressed:** 10 lbs. **Spring At Rest:** 4 1/2 lbs.
Options: M, B, W, V, N, H, P6 **Maximum Stroke:** 24″ For M option add 0.125

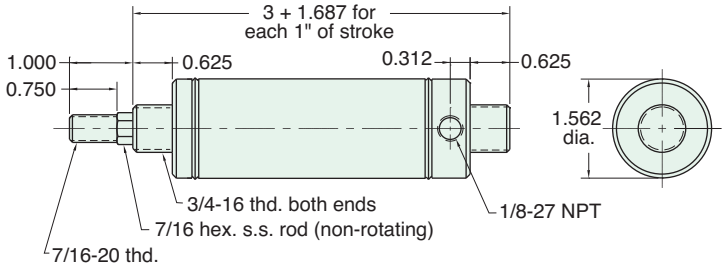


Furnished without nut(s). See Chart on Page 51.

ESN-24-❑-❑

Single Acting

Mount: End **Standard Stroke Lengths:** 1/2″, 1″, 1-1/2″, 2″, 3″, 4″
Type: Non-Rotating Rod **Spring Compressed:** 10 lbs. **Spring At Rest:** 4 1/2 lbs.
Options: M, B, V, N, H **Maximum Stroke:** 24″ For M option add 0.125

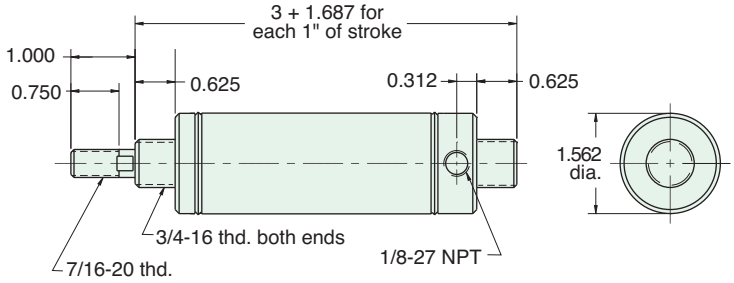


Nuts included, but not shown on drawing

ESR-24-❑-❑

Single Acting

Mount: End **Standard Stroke Lengths:** 1/2″, 1″, 1-1/2″, 2″, 3″, 4″
Type: Rotating Rod **Spring Compressed:** 10 lbs. **Spring At Rest:** 4 1/2 lbs.
Options: M, B, W, V, N, H **Maximum Stroke:** 15″ For M option add 0.125



Nut included, but not shown on drawing

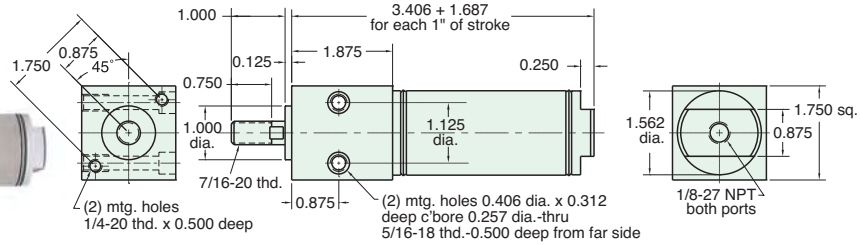
1 1/2″ Bore Stainless Steel Cylinder

FSR-24-❑-❑

Single Acting

Mount: Front **Standard Stroke Lengths:** 1/2″, 1″, 1-1/2″, 2″, 3″, 4″
Type: Rotating Rod **Spring Compressed:** 10 lbs. **Spring At Rest:** 4 1/2 lbs.
Options: M, B, W, V, N, S, H **Maximum Stroke:** 24″

For M option add 0.125
For S option add 0.187

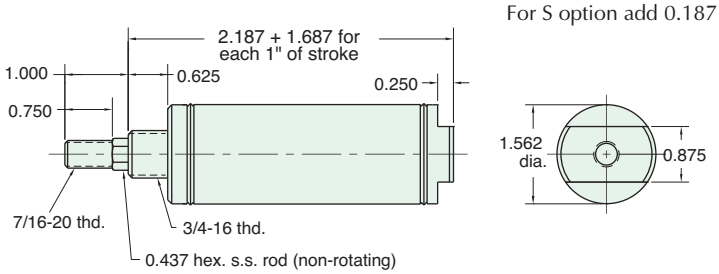


SSN-24-❑-❑

Single Acting

Mount: Stud **Standard Stroke Lengths:** 1/2″, 1″, 1-1/2″, 2″, 3″, 4″
Type: Non-Rotating Rod **Spring Compressed:** 10 lbs. **Spring At Rest:** 4 1/2 lbs.
Options: M, B, V, N, S, H **Maximum Stroke:** 24″

For M option add 0.125
For S option add 0.187



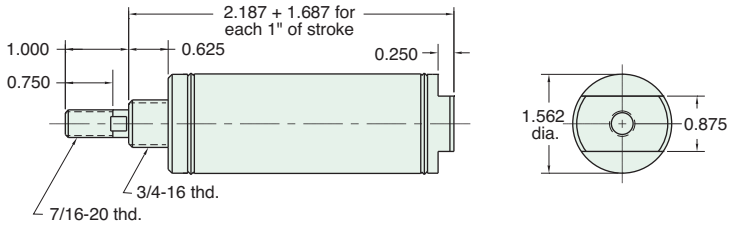
Nut included, but not shown on drawing

SSR-24-❑-❑

Single Acting

Mount: Stud **Standard Stroke Lengths:** 1/2″, 1″, 1-1/2″, 2″, 3″, 4″
Type: Rotating Rod **Spring Compressed:** 10 lbs. **Spring At Rest:** 4 1/2 lbs.
Options: M, B, W, V, N, S, H **Maximum Stroke:** 24″

For M option add 0.125
For S option add 0.187



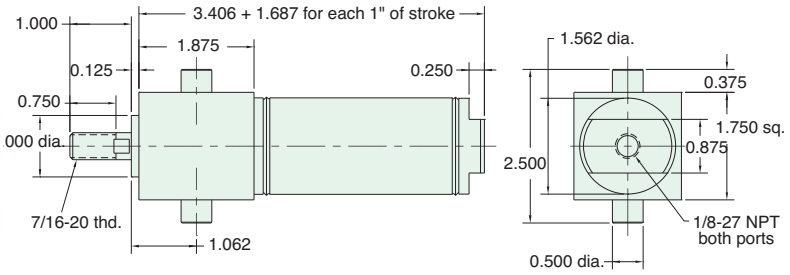
Nut included, but not shown on drawing

TSR-24-❑-❑

Single Acting

Mount: Trunnion **Standard Stroke Lengths:** 1/2″, 1″, 1-1/2″, 2″, 3″, 4″
Type: Rotating Rod **Spring Compressed:** 10 lbs. **Spring At Rest:** 4 1/2 lbs.
Options: M, B, W, V, N, S, H **Maximum Stroke:** 23″

For M option add 0.125
For S option add 0.187

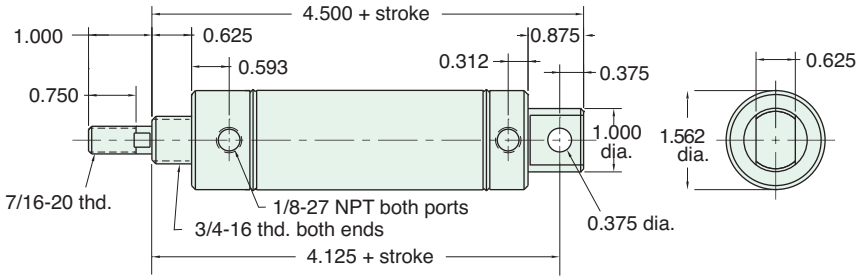


1 1/2″ Bore Stainless Steel Cylinder

CDR-24-❑-❑

Double Acting

Mount: Clevis **Standard Stroke Lengths:** 1/2″, 1″, 1-1/2″, 2″, 3″, 4″, 6″, 8″, 10″, 12″
Type: Rotating Rod **Maximum Stroke:** 39″
Options: C, F, R, M, B, W, V, N, P2, P3, P4, P5, P6, P7, P8

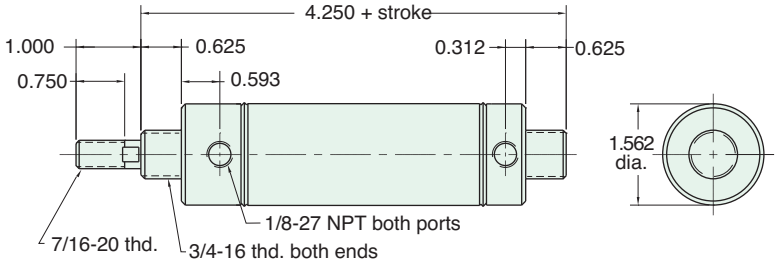


Furnished without nut(s). See Chart on Page 51.

EDR-24-❑-❑

Double Acting

Mount: End **Standard Stroke Lengths:** 1/2″, 1″, 1-1/2″, 2″, 3″, 4″, 6″, 8″, 10″, 12″
Type: Rotating Rod **Maximum Stroke:** 39″
Options: C, F, R, M, B, W, V, N, P6, P7, P8

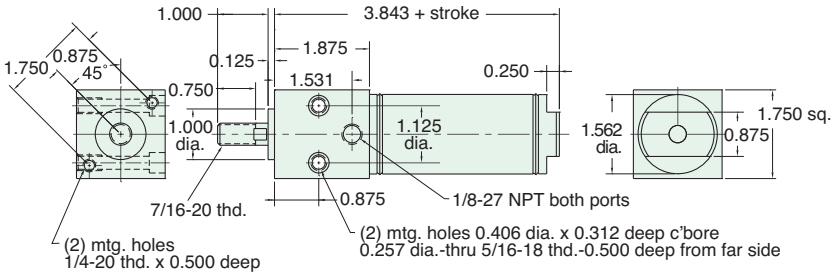


Nuts included, but not shown on drawing

FDR-24-❑-❑

Double Acting

Mount: Front **Standard Stroke Lengths:** 1/2″, 1″, 1-1/2″, 2″, 3″, 4″, 5″, 6″
Type: Rotating Rod **Maximum Stroke:** 40″
Options: M, B, W, V, N, S, P6, P7, P8 For S option add 0.187

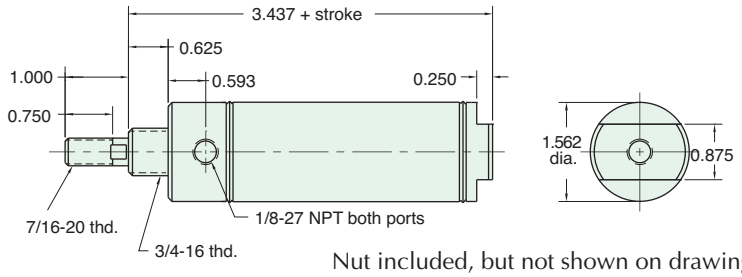


SDR-24-❑-❑

Double Acting

Mount: Stud **Standard Stroke Lengths:** 1/2″, 1″, 1-1/2″, 2″, 3″, 4″, 6″, 8″, 10″, 12″
Type: Rotating Rod **Maximum Stroke:** 40″
Options: C, F, R, M, B, W, V, N, S, P6, P7, P8 C, F, R and S option add 0.187

NEW! All Stainless Steel line now available!
See pages 66 - 70



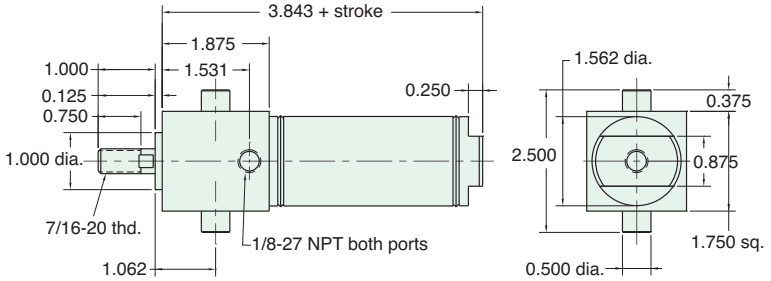
Nut included, but not shown on drawing
C, F, & R options use side ported rear head

1 1/2″ Bore Stainless Steel Cylinder

TDR-24-❑-❑

Double Acting

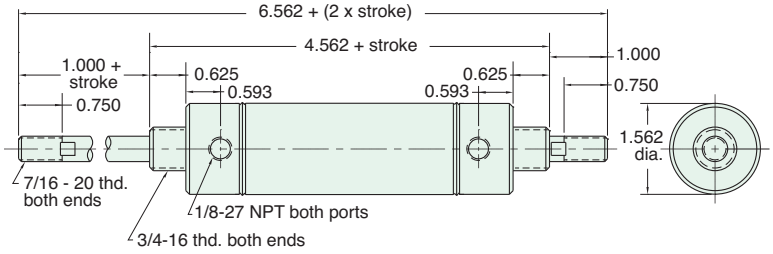
Mount: Trunnion **Standard Stroke Lengths:** 1/2″, 1″, 1-1/2″, 2″, 3″, 4″, 5″, 6″
Type: Rotating Rod **Maximum Stroke:** 40″
Options: M, B, W, V, N, D, P6, P7, P8 For S option add 0.187



