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PRODUCT LIST

PRODUCT SERIES	PRODUCT DESCRIPTION	PAGE
500 Series	Two Way, Low Pressure Valve.....	500 1-4
8100 Series.....	Two Way, High Pressure Valve	8100..... 1-4
D175 Series	Economical, Two Way, High Pressure, No Freeze Valve	D175 1-4
400 Series	Two Way, No Freeze and Angle Valve.....	400 1-6
8900 Series.....	Two Way, Over-Balanced Valve	8900..... 1-4
304 Series	Three Way, Two Position, Low Pressure Valve	304 1-4
8500 Series.....	Three Way, Two position, High Pressure Valve	8500..... 1-4
410 Series	Three Way Two Position, High Pressure Balanced Valve	410 1-4
550 Series	Back Pressure, Low Pressure Valve	550 1-8
8150 Series.....	Back Pressure or Pressure Reducing High Pressure Valve	8150..... 1-4
8950 Series.....	Back Pressure or Pressure Reducing, Over-Balanced Valve	8950..... 1-6
R2800 Series	Pressure Pilot	R2800 1-4
885 & 992 Series	Valve Position Indicators	MP..... 1-3
	Control Valve Common Options	Option 1

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500 Series Two Way, Low Pressure Valve

Application:

This valve is used for on-off or modulating control of water, oil or gas on low pressure applications. Oil and gas production separators, heater/treaters or any type of liquid accumulators are but a few of the many applications where the 500 Series valves are perfectly suited.

Operation:

In a normally closed application, a spring exerts a force onto the top side of the diaphragm, pushing the plug against the seat. To open the valve, pressure is applied to the lower side of the diaphragm overcoming the force, allowing flow through the valve. In a normally open application, the procedure is reversed. This valve may also be used with a hydraulic electric actuator.

Features:

- Easily serviced with internal parts removable from the top of the valve without having to remove the valve body from the line.
- Stainless steel stem working in a replaceable bushing ensures a longer packing life.
- Soft trim of molded nitrile provides a bubble tight shut off. Other trim options are available.
- Spring closing will hold the following back pressure:
1" = 100 psig; 2" = 100 psig; 3" = 50 psig;
4" = 50 psig
Higher pressures are available.



Fluid Capacity

Liquid Flow (Barrels/Day) Steady Flow

Pressure Drop PSI	Valve Size			
	1"	2"	3"	4"
5	1230	3470	6170	8500
10	1740	4900	8710	12100
25	2740	7700	13700	19000
50	3890	10980	19500	27000
100	5500	15400	27400	38200
150	6720	18900	34600	46700
200	7780	21800	38900	54000
250	8700	24400	43400	60300
300	9520	26800	47600	66000
350	10300	28900	51400	71300

Values based on water.
For gravity correction multiply BBLs/DAY by: $\frac{1}{\sqrt{\text{Specific Gravity}}}$

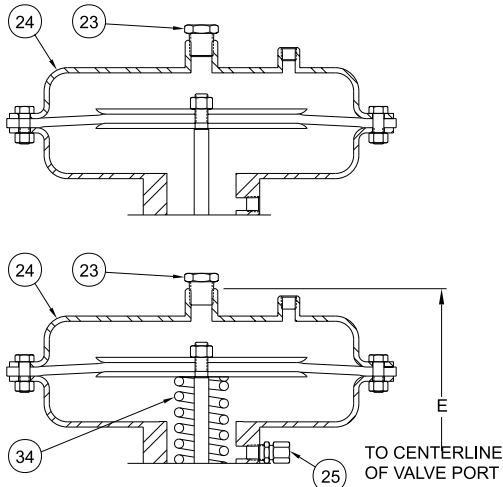
Maximum Gas Capacity (MMSCFD)

Steady Flow

Inlet Pressure PSIG	Valve Size			
	1"	2"	3"	4"
5	.32	.90	1.59	2.22
10	.40	1.12	1.99	2.77
25	.64	1.81	3.22	4.46
50	1.05	2.94	5.23	7.27
100	1.85	5.22	9.26	12.9
150	2.67	7.50	13.3	18.5
200	3.48	9.77	17.4	24.1
250	4.28	12.0	21.4	29.8
300	5.10	14.4	25.5	35.4
350	5.90	29.5	16.6	40.9

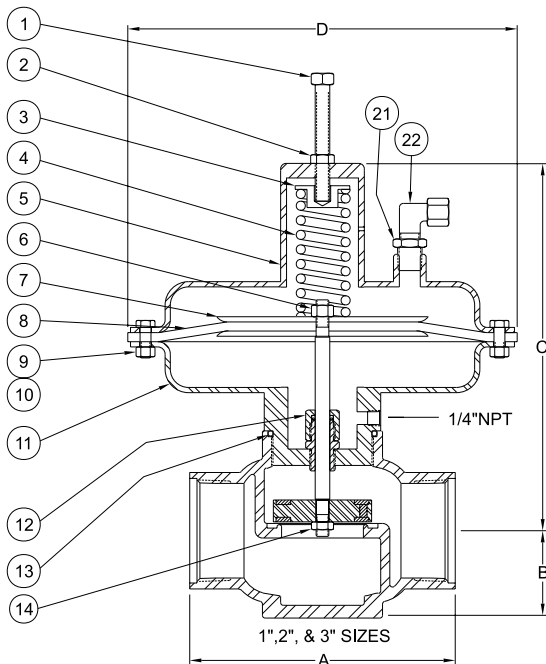
Values Based on Natural Gas .75 Specific Gravity @ 60°F.
Outlet pressure (psia) is assumed to be 1/2 inlet pressure (psia) or less.

500 Series
Two Way, Low Pressure Valve

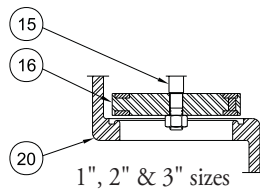


Dimensions				
Size	1"	2"	3"	4"
A	5"	6 1/2"	9 1/8"	11"
B	1 9/16"	2 3/4"	3"	3 3/8"
C	7 5/8"	9 1/2"	12 1/4"	13 3/4"
D	9"	10 1/2"	13 1/16"	13 1/16"
E	6 1/4"	8"	9 1/4"	10 3/4"

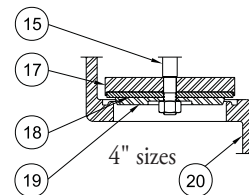
Flanged Models		
Flange	Face to Face	W.P. @ 100°F
2" 150# RF	6 1/2"	275 psig
2" 300# RF	9 1/8"	600 psig
3" 150# RF	9 1/8"	275 psig
3" 300# RF	12"	600 psig
4" 150# RF	11"	275 psig



500-311-111 SHOWN

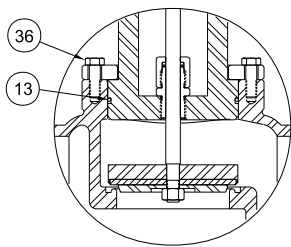


1", 2" & 3" sizes

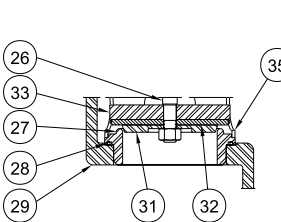
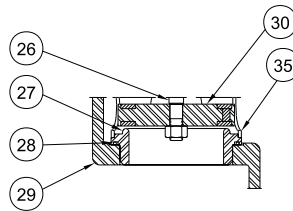


4" sizes

INTEGRAL SEAT



4" SIZE



REMOVABLE SEAT

500 Series
Two Way, Low Pressure Valve

Model	1"	2"	3"	4"	Description	Material	Qty
Item	Part #	Part #	Part #	Part #			
1.....	10210.....	10210	10213.....	10213.....	Adjustment Screw	Plated	1
2.....	10177.....	10177	10182.....	10182.....	Jam Nut	Plated	1
3.....	20582.....	20628	20602.....	20602.....	Spring Retainer	Carbon Steel.....	1
4.....	10051.....	10075	10043.....	10060.....	Spring	Oil Tempered Steel	1
5.....	30043.....	30045	30051.....	30051.....	Upper Diaphragm Housing	Fabricated Carbon Steel....	1
6.....	10172.....	10172	10180.....	10180.....	Lock Nut	Plated	1
7.....	20622.....	20696	30071.....	30071.....	Diaphragm Plate	Cold Rolled Steel Plate	2
8.....	10100.....	10094	10028.....	10028.....	Diaphragm.....	Nylon Reinforced Nitrile..	1
9.....	10206.....	10207			Cap Screw.....	Plated	12
			10207.....	10207.....	Cap Screw.....	Plated	16
10.....	10175.....	10175			Hex Nut.....	Plated	12
			10175.....	10175.....	Hex Nut.....	Plated	16
11.....	30044.....	30057	30054.....	30050.....	Lower Diaphragm Housing	Fabricated Carbon Steel....	1
12.....	21409.....	21212	21348.....	21348.....	Packing Gland Assembly	Brass/Nitrile	1
13.....	10135.....	10138	10144.....	10147.....	O-Ring	Nitrile.....	1
14.....	10173.....	10173	10181.....	10181.....	Lock Nut	18-8 ss.....	1
15.....	20072.....	20630	20690.....	20640.....	Stem, Integral Seat	303 ss	1
16.....	20232.....	20384	20833.....		Plug	Molded Nitrile	1
17.....				20641.....	Plug Disc	Carbon Steel.....	1
18A.....				10559.....	Plug Insert	Nitrile.....	1
18B.....				20642.....	Plug Insert	Polyurethane.....	1
18C.....				20884.....	Plug Insert	Acetal	1
18D.....				20995.....	Plug Insert	TFE.....	1
19.....				20643.....	Plug Retainer	Carbon Steel.....	1
20A..	20621.....	30068	30085.....	40075.....	Body, Threaded, Integral Seat.....	Ductile ASTM A395	1
20B..	20410.....	30076	30077.....	40074.....	Body, Grooved, Integral Seat.....	Ductile ASTM A395	1
20C.....		30107	40077.....	50023.....	Body, 150# RF Flanged, Integral Seat	Ductile ASTM A395	1
20D.....		30385	40547.....		Body, 300# RF Flanged, Integral Seat	Ductile ASTM A395	1
21.....	10748.....	10748	10748.....	10748.....	Bushing.....	Plated	1
22.....	23339.....	23339	23339.....	23339.....	Vent Assembly.....	Plated	1
23.....	10346.....	10346	10346.....	10346.....	Plug	Plated	1
24.....	30012.....	30049	30101.....	30101.....	Upper Diaphragm Housing	Fabricated Carbon Steel....	1
25.....	23338.....	23338	23338.....	23338.....	Vent Assembly.....	Plated	1
26.....	21006.....	20629	20480.....	20483.....	Stem, Removable Seat	303 ss	1
27.....	21005.....	20631	20635.....	30073.....	Seat	303 ss	1
28.....	10724.....	10136	10141.....	10146.....	O-Ring	Nitrile.....	1
29A..	21007.....	30083	30084.....	40076.....	Body, Threaded, Removable seat	Ductile, ASTM A395	1
29B..	21585.....	30082	30086.....	40073.....	Body, Grooved, Removable seat	Ductile, ASTM A395	1
29C.....		30081	40078.....	50022.....	Body, 150# RF Flange, Removable seat	Ductile, ASTM A395	1
29D.....		30144	40546.....		Body, 300# RF Flanged, Removable seat	Ductile, ASTM A395	1
30.....				20237.....	Plug	Molded Nitrile	1
31.....	21002.....	20626	20638.....		Plug Retainer	303 ss	1
				20851.....	Plug Retainer	Carbon Steel.....	1
32A..	21003.....	20627	20639.....	20996.....	Plug Insert	Polyurethane.....	1
32B..	21587.....	21140	21144.....	20880.....	Plug Insert	Acetal	1
32C..	21363.....	21419	21143.....	20850.....	Plug Insert	TFE.....	1
32D..	10745.....				Plug Insert	Buna-N	1
33.....	21004.....	20625	20637.....		Plug Disc	303 ss	1
				20849.....	Plug Disc	Carbon Steel.....	1
34.....	10085.....	10075	10043.....	10043.....	Spring	Oil Tempered Steel	1
35.....				30072.....	Cage.....	Carbon Steel.....	1
36.....				10207.....	Cap Screw.....	Plated	8
	10016.....	10016	10016.....	10016.....	Name Plate <i>(not shown)</i>	18-8 ss.....	1
	10324.....	10324	10324.....	10324.....	Drive Screw <i>(not shown)</i>	18-8 ss.....	2

500 Series

Two Way, Low Pressure Valve

Specifications:

Size:	1" Globe	2" Globe	3" Globe	4" Globe
Working Pressure:	600 psig	600 psig	600 psig	300 psig
Effective Area:	23 sq. in	45 sq. in	62 sq. in.	62 sq. in.
C_v Factor:	16	45	80	111
Temperature:	-20°F to + 180°F; available to + 240°F			
Topworks:	Pressed steel housing with nylon reinforced nitrile diaphragm; 50 psig maximum supply pressure.			
Trim:				
Seat:	Integral in the valve body or removable stainless steel.			
Plug:	Steel with molded nitrile standard; optional fabricated acetal, polyurethane or TFE inserts.			
Materials:				
Body:	Ductile ASTM A395			
Stem:	Stainless steel			
Packing:	Poly Pak and/or o-rings			

Ordering Chart:

500 Series: Two-way, low pressure valve

Size:

- 1 - 1"
- 2 - 2"
- 3 - 3"
- 4 - 4"

Connection:

- 1 - Threaded
- 2 - Grooved
- 3 - Flanged, specify type*

Topworks:

- 1 - Spring top
- 2 - Spring under
- 3 - Pressure balanced

Trim:

Seat:

- 1 - Integral
- 2 - Removable, stainless steel

Plug:

- 1 - Steel with molded Nitrile
- 2 - Acetal - insert
- 3 - Polyurethane - insert
- 4 - TFE plug (fluorocarbon o-rings)
- 5 - Options (*see common options list*)

Other:

- 1 - No visual indicator
- 2 - Visual indicator
- 5 - Options (*see common options list*)

Option Number:

- () - Pathway will assign an option number based on specified requirements.

500 - - ()

Example: 500-111-121

**flanged models available in 150# or 300# RF*

8100 Series Two Way, High Pressure Valve

Application:

This valve is used for on-off or throttling control of water, oil or gas on high pressure applications. Oil and gas production separators, gas scrubbers or any type liquid accumulators are a few typical applications where this valve is ideally suited. By adding a pressure pilot to control this valve, it may be used as a back pressure or pressure reducing valve.

Operation:

In a normally closed application, a spring exerts a force onto the top side of the diaphragm, pushing the plug against the seat. To open the valve, pressure is applied to the lower side of the diaphragm overcoming the force imposed by the spring and lifting the plug from the seat. This allows flow through the valve. In a normally open application, the procedure is reversed.

Features:

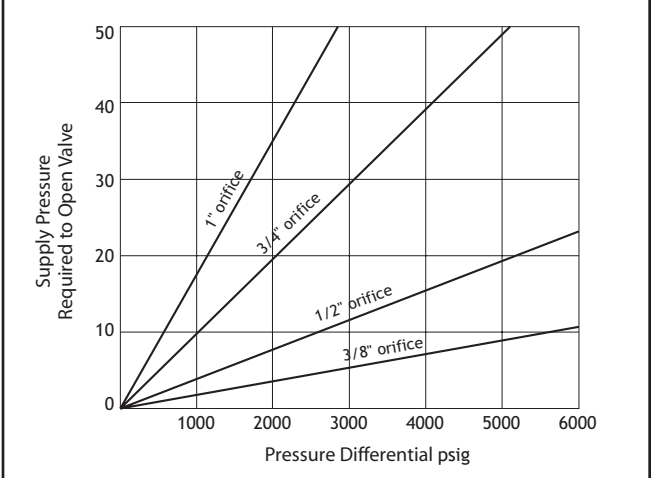
- Optional flow patterns with "T" body. Straight through or angle flow for easy installation.
- Easily serviced with the internal parts removable from the top of the valve without removing the body from the line.
- 17-4 PH heat treated stainless steel trim is standard. Available in carbide, carbide coated or soft trim to fit your application.
- Long packing life provided by stainless steel stem working in a replaceable bushing.
- Self lubricating TFE stem packing assures a positive seal without maintenance.
- Easy trim replacement without dismantling the topworks.



