



# Stainless Products, Inc.

[www.stainless-products.com](http://www.stainless-products.com)



## Sanitary Air Valves & Butterfly Valves

# Stainless Products, Inc.

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Stainless Products, Inc. sanitary valves meet the standards of 53-06, Authorization # 762.

Please contact the factory or visit our website to inquire on our complete line of stainless steel flow components.

# Section A

## SP160 /SP161 Series Shut-off and Divert Ordering Information

- Features and Options**
- All stainless steel constructions (T316L wetted parts)
  - Precision molded seat assures positive shut-off and long life
  - Seat material include:
    - EPDM
    - Viton®
    - P.T.F.E (replaceable seat)
  - Dual micro-switch or dual proximity switch optional
  - Viton® stem o-ring
  - Open yoke provides leak detection and visual stem position
  - No special tools needed for valve maintenance



**SP160\_\_ - MS - 7 - 2" - 20 - EPDM**

SP160= Short Stroke  
SP161 = Long Stroke

"RS" If P.T.F.E seat  
\* If bonded plug leave blank

**Indication Options**  
MS = Micro-switch  
PRX = Prox-switch

Note: Micro-Switch and Prox-Switches are not available on 4" valves

**Body Styles:**

*Shut-Off:*  
7 = Tee Body  
9 = Cross Body

*Divert:*  
77= Upper Tee  
Lower Tee  
79 = Upper Tee  
Lower Cross  
97 = Upper Cross  
Lower Tee  
99 = Upper Cross  
Lower Cross

**Bonded Plug Material**

EPDM  
Viton®

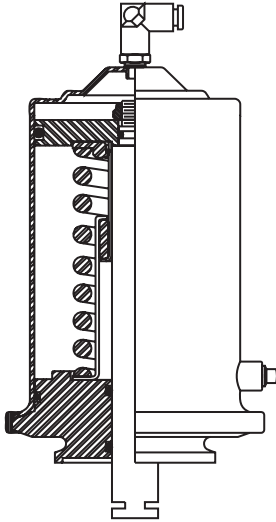
**Actuator Style**

H = Manual Handle  
10 = Normally Open  
20 = Normally Closed  
30 = Air-to-Air

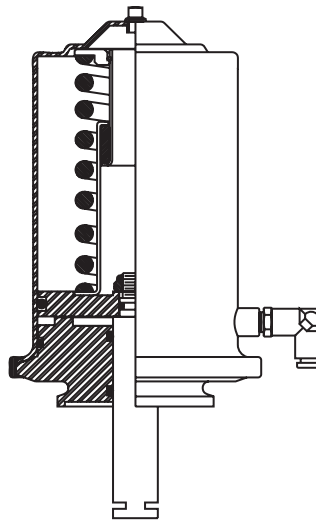
**Valve Size**

1/2"  
3/4"  
1"  
1.5"  
2"  
2.5"  
3"

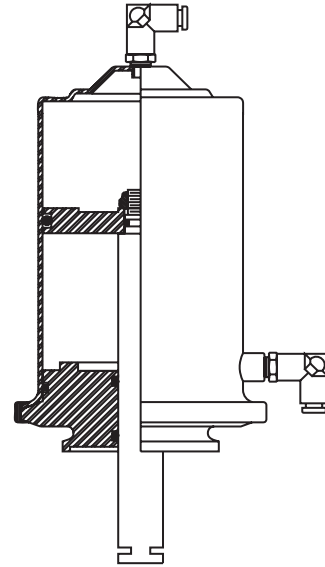
# Short Stroke Actuators



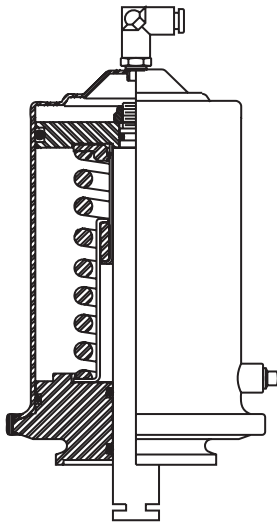
**SP10**  
 "Normally Open"  
 Air to Close-Spring to Open



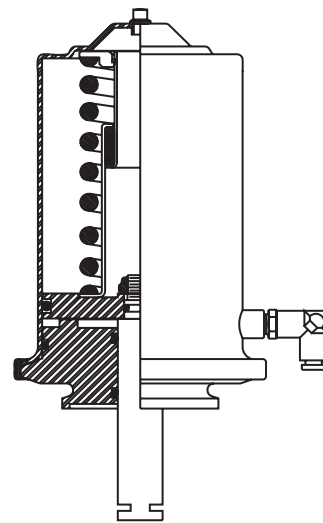
**SP20**  
 "Normally Closed"  
 Air to Open-Spring to Close



**SP30**  
 "Air-to-Air"  
 Air to Open-Air to Close



**SP10/70**  
 Light Duty Spring  
 "Normally Open"  
 Air to Close-Spring to Open  
 3-15 PSI Air Pressure



**SP20/70**  
 Light Duty Spring  
 "Normally Closed"  
 Air to Open-Spring to Close  
 3-15 PSI Air Pressure

# Short Stroke Actuators

## SP20 Shut-Off Capabilities

The following table gives the approximate maximum line pressure against which the spring in a normally-closed ; air-to-open valve will hold.

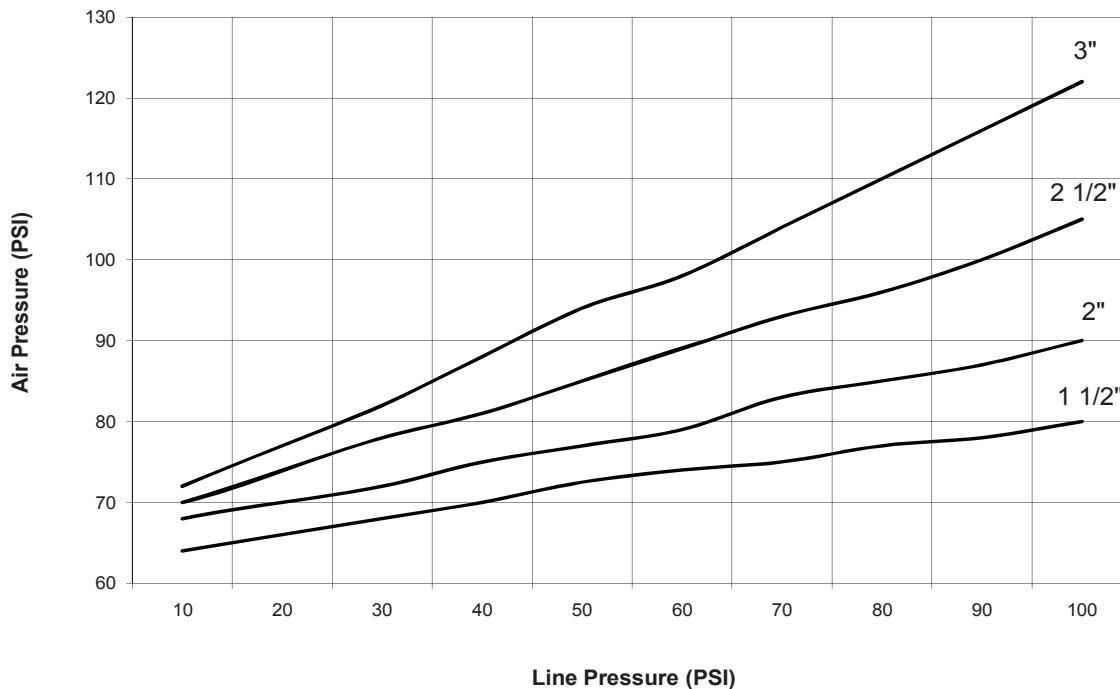
Valve Size	SP20 Actuator
1" & 1.5"	190 PSI
2"	100 PSI
2.5"	60 PSI
3"	45 PSI

SP10/70 and SP20/70 standard actuator with spring that has full movement with 15 PSI air pressure. No line pressure is considered.

Act. Size & Air Pres.	Product Pressure	
	1/2"	3/4"
50 PSI	195	195
60 PSI	230	230

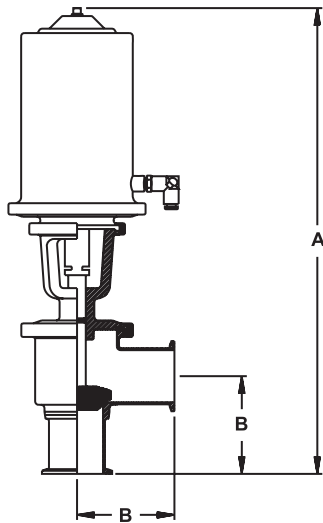
The chart below illustrates the air supply which must be available to a normally-open; air-to-close valve in order to fully shut off against the corresponding fluid pressure.

## SP10 Actuator Line Pressure Curve

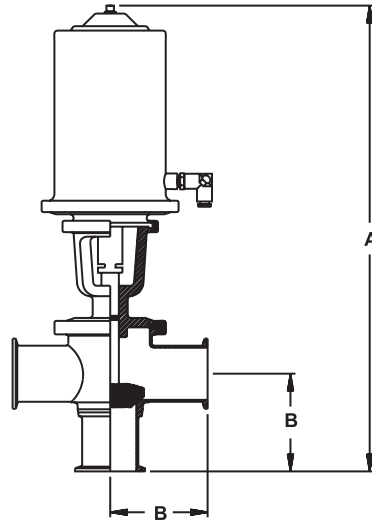


# Short Stroke Valves

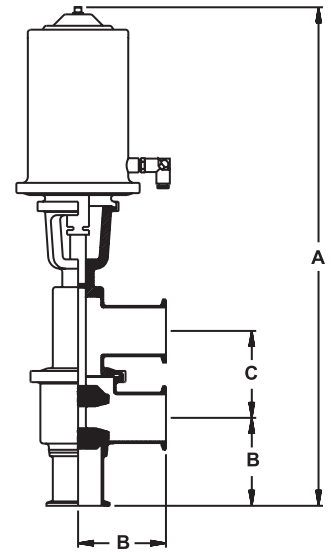
## SP160 Series - Rubber Coated and PTFE Replaceable Seat



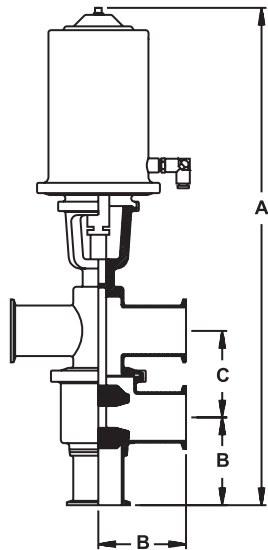
SP160-7-x-ACT



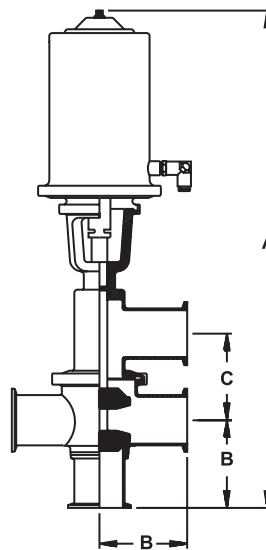
SP160-9-x-ACT



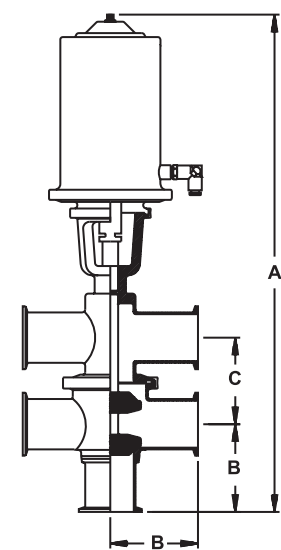
SP160-77-x-ACT



SP160-79-x-ACT



SP160-97-x-ACT



SP160-99-x-ACT

Valves are shown with #20 Act.

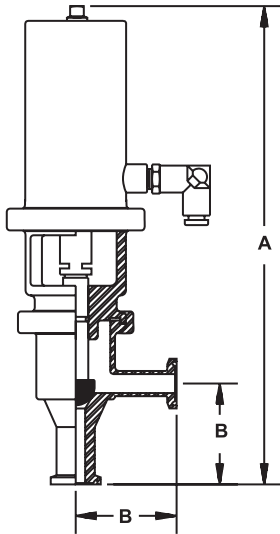
x=Valve size

All valves are standard with sanitary clamp end-connections, please contact factory for other options.