SDD-24-❑-❑

Double Acting

Mount: Stud **Standard Stroke Lengths:** 1″, 2″, 3″, 4″, 5″, 6″, 8″, 10″, 12″
Type: Double Rod **Maximum Stroke:** 19″
Options: C, F, M, B, W, V, N, P6, P7, P8

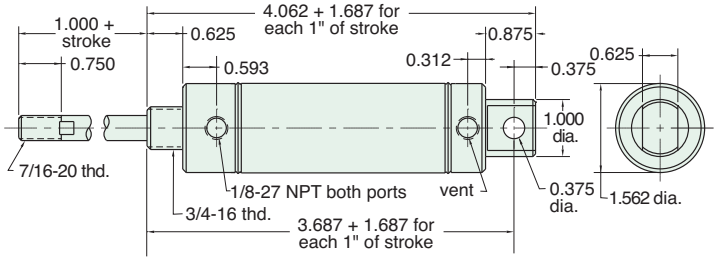


Nuts included, but not shown on drawing

CRR-24-❑-❑

Reverse Acting

Mount: Clevis **Standard Stroke Lengths:** 1/2″, 1″, 1-1/2″, 2″, 3″, 4″
Type: Rotating Rod **Spring Compressed:** 10 lbs. **Spring At Rest:** 4 1/2 lbs.
Options: M, B, W, V, N, H, P2, P3, P4, P5, P6, P7, P8 **Maximum Stroke:** 14″

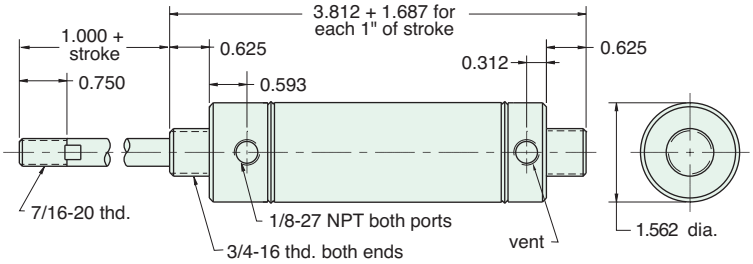


Furnished without nut(s). See Chart on Page 51.

ERR-24-❑-❑

Reverse Acting

Mount: End **Standard Stroke Lengths:** 1/2″, 1″, 1-1/2″, 2″, 3″, 4″
Type: Rotating Rod **Spring Compressed:** 10 lbs. **Spring At Rest:** 4 1/2 lbs.
Options: M, B, W, V, N, H **Maximum Stroke:** 14″



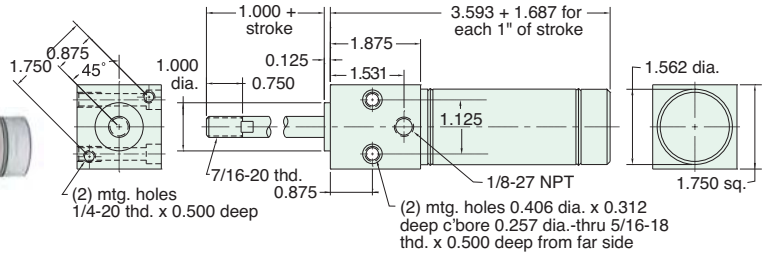
Nuts included, but not shown on drawing

1 1/2″ Bore Stainless Steel Cylinder

FRR-24-❑-❑

Reverse Acting

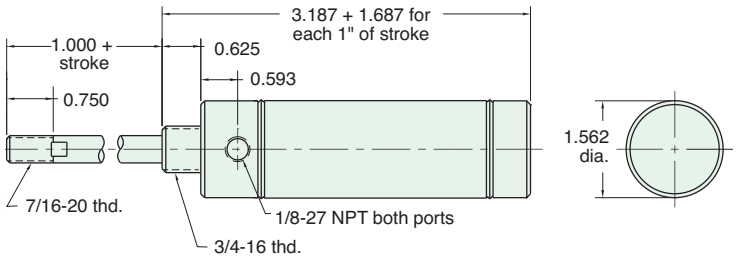
Mount: Front **Standard Stroke Lengths:** 1/2″, 1″, 1-1/2″, 2″, 3″, 4″
Type: Rotating Rod **Spring Compressed:** 10 lbs. **Spring At Rest:** 4 1/2 lbs.
Options: M, B, W, V, N, H **Maximum Stroke:** 15″



SRR-24-❑-❑

Reverse Acting

Mount: Stud **Standard Stroke Lengths:** 1/2″, 1″, 1-1/2″, 2″, 3″, 4″
Type: Rotating Rod **Spring Compressed:** 10 lbs. **Spring At Rest:** 4 1/2 lbs.
Options: M, B, W, V, N, H **Maximum Stroke:** 15″

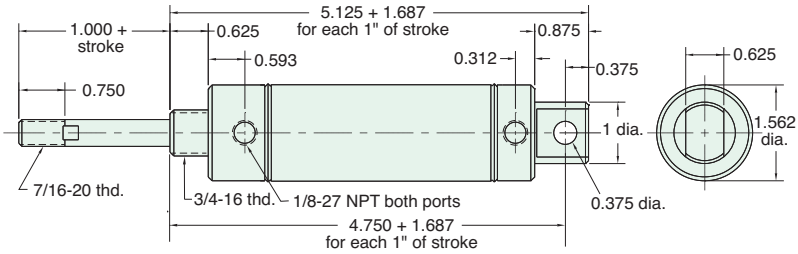


Nut included, but not shown on drawing

CBR-24-❑-❑

Double Acting, Spring Bias

Mount: Clevis **Standard Stroke Lengths:** 1/2″, 1″, 1-1/2″, 2″, 3″, 4″
Type: Rotating Rod **Spring Compressed:** 10 lbs. **Spring At Rest:** 4 1/2 lbs.
Options: M, B, W, V, N, H, P2, P3, P4, P5, P6, P7, P8 **Maximum Stroke:** 14″

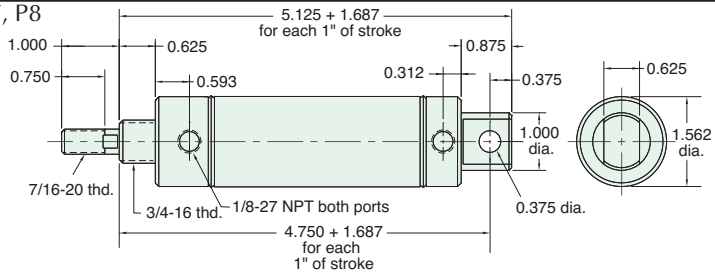


Furnished without nut(s). See Chart on Page 51.

CFR-24-❑-❑

Double Acting, Front Spring Bias

Mount: Clevis **Standard Stroke Lengths:** 1/2″, 1″, 1-1/2″, 2″, 3″, 4″
Type: Rotating Rod **Spring Compressed:** 10 lbs. **Spring At Rest:** 4 1/2 lbs.
Options: M, B, W, V, N, H, P2, P3, P4, P5, P6, P7, P8 **Maximum Stroke:** 23″



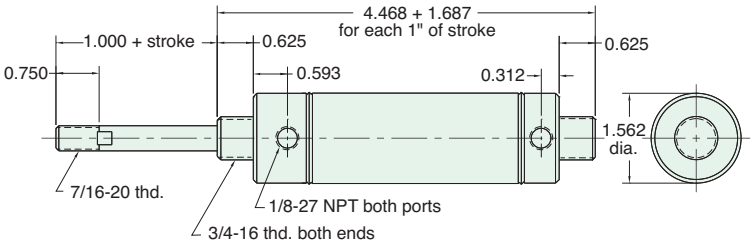
Furnished without nut(s). See Chart on Page 51.

1 1/2″ Bore Stainless Steel Cylinder

EBR-24-❑-❑

Double Acting, Rear Spring Bias

Mount: End **Standard Stroke Lengths:** 1/2″, 1″, 1-1/2″, 2″, 3″, 4″
Type: Rotating Rod **Spring Compressed:** 10 lbs. **Spring At Rest:** 4 1/2 lbs.
Options: M, B, W, V, N, H, P6, P7, P8 **Maximum Stroke:** 14″

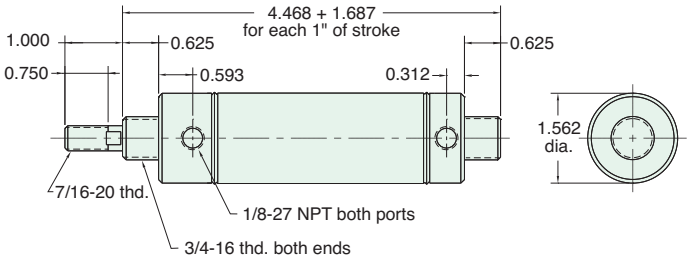


Nuts included, but not shown on drawing

EFR-24-❑-❑

Double Acting, Front Spring Bias

Mount: End **Standard Stroke Lengths:** 1/2″, 1″, 1-1/2″, 2″, 3″, 4″
Type: Rotating Rod **Spring Compressed:** 10 lbs. **Spring At Rest:** 4 1/2 lbs.
Options: M, B, W, V, N, H, P6, P7, P8 **Maximum Stroke:** 23″

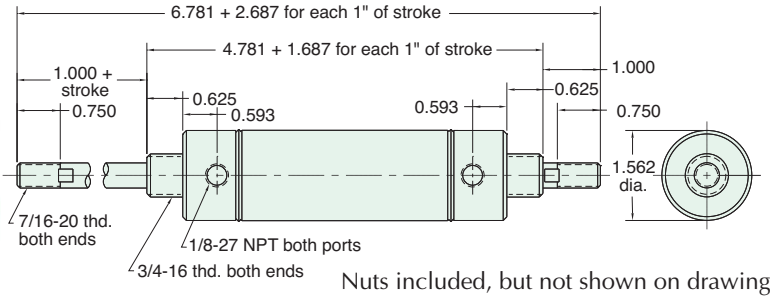


Nuts included, but not shown on drawing

SFD-24-❑-❑

Double Acting, Front Spring Bias

Mount: Stud **Standard Stroke Lengths:** 1/2″, 1″, 1-1/2″, 2″, 3″, 4″
Type: Double Rod **Spring Compressed:** 10 lbs. **Spring At Rest:** 4 1/2 lbs.
Options: M, B, W, V, N, H, P6, P7, P8 **Maximum Stroke:** 14″

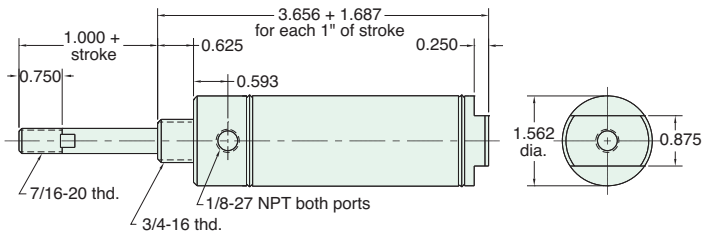


Nuts included, but not shown on drawing

SBR-24-❑-❑

Double Acting, Rear Spring Bias

Mount: Stud **Standard Stroke Lengths:** 1/2″, 1″, 1-1/2″, 2″, 3″, 4″
Type: Rotating Rod **Spring Compressed:** 10 lbs. **Spring At Rest:** 4 1/2 lbs.
Options: M, B, W, V, S, N, H, P6, P7, P8 **Maximum Stroke:** 15″ For S option add 0.187