Maximum Pressure Differential: Flow Under Seat

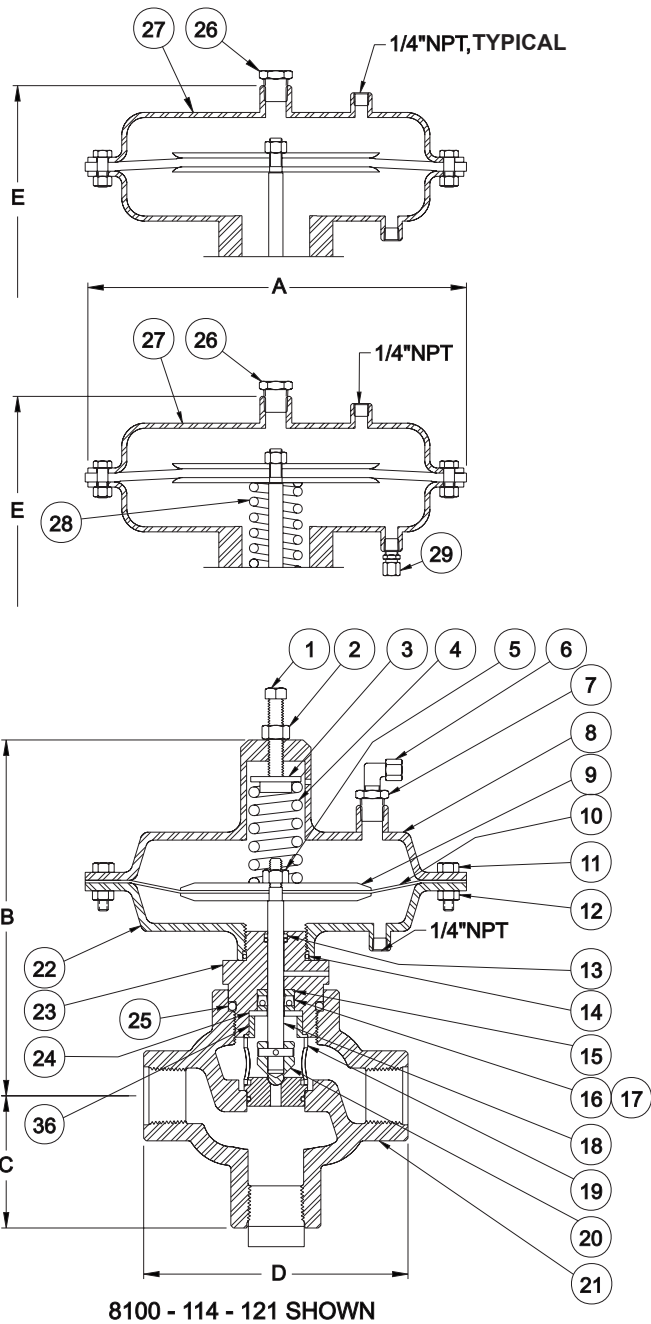
Orifice	Topworks 23 sq.in.	Topworks 45 sq. in	Topworks 62 sq. in.
1/4"	4000 psig	6000 psig	6000 psig
3/8"	4000 psig	6000 psig	6000 psig
1/2"	2500 psig	2800 psig	6000 psig
3/4"	-	1200 psig	3000 psig
1"	-	700 psig	1750 psig

**Maximum Differential Pressure
(Flow Over Seat) 45 Square Inch Topworks**



For 23 sq. in. topworks, multiply supply pressure by 1.96.
For 62 sq. in. topworks, multiply supply pressure by 0.73.
Maximum trim size on valve with 23 sq. in. topworks is 1/2".

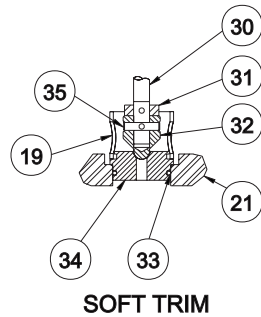
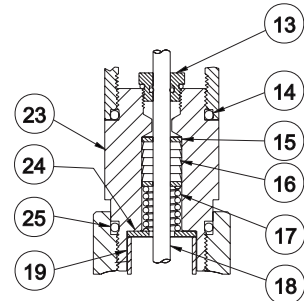
8100 Series Two Way, High Pressure Valve



Dimensions					
Size	1" - 23	1" - 45	1" - 62	2" - 45	2" - 62
A	9"	10 1/2"	13 1/16"	10 1/2"	13 1/16"
B	8 3/8"	11 1/8"	14 3/4"	11 3/8"	15"
C	2 1/8"	2 1/8"	2 1/8"	3 1/2"	3 1/2"
D	6 1/4"	6 1/4"	6 1/4"	7"	7"
E	7"	9 5/8"	11 3/4"	9 7/8"	12"

Flanged Models		
Flange	Face to Face	W.P. @ 100°F
1" 150# RF or RTJ	7"	275 psig
2" 150# RF or RTJ	7-1/2"	275 psig
1" 300# RF or RTJ	7-1/4"	720 psig
2" 300# RF or RTJ	7-7/8"	720 psig
1" 600# RF or RTJ	7-3/4"	1440 psig
2" 600# RF or RTJ	8-3/8"	1440 psig
1" 900# RF or RTJ	8-5/8"	2160 psig
2" 900# RF or RTJ	9-3/4"	2160 psig
1" 1500# RF or RTJ	8-5/8"	3600 psig
2" 1500# RF or RTJ	9-3/4"	3000 psig

Special Face to Face available on flanged and beveled connections.



CAUTION:
 Remove spring tension by backing off adjustment screw
 OR apply air pressure under diaphragm BEFORE removing
 topworks. Otherwise, trim will be damaged!

8100 Series
Two Way, High Pressure Valve

Model	23 sq. in. top	45 sq. in. top	62 sq. in. top			
Item	Part #	Part #	Part #	Description	Material	Qty
1	10209	10210	10213	Adjustment Screw	Plated	1
2	10177	10177	10182	Jam Nut	Plated	1
3	20673	20628	20602	Spring Retainer	Carbon Steel	1
4	10066	10075	10061	Spring	Oil Tempered Steel	1
5	10172	10172	10172	Lock Nut	Plated	1
6	23339	23339	23339	Vent Assembly	Plated	1
7	10748	10748	10748	Bushing	Plated	1
8	30043	30045	30051	Upper Diaphragm Housing	Fabricated Carbon Steel	1
9	20622	20696	20696	Diaphragm Plate	Cold Rolled Steel Plate	2
10	10100	10094	10028	Diaphragm	Nylon Reinforced Nitrile	1
11	10206	10207		Cap Screw	Plated	12
			10207	Cap Screw	Plated	16
12	10175	10175		Hex Nut	Plated	12
			10175	Hex Nut	Plated	16
13		21521	21521	Packing Gland Assembly	Brass/Nitrile	1
	10119			O-Ring	Nitrile	1
	10120			O-Ring Backup	TFE	2
14	10363	10149	10149	O-Ring	Nitrile	1
15	20694	20694	20694	Packing Follower	Brass	2
16	10159			Packing	Molythane	1
		10153	10153	Packing	TFE	1
17		10076	10076	Packing Spring	316 ss	1
18	20424	20697	20698	Stem, Hard Trim	303 ss	1
19	20606	20693	20693	Cage	Carbon Steel	1
20	See Trim Chart			Trim Set	See Chart	1
21	See Body Chart			Body	Cast Steel	1
22	30332	30056	30052	Lower Diaphragm Housing	Fabricated Carbon Steel	1
23	31104			Packing Block	303 ss	1
		30021	30021	Packing Block	Plated	1
24	20608			Packing Retainer	Carbon Steel	1
		10082	10082	Packing Retainer	Plated	1
25	10149	10149	10149	O-Ring	Nitrile	1
26	10346	10346	10346	Plug	Plated	1
27	30012	30049	30101	Upper Diaphragm Housing	Fabricated Carbon Steel	1
28	10076			Spring	316 ss	1
		10074	10061	Spring	Oil Tempered Steel	1
29	23338	23338	23338	Vent Assembly	Plated	1
30		21194	21343	Stem, Soft Trim	303 ss	1
31		20949	20949	Travel Stop	303 ss	1
32		See TrimChart		Plug, Soft Trim	See Chart	1
33		10128	10128	O-Ring	Nitrile	1
34		See Trim Chart		Seat	See Chart	1
35		10712	10712	Pin	18-8 ss	1
36	20607			Spacer	Carbon Steel	1
	10016	10016	10016	Name Plate (not shown)	18-8 ss	1
	10324	10324	10324	Drive Screw (not shown)	18-8 ss	2

Trim Chart - 8100 Series

Description	1/8"	1/4"	3/8"	1/2"	3/4"	1"
17-4 ss, Snap	20730	20731	20732	20733	20734	20735
17-4 ss, Throttling	20736	20737	20738	20739	20740	20741
Carbide, Snap	20742	20743	20744	20745	20746	
Carbide, Throttling		20749	20750	20751	20752	
Carbide K Coated, Snap	23767	23768	23769	23770	23771	23772
Carbide K Coated, Throttling	23779	23780	23781	23782	23783	23784
Acetal Plug, Snap		20779	20780	20781	20782	20783
Acetal Plug, Throttling		20797	20798	20799	20800	20801
Seat (for Soft Trim)		20755	20756	20757	20758	20759

Body Chart - 8100 Series

Description	1"	2"
NPT Threaded	30022	30023
Beveled for weld	30866	30019
Flanged, 150# RF	40912	40898
Flanged, 300# RF	40099	40104
Flanged, 600# RF	40100	40105
Flanged, 600# RTJ	40102	40107
Flanged, 1500# RF	40101	40106
Flanged, 1500# RTJ	40103	40108
<i>Other Flange Options. Contact Pathway.</i>		

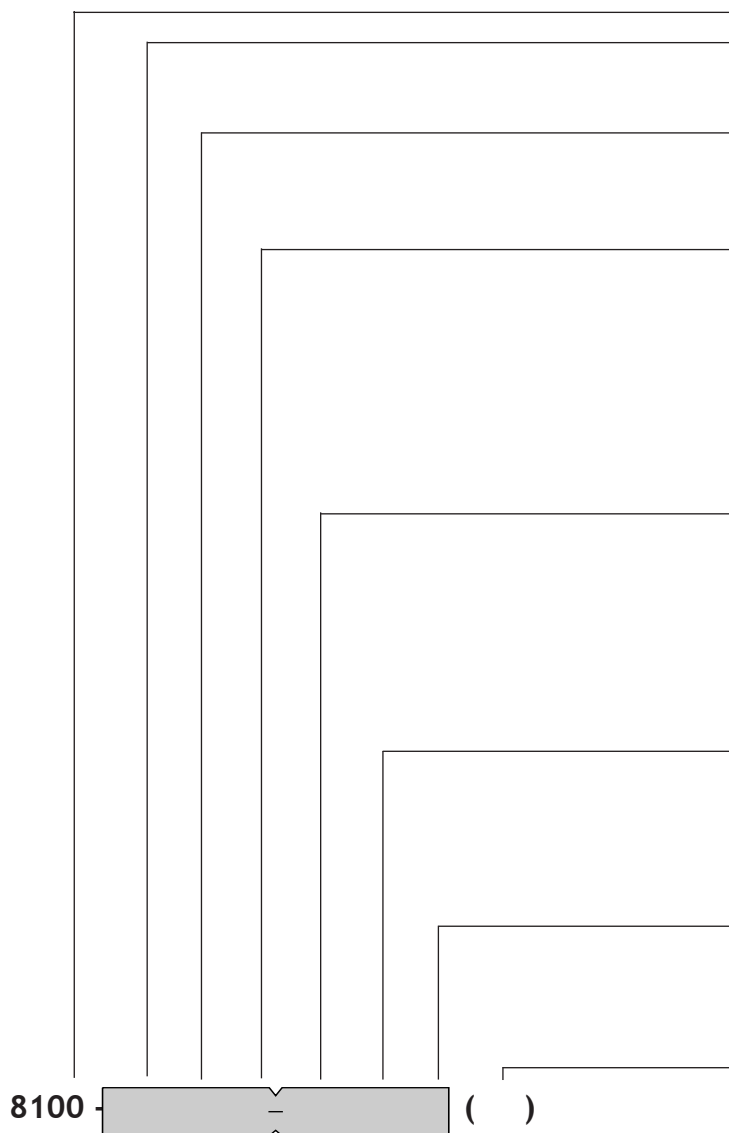
8100 Series

Two Way, High Pressure Valve

Specifications:

Size:	1" Tee Body	2" Tee Body
Working Pressure:	6000 psig (4000 psig on 23 sq. in. topworks)	3000 psig
Temperature:	-20°F to +180°F; available to +450°F	
Topworks:	Pressed steel with nylon reinforced nitrile diaphragm; 50 psig maximum supply pressure.	
Effective Area:	Choice of 23 sq. in., 45 sq. in. or 62 sq. in.	
C_v Factor - Orifice:	Angle	Globe
	Angle	Globe
1/4"	2.3	1.9
3/8"	4.6	4.2
1/2"	8.3	7.2
3/4"	15.0	12.8
1"	21.0	16.1
Trim:	17-4 PH stainless steel or carbide, snap acting or throttling	
Material:		
Body:	Cast steel	
Stem:	Stainless steel	
Packing:	TFE V	

Ordering Chart:



8100 Series, Two Way, High-Pressure Valve

- Size:**
- 1 - 1"
 - 2 - 2"
- Connection:**
- 1 - Threaded
 - 3 - Flanged, specify type*
 - 4 - Beveled for weld
- Topworks:**
- 1 - Spring top (45 sq. in.)
 - 2 - Spring under (45 sq. in.)
 - 3 - Pressure balanced (45 sq. in.)
 - 4 - Spring top (23 sq. in.) 4000 psig MWP
 - 6 - Spring top (62 sq. in.)
 - 7 - Spring under (62 sq. in.)
 - 8 - Pressure balanced (62 sq. in.)
 - 9 - Spring under (23 sq. in.) 4000 psig MWP
- Trim Type:**
- 1 - Snap acting (stainless steel)
 - 2 - Throttling (stainless steel)
 - 3 - Snap acting (carbide)
 - 4 - Throttling (carbide)
 - 5 - Options (specify your requirements)
 - 6 - Snap acting (carbide - K coating)
 - 7 - Throttling (carbide - K coating)
- Trim Size:**
- 1 - 1/4"
 - 2 - 3/8"
 - 3 - 1/2"
 - 4** - 3/4"
 - 6** - 1" (not available in carbide)
- Other:**
- 1 - No visual indicator
 - 2 - Visual indicator
 - 4 - Open yoke (high temperature)
 - 5 - Options (*see common options list*)
- Option Number:**
- () - Pathway will assign an option number based on specified requirements.

Example: 8100-111-121

*Flanged models available in 150# to 1,500# RF or RTJ. **8100-4**
** Not available on 23 sq. in. topworks.

D175 Series

Economical, Two Way, High Pressure, No Freeze Valve

Application:

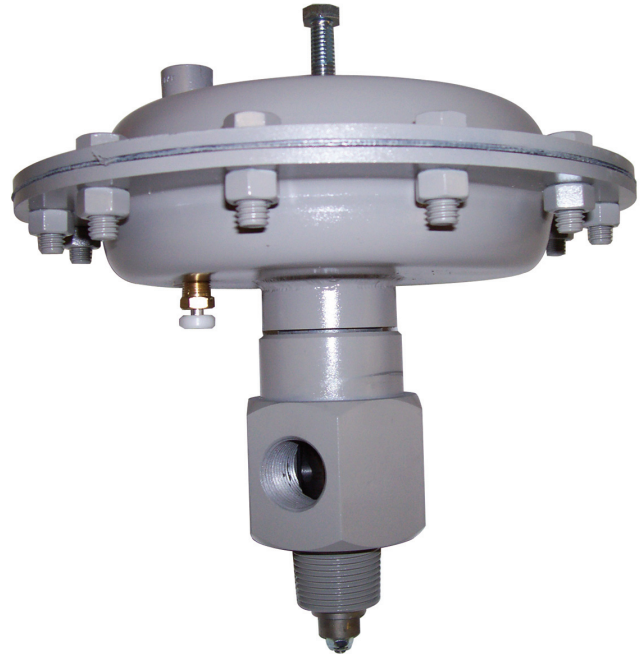
The D175 provides an economical high pressure, snap acting no freeze valve with big valve features. The valve comes standard with hardened 440C stainless steel plug and seat. In addition, the valve and valve trim can be repaired or replaced without having to remove the valve body from the vessel or the piping. The valve trim is positioned inside the vessel to benefit from the heat of the process, thereby reducing the possibility of freezing. The D175 No Freeze Valve is used on oil and gas separators, gas scrubbers, or any type of liquid accumulator equipment.

Operation:

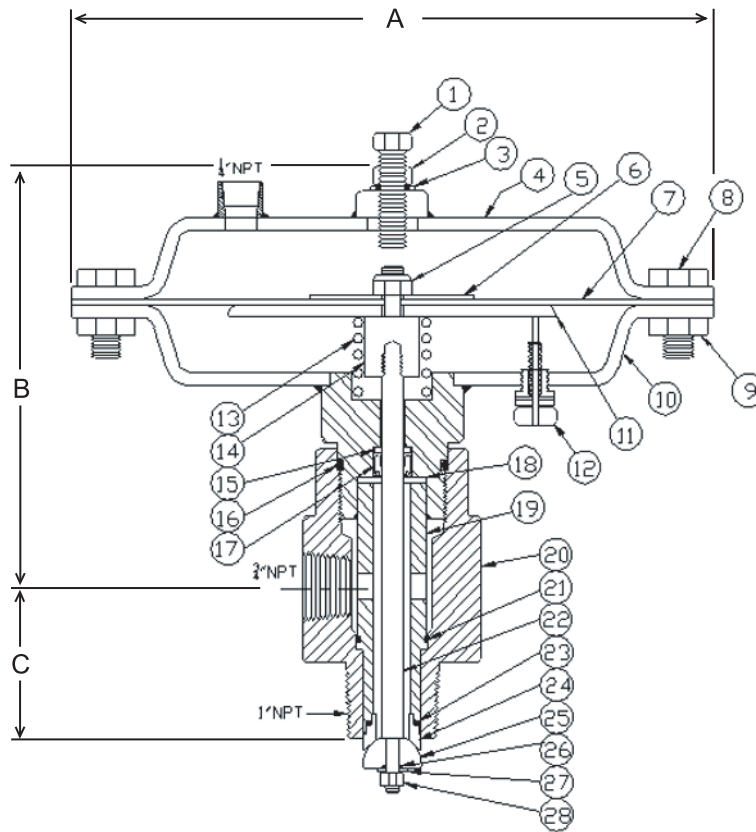
The spring in the topworks exerts a force on the bottom of the diaphragm pushing the plug into the seat. To open the valve, supply pressure is applied to the top side of the diaphragm. This pressure overcomes the spring force and the valve opens allowing flow through the valve. When supply pressure is removed, the spring closes the valve.