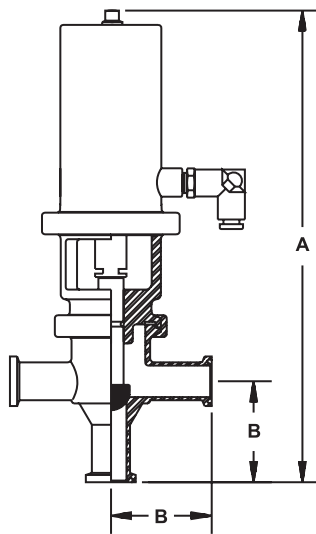
Size	Valve Dimensions				Shipping #'s	
	A.		B.		Shut-off Valve	Divert Valve
1"	14 7/8"	17 9/16"	2 1/2"	2 27/32"	16 1/2 #	18 #
1.5"	15 5/8"	18 5/16"	2 3/4"	2 15/16"	16 1/2 #	18 #
2"	15 5/8"	19 13/16"	3 1/2"	3 7/16"	16 1/2 #	19 1/2 #
2.5"	17"	20 11/16"	3 1/2"	3 15/16"	18 #	20 1/2 #
3"	17 11/16"	22 1/4"	3 3/4"	4 9/16"	20 #	22 1/2 #

# Short Stroke Valves

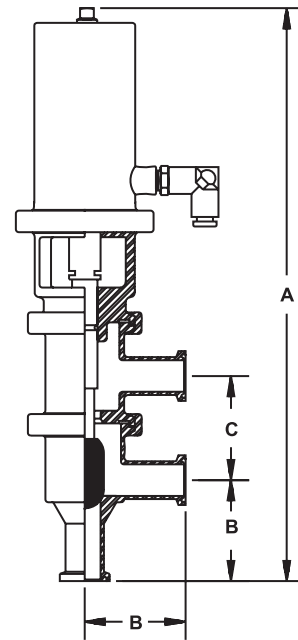
## SP160 Series Fractional Valves - Rubber Coated and PTFE Replaceable Seat



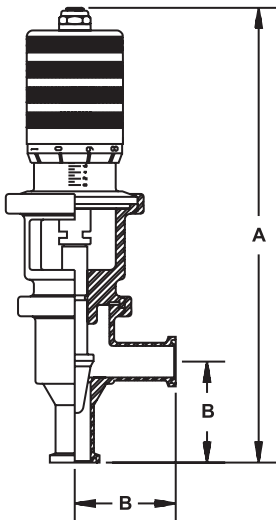
SP160-7-x-ACT



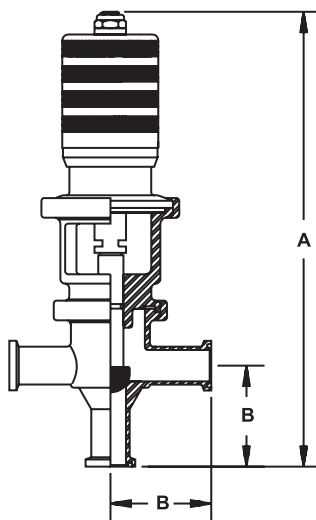
SP160-9-x-ACT



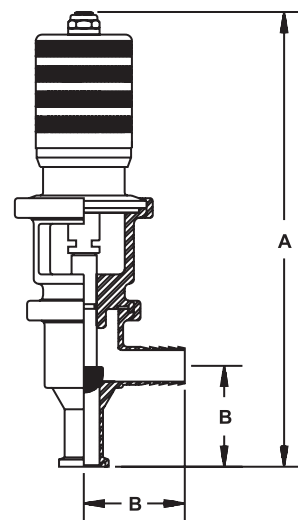
SP160-77-x-ACT



SP160-7MH-x



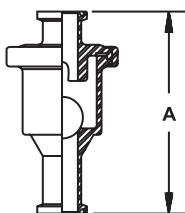
SP160-9-x-H



SP160-7S-x-H

x=Valve size

SP45V-x

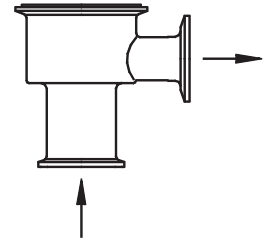
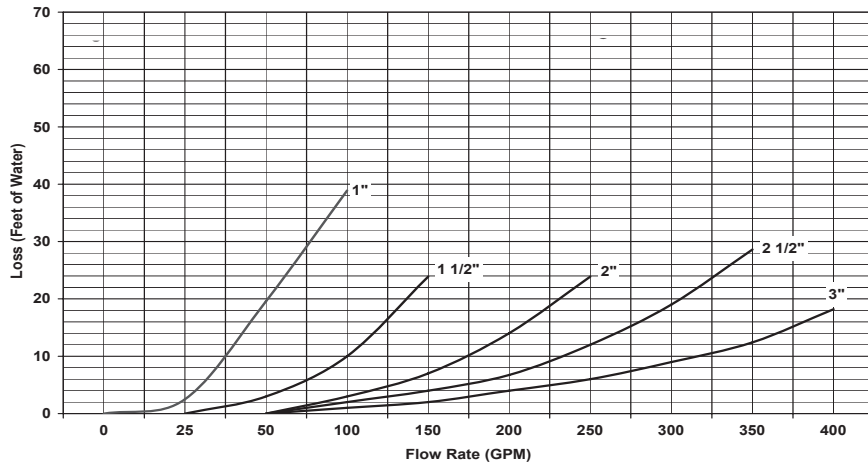


Valve Dimensions						
Size	A.			Check Valve	B.	
	Shut-Off Valve	Divert Valve	Hand Operated		Shut-off Valve	Divert Valve
1/2"	9 3/16"	11 1/4"	7 1/2"	4"	2"	2 3/16"
3/4"	9 3/16"	11 1/4"	7 1/2"	4"	2"	2 3/16"

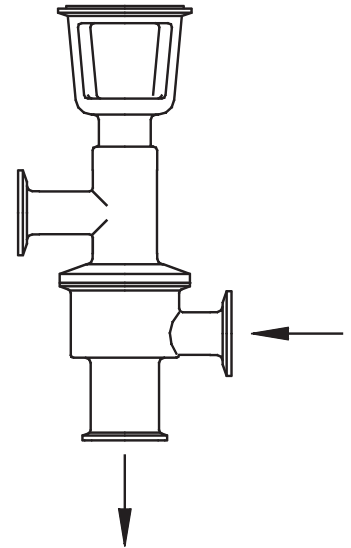
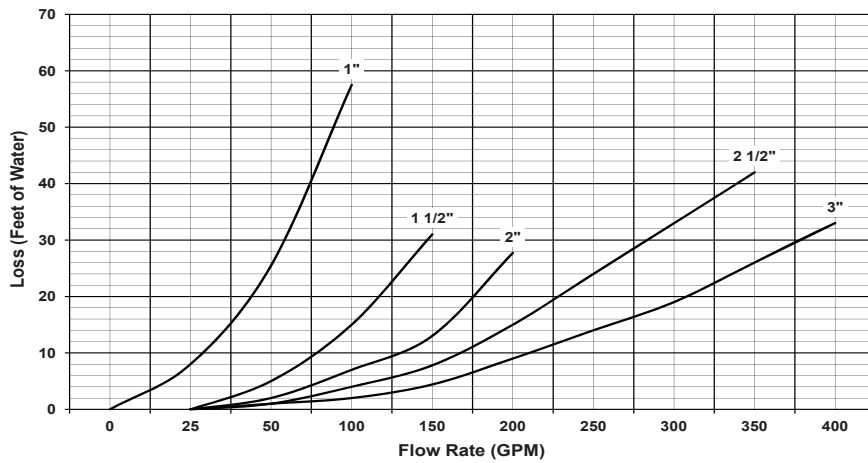
# Short Stroke Valves

## SP160 Series - Head Loss Curves

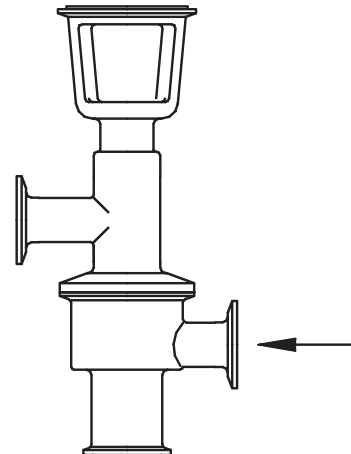
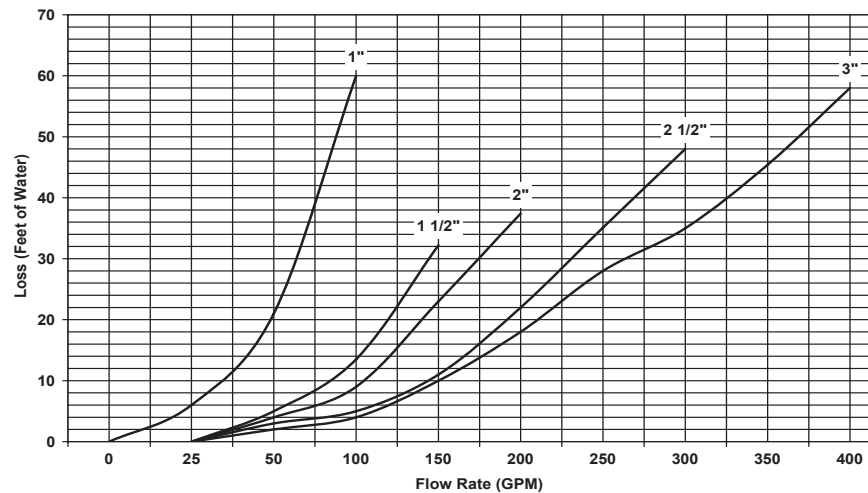
SP160-7 Tee Body Valve



SP160-77 Divert Valve



SP160-77 Divert Valve

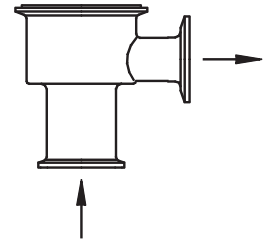
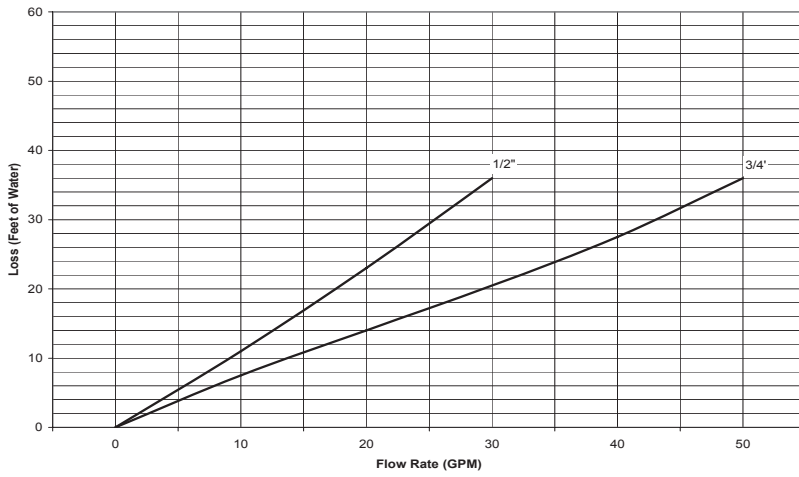




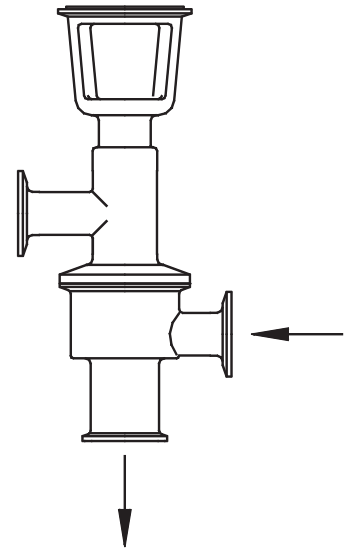
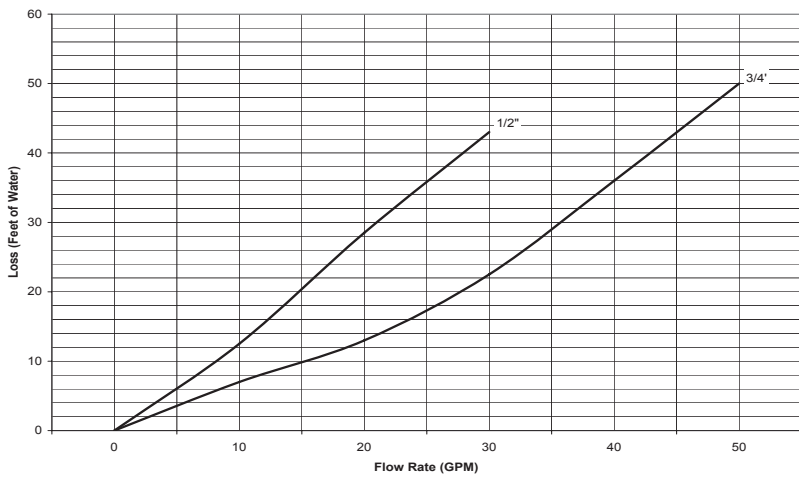
# Short Stroke Valves