Nuts included, but not shown on drawing

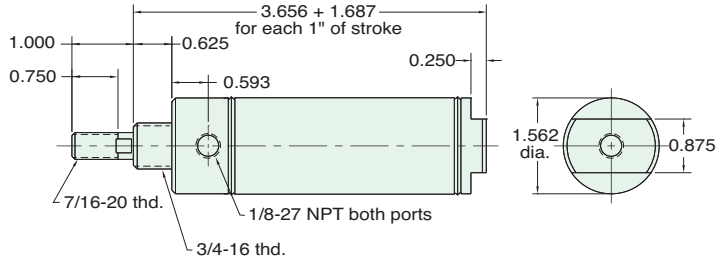
1 1/2″ Bore Stainless Steel Cylinder

SFR-24-❑-❑

Double Acting, Front Spring Bias

Mount: Stud
Type: Rotating Rod
Options: M, B, W, V, N, S, H, P6, P7, P8

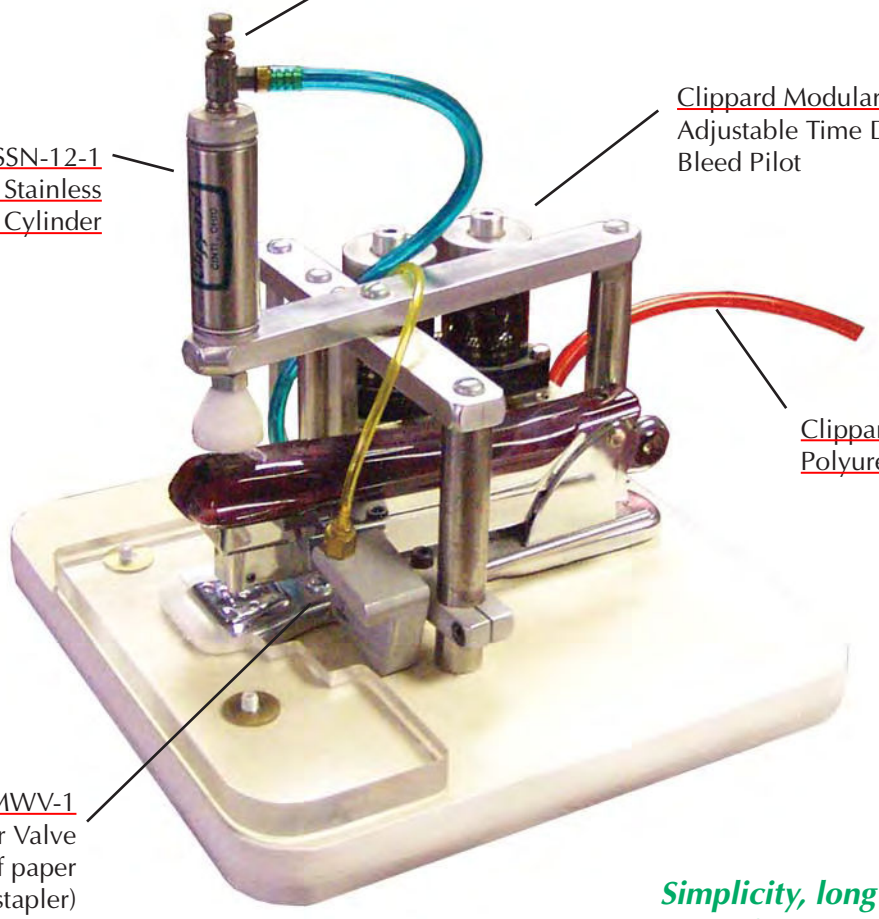
Standard Stroke Lengths: 1/2″, 1″, 1-1/2″, 2″, 3″, 4″
Spring Compressed: 10 lbs. **Spring At Rest:** 4 1/2 lbs.
Maximum Stroke: 23″
For S option add 0.187



Nut included, but not shown on drawing

For harsh environments, refer to page 76 for Clippard's Corrosion-Resistant Stainless Steel 1 1/2″ cylinders.

Pneumatic Stapler



Simplicity, long life, low cost, ease of maintenance and high power are combined in this unique office stapler application.

Mounting Nuts

Stud Nut

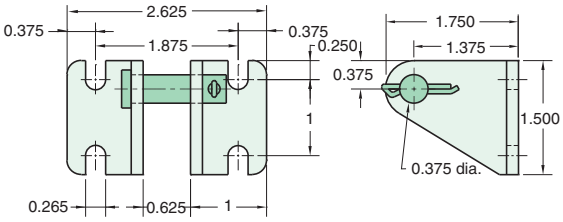
Part Number	Across Flats	Nut Thickness	Nut (Thread)
N12-16	1 3/32″	27/64″	3/4-16

Rod Nut

Part Number	Across Flats	Nut Thickness	Nut (Thread)
N07-20	11/16″	1/4″	7/16-20

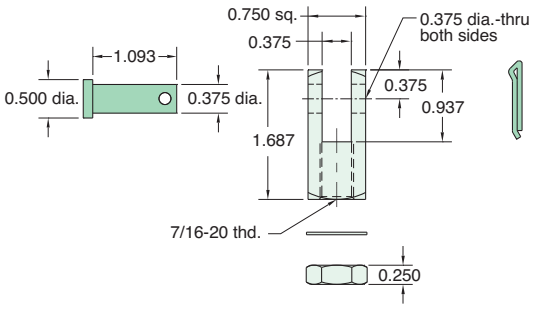
CB-2495

Clevis Bracket
Material: Steel, bright zinc plated



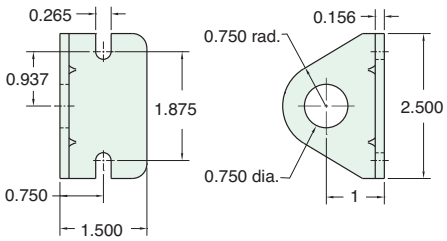
RC-2481

Rod Clevis
Material: Steel, electroless nickel plate



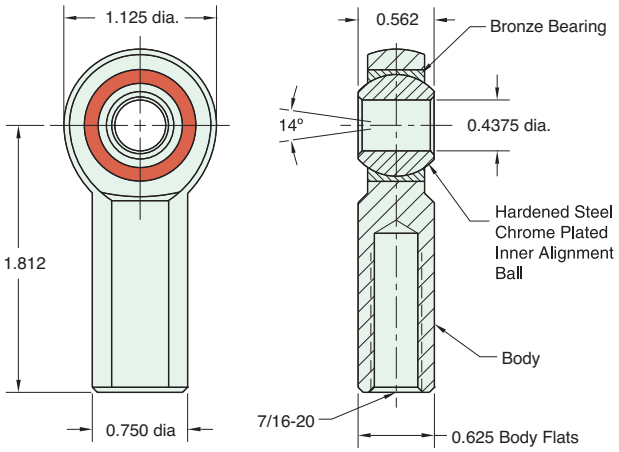
FB-2491

Foot Bracket
Material: Steel, bright zinc plated



RE-2485

Rod End
Material: Steel, bright zinc plated body



Max. Static Radial Load (rod end only): 4,300 lbs.
Fits Rod Thread Size: 7/16-20

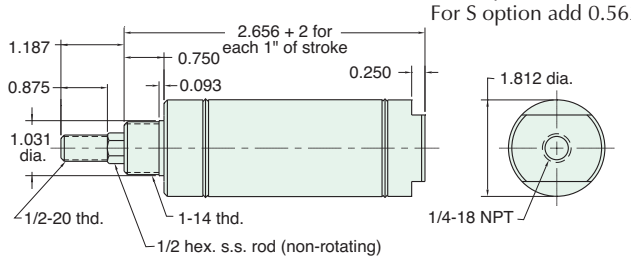
1 3/4″ Bore Stainless Steel Cylinder

SSN-28-❑-❑

Single Acting

Mount: Stud **Standard Stroke Lengths:** 1/2″, 1″, 1-1/2″, 2″, 3″, 4″
Type: Non-Rotating Rod **Spring Compressed:** 24 lbs. **Spring At Rest:** 11 lbs.
Options: M, V, N, S **Maximum Stroke:** 20″

Bumpers are standard
For M option add 0.125
For S option add 0.562



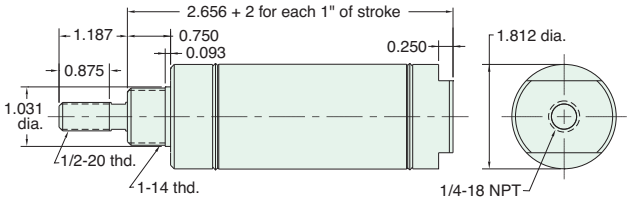
Nut included, but not shown on drawing

SSR-28-❑-❑

Single Acting

Mount: Stud **Standard Stroke Lengths:** 1/2″, 1″, 1-1/2″, 2″, 3″, 4″
Type: Rotating Rod **Spring Compressed:** 24 lbs. **Spring At Rest:** 11 lbs.
Options: M, W, V, N, S **Maximum Stroke:** 20″

Bumpers are standard
For M option add 0.1255
For S option add 0.562



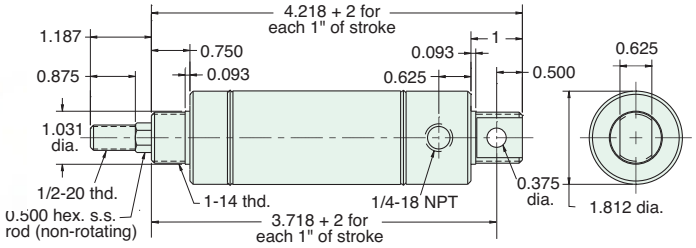
Nut included, but not shown on drawing

USN-28-❑-❑

Single Acting

Mount: Universal **Standard Stroke Lengths:** 1/2″, 1″, 1-1/2″, 2″, 3″, 4″
Type: Non-Rotating Rod **Spring Compressed:** 24 lbs. **Spring At Rest:** 11 lbs.
Options: M, V, N, P6

Bumpers are standard. For M option add 0.125



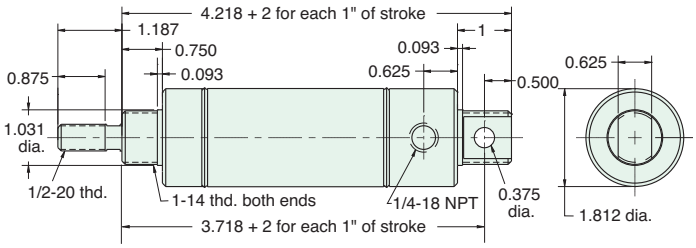
Furnished without nut(s). See Chart on Page 55.

USR-28-❑-❑

Single Acting

Mount: Universal **Standard Stroke Lengths:** 1/2″, 1″, 1-1/2″, 2″, 3″, 4″
Type: Rotating Rod **Spring Compressed:** 24 lbs. **Spring At Rest:** 11 lbs.
Options: M, W, V, N, P6

Bumpers are standard. For M option add 0.125



Furnished without nut(s). See Chart on Page 55.

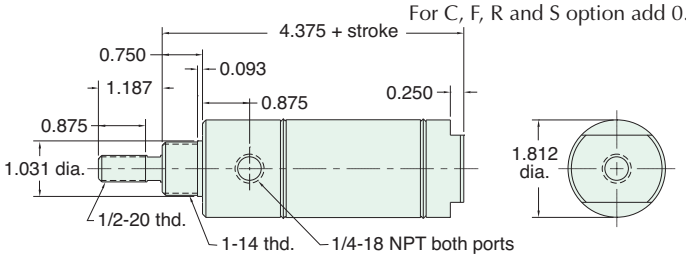
1 3/4″ Bore Stainless Steel Cylinder

SDR-28-❑-❑

Double Acting

Mount: Stud **Standard Stroke Lengths:** 1/2″, 1″, 1-1/2″, 2″, 3″, 4″, 5″, 6″
Type: Rotating Rod **Maximum Stroke:** 39″
Options: C, F, R, M, W, V, N, S, P6, P7, P8 **Bumpers are standard**

For C, F, R and S option add 0.562



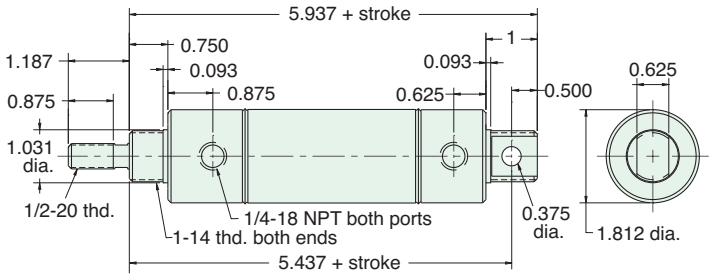
Nut included, but not shown on drawing

C, F, & R options use side ported rear head

UDR-28-❑-❑

Double Acting

Mount: Universal **Standard Stroke Lengths:** 1/2″, 1″, 1-1/2″, 2″, 3″, 4″, 6″, 8″, 10″, 12″
Type: Rotating Rod **Maximum Stroke:** 37″
Options: C, F, R, M, W, V, N, P2, P3, P4, P5, P6, P7, P8 **Bumpers are standard**

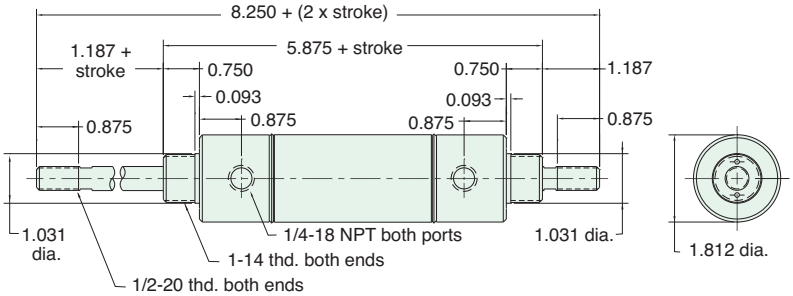


Furnished without nut(s). See Chart on Page 55.

