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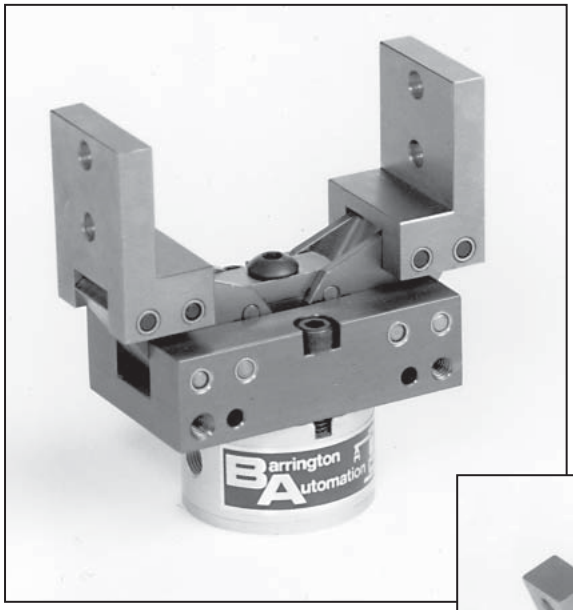
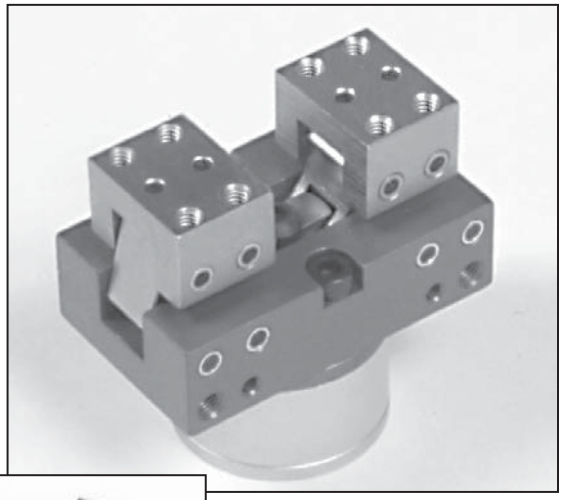
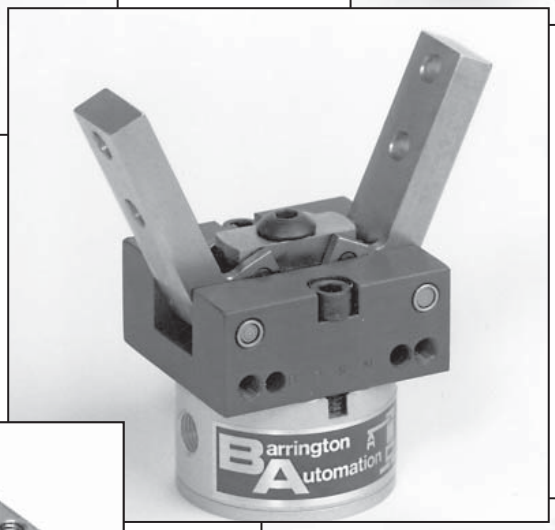
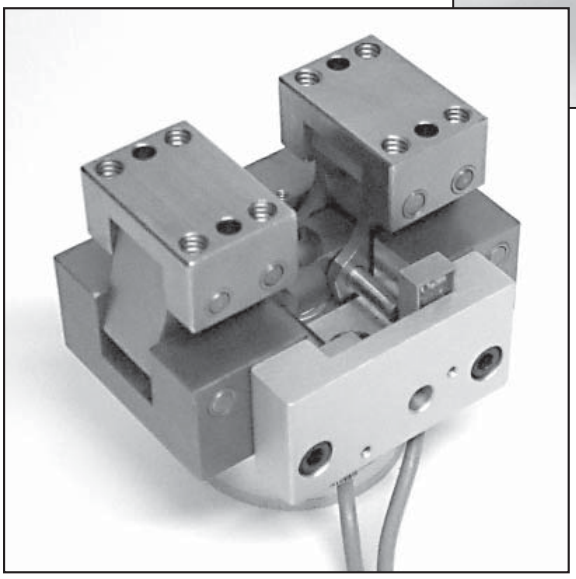
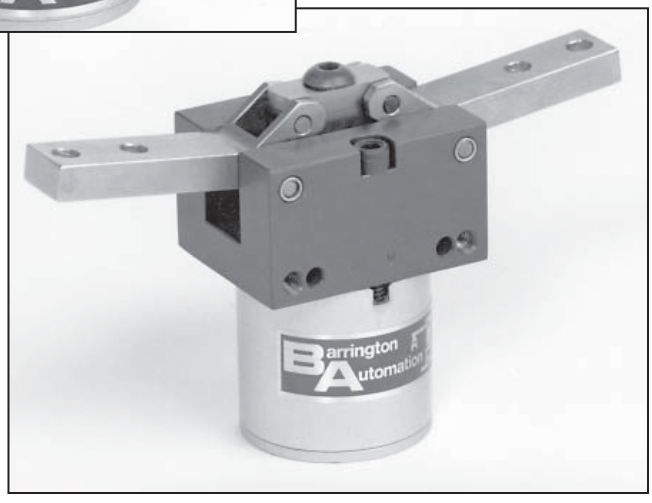
Precision Grippers





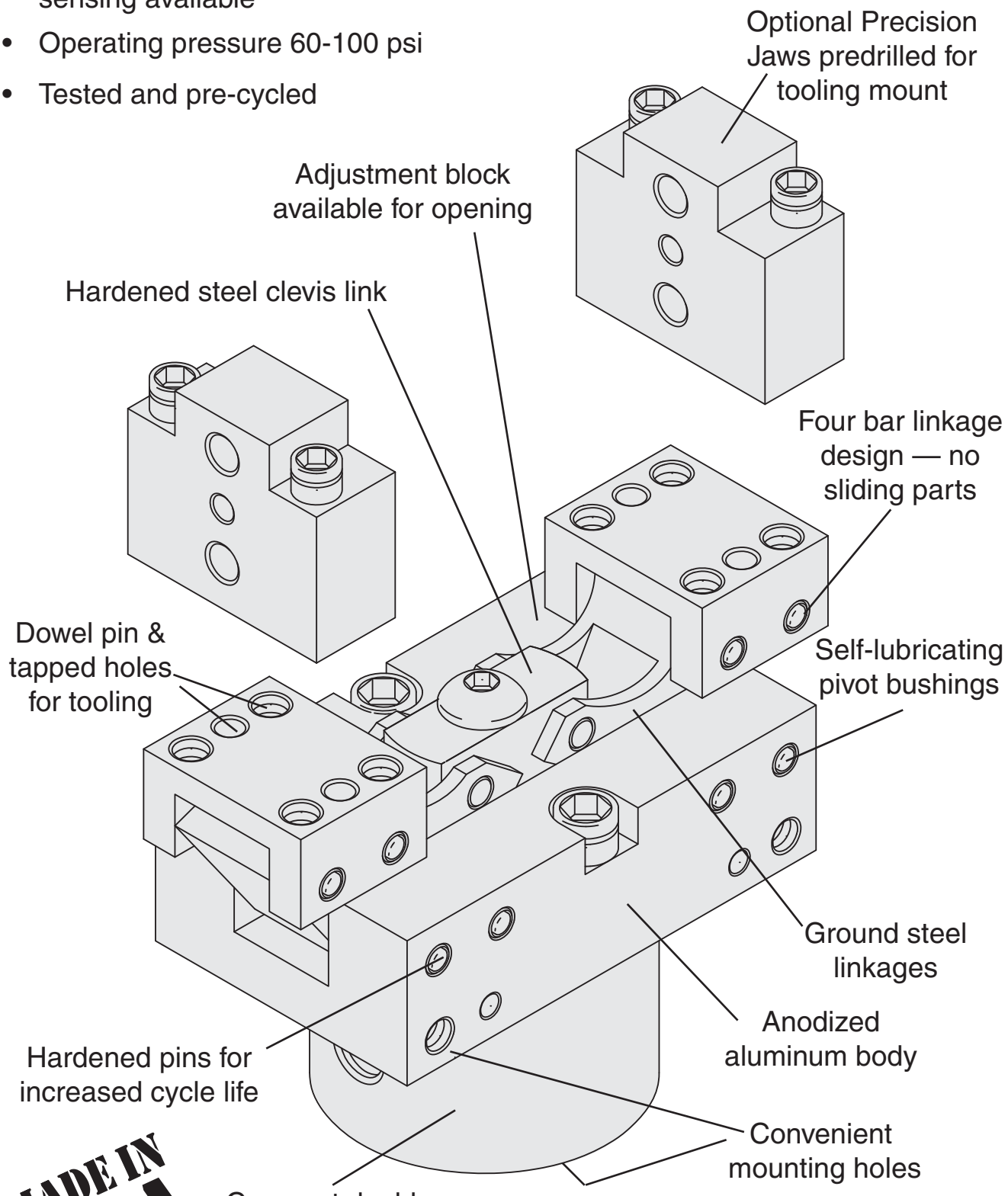






Precision Gripper Features

- Open, close, and jaw position sensing available
- Operating pressure 60-100 psi
- Tested and pre-cycled



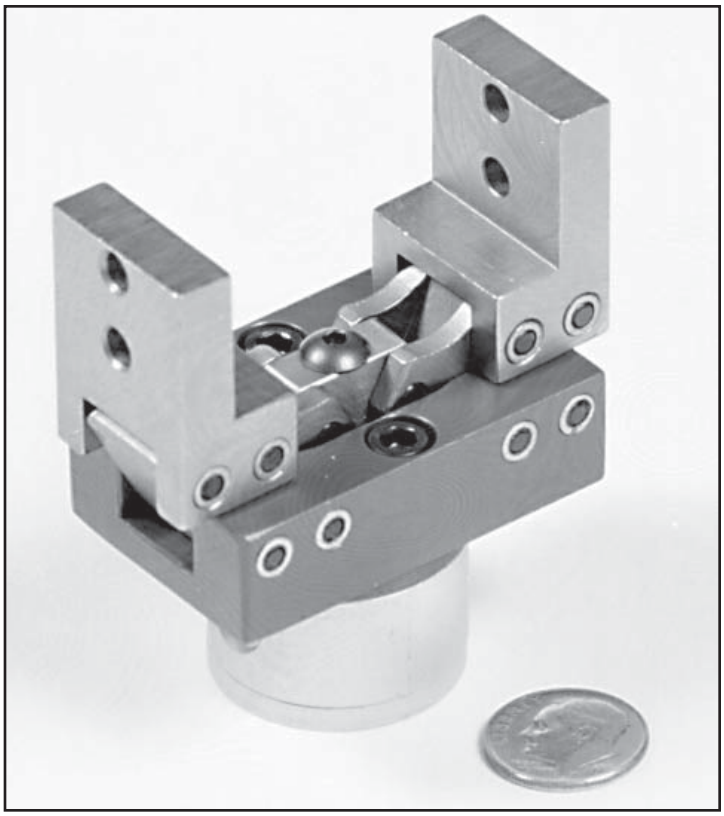
MADE IN USA

Available from stock

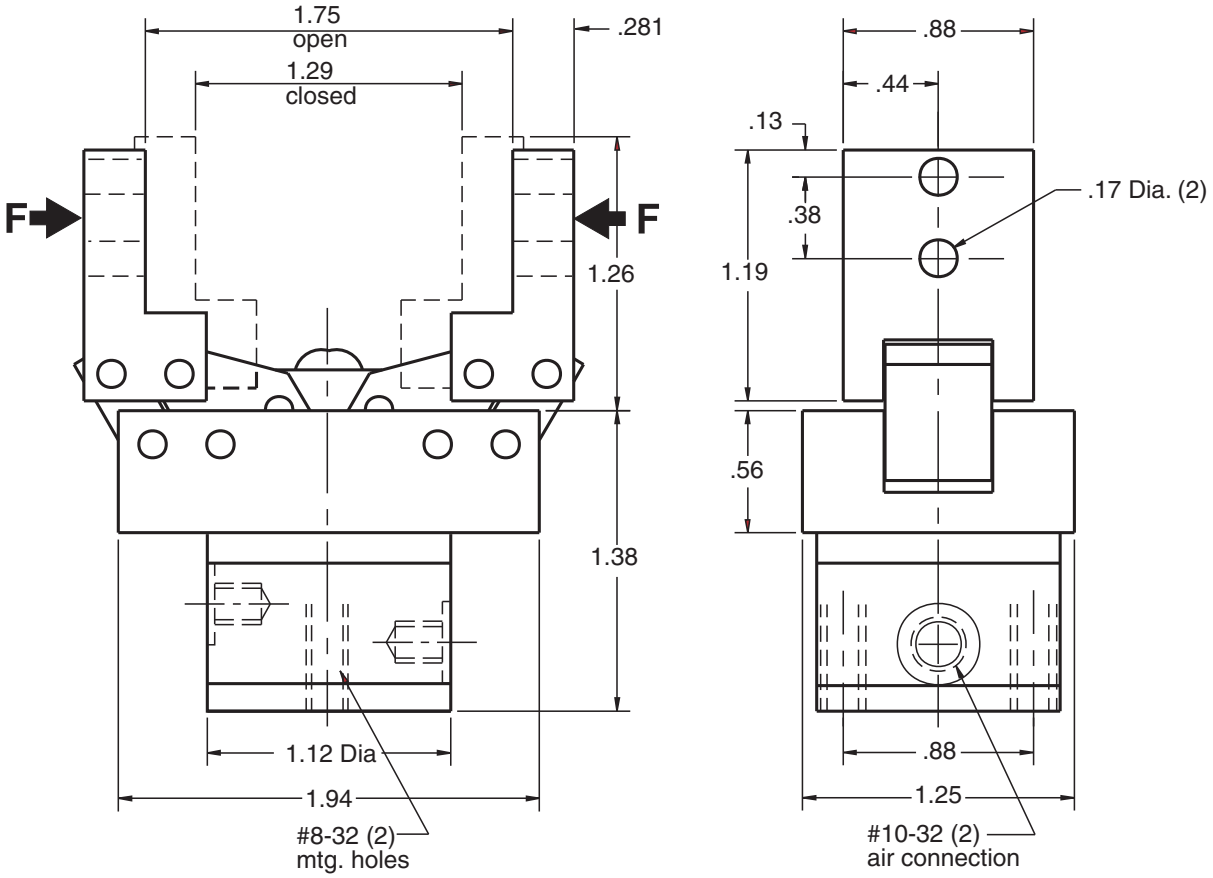
Custom tooling and special grippers also available. Call us with your application.

Gripper PARALLEL MOTION Double Acting

B-0P



TECHNICAL DATA	
Weight	7 oz
Max Rec. Load	1 lb
Force @ 80 psi	6 lbs @ F
Operating Pressure	60-100 PSI



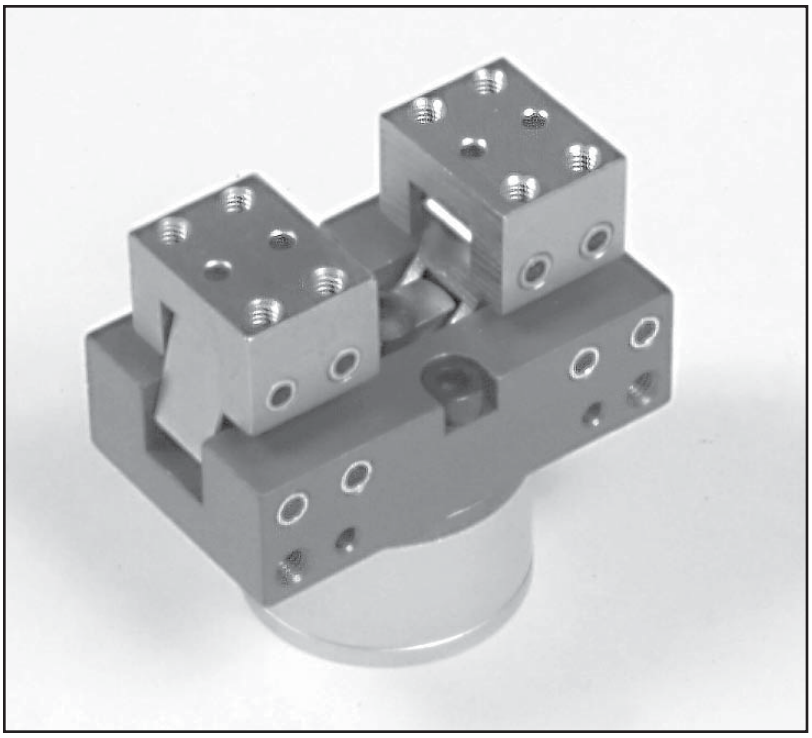
For sensing options, see page 17

Gripper

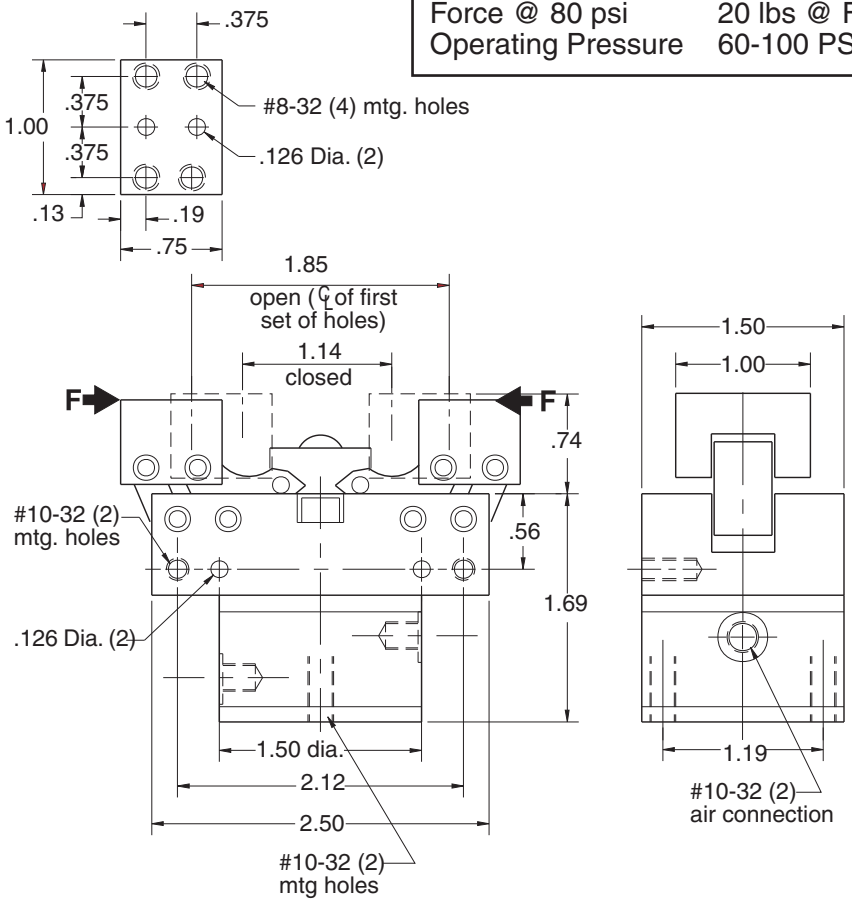
PARALLEL MOTION
Double Acting

Barrington Automation

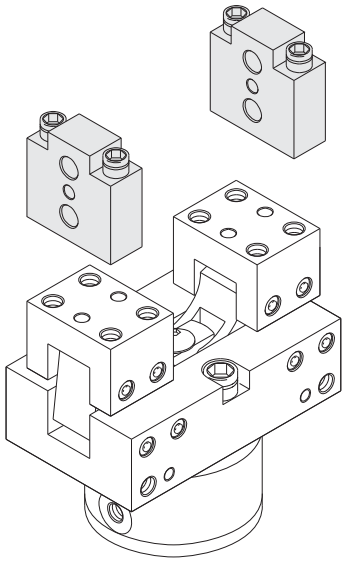
B-1P



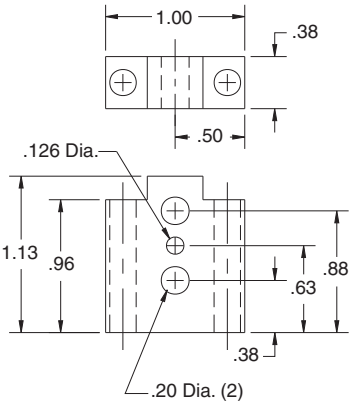
TECHNICAL DATA	
Weight	14 oz.
Max Rec. Load	5 lbs
Force @ 80 psi	20 lbs @ F
Operating Pressure	60-100 PSI



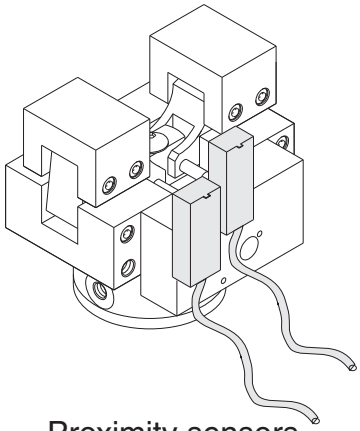
Accessories



Upright ground steel jaws for mounting tooling



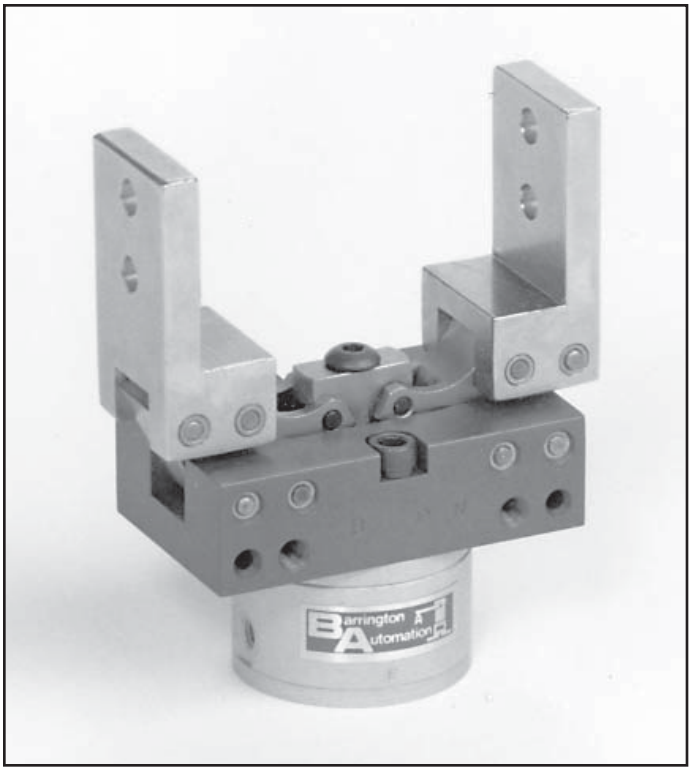
J1-1 jaw for B-1P (bolts & pins included)



Proximity sensors preassembled for open & closed positions (see page 17)

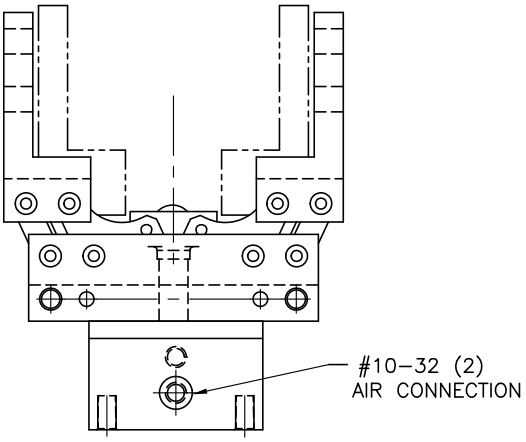
Gripper

B-1P-VJ

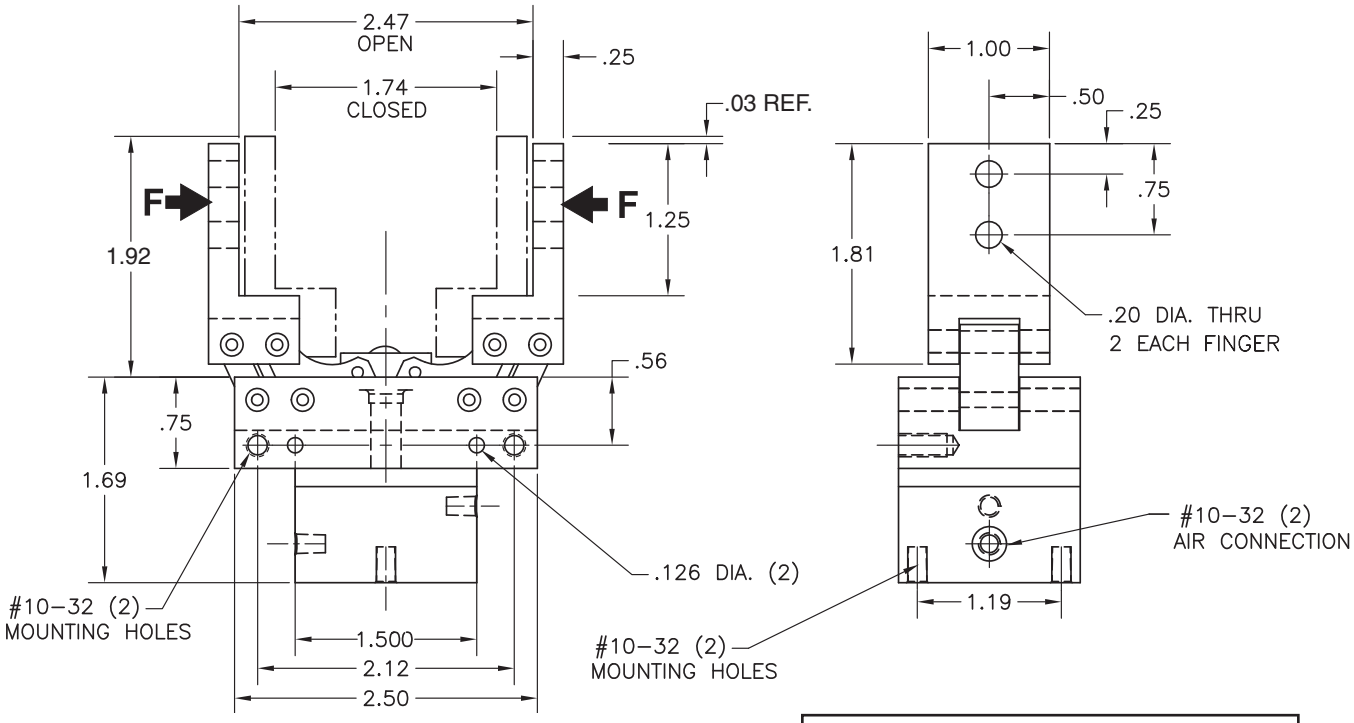


Optional

B-1P-VJ-R



Note: **R** indicates that the position of ports and mounting holes are rotated 90° from standard version as shown above.