## SP160 Series Fractional - Head Loss Curves

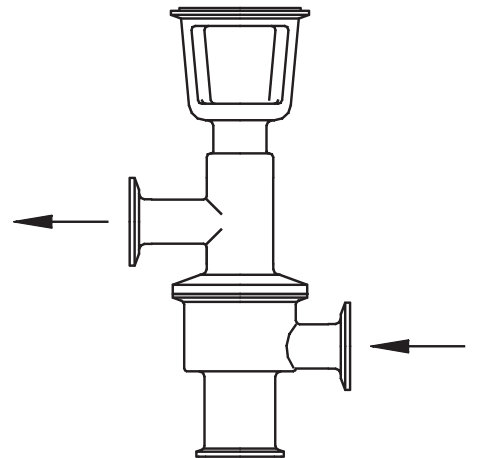
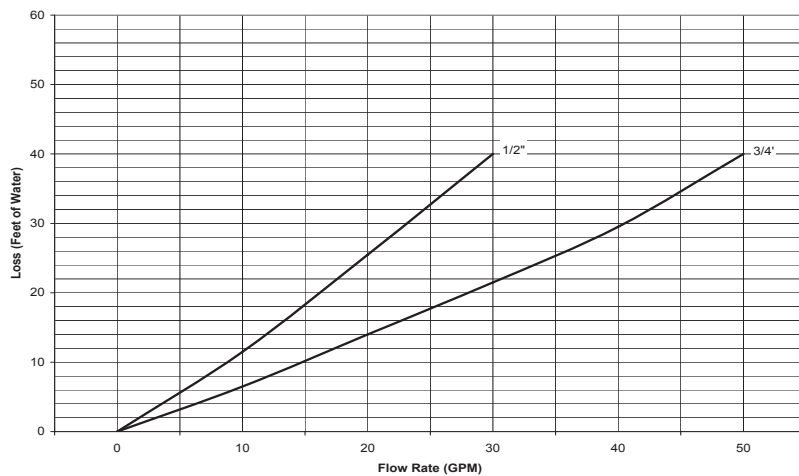
SP160-7 Tee Body Valve



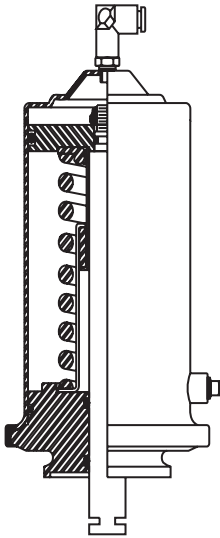
SP160-77 Divert Valve



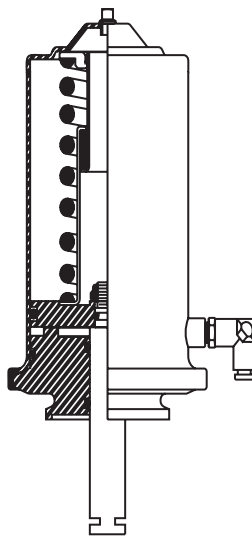
SP160-77 Divert Valve



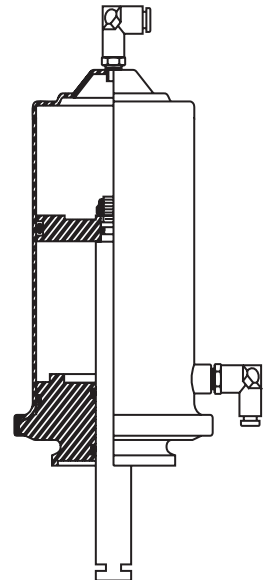
# Long Stroke Actuators



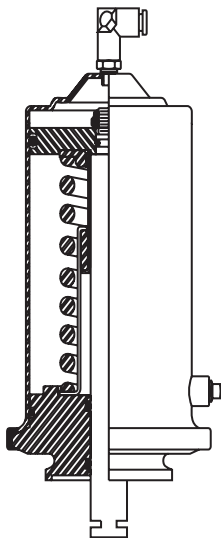
**SP110**  
"Normally Open"  
Air to Close-Spring to Open



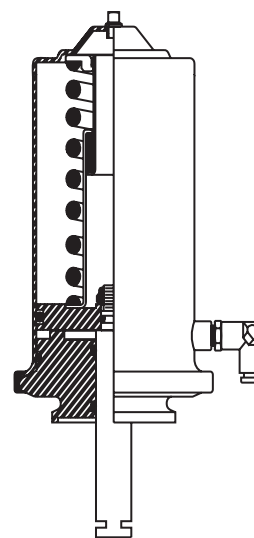
**SP120**  
"Normally Closed"  
Air to Open-Spring to Close



**SP130**  
"Air-to-Air"  
Air to Open-Air to Close



**SP110/70**  
Light Duty Spring  
"Normally Open"  
Air to Close-Spring to Open  
3-15 PSI Air Pressure



**SP120/70**  
Light Duty Spring  
"Normally Closed"  
Air to Open-Spring to Close  
3-15 PSI Air Pressure

# Long Stroke Actuators

## SP120 Shut-Off Capabilities

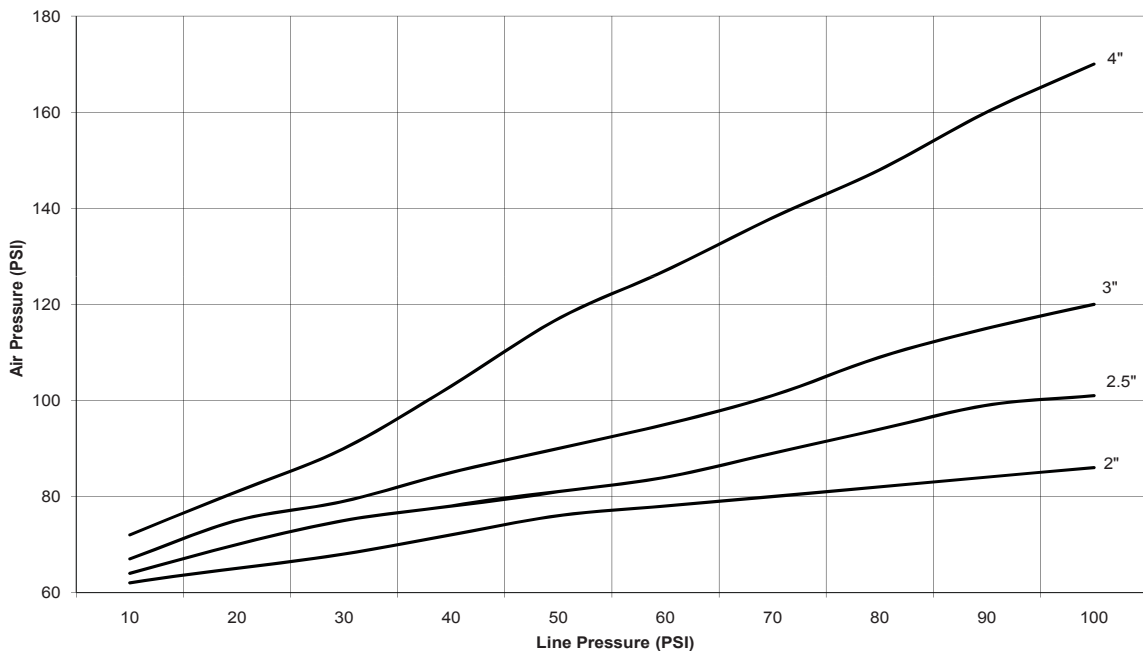
The following table gives the approximate maximum line pressure against which the spring in a normally-closed ; air-to-open valve will hold.

Valve Size	SP120 Actuator
2"	50 PSI
2.5"	30 PSI
3"	20 PSI
4"	Contact Factory

SP110/70 and SP120/70 standard actuator with spring that has full movement with 15 PSI air pressure. No line pressure is considered.

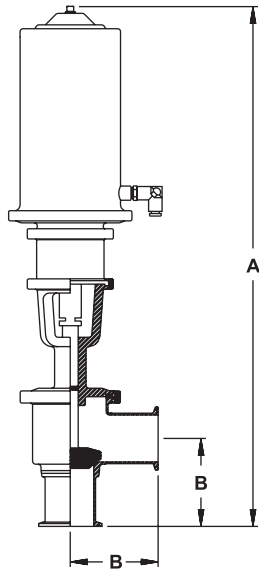
The chart below illustrates the air supply which must be available to a normally-open; air-to-close valve in order to fully shut off against the corresponding fluid pressure.

## SP110 Actuator Line Pressure Curve

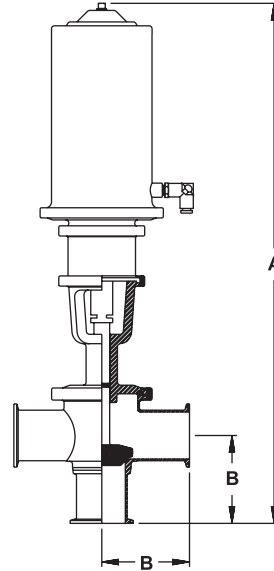


# Long Stroke Valves

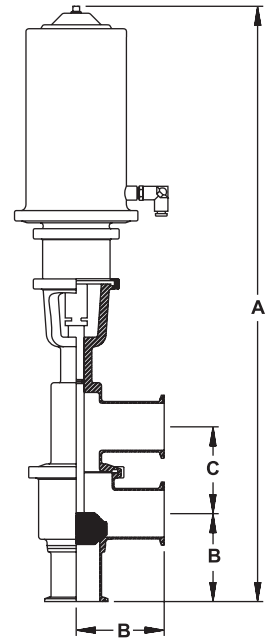
## SP161 Series - Rubber Coated and PTFE Replaceable Seat



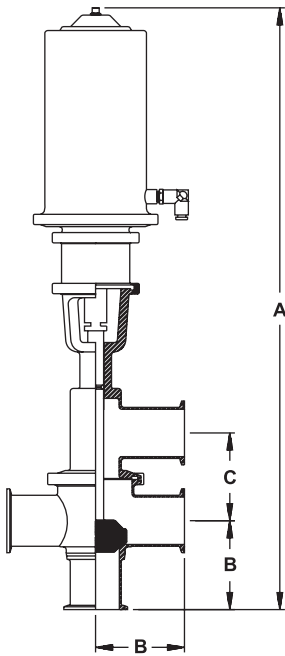
SP161-7-x-ACT



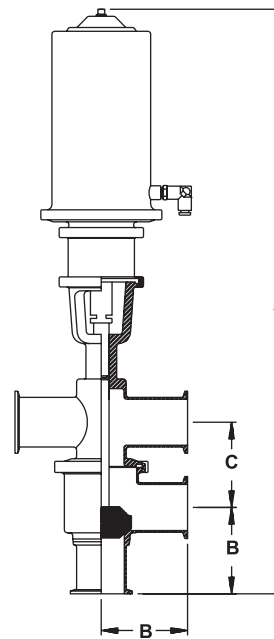
SP161-9-x-ACT



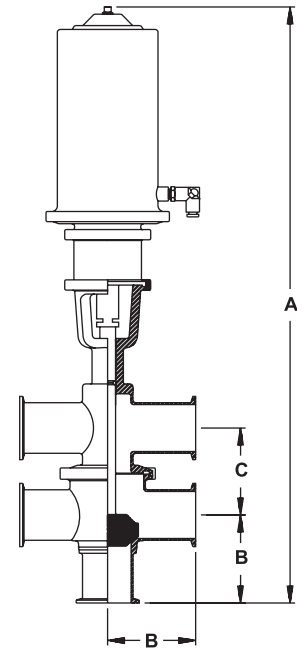
SP161-77-x-ACT



SP161-97-x-ACT



SP161-79-x-ACT



SP161-99-x-ACT

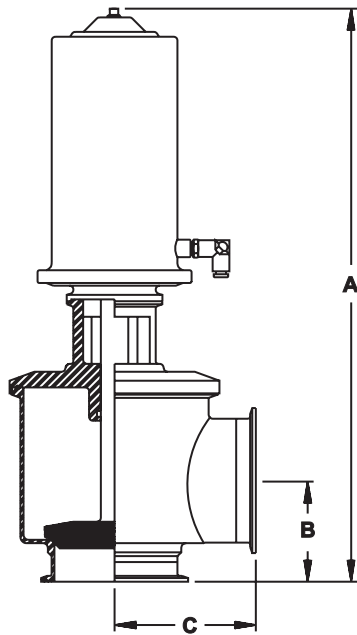
Valves are shown with #120 Act.  
x=Valve size

All valves are standard with sanitary clamp end-connections, please contact factory for other options.