SDD-28-❑-❑

Double Acting

Mount: Stud **Standard Stroke Lengths:** 1″, 2″, 3″, 4″, 5″, 6″, 8″, 10″, 12″
Type: Double Rod **Maximum Stroke:** 18″
Options: C, F, M, W, V, N, P6, P7, P8 **Bumpers are standard**



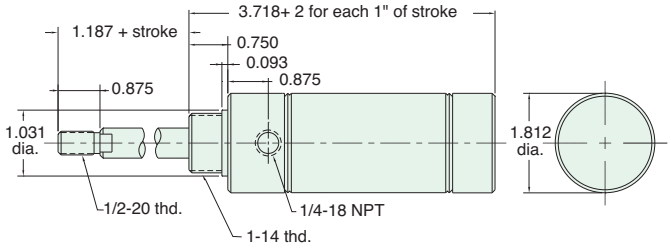
Nuts included, but not shown on drawing

SRR-28-❑-❑

Reverse Acting

Mount: Stud **Standard Stroke Lengths:** 1/2″, 1″, 1-1/2″, 2″, 3″, 4″
Type: Rotating Rod **Spring Compressed:** 24 lbs. **Spring At Rest:** 11 lbs.
Options: M, W, V, N **Maximum Stroke:** 13″ **Bumpers are standard**

For M option add 0.125



Nut included, but not shown on drawing

1 3/4″ Bore Stainless Steel Cylinder

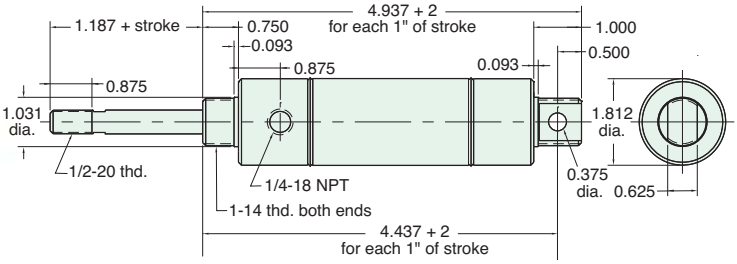
URR-28-❑-❑

Reverse Acting

Mount: Universal
Type: Rotating Rod
Options: M, W, V, N, P2

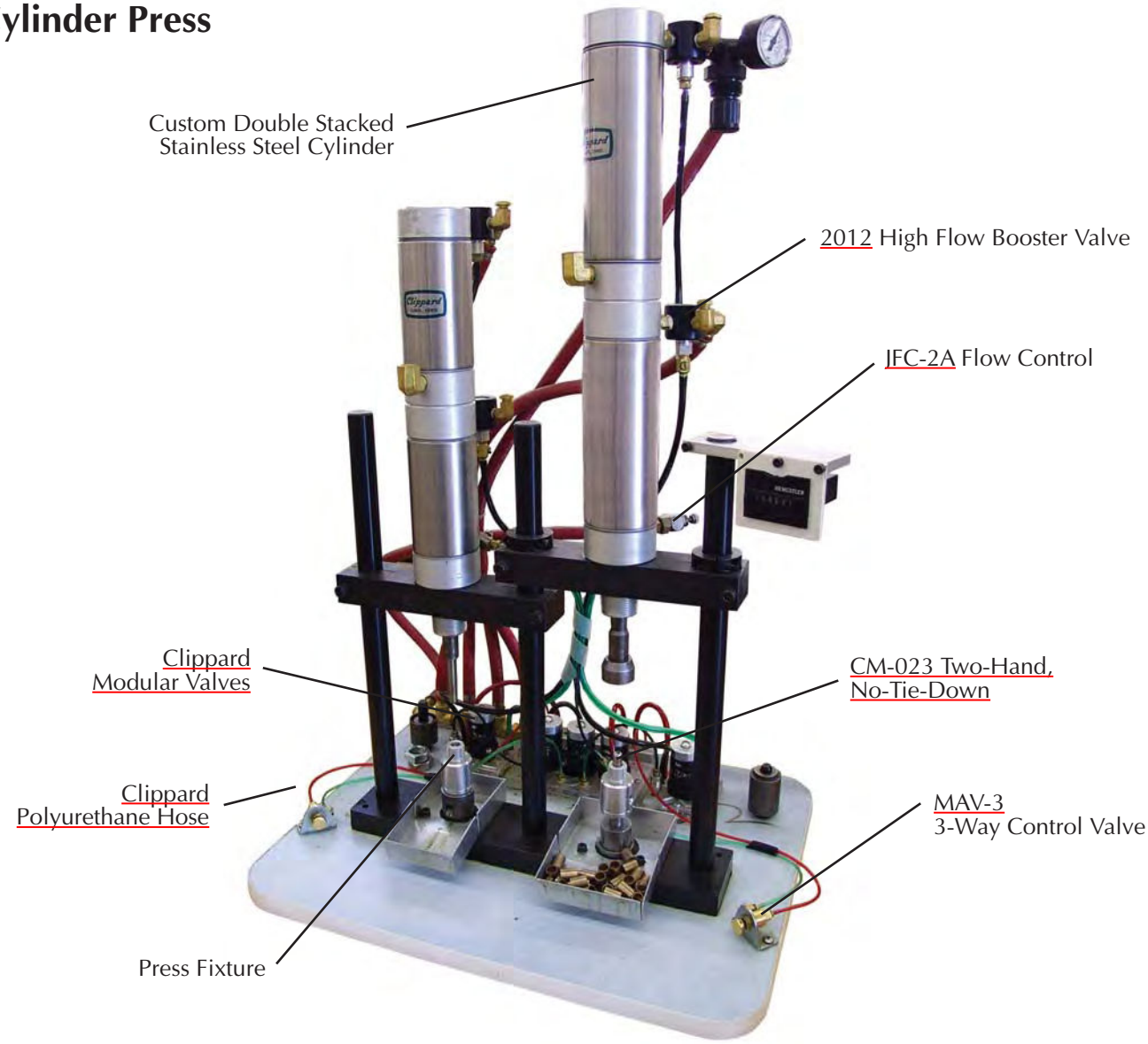
Standard Stroke Lengths: 1/2″, 1″, 1-1/2″, 2″, 3″, 4″
Spring Compressed: 24 lbs. **Spring At Rest:** 11 lbs.
Maximum Stroke: 12″

Bumpers are standard
For M option add 0.125



Furnished without nut(s). See Chart on Page 55.

Dual Double Stacked Cylinder Press



Mounting Nuts

Stud Nut

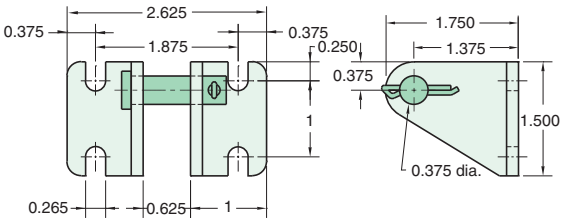
Part Number	Across Flats	Nut Thickness	Nut (Thread)
N16-14	1 1/2″	35/64″	1-14

Rod Nut

Part Number	Across Flats	Nut Thickness	Nut (Thread)
N08-20	3/4″	5/16″	1/2-20

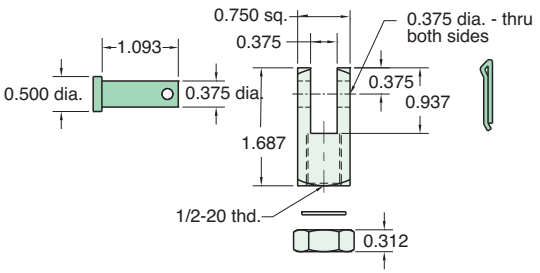
CB-2495

Clevis Bracket
Material: Steel, bright zinc plated



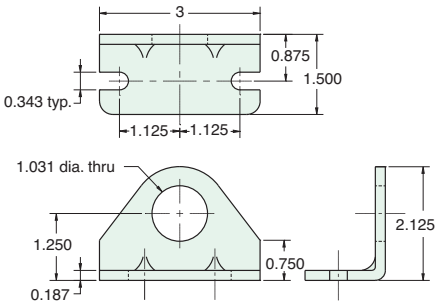
RC-3281

Rod Clevis
Material: Steel, electroless nickel plate



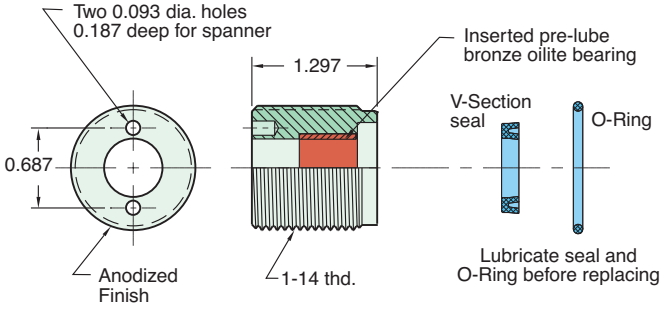
FB-2891

Foot Bracket
Material: Steel, bright zinc plated



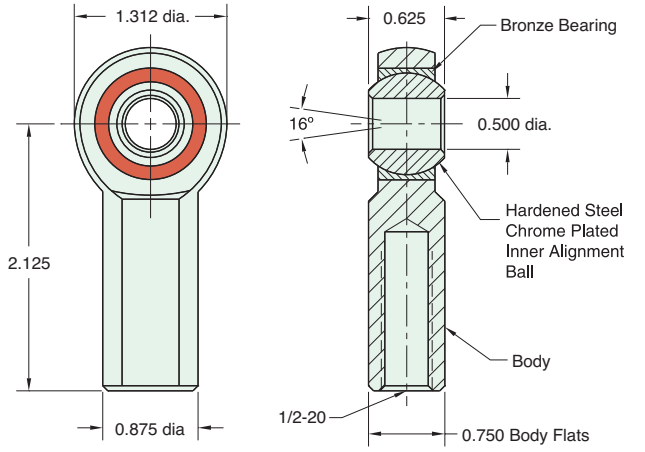
RK-2899

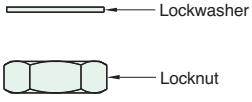
Replaceable Rod Seal
Material: Aluminum body



RE-3285

Rod End
Material: Steel, bright zinc plated body





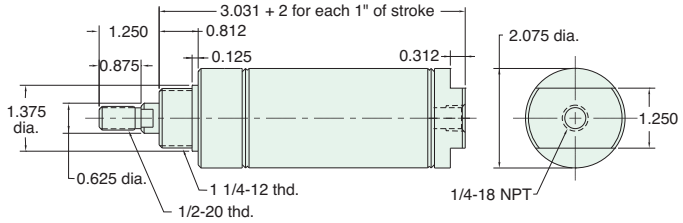
Max. Static Radial Load (rod end only): 6,700 lbs.
Fits Rod Thread Size: 1/2-20

2″ Bore Stainless Steel Cylinder

SSR-32-❑-❑

Single Acting

Mount: Stud **Standard Stroke Lengths:** 1″, 2″, 3″, 4″
Type: Rotating Rod **Spring Compressed:** 30 lbs. **Spring At Rest:** 15 lbs.
Options: M, B, W, V, N, S **Maximum Stroke:** 20″
For M option add 0.125
For S option add 0.375

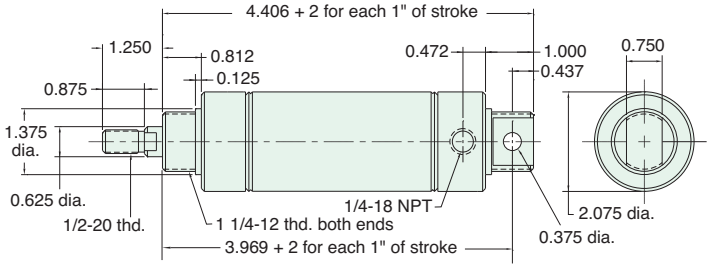


Nut included, but not shown on drawing

USR-32-❑-❑

Single Acting

Mount: Universal **Standard Stroke Lengths:** 1/2″, 1″, 1-1/2″, 2″, 3″, 4″
Type: Rotating Rod **Spring Compressed:** 30 lbs. **Spring At Rest:** 15 lbs.
Options: M, B, W, V, N, P6 **Maximum Stroke:** 19″
For M option add 0.125

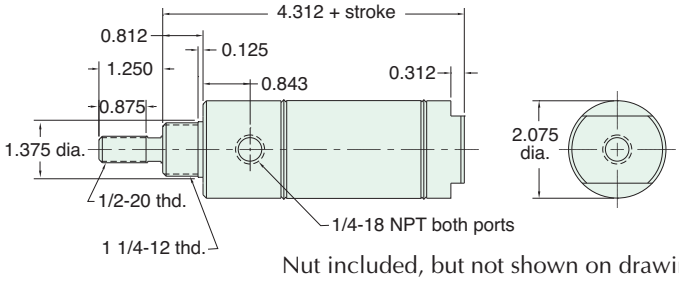


Furnished without nut(s). See Chart on Page 59.