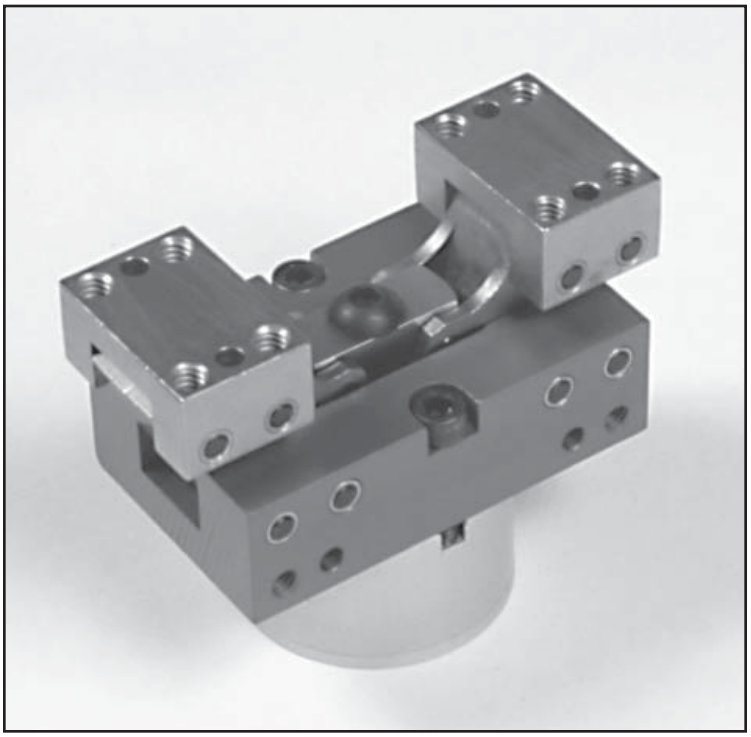
Proximity sensors preassembled for open & closed positions (see page 17)

TECHNICAL DATA	
Weight	14 oz
Max Rec. Load	5 lbs
Force @ 80 psi	20 lbs @ F
Operating Pressure	60-100 PSI

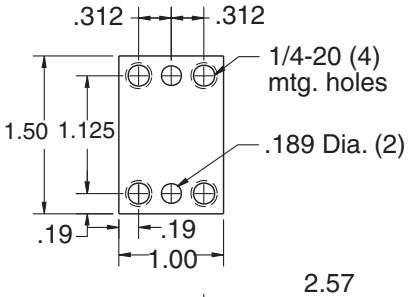
Gripper

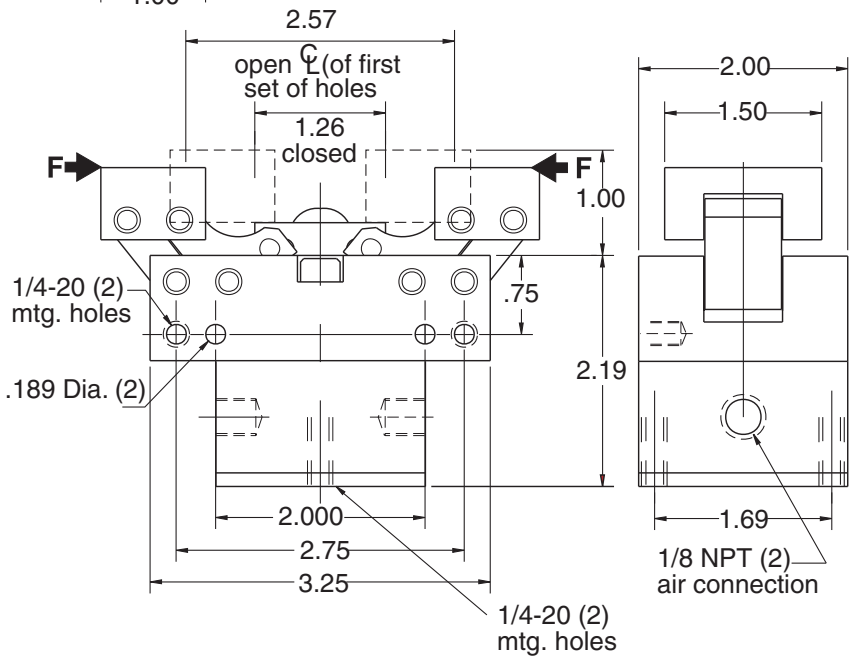
PARALLEL MOTION
Double Acting

B-2P



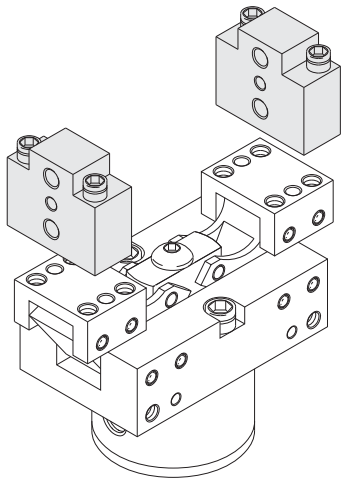
TECHNICAL DATA	
Weight	1.7 lbs
Max Rec. Load	12 lbs
Force @ 80 psi	40 lbs @ F
Operating Pressure	60-100 PSI



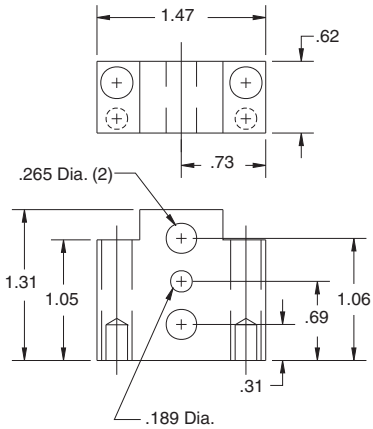


Barrington Automation

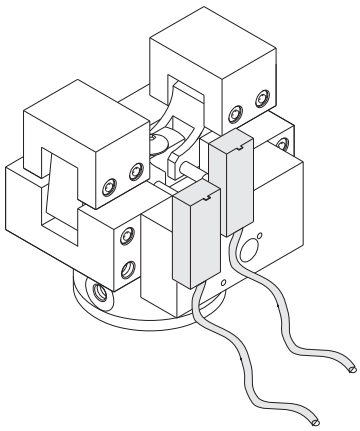
Accessories



Upright ground steel jaws for mounting tooling



J1-2 jaw for B-2P
(bolts & pins included)



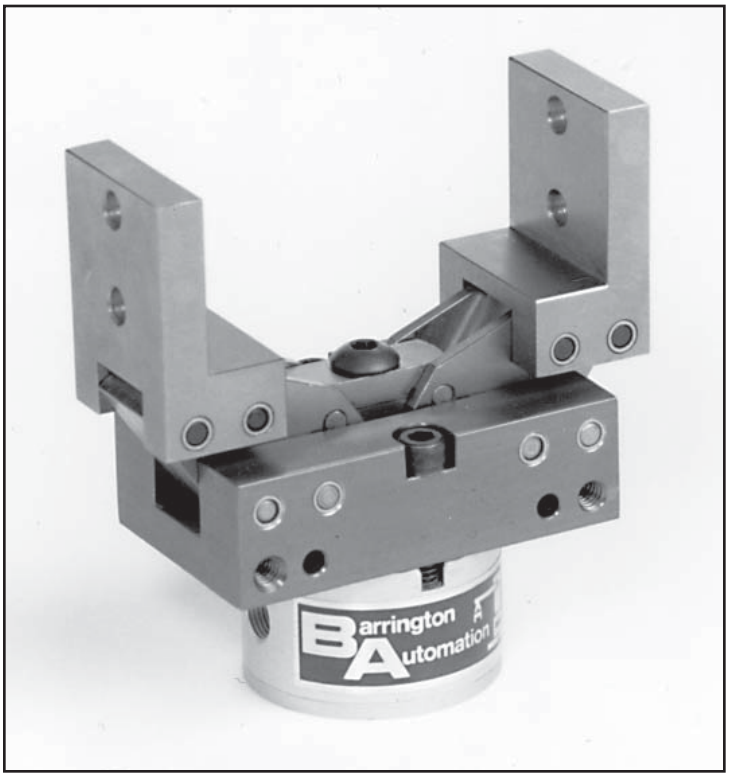
Proximity sensors preassembled for open & closed positions
(see page 17)

Gripper

PARALLEL MOTION
Double Acting

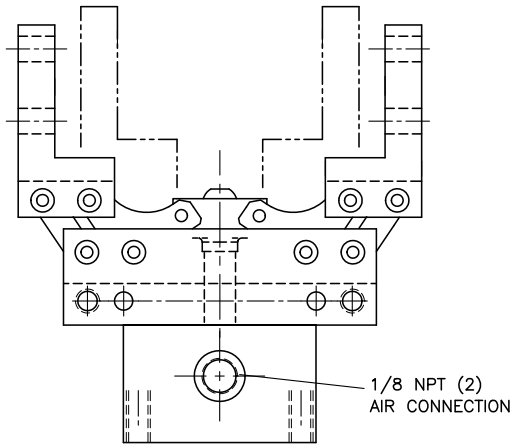
Barrington Automation

B-2P-VJ

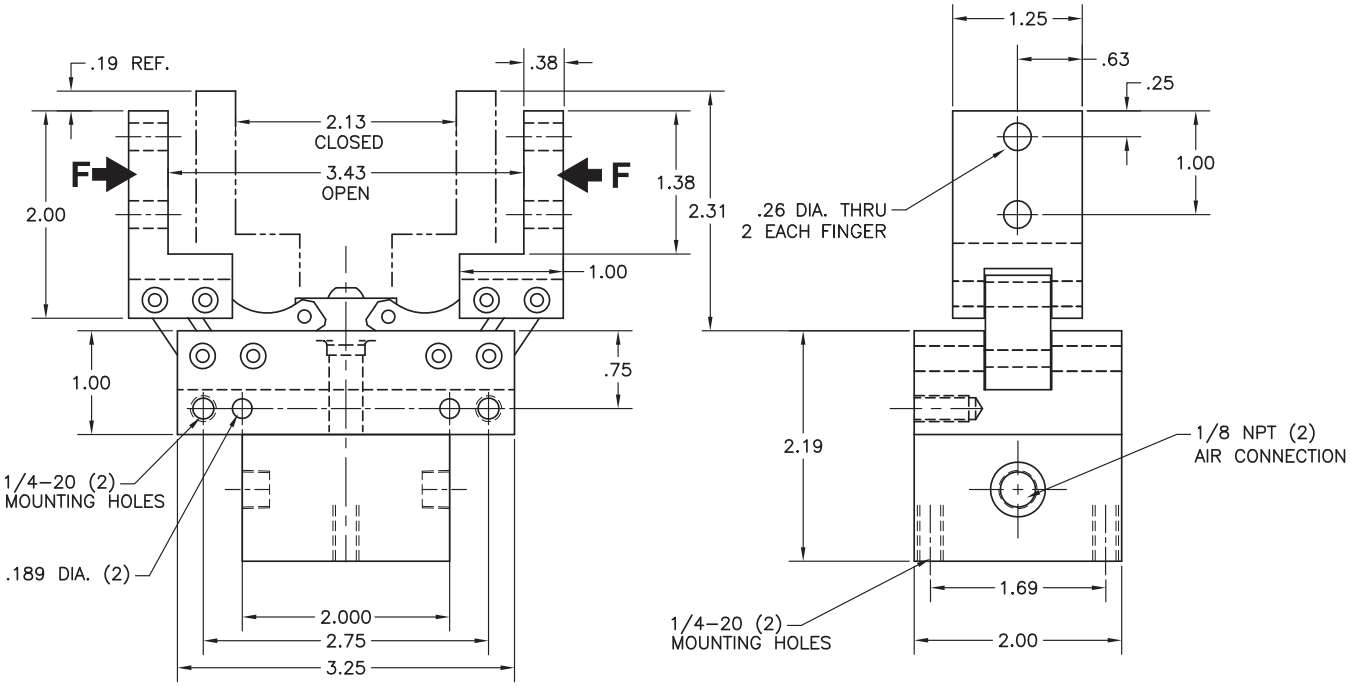


Optional

B-2P-VJ-R



Note: **R** indicates that the position of ports and mounting holes are rotated 90° from standard version as shown above.



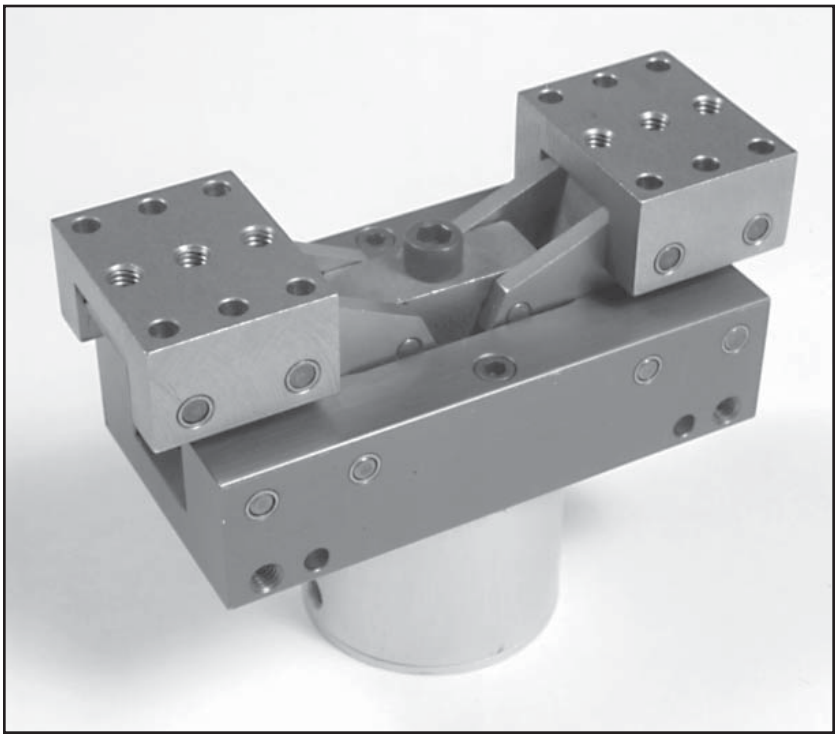
Proximity sensors preassembled for open & closed positions (see page 17)

TECHNICAL DATA	
Weight	1.7 lbs
Max Rec. Load	12 lbs
Force @ 80 psi	40 lbs @ F
Operating Pressure	60-100 PSI

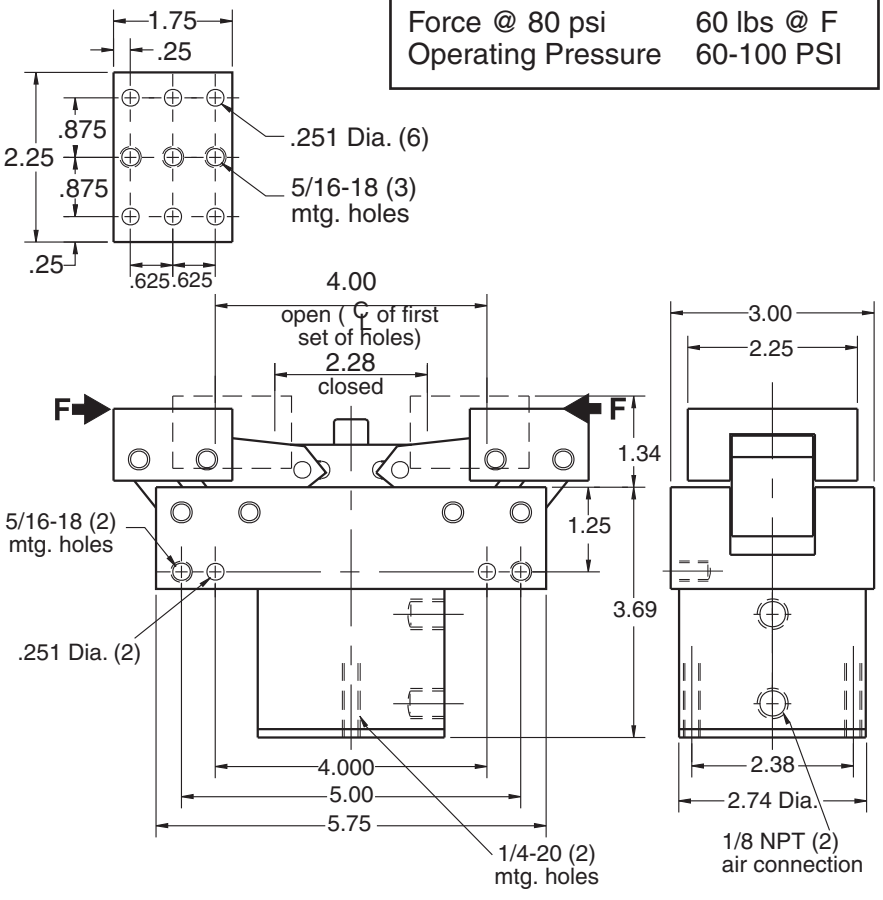
Gripper

PARALLEL MOTION
Double Acting

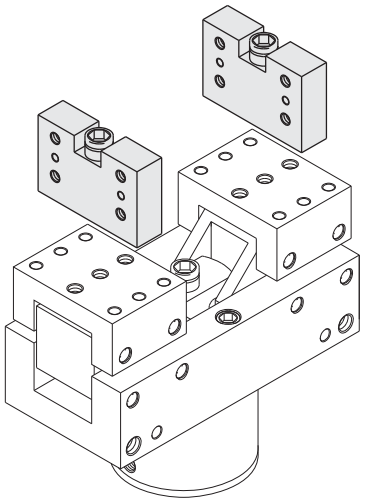
B-3P



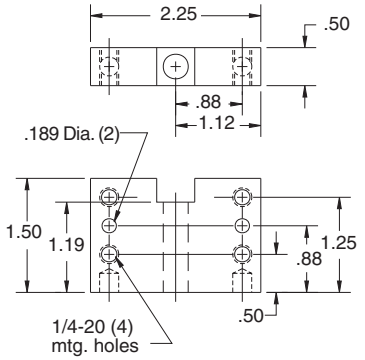
TECHNICAL DATA	
Weight	5.2 lbs
Max Rec. Load	30 lbs
Force @ 80 psi	60 lbs @ F
Operating Pressure	60-100 PSI



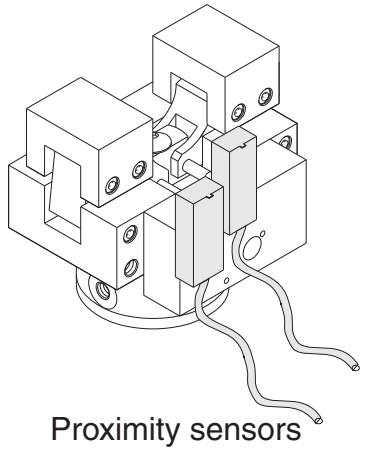
Barrington Automation Accessories



Upright ground steel jaws for mounting tooling



J1-3 jaw for B-3P
(bolts & pins included)



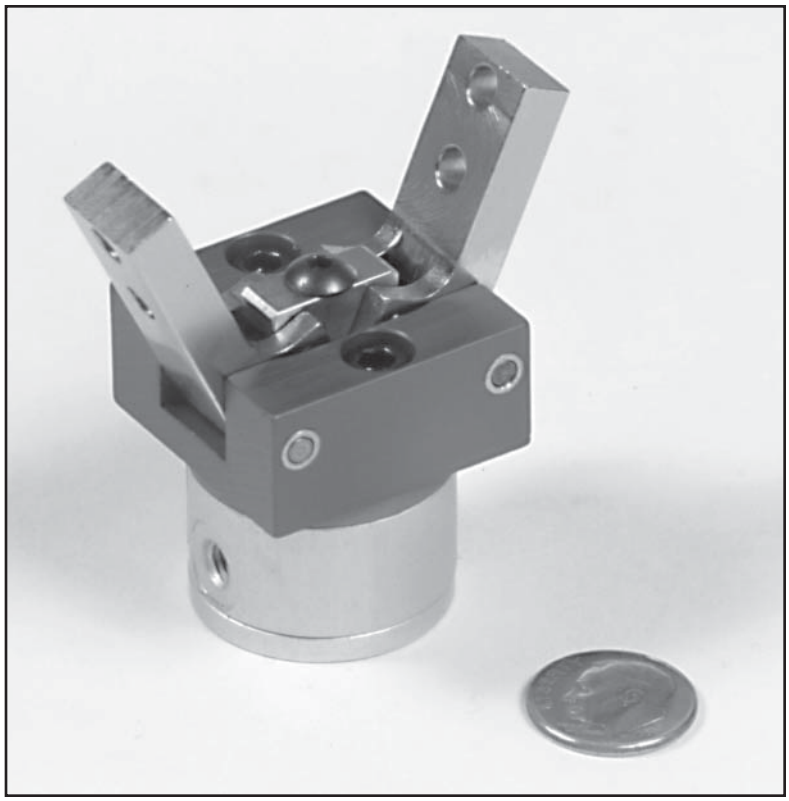
Proximity sensors preassembled for open & closed positions
(see page 17)

Mini Gripper

RADIAL MOTION
Double Acting

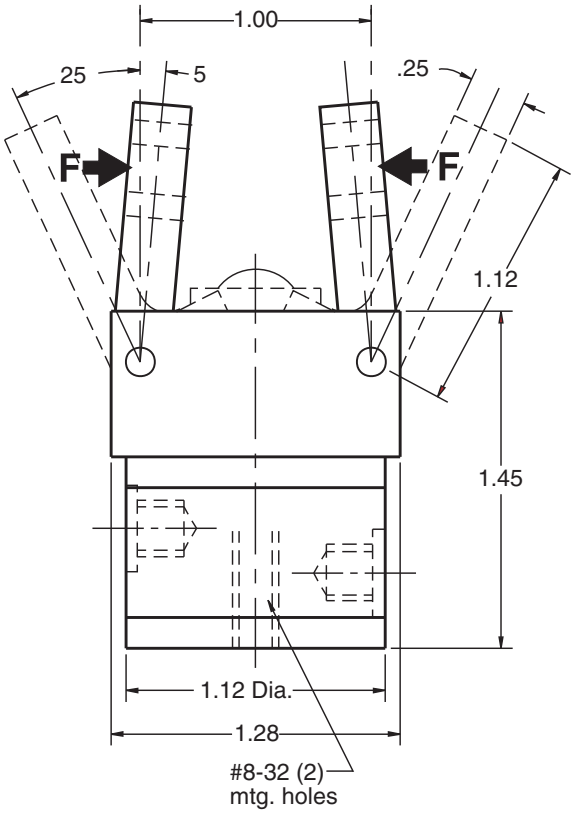
Barrington Automation

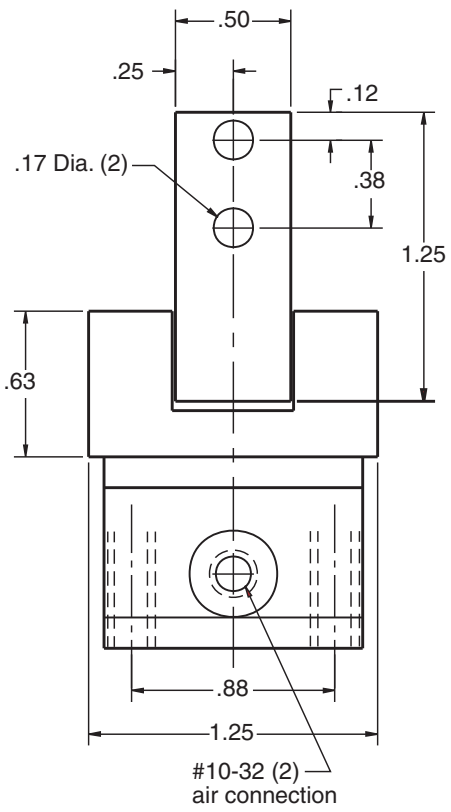
B-0S



TECHNICAL DATA:

Weight	5 oz
Max Rec. Load	0.5 lbs
Force @ 80 psi	3 lbs @ F
Operating Pressure	60-100 PSI





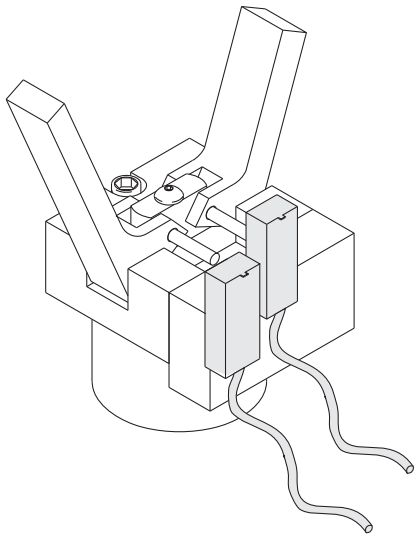
For sensing options, see page 18

Gripper

RADIAL MOTION
Double Acting

Barrington Automation

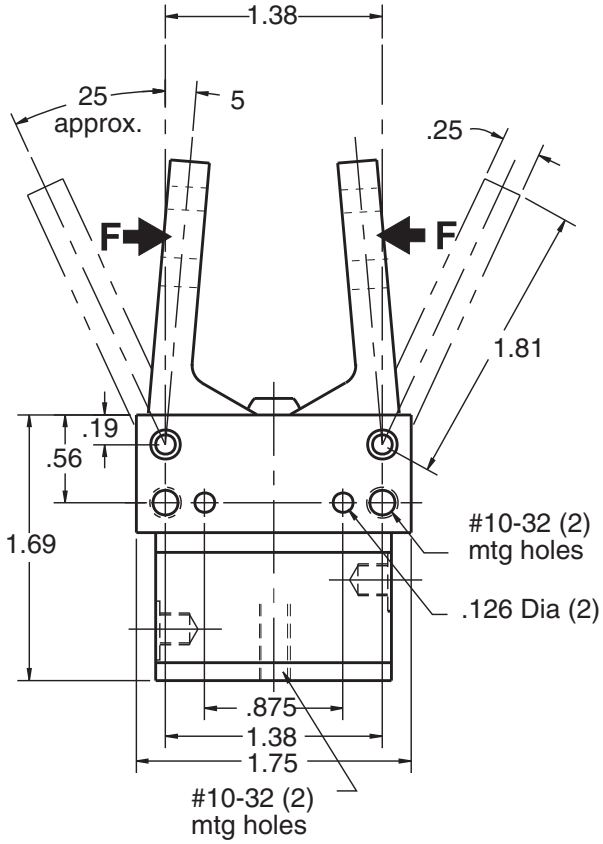
B-1S

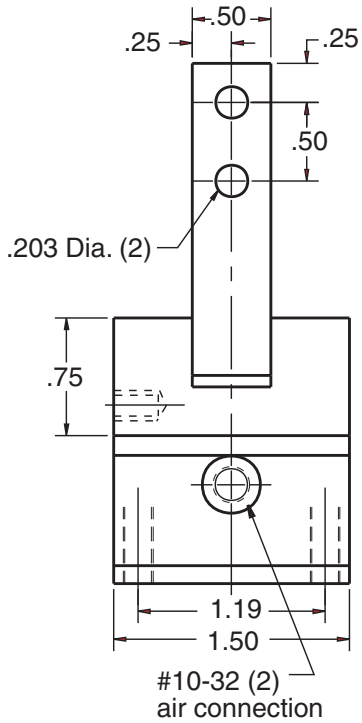


Proximity sensors
preassembled for
open & closed positions
(see page 17)

TECHNICAL DATA:

Weight	8 oz.
Max Rec. Load	2 lbs
Force @ 80 psi	8 lbs @ F
Operating Pressure	60-100 PSI



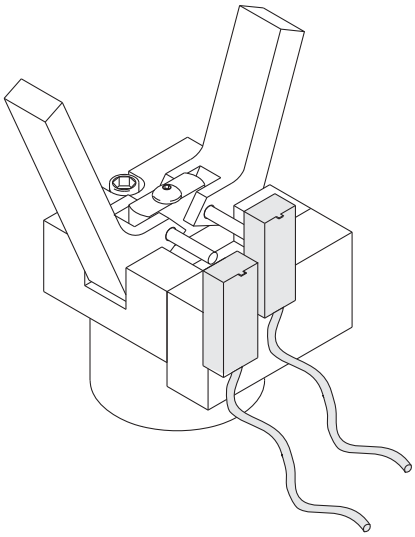


Gripper

RADIAL MOTION
Double Acting

Barrington Automation

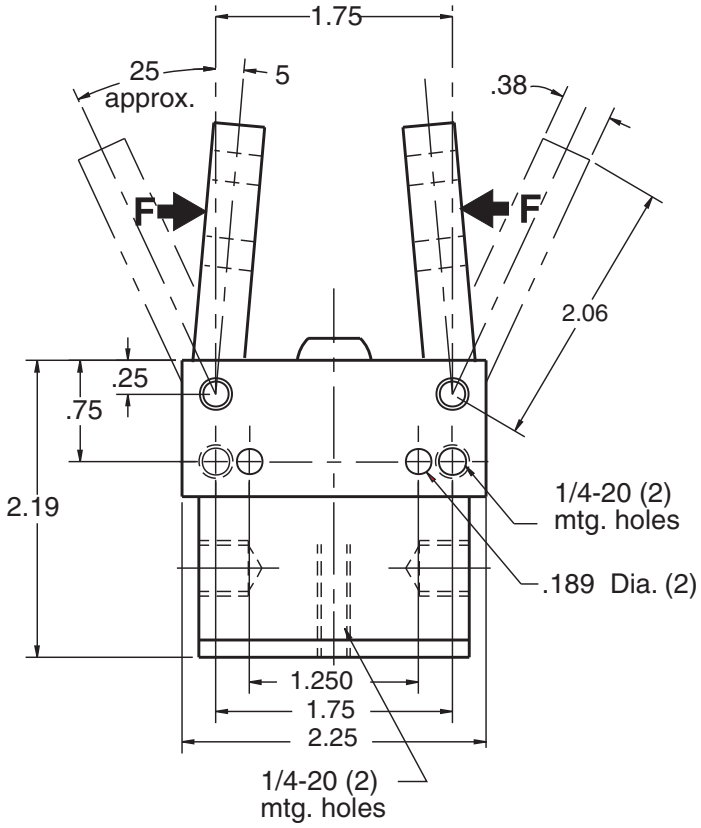
B-2S

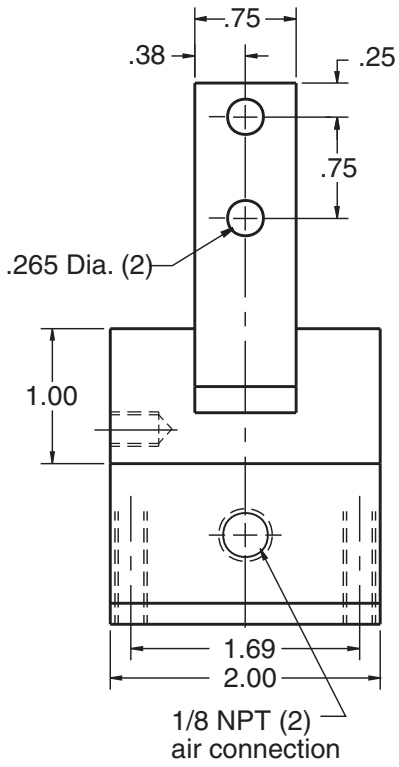


Proximity sensors
preassembled for
open & closed positions
(see page 17)

TECHNICAL DATA:

Weight	1 lb
Max Rec. Load	6 lbs
Force @ 80 psi	24 lbs @ F
Operating Pressure	60-100 PSI



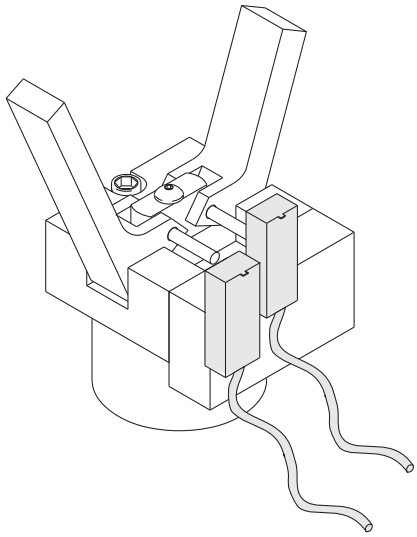


Gripper

RADIAL MOTION
Double Acting

Barrington Automation

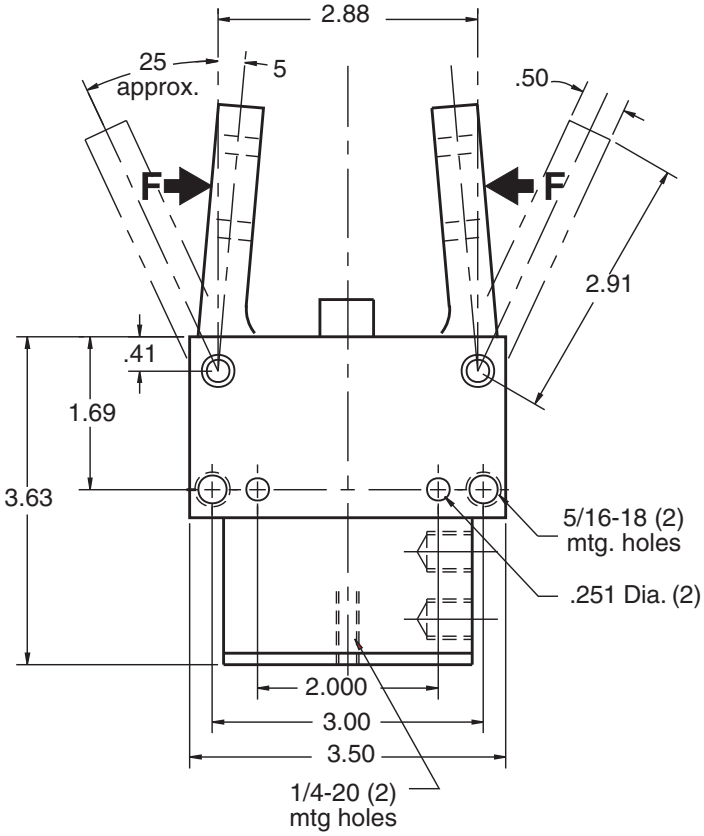
B-3S

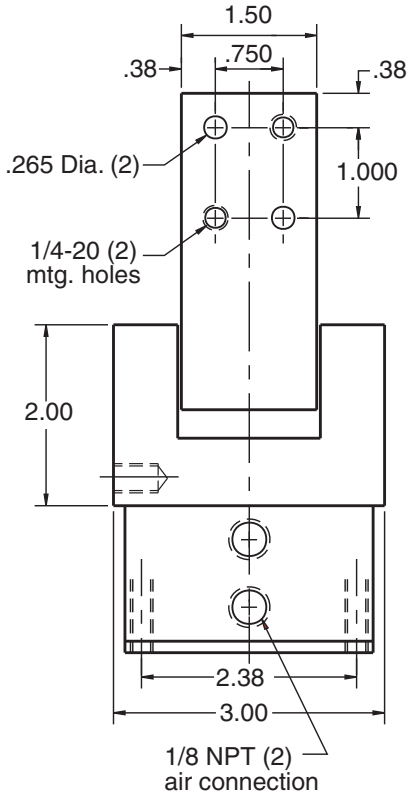


Proximity sensors preassembled for open & closed positions (see page 17)