Features:

- Lower cost and longer field life.
- No-freeze design.
- Fail closed for safety.
- Rebuild and replace trim without removing body from piping system.
- Quality plug/seat material selections
- 2160 psig maop and shut off capability
- Affordable repair kits available



D175 Series
Economical, Two Way, High Pressure, No Freeze Valve



MODER D175-111-111 SHOWN

Dimensions for Standard Models

- A.....9"
- B.....5 3/4"
- C.....2 1/8"

D175 Series
Economical, Two Way, High Pressure, No Freeze Valve

Item	Part #	Description	Material	Qty
1.....	13288	Adjusting Screw	Plated Steel	1
2.....	10177	Jam Nut	Plated Steel	1
3.....	13289	Seal Washer	Plated Steel	1
4.....	31679	Upper Diaphragm Housing	Carbon Steel	1
5.....	10172	Lock Nut	Plated	1
6.....	25377	Upper Diaphragm Plate	Carbon Steel	1
7.....	10100	Diaphragm	Nylon Reinforced Nitrile	1
8.....	10206	Cap Screw	Plated Steel	12
9.....	10175	Hex Nut	Plated Steel	12
10.....	31677	Lower Diaphragm Housing	Carbon Steel	1
11.....	20622	Lower Diaphragm Plate	Carbon Steel	1
12.....	25396	Vent/Position Indicator	Brass/SS	1
13.....	13287	Spring	Music Wire	1
14.....	25372	Adaptor/Stop	303 SS	1
15.....	25373	Packing follower	Brass	1
16.....	10473	Oring, Packing Block	Nitrile	1
17.....	13286	Packing	Molythane	1
18.....	25374	Packing Retainer	Carbon Steel	1
19.....	25368	Cage	Carbon Steel	1
20.....	31676	Body	Carbon Steel	1
21.....	11093	Oring, Cage	Nitrile	1
22.....	25371	Stem	303 SS	1
23.....	10116	Oring, Seat	Nitrile	1
24.....	25369	Seat *	440C SS	1
25.....	25370	Plug *	440C SS	1
26.....	10105	Oring, Plug	Nitrile	1
27.....	13284	Washer	Plated	1
28.....	13285	Lock Nut	18-8 SS	1
.....	10016	Name Plate (<i>not shown</i>)	18-8 SS	1
.....	10324	Drive Screw (<i>not shown</i>)	18-8 SS	2

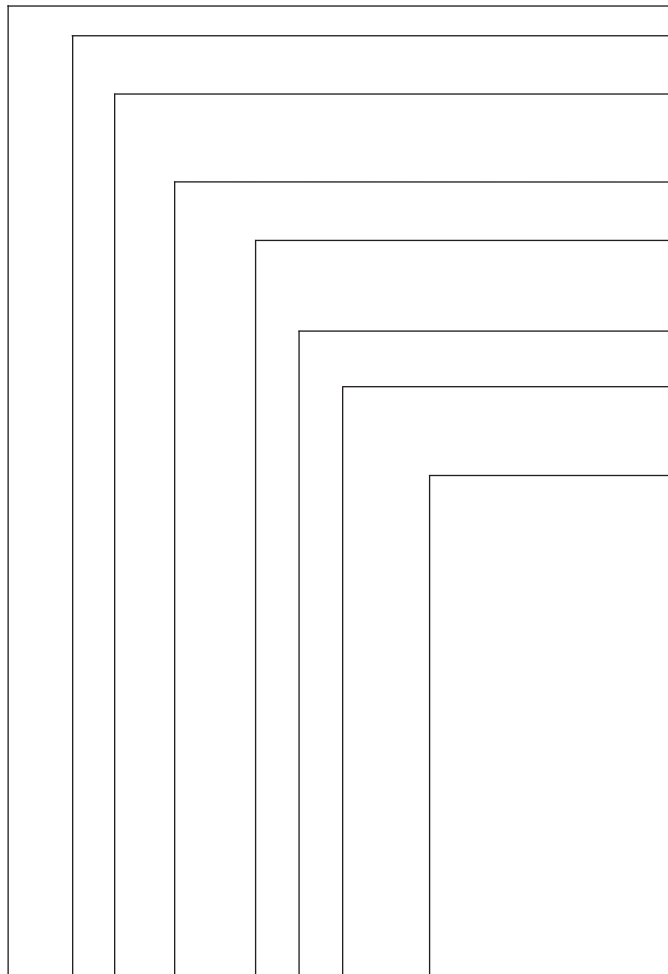
*Sold together as a set

D175 Series
Economical, Two Way, High Pressure, No Freeze Valve

Specifications:

Type:	D175
Size:	1" MNPT Inlet & 3/4" FNPT Outlet
Working Pressure:	2160 psig
Temperature:	-20°F to +180°F
Topworks:	Pressed steel with nylon reinforced nitrile diaphragm. 60 psig maximum supply pressure.
C _v Factor - Orifice:	4.2 1/2" (3/8 equiv.)
Trim:	440 C Stainless Steel Standard
Material:	
Body:	Steel or 316 Stainless Steel
Stem:	Stainless Steel
Packing:	Poly Pak

Ordering Chart:



- D175 Series: Two-way, no-freeze valve
- Body Type:
 - 2 - No freeze valve
- Connection:
 - 4 - 1" NPT Inlet & 3/4" FNPT Outlet, Carbon Steel Body
- Topworks:
 - 2 - 23 sq. in. pressed steel
- Trim Type:
 - 1 - Snap acting (440C stainless steel)
 - 5 - Options (specify your requirements)
- Trim Size:
 - 2 - 1/2" (3/8 equiv.)
- Other:
 - 2 - Visual indicator (std)
 - 5 - Options (specify your requirements)
- Option Number:
 - () - Pathway will assign an option number based on specified requirements.

Maximum Differential Pressure

Supply to Actuator (psig)	Max. Diff. Pressure (psig)
15	1000
20	1400
30	2160

D175 ()

Example: D175-242-122

400 Series Two Way, No-Freeze Valve and Angle Valve

Application:

These valves are used for snap acting on-off or throttling control of high pressure liquids or gas. Oil and gas separators, gas scrubbers or any liquid accumulators are a few applications. The no-freeze version has the trim on the inside of the vessel in direct contact with the process. This "heating process" prevents the fluid from freezing.

Operation:

The spring in the topworks exerts a force on the top of the diaphragm pushing the stem and plug onto the seat. To open the valve, supply pressure is applied under the diaphragm. This pressure overcomes the spring force and the valve opens allowing flow through the valve. When supply pressure is removed, the spring closes the valve.

Features:

- Lower cost and longer field life.
- Stainless steel body and wetted parts available.
- Topworks are available in three sizes to fit your application.
- No-freeze version for gas scrubbers.
- Fail closed for safety.



400 Series
Two Way, No-Freeze Valve and Angle Valve

Dimensions for Standard Models

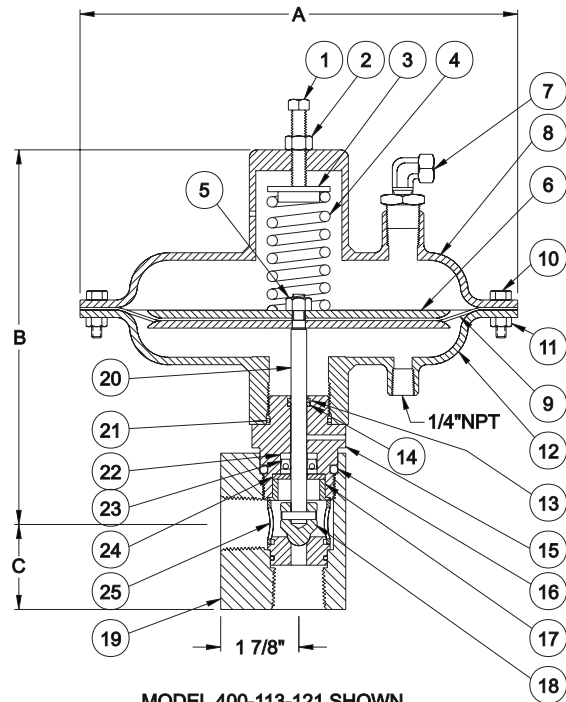
Model	400-113	400-111	400-112
A.....	10 1/2"	5 1/2"	9"
B.....	9 1/4"	6 7/8"	7 3/8"
C.....	2 1/8"	2 1/8"	2 1/8"

Trim Chart

1/4"	3/8"	1/2"	
Part #	Part #	Part #	Material
20731.....	20732.....	20733	Snap, 17-4 PH
20737.....	20738.....	20739	Throttling, 17-4 PH
20743.....	20744.....	20745	Snap, Carbide
20749.....	20750.....	20751	Throttling, Carbide
23768.....	23769.....	23770	Snap, Carbide-K
23780.....	23781.....	23782	Throttling, Carbide-K

CAUTION:

Remove spring tension by backing off adjustment screw OR apply air pressure under diaphragm BEFORE removing top-works. Otherwise, trim will be damaged!

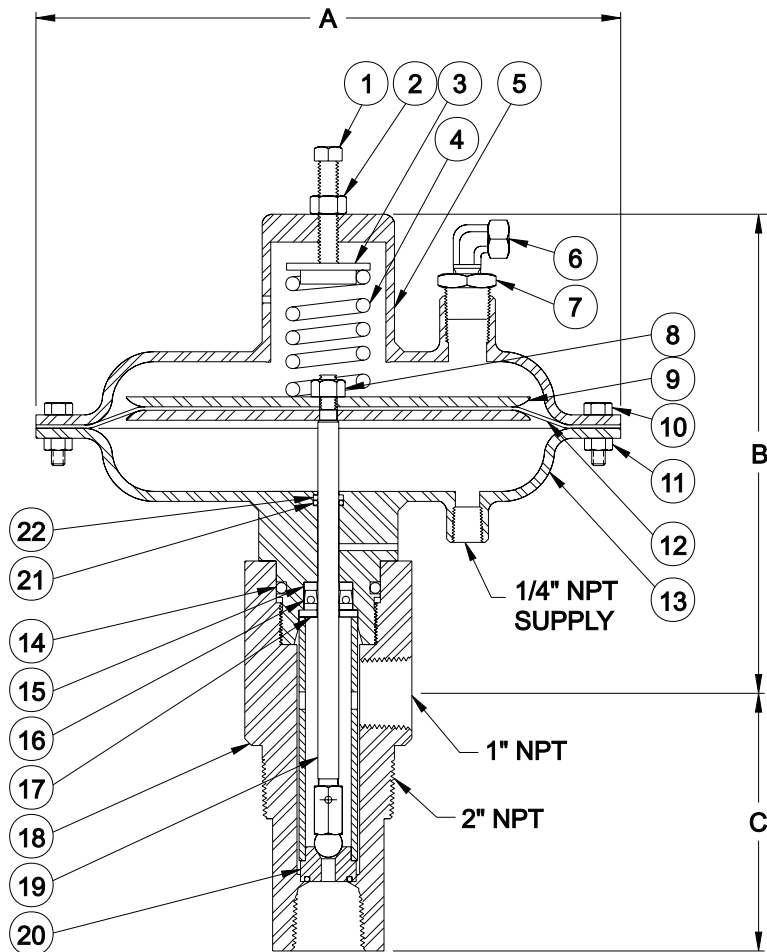


MODEL 400-113-121 SHOWN

Model 400-113 400-111 400-112

Item	Part #	Part #	Part #	Description	Material	Qty
1.....	10210	10209	10209	Adjustment Screw.....	Plated	1
2.....	10177	10177	10177	Jam Nut.....	Plated	1
3.....	20628	20473	20673	Spring Retainer.....	Carbon Steel	1
4.....	10075	10027	10066	Spring.....	Oil Tempered Steel	1
5.....	10172	10172	10172	Lock Nut.....	Nylok	1
6.....	20696	21101	20622	Diaphragm Plate.....	Cold Rolled Steel Plate	2
7.....	23339	23339	23339	Vent Assembly, Elbow.....	Plated	1
8.....	30045		30043	Upper Diaphragm Housing..	Fabricated Carbon Steel	1
		30199		Upper Diaphragm Housing..	Cast Iron.....	1
9.....	10094	10389	10100	Diaphragm	Nylon Reinforced Nitrile	1
10.....	10207		10206	Cap Screw	Plated	12
		10470		Cap Screw	Plated	8
11.....	10175		10175	Hex Nut	Plated	12
		10168		Hex Nut	Plated	8
12.....	30397		30332	Lower Diaphragm Housing..	Fabricated Carbon Steel	1
		30286		Lower Diaphragm Housing..	Cast Iron.....	1
13.....	10119	10119	10119	O-Ring	Nitrile.....	1
14.....	10120	10120	10120	Backup Ring.....	TFE.....	1
15.....	30284	30284	30284	Packing Block.....	Carbon Steel	1
16.....	10148	10148	10148	O-Ring.....	Nitrile.....	1
17.....	20607	20607	20607	Spacer.....	Carbon Steel	1
18.....	See Chart Above.....			Trim Set.....	See chart	1
19.....	30311	30311	30311	Body.....	Carbon Steel	1
20.....	20609	20424	20424	Stem	303 ss	1
21.....	10363	10363	10363	O-Ring	Nitrile.....	1
22.....	20694	20694	20694	Packing Follower	Brass	1
23.....	10159	10159	10159	Packing.....	Molythane	1
24.....	20608	20608	20608	Retainer.....	Carbon Steel	1
25.....	20606	20606	20606	Cage	Carbon Steel	1

400 Series
Two Way, No-Freeze Valve and Angle Valve



MODEL 400-223-121 SHOWN

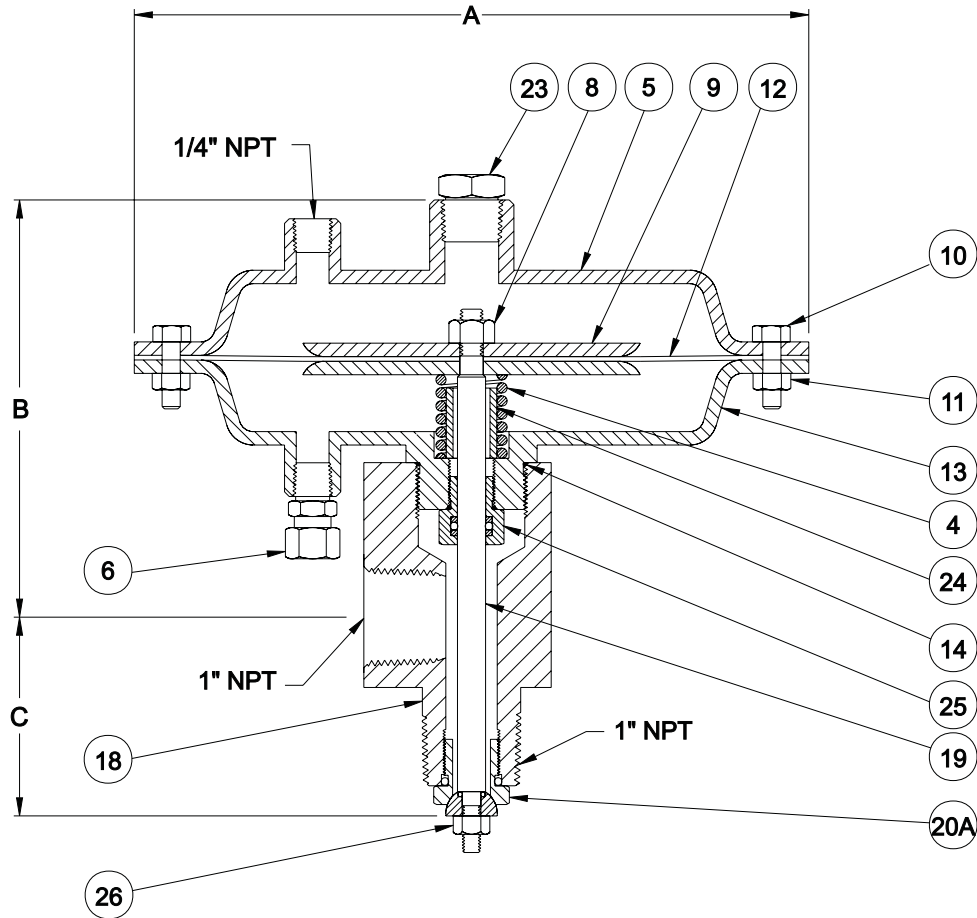
Dimensions for Standard Models:

Model	400-222	400-223
A.....	9"	10 1/2"
B.....	8 1/8"	8 5/8"
C.....	4 3/8"	4 3/8"

CAUTION:

Remove spring tension by backing off adjustment screw OR apply air pressure under diaphragm BEFORE removing topworks. Otherwise, trim will be damaged!