SDR-32-❑-❑

Double Acting

Mount: Stud **Standard Stroke Lengths:** 1/2″, 1″, 1-1/2″, 2″, 3″, 4″, 5″, 6″
Type: Rotating Rod **Maximum Stroke:** 39″
Options: C, F, R, M, B, W, V, N, S, P6, P7, P8
For C, F, R and S options add 0.375



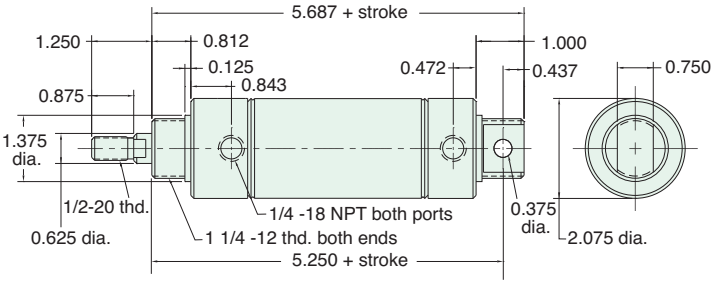
Nut included, but not shown on drawing
C, F, & R options use side ported rear head

UDR-32-❑-❑

Double Acting

Mount: Universal **Standard Stroke Lengths:** 1/2″, 1″, 1-1/2″, 2″, 3″, 4″, 5″, 6″, 7″, 8″, 10″, 12″
Type: Rotating Rod **Maximum Stroke:** 38″
Options: C, F, R, M, B, W, V, N, P2, P3, P4, P5, P6, P7, P8

New All Stainless Steel line now available!
See pages 66 - 70



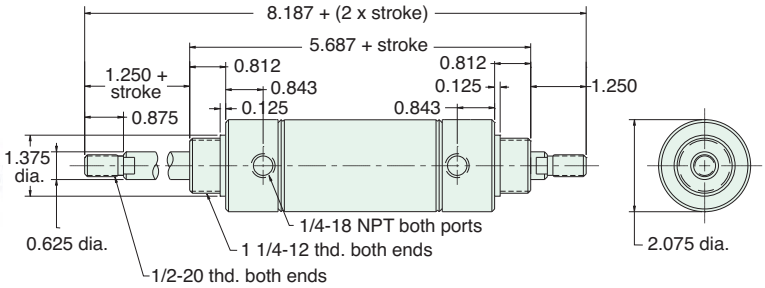
Furnished without nut(s). See Chart on Page 59.

2″ Bore Stainless Steel Cylinder

SDD-32-❑-❑

Double Acting

Mount: Stud **Standard Stroke Lengths:** 1″, 2″, 3″, 4″, 5″, 6″, 8″, 10″, 12″
Type: Double Rod **Maximum Stroke:** 18″
Options: C, F, M, B, W, V, N, P6, P7, P8

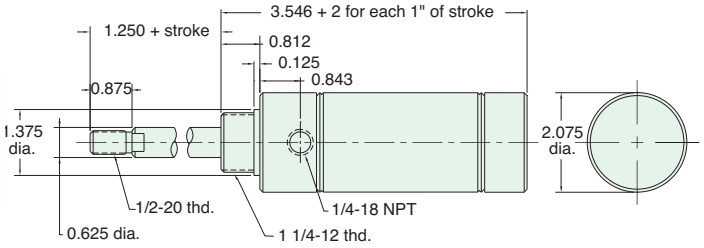


Nuts included, but not shown on drawing

SRR-32-❑-❑

Reverse Acting

Mount: Stud **Standard Stroke Lengths:** 1″, 2″, 3″, 4″
Type: Rotating Rod **Spring Compressed:** 30 lbs. **Spring At Rest:** 15 lbs.
Options: M, B, W, V, N **Maximum Stroke:** 12″ For M option add 0.125

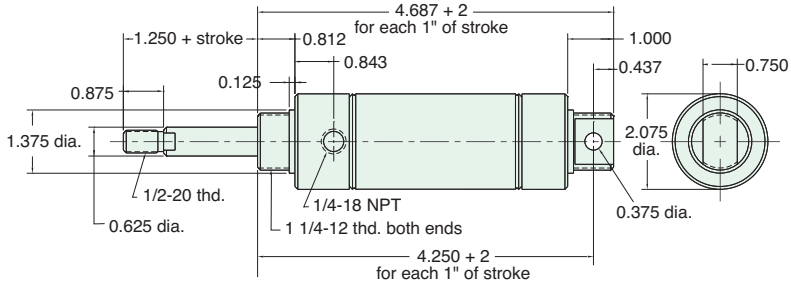


Nut included, but not shown on drawing

URR-32-❑-❑

Reverse Acting

Mount: Universal **Standard Stroke Lengths:** 1/2″, 1″, 1-1/2″, 2″, 3″, 4″
Type: Rotating Rod **Spring Compressed:** 30 lbs. **Spring At Rest:** 15 lbs.
Options: M, B, W, V, N, P2 **Maximum Stroke:** 13″ For M option add 0.125

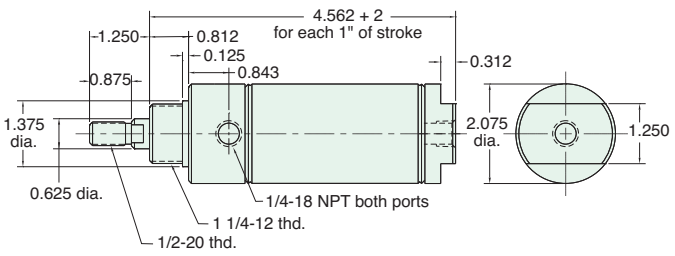


Furnished without nut(s). See Chart on Page 59.

SFR-32-❑-❑

Spring Bias

Mount: Stud **Standard Stroke Lengths:** 1/2″, 1″, 1-1/2″, 2″, 3″, 4″
Type: Rotating Rod **Spring Compressed:** 30 lbs. **Spring At Rest:** 15 lbs.
Options: M, B, W, V, N, S, P6, P7, P8 For S option add 0.375



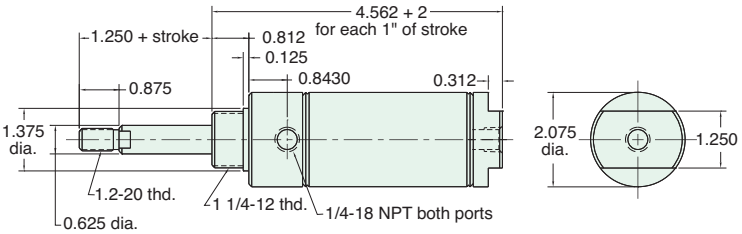
Nut included, but not shown on drawing

2″ Bore Stainless Steel Cylinder

SBR-32-❑-❑

Mount: Stud **Standard Stroke Lengths:** 1/2″, 1″, 1-1/2″, 2″, 3″, 4″
Type: Rotating Rod **Spring Compressed:** 30 lbs. **Spring At Rest:** 15 lbs.
Options: M, B, W, V, N, S, P6, P7, P8 For S option add 0.375

Spring Bias

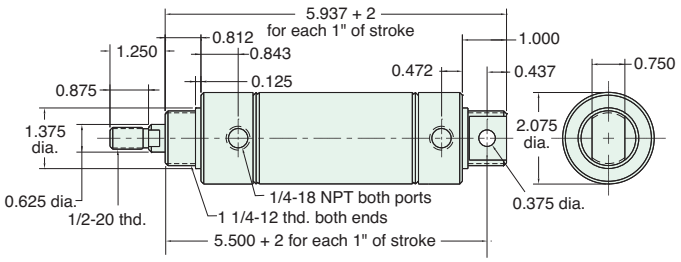


Nut included, but not shown on drawing

UFR-32-❑-❑

Mount: Universal **Standard Stroke Lengths:** 1/2″, 1″, 1-1/2″, 2″, 3″, 4″
Type: Rotating Rod **Spring Compressed:** 30 lbs. **Spring At Rest:** 15 lbs.
Options: M, B, W, V, N, P2, P3, P4, P5, P6, P7, P8

Spring Bias

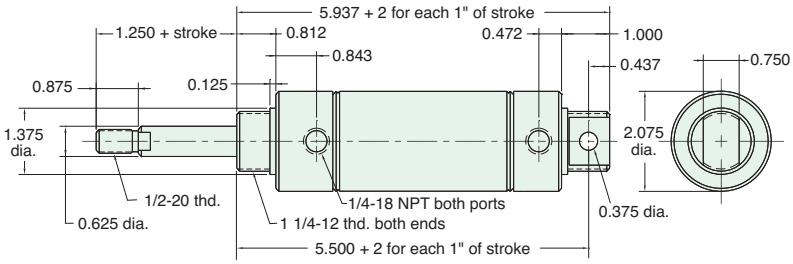


Furnished without nut(s). See Chart on Page 59.

UBR-32-❑-❑

Mount: Universal **Standard Stroke Lengths:** 1/2″, 1″, 1-1/2″, 2″, 3″, 4″
Type: Rotating Rod **Spring Compressed:** 30 lbs. **Spring At Rest:** 15 lbs.
Options: M, B, W, V, N, P2, P3, P4, P5, P6, P7, P8

Spring Bias



Furnished without nut(s). See Chart on Page 59.

CUSTOMer solutions

If you need a product that fits your application perfectly, Clippard has the capability to design or modify one of its products to suit your exact needs. We understand that a standard catalog product may be close but not be exactly what you need. Let us know YOUR Need, and we will help to find YOUR Solution!

Custom Cylinders

"Twice the force in half the size" was the goal for one custom cylinder. Multiple cylinder positions, or multiplied force can be achieved with this design.

Mounting Nuts

Stud Nut

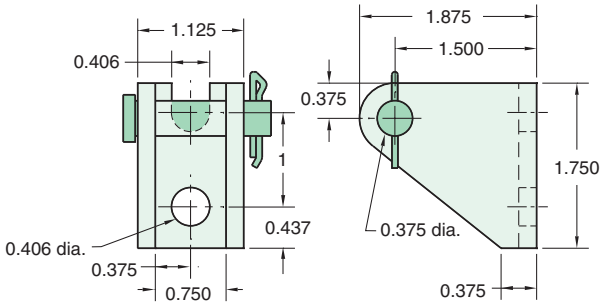
Part Number	Across Flats	Nut Thickness	Nut (Thread)
N20-12	1 3/4″	7/16″	1 1/4-12

Rod Nut

Part Number	Across Flats	Nut Thickness	Nut (Thread)
N08-20	3/4″	5/16″	1/2-20

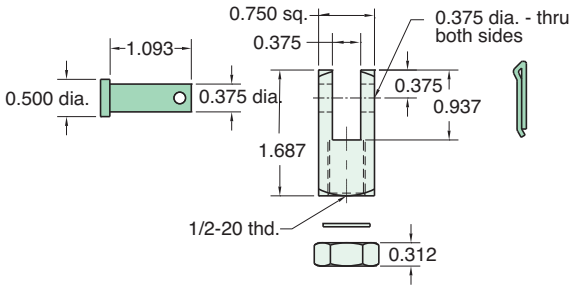
CB-3295

Clevis Bracket
Material: Steel, bright zinc plated



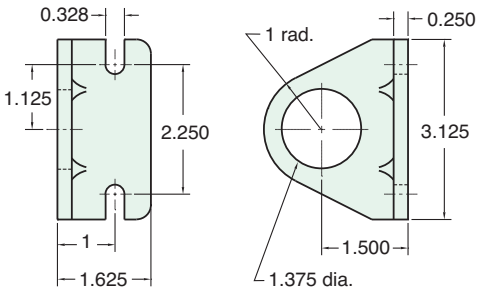
RC-3281

Rod Clevis
Material: Steel, electroless nickel plate



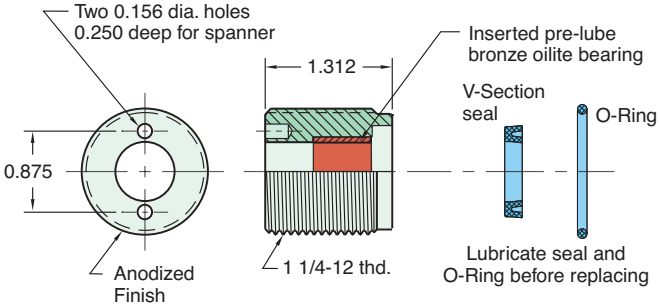
FB-3291

Foot Bracket
Material: Steel, bright zinc plated



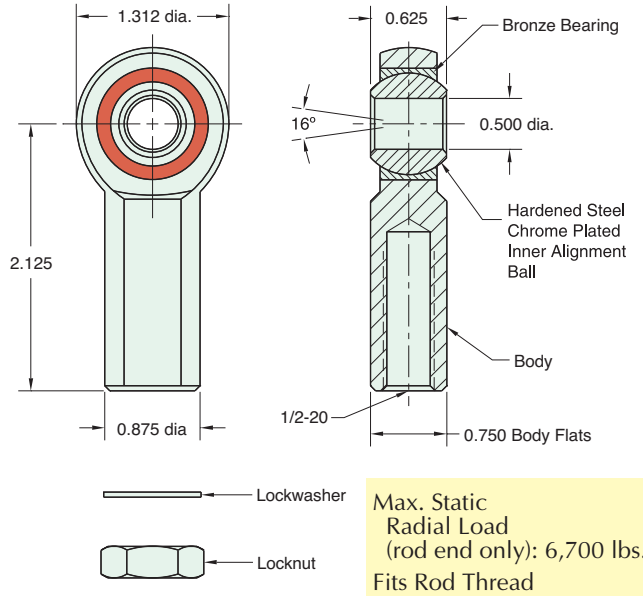
RK-3299

Replaceable Rod Seal
Material: Aluminum body



RE-3285

Rod End
Material: Steel, bright zinc plated body



Max. Static Radial Load (rod end only): 6,700 lbs.
Fits Rod Thread Size: 1/2-20

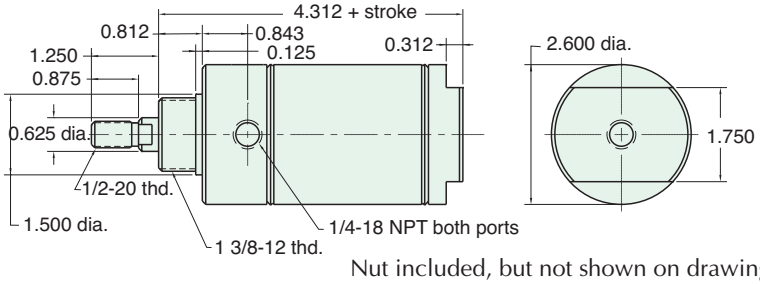
2 1/2″ Bore Stainless Steel Cylinder

SDR-40-❑-❑

Double Acting

Mount: Stud **Standard Stroke Lengths:** 1″, 2″, 3″, 4″, 5″, 6″
Type: Rotating Rod **Maximum Stroke:** 39″
Options: C, F, R, M, W, V, N, S, P6, P7, P8