TECHNICAL DATA:

Weight	3.3 lbs
Max Rec. Load	18 lbs
Force @ 80 psi	55 lbs @ F
Operating Pressure	60-100 PSI



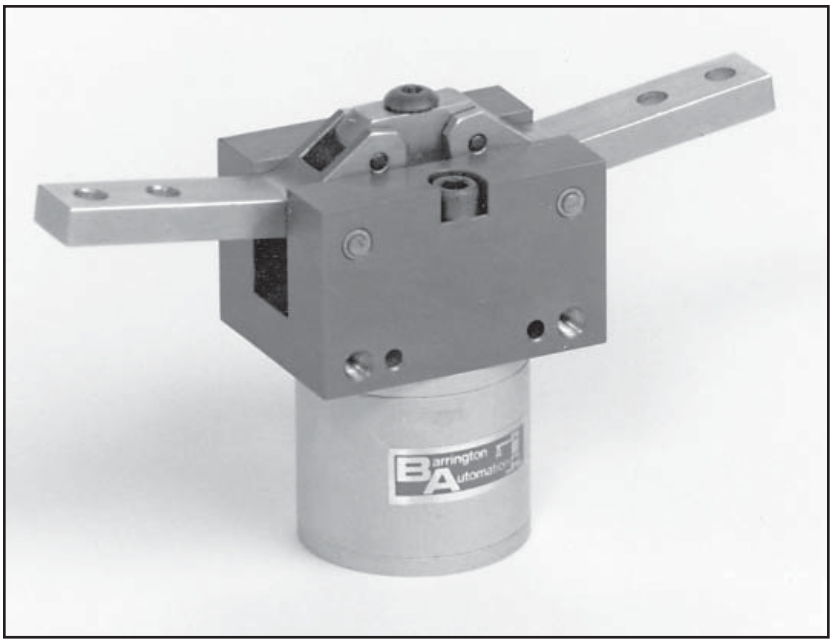


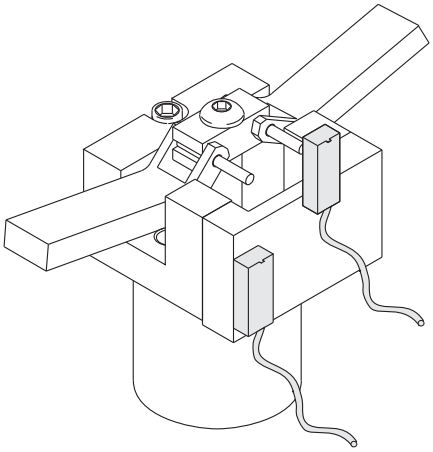
Gripper

WIDE OPENING RADIAL MOTION
Double Acting

Barrington Automation

B-1W

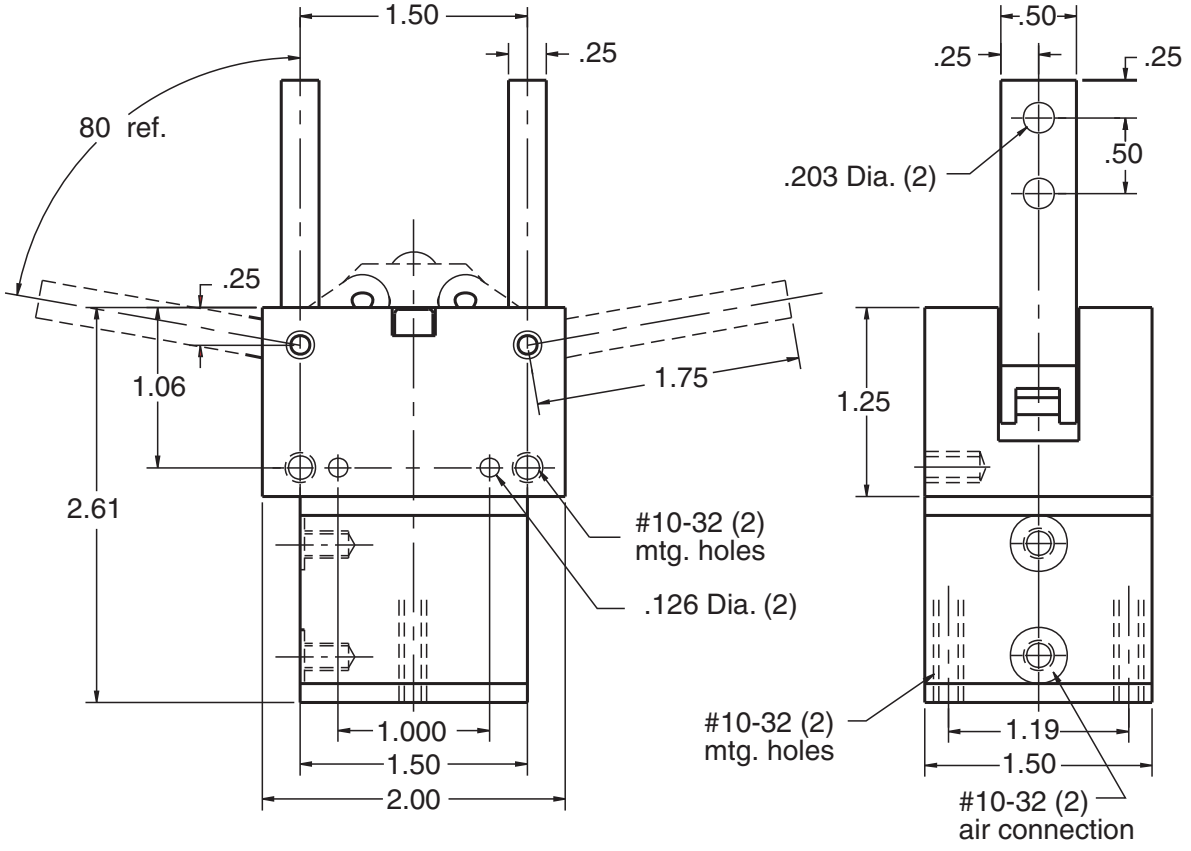




Proximity sensors
preassembled for
open & closed positions
(see page 17)

TECHNICAL DATA:

Weight	11 oz.
Max Rec. Load	2 lbs
Force @ 80 psi	8 lbs @ F
Operating Pressure	60-100 PSI

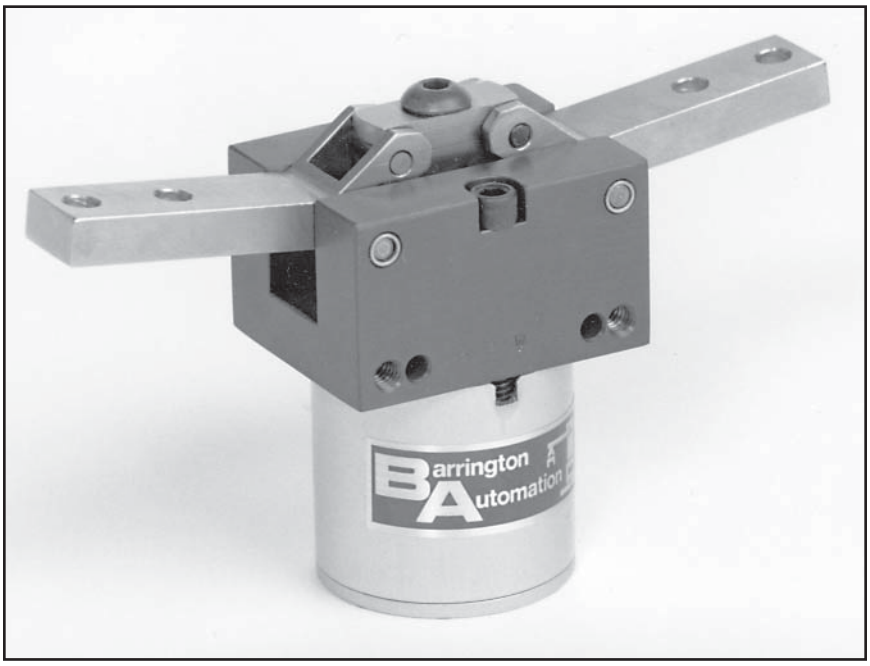


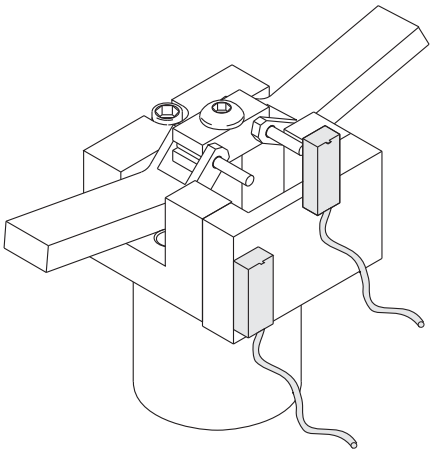
Gripper

WIDE OPENING RADIAL MOTION
Double Acting

Barrington Automation

B-2W

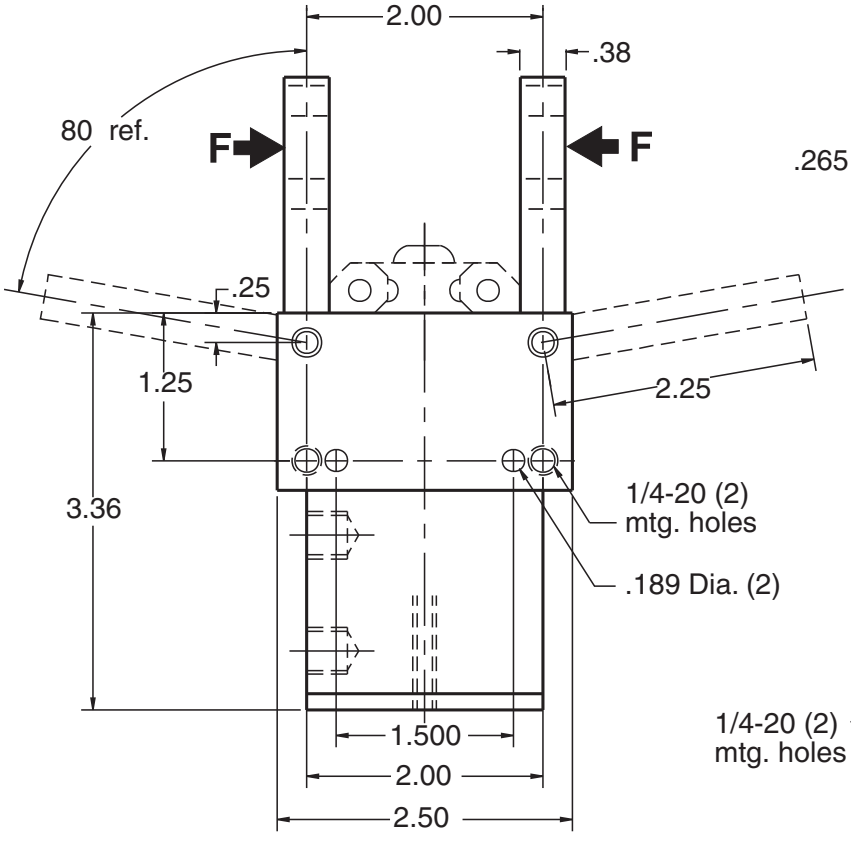


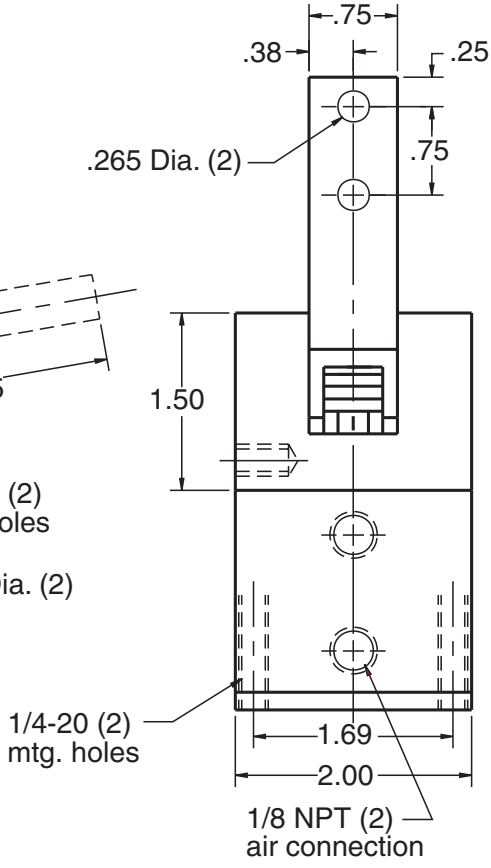


Proximity sensors
preassembled for
open & closed positions
(see page 17)

TECHNICAL DATA:

Weight	1.5 lb
Max Rec. Load	6 lbs
Force @ 80 psi	24 lbs @ F
Operating Pressure	60-100 PSI



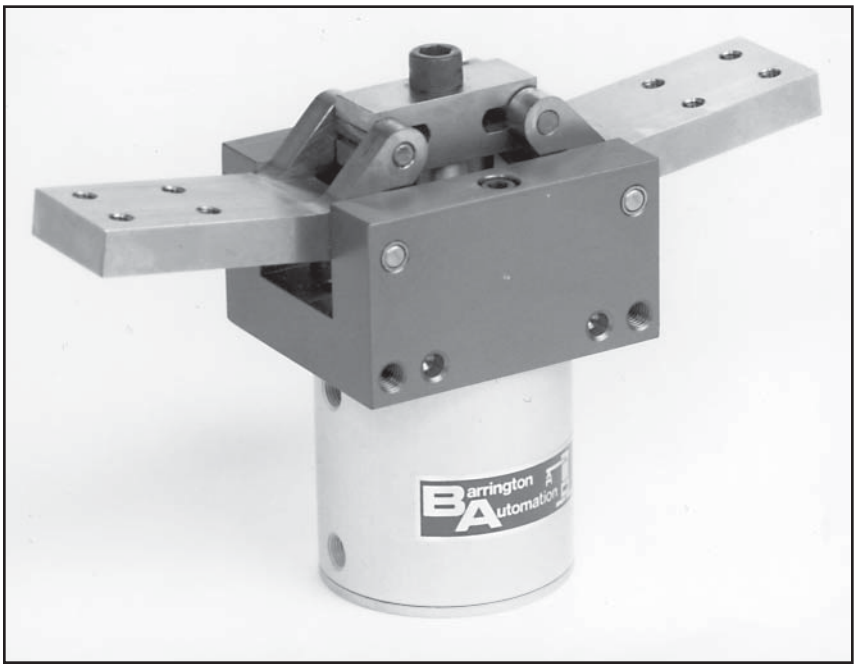


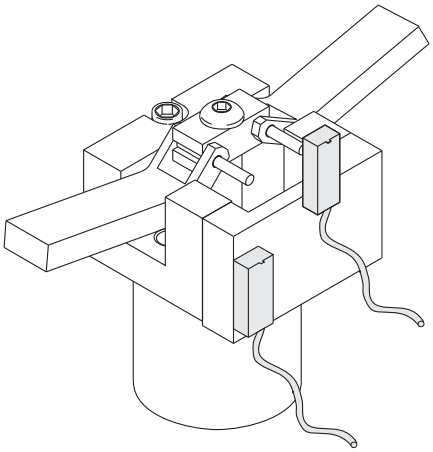
Gripper

WIDE OPENING RADIAL MOTION
Double Acting

Barrington Automation

B-3W

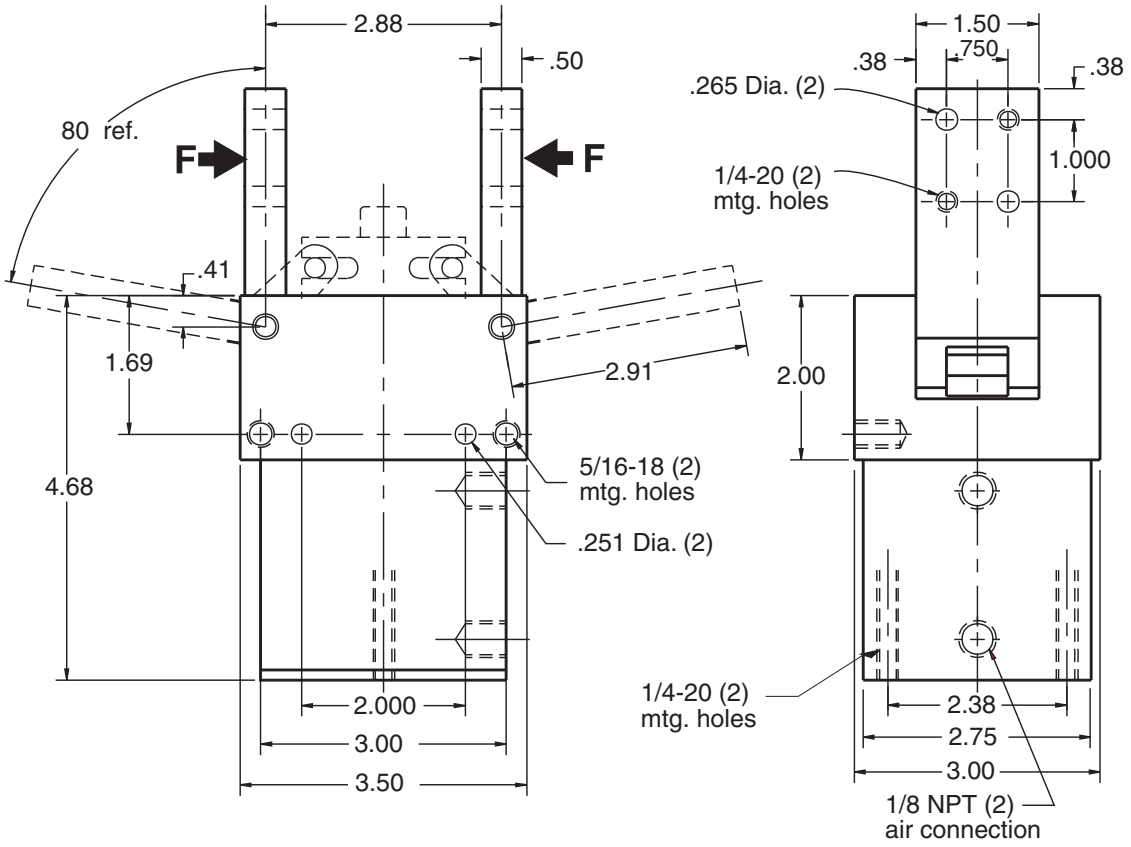




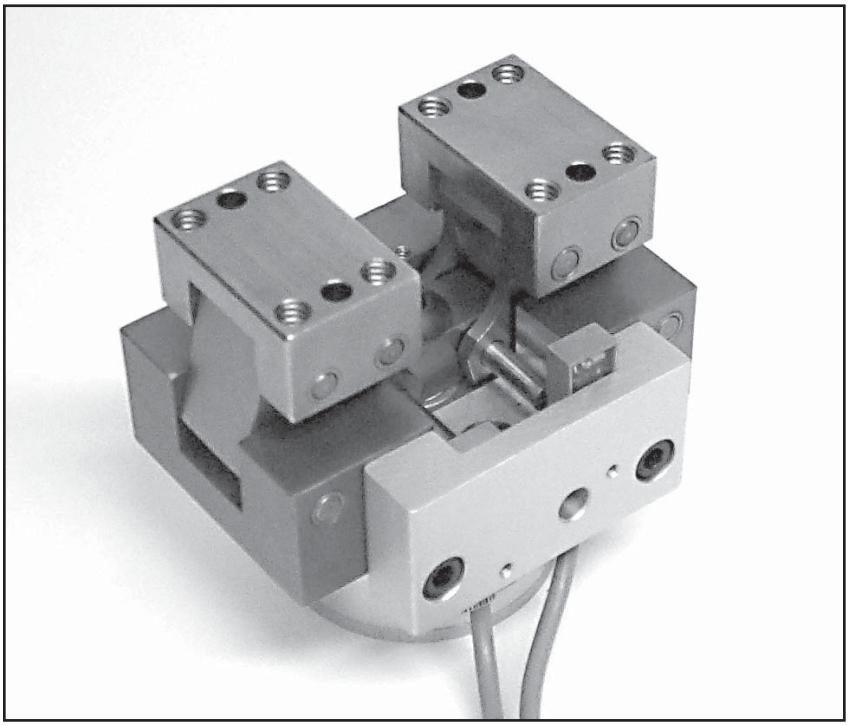
Proximity sensors
preassembled for
open & closed positions
(see page 17)

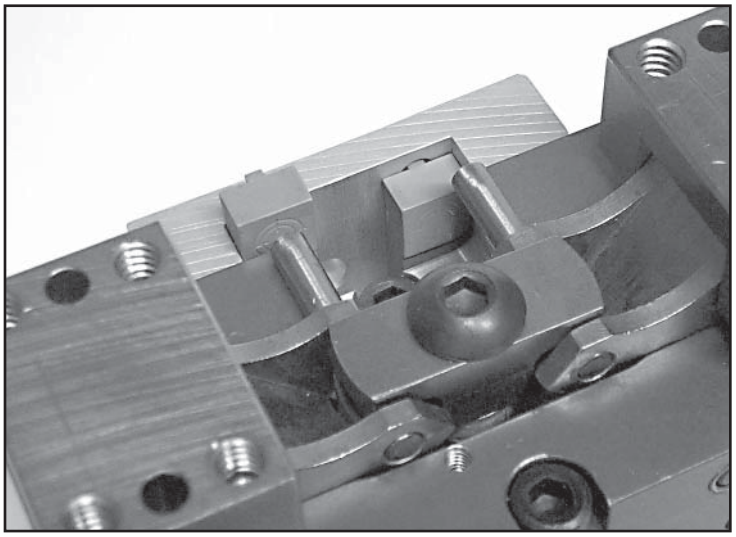
TECHNICAL DATA:

Weight	3.5 lbs
Max Rec. Load	18 lbs
Force @ 80 psi	55 lbs @ F
Operating Pressure	60-100 PSI

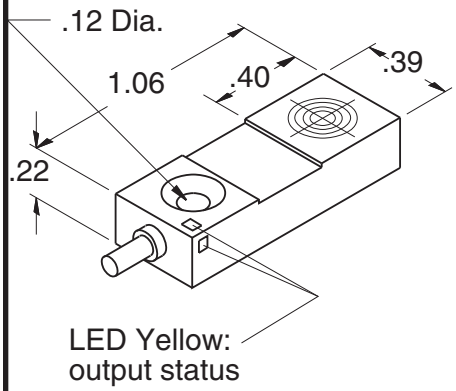


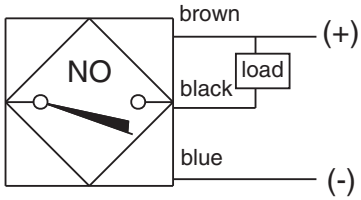
Gripper Sensing



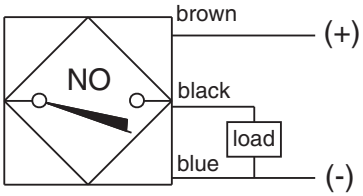


Inductive Proximity Sensor





GPX-N (NPN)
(Current sinking)



GPX-P (PNP)
(Current sourcing)

Technical Data:	
Operating voltage	10-30 VDC
Load current	100mA
Output function	NPN or PNP
Output type	Digital
Max. switch frequency	1 kHz
Status indicator with LED	YES
Sensing distance	4mm
Overvoltage protection	YES
Polarity protection	YES
Short circuit protection	YES
Operating temperature	-14° to +158°
Installation	Clearance holes
Connection	2m-3 wire cable

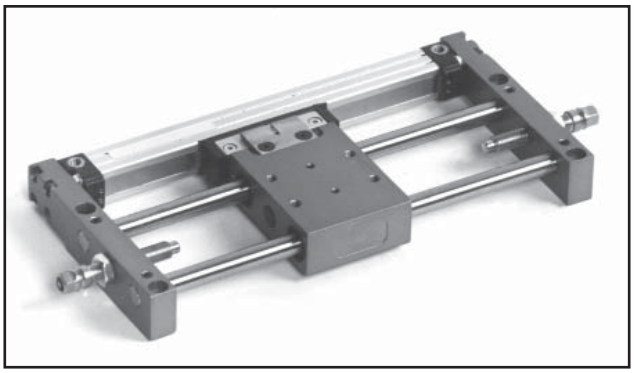
Ordering Information:
Sensor Mounting Bracket:
[Gripper model] - SM
Example: B-2P-SM

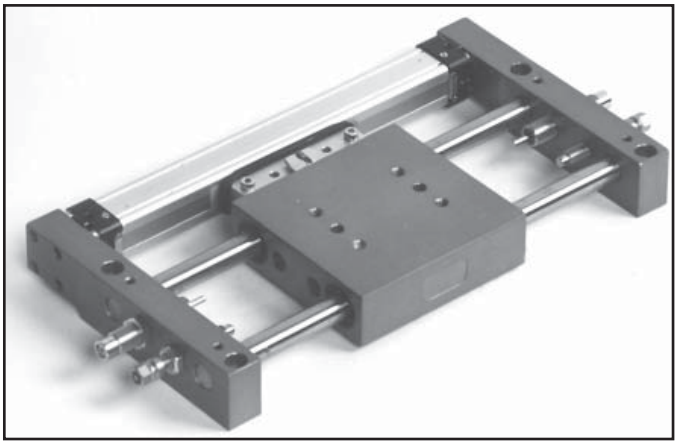
Proximity Sensor:
GPX-N (NPN)
GPX-P (PNP)

Note: Please indicate "Open" or "Closed" position when ordering one sensor.