400 Series
Two Way, No-Freeze Valve and Angle Valve



MODEL 400-232-131 SHOWN

Dimensions for Standard Models

Model	400-231	400-232
A.....	5 1/2"	9"
B.....	4 9/16"	5 5/8"
C.....	2 11/16"	2 11/16"

400 Series

Two Way, No-Freeze Valve and Angle Valve

Model	400-222	400-223	400-231	400-232			
Item	Part #	Part #	Part #	Part #	Description	Material	Qty
1.....	10210.....	10210.....			Adjustment Screw.....	Plated.....	1
2.....	10177.....	10177.....			Jam Nut.....	Plated.....	1
3.....	20582.....	20628.....			Spring Retainer.....	Carbon Steel.....	1
4.....	10051.....	10075.....			Spring.....	Oil Tempered Steel.....	1
			10030.....	10030.....	Spring.....	Music Wire.....	1
5.....	30043.....	30045.....		30012.....	Upper Diaphragm Housing.....	Fabricated Carbon Steel....	1
			30343.....		Upper Diaphragm Housing.....	Cast Iron.....	1
6.....	23339.....	23339.....	23338.....	23338.....	Vent Assembly.....	Plated.....	1
7.....	10748.....	10748.....			Bushing.....	Plated.....	1
8.....	10172.....	10172.....	10172.....	10172.....	Lock Nut.....	Plated.....	1
9.....	20622.....	20696.....	21101.....	20622.....	Diaphragm Plate.....	Cold Rolled Steel Plate.....	2
10.....	10206.....	10207.....		10206.....	Cap Screw.....	Plated.....	12
			10470.....		Cap Screw.....	Plated.....	8
11.....	10175.....	10175.....		10175.....	Hex Nut.....	Plated.....	12
			10168.....		Hex Nut.....	Plated.....	8
12.....	10100.....	10094.....	10389.....	10100.....	Diaphragm.....	Nylon Reinforced Nitrile..	1
13.....	31381.....	30048.....		30334.....	Lower Diaphragm Housing.....	Fabricated Carbon Steel....	1
			30318.....		Lower Diaphragm Housing.....	Cast Iron.....	1
14.....	10148.....	10148.....	10473.....	10473.....	O-Ring.....	Nitrile.....	1
15.....	20694.....	20694.....			Packing Follower.....	Brass.....	2
16.....	10159.....	10159.....			Packing.....	Mohlythane.....	1
17.....	20366.....	20366.....			Packing Retainer.....	Carbon Steel.....	1
18.....	30066.....	30066.....	20488.....	20488.....	Body.....	Carbon Steel.....	1
19.....	20365.....	20365.....	20490.....	20547.....	Stem.....	303 ss.....	1
20A.....	20401.....	20401.....			Trim Set, 1/4".....	Nitrile/Stainless Steel.....	1
20B.....			21122.....	21122.....	Trim Set 1/2".....	Nitrile/Stainless Steel.....	1
20C.....	20402.....	20402.....			Trim Set, 3/8".....	Nitrile/Stainless Steel.....	1
21.....	10120.....	10120.....			Backup Ring.....	TFE.....	1
22.....	10119.....	10119.....			O-Ring.....	Nitrile.....	1
23.....			10346.....	10346.....	Plug.....	Plated.....	1
24.....			20501.....	20501.....	Travel Stop.....	Carbon Steel.....	1
25.....			21409.....	21409.....	Packing Gland Assembly.....	Nitrile.....	1
26.....			10170.....	10170.....	Lock Nut.....	18-8 ss.....	1
	10016.....	10016.....	10023.....	10023.....	Name Plate (not shown).....	18-8 ss.....	1
	10324.....	10324.....	10324.....	10324.....	Drive Screw (not shown).....	18-8 ss.....	2

CAUTION:

Prevent trim damage when removing topworks by first removing the trim plug. Extend plug by adding air pressure to top of diaphragm, remove plug nut and plug, release air pressure, and unscrew topworks. Alternative procedure - remove actuator housing bolts and the top half of actuator housing. Prevent the plug from rotating by grasping the diaphragm plate and diaphragm plate nut, and remove the plug retaining nut and the plug. Remaining half of the topworks can then be removed.

400 Series

Two Way, No-Freeze Valve and Angle Valve

Specifications:

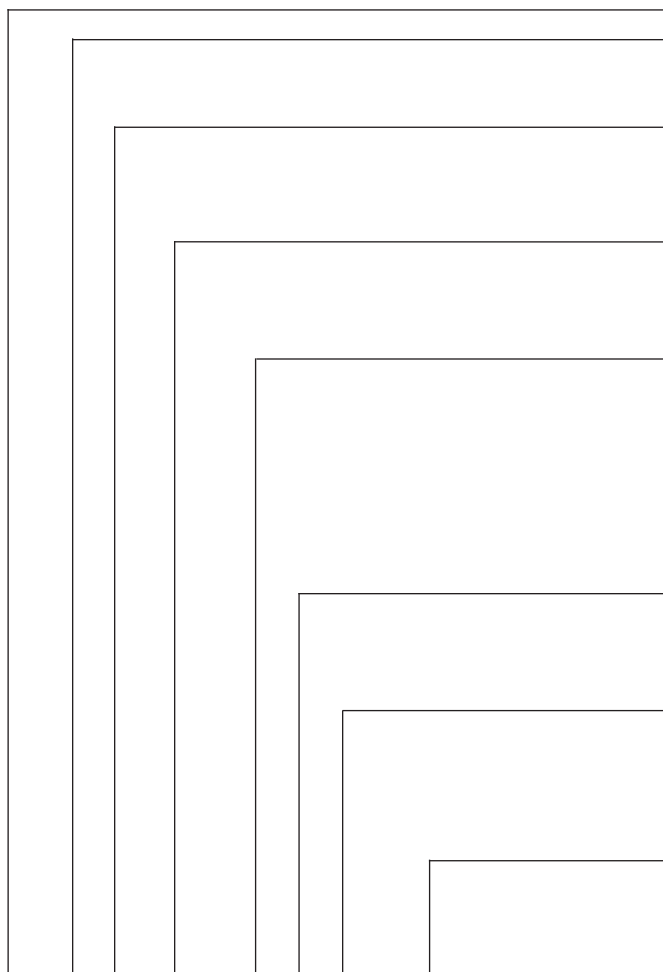
Type:	400-1	400-22	400-23
Size:	1" FNPT Inlet & Outlet	See Below	See Below
Working Pressure:	4000 psig	4000 psig	1500 psig
Temperature:	-20°F to +180°F, available to +240° F		
Topworks:	Cast iron or pressed steel with nylon reinforced nitrile diaphragm. 50 psig maximum supply pressure.		

C_v Factor - Orifice:

1/4"	2.2	2.0
3/8"	4.6	4.4
1/2"	8.4	3.5

Trim:	17-4 PH Stainless Steel, Carbide, or Carbide K coating.
Material:	
Body:	Steel or T316 Stainless Steel
Stem:	Stainless Steel
Packing:	Poly Pak

Ordering Chart:



- 400 Series: Two-way, no-freeze and angle valve**
- Body Type:**
- 1 - Angle valve*
 - 2 - No freeze valve**
- Connection:**
- 1 - 1" FNPT Inlet & Outlet, *Body Type 1*
 - 2 - 2" MNPT vessel, 1" FNPT Outlet, *Body Type 2*
 - 3 - 1" MNPT Inlet, 1" FNPT Outlet, *Body Type 2*
- Topworks:**
- 1 - 9 sq. in. cast iron
 - 2 - 23 sq. in. pressed steel
 - 3 - 45 sq. in. pressed steel
- Trim Type:**
- 1 - Snap acting (stainless steel)
 - 2 - Throttling (stainless steel) ***
 - 3 - Snap acting (carbide) ***
 - 4 - Throttling (carbide) ***
 - 5 - Options (*see common options list*)
 - 6 - Snap acting (carbide K coating) ***
 - 7 - Throttling (carbide K coating) ***
- Trim Size:**
- 1 - 1/4"
 - 2 - 3/8"
 - 3 - 1/2"
- Other:**
- 1 - No visual indicator
 - 2 - Visual indicator
 - 5 - Options (*see common options list*)
 - 6 - Stainless steel body & wetted parts
- Option Number:**
- () - Pathway will assign an option number based on specified requirements.

400- - ()
Example: 400-111-111

Notes:

1. Visual indicator not available on valves with Topworks #1.
2. Model 400-22 available only with Topworks #2 & #3 and with Trim Type #1, Trims Size #1 & #2.
3. Model 400-23 available only with Trim Type #1 and Trim Size #3.

- * 111 Maximum differential pressure = 1000 psi
- ** 231 Maximum differential pressure = 700 psi
- *** 232 Maximum differential pressure = 1500 psi
- *** Available only with the two-way valve body Type 1

8900 Series Two Way, Over-Balanced Valve

Application:

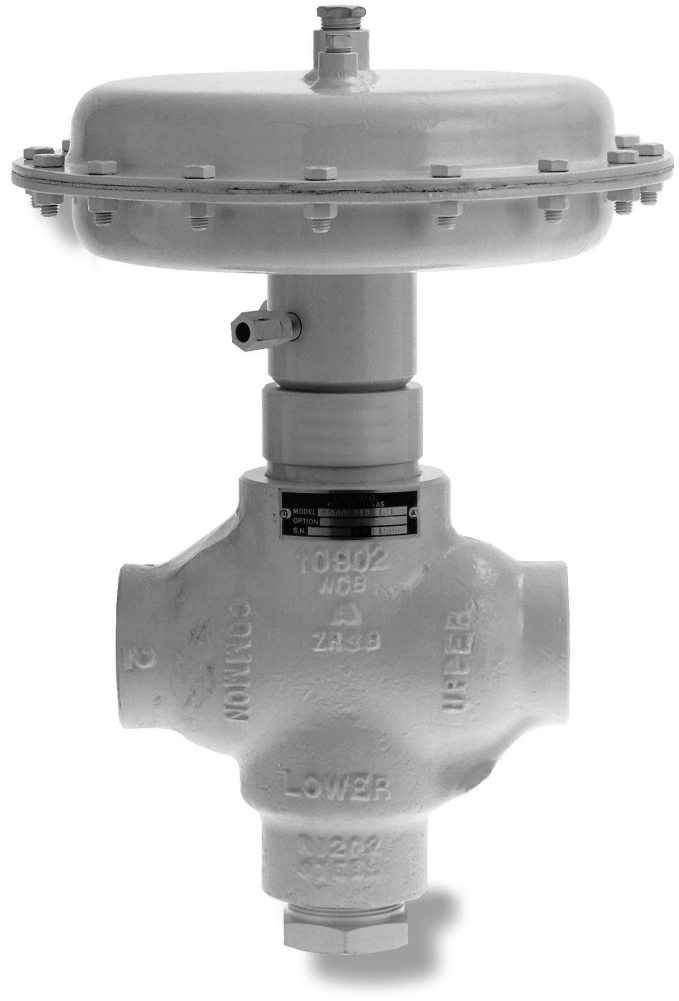
This valve is used when bubble tight shut off is required on high differential pressures. The 8900 Series replaces high pressure, double ported valves and provides positive closure. Commonly used for shutting in of oil or gas wells. Two inch available in 316L stainless steel body.

Operation:

Upstream pressure is applied to the plug and the piston. The piston has a larger effective area than the plug so line pressure keeps the valve closed. When supply pressure is applied on top of the diaphragm, the valve opens. Removing supply pressure allows the line pressure to move the piston up. This process closes the valve. Supply pressure can be controlled using a solenoid valve, pressure pilot or other signal devices.

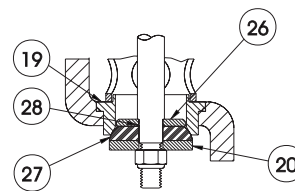
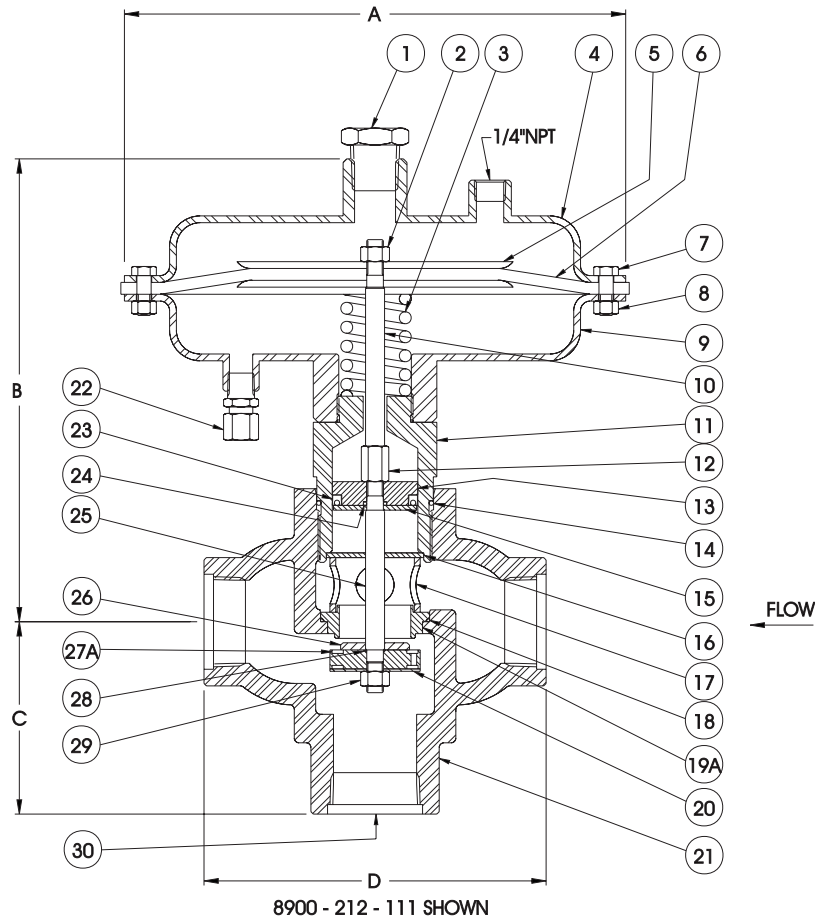
Features:

- Fails closed at high pressure without depending on an internal spring provides added safety.
- All internal parts can be removed without taking the valve body from the line.
- Stainless steel stem, piston housing and seat provides longer field life.
- Available in 2" - 316L stainless steel body to CF8M specifications.
- Soft trim provides bubble tight shut off.



8900 Series

Two-Way, Over-Balanced Valve



RADIUS PLUG

Flanged Models

Flange	Face to Face	W.P. @ 100°F
1" 150# RF or RTJ	6 3/4"	275 psig
2" 150# RF or RTJ	9 5/8"	275 psig
1" 300# RF or RTJ	6 3/4"	720 psig
2" 300# RF or RTJ	10 1/4"	720 psig
1" 600# RF or RTJ	6 3/4"	1440 psig
2" 600# RF or RTJ	10 3/8"	1440 psig
1" 900# RF or RTJ	7 1/4"	1500 psig
2" 900# RF or RTJ	12"	1500 psig
1" 1500# RF or RTJ	7 1/4"	1500 psig
2" 1500# RF or RTJ	12"	1500 psig

Dimensions

Size	1"	2"
A	10 1/2"	13 1/16"
B	11 7/8"	12 1/2"
C	3 1/8"	5 1/16"
D	6 1/4"	9"

Special Face to Face available on flanged and beveled connections.

8900 Series
Two-Way, Over-Balanced Valve

Model Item	1" Part #	2" Part #	Description	Material	Qty
1.....	10346.....	10346.....	Pipe Plug.....	Plated.....	1
2.....	10172.....	10172.....	Lock Nut.....	Plated.....	1
3.....	10074.....	10043.....	Spring.....	Carbon Steel.....	1
4.....	30049.....	30101.....	Upper Diaphragm Housing.....	Fabricated Carbon Steel.....	1
5.....	20696.....	20696.....	Diaphragm Plate.....	Cold Rolled Steel Plate.....	2
6.....	10094.....	10028.....	Diaphragm.....	Nitrile.....	1
7.....	10207.....	10207.....	Cap Screw.....	Plated.....	12
8.....	10175.....	10175.....	Hex Nut.....	Plated.....	16
9.....	30056.....	30052.....	Lower Diaphragm Housing.....	Fabricated Carbon Steel.....	1
10.....	20717.....	20328.....	Upper Stem.....	303 ss.....	1
11.....	30059.....	30091.....	Piston Housing.....	303 ss.....	1
12.....	20716.....	20716.....	Stem Connector.....	303 ss.....	1
13.....	20715.....	20336.....	Piston.....	Brass.....	1
14.....	10149.....	10140.....	O-Ring.....	Nitrile.....	1
15.....	20714.....	20337.....	Piston Retainer.....	Brass.....	1
16.....	20713.....	10367.....	Travel Stop.....	Carbon Steel.....	1
17.....	20712.....	20666.....	Cage.....	Carbon Steel.....	1
18.....	10134.....	10132.....	O-Ring.....	Nitrile.....	1
19.....	20514.....	20331.....	Seat, Radius Plug.....	303 ss.....	1
19A.....	20699.....	20330.....	Seat, Molded Nitrile Plug.....	303 ss.....	1
20.....	20719.....	20325.....	Back Up Plate.....	303 ss.....	1
20A.....	20711.....	20327.....	Back-Up Plate, Molded Nitrile Plug.....	Carbon Steel.....	1
21.....	See Chart Below.....	.....	Body.....	Cast Steel.....	1
22.....	23338.....	23338.....	Vent Assembly.....	Plated.....	1
23.....	10160.....	10161.....	Packing.....	Molythane.....	1
24.....	10121.....	10121.....	O-Ring.....	Nitrile.....	1
25.....	20319.....	20332.....	Lower Stem.....	303 ss.....	1
26.....	20471.....	20338.....	Plug Retainer.....	303 ss.....	1
27.....	21599.....	20329.....	Plug.....	Polyurethane, Radius Plug.....	1
.....	20718.....	21150.....	Plug.....	Acetal, Radius Plug.....	1
.....	.....	23747.....	Plug.....	Glass filled TFE, Radius Plug.....	1
27A.....	20710.....	20326.....	Plug.....	Molded Nitrile.....	1
28.....	10111.....	10111.....	O-Ring.....	Nitrile.....	1
29.....	10181.....	10181.....	Lock Nut.....	18-8 ss.....	1
30.....	10224.....	10225.....	Pipe Plug (not shown).....	Carbon Steel.....	1
.....	10016.....	10016.....	Name Plate (not shown).....	18-8 ss.....	1
.....	10324.....	10324.....	Drive Screw (not shown).....	18-8 ss.....	2