Bumpers are standard
For M option add 0.312
For C, F, R and S option add 0.375



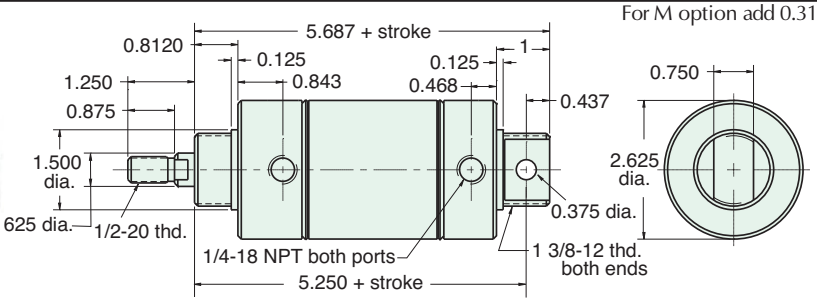
Nut included, but not shown on drawing

UDR-40-❑-❑

Double Acting

Mount: Universal **Standard Stroke Lengths:** 1″, 2″, 3″, 4″, 5″, 6″, 7″, 8″, 10″, 12″
Type: Rotating Rod **Maximum Stroke:** 38″
Options: C, F, R, M, W, V, N, P2, P3, P4, P5, P6, P7, P8

Bumpers are standard
For M option add 0.312



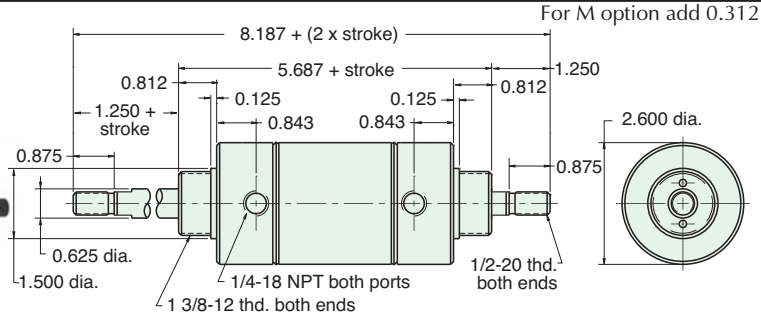
Furnished without nut(s). See Chart on Page 61.

SDD-40-❑-❑

Double Acting

Mount: Stud **Standard Stroke Lengths:** 1″, 2″, 3″, 4″, 5″, 6″, 8″, 10″, 12″
Type: Double Rod **Maximum Stroke:** 18″
Options: C, F, M, W, V, N, P6, P7, P8

Bumpers are standard
For M option add 0.312



Nut included, but not shown on drawing

Did you know that all Clippard cylinders are 100% tested.

Mounting Nuts

Stud Nut

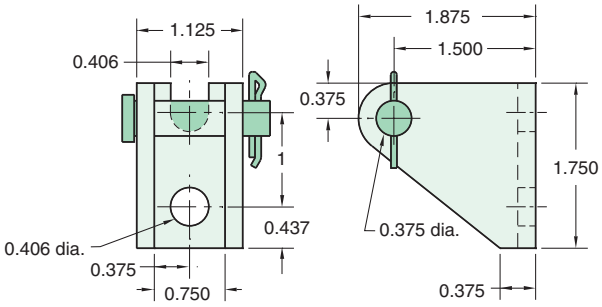
Part Number	Across Flats	Nut Thickness	Nut (Thread)
N22-12	1 7/8″	1/2″	1 3/8-12

Rod Nut

Part Number	Across Flats	Nut Thickness	Nut (Thread)
N08-20	3/4″	5/16″	1/2-20

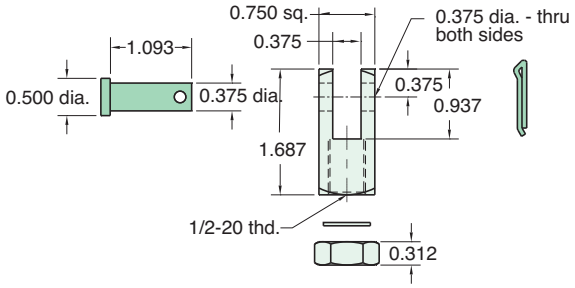
CB-3295

Clevis Bracket
Material: Steel, bright zinc plated



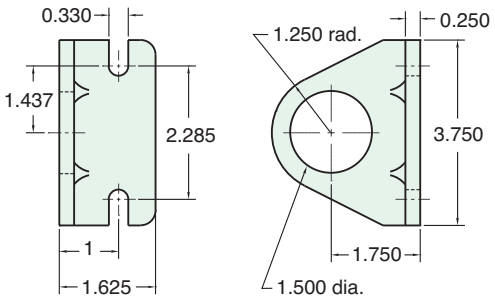
RC-3281

Rod Clevis
Material: Steel, electroless nickel plate



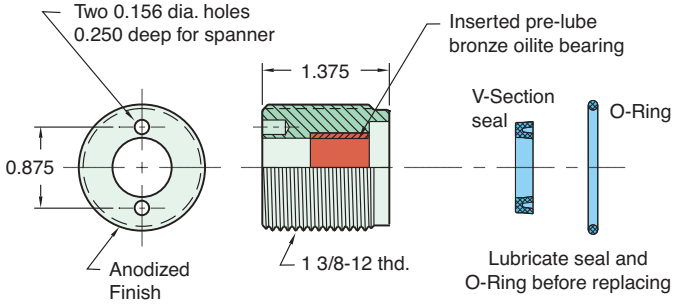
FB-4091

Foot Bracket
Material: Steel, bright zinc plated



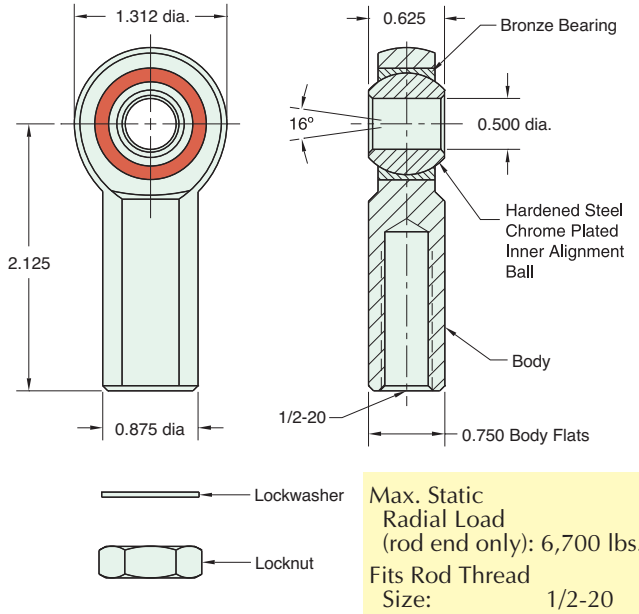
RK-4099

Replaceable Rod Seal
Material: Aluminum body



RE-3285

Rod End
Material: Steel, bright zinc plated body



Max. Static
Radial Load
(rod end only): 6,700 lbs.
Fits Rod Thread
Size: 1/2-20

3″ Bore Stainless Steel Cylinder

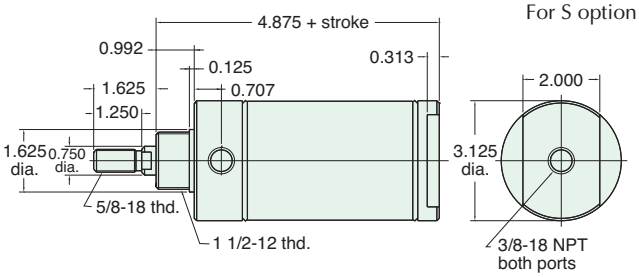
SDR-48-❑-❑

Double Acting

Mount: Stud
Type: Rotating Rod
Options: M, W, V, N, S, P6, P7, P8

Standard Stroke Lengths: 1″, 2″, 3″, 4″, 5″, 6″
Maximum Stroke: 34″

Bumpers are standard
No additional length for bumpers
For S option add 0.437



Nut included, but not shown on drawing

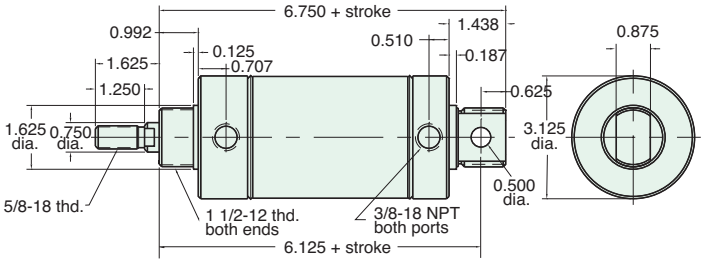
UDR-48-❑-❑

Double Acting

Mount: Universal
Type: Rotating Rod
Options: M, W, V, N, P2, P3, P4, P5, P6, P7, P8

Standard Stroke Lengths: 1″, 2″, 3″, 4″, 5″, 6″, 7″, 8″, 10″, 12″
Maximum Stroke: 32″

Bumpers are standard
No additional length for bumpers



Furnished without nut(s). See Chart on Page 63.

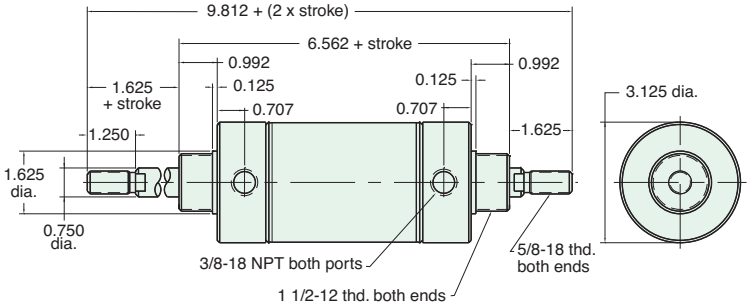
SDD-48-❑-❑

Double Acting

Mount: Stud
Type: Double Rod
Options: M, W, V, N, P6, P7, P8

Standard Stroke Lengths: 1″, 2″, 3″, 4″, 5″, 6″, 8″, 10″, 12″
Maximum Stroke: 15″

Bumpers are standard
No additional length for bumpers



Nuts included, but not shown on drawing

Did you know...

Minimatic®, Maximatic®, Minimetric®, Fluidamp®, Octoport®, Air-2-Electric® and Air Force One® are all Clippard registered trademarks.

Mounting Nuts

Stud Nut

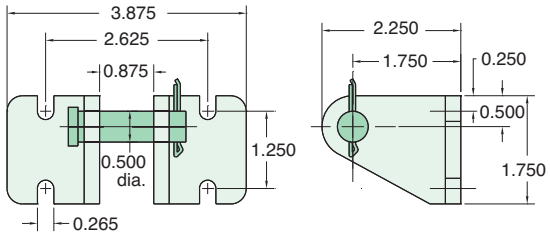
Part Number	Across Flats	Nut Thickness	Nut (Thread)
N24-12	2 1/4″	1/2″	1 1/2-12