Precision Pneumatic

Table Slides





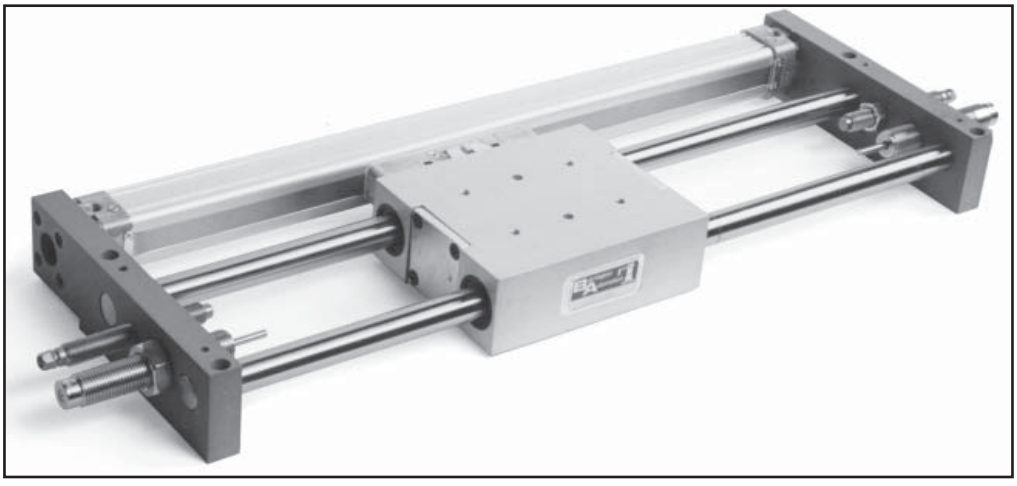
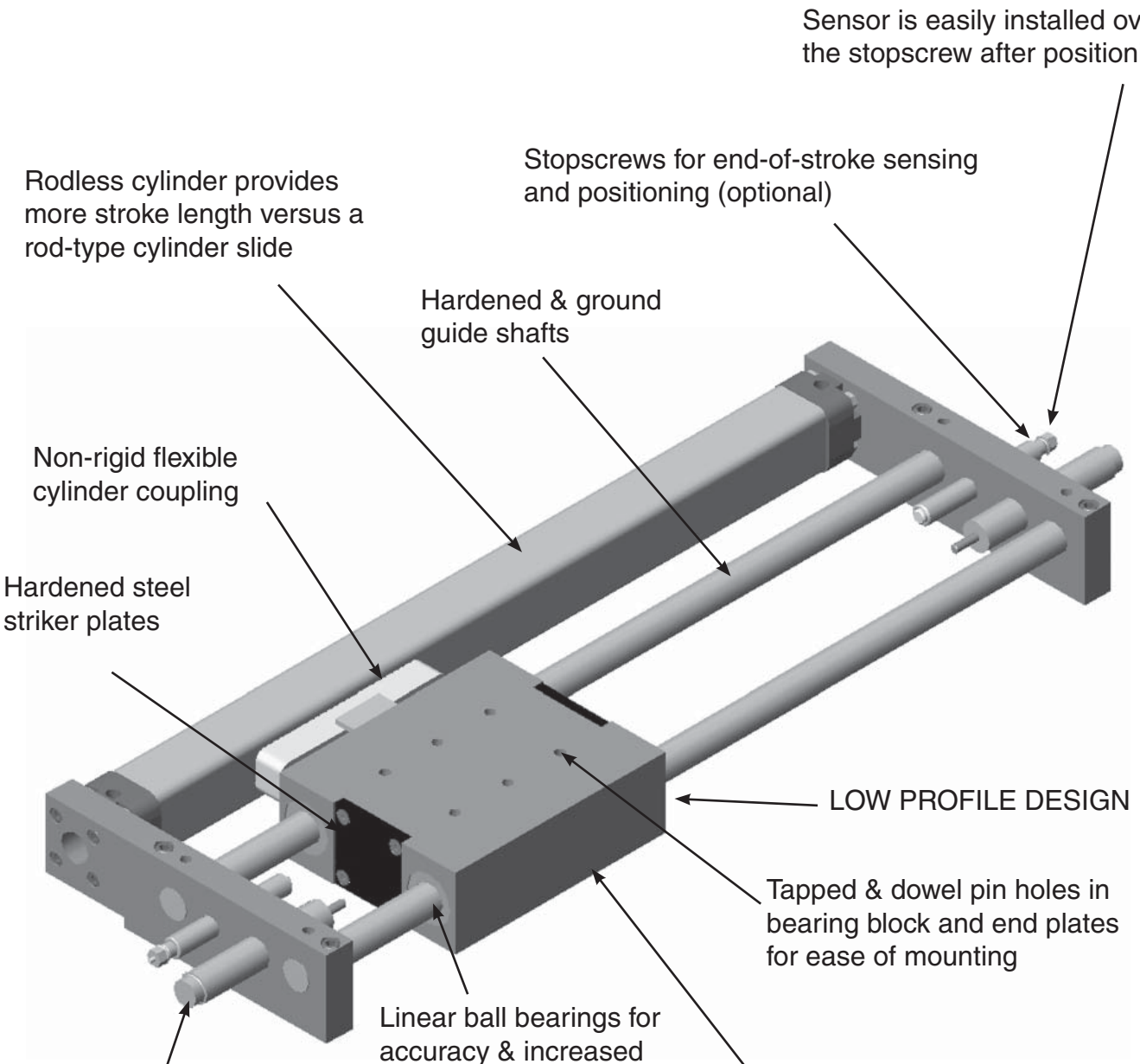


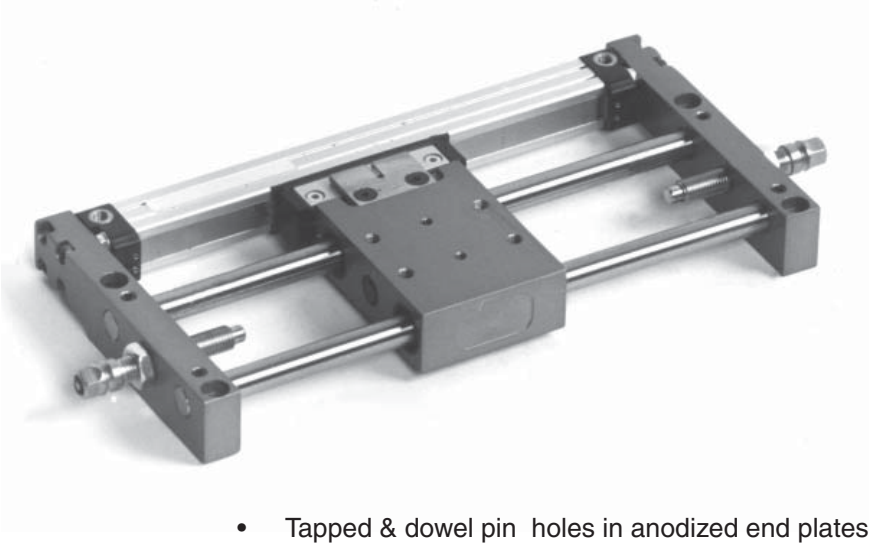
Table Slide Features

- Operating Pressure 60-100 psi
- Test and pre-cycled
- 4 Bore Sizes Available
- Stroke Lengths up to 36 inches



MADE IN USA

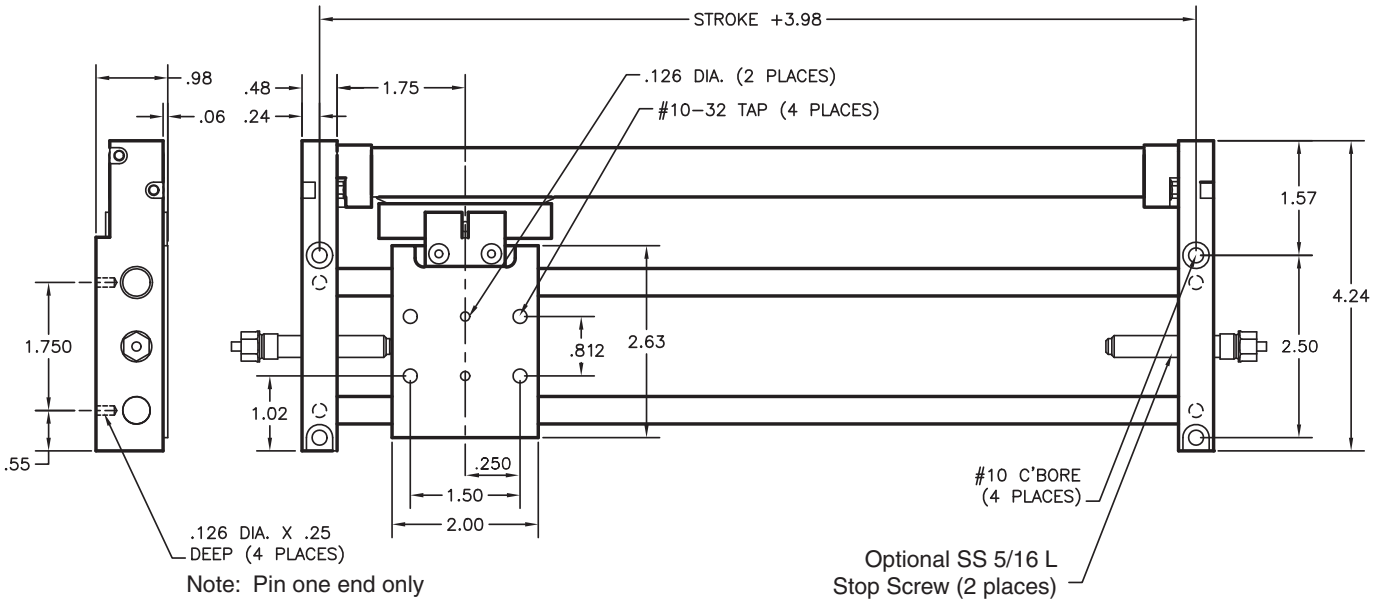
ES-1 Table Slide



Features

- External mounted rodless cylinder
- Rodless cylinder for short overall length
- 0.375 dia. case hardened & ground shafts
- 4 linear ball bearings and seals for extended cycle life
- Tapped & dowel pin holes in anodized body for ease of mounting
- Tapped & dowel pin holes in anodized end plates for ease of mounting
- Hardened adjustable stopscrews for accurate and repeatable positioning
- End of stroke sensing switches are available for stopscrews

Dimensions



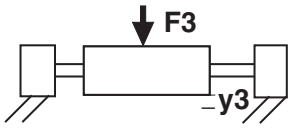
NOTE: Flow controls are recommended for all applications.

ES-1 Table Slide

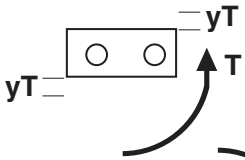
Technical Data

Bore	= .38”
Force @ 80 psi	= 9 lbs
Operating medium	= compressed air 60-100 psi
Air connection	= 10-32
Repeat accuracy	= +/-0.0005”
Life expectancy	= >100 million travel inches

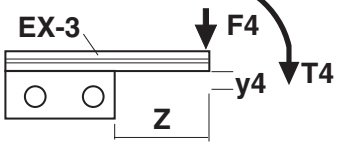
Force diagrams below depict the load and the resultant deflection caused by that force (or torque).



F3=X*F1
y3=y1/X



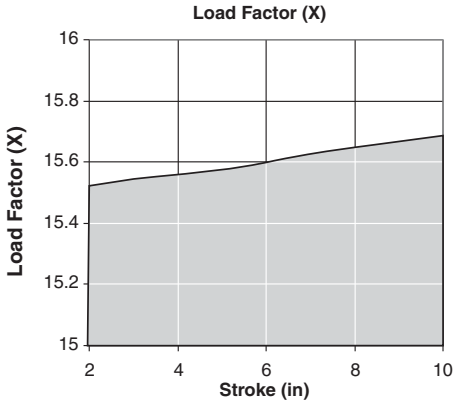
T=F3*0.87/X
yT = y1/2 or
yT = y3*X/2



For T4 = T;
If T4 = F4*(z+0.87) and T=F3*0.87/X then,

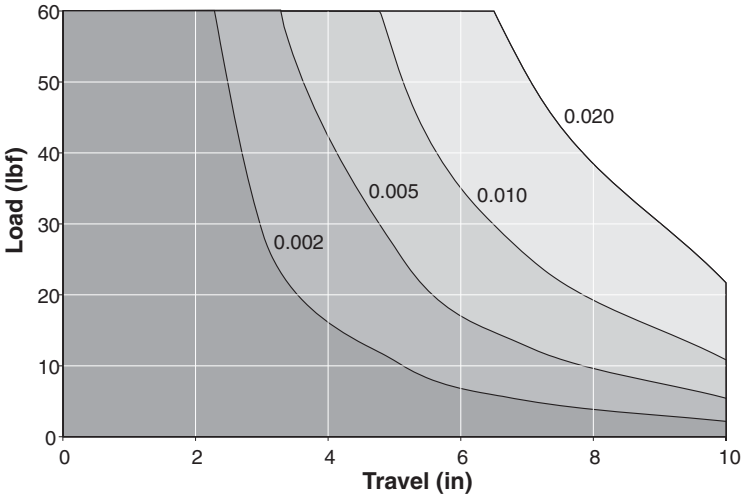
F4 = F3*0.87/(X*(z+0.87))

-F4 is the force that will cause a deflection (yT) at the block’s edge. To determine the deflection at the cantilever end use the following:
y4 = F4*z3/(9.78E+07)



The load factor (X) is used in calculations as a relationship between a load on the ends (F1) versus a load in the center (F3).

F3 Load vs. Travel at set Deflection (y_3) for the ES-1



Ordering & Options

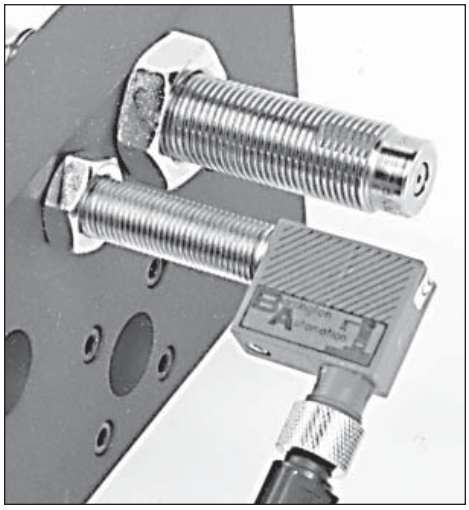
ES - 1 - ☐ - ☐

STROKE
(1" to 10")

C = Base ES with
internal air cushion standard
SS = with 2 Stop Screws

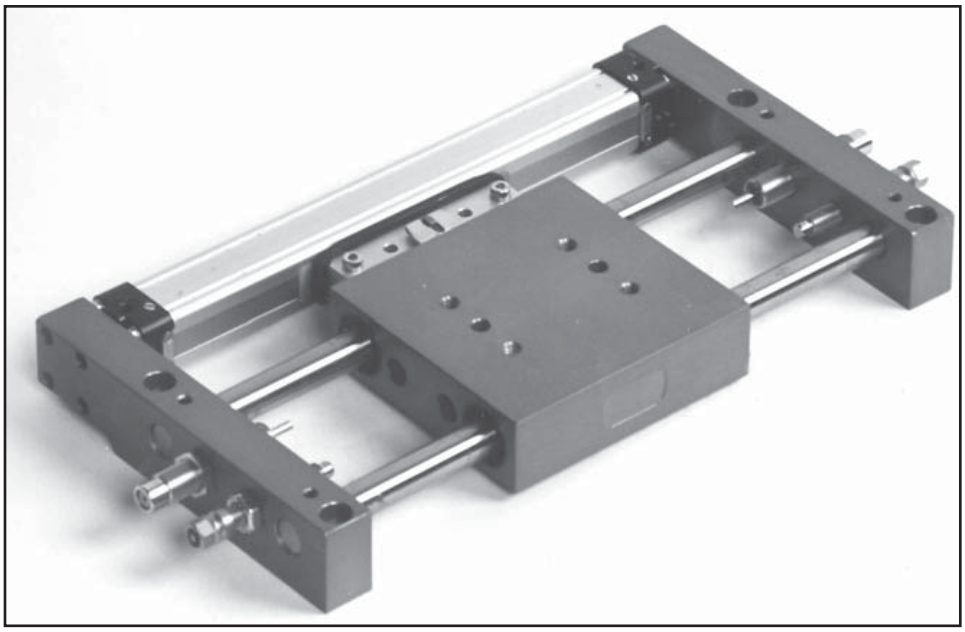
No Shocks Available

For end of stroke sensing, see page 49-53



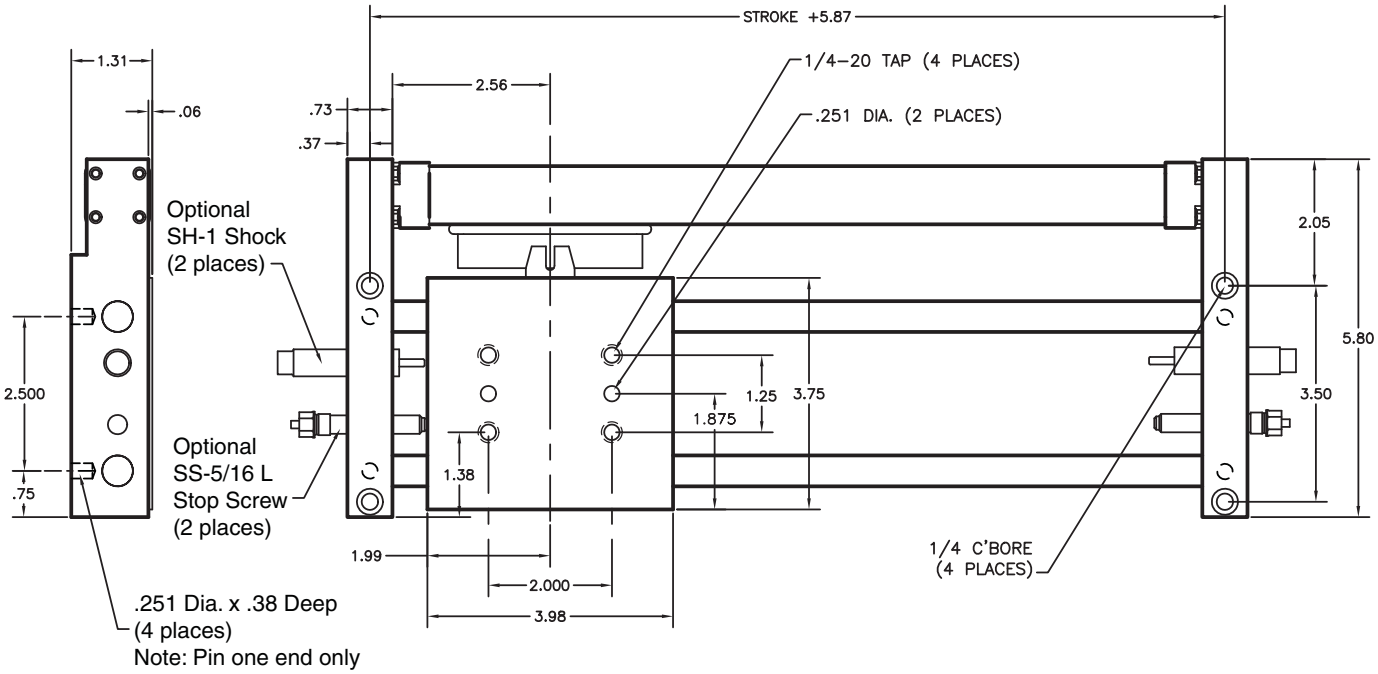
ES-2 Table Slide

Features



- External mounted rodless cylinder
- Rodless cylinder for short overall length
- 0.50 dia. case hardened & ground shafts
- 4 linear ball bearings and seals for extended cycle life
- Tapped & dowel pin holes in anodized body for ease of mounting
- Tapped & dowel pin holes in anodized end plates for ease of mounting
- Hardened adjustable stopscrews for accurate and repeatable positioning
- Hydraulic shock absorbers
- End of stroke sensing switches are available for stopscrews

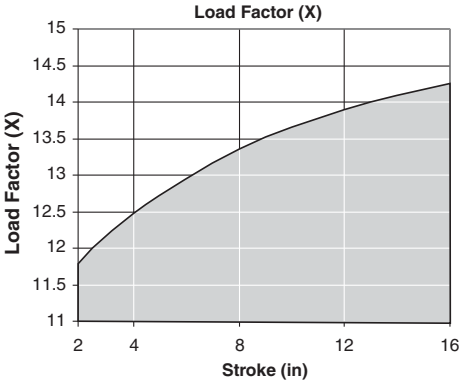
Dimensions



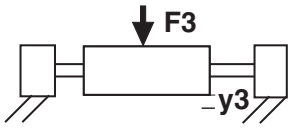
NOTE: Flow controls are recommended for all applications.

Technical Data

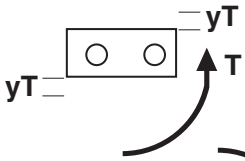
- Bore = .62"
- Force @ 80 psi = 24 lbs
- Operating medium = compressed air 60-100 psi
- Air connection = 10-32
- Repeat accuracy = +/-0.0005"
- Life expectancy = >100 million travel inches
- Force diagrams below depict the load and the resultant deflection caused by that force (or torque).



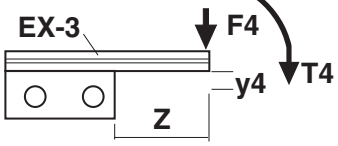
The load factor (X) is used in calculations as a relationship between a load on the ends (F1) versus a load in the center (F3).



F3=X*F1
$y_3=y_1/X$



T=F3*1.25/X
$y_T = y_1/2$ or
$y_T = y_3*X/2$

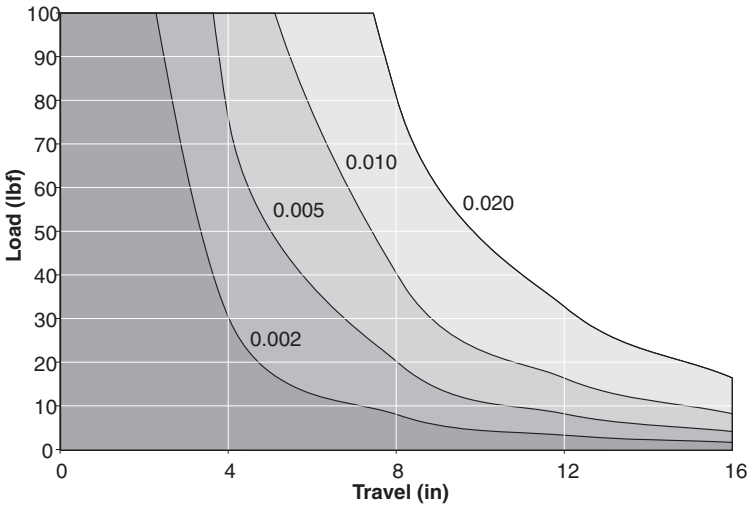


For T4 = T;
If T4 = F4*(z+1.25) and T=F3*1.25/X then,

F4 = F3*1.25/(X*(z+1.25))

-F4 is the force that will cause a deflection (y_T) at the block's edge. To determine the deflection at the cantilever end use the following:
$y_4 = F4*z^3/(9.78E+07)$

F3 Load vs. Travel at set Deflection (y_3) for the ES-2



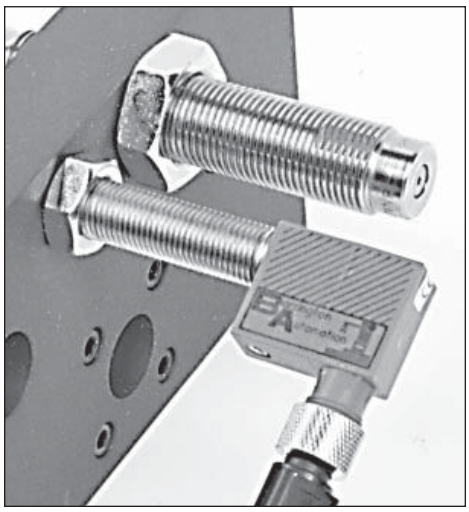
Ordering & Options

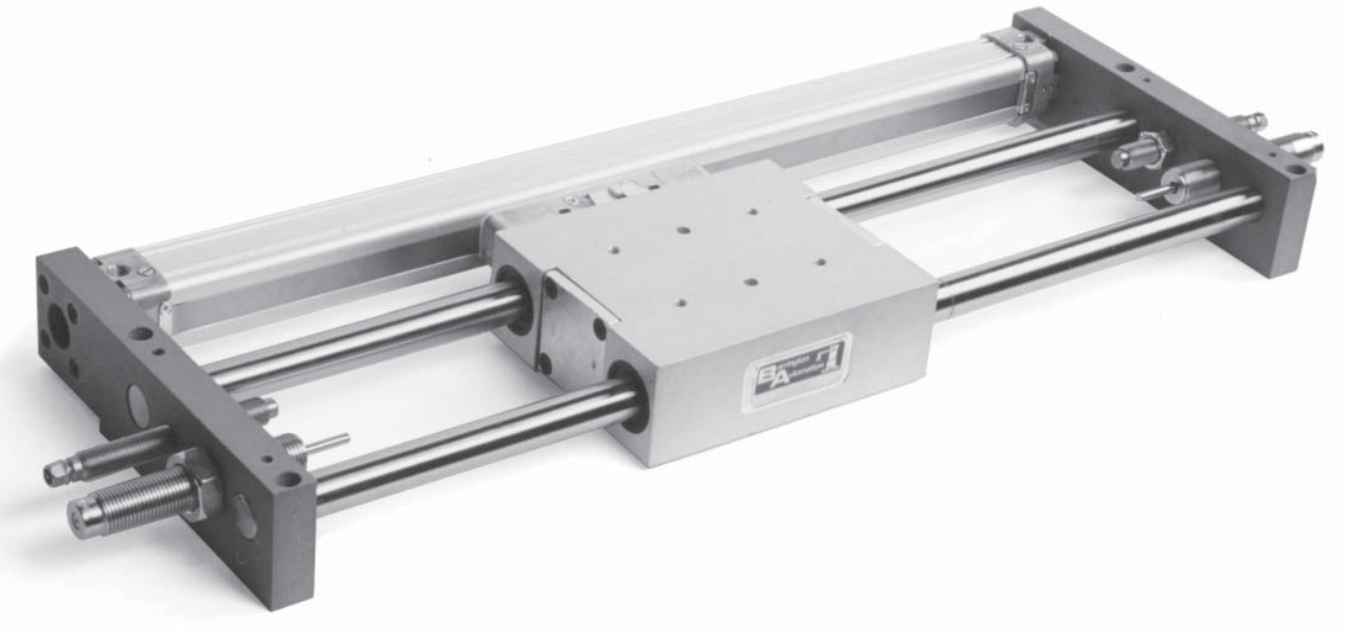
ES - 2 - ☐ - ☐

STROKE
(1" to 16")

C = Base ES with
internal air cushion standard
SS = with 2 Stop Screws
SH = with 2 Shock Absorbers
SB = with both Stopscrews &
Shock Absorbers

For end of stroke sensing, see page 49-53

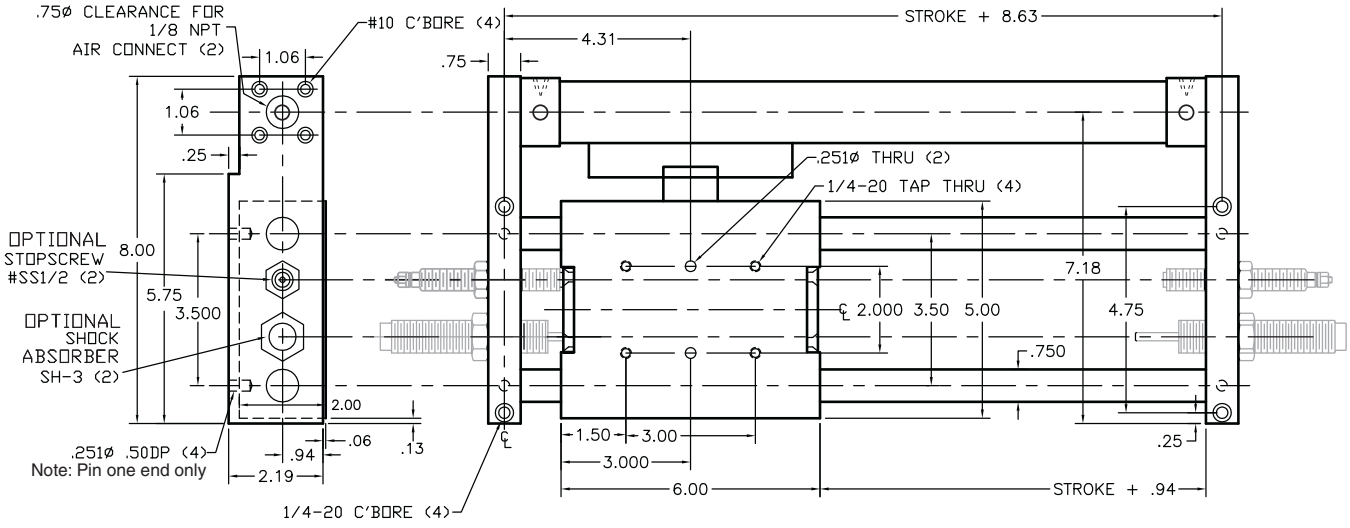




Features

- External mounted rodless cylinder
- Rodless cylinder for short overall length
- 0.750 dia. case hardened & ground shafts
- 4 linear ball bearings and seals for extended cycle life
- Tapped & dowel pin holes in anodized body for ease of mounting
- Tapped & dowel pin holes in anodized end plates for ease of mounting
- Hardened adjustable stopscrews for accurate and repeatable positioning available
- Hydraulic shock absorbers available
- End of stroke sensing switches are available for stop-screws (see page 49-53)
- Mulitple Air Connections

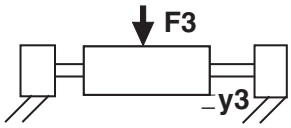
Dimensions



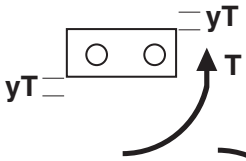
NOTE: Flow controls are recommended for all applications.

Technical Data

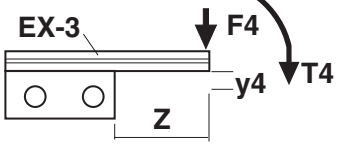
- Bore = 1”
- Force @ 80 psi = 60 lbs
- Operating medium = compressed air 60-100 psi
- Air connection = 1/8 NPT
- Repeat accuracy = +/-0.0005"
- Life expectancy = >100 million travel inches
- Force diagrams below depict the load and the resultant deflection caused by that force (or torque).



F3=X*F1
$y_3=y_1/X$



T=F3*1.75/X
$y_T = y_1/2$ or
$y_T = y_3*X/2$

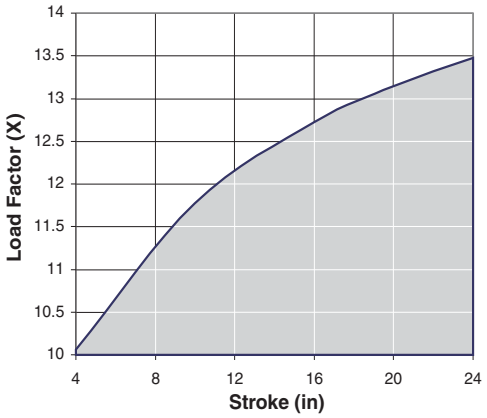


For T4 = T;
If T4 = F4*(z+1.75) and T=F3*1.75/X then,

F4 = F3*1.75/(X*(z+1.75))

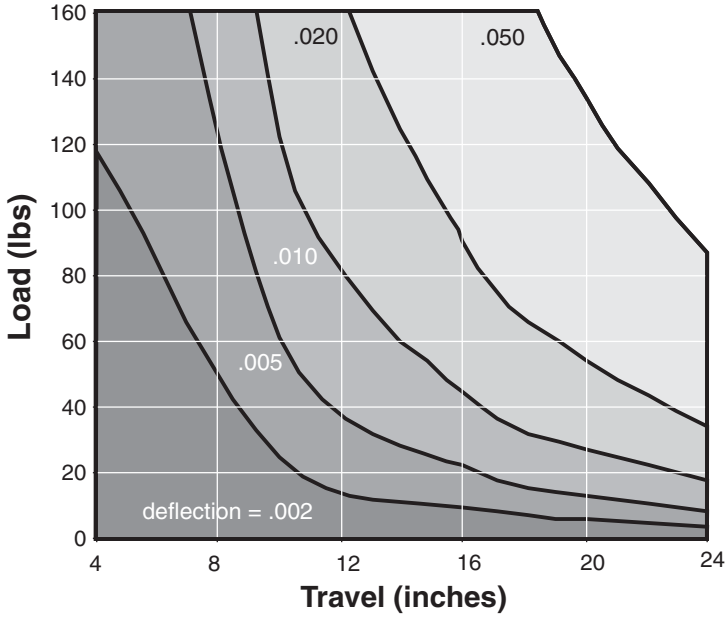
-F4 is the force that will cause a deflection (y_T) at the block's edge. To determine the deflection at the cantilever end use the following:
$y_4 = F4*z^3/(9.78E+07)$

Load Factor (x)



The load factor (X) is used in calculations as a relationship between a load on the ends (F1) versus a load in the center (F3).