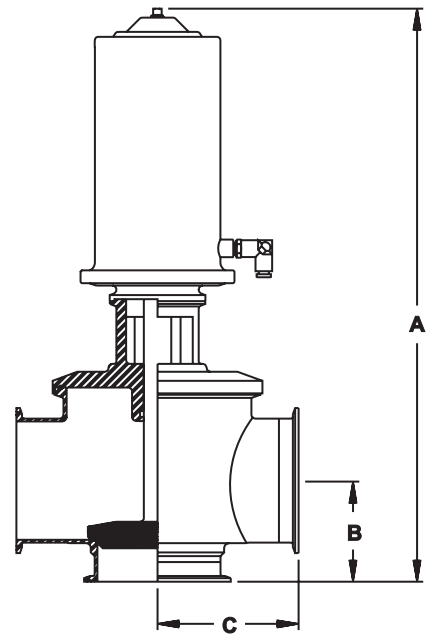
Size	Valve Dimensions				Shipping #'s	
	A.		B.	C.	Shut-off Valve	Divert Valve
2"	Shut-Off Valve	Divert Valve	Shut-off Valve	Divert Valve	Shut-off Valve	Divert Valve
2.5"	21 3/4"	25 3/4"	3 1/2"	3 7/16"	16 1/2 #	19 1/2 #
3"	22 1/2"	27 1/4"	3 1/2"	3 15/16"	18 #	20 1/2 #
	23 7/8"	29"	3 3/4"	4 9/16"	20 #	22 1/2 #

# Long Stroke Valves

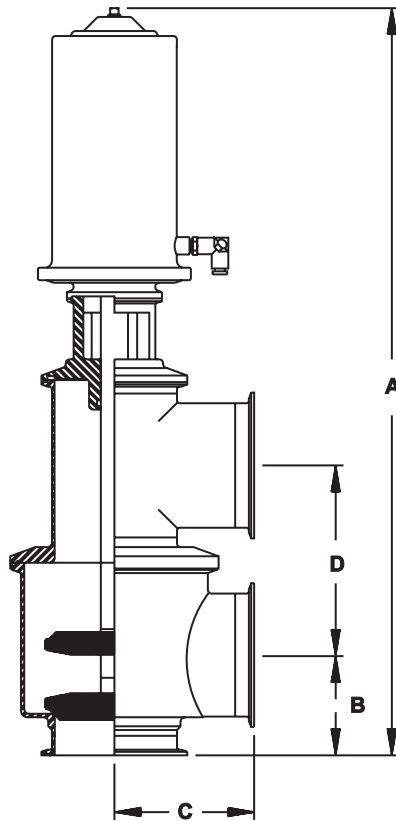
## SP161 Series - 4" Rubber Coated and PTFE Replaceable Seat



SP161-7-4"-ACT



SP161-9-4"-ACT



SP161-77-4"-ACT

Valves are shown with #120 Act.

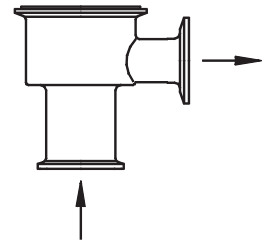
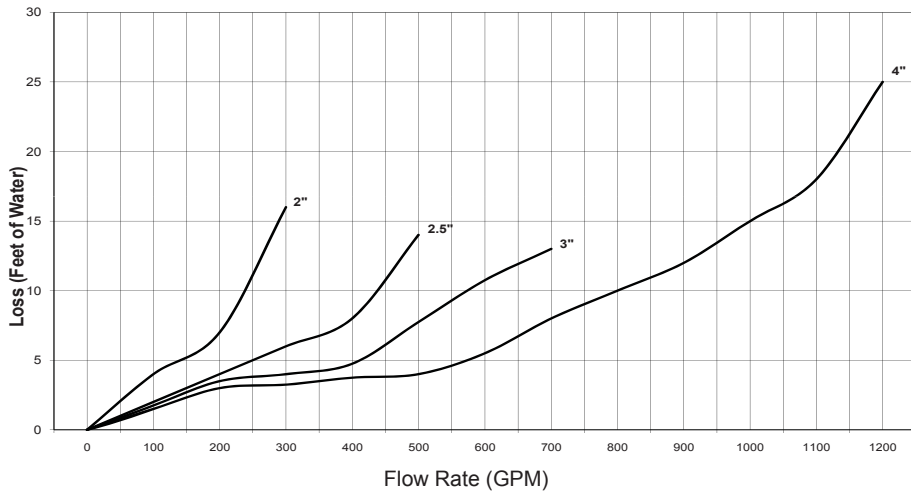
All valves are standard with sanitary clamp end-connections, please contact factory for other options.

Valve Dimensions						Shipping #'s	
	A.		B.	C.	D.		
Size	Shut-Off Valve	Divert Valve	Shut-off Valve	Divert Valve	Divert Valve	Shut-off Valve	Divert Valve
4"	19 1/8"	25 1/8"	3 3/8"	4 1/2"	6 1/8"	29 #	35 1/2 #

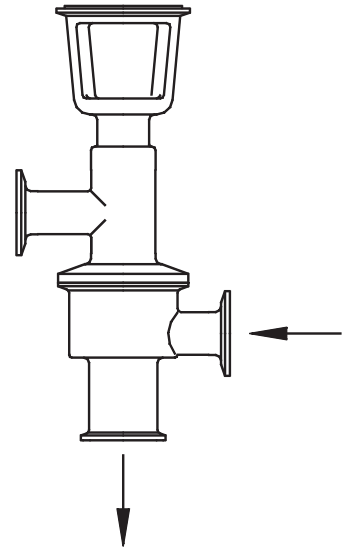
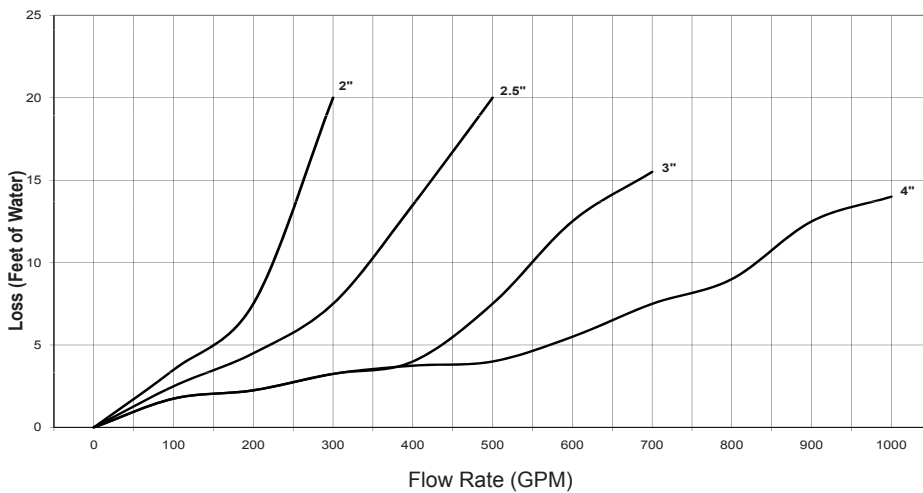
# Long Stroke Valves

## SP161 Series - Head Loss Curves

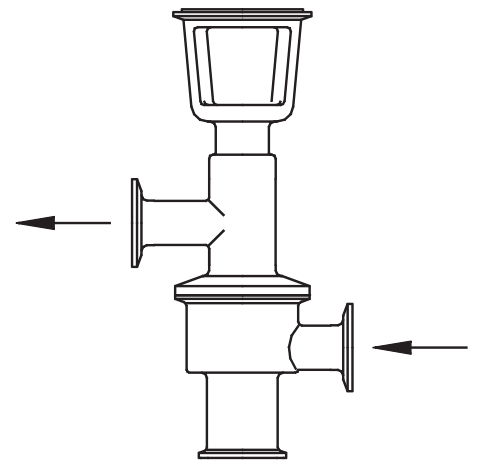
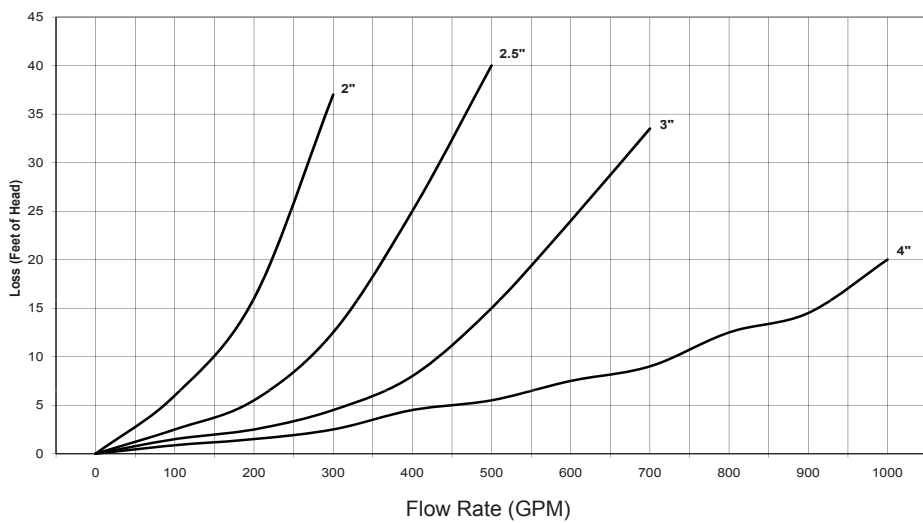
SP161-7 Tee Body Valve



SP161-77 Divert Valve

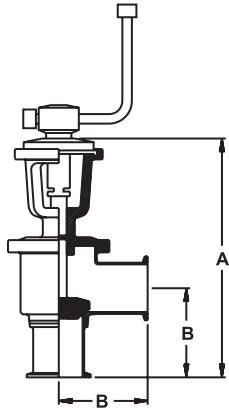


SP161-77 Divert Valve

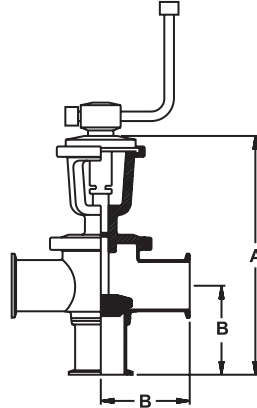


# Manual Valves

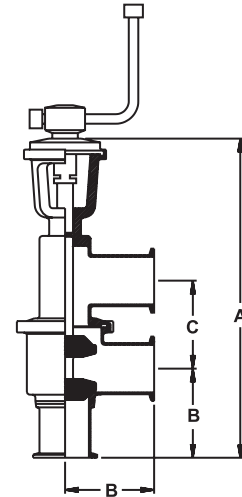
## SP160 Series / SP161 Series- Rubber Coated and PTFE Replaceable Seat



SP160-7-x-H  
OR  
SP161-7-x-H



SP160-9-x-H  
OR  
SP161-9-x-H



SP160-77-x-H  
OR  
SP161-77-x-H

### SP160 Series Short Stroke

SP160 Series Valve Dimensions					Shipping #'s	
Size	A.		B.		C.	
	Shut-Off Valve	Divert Valve	Shut-off Valve	Divert Valve	Shut-off Valve	Divert Valve
1"	7 1/8"	9 3/4"	2 1/2"	2 27/32"	2 1/2 #	3 1/2 #
1.5"	7 3/8"	10"	2 3/4"	2 27/32"	2 1/2 #	3 1/2 #
2"	8 3/8"	11"	3 1/2"	3 7/16"	3 1/2 #	4 1/2 #
2.5"	8 3/4"	12"	3 1/2"	3 15/16"	4 1/2 #	5 1/2 #
3"	9 1/16"	14"	3 3/4"	4 9/16"	7 #	8 #

All valves are standard with sanitary clamp end-connections, please contact factory for other options.