Body Chart

1" Part #	2" Part #	Description	1" Part #	2" Part #	Description
30120.....	40068.....	NPT Threaded	40129.....	40145.....	Flanged, 600# RTJ
30121.....	40065.....	Beveled for weld	40126.....	40142.....	Flanged, 1500# RF
40464.....	43715.....	Flanged, 150# RF	40129.....	40148.....	Flanged, 1500# RTJ
40120.....	40136.....	Flanged, 300# RF	<i>Other flange options available, contact Pathway.</i>		
40123.....	40139.....	Flanged, 600# RF			

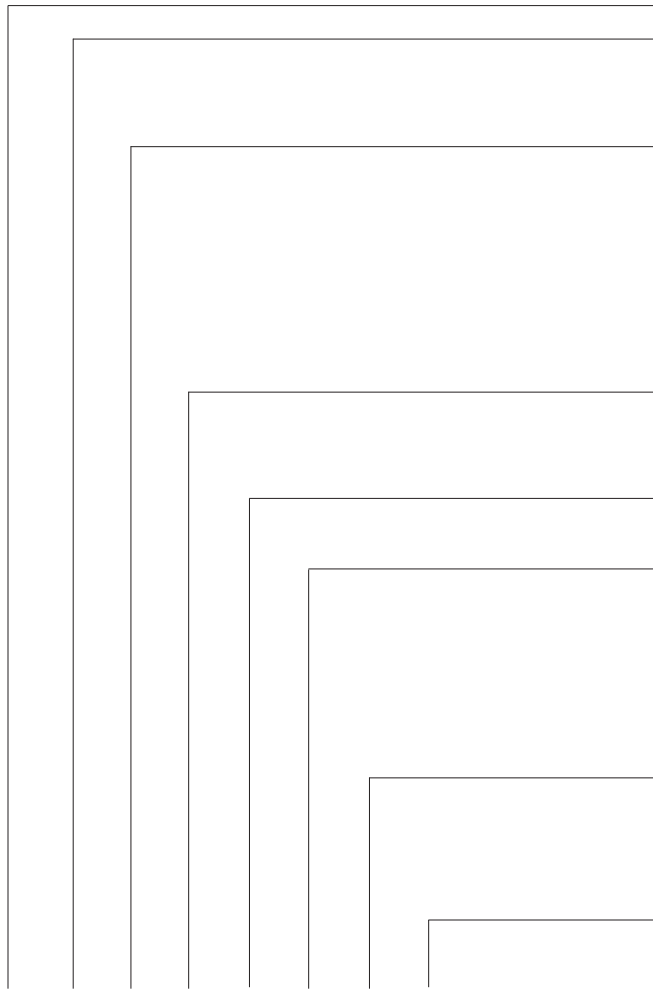
8900 Series

Two-Way, Over-Balanced Valve

Specifications:

Size:	<u>1" Tee Body</u>	<u>2" Tee Body</u>
Working Pressure:	1500 psig	1500 psig
Temperature:	-20°F to +180°F; available to +240°F	
Topworks:	Pressed steel with nylon reinforced nitrile diaphragm. 50 psig maximum supply pressure.	
Effective Area:	45 sq. in.	62 sq. in.
C_v Factor :	18	48
Trim:		
Seat:	Stainless steel, removable.	
Plug:	Steel with molded nitrile standard; optional fabricated acetal, polyurethane or TFE inserts.	
Material:		
Body:	Cast steel standard, available in 316L stainless steel (2" size)	
Stem:	Stainless steel	
Packing:	Poly Pak	
Packing Block:	Stainless steel	

Ordering Chart:



8900 Series: Two-way, over-balanced valve

Size:

- 1 - 1"
- 2 - 2"

Connection:

- 1 - Threaded (cast steel)
- 3 - Flanged (cast steel) specify type*
- 4 - Beveled for weld (cast steel)
- 6 - 2" threaded 316L ss (CF8M)
- 8 - 2" flanged 316 ss (CF8M) specify type*
- 9 - 2" beveled for weld, 316L ss (CF8M)

Topworks:

- 1 - Fail "open"
- 2 - Fail "closed"

Trim Seat:

- 1 - Removable, stainless steel

Trim Plug:

- 1 - Nitrile
- 2 - Acetal
- 3 - Polyurethane
- 4 - TFE plug (fluorocarbon o-rings)
- 5 - Options (*see common options list*)

Other:

- 1 - No visual indicator
- 2 - Visual indicator
- 5 - Options (*see common options list*)

Option Number:

- () - Pathway will assign an option number based on specified requirements.

**flanged models available in 150# to 1,500# RF or RTJ.*

8900- ()

Example: 8900-211-212

304 Series Three-Way, Two Position, Low Pressure Valve

Application:

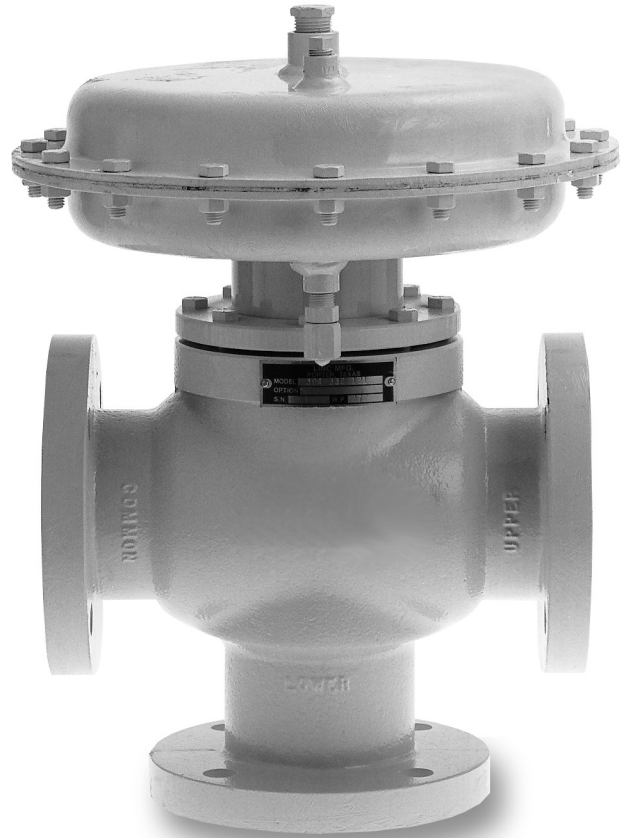
This valve is used for diverting, blending or metering. One port is common while a plug travels from the lower to the upper seat to divert the flow between the upper and lower ports. Ideal for well test manifolds, metering skids and anywhere a diverting flow is required.

Operation:

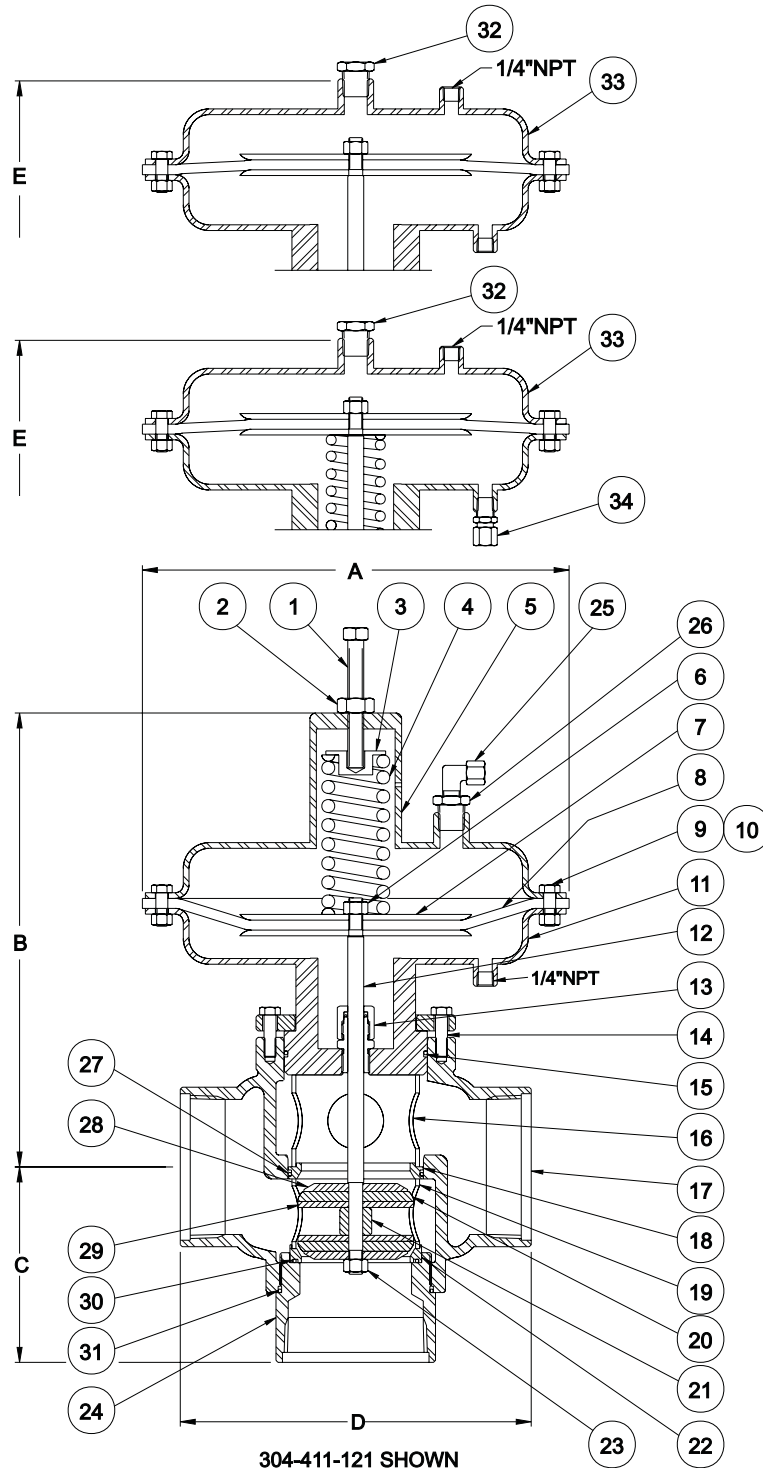
Applying supply pressure to the diaphragm causes the stem and plug to move from the upper to the lower seat, diverting flow. When supply pressure is removed, the spring moves the stem and plug to the upper seat. Topworks are available with the spring in the top position, spring under or pressure balanced providing a choice of which port is normally closed. The valve may also be used with a hydraulic electric actuator.

Features:

- Long packing life provided due to stainless steel stem operating in a replaceable bushing.
- Stainless steel seats are removable for easier servicing.
- Soft trim for bubble tight shut off.
- Durability and dependability built into every component.



304 Series
Three-Way, Two Position, Low Pressure Valve



304 Series
Three-Way, Two Position, Low Pressure Valve

Model	2"	3"	4"			
Item	Part #	Part #	Part #	Description	Material	Qty
1.....	10213	10213	10213	Adjustment Screw.....	Plated.....	1
2.....	10182	10182	10182	Jam Nut.....	Plated.....	1
3.....	20602	20602	20602	Spring Retainer.....	Carbon Steel.....	1
4.....	10043	10060	10060	Spring.....	Oil Tempered Steel.....	1
5.....	30051	30051	30051	Upper Diaphragm Housing.....	Fabricated Carbon Steel.....	1
6.....	10180	10180	10180	Lock Nut.....	Plated.....	1
7.....	30071	30071	30071	Diaphragm Plate.....	Cold Rolled Steel Plate.....	2
8.....	10028	10028	10028	Diaphragm.....	Nylon Reinforced Nitrile.....	1
9.....	10207	10207	10207	Cap Screw.....	Plated.....	16
10.....	10175	10175	10175	Hex Nut.....	Plated.....	16
11.....	30100	30050	30050	Lower Diaphragm Housing.....	Fabricated Carbon Steel.....	1
12.....	20589	20590	20594	Stem.....	303 ss.....	1
13.....	21348	21348	21348	Packing Gland Assembly.....	Brass/Nitrile.....	1
14.....	10205	10207	10207	Cap Screw.....	Plated.....	8
15.....	10142	10147	10147	O-Ring.....	Nitrile.....	1
16.....	20592	20591		Upper Cage.....	304 ss.....	1
		20593		Upper Cage.....	Carbon Steel.....	1
17.....	40070	40069	40090	Body, Threaded.....	Ductile ASTM A395.....	1
17B.....	40072	40071	40089	Body, Grooved.....	Ductile ASTM A395.....	1
17C.....	50024	50025	40088	Body, Flanged, 150# RF.....	Ductile ASTM A395.....	1
17D.....	50030	50084	N/A	Body, Flanged, 300# RF.....	Ductile ASTM A395.....	1
18.....	20585	20245	20595	Upper Seat.....	303 ss.....	1
19.....	20592	20247		Lower Cage.....	304 ss.....	1
		20599		Lower Cage.....	Carbon Steel.....	1
20A.....	20587	20249	20597	Plug.....	Polyurethane.....	2
20B.....	21149	21104	21471	Plug.....	Acetal.....	2
20C.....	23429	22307	22722	Plug.....	Glass filled TFE.....	2
21.....	20588	20248	20601	Plug Spacer.....	303 ss.....	1
22.....	20584	20246	20600	Lower Seat.....	303 ss.....	1
23.....	10181	10181	10181	Lock Nut.....	18-8 ss.....	1
24.....			30104	Connector, Threaded.....	Carbon Steel.....	1
24B.....			30103	Connector, Grooved.....	Carbon Steel.....	1
25.....	23339	23339	23339	Vent Assembly.....	Plated.....	1
26.....	10748	10748	10748	Bushing.....	Plated.....	1
27.....	10141	10146	10146	O-Ring.....	Nitrile.....	1
28.....	20586	20583	20598	Plug Retainer.....	303 ss.....	2
29.....			20596	Plug Backup Plate.....	303 ss.....	2
30.....	10137	10143	10981	O-Ring.....	Nitrile.....	1
31.....			11064	O-Ring.....	Nitrile.....	1
32.....	10346	10346	10346	Plug.....	Plated.....	1
33.....	30101	30101	30101	Upper Diaphragm Housing.....	Fabricated Carbon Steel.....	1
34.....	23338	23338	23338	Vent Assembly.....	Plated.....	1
	10016	10016	10016	Name Plate (not shown).....	18-8 ss.....	1
	10324	10324	10324	Drive Screw (not shown).....	18-8 ss.....	2

Flanged Models

Flange	Face to Face	CL to Face	W.P. @100°F
2" 150# RF.....	9"	4 1/2"	275 psig
3" 150# RF.....	11 3/4"	6 1/2"	275 psig
4" 150# RF.....	11"	6 1/8"	275 psig
2" 300# RF.....	9 1/4"	4 5/8"	600 psig
3" 300# RF.....	12"	6 3/4"	300 psig

Dimensions

Size	2"	3"	4"
A.....	13 1/16"	13 1/6"	13 1/16"
B.....	11 3/4"	13 1/2"	13 7/8"
C.....	4 1/2"	5 3/8"	6 1/8"
D.....	9"	10 3/4"	11"
E.....	9 3/4"	10 1/2"	10 7/8"

304 Series

Three-Way, Two Position, Low Pressure Valve

Specifications:

Size:	2"	3"	4"
Working Pressure:	600 psig	300 psig	300 psig
Temperature:	-20°F to +180°F, std.; available to +240°F		
Topworks:	Pressed steel with nylon reinforced nitrile diaphragm. 50 psig maximum supply pressure.		
Effective Area:	62 sq. in.	62 sq. in.	62 sq. in.
C_v Factor:			
C to U	48	118	180
C to L	64	189	227
Trim:			
Seat:	Stainless steel, removable.		
Plug:	Fabricated acetal, polyurethane or TFE inserts.		
Material:			
Body:	Ductile standard		
Stem:	Stainless steel		
Packing:	Poly Pak		

Ordering Chart:

304 Series: Three-way, two position valve

Size:

- 1 - 1"
- 2 - 2"
- 3 - 3"
- 4 - 4"

Connection:

- 1 - Threaded
- 2 - Grooved
- 3 - Flanged, specify type*

Topworks:

- 1 - Spring top (62 sq. in.)
- 2 - Spring under (62 sq. in.)
- 3 - Pressure balanced (62 sq. in.)
- 6 - Spring top (45 sq. in.)
- 7 - Spring under (45 sq. in.)
- 8 - Pressure balanced (45 sq. in.)