Rod Nut

Part Number	Across Flats	Nut Thickness	Nut (Thread)
N10-18	15/16″	3/8″	5/8-18

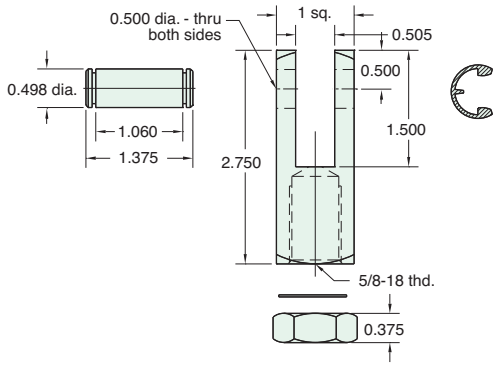
CB-4895

Clevis Bracket
Material: Steel, bright zinc plated



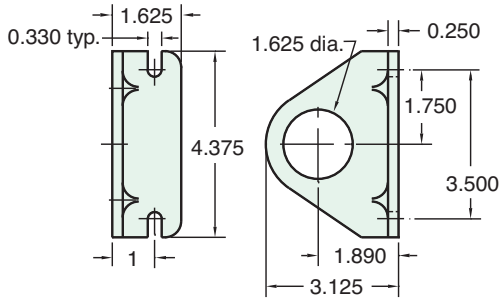
RC-4881

Rod Clevis
Material: Steel, electroless nickel plate



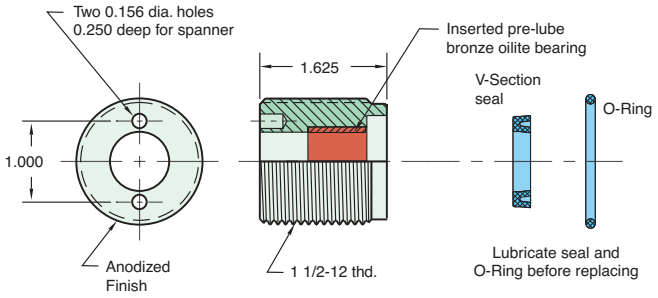
FB-4891

Foot Bracket
Material: Steel, bright zinc plated



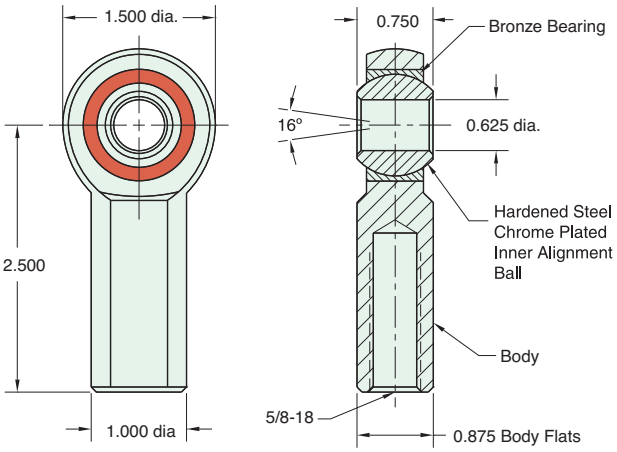
RK-4899

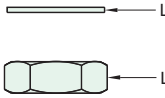
Replaceable Rod Seal
Material: aluminum body



RE-4885

Rod End
Material: Steel, bright zinc plated body



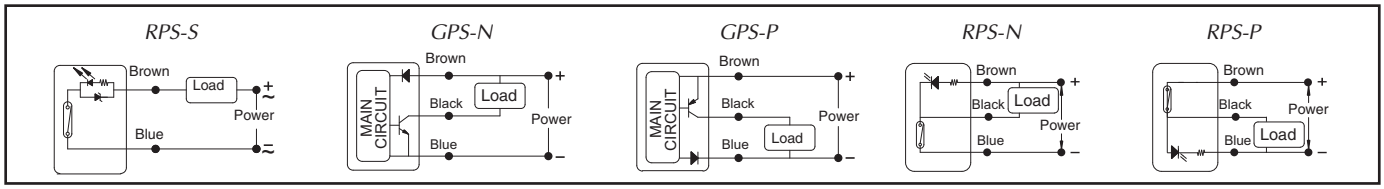


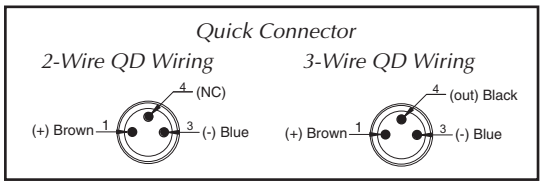
Max. Static Radial Load (rod end only): 7,400 lbs.
Fits Rod Thread Size: 5/8-18

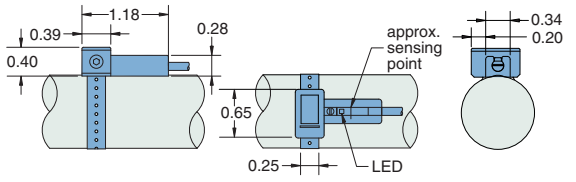
Magnetic Piston -M

Clippard stainless steel pneumatic cylinders that are equipped with an internal magnet that can be used with the Reed Switch and GMR Sensor. By accurately sensing the magnetic field of the piston when it passes beneath the sensor, the position of the rod piston is determined, and the feedback signal is created. Use of this option may add to the overall length of the cylinder. See specific cylinder listings for availability and details of the overall length adder.

Characteristic/Type	RPS-S	GPS-N	GPS-P	RPS-N	RPS-P
Switching Logic	SPST Normally-Open	Solid State Output, Normally-Open	Solid State Output, Normally-Open	SPST Normally-Open	SPST Normally-Open
Sensor Type	Reed Switch	NPN Current Sinking	PNP Current Sourcing	Reed Switch NPN	Reed Switch PNP
Operating Voltage	RPS-S3: 5 to 120 VAC RPS-S8Q: 5 to 60 VAC/DC	5 to 28 VDC	5 to 28 VDC	5 to 30 VDC	5 to 30 VDC
Switching Current	100 mA max.	200 mA max.	200 mA max.	250 mA max.	250 mA max.
Switching Rating	10 W max.	6 W max.	6 W max.	10 W max.	10 W max.
Current Consumption	-	7.5 mA max. @ 24 V (Switch Active)	7.5 mA max. @ 24 V (Switch Active)	10 mA max. @ 24 V (Switch Active)	10 mA max. @ 24 V (Switch Active)
Voltage Drop	2.5 V max. @ 40 mA DC	0.5 V max. @ 200 mA (Resistive Load)	0.5 V max. @ 200 mA (Resistive Load)	0.5 V max. @ 550 mA (Resistive Load)	0.5 V max. @ 550 mA (Resistive Load)
Leakage Current	-	0.01 mA max.	0.01 mA max.	-	-
Indicator	Red LED	Red LED	Green LED	Red LED	Green LED
Cable	2.8§, 2C, Oil-Resistant PVC	2.8§, 3C, Oil-Resistant PVC	2.8§, 3C, Oil-Resistant PVC	2.8§, 3C, Oil-Resistant PVC	2.8§, 3C, Oil-Resistant PVC
Sensitivity	60 G	40 ~ 750 G	40 ~ 750 G	60 G	60 G
Max. Switching Frequency	200 Hz	5,000 Hz	5,000 Hz	1,000 Hz	1,000 Hz
Temperature Range	14 to 158°F (-10 to 70°C)	14 to 158°F (-10 to 70°C)	14 to 158°F (-10 to 70°C)	14 to 158°F (-10 to 70°C)	14 to 158°F (-10 to 70°C)
Shock	30 G	50 G	50 G	30 G	30 G
Vibration	9 G	9 G	9 G	9 G	9 G
Enclosure Classification	IP 67 (NEMA 6)	IP 67 (NEMA 6)	IP 67 (NEMA 6)	IP 67 (NEMA 6)	IP 67 (NEMA 6)
Protection Circuit	-	Power Source Reverse Polarity; Surge Suppression	Power Source Reverse Polarity; Surge Suppression	-	-







Mounting Bracket

Clippard's Universal Mounting Bracket is designed to be used with both the Solid State (GMR) Sensor and the Reed Switch. The Universal Bracket can be used on any Clippard stainless steel cylinder where the -M option is available. Comes complete with 5/64" hex wrench.

Part No.	
UC-0848	Mounting Bracket

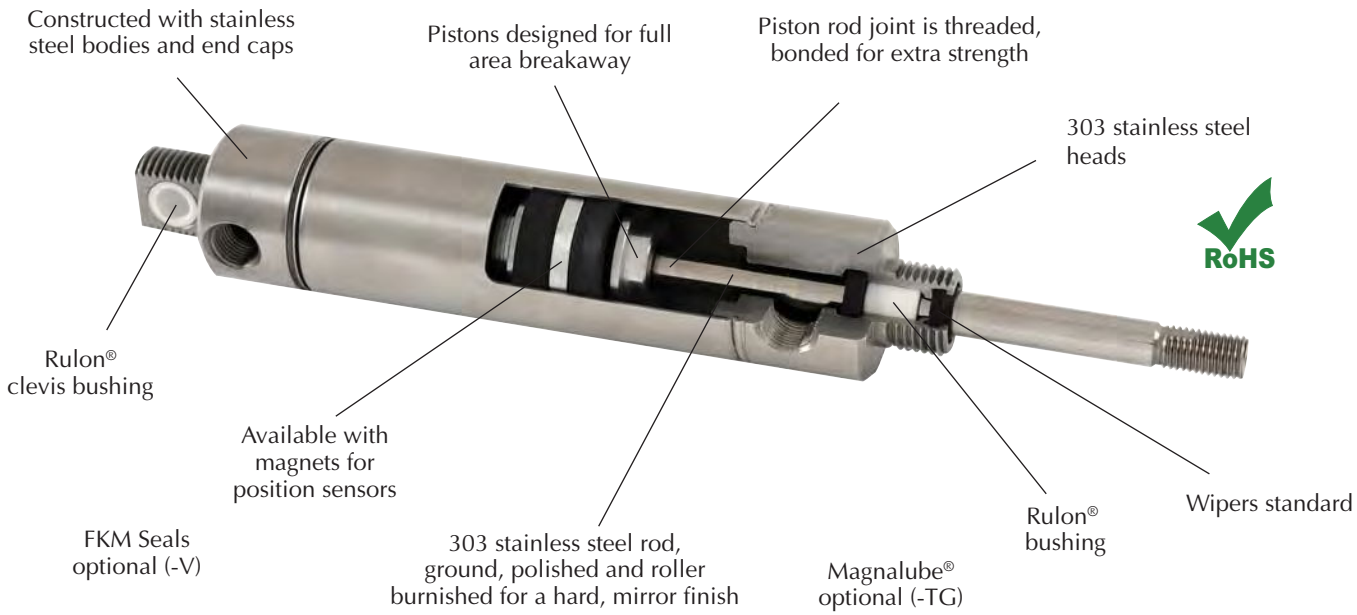
Reed Switch Part No.	
RPS-P3	Sourcing Switch with 3 m Wire Leads
RPS-P8Q	Sourcing Switch with 8 mm Male QC 6" Pigtail
RPS-N3	Sinking Switch with 3 m Wire Leads
RPS-N8Q	Sinking Switch with 8 mm Male QC 6" Pigtail
RPS-S3	Simple Switch (2-Wire) with 3 m Wire Leads
RPS-S8Q	Simple Switch (2-Wire) with 8 mm Male QC 6" Pigtail
CPS-C8Q5	Mating Cable Assembly, 8 mm Female QC with 5 m Leads

GMR Switch Part No.	
GPS-P3	Sourcing Switch with 3 m Wire Leads
GPS-P8Q	Sourcing Switch with 8 mm Male QC 6" Pigtail
GPS-N3	Sinking Switch with 3 m Wire Leads
GPS-N8Q	Sinking Switch with 8 mm Male QC 6" Pigtail
CPS-C8Q5	Mating Cable Assembly, 8 mm Female QC with 5 m Leads

NEW! All Stainless Steel Cylinder Construction

Designed for use in a broad range of applications including those in washdown and caustic environments, these quality cylinders are constructed of durable 303 stainless steel. They include a Nitrile rod wiper to keep potential contaminants from penetrating inside the cylinder, and are available with bore sizes from 3/4″ to 2″. Standard stroke lengths are from 1″ up to 32″ on some models.

While competitively priced, these products maintain the Clippard standard for quality and reliability that has been the industry standard for many years.



Features

- Polished I.D. 304 stainless steel tubes for low breakaway
- Precision rolled construction for a solid, leakproof cylinder at a reasonable price
- 303 stainless steel heads
- Cylinder heads are machined from one side for better concentricity
- FDA Compliant Rulon® rod bushing
- FDA Compliant Rulon® clevis bushing on all universal mount cylinders
- Rods are threaded, bonded and orbit formed to pistons
- Interchangeable with other common brands of round body cylinders
- All Stainless Steel Air Volume Tanks available on page 67
- FDA compliant grease lubrication standard
- Ground, polished and roller burnished 303 stainless rods provide a smoother rod finish that protects rod seals, giving longer life
- Full piston area breakaway to assure full power from the beginning of each stroke
- Nitrile “U”-cup piston seals for full power, low friction and trouble-free performance
- Nitrile “U”-cup rod seals for leakproof operation
- Temperature range: -20 to 230°F (FKM: -20 to 400°F)
- Maximum pressure: 250 psig
- For additional specifications, see pages 3 through 7

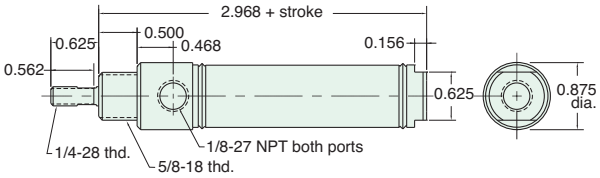
® Magnalube is a registered trademark of Magnalube, Inc.
® Rulon is a registered trademark of Saint Gobain

NEW! 3/4″ Bore All Stainless Steel Cylinder

SS-SDR-12-❑-❑

Mount: Stud **Standard Stroke Lengths:** 1/2″, 1″, 1-1/2″, 2″, 3″, 4″, 5″, 6″
Type: Rotating Rod **Maximum Stroke:** 12″
Options: V, M, N, TG

Double Acting

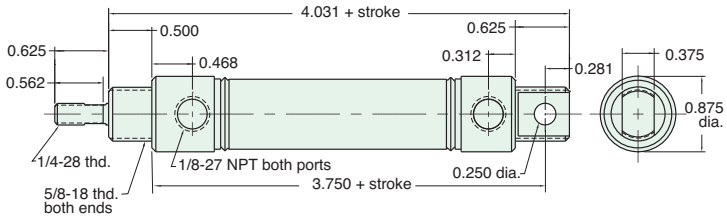


Nuts included, but not shown on drawing

SS-UDR-12-❑-❑

Mount: Universal **Standard Stroke Lengths:** 1/2″, 1″, 1-1/2″, 2″, 3″, 4″, 5″, 6″, 8″, 10″, 12″
Type: Rotating rod **Maximum Stroke:** 32″
Options: V, M, N, TG

Double Acting

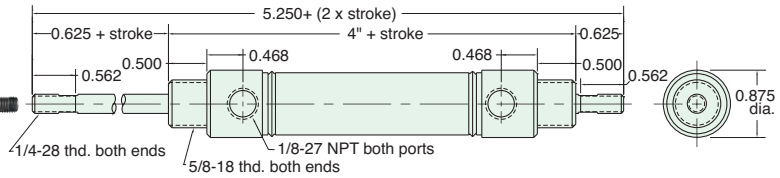


Furnished without nut(s). See Chart below.