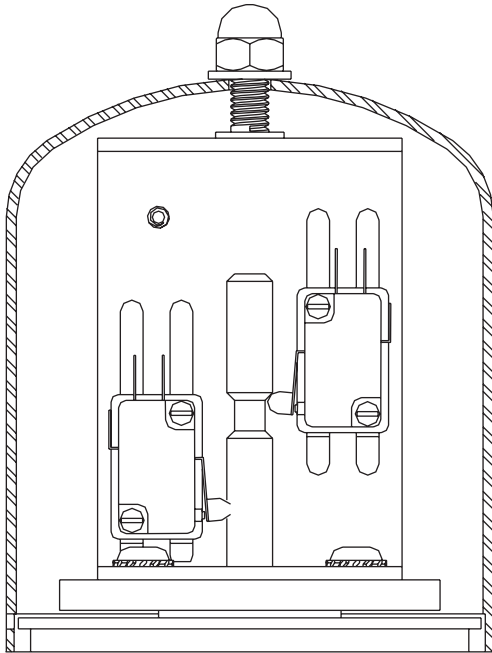
x=Valve size

### SP161 Series Long Stroke

SP161 Series Valve Dimensions					Shipping #'s	
Size	A.		B.		C.	
	Shut-Off Valve	Divert Valve	Shut-off Valve	Divert Valve	Shut-off Valve	Divert Valve
2"	9 7/8"	13 3/16"	3 1/2"	3 7/16"	8 #	10 #
2.5"	10 1/2"	14 1/4"	3 1/2"	3 15/16"	9 1/2 #	12 #
3"	11 3/4"	15 7/8"	3 3/4"	4 9/16"	11 #	13 1/4 #

# Micro / Proximity Actuators

## SP160 Series / SP161 Series- Indication Options



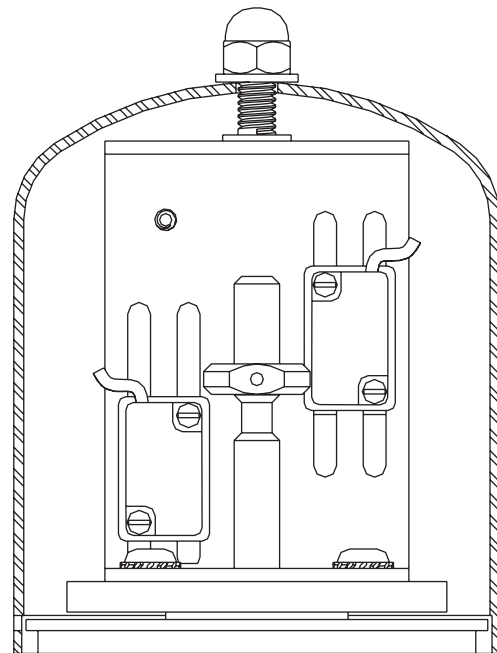
SP20MS  
Micro-Switch

Stainless Products' micro / proximity switch valves have the same great features as the other valves in our line. In addition Stainless Products uses environment-proof switches. A precision basic switch is located in a corrosion resistant T316L housing to protect the switch contacts from contamination.

The switch(s) can indicate by light or readout on a control panel whether the valve is in the full-open or full-closed position. The micro / proximity switch actuator can be used on any Stainless Products air valve. For details please contact the factory.

SP10MS & SP20MS (Short Stroke Micro)  
SP110MS & SP120MS (Long Stroke Micro)  
SP10PRX & SP20PRX (Short Stroke Proximity)  
SP110PRX & SP120PRX (Long Stroke Proximity)

\*\* Except 4" Valves, contact factory for options \*\*

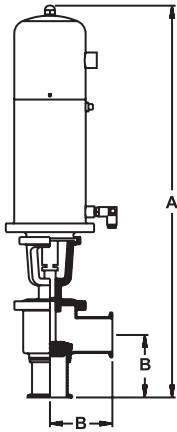


SP20PRX  
Proximity-Switch

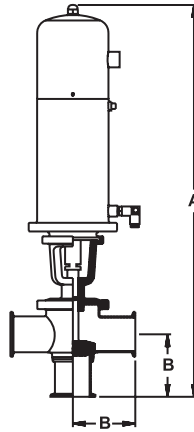


# Micro / Proximity Actuators

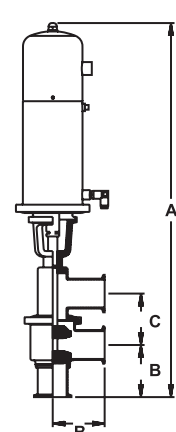
## SP160MS / PRX - Short Stroke



SP160MS/PRX-7 Body



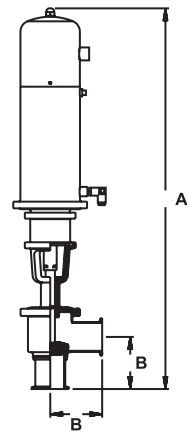
SP160MS/PRX-9 Body



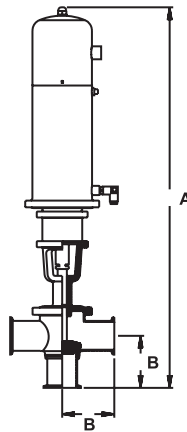
SP160MS/PRX-77 Body

Valve Dimensions					Shipping #'s	
	A.		B.	C.		
Size	Shut-Off Valve	Divert Valve	Shut-off Valve	Divert Valve	Shut-off Valve	Divert Valve
1"	21 1/8"	23 13/16"	2 1/2"	2 27/32"	22 1/2 #	24 #
1.5"	21 3/8"	24 1/16"	2 3/4"	2 27/32"	22 1/2 #	24 #
2"	27 1/2"	25 9/16"	3 1/2"	3 7/16"	22 1/2 #	25 1/2 #
2.5"	28 1/4"	26 7/16"	3 1/2"	3 15/16"	24 #	26 1/2 #
3"	29 5/8"	28"	3 3/4"	4 9/16"	26 #	28 1/2 #

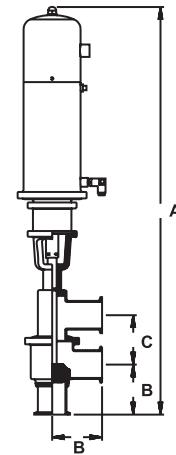
## SP161MS / PRX - Long Stroke



SP161MS/PRX-7 Body



SP161MS/PRX-9 Body

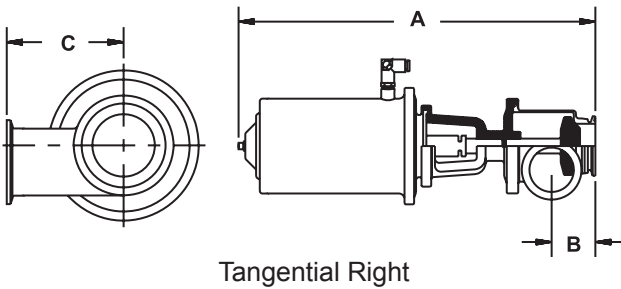


SP161MS/PRX-77 Body

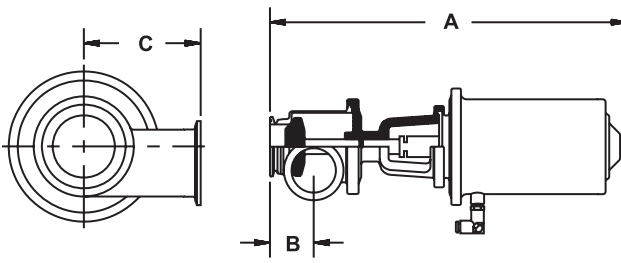
Valve Dimensions					Shipping #'s	
	A.		B.	C.		
Size	Shut-Off Valve	Divert Valve	Shut-off Valve	Divert Valve	Shut-off Valve	Divert Valve
2"	25 7/16"	27 1/2"	3 1/2"	3 7/16"	26 1/2 #	29 #
2.5"	26 7/16"	28 1/4"	3 1/2"	3 15/16"	26 1/2 #	29 #
3"	28"	29 5/8"	3 3/4"	4 9/16"	30 1/2 #	34 1/2 #

# Tank Outlet Valves

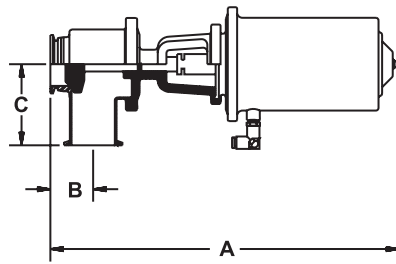
## SP163 and SP1613 Tank Outlet Valves



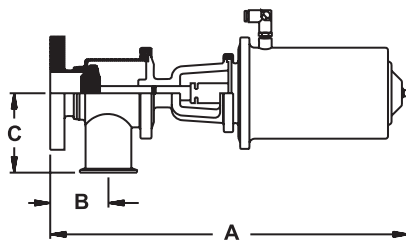
Tangential Right



Tangential Left



Straight



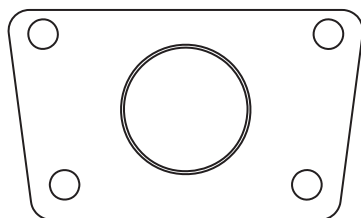
Flange

Size	Valve Dimensions				Shipping #s	
	A.		B.	C.	Short Stroke Valve	Long Stroke Valve
	Short Stroke Valve	Long Stroke Valve				
2"	14 31/32"	21 1/8"	1 27/32"	4 1/8"	16.5 #	22 #
2.5"	15 13/16"	21 13/16"	2 5/16"	4 1/8"	18 #	22 #
3"	16 9/16"	22 11/16"	2 5/8"	4 1/2"	20 #	25 #
4"	N/A	19"	3 3/16"	4 3/4"	N/A	28 #

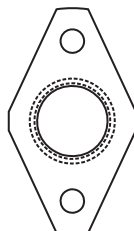
Size	Valve Dimensions				Shipping #s	
	A.		B.	C.	Short Stroke Valve	Long Stroke Valve
	Short Stroke Valve	Long Stroke Valve				
2"	14 31/32"	21 1/8"	1 27/32"	4 1/8"	16.5 #	22 #
2.5"	15 13/16"	21 13/16"	2 5/16"	4 1/8"	18 #	22 #
3"	16 9/16"	22 11/16"	2 5/8"	4 1/2"	20 #	25 #
4"	N/A	19"	3 3/16"	4 3/4"	N/A	28 #

Size	Valve Dimensions				Shipping #s	
	A.		B.	C.	Short Stroke Valve	Long Stroke Valve
	Short Stroke Valve	Long Stroke Valve				
2"	14 31/32"	21 1/8"	1 27/32"	4 1/8"	16.5 #	22 #
2.5"	15 13/16"	21 13/16"	2 5/16"	4 1/8"	18 #	22 #
3"	16 9/16"	22 11/16"	2 5/8"	4 1/2"	20 #	25 #
4"	N/A	19"	3 3/16"	4 3/4"	N/A	28#

Size	Valve Dimensions				Shipping #s	
	A.		B.	C.	Short Stroke Valve	Long Stroke Valve
	Short Stroke Valve	Long Stroke Valve				
2"	14 31/32"	21 1/8"	1 27/32"	4 1/8"	16.5 #	22 #
2.5"	15 13/16"	21 13/16"	2 5/16"	4 1/8"	18 #	22 #
3"	16 9/16"	22 11/16"	2 5/8"	4 1/2"	20 #	25 #



2 1/2" & 3" Valves

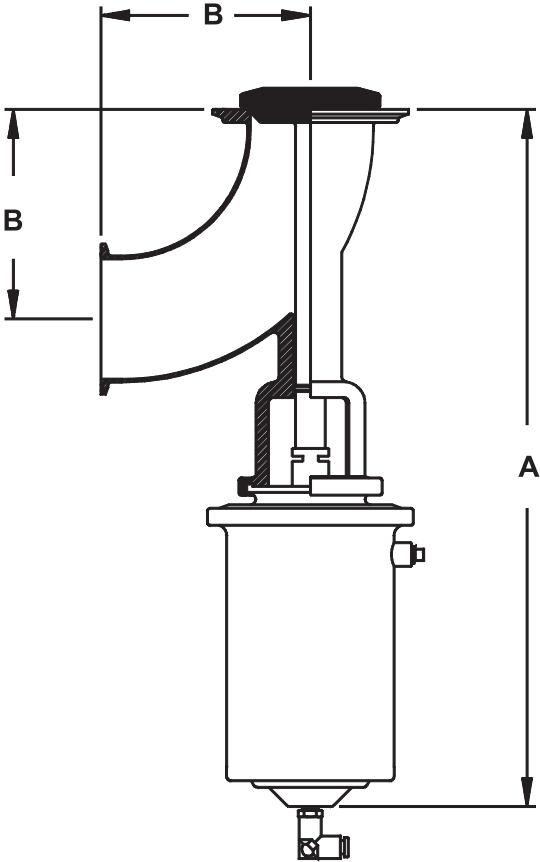


1.5" & 2" Valves

2 and 4 Hole Flanges  
Contact factory for options and dimensions

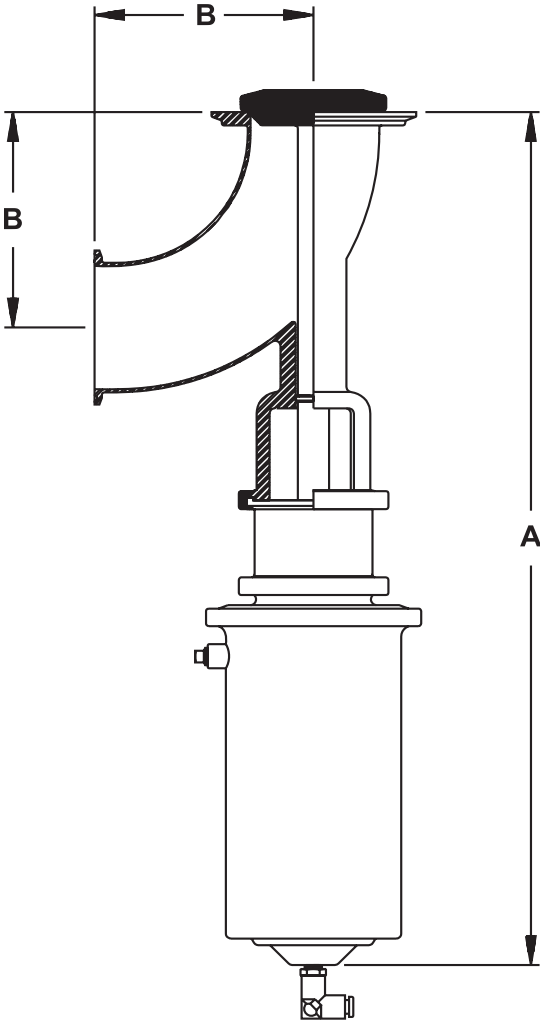
# Elbow Valves

SP164 Short Stroke Elbow Valve



Valves are shown with #10 Act.