Trim Seat:

- 1 - Removable, stainless steel

Trim Plug:

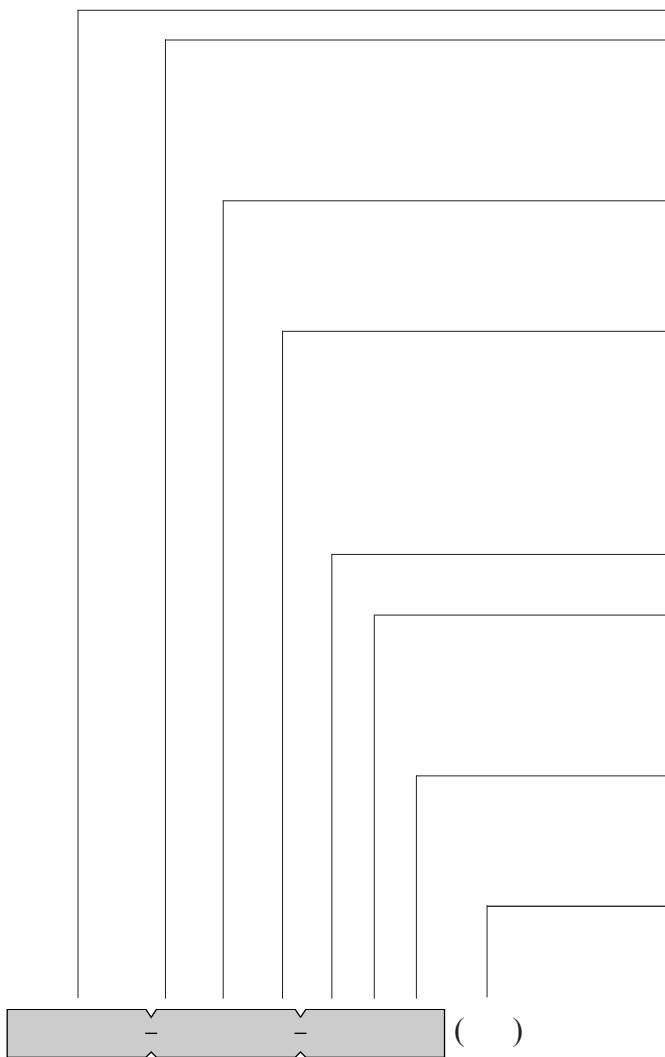
- 2 - Acetal
- 3 - Polyurethane
- 4 - TFE plug (fluorocarbon o-rings)
- 5 - Other (see common options list)

Other:

- 1 - No visual indicator
- 2 - Visual indicator
- 5 - Options (see common options list)

Option Number:

- () - Pathway will assign an option number based on specified requirements.



Example: 304-211-121

*flanges available
2"-150# or 300# RF, 3"-150# or 300# RF, 4"-150# RF

8500 Series Three-Way, Two Position, High Pressure Valve

Application:

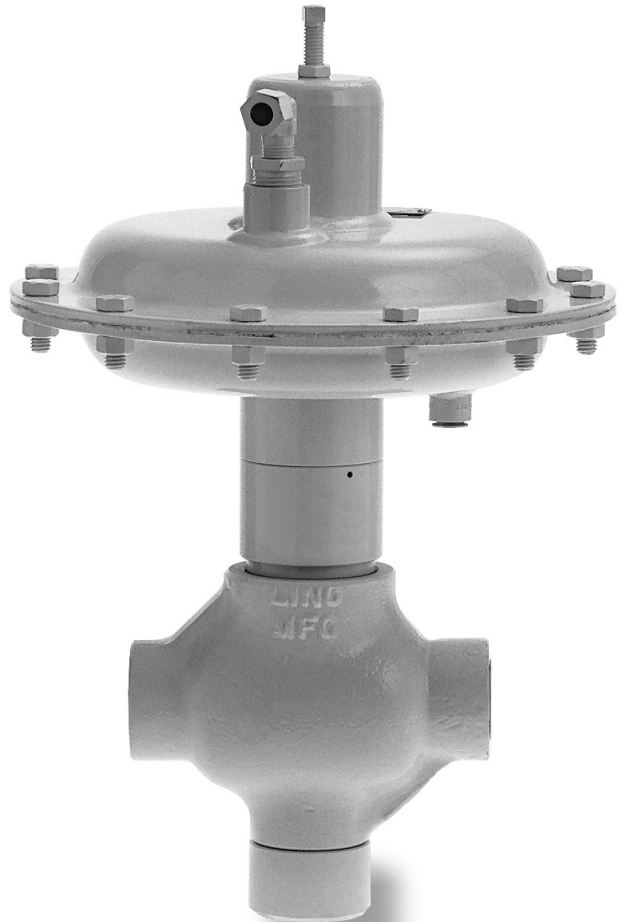
This valve is used for diverting, blending or metering. One port is common while a plug travels from the lower to the upper seat to divert the flow between the upper and lower ports. Ideal for well test manifolds and other high pressure applications. Available in a 2" 316L stainless steel body.

Operation:

Applying supply pressure to the diaphragm causes the stem and plug to move from the upper to the lower seat, diverting flow. When supply pressure is removed, the spring moves the stem and plug to the upper seat. Topworks are available with the spring in the top position, spring under or pressure balanced providing a choice of which port is normally closed. This valve may also be used with a hydraulic electric actuator.

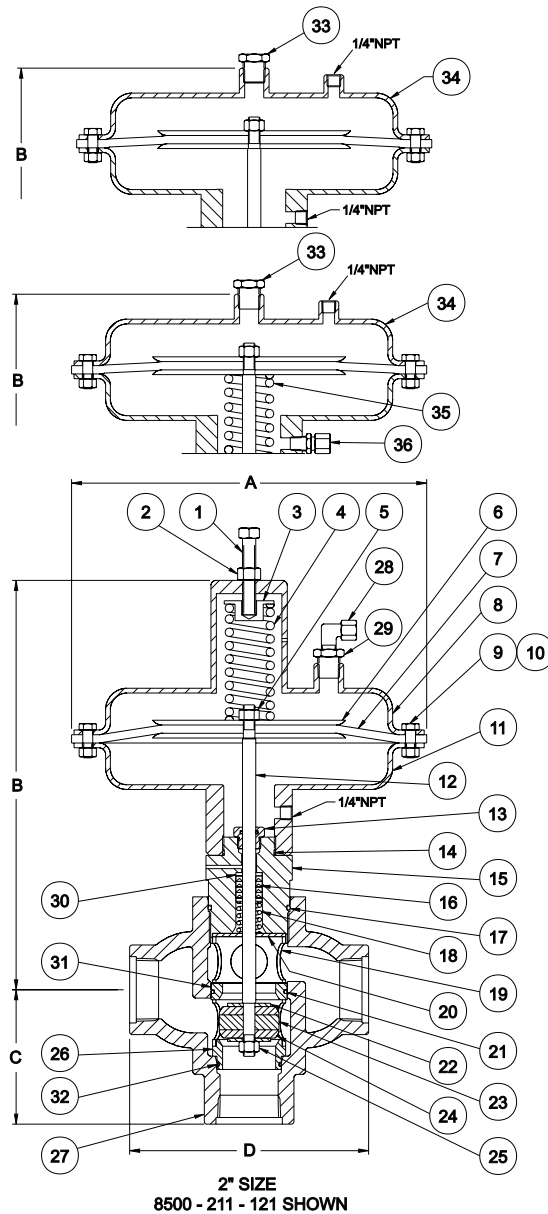
Features:

- Long packing life provided due to stainless steel stem operating in a replaceable bushing.
- Available in a 2" 316L stainless steel body to CF8M specification.
- Stainless steel seats are removable for easier servicing.
- Soft trim for bubble tight shut off.
- Durability and dependability built into every component.



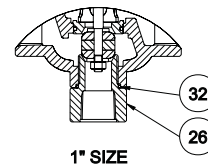
8500 Series

Three-Way, Two Position, High Pressure Valve



Dimensions

Size	1"	2"
A	10 1/2"	13 1/16"
B	11 1/8"	15 1/4"
C	3 7/8"	5 1/8"
D	6 1/4"	9"
E	9 5/8"	12 1/4"



Flanged Models

Flange	Face to Face	CL to Face	W.P. @ 100°F
1" 150# RF or RTJ	7"	4 1/4"	275 psig
1" 300# RF or RTJ	7 1/4"	4 1/2"	720 psig
1" 600# RF or RTJ	7 3/4"	4 1/2"	1440 psig
1" 900# RF or RTJ	8 5/8"	5"	2160 psig
1" 1500# RF or RTJ	8 5/8"	5"	3600 psig
2" 150# RF or RTJ	9 5/8"	5 5/8"	275 psig
2" 300# RF or RTJ	10 1/4"	5 5/8"	720 psig
2" 600# RF or RTJ	10 3/8"	5 1/2"	1440 psig
2" 900# RF or RTJ	12"	6 3/4"	2160 psig
2" 1500# RF or RTJ	12"	6 3/4"	3000 psig

Special Face to Face available on flanged and beveled connections.

8500 Series
Three-Way, Two Position, High Pressure Valve

Model 1"	2"				
Item	Part #	Part #	Description	Material	Qty
1.....	10210	10213	Adjustment Screw.....	Plated.....	1
2.....	10177	10182	Jam Nut.....	Plated.....	1
3.....	20628	20602	Spring Retainer.....	Carbon Steel.....	1
4.....	10075	10061	Spring.....	Oil Tempered Steel.....	1
5.....	10172	10180	Lock Nut.....	Plated.....	1
6.....	20696	30071	Diaphragm Plate.....	Cold Rolled Carbon Steel Plate.....	2
7.....	10094	10028	Diaphragm.....	Nylon Reinforced Nitrile.....	1
8.....	30045	30051	Upper Diaphragm Housing.....	Fabricated Carbon Steel.....	1
9.....	10207		Cap Screw.....	Plated.....	12
9.....		10207	Cap Screw.....	Plated.....	16
10.....	10175		Hex Nut.....	Plated.....	12
10.....		10175	Hex Nut.....	Plated.....	16
11.....	30056	30052	Lower Diaphragm Housing.....	Fabricated Carbon Steel.....	1
12.....	21229	20610	Stem.....	303 ss.....	1
13.....	21521	21539	Packing Gland Assembly.....	Brass/Nitrile.....	1
14.....	10149	10149	O-Ring.....	Nitrile.....	1
15.....	30021		Packing Block.....	Plated.....	1
.....		20611	Packing Block.....	303 ss.....	1
16.....	10153	10154	Packing.....	TFE.....	1
17.....	10149	10140	O-Ring.....	Nitrile.....	1
18.....	10076	10076	Packing Spring.....	316 ss.....	1
19.....	20701		Cage.....	Carbon Steel.....	1
19.....		20614	Cage.....	304 ss.....	2
20.....	10082		Packing Retainer.....	Plated.....	1
.....		20613	Packing Retainer.....	303 ss.....	1
21.....	10134	10139	O-Ring.....	Nitrile.....	1
22.....	20244	20616	Plug Retainer.....	303 ss.....	2
23.....	20703	20618	Plug Spacer.....	303 ss.....	1
24A.....	20702	20617	Plug.....	Polyurethane.....	2
24B.....	21347	21542	Plug.....	Acetal.....	2
24C.....	23969	23725	Plug.....	Glass filled TFE.....	2
25.....	10173	10181	Lock Nut.....	18-8 ss.....	1
26.....	20406	20619	Lower Seat.....	303 ss.....	1
27.....	See Chart Below		Body.....	Cast Iron.....	1
28.....	23339	23339	Vent Assembly.....	Plated.....	1
29.....	10748	10748	Bushing.....	Plated.....	1
30.....	20694	20612	Packing Follower.....	Brass.....	2
31.....	20700	20615	Upper Seat.....	303 ss.....	1
32.....	10130	10131	O-Ring.....	Nitrile.....	1
33.....	10346	10346	Plug.....	Plated.....	1
34.....	30049	30101	Upper Diaphragm Housing.....	Fabricated Carbon Steel.....	1
35.....	10074	10044	Spring.....	Oil Tempered Steel.....	1
36.....	23338	23338	Vent Assembly.....	Plated.....	1
.....	10016	10016	Name Plate (not shown).....	18-8 ss.....	1
.....	10324	10324	Drive Screw (not shown).....	18-8 ss.....	2

Body Chart	Description
30062.....	40119..... NPT Threaded
.....	40062..... Beveled or weld
40329.....	40463..... Flanged, 150# RF
42925.....	40114..... Flanged, 300# RF
.....	40115..... Flanged, 600# RF
.....	40117..... Flanged, 600# RTJ
.....	40118..... Flanged, 1500# RF
43995.....	40118..... Flanged, 1500# RTJ

Other Flange Options Available, Contact Pathway

8500 Series

Three-Way, Two Position, High Pressure Valve

Specifications:

Size:	1"	2"
Working Pressure:	6000 psig	3000 psig
Temperature:	-20°F to +180°F, std.; available to +240°F	
Topworks:	Pressed steel with nylon reinforced nitrile diaphragm. 50 psig max supply pressure.	
Effective Area:	45 sq. in.	62 sq. in.
C _v Factor:		
C to U	16	48
C to L	21	70
Trim:		
Seat:	Stainless steel, removable.	
Plug:	Fabricated acetal, polyurethane or TFE inserts.	
Material:		
Body:	Steel standard; available 316L stainless steel (2" size)	
Stem:	Stainless steel	
Packing:	TFE V	

Ordering Chart:

8500 Series: Three-way, two position valve

Size:

- 1 - 1"
- 2 - 2"

Connection:

- 1 - Threaded
- 3 - Flanged, specify type*
- 6 - 2" threaded 316L ss (CF8M)
- 8 - 2" flanged 316L ss (CF8M), specify type*
- 9 - 2" beveled for weld, 316L ss (CF8M)

Topworks:

- 1 - Spring top (62 sq. in.)
- 2 - Spring under (62 sq. in.)
- 3 - Pressure balanced (62 sq. in.)
- 6 - Spring top (45 sq. in.)
- 7 - Spring under (45 sq. in.)
- 8 - Pressure balanced (45 sq. in.)

Trim Seat:

- 1 - Removable, stainless steel

Trim Plug:

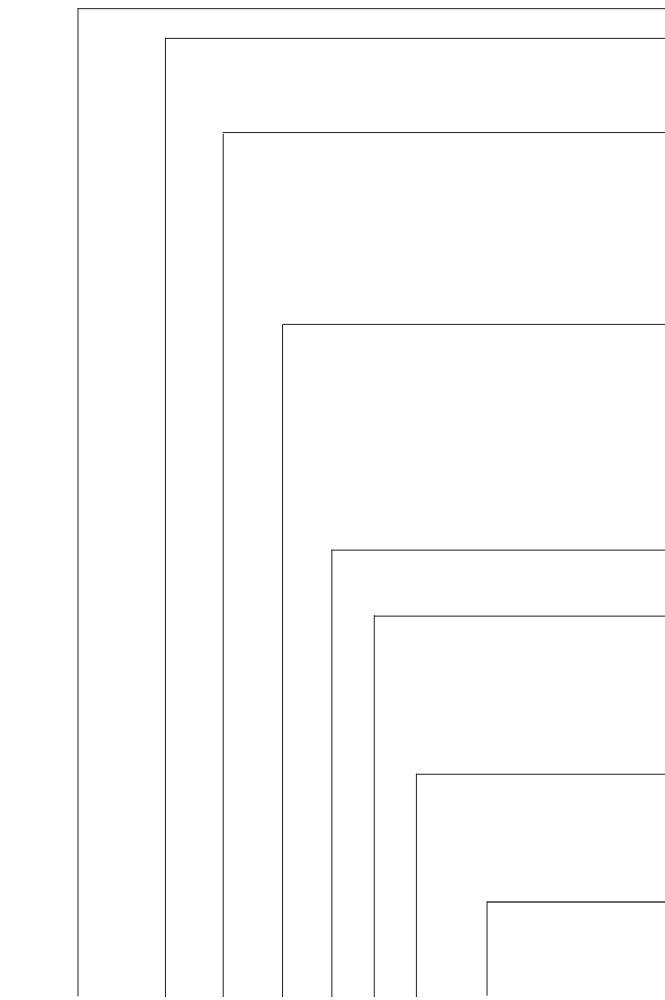
- 2 - Acetal
- 3 - Polyurethane
- 4 - TFE plug (fluorocarbon o-rings)
- 5 - Other (see common options list)

Other:

- 1 - No visual indicator
- 2 - Visual indicator
- 5 - Options (see common options list)

Option Number:

- () - Pathway will assign an option number based on specified requirements.



- - - ()

Example: 8500-111-121

**flanges available
1" or 2"-150# to 1500# RF or RTJ*

410 Series

Three-Way, Two Position, High Pressure, Balanced Valve

Application:

This valve is used for diverting, blending, or metering of water, oil and gas where large differential pressures are involved. Use on high pressure well test manifolds and salt water disposal systems is ideal. Also available in a 316L stainless steel body.