F3 Load vs. Travel at set Deflection (y_3) for the ES-3



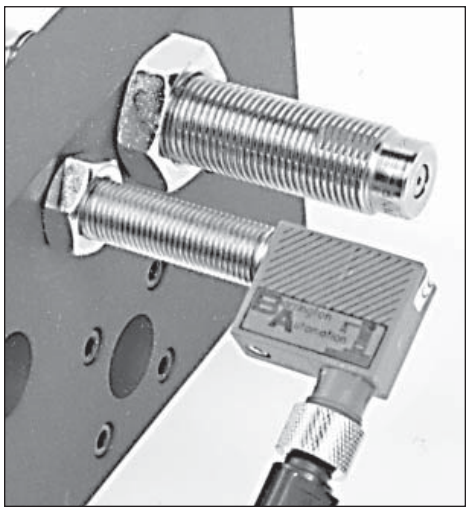
Ordering & Options

ES - 3 - ☐ - ☐

STROKE
(1" to 24")

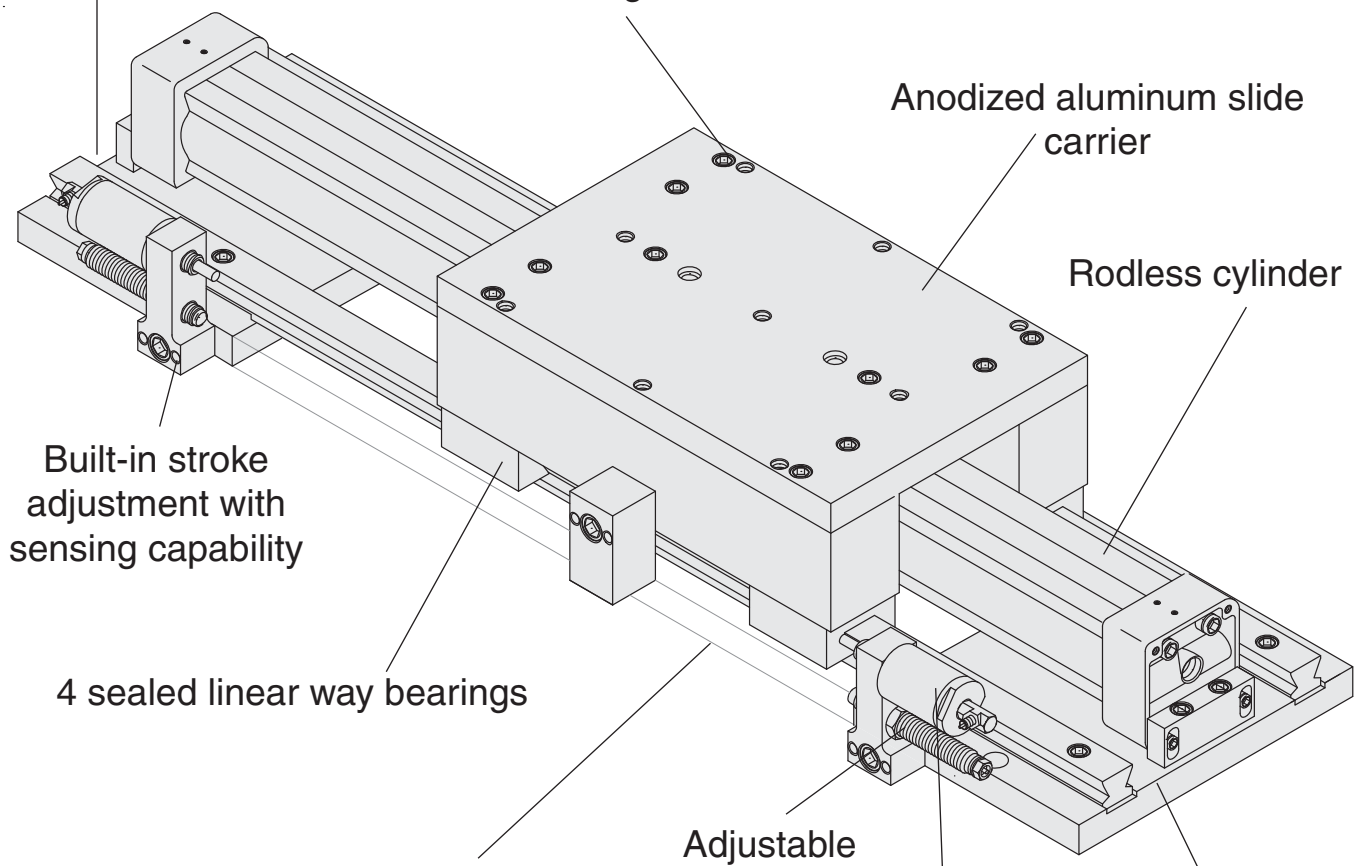
C = Base ES with
internal air cushion standard
SS = with 2 Stop Screws
SH = with 2 Shock Absorbers
SB = with both Stopscrews &
Shock Absorbers

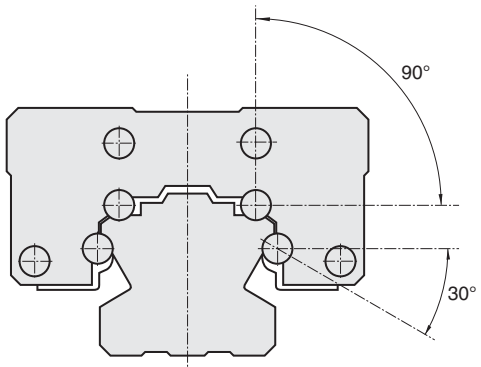
For end of stroke sensing, see page 49-53



Heavy Duty Table Slide Features

Barrington Automation



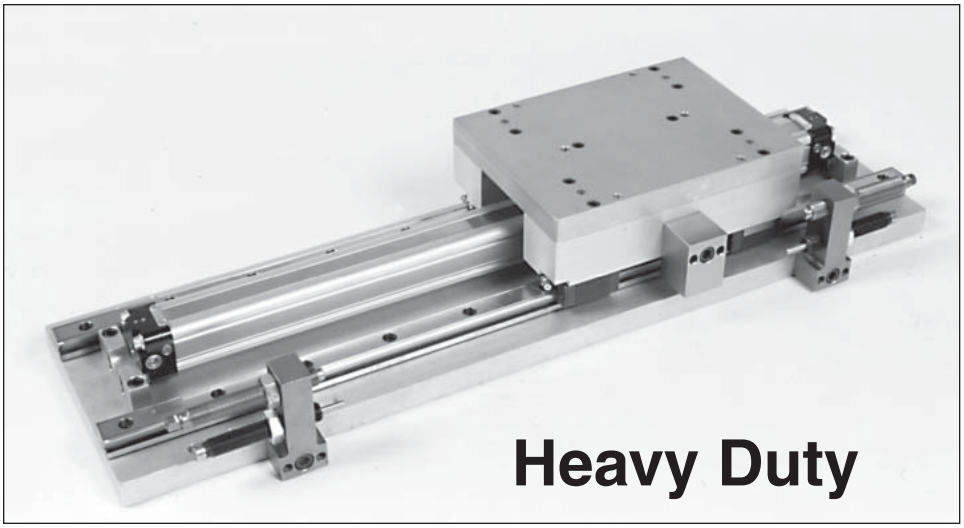


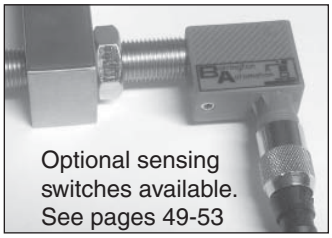
Heavy duty linear rail and bearing design

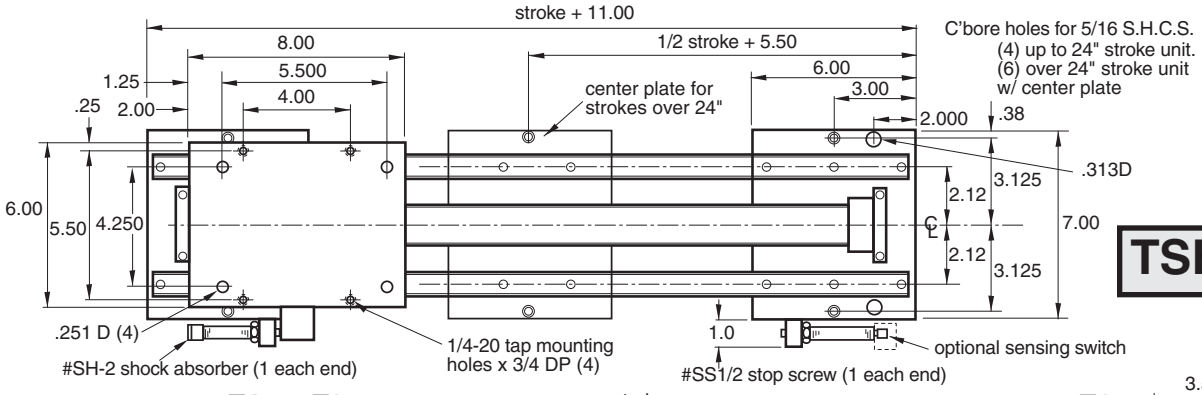
MADE IN USA

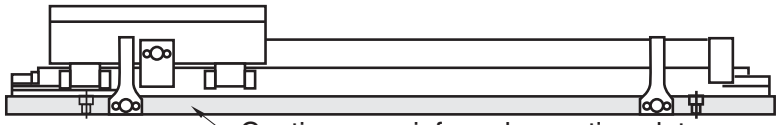
Custom designed slides also available. Call us with your applications.

TSHD-3 Table Slide









TSHD-R-3

Continuous reinforced mounting plate
(4 mtg holes up to 24" stroke - 6 mtg holes over 24" stroke)

Order:
TSHD-3-(stroke)
TSHD-R-3-(stroke) (reinforced)
Bore = 1"
Force at 80 psi: 48 lbs

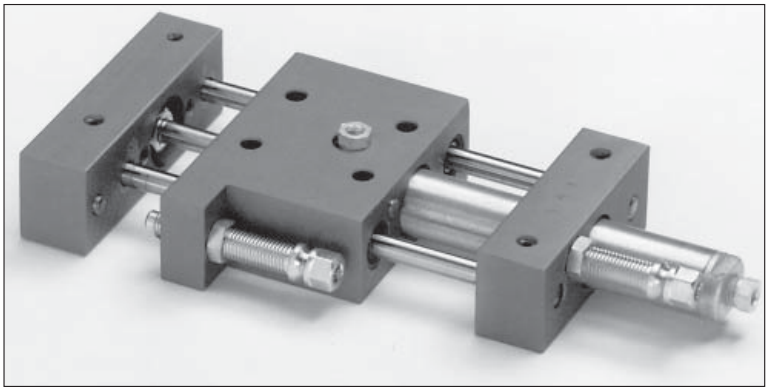
F_L1 = 180 (320 reinforced)
F_L2 = .75 x F_L1
F_L3 = .50 x F_L1
Approx. Weight = 16 lbs + .5 x (stroke) = lbs
Available strokes up to 96" in 1" increments

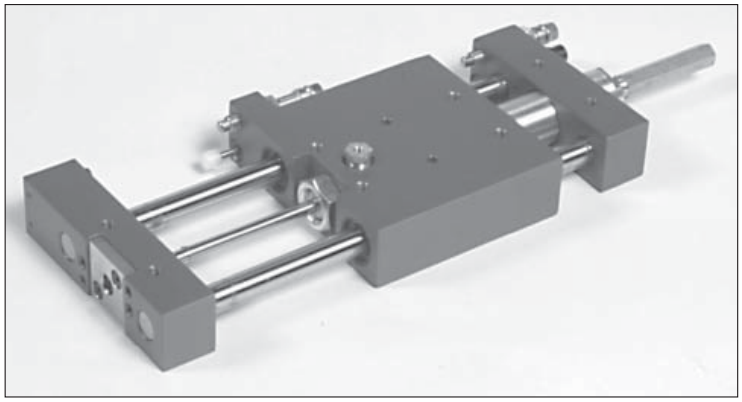
Technical data
-Stroke designed with built in stopscrews with fine threads
-The stopscrews can be used with sensing switches
-Designed for production rates and long life
-Seal kits and rebuilt kits available.

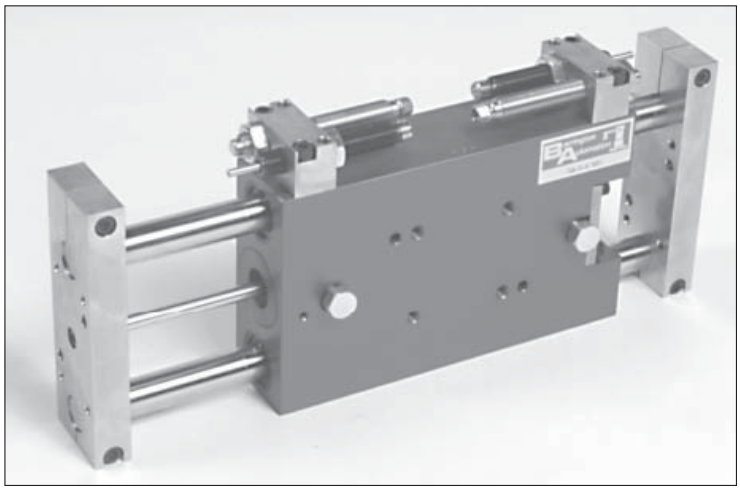
Operating medium	Compressed air
Operating pressure	60-100 psi
Repeat accuracy	±0.0005 in
Air connection	1/8 NPT

Precision Pneumatic

Linear Actuators



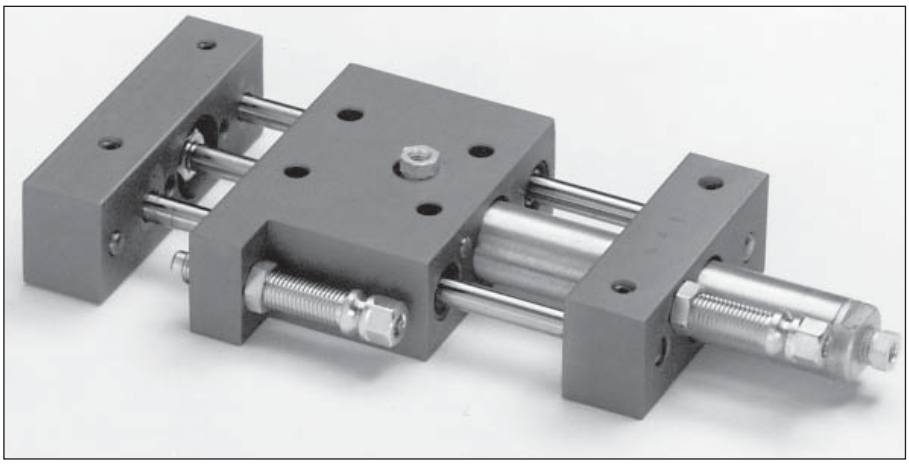




LA-1 Linear Actuator

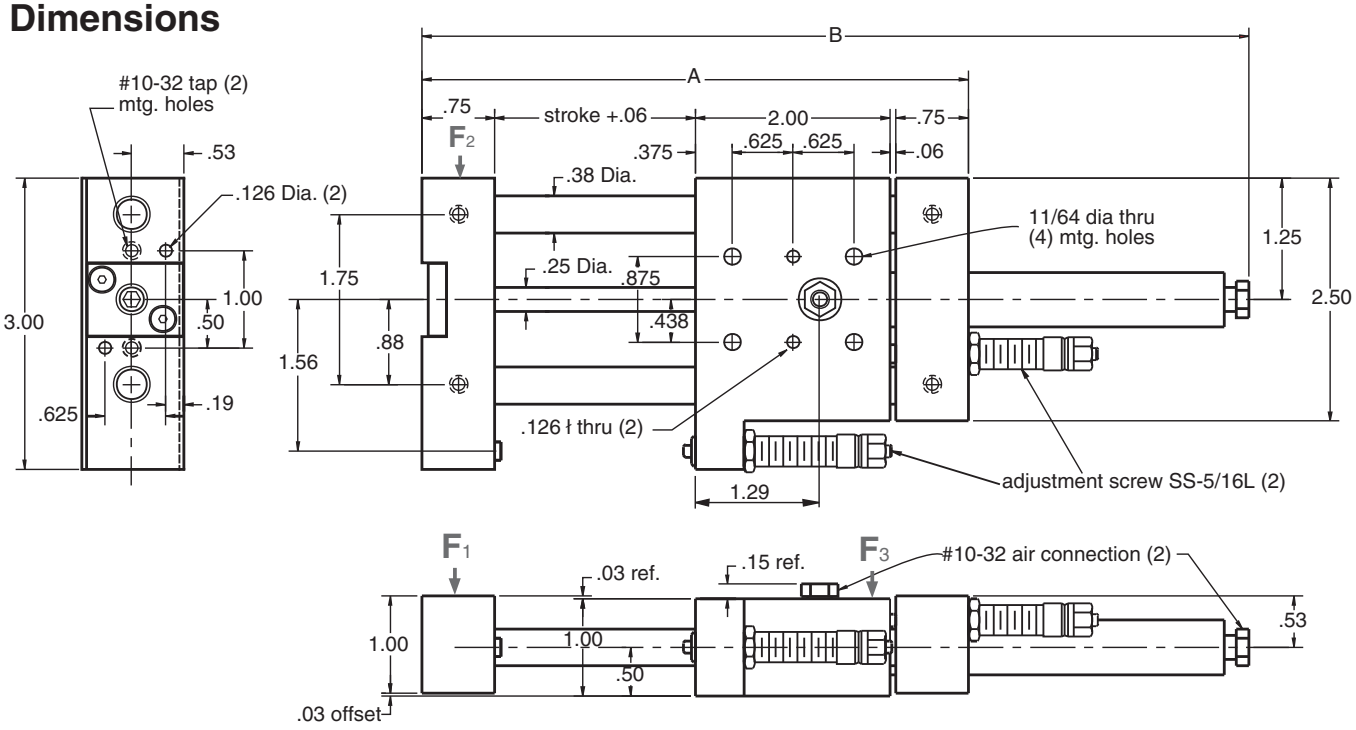
Features

- 9/16” bore
- 0.375” dia. case hardened & ground shafts
- 4 linear ball bearings and seals
- Cylinders can be rebuilt
- Chrome plated cylinder rods
- Adjustable stopscrews for end of stroke adjustment
- Sensing switches can be used with stopscrews
- Compressed air from 60-100 psi
- 10-32 air connection



- Tapped & dowel pin holes in anodized body for ease of mounting
- End blocks anodized and include tapped & dowel pin holes

Dimensions



Type	Stroke	A	B	Weight
LA-1-1	1"	4.62	6.50	1.2
LA-1-2	2"	5.62	8.50	1.3
LA-1-3	3"	6.62	10.50	1.4
LA-1-4	4"	7.62	12.50	1.5

Ordering

The LA-1 comes in four standard stroke lengths: # = 1, 2, 3, & 4. Custom stroke lengths are available upon request.

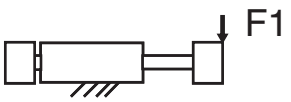
LA-1- [#]

LA-1 Linear Actuator

Technical Data

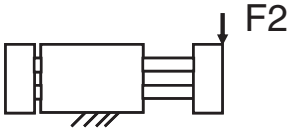
Force @ 80 psi = 14 lbs
Repeat accuracy = +/-0.0005”
Life expectancy = >100 million travel nches

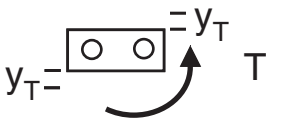
Force diagrams below depict the load (F#) and the resultant deflection (y#) caused by that force (or torque T).



$F1 = F2$

$y_1 = y_2$

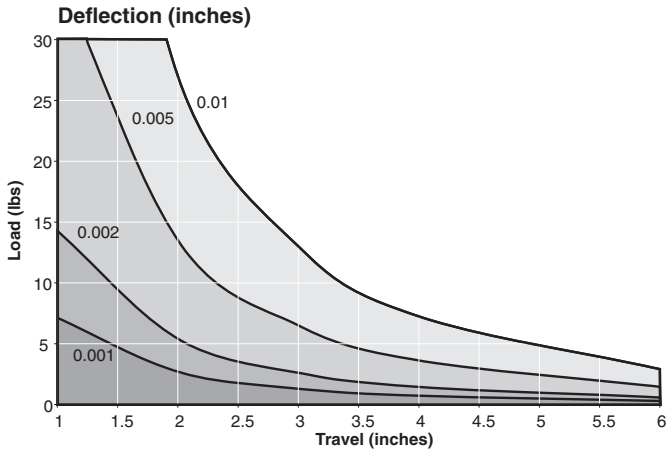




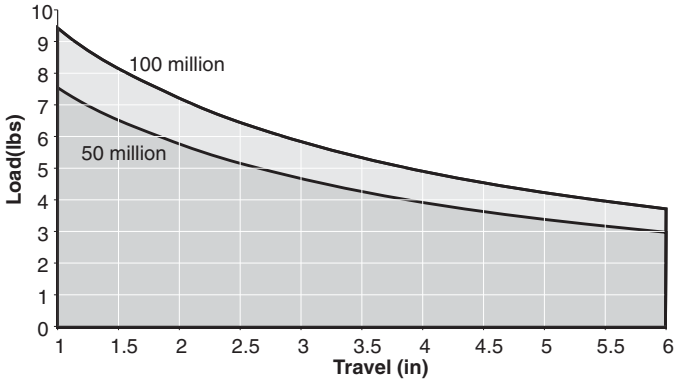
$T = F1 * 0.88$

$y_T = y_1 * .5$

F1 Load vs. Travel at set Deflections for the LA-1

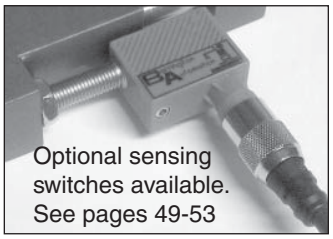


Life (millions of inches traveled) vs. Travel & Load



Options

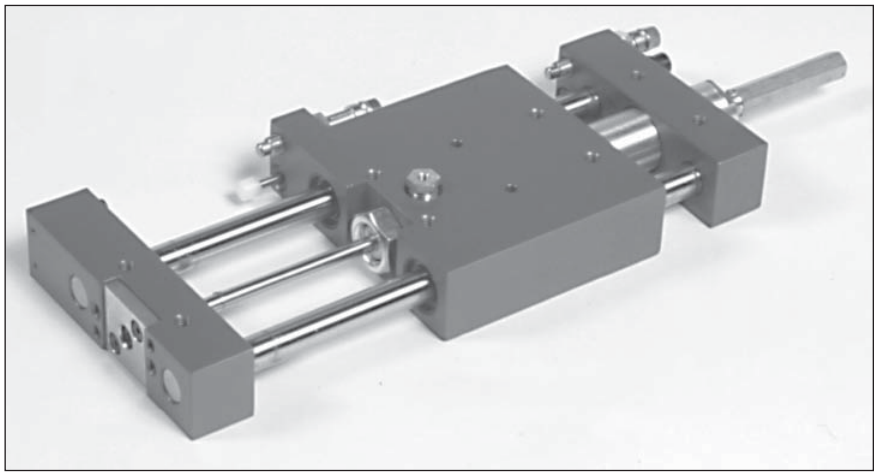
Sensing switches are available as an option. They are mounted to the stopscrews as seen in the photo to the right. For specifications on sensing please see page 49.



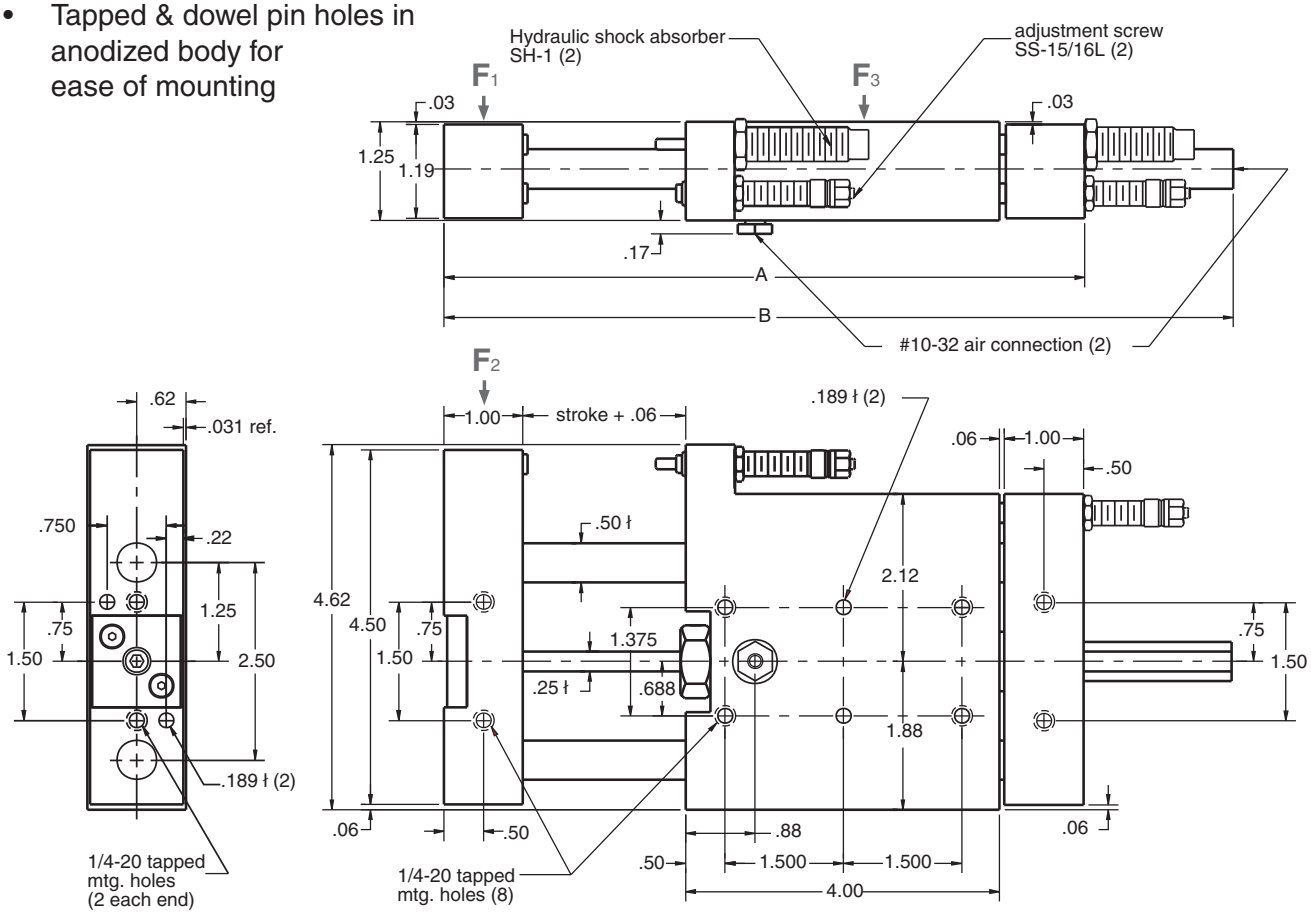
LA-2 Linear Actuator

Features

- 3/4" bore
- 0.500" dia. case hardened & ground shafts
- 4 linear ball bearings and seals
- Cylinders can be rebuilt
- Chrome plated cylinder rods
- Adjustable stopscrews for end of stroke adjustment
- Sensing switches can be used with stopscrews
- Compressed air from 60-100 psi
- 10-32 air connection
- Tapped & dowel pin holes in anodized body for ease of mounting



- End blocks anodized and include tapped & dowel pin holes
- Hydraulic shock absorbers



Type	Stroke	A	B	Weight
LA-2-2	2"	8.12	10.0	4.0
LA-2-4	4"	10.12	14.0	4.5
LA-2-6	6"	12.12	18.0	5.0
LA-2-8	8"	14.12	22.0	5.5

Ordering

The LA-2 comes in four standard stroke lengths: # = 2, 4, 6, & 8. Custom stroke lengths are available upon request.

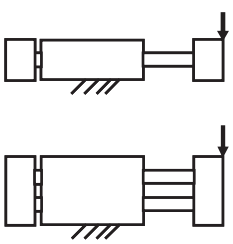
LA-2- [#]

LA-2 Linear Actuator

Technical Data

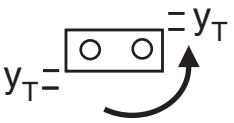
Force @ 80 psi = 32 lbs
Repeat accuracy = +/-0.0005”
Life expectancy = >100 million travel inches

Force diagrams below depict the load (F#) and the resultant deflection (y#) caused by that force (or torque T).