SP165 Long Stroke Elbow Valve

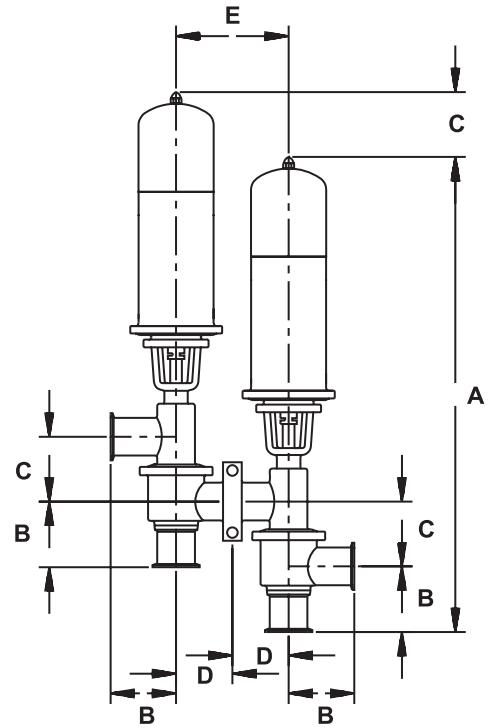
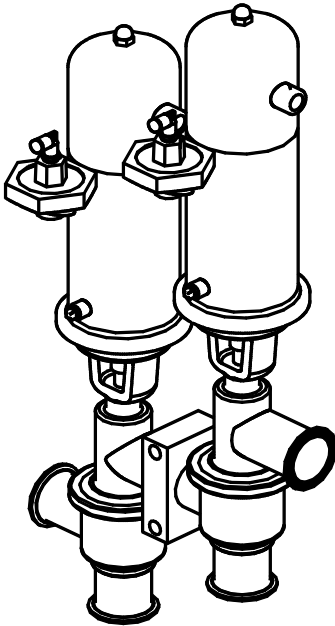


Valves are shown with #110 Act.

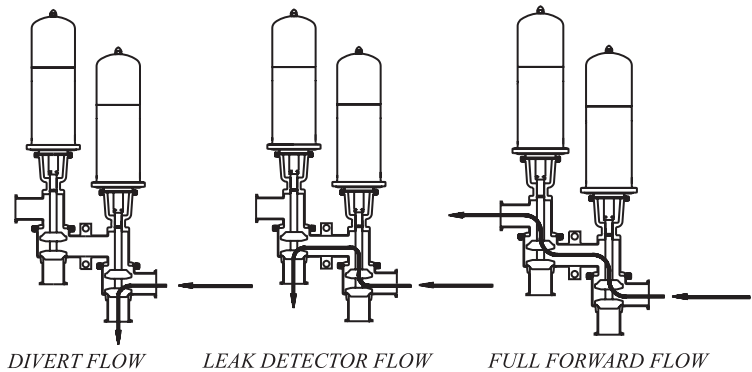
Valve Dimensions				Shipping #'s	
Size	A.		B.	Shipping #'s	
	SP164	SP165		SP164	SP165
2"	15 3/4"	20 1/4"	3 1/2"	19 #	22 #
2.5"	16 1/2"	21"	4 1/4"	19 #	23 #
3"	17 1/4"	21 3/4"	5"	20 #	25 #

# Flow Diversion Valves

SP160 FDV Series Short Stroke  
 SP161 FDV Series Long Stroke



Valve Dimensions						
Size	Short Stroke	Long Stroke	B.	C.	D.	E.
	A.					
1.5"	23 1/2"	n/a	2 3/4"	2 27/32"	3"	6"
2"	25"	27 1/2"	3 1/2"	3 7/16"	3 3/4"	7 1/2"
2.5"	25 7/8"	28 1/4"	3 1/2"	3 15/16"	3 3/4"	7 1/2"
3"	27 7/16"	29 5/8"	3 3/4"	4 9/16"	4"	8"



# Section B

## SP160 Series Modulating Valve Ordering Information

### Features and Options

- All stainless steel constructions (T316L wetted parts)
- Precision machined plug and stem assures precise control and long life
- Available with a valve positioner or hand operated
- Viton stem o-ring
- Open yoke provides leak detection and visual stem position
- No special tools needed for valve maintenance



**SP160 - 7MT - 2" - 20 VPR**

#### Body Style and Plug Style

7M or MT  
9M or MT  
77M or MT

\* Add "H" if hand operated

"M" = multi-taper plug  
"MT" = straight-taper plug

See valve sizing curves for correct plug selection

#### Actuator Style

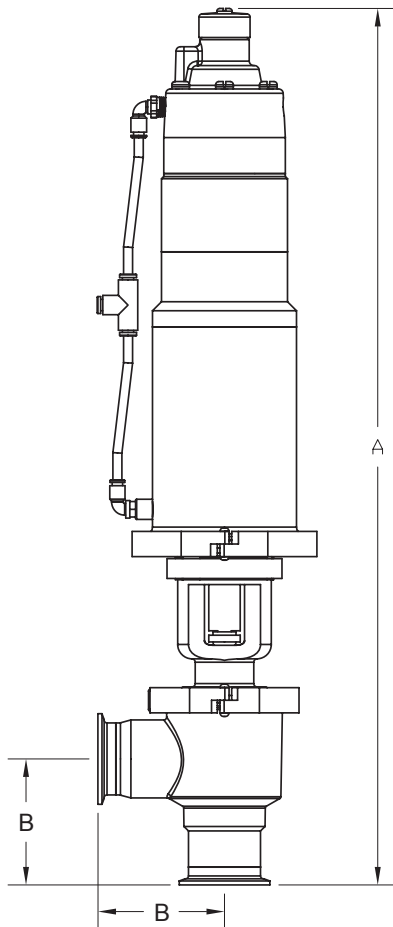
10VPD = normally open  
20VPR = normally closed

#### Valve Size

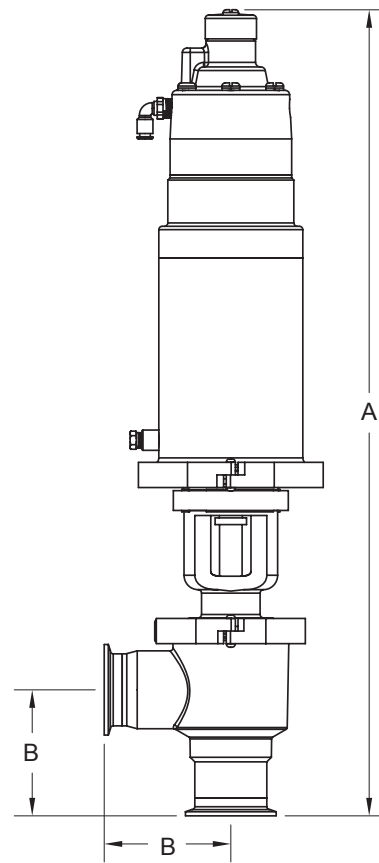
1"  
1.5"  
2"  
2.5"  
3"

# Modulating Valves

## SP160 Series Modulating Valves “7MT”-Straight Taper and “7M”-Multi-Taper



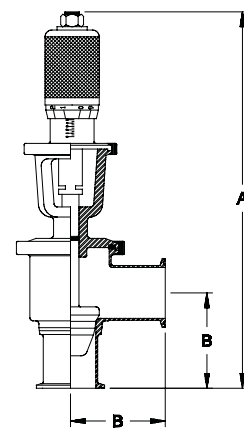
SP160-7MT-x-20VPR



SP160-7MT-x-10VPD

x= valve size

Size	Valve Dimensions				Shipping #'s	
	A.		B.		SP20VPR SP10VPD	Hand Operated
1"	23 7/8"	22 1/8"	13 1/2"	2 1/2"	16#	11#
1.5"	23 7/8"	22 1/8"	13 1/2"	2 3/4"	16#	13#
2"	23 7/8"	22 1/8"	14 1/2"	3 1/2"	19#	13#
2.5"	25 1/4"	23 1/2"	14 7/8"	3 1/2"	19#	15#
3"	25 15/16"	24 3/16"	15 9/16"	3 3/4"	21#	17#

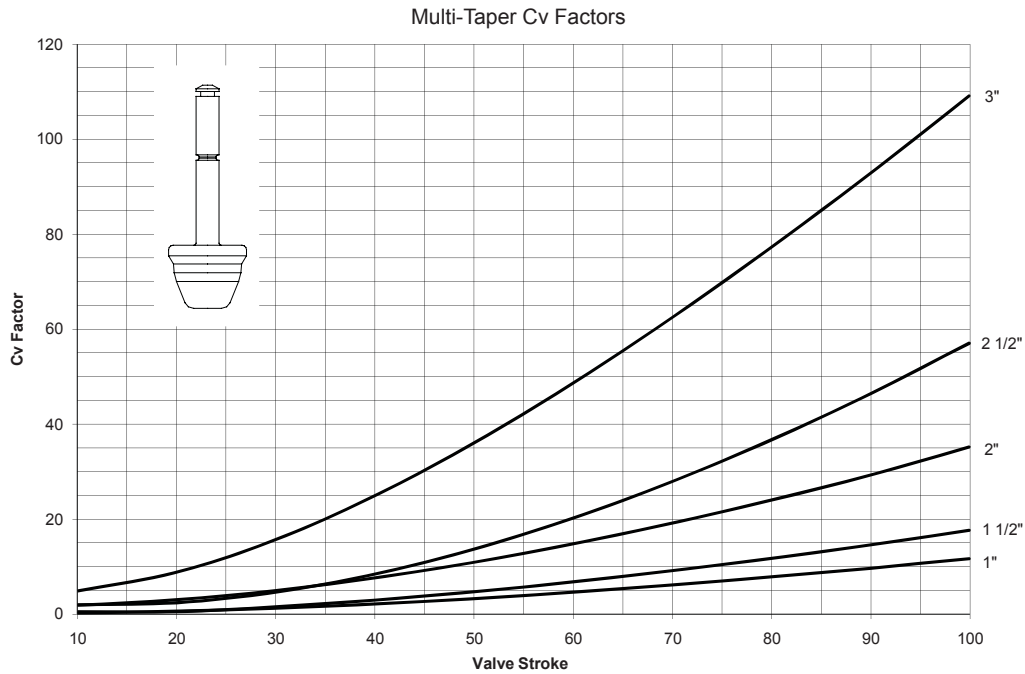


SP160-7MH-x

Please contact the factory for information on Modulating Divert Valves and other body configurations.

# Modulating Valves

## SP160 Series 7M Multi-Taper Cv Factors



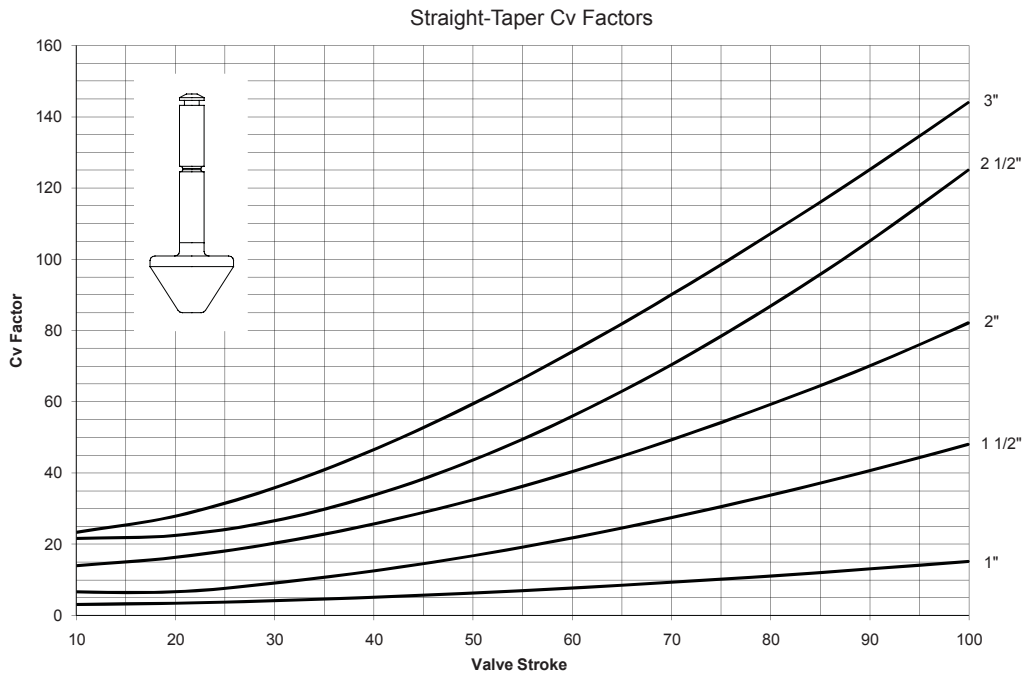
Please contact the factory for information on 7MR o-ring seat options.