Operation:

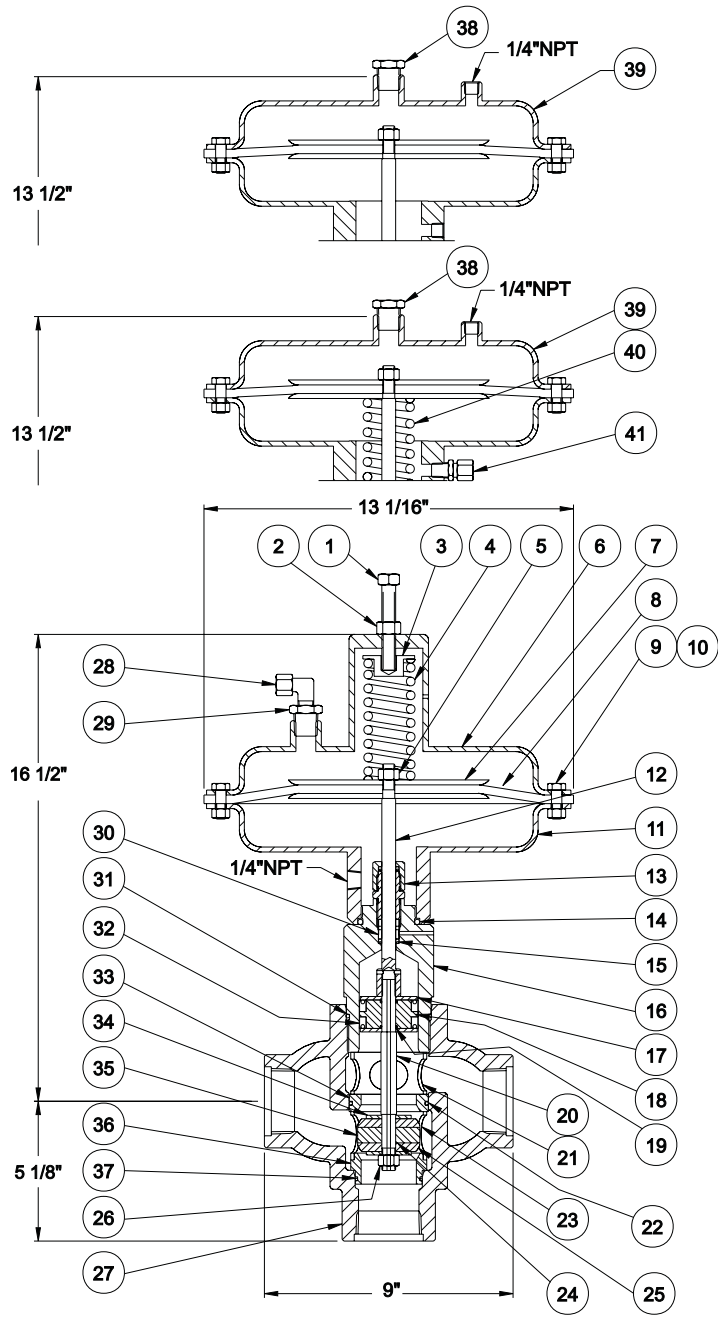
When supply pressure is applied to the diaphragm, the plug moves from the upper to the lower seat to divert the flow between the two ports. The piston is sized to balance the valve even with high differential pressures. This reduces the force required to switch the valve from one port to the other.

Features:

- High pressure differential may be operated with 30 psig supply.
- All internal parts can be removed without taking the valve body from the line.
- Stainless steel seats and stem provide long product life.
- Available in 316L stainless steel body to CF8M specification.
- Soft trim for bubble tight shut off.



410 Series
Three-Way, Two Position, High Pressure, Balanced Valve



410 - 211 - 121 SHOWN

Body Chart

Part #	Part #	Description
40119.....	40119.....	NPT Threaded
40062.....	40062.....	Beveled for weld
40463.....	40463.....	Flanged, 150# RF
40114.....	40114.....	Flanged, 300# RF
40115.....	40115.....	Flanged, 600# RF
40117.....	40117.....	Flanged, 600# RTJ
40116.....	40116.....	Flanged, 1500# RF
40118.....	40118.....	Flanged, 1500# RTJ

Other Flange Options Available, Contact Pathway

Flanged Models

Flange	Face to Face	CL to Face	W.P. @100°F
2" 150# RF or RTJ.....	9 5/8"	5 5/8"	275 psig
2" 300# RF or RTJ.....	10 1/4"	5 5/8"	720 psig
2" 600# RF or RTJ.....	10 3/8"	5 1/2"	1440 psig
2" 900# RF or RTJ.....	12"	6 3/4"	2160 psig
2" 1500# RF or RTJ.....	12"	6 3/4"	3000 psig

Special Face to Face available on flanged and beveled for weld connections.

410 Series
Three-Way, Two Position, High Pressure, Balanced Valve

Model 1500 psi		3000 psi		Description	Material	Qty
Item	Part #	Part #	Part #			
1.....	10213	10213	10213	Adjustment Screw.....	Plated.....	1
2.....	10182	10182	10182	Jam Nut.....	Plated.....	1
3.....	20602	20602	20602	Spring Retainer.....	Carbon Steel.....	1
4.....	10061	10061	10061	Spring.....	Oil Tempered Steel.....	1
5.....	10180	10180	10180	Lock Nut.....	Plated.....	1
6.....	30051	30051	30051	Upper Diaphragm Housing.....	Fabricated Carbon Steel.....	1
7.....	30071	20465	20465	Diaphragm Plate.....	Cold Rolled Carbon Steel Plate.....	2
8.....	10097	10097	10097	Diaphragm.....	Nylon Reinforced Nitrile.....	1
9.....	10207	10207	10207	Cap Screw.....	Plated.....	16
10.....	10175	10175	10175	Hex Nut.....	Plated.....	16
11.....	30052	30052	30052	Lower Diaphragm Housing.....	Fabricated Carbon Steel.....	1
12.....	30067	30069	30069	Upper Stem.....	303 ss.....	1
13.....	21902	21902	21902	Packing Gland Assembly.....	Brass/Nitrile.....	1
14.....	10149	10149	10149	O-Ring.....	Nitrile.....	1
15.....	10157	10157	10157	Packing.....	Molythane.....	1
16.....	40066	40067	40067	Piston Block.....	303 ss.....	1
17.....	20368	20375	20375	Packing Retainer.....	303 ss.....	2
18.....	20369	20376	20376	Piston.....	Brass.....	1
19.....	10114	10115	10115	O-Ring.....	Nitrile.....	2
20.....	20370	20377	20377	Lower Stem.....	303 ss.....	2
21.....	20383	20383	20383	Upper Cage.....	303 ss.....	1
22.....	10139	10139	10139	O-Ring.....	Nitrile.....	1
23.....	20614	20614	20614	Lower Cage.....	304 ss.....	2
24.....	10114	10115	10115	O-Ring.....	Nitrile.....	2
25A.....	21187	21601	21601	Plug.....	Polyurethane.....	2
25B.....	20372	20380	20380	Plug.....	Acetal.....	2
25C.....	23981			Plug.....	Glass filled TFE.....	2
26.....	10184	10185	10185	Lock Nut.....	18-8 ss.....	1
27.....	See Body Chart			Body.....	Cast Steel.....	1
28.....	23339	23339	23339	Vent Assembly.....	Plated.....	1
29.....	10748	10748	10748	Bushing.....	Plated.....	1
30.....	20367	20367	20367	Packing Retainer.....	Brass.....	1
31.....	10140	10140	10140	O-Ring.....	Nitrile.....	1
32.....	10163	10162	10162	Packing.....	Molythane.....	2
33.....	20374	20378	20378	Upper Seat.....	303 ss.....	1
34.....	20373	20379	20379	Plug Retainer.....	303 ss.....	2
35.....	20371	20381	20381	Plug Spacer.....	303 ss.....	1
36.....	20619	20382	20382	Lower Seat.....	303 ss.....	1
37.....	10131	10131	10131	O-Ring.....	Nitrile.....	1
38.....	10346	10346	10346	Plug.....	Plated.....	1
39.....	30101	30101	30101	Upper Diaphragm Housing.....	Fabricated Carbon Steel.....	1
40.....	10045	10045	10045	Spring.....	Oil Tempered Steel.....	1
41.....	23338	23338	23338	Vent Assembly.....	Plated.....	1
.....	10016	10016	10016	Name Plate (<i>not shown</i>).....	18-8 ss.....	1
.....	10324	10324	10324	Drive Screw (<i>not shown</i>).....	18-8 ss.....	2

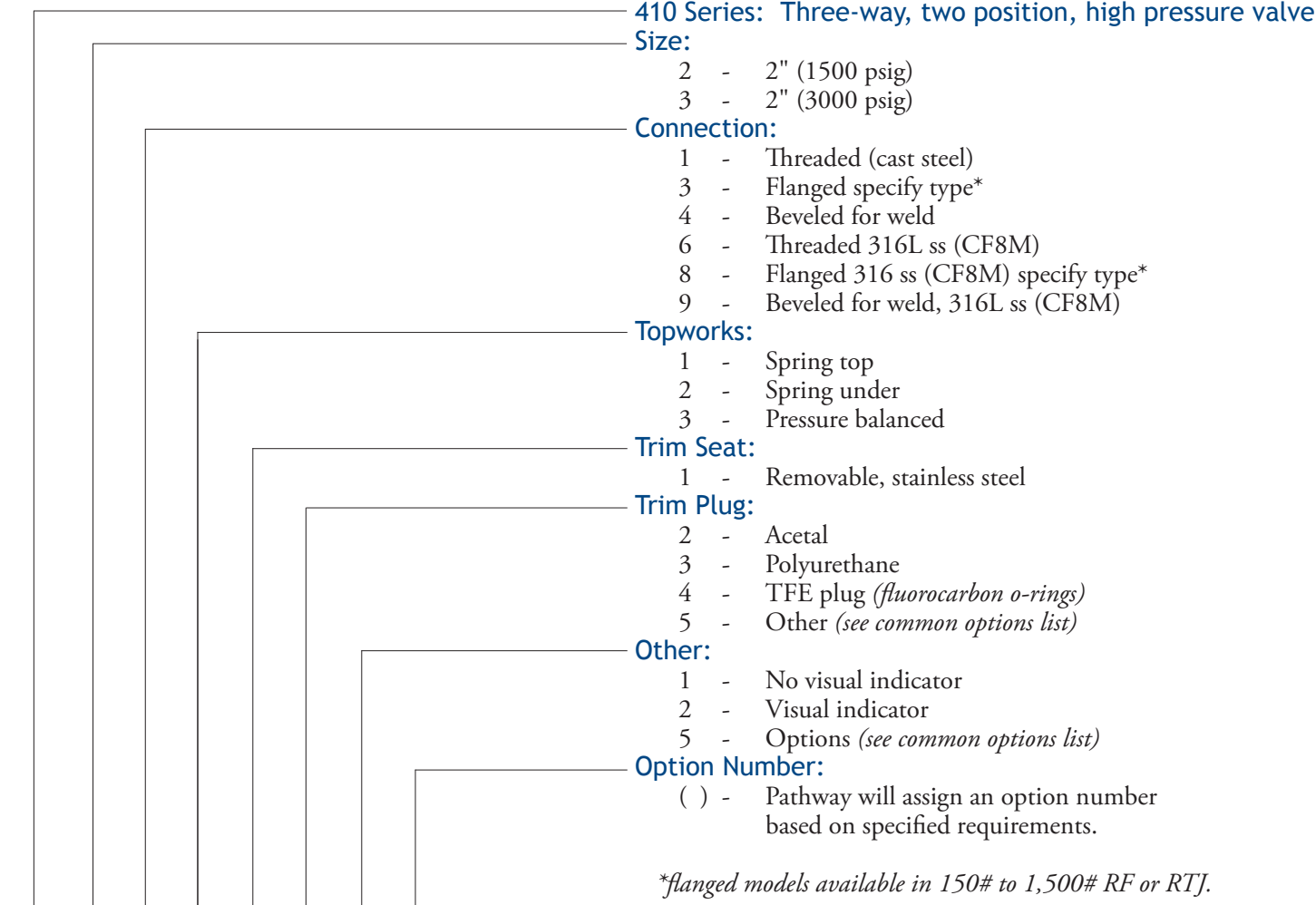
410 Series

Three-Way, Two Position, High Pressure, Balanced Valve

Specifications:

Size:	2"
Working Pressure:	1500 psig standard, available to 3000 psig
Temperature:	-20°F to +180°F; available to +240°F
Topworks:	Pressed steel with nylon reinforced nitrile diaphragm. 50 psig maximum supply pressure.
Effective Area:	62 sq. in.
C_v Factor:	C to U=48 C to L=70
Trim:	
Seat:	Stainless steel, removable.
Plug:	Fabricated acetal, polyurethane or TFE inserts.
Material:	
Body:	Cast steel standard, available in 316L stainless steel
Stem:	Stainless steel
Packing:	Poly Pak

Ordering Chart:



410- ()
Example: 410-211-121

550 Series Back Pressure, Low Pressure Valve

Application:

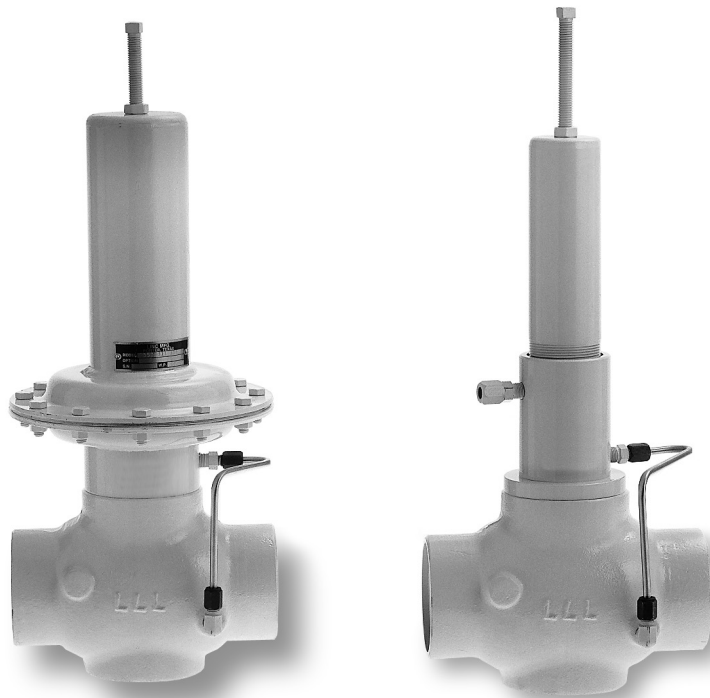
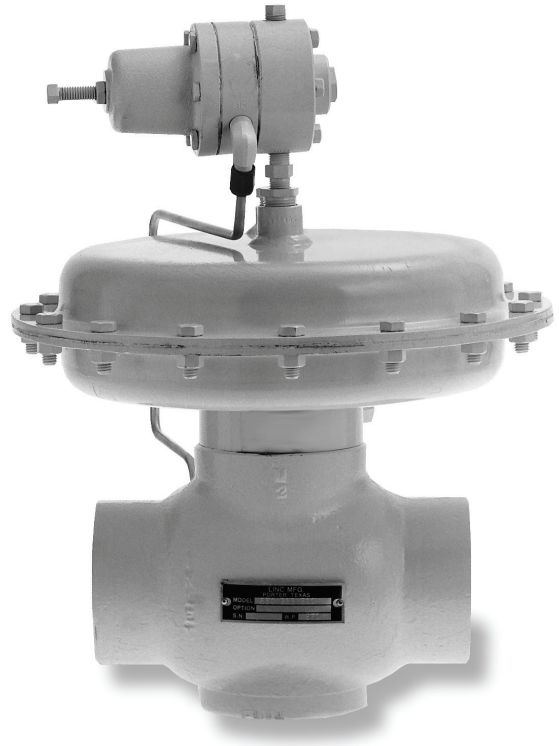
The 550 Series are used on any installation where the pressure upstream must be kept in a preset range. These valves can be used as a pressure relief valve, custody transfer dump valve to hold a certain back pressure or a separator back pressure valve on the gas or liquid side.

Operation:

Upstream pressure is applied to the bottom of the diaphragm, piston or to the pilot through connecting tubing. An adjustable spring tension opposes this pressure. When this pressure exceeds the pressure setting on the spring, the plug is raised off the seat. By varying the spring tension with the adjustment screw, the pressure setting can be varied.

Features:

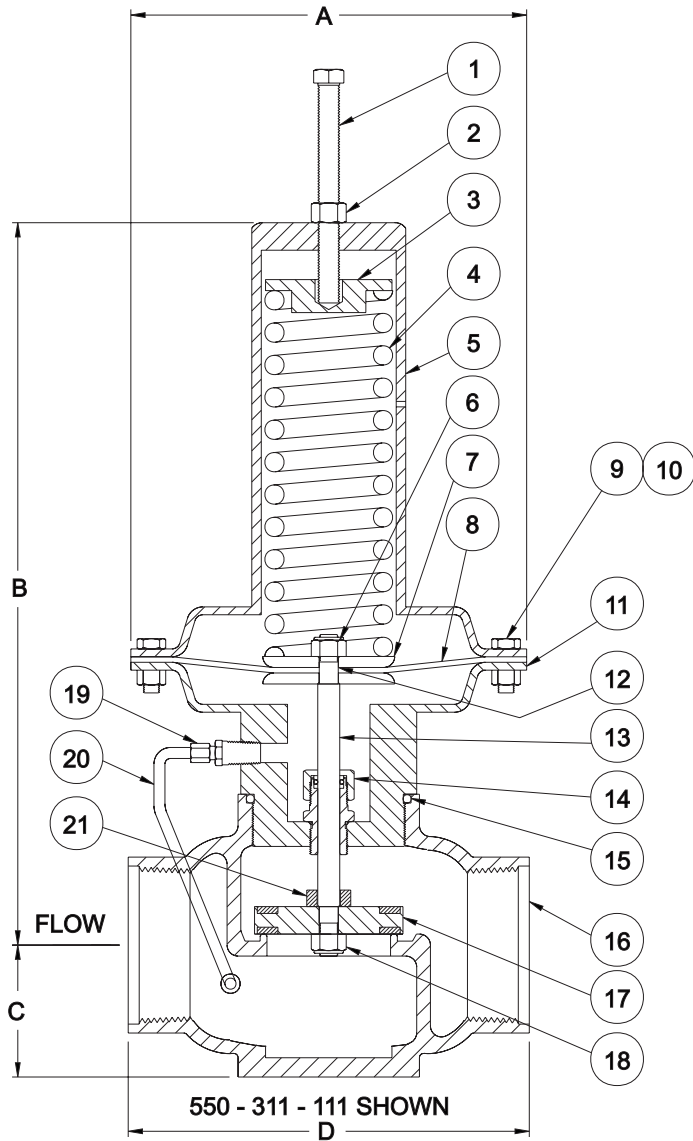
- The nitrile soft seat provides a bubble tight shut off even if foreign particles are present.
- All internal parts can be removed without taking the valve body from the line.
- Long packing life is provided due to the stainless steel stem working in a replaceable bushing.
- Self contained or pilot operated.