$F1 = F2$

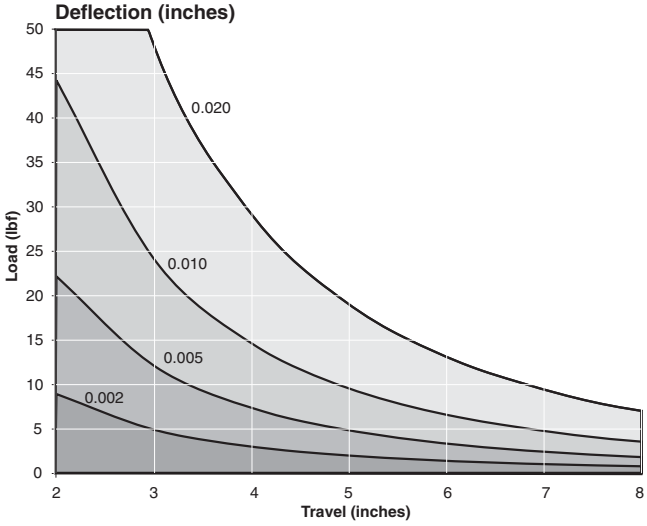
$y_1 = y_2$



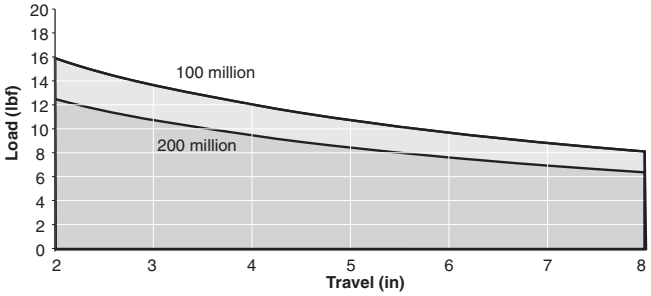
$T = F1 * 1.25$

$y_T = y_1 * .5$

F1 Load vs. Travel at set Deflections for the LA-2

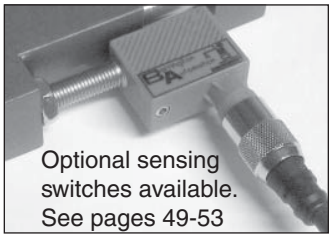


Life(millions of inches traveled) vs. Travel & Load



Options

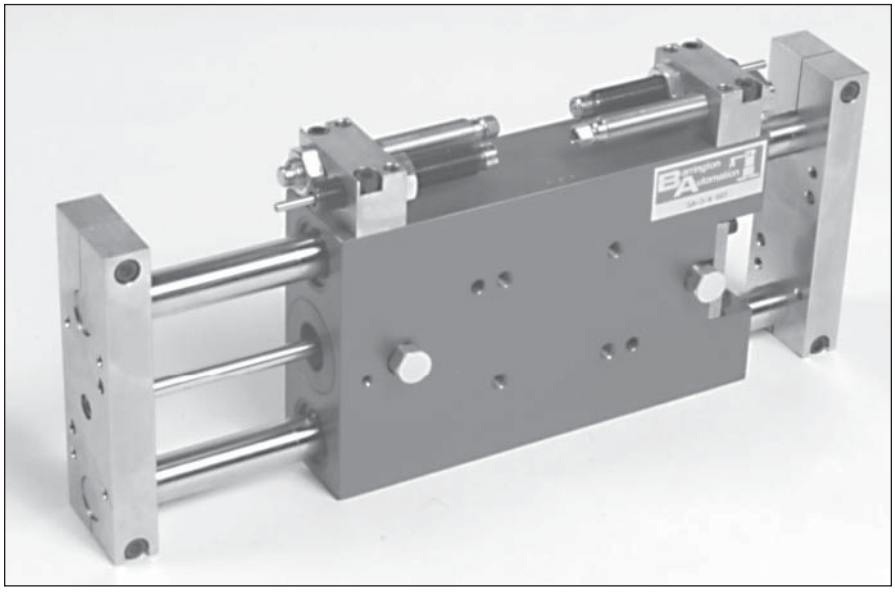
Sensing switches are available as an option. They are mounted to the stopscrews as seen in the photo to the right. For specifications on sensing please see page 51.


Optional sensing switches available. See pages 49-53

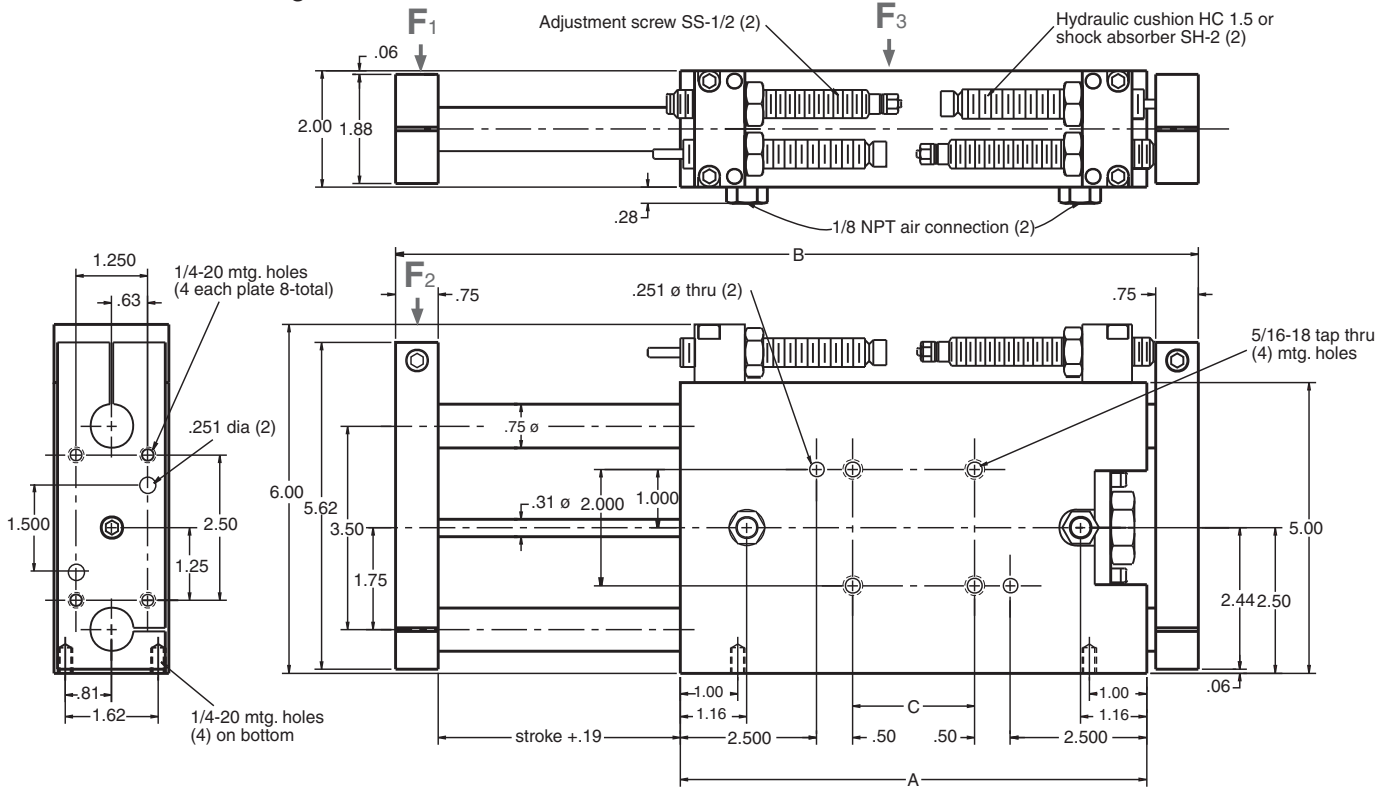
LA-3 Linear Actuator

Features

- 1 1/8" bore
- 0.750" dia. case hardened & ground shafts
- 4 linear ball bearings and seals
- Cylinders can be rebuilt
- Chrome plated cylinder rods
- Adjustable stopscrews for end of stroke adjustment
- Sensing switches can be used with stopscrews
- Compressed air from 60-100 psi
- 1/8 NPT air connection
- Tapped & dowel pin holes in anodized body for ease of mounting



- End blocks anodized and include tapped & dowel pin holes



Type	Stroke	A	B	C	Weight
LA-3-4	0-4"	8.12	14.00	2.12	16
LA-3-8	0-8"	12.12	22.00	6.12	20

Ordering

The LA-3 comes in four standard stroke lengths: = 4, 8. Custom stroke lengths are available upon request.

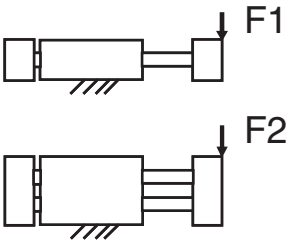
LA-3- [#]

LA-3 Linear Actuator

Technical Data

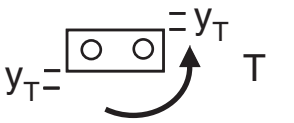
Force @ 80 psi = 72 lbs
Repeat accuracy = +/-0.0005”
Life expectancy = >100 million travel inches

Force diagrams below depict the load (F#) and the resultant deflection (y#) caused by that force (or torque T).



$F1 = F2$

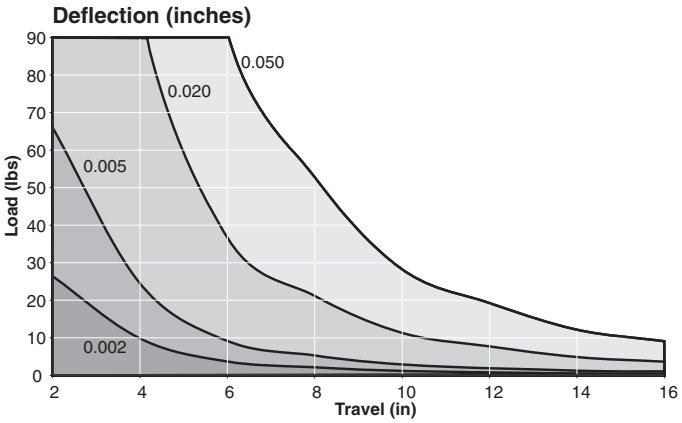
$y_1 = y_2$



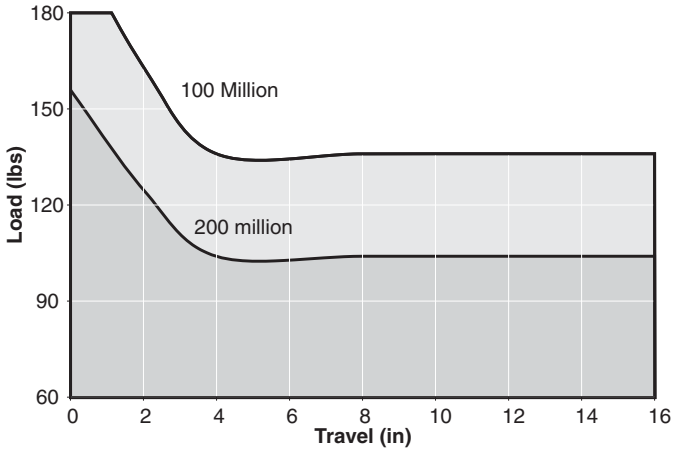
$T = F1 * 1.75$

$y_T = y_1 * .5$

F1 Load vs. Travel at set Deflections for the LA-3

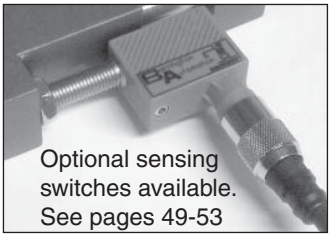


Life (millions of inches of travel) vs. Travel & Load



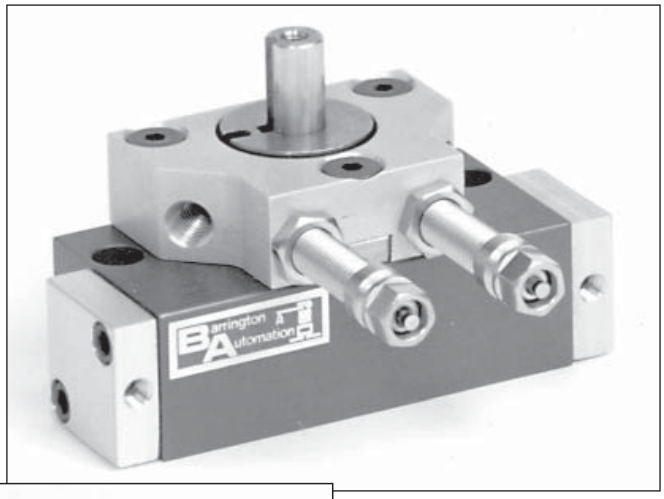
Options

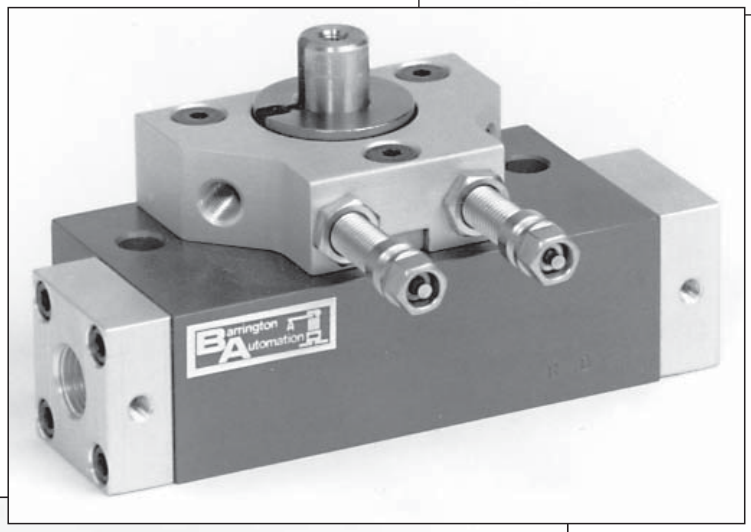
Sensing switches are available as an option. They are mounted to the stopscrews as seen in the photo to the right. For specifications on sensing please see page 49.

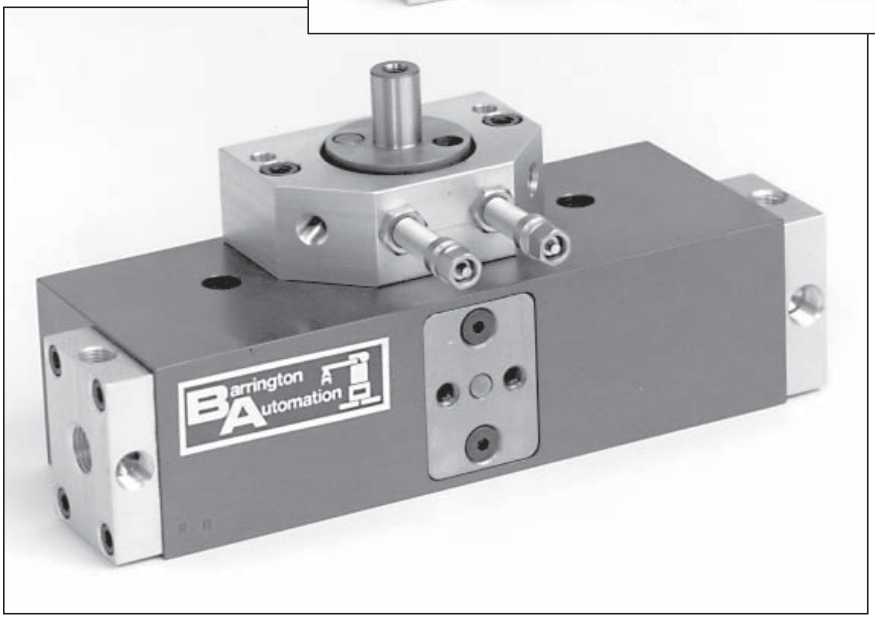


Precision Pneumatic

Rotary Drives

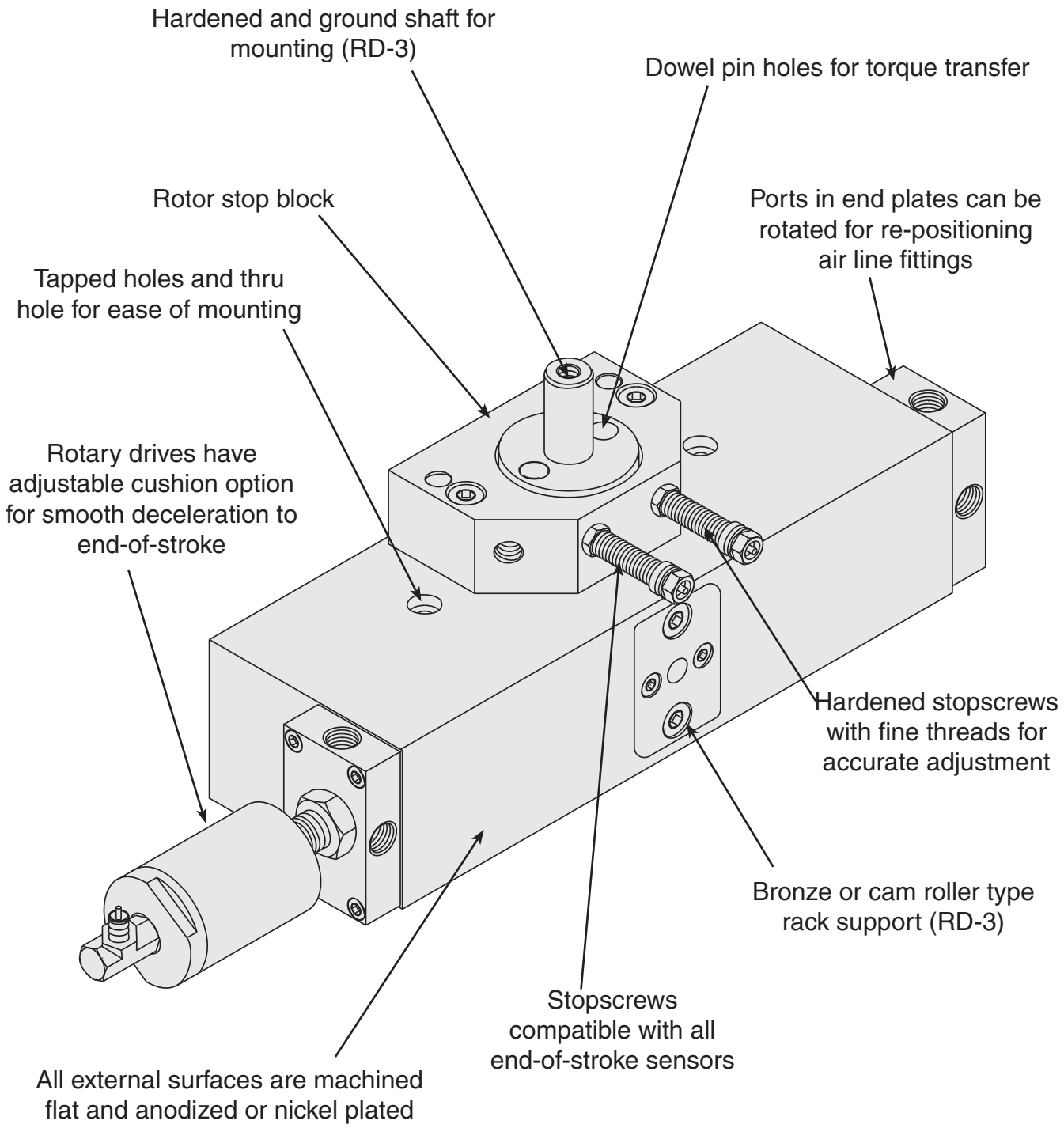






Rotary Drive Features

Barrington Automation

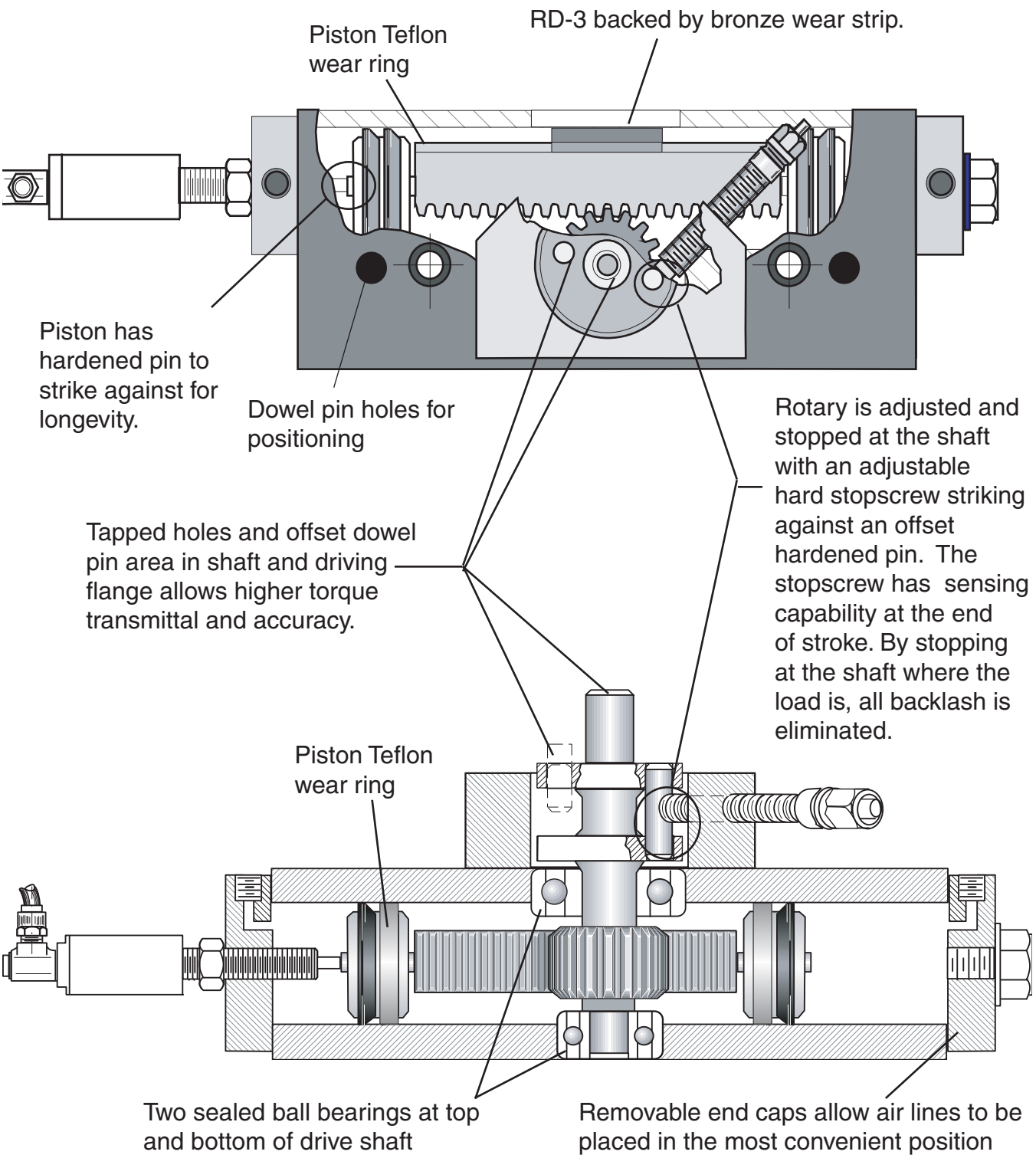


MADE IN USA

Available from stock

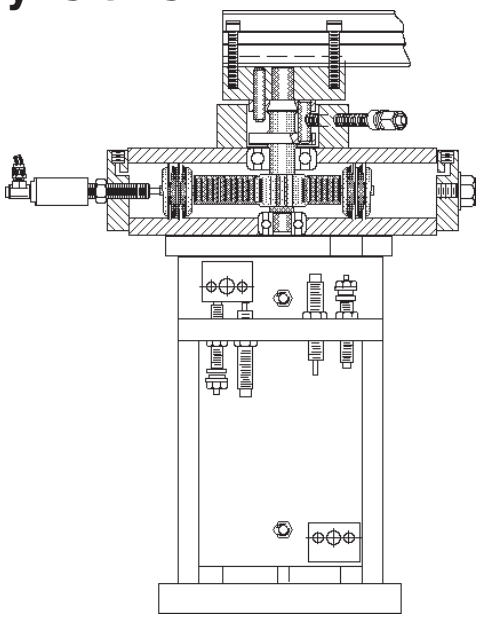
0 to 180° rotation fully adjustable

Rotary Drive Construction

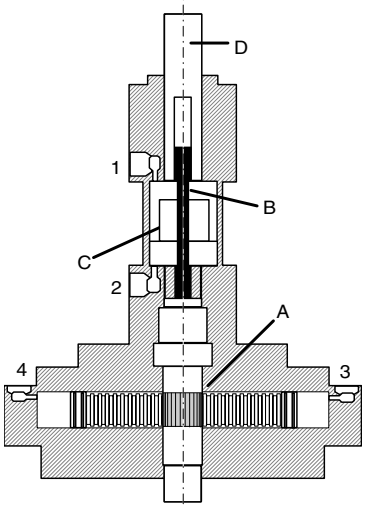


Rotary Drive Comparison

Why is this . . .



better than this?



1. Rotary actuators always have bearings very close to the drive gear. Therefore, the closer the load is to the bearing area, the more rigid, precise, wear resistant and accurate the rotating arm or load will be. Barrington Automation puts the load right at the rotary, very close to the main bearings. Brand X puts the load at D, the farthest point from the rotary drive at A.

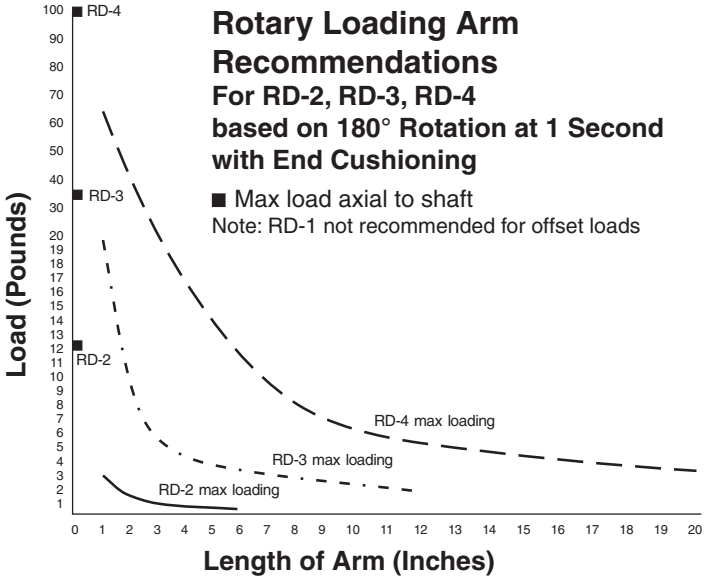
2. Barrington Automation's separate components need no splines or sliding members so that accuracy is not compromised. Because the Brand X rotary drive is at the bottom, a spline (B) is needed inside the cylinder (C) to maintain shaft alignment. These sliding members amplify deflections and add slop to the system.

3. The Barrington Automation rotary uses a shaft and driving flange with a pressed dowel pin outside the shaft area for torque transmittal. This produces a tight and highly accurate system which ensures reliability over a long service life. Brand X uses a round shaft with a flat to hold the arm or load at (D). Torque is transmitted through a slip fit hole and a set screw. It is difficult to maintain any accuracy with this design.

4. The Barrington Automation rotary is adjusted and stopped at the shaft with an adjustable stopscrew striking against an offset hardened pin, eliminating backlash. The Brand X rotary stop adjustment is either nonexistent or accomplished through the end caps (3, 4). Stopping accuracy must be transferred through the entire mechanism (stopscrew to piston to piston rack to drive gear to spline to shaft to set screw on the flat to the arm), with slop added at each transfer point in the mechanism.

Most Brand X combined motion units in the field have required external guides, stops and cushions to keep the unit operating within reasonable tolerances. In addition, the Brand X unit allows no linear adjustment.

The Barrington Automation solution uses separate units (ET and RD) which allow completely independent stroke adjustment, cushioning, switching and mounting options.



Rotary Loading Arm Recommendations

For RD-2, RD-3, RD-4
based on 180° Rotation at 1 Second with End Cushioning

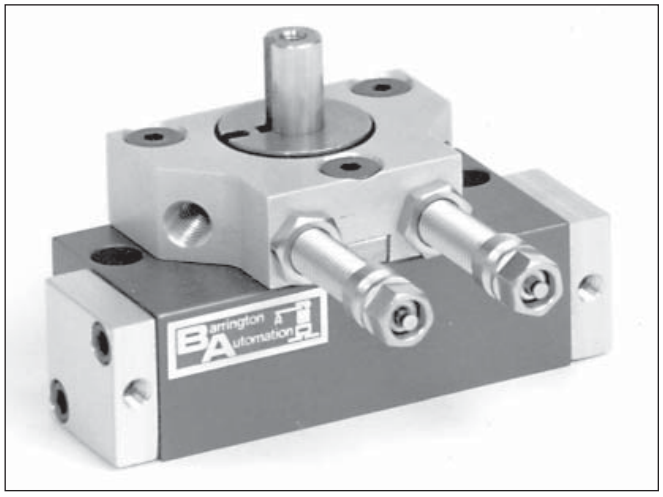
■ Max load axial to shaft
Note: RD-1 not recommended for offset loads

All Barrington Automation components are designed for use with each other.

The primary concept of our modular automation system is the integration of components.