Valve Stroke	1"	1.5"	2"	2.5"	3"
10%	.25	.50	1.90	2.00	4.90
20%	.75	1.00	3.20	3.90	10.00
30%	1.00	2.00	7.30	8.70	18.50
40%	1.25	3.00	11.90	14.80	24.00
50%	1.875	4.00	14.60	20.40	31.00
60%	3.00	6.50	16.90	26.00	39.60
70%	4.00	6.80	20.00	31.00	56.00
80%	5.00	8.30	24.20	37.00	72.00
90%	6.50	9.30	29.20	47.00	87.40
100%	12.00	14.30	33.70	53.50	110.00

Data is based on water at 70°F

# Modulating Valves

## SP160 Series 7MT Straight Taper Cv Factors



Please contact the factory for information on 7MTR o-ring seat options.

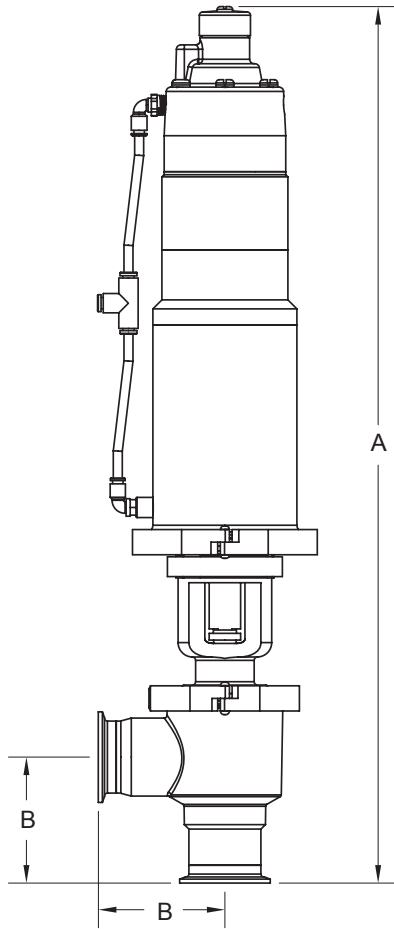
Valve Stroke	1"	1.5"	2"	2.5"	3"
10%	3.00	6.60	14.00	21.60	23.20
20%	5.00	11.00	23.80	36.00	40.70
30%	6.60	15.50	32.50	49.00	55.50
40%	8.10	19.40	40.00	58.80	69.00
50%	9.60	23.00	47.80	70.00	82.00
60%	10.80	26.50	54.70	80.00	96.00
70%	12.00	30.00	61.00	89.50	110
80%	13.20	33.20	67.00	98.00	123
90%	14.30	36.80	73.50	109	134
100%	15.40	40.00	79.00	118	145

Data is based on water at 70°F

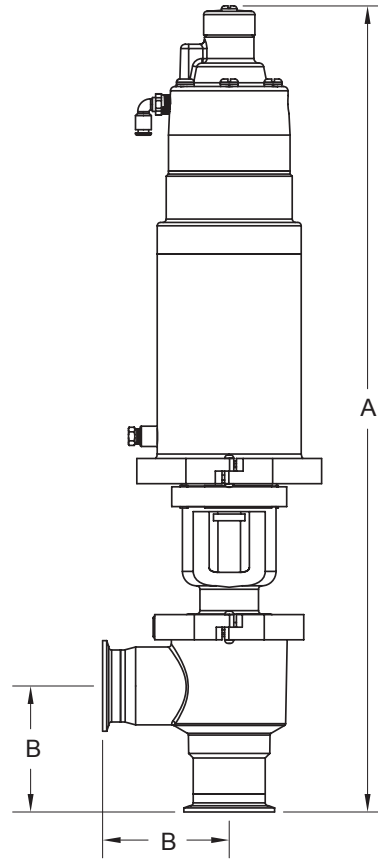


# Modulating Valves

## Micro Flow Modulating Valves

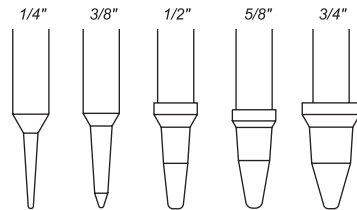


SP160-7M-1-x-20VPR



SP160-7M-1-x-10VPD

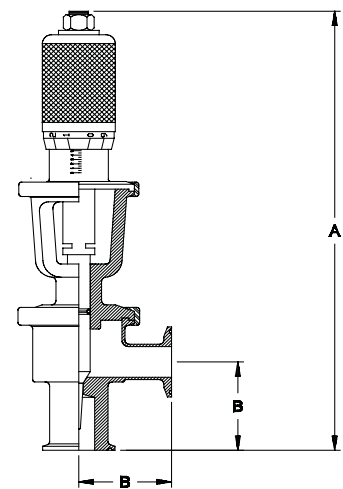
Available plug sizes



Valve Dimensions				Shipping #'s		
	A.		B.			
Size	SP20VPR	SP10VPD	Hand Operated	Shut-off Valve	SP20VPR SP10VPD	Hand Operated
1"	23 7/8"	22 1/8"	13 1/2"	2 1/2"	17#	11#

x= valve size

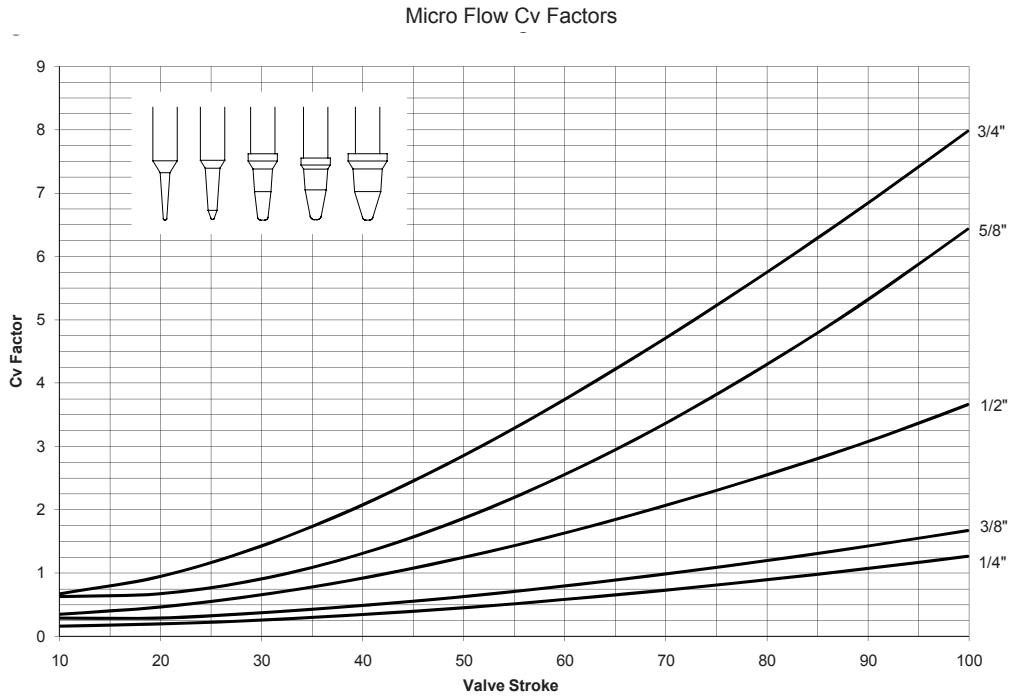
All Micro-Flow Valves have 1" SP-Clamp End Connections.



SP160-7MH-1-x

# Modulating Valves

## SP160 Series Micro Flow Cv Factors



Valve Stroke	1/4"	3/8"	1/2"	5/8"	3/4"
10%	.32	.38	1.11	1.43	1.57
20%	.44	.92	1.33	1.58	1.64
30%	.66	1.26	1.93	2.25	2.37
40%	.92	1.58	2.50	2.97	3.16
50%	1.11	1.90	3.16	3.95	4.79
60%	1.36	2.25	3.79	5.28	6.32
70%	1.52	2.50	4.52	6.32	8.63
80%	1.64	2.78	5.00	6.96	10.53
90%	1.75	2.97	5.57	7.91	12.26
100%	1.80	3.16	5.95	8.85	13.95

Data is based on water at 70°F

# Modulating Valves

## Modulating Valve Sizing Instruction

Selecting the correct throttling valve for your application

$\Delta p$  = Pressure Drop Across in PSI  
(Inlet Pressure Minus Outlet Pressure)

Inlet Pressure (10 PSI) minus Outlet Pressure (3 PSI)  
( $\Delta p$ ) = 7 PSI

Formula for water and other products with a specific gravity equal to 1.0.

$$Cv = \sqrt{\frac{GPM}{\Delta p}}$$

Formula for water and other products with a specific gravity other than water.

$$Cv = \sqrt{\frac{GPM}{\Delta p / SG}}$$

GPM=Product flow rate  
SG= Specific gravity of gravity  
 $\Delta p$  = Pressure Drop across valve in PSI

Example:

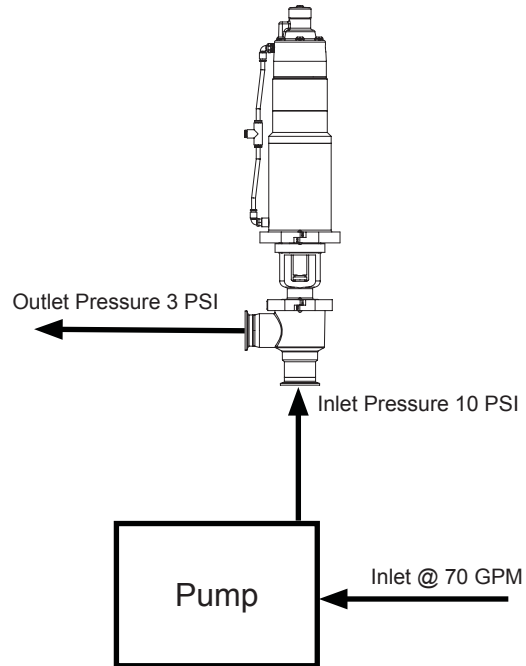
- 70 GPM of water
- Inlet pressure 10 PSI
- Outlet pressure 3 PSI

Solution:

$\Delta p = 10 \text{ PSI} - 3 \text{ PSI} = 7 \text{ PSI}$  ( See above)

$$CV = \sqrt{\frac{70}{7 \text{ PSI}}} = 26.45$$

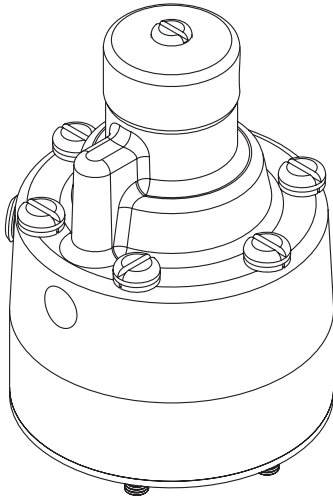
Once your Cv factor has been calculated, locate your Cv factor on the charts from pages 2,3 or 5. Use the closest number to your figure. If you find that your Cv factor is listed on more than one chart, use the one that is closest to the optimum operating point. (optimum operating point is when the valve is 50% open) .



For further assistance sizing a control valve for your application, please contact the factory.

# Modulating Valves

## 20VPR and 10VPD Valve Positioners



20VPR 3# Instrument pressure = Valve Closed  
15# Instrument pressure = Valve Open  
10VPD 3# Instrument pressure = Valve Open  
15# Instrument pressure = Valve Closed

### General Specifications:

Input Range	3-15 PSI
Supply Pressure	100 PSI Max.
Ambient Temp Limits	-40° F to 180 ° F

### Pneumatic Connections:

All connections are 1/4" NPT  
Recommended piping 1/4" OD Instrument (input)  
3/8" OD Supply  
Use pipe sealant sparingly on male threads only.  
A non-hardening sealant is strongly recommended.

### Instrument Air Requirements:

Connect the positioner to only clean, dry, oil free instrument air. Failure to do so will increase the possibility of a malfunction.

### Caution- Synthetic compressor lubricants in the air stream at the instrument may cause the positioner to fail.

The requirements for quality instrument air can be found in the Instrument Society of America's "Quality Standard for Instrument Air" (ISA-S7.3).