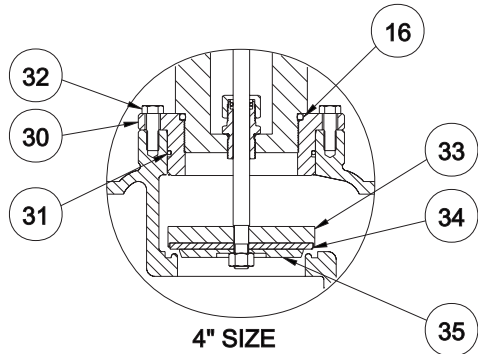
550 Series
Diaphragm Operated, Back Pressure, Low Pressure Valve

Dimensions			
Size	2"	3"	4"
A	9"	9"	9"
B	15 7/8"	16 3/8"	17 1/2"
C	2 3/4"	3"	3 3/8"
D	6 1/2"	9 1/8"	11"

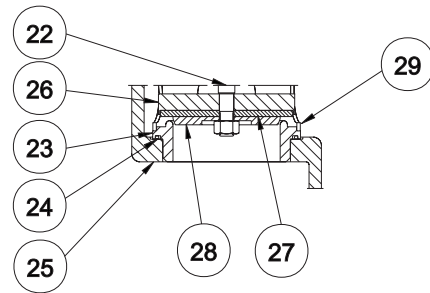
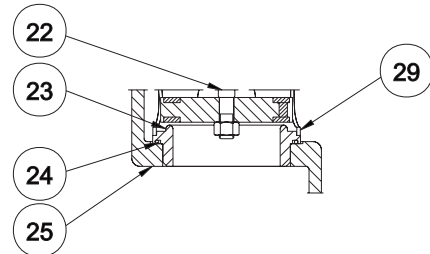
Flanged Models		
Flange	Face to Face	W.P. @ 100°F
2" 150# RF	6 1/2"	100 psig
2" 300# RF	9 1/8"	100 psig
3" 150# RF	9 1/8"	90 psig
3" 300# RF	12"	90 psig
4" 150# RF	11"	50 psig



2" & 3" SIZES



4" SIZE

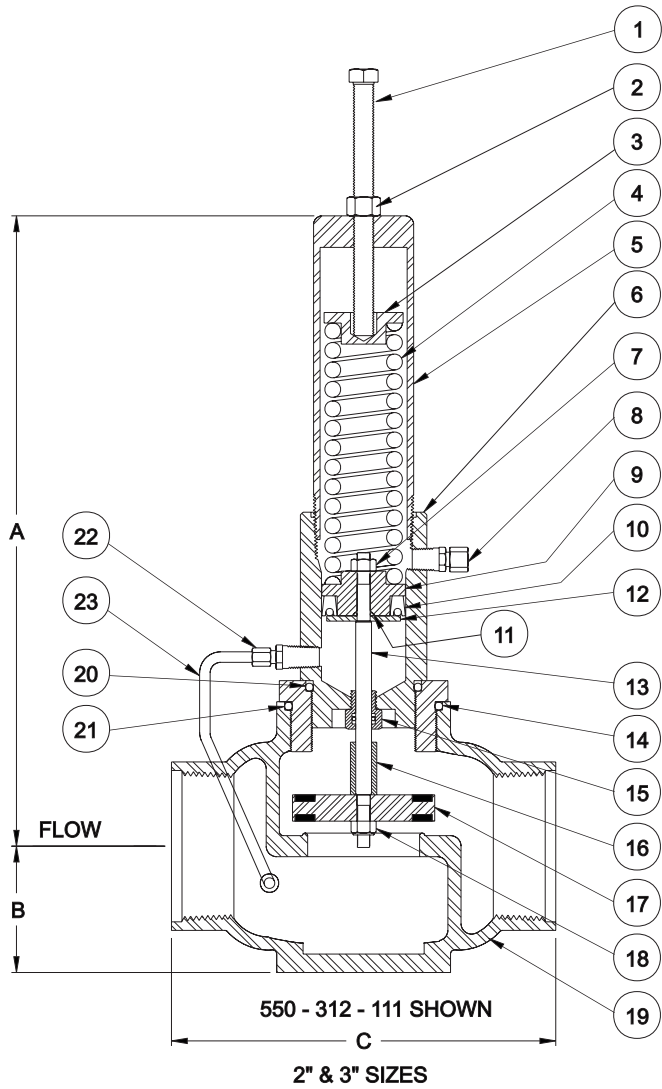


REMOVABLE SEAT

550 Series
Diaphragm Operated, Back Pressure, Low Pressure Valve

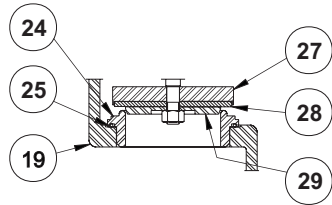
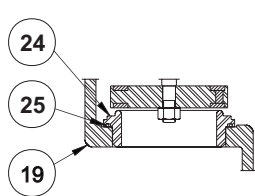
Model	2"	3"	4"	Description	Material	Qty
Item	Part #	Part #	Part #			
1.....	10216	10215	10215	Adjustment Screw.....	Plated.....	1
2.....	10182	10182	10182	Jam Nut.....	Plated.....	1
3.....	20602	20604	20604	Spring Retainer.....	Carbon Steel.....	1
4.....	10049	10046	10046	Spring, all valves.....	Oil Tempered Steel.....	1
.....	10805	.....	.....	Spring, add'l for 70-100 psi range.....	Oil Tempered Steel.....	1
.....	.....	10049	.....	Spring, add'l for 40-90 psi range.....	Oil Tempered Steel.....	1
.....	.....	.....	10049	Spring, add'l for 30-60 psi range.....	Oil Tempered Steel.....	1
5.....	30046	30053	30053	Upper Diaphragm Housing.....	Fabricated Carbon Steel.....	1
.....	20624	.....	.....	Threaded Spring Housing.....	Fabricated Carbon Steel.....	1
6.....	10172	10180	10180	Lock Nut.....	Plated.....	1
7.....	20623	20603	20603	Diaphragm Plate.....	Cold Rolled Carbon Steel Plate	2
8.....	10101	10098	10098	Diaphragm.....	Nylon Reinforced Nitrile.....	1
9.....	10207	10207	10207	Cap Screw.....	Plated.....	12
10.....	10175	10175	10175	Hex Nut.....	Plated.....	12
11.....	30047	30055	30055	Lower Diaphragm Housing.....	Fabricated Carbon Steel.....	1
12.....	.....	10113	10113	O-Ring.....	Nitrile.....	1
13.....	20630	20633	20537	Stem, Integral Seat.....	303 ss.....	1
14.....	21147	21449	21449	Packing Gland Assembly.....	Nitrile.....	1
15.....	10138	10144	10144	O-Ring.....	Nitrile.....	1
16.....	30109	30114	40092	Body, Threaded, Integral Seat.....	Ductile ASTM A395.....	1
.....	30108	30113	40091	Body, Grooved, Integral Seat.....	Ductile ASTM A395.....	1
.....	30079	40095	50027	Body, Flanged, 150# RF, Integral Seat.....	Ductile ASTM A395.....	1
.....	30398	40790	.....	Body, Flanged 300# RF, Integral Seat.....	Ductile ASTM A395.....	1
17.....	20384	20833	20237	Plug.....	Molded Nitrile.....	1
18.....	10173	10181	10181	Lock Nut.....	18-8 ss.....	1
19.....	11456	11456	11456	Tube Fitting (Straight).....	Plated.....	1
19B.....	11457	11457	11457	Tube Fitting (Elbow).....	Plated.....	1
20.....	18316	18316	18316	Tubing.....	316 ss.....	1
21.....	.....	20634	.....	Travel Stop.....	Brass.....	1
22.....	20629	20636	20483	Stem (Removable Seat).....	303 ss.....	1
23.....	20631	20635	30073	Seat.....	303 ss.....	1
24.....	10136	10141	10146	O-Ring.....	Nitrile.....	1
25.....	30112	30116	40094	Body, Threaded, Removable seat.....	Ductile ASTM A395.....	1
.....	30111	30115	40553	Body, Grooved, Removable seat.....	Ductile ASTM A395.....	1
.....	30110	40096	50028	Body, Flanged 150#RF, Removable seat.....	Ductile ASTM A395.....	1
.....	30399	40793	.....	Body, Flanged, 300# RF, Removable seat.....	Ductile ASTM A395.....	1
26.....	20625	20637	.....	Plug Disc.....	303 ss.....	1
.....	.....	.....	20849	Plug Disc.....	Carbon Steel.....	1
27.....	20627	20639	20996	Plug Insert.....	Polyurethane.....	1
.....	21140	21144	20880	Plug Insert.....	Acetal.....	1
.....	21419	21143	20850	Plug Insert.....	TFE.....	1
28.....	20626	20638	.....	Plug Retainer.....	303 ss.....	1
.....	.....	.....	20851	Plug Retainer.....	Carbon Steel.....	1
29.....	.....	.....	30072	Cage.....	Carbon Steel.....	1
30.....	.....	.....	30185	Adapter.....	Carbon Steel.....	1
31.....	.....	.....	10147	O-Ring.....	Nitrile.....	1
32.....	.....	.....	10207	Cap Screw.....	Plated.....	8
33.....	.....	.....	20641	Plug Disc.....	Carbon Steel.....	1
34.....	.....	.....	10559	Plug Insert.....	Nitrile.....	1
.....	.....	.....	20642	Plug Insert.....	Polyurethane.....	1
.....	.....	.....	20884	Plug Insert.....	Acetal.....	1
.....	.....	.....	20995	Plug Insert.....	TFE.....	1
35.....	.....	.....	20643	Plug Retainer.....	Carbon Steel.....	1
.....	10016	10016	10016	Name Plate (not shown).....	18-8 ss.....	1
.....	10324	10324	10324	Drive Screw (not shown).....	18-8 ss.....	2

550 Series
Piston Operated, Back Pressure, Low Pressure Valve



Dimensions		
Size	2"	3"
A	13 5/8"	14 3/4"
B	2 3/4"	3"
C	6 1/2"	9 1/8"

Flanged Models		
Flange	Face to Face	W.P. @ 100° F
2" 150# RF	6 1/2"	200 psig
2" 300# RF	9 1/8"	200 psig
3" 150# RF	9 1/8"	150 psig
3" 300# RF	12"	150 psig

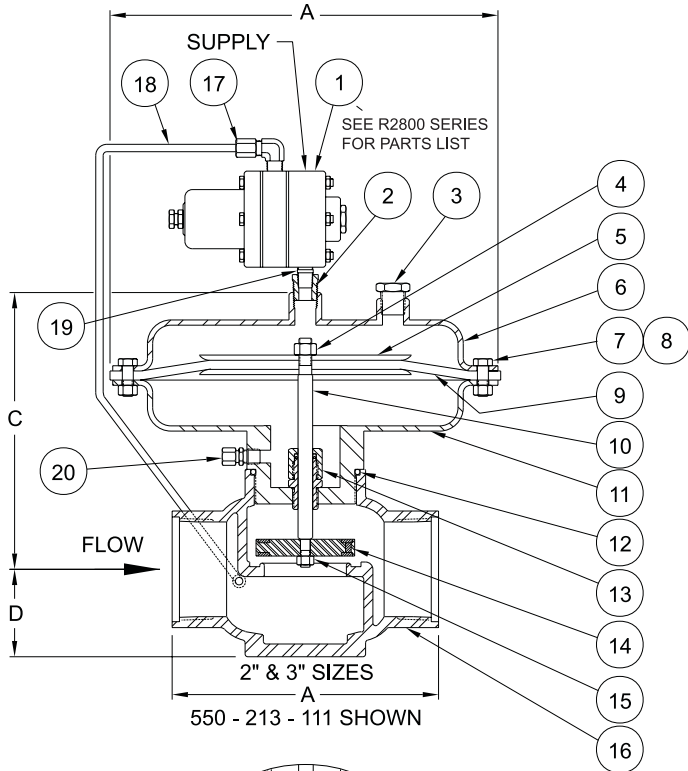


REMOVABLE SEAT

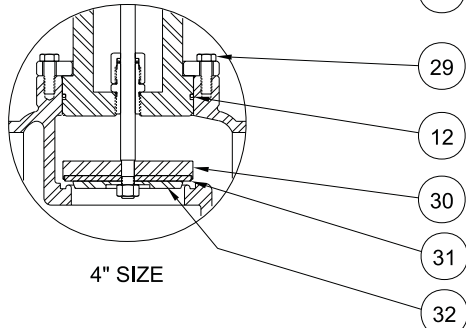
550 Series
Piston Operated, Back Pressure, Low Pressure Valve

Model 2"		3"		Description	Material	Qty
Item	Part #	Part #	Part #			
1.....	10214	.....	10216	Adjustment Screw	Plated	1
2.....	10182	.....	10182	Jam Nut	Plated	1
3.....	20602	.....	20602	Spring Retainer	Carbon Steel	1
4.....	10049	.....	10049	Spring	Oil Tempered Steel	1
5.....	20624	.....	20624	Spring Housing	Fabricated Carbon Steel	2
6.....	30064	.....	30064	Piston Block	Nickel Plated	1
7.....	10172	.....	10172	Lock Nut	Plated	1
8.....	23338	.....	23338	Vent Assembly	Plated	1
9.....	20344	.....	20344	Piston	Brass	16
10.....	10164	.....	10164	Packing	Molythane	16
11.....	10110	.....	10110	O-Ring	Nitrile	1
12.....	20345	.....	20345	Piston Retainer	303 ss	1
13.....	20346	.....	20347	Stem	303 ss	1
14.....	10138	.....	10144	O-Ring	Nitrile	1
15.....	21409	.....	21409	Packing Gland Assembly	Brass/Nitrile	1
16.....		.....	20349	Travel Stop	303 ss	1
17.....	20384	.....	20413	Plug	Molded Nitrile	1
18.....	10173	.....	10173	Lock Nut	18-8 ss	1
19.....	30109	.....	30114	Body, Threaded, Integral Seat	Ductile ASTM A395	1
.....	30108	.....	30113	Body, Grooved, Integral Seat	Ductile ASTM A395	1
.....	30079	.....	40095	Body, Flanged, 150# RF Integral Seat	Ductile ASTM A395	1
.....	30398	.....	40790	Body, Flanged, 300# RF Integral Seat	Ductile ASTM A395	1
20.....		.....	10138	O-Ring	Nitrile	2
21.....		.....	20348	Adapter	Carbon Steel	1
22.....	11456	.....	11456	Tube Fitting (straight)	Plated	1
.....	11457	.....	11457	Tube Fitting (elbow)	Plated	1
23.....	18316	.....	18316	Tubing	316 ss	1
24.....	20631	.....	20635	Seat	303 ss	1
25.....	10136	.....	10141	O-Ring	Nitrile	1
26.....	30112	.....	30116	Body, Threaded, Removable seat	Ductile ASTM A395	1
.....	30111	.....	30115	Body, Grooved, Removable seat	Ductile ASTM A395	1
.....	30110	.....	40096	Body, Flanged, 150# RF, Removable seat	Ductile ASTM A395	1
.....	30398	.....	40793	Body, Flanged, 300# RF, Removable seat	Ductile ASTM A395	1
27.....	20625	.....	23217	Plug Disc	303 ss	1
28.....	20627	.....	21832	Plug Insert	Polyurethane	1
.....	21140	.....	21831	Plug Insert	Acetal	1
.....	21419	.....	21828	Plug Insert	TFE	1
29.....	20626	.....	21829	Plug Retainer	303 ss	1
.....	10016	.....	10016	Name Plate (not shown)	18-8 ss	1
.....	10324	.....	10324	Drive Screw (not shown)	18-8 ss	2

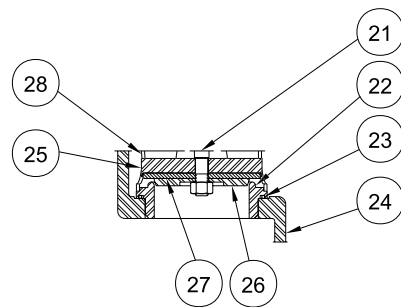
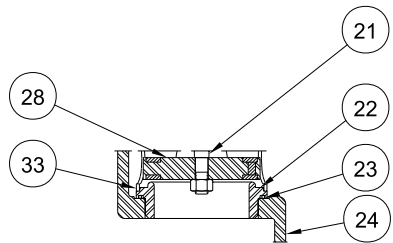
550 Series
Pilot Operated, Back Pressure, Low Pressure Valve



550 - 213 - 111 SHOWN



4" SIZE



REMOVABLE SEAT

Dimensions

Size	2"	3"	4"
A	6 1/2"	9 1/8"	9 1/8"
B	2 3/4"	3"	3"
C	8"	9 1/4"	9 1/4"
D	10 1/2"	13 1/16"	13 1/16"

Flanged Models

Flange	Face to Face	W.P. @ 100°F
2" 150# RF	6 1/2"	275 psig
2" 300# RF	9 1/8"	350 psig
3" 150# RF	9 1/8"	275 psig
3" 300# RF	12"	350 psig
4" 150# RF	9 1/8"	275 psig
4" 300# RF	12"	300 psig

550 Series
Pilot Operated, Back Pressure, Low Pressure Valve