RD-1 Rotary Drive

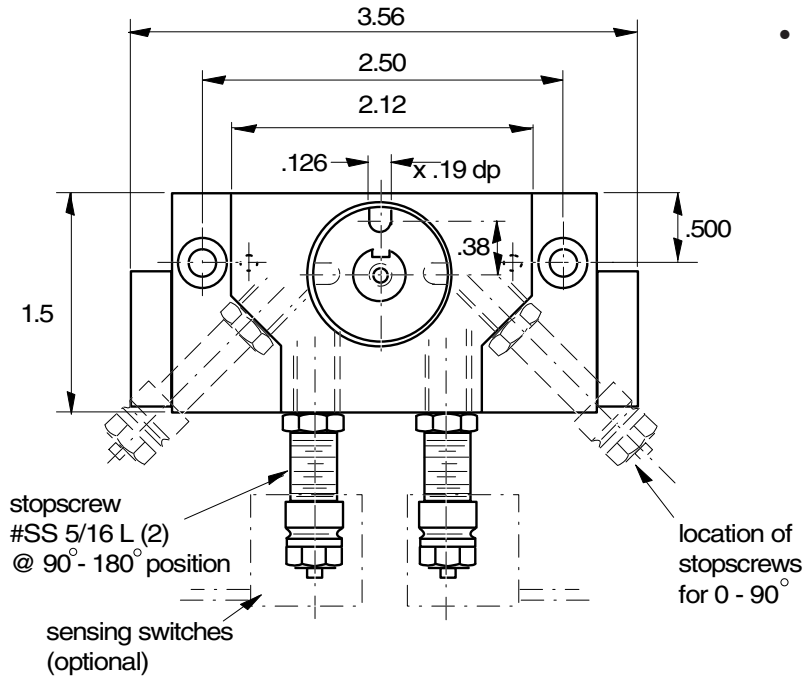
0-180° Fully Adjustable

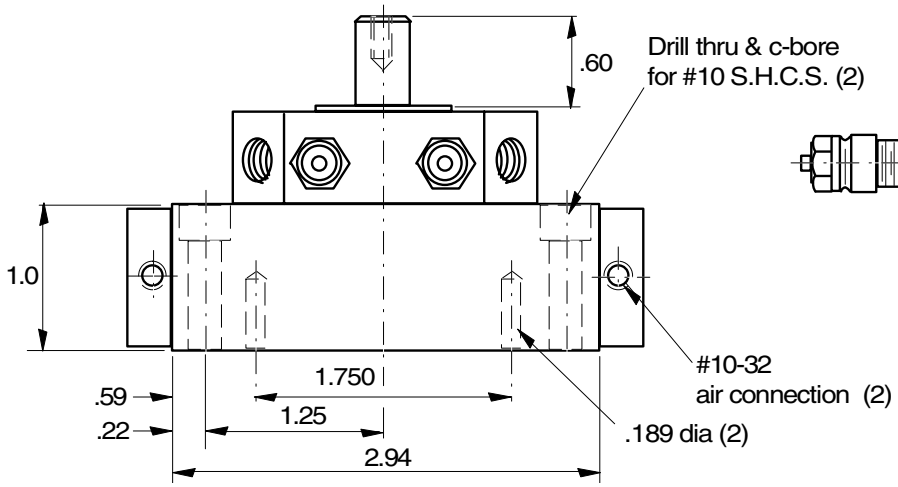


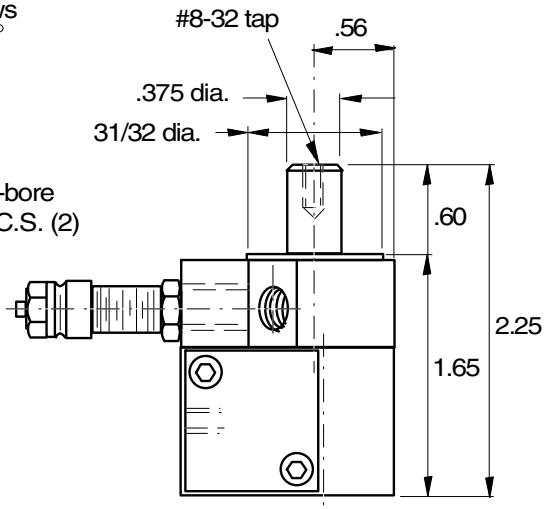
Features

- Angle of rotation adjusted with built in stop screws with fine threads
- Stop screws are compatible with sensing switches
- Designed for production rates and long life
- Two sealed ball bearings at top and bottom of drive shaft
- Tapped holes and offset dowel pin area in shaft and driving flange allows higher torque transmittal and accuracy
- Bearings are positioned very close to the drive gear for rigidity, precision, wear resistance and accuracy.
- Shaft is stopped with an adjustable hard stopscrew against a hardened pin, eliminating backlash

Dimensions





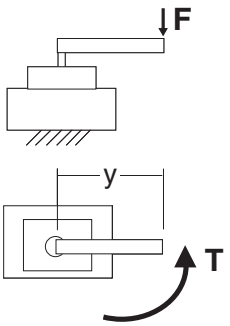


Note: shown in mid-position

RD-1 Rotary Drive

Technical Data

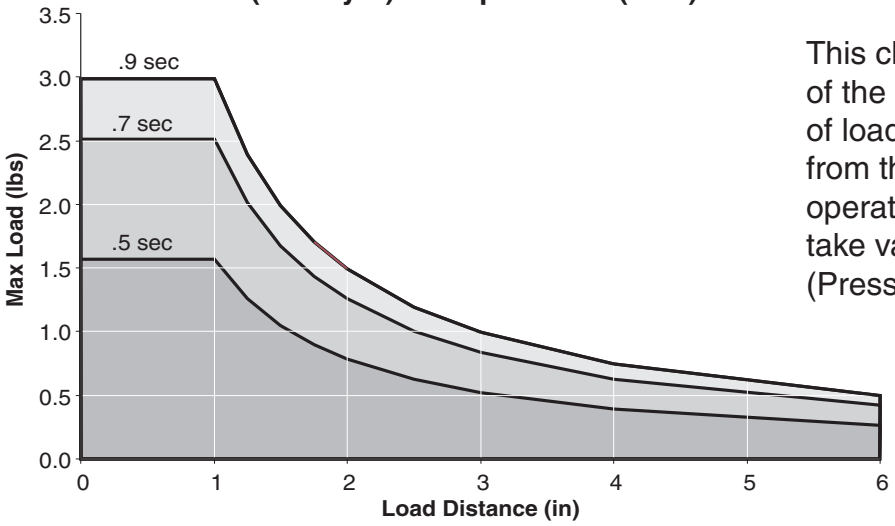
Bore	= 0.5”
Repeat accuracy	= +/-0.0005”
Life expectancy	= 5-6 million cycles
Compressed air	= 60 to 100 psi
Angle of rotation	= 0 to 180 degrees
Weight	= 1 lbs
Air connection	= 10-32
Max radial bearing load	= 4 lbs
Max axial bearing load	= 6 lbs



Pressure	Piston Area (in^2)	Max Torque (in-lbs)
60	.196	2.9
70	.196	3.4
80	.196	3.9
90	.196	4.4
100	.196	4.9

The diagrams above depict the load (F) on an arm of length = y. Also shown is the torque of the RD-1 which is given in the chart:

Load vs. Distance for Different Cycle Times (@80psi)
Load (for any P) = Graph value *(P/80)



This chart shows how the cycle time of the RD-1 is affected by the amount of load and distance the load is from the shaft, for 180° rotation. For operating pressures other than 80, take value from graph and multiply by (Pressure in psi/80).

Options

Sensing switches are available as an option. They are mounted to the stopscrews as seen in the photo to the right. For specifications on sensing please see page 49.

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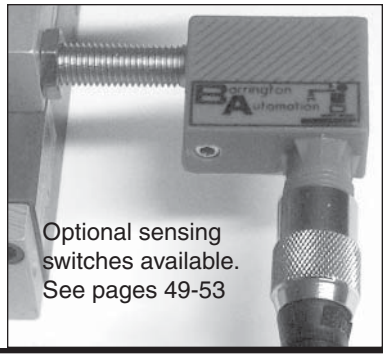
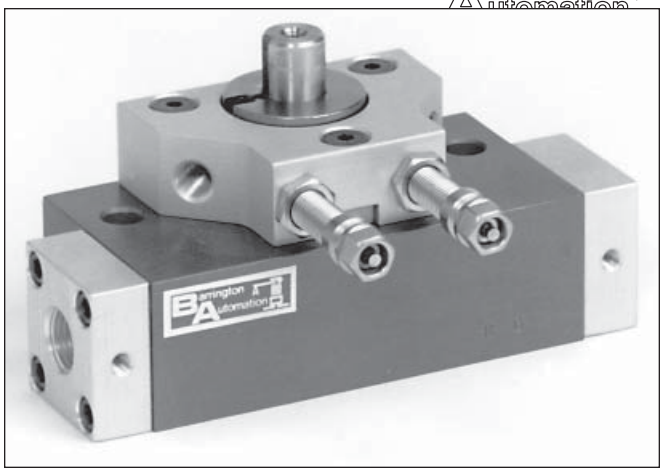


RD-2 Rotary Drive

0-180° Fully Adjustable

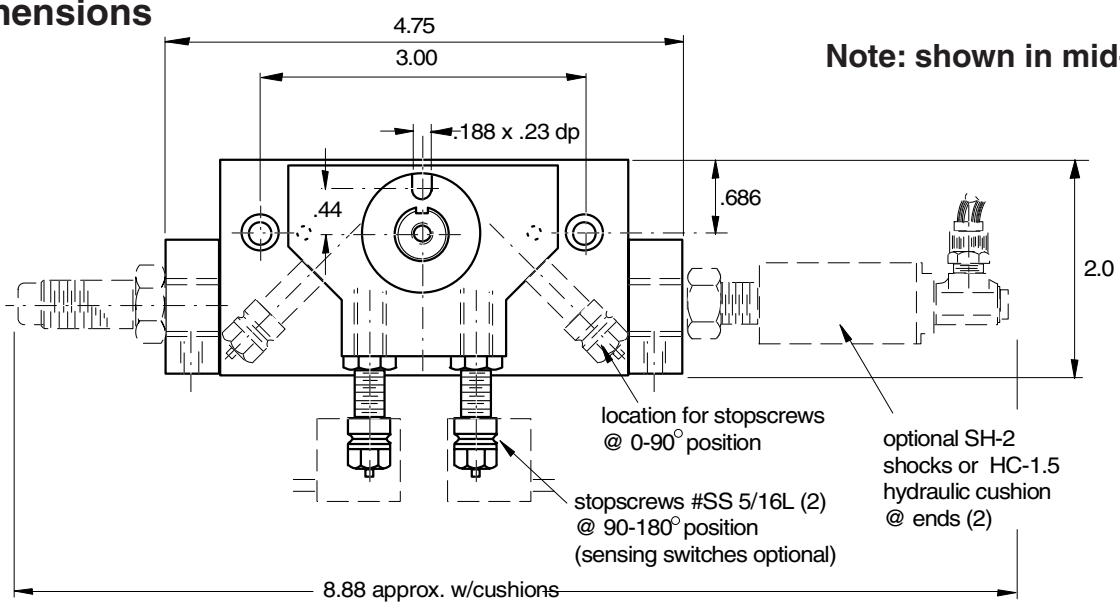


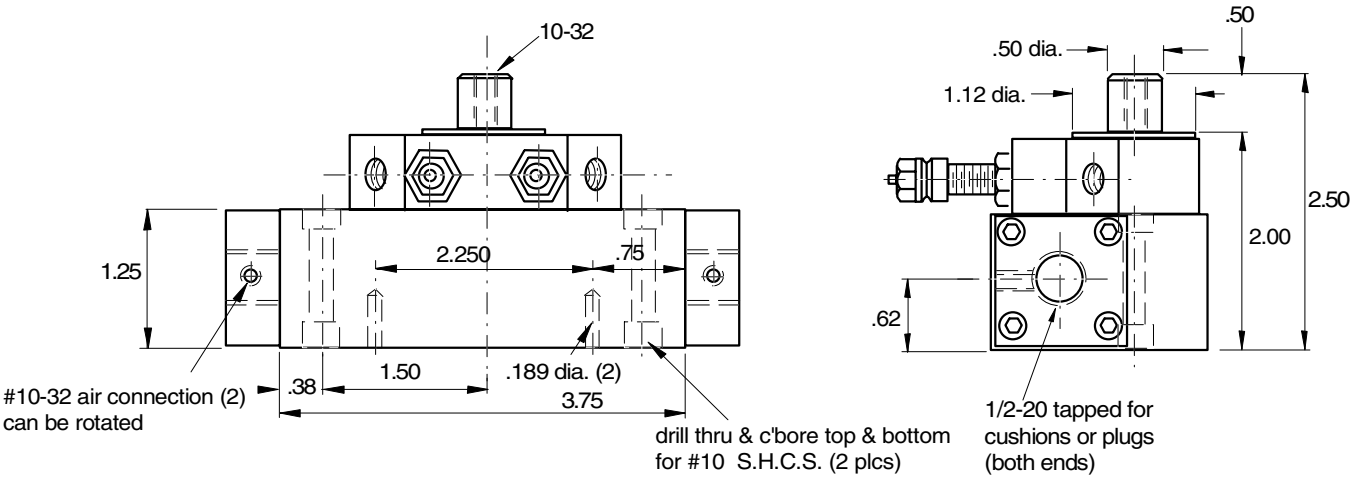
Features

- Angle of rotation adjusted with built in stop screws with fine threads
- Stop screws are compatible with sensing switches
- End stops deceleration with available cushions or shocks
- Designed for production rates and long life
- Two sealed ball bearings at top and bottom of drive shaft
- Tapped holes and offset dowel pin area in shaft and driving flange allows higher torque transmittal and accuracy
- Bearings are positioned very close to the drive gear for rigidity, precision, wear resistance and accuracy.
- Shaft is stopped with an adjustable hard stopscrew against a hardened pin, eliminating backlash

Dimensions

Note: shown in mid-position

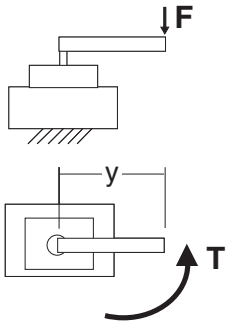




RD-2 Rotary Drive

Technical Data

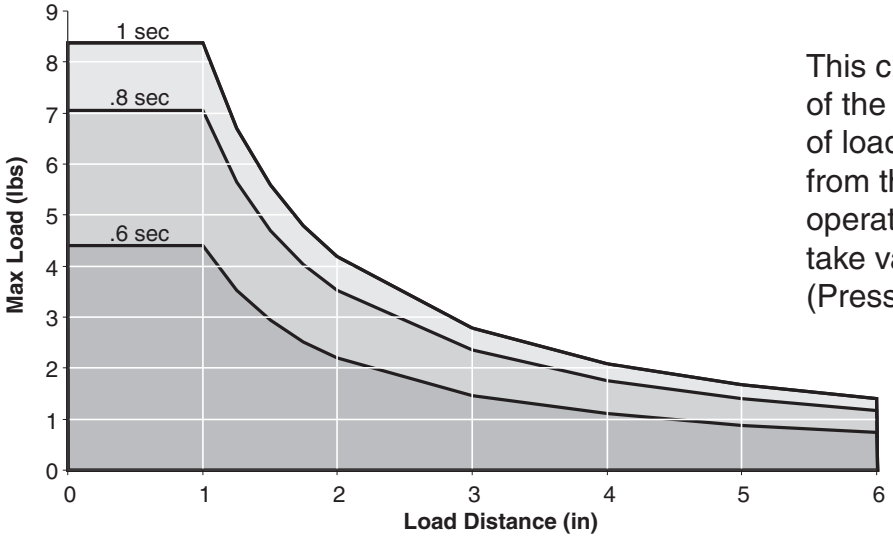
Bore	= 0.75"
Repeat accuracy	= +/-0.0005"
Life expectancy	= 5-6 million cycles
Compressed air	= 60 to 100 psi
Angle of rotation	= 0 to 180 degrees
Weight	= 2 lbs
Air connection	= 10-32
Max radial bearing load	= 8 lbs
Max axial bearing load	= 12 lbs



Pressure	Piston Area (in^2)	Max Torque (in-lbs)
60	.442	9.4
70	.442	11.0
80	.442	12.6
90	.442	14.2
100	.442	15.7

The diagrams above depict the load (F) on an arm of length = y. Also shown is the torque of the RD-2 which is given in the chart:

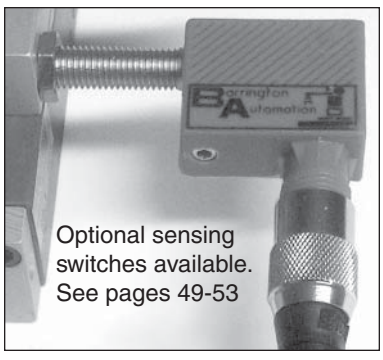
Load vs. Distance for Different Cycle Times (@80psi)
Load (for any P) = Graph value *(P/80)



This chart shows how the cycle time of the RD-2 is affected by the amount of load and distance the load is from the shaft, for 180° rotation. For operating pressures other than 80, take value from graph and multiply by (Pressure in psi/80).

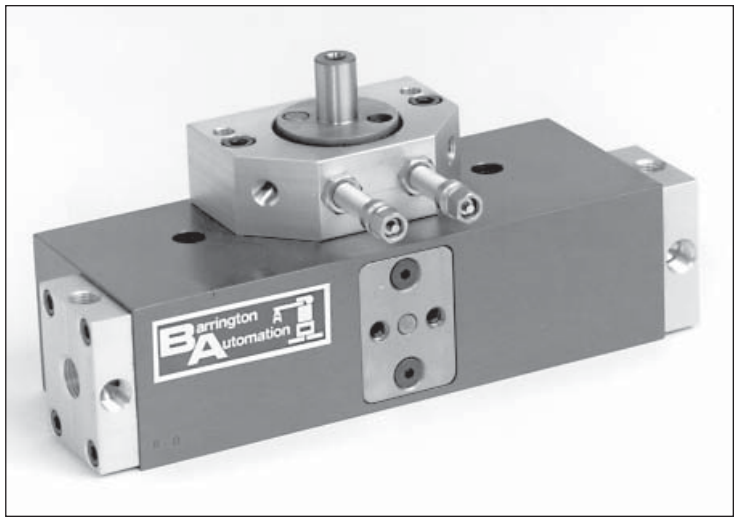
Options

Sensing switches are available as an option. They are mounted to the stopscrews as seen in the photo to the right. For specifications on sensing please see page 49. Shocks or cushions are also available.



RD-3 Rotary Drive

0-180° Fully Adjustable

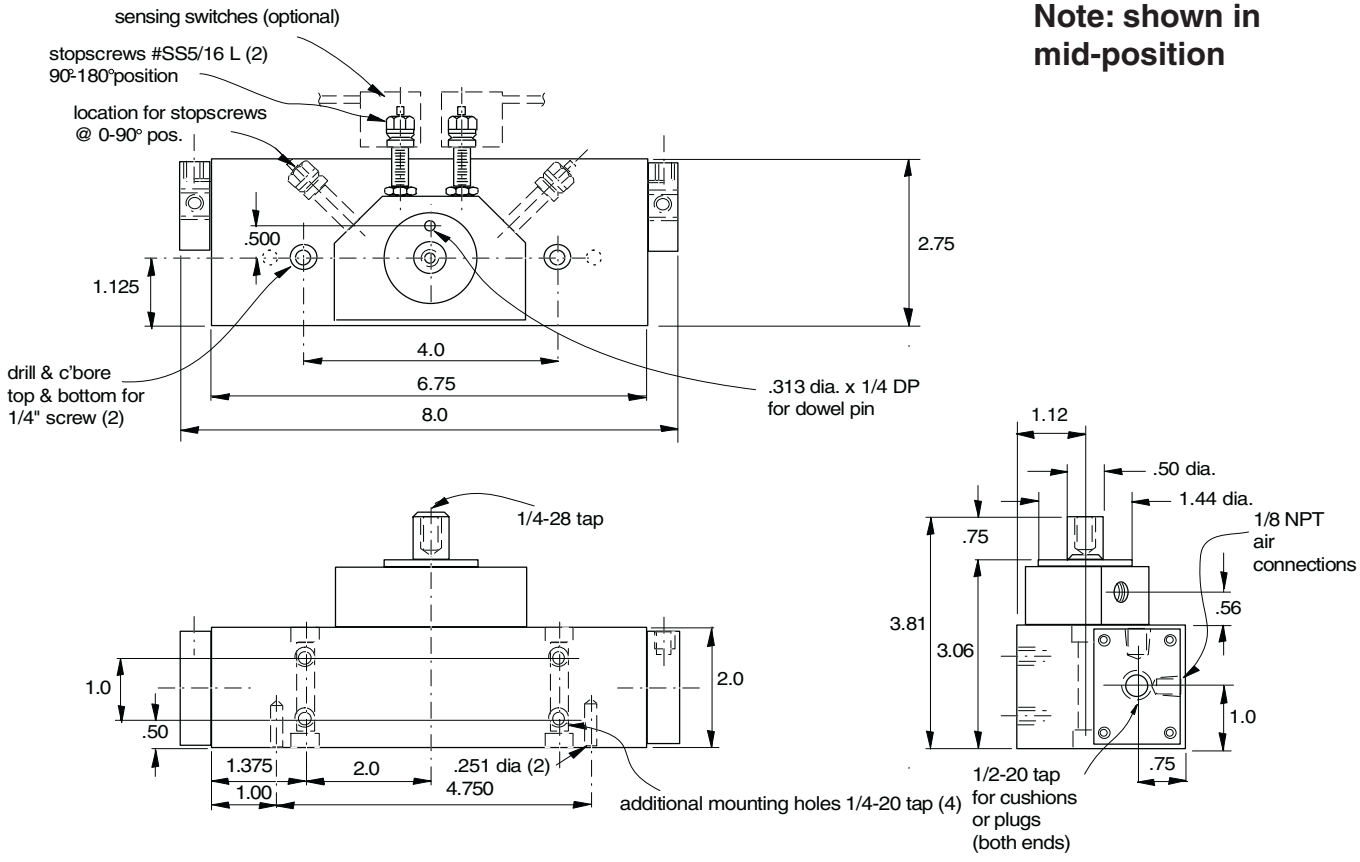


Features

- Angle of rotation adjusted with built in stop screws with fine threads
- Stop screws are compatible with sensing switches
- End stops deceleration with available cushions
- Designed for production rates and long life
- Piston has hardened pin to strike for longevity
- Two sealed ball bearings at top and bottom of drive shaft
- Tapped holes and offset dowel pin area in shaft and driving flange allows higher torque transmittal and accuracy
- Bearings are positioned very close to the drive gear for rigidity, precision, wear resistance and accuracy.
- Shaft is stopped with an adjustable hard stopscrew against a hardened pin, eliminating backlash

Dimensions

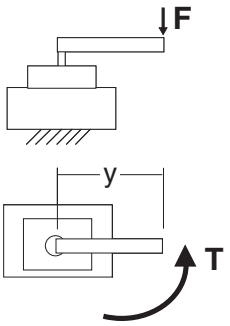
Note: shown in mid-position



RD-3 Rotary Drive

Technical Data

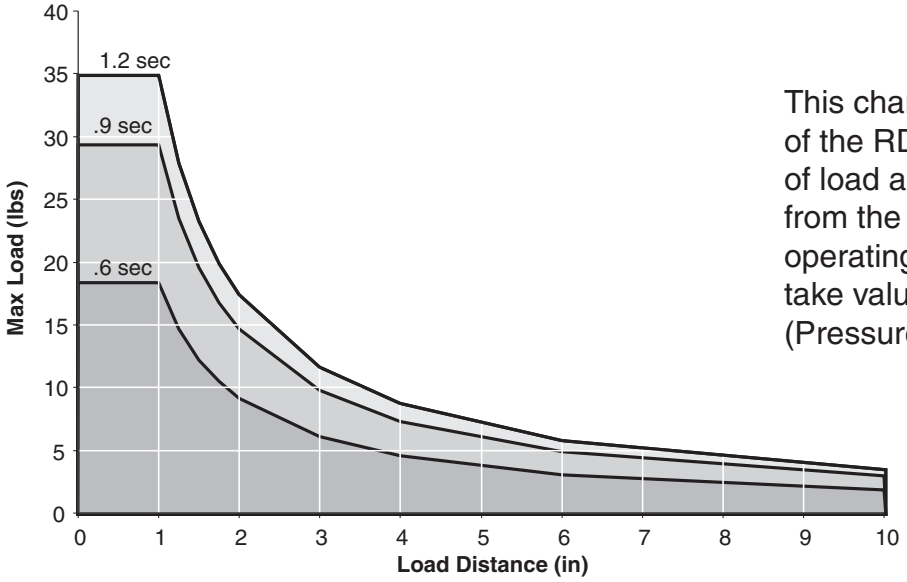
Bore	= 1.25”
Repeat accuracy	= +/-0.0005”
Life expectancy	= 5-6 million cycles
Compressed air	= 60 to 100 psi
Angle of rotation	= 0 to 180 degrees
Weight	= 5 lbs
Air connection	= 10-32
Max radial bearing load	= 20 lbs
Max axial bearing load	= 36 lbs



Pressure	Piston Area (in^2)	Max Torque (in-lbs)
60	1.227	33
70	1.227	38
80	1.227	44
90	1.227	49
100	1.227	55

The diagrams above depict the load (F) on an arm of length = y. Also shown is the torque of the RD-3 which is given in the chart:

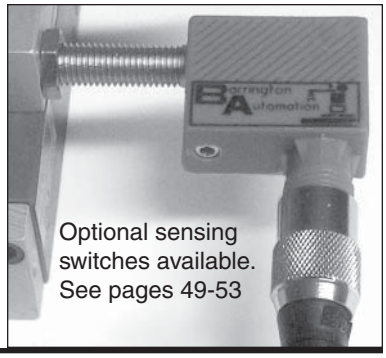
Load vs. Distance for Different Cycle Times (@80psi)
Load (for any P) = Graph value *(P/80)



This chart shows how the cycle time of the RD-3 is affected by the amount of load and distance the load is from the shaft, for 180° rotation. For operating pressures other than 80, take value from graph and multiply by (Pressure in psi/80).

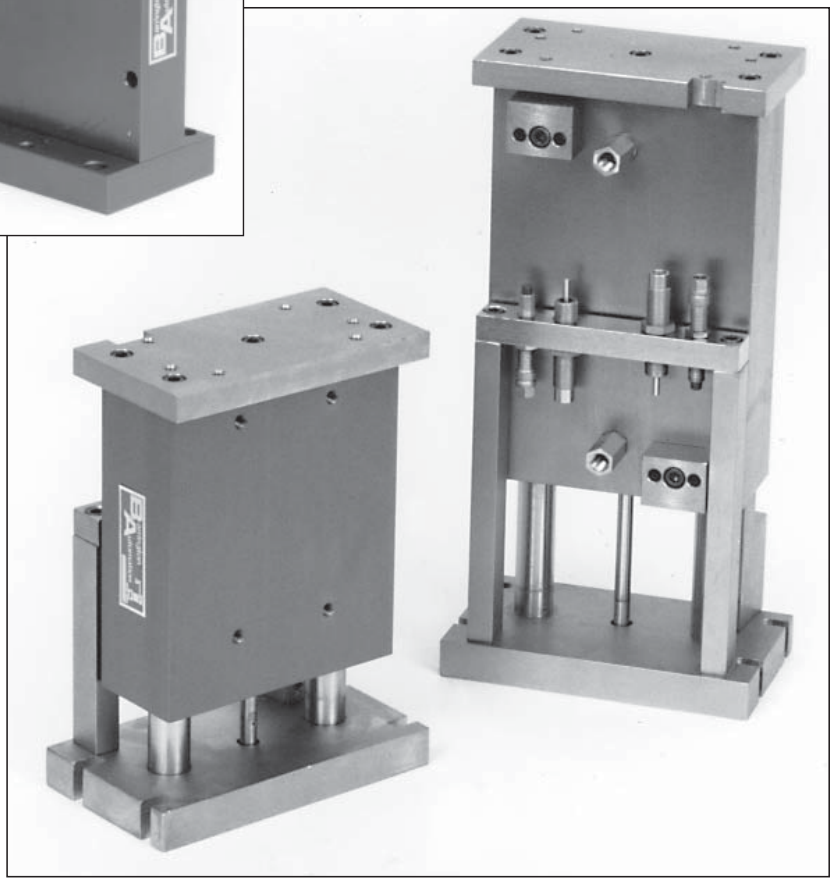
Options

Sensing switches are available as an option. They are mounted to the stopscrews as seen in the photo to the right. For specifications on sensing please see page 49. Shocks or cushions are also available.



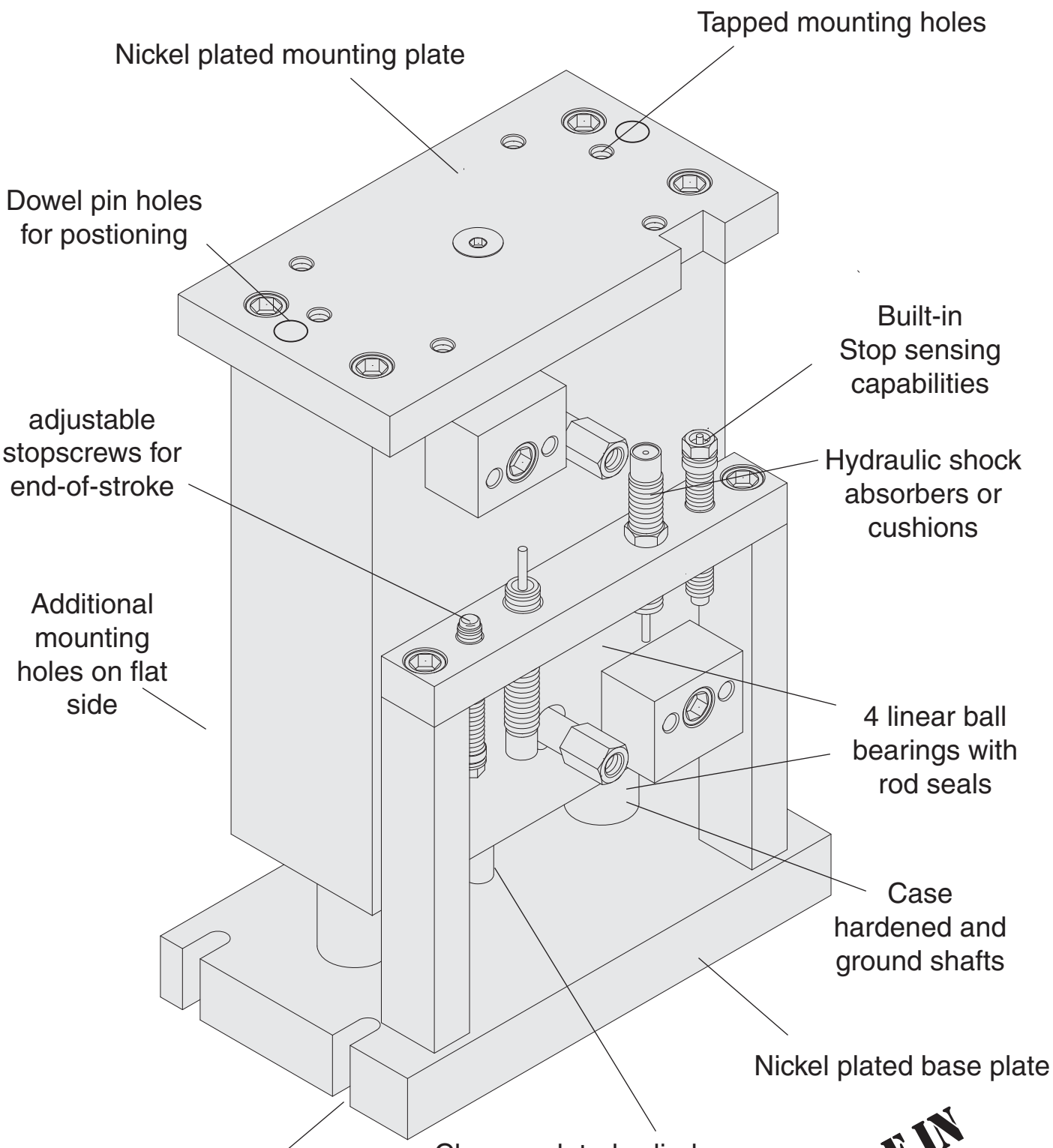
Precision Pneumatic

Elevating Tables

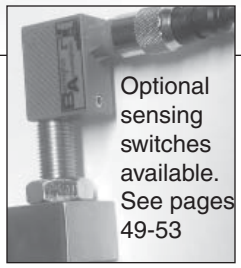


Elevating Table Features

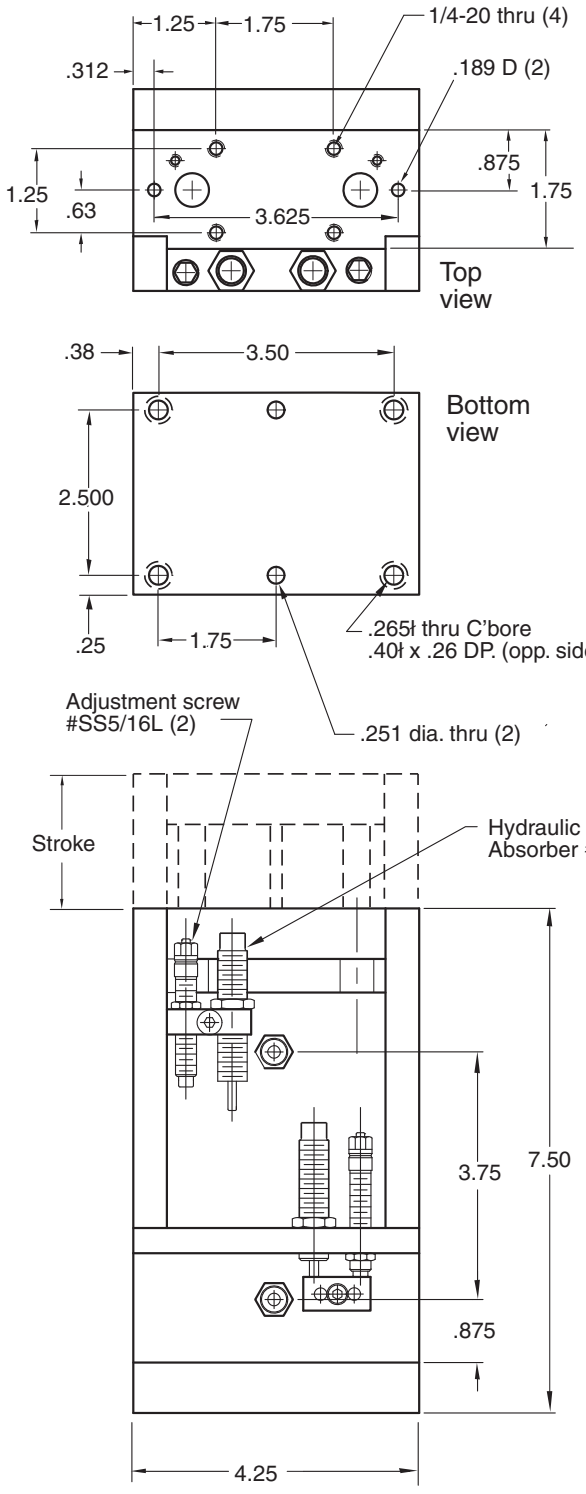
Barrington Automation



ET-2 Elevating Table



Optional sensing switches available. See pages 49-53



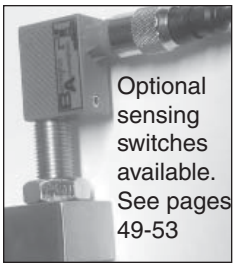
Type	Stroke	Force @ 80psi	Weight
ET-2-2	0-2"	24 lbs	5 lbs

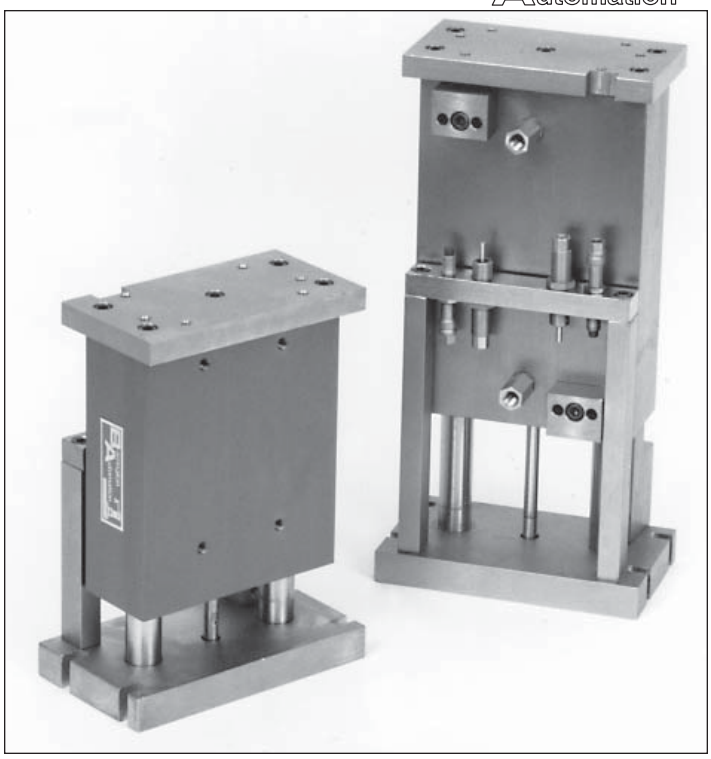
Technical data

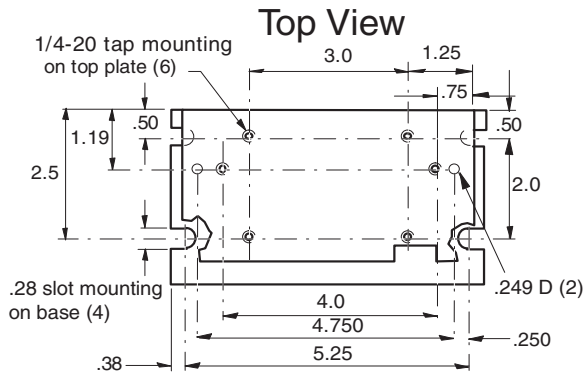
-$^{3}/_{4}$" Bore
-Stroke designed with built in stopscrews with fine threads.
-The stopscrews can be used with sensing switches.
-Designed for production rates and long life.
-Seal kits and rebuild kits available.

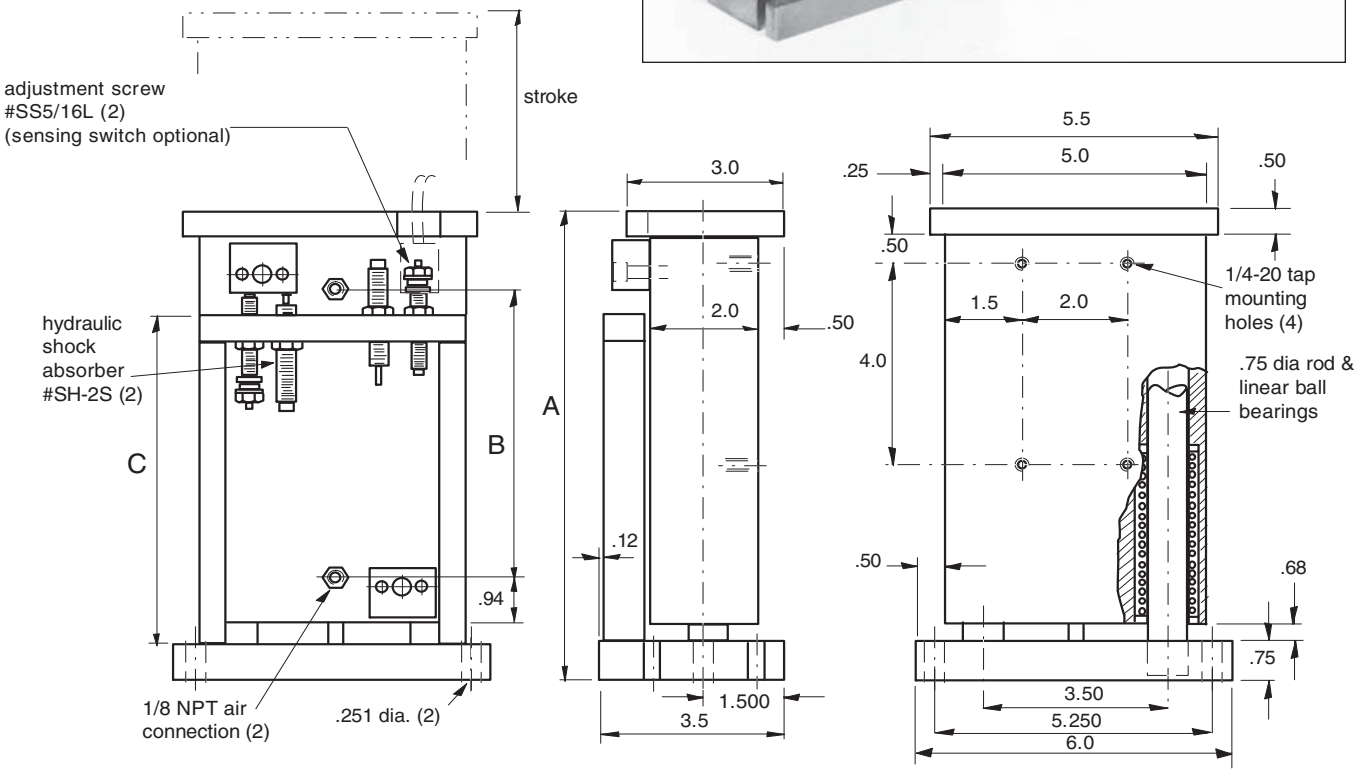
Operating medium	Compressed air or hydraulic oil
Operating pressure	60-100 psi
Repeat accuracy	±0.0005 in
Air connection	$^{1}/_{8}$ NPT

ET-3 Elevating Table









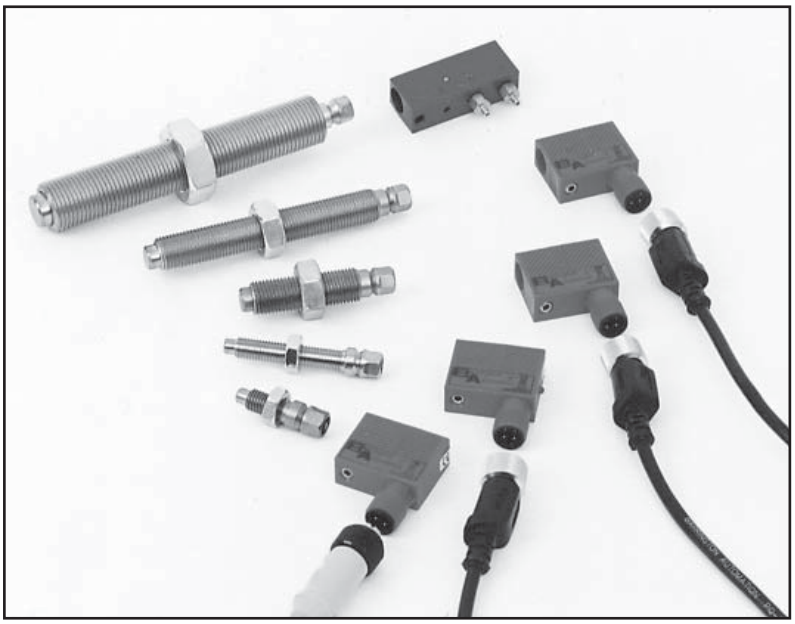
Type	Stroke	A	B	C	Force @ 80psi	Weight
ET-3-2	0-2"	7.69	3.75	4.75	60 lbs	12 lbs
ET-3-4	0-4"	9.69	5.75	6.75	60 lbs	16 lbs

Technical data

-1 1/8" Bore
-Stroke designed with built in stopscrews with fine threads.
-The stopscrews can be used with sensing switches.
-Designed for production rates and long life.
-Seal kits and rebuild kits available.

Operating medium	Compressed air or hydraulic oil
Operating pressure	60-100 psi
Repeat accuracy	±0.0005 in
Air connection	1/8 NPT

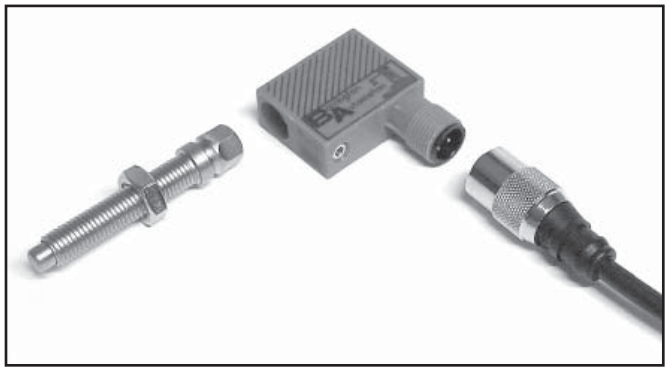
Sensing a Problem?
Barrington can solve it!



Barrington switches and stopscrews provide your automation with the highest quality and most convenient precision sensing solutions available. They come standard on all our rotary and linear actuators, or they can be integrated into your design as stand alone products whenever precision feedback and adjustment are required.

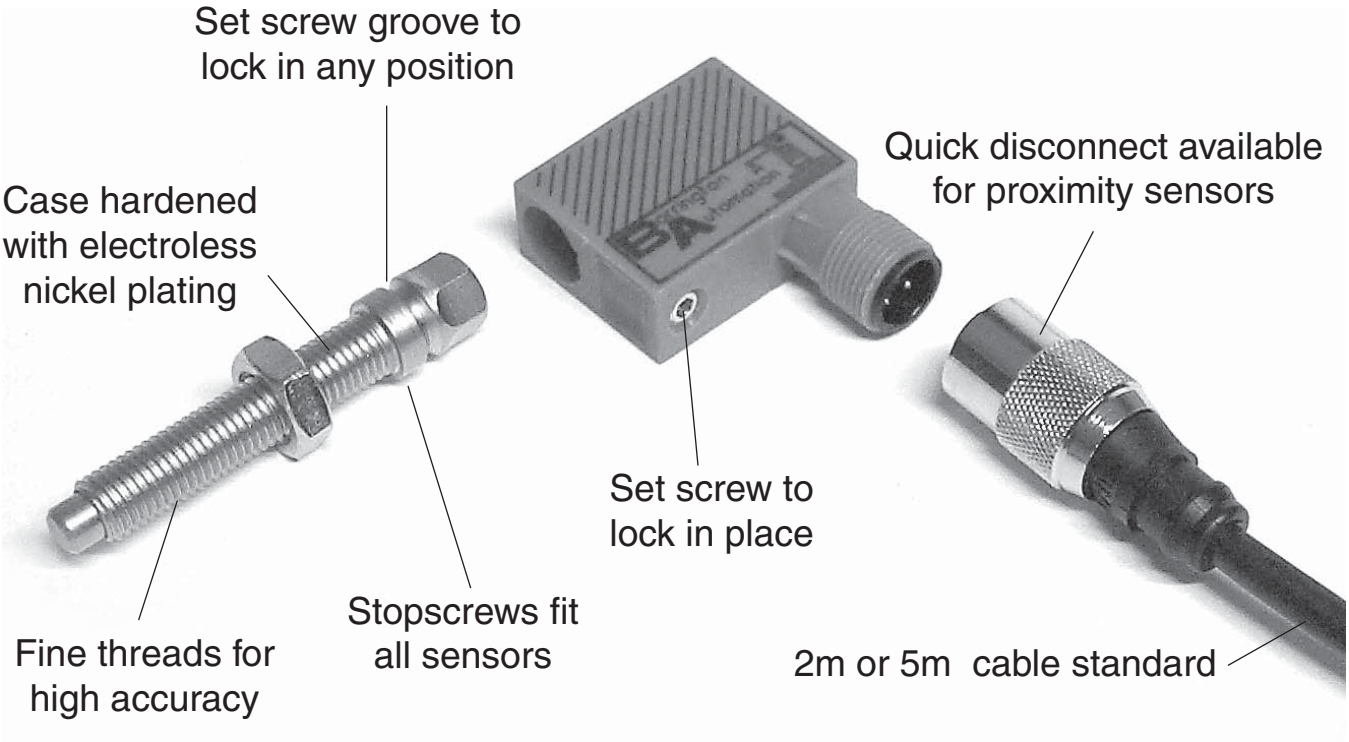
Precision and convenience is unmatched when assembling our sensing solution.

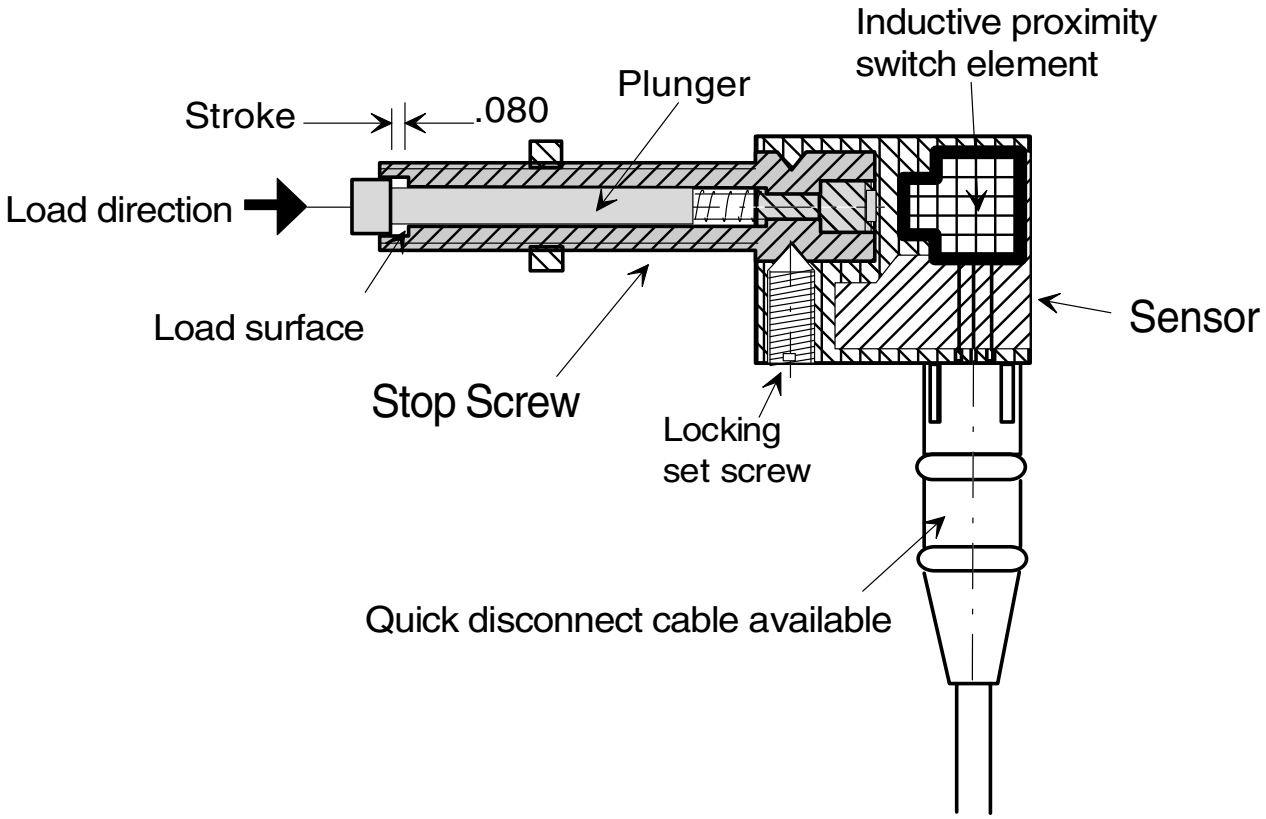
- After fine thread positioning of the stopscrew on the automation component; the sensor is placed over the end of the stopscrew and locked in place with a setscrew.
- This combination eliminates the need for a secondary sensor adjustment after the hard stop adjustment has been made.
- Any adjustment of the stopscrew AUTOMATICALLY adjusts the sensor.
- The cable quick-disconnect makes wiring multiple sensing locations easy.



- Precision and convenience is unmatched when assembling our sensing solution.
- Easily integrates with our shock absorbers and mounting blocks to fit ANY existing application.
- Available in 3-wire NPN & PNP, and 2-wire AC, DC, & pneumatic configurations.

Sensor and Stopscrew Features

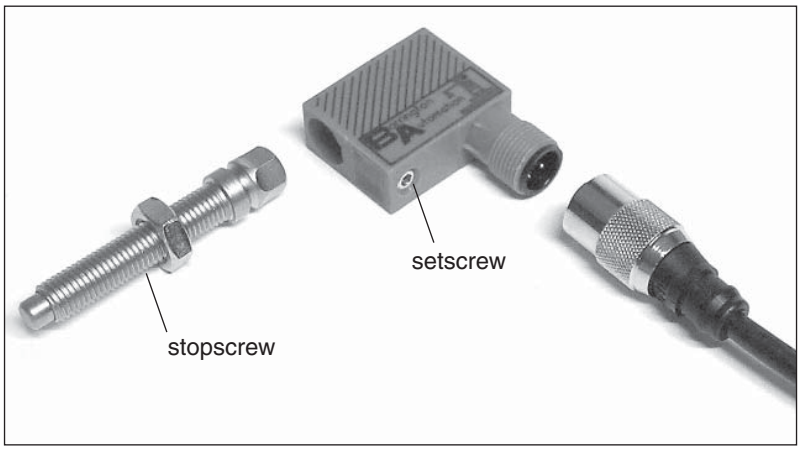




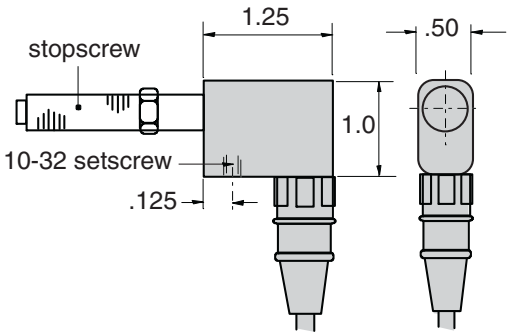
Sensing Switches

PRS-Q
PRS-QP

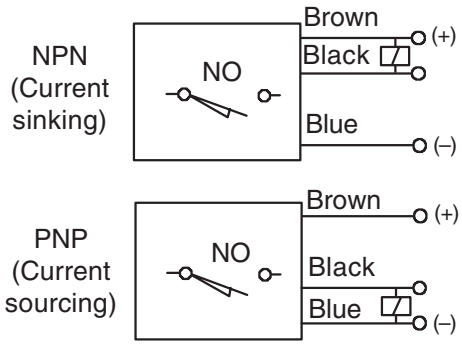
Inductive proximity type



Dimensions

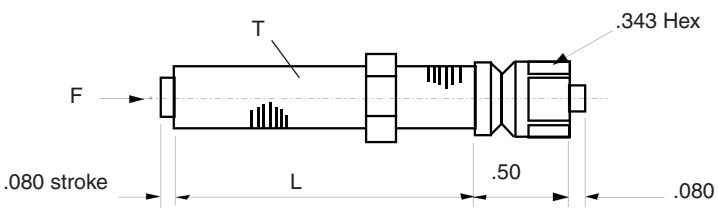


Function schematic



Technical data:		
Operating voltage	10-60 VDC	
Max. overload	10%	
Open circuit current	100 mA	
Max. current overload	100 mA	
Output function	NPN or PNP	
Output type	Digital	
Max. switch frequency	2 kHz	
Status indicator with LED	YES	
Sensing distance		
Overvoltage protection	YES	
Polarity protection	YES	
Short circuit protection	YES	
Operating temperature	-14° to +158°	
Installation	These sensors are designed for use with stop screw type SS	
Main material of construction	Polymide glass filled	
Connection	2m-3 wire cable or quick disconnect	
Durability	10,000,000 cycles	
Description:	**Order No.:**	
Sensor switch with 2m cable connected by screw plug	NPN **PRS-Q**	PNP **PRS-QP**
Sensor switch without cable	**PR-SO**	**PR-SOP**
2m cable with connector	**PQ-C**	**PQ-C**
5m cable with connector	**PQ-C5**	**PQ-C5**

Stopscrews

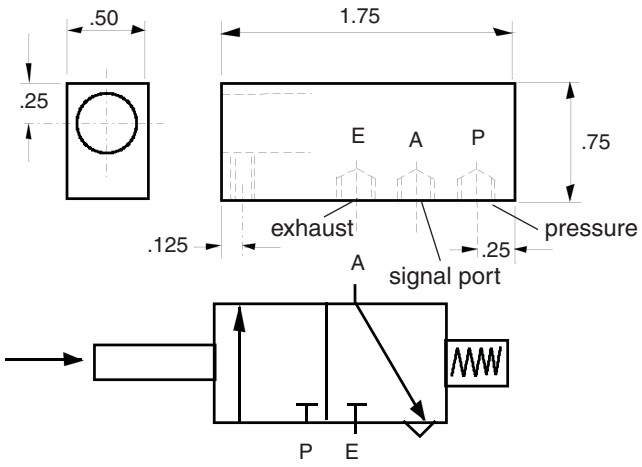


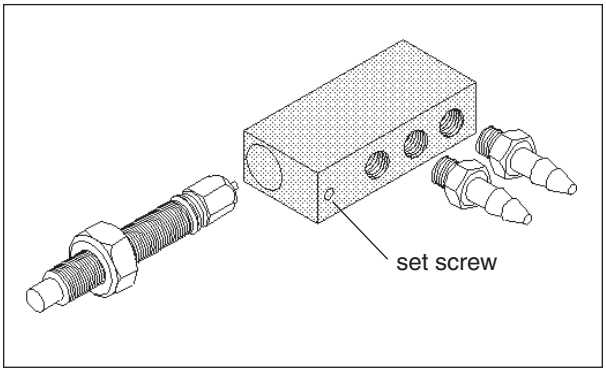
Type	T	L	F.max.
SS-5/16L	5/16-24	1.50	200 lbs
SS-1/2	1/2-20	3.25	1500 lbs

Pneumatic Sensing Switch

PN

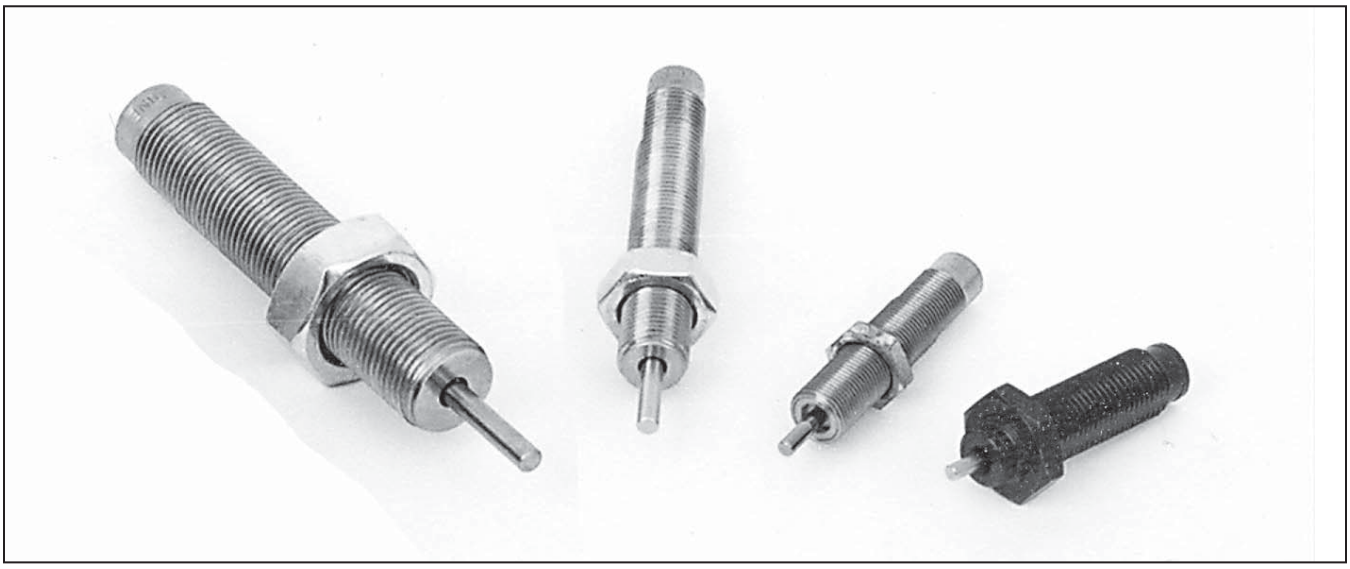
Pneumatic type (normally closed)





Signal is maintained while stop screw is depressed.
Fits all SS stop screws. Operating pressure P = 15 - 120 psi.
Signal pressure A = P when activated.
Connection ports 10-32 (2)
Aluminum body

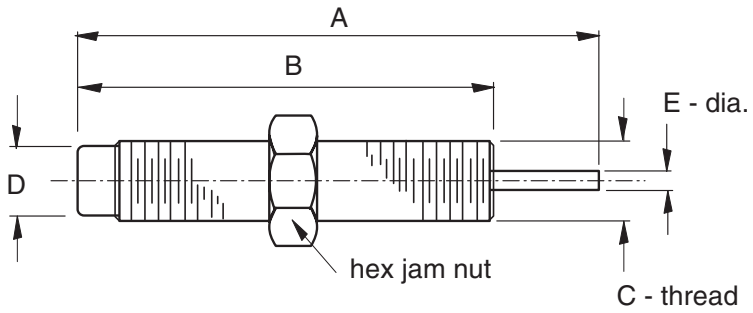
Shock Absorbers



The progressive damping characteristics and built in “self compensation” design, decelerates a moving mass by minimizing the reaction force at impact and gradually increasing the resistance force throughout the working stroke of the shock absorber. (i.e.: higher speeds with softer stops)

-Chrome plated piston rod
-Standard operating temp range
15° F. - 180° F.
-Threaded body for ease of mounting
-Progressive damping characteristics

Note: shock absorbers should be adjusted such that it is **not** used as the final stop. Stop screws are designed for this purpose (see page 49)



	Stroke	A	B	C	D	E	Max shock force
SH-1	13/32	2.38	1.97	7/16-28	3/8	.12	140 lbs
SH-2	5/8	3.84	3.20	1/2-20	7/16	.16	450 lbs
SH-2S	1/4	2.10	1.82	1/2-20	7/16	.12	250 lbs
SH-3	7/8	4.66	3.76	3/4-16	5/8	.19	700 lbs