### Particle Size- no larger than 3 microns

**Dew Point-** at line pressure- should be at least 18°F below the minimum temperature to which any part of the instrument air system is exposed at any season of the year. Under no circumstances should the dew point-at line pressure- exceed 35.6°F.

**Oil Content-** maximum total oil or hydrocarbon content, exclusive of noncondensibles, should not exceed 1 PPM under normal operating conditions.

### Adjustment:

The only adjustment that can be made on the positioner is a zero adjustment. The zero adjusting screw is located under the positioner's top cover.

When valve shut off or opening is required at a specific instrument pressure you will need to zero the positioner at this point, set the instrument air at the specific pressure and turn the zero adjustment screw until the valve reaches the required position.

A slight change of the instrument pressure should start to move the valve.

### Maintenance:

Clean, dry, oil free instrument air will reduce most problems associated with pneumatic instruments. If all air requirements (see above) are observed, no routine maintenance is recommended.

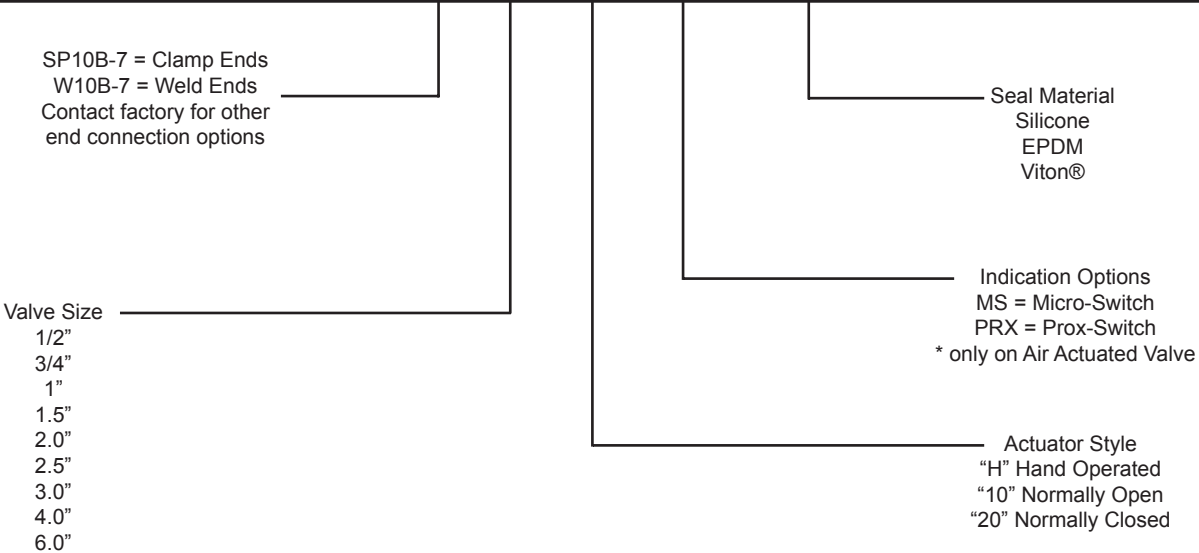
# Section C

## Butterfly Valve Options and Ordering Information

- Features and Options:
  - All stainless steel construction (T304/T316L wetted parts)
  - Precision molded seat assures positive shut-off and long life
  - Seat material include:
    - Silicone
    - EPDM
    - Viton®
  - Available with dual micro-switches or dual proximity switches
  - Hand operated or Air actuated
  - End connections options include:
    - John Perry
    - Bevel Seat
    - I-Line
    - (contact factory for other options)



### SP10B - 7 - 2" - 20 - PRX - EPDM



# Butterfly Valve Specifications

## Specifications

Body Material: T304 or T316L Stainless Steel

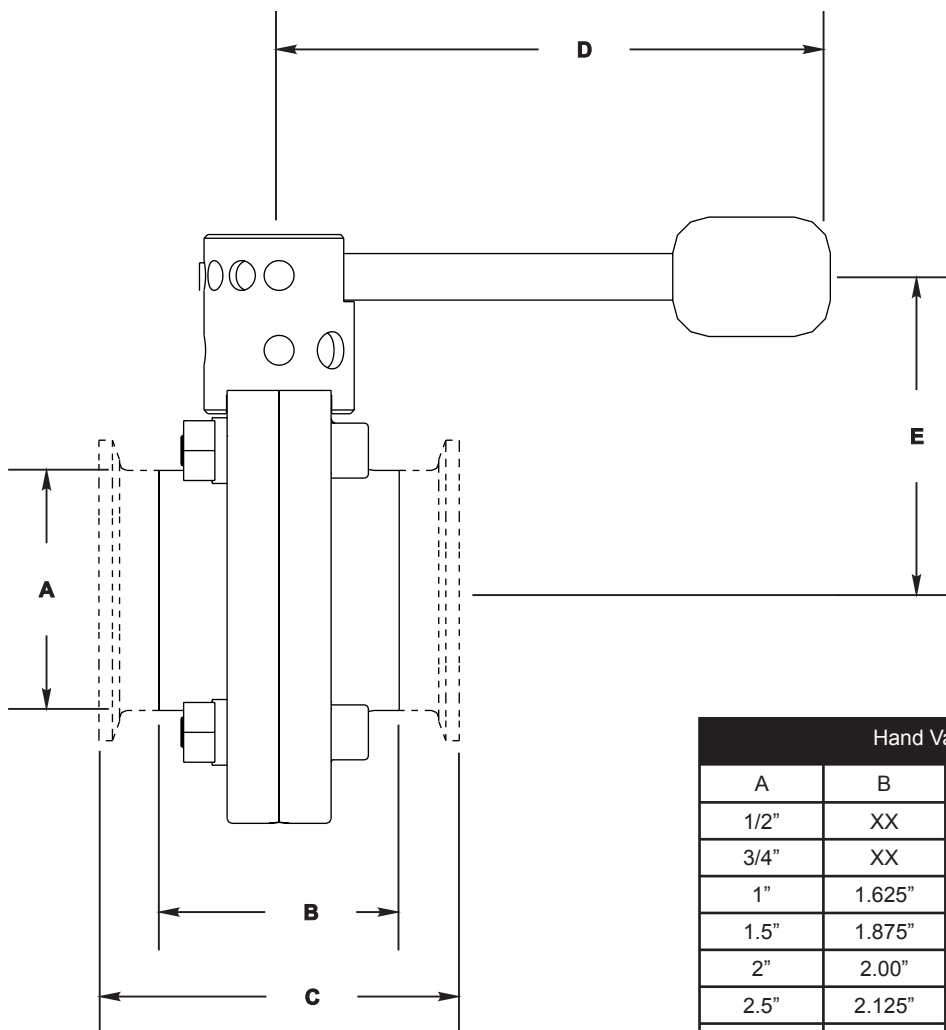
Seat Material: Silicone, EPDM and Viton®

Stem and Disc: T316L

Pressure Rating: 140 PSI Max. (6" Valve- 100 PSI Max.)

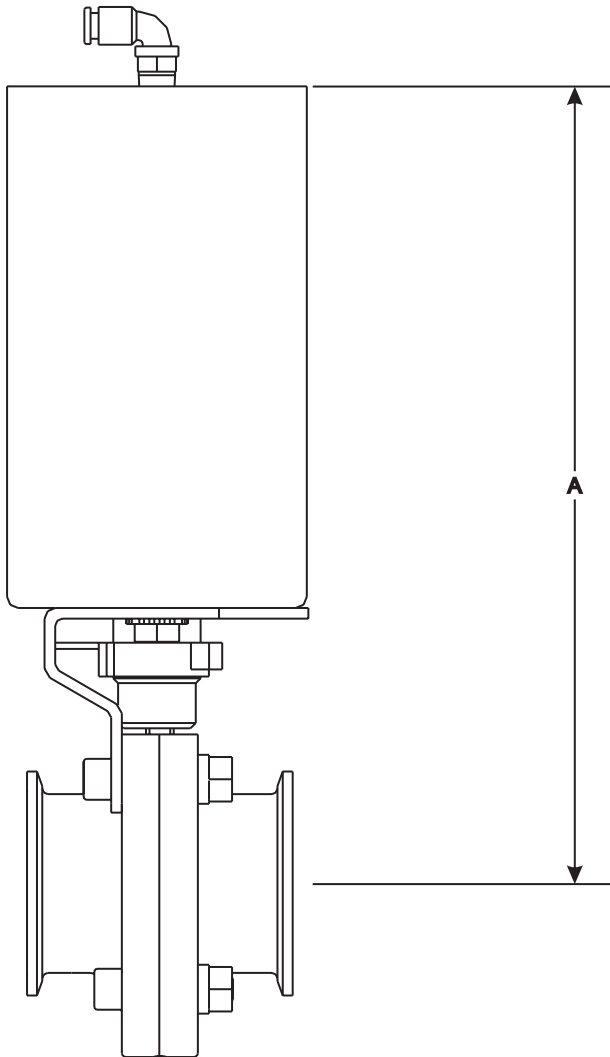
Temperature Range: -80° F to + 400° F

Handle: Fully open or closed spring loaded assembly (4) Position



Hand Valve Dimensions				
A	B	C	D	E
1/2"	XX	2.50"	4.125"	2.00"
3/4"	XX	2.50"	4.125"	2.00"
1"	1.625"	2.875"	4.125"	2.00"
1.5"	1.875"	3.625"	4.125"	2.125"
2"	2.00"	3.781"	4.125"	2.625"
2.5"	2.125"	3.938"	4.125"	3.063"
3"	2.437"	4.063"	5.687"	3.250"
4"	3.156"	4.61"	5.687"	4.00"
6"	3.125"	4.438"	20"	5.50"

# Air Actuated Valves



Air to open, Spring to Close Actuator

Position indicator for visual indication

Dual micro-switch and proximity-switch indication options (contact factory for details)

Air Pressure required: 65-85 PSI  
 Product pressure range: 140 PSI Max.  
 Temperature Range: -20°F to +200°F

Air Actuated Butterfly								
Size	1/2"	3/4"	1"	1.5"	2"	2.5"	3"	4"
A	8.625"	8.625"	8.625"	8.625"	9"	9.375"	9.563"	10.375"
Weight	9	9	9	9	9.5	10.5	13.3	16.5

# Valve Positioner

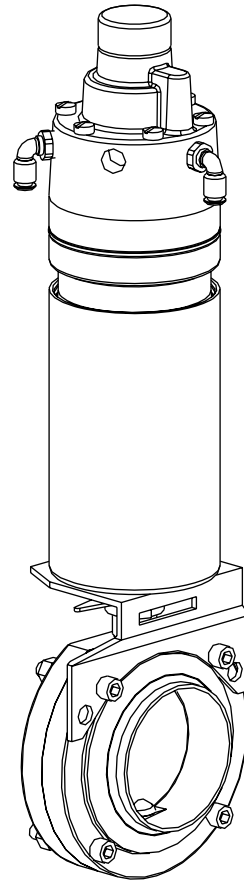
## SP10B-7-x-20VP

Our 20VP butterfly valve actuator offers the same precise control as our SP160 series control valves at a lower cost. The valves utilizes the same Siemens positioner as our SP160 series valves, using a 3-15 PSI air signal.

Available with all standard butterfly valve options and connections types.

Air Supply Requirements:  
3-15 PSI

Supply Air:  
90-100 PSI



Contact the factory for more control indication options.



# Seat Material Selection

## Comparing Properties

**Nitrile (Buna)**- Buna-N is known to exhibit generally good resistance to petroleum-based oils, greases and hydraulic fluids, aliphatic hydrocarbons like propane, butane, petroleum oil, mineral oil, diesel fuel and fuel oils, vegetable oils, organic fats, most silicone-based fluids and lubricants, alcohols, most HFA, HFB and HFC fluids, alkali and salt solutions, and some other chemicals.

**Silicone**- FDA grade silicone exhibits a wish list of characteristics including superb chemical resistance, high temperature performance, good thermal and electrical resistance, long-term resiliency, and easy fabrication. It also possesses excellent UV and ozone resistance. This material is low volatile, peroxide free and does not discolor over time. Silicone is odorless, tasteless, chemically inert and non-toxic. It offers all FDA approved ingredients, low compression set and fungus resistance.

**EPDM**- Ethylene-propylene compounds are prepared from ethylene and propylene (EPM) and usually a third monomer (EPDM). These compounds are used frequently to seal in brake systems, and for sealing hot water and steam. Ethylene propylene compounds have good resistance to mild acids, detergents, alkalis, silicone oils and greases, ketones, and alcohols. They are not recommended for applications with petroleum oils, mineral oil, di-ester lubricants, or fuel exposure.

**Viton®**- Viton® offers excellent chemical resistance, especially to many acids and alkalies. Makes it the best choice for many pharmaceutical, chemical, automotive, or fuel applications. These gaskets are not recommended for sterilization.

Contact factory if assistance is needed selecting the correct seat material.



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