SS-SDD-12-❑-❑

Mount: Stud **Standard Stroke Lengths:** 1″, 2″, 3″, 4″, 5″, 6″
Type: Double Rod **Maximum Stroke:** 6″
Options: V, M, N, TG

Double Acting



Nuts included, but not shown on drawing

Accessories

Mounting Nuts

Part Number	Nut Type	Across Flats	Nut Thickness	Nut (Thread)
N10-18-SS	Stud	15/16″	3/8″	5/8-18
N04-28A-SS	Rod	7/16″	5/32″	1/4-28

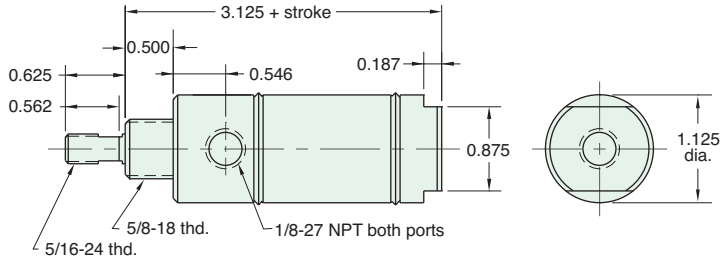
Part Number	Product	Drawing Shown on Page
RC-1281-SS	Rod Clevis	29
FB-1791-SS	Foot Bracket	29
CB-1795-SS	Clevis Bracket	29

NEW! 1 1/6″ Bore All Stainless Steel Cylinder

SS-SDR-17-❑-❑

Double Acting

Mount: Stud **Standard Stroke Lengths:** 1/2″, 1″, 1-1/2″, 2″, 3″, 4″, 5″, 6″
Type: Rotating Rod **Maximum Stroke:** 12″
Options: V, M, N, TG

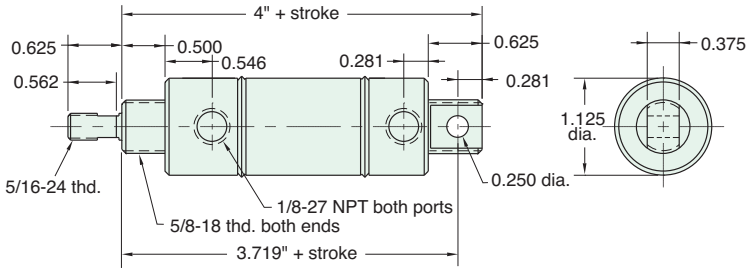


Nut included, but not shown on drawing

SS-UDR-17-❑-❑

Double Acting

Mount: Universal **Standard Stroke Lengths:** 1/2″, 1″, 1-1/2″, 2″, 3″, 4″, 5″, 6″, 8″, 10″, 12″
Type: Rotating Rod **Maximum Stroke:** 24″
Options: V, M, N, TG

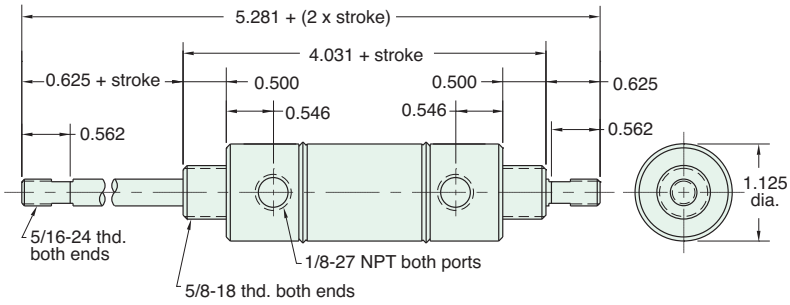


Furnished without nut(s). See Chart below.

SS-SDD-17-❑-❑

Double Acting

Mount: Stud **Standard Stroke Lengths:** 1″, 2″, 3″, 4″, 5″, 6″
Type: Double Rod **Maximum Stroke:** 6″
Options: V, M, N, TG



Nuts included, but not shown on drawing

Accessories

Mounting Nuts

Part Number	Nut Type	Across Flats	Nut Thickness	Nut (Thread)
N10-18-SS	Stud	15/16″	3/8″	5/8-18
N05-24-SS	Rod	1/2″	3/16″	5/16-24

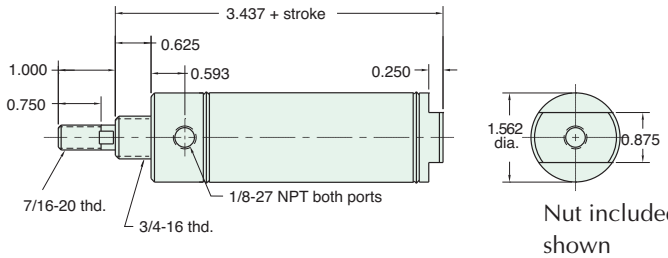
Part Number	Product	Drawing Shown on Page
RC-1781-SS	Rod Clevis	39
FB-1791-SS	Foot Bracket	39
CB-1795-SS	Clevis Bracket	39

NEW! 1 1/2″ Bore All Stainless Steel Cylinder

SS-SDR-24-❑-❑

Mount: Stud **Standard Stroke Lengths:** 1/2″, 1″, 1-1/2″, 2″, 3″, 4″, 6″, 8″, 10″, 12″
Type: Rotating Rod **Maximum Stroke:** 40″
Options: V, M, N, TG

Double Acting

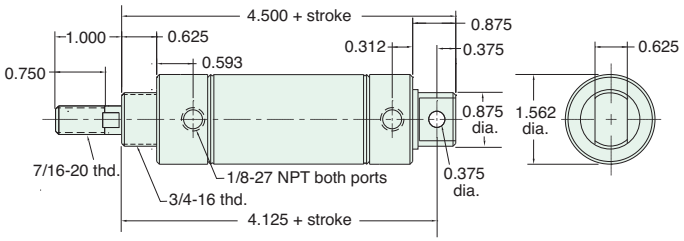


Nut included, but not shown

SS-CDR-24-❑-❑

Mount: Clevis **Standard Stroke Lengths:** 1/2″, 1″, 1-1/2″, 2″, 3″, 4″, 6″, 8″, 10″, 12″
Type: Rotating Rod **Maximum Stroke:** 39″
Options: V, M, N, TG

Double Acting

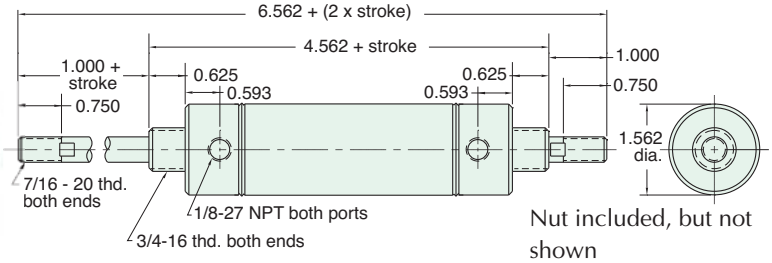


Furnished without nut(s). See Chart below.

SS-SDD-24-❑-❑

Mount: Stud **Standard Stroke Lengths:** 1″, 2″, 3″, 4″, 5″, 6″, 8″, 10″, 12″
Type: Double Rod **Maximum Stroke:** 12″
Options: V, M, N, TG

Double Acting

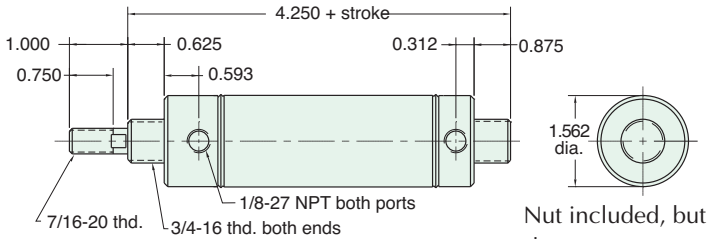


Nut included, but not shown

SS-EDR-24-❑-❑

Mount: End **Standard Stroke Lengths:** 1/2″, 1″, 1-1/2″, 2″, 3″, 4″, 6″, 8″, 10″, 12″
Type: Rotating Rod **Maximum Stroke:** 39″
Options: V, M, N, TG

Double Acting



Nut included, but not shown

Mounting Nuts

Part Number	Nut Type	Across Flats	Nut Thickness	Nut (Thread)
N12-16-SS	Stud	1 3/32″	27/64″	3/4-16
N07-20-SS	Rod	11/16″	1/4″	7/16-20

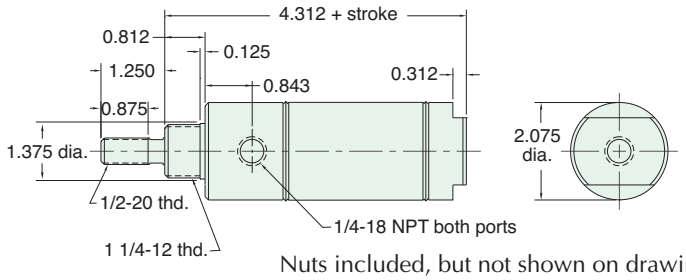
Part Number	Product	Drawing Shown on Page
RC-2481-SS	Rod Clevis	51
FB-2491-SS	Foot Bracket	51
CB-2495-SS	Clevis Bracket	51

NEW! 2″ Bore All Stainless Steel Cylinder

SS-SDR-32-❑-❑

Double Acting

Mount: Stud **Standard Stroke Lengths:** 1/2″, 1″, 1-1/2″, 2″, 3″, 4″, 5″, 6″
Type: Rotating Rod **Maximum Stroke:** 12″
Options: V, M, N, TG

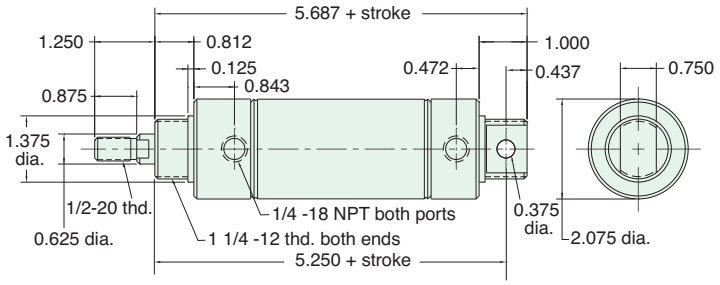


Nuts included, but not shown on drawing

SS-UDR-32-❑-❑

Double Acting

Mount: Universal **Standard Stroke Lengths:** 1/2″, 1″, 1-1/2″, 2″, 3″, 4″, 5″, 6″, 7″, 8″, 10″, 12″
Type: Rotating Rod **Maximum Stroke:** 32″
Options: V, M, N, TG

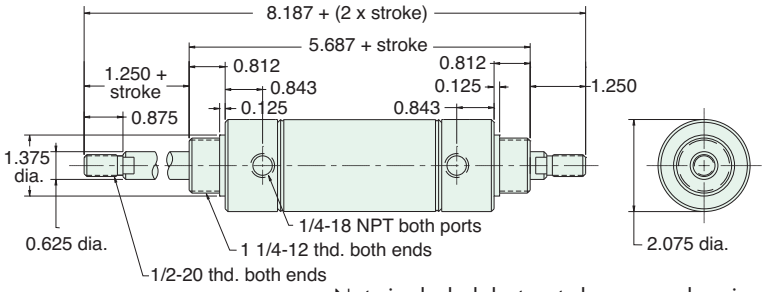


Furnished without nut(s). See Chart below.

SS-SDD-32-❑-❑

Double Acting

Mount: Stud **Standard Stroke Lengths:** 1″, 2″, 3″, 4″, 5″, 6″, 8″, 10″, 12″
Type: Double Rod **Maximum Stroke:** 12″
Options: V, M, N, TG



Nuts included, but not shown on drawing

Accessories

Mounting Nuts

Part Number	Nut Type	Across Flats	Nut Thickness	Nut (Thread)
N20-12-SS	Stud	1 3/4″	7/16″	1 1/4-12
N08-20-SS	Rod	3/4″	5/16″	1/2-20

Part Number	Product	Drawing Shown on Page
RC-3281-SS	Rod Clevis	59
FB-3291-SS	Foot Bracket	59
CB-3295-SS	Clevis Bracket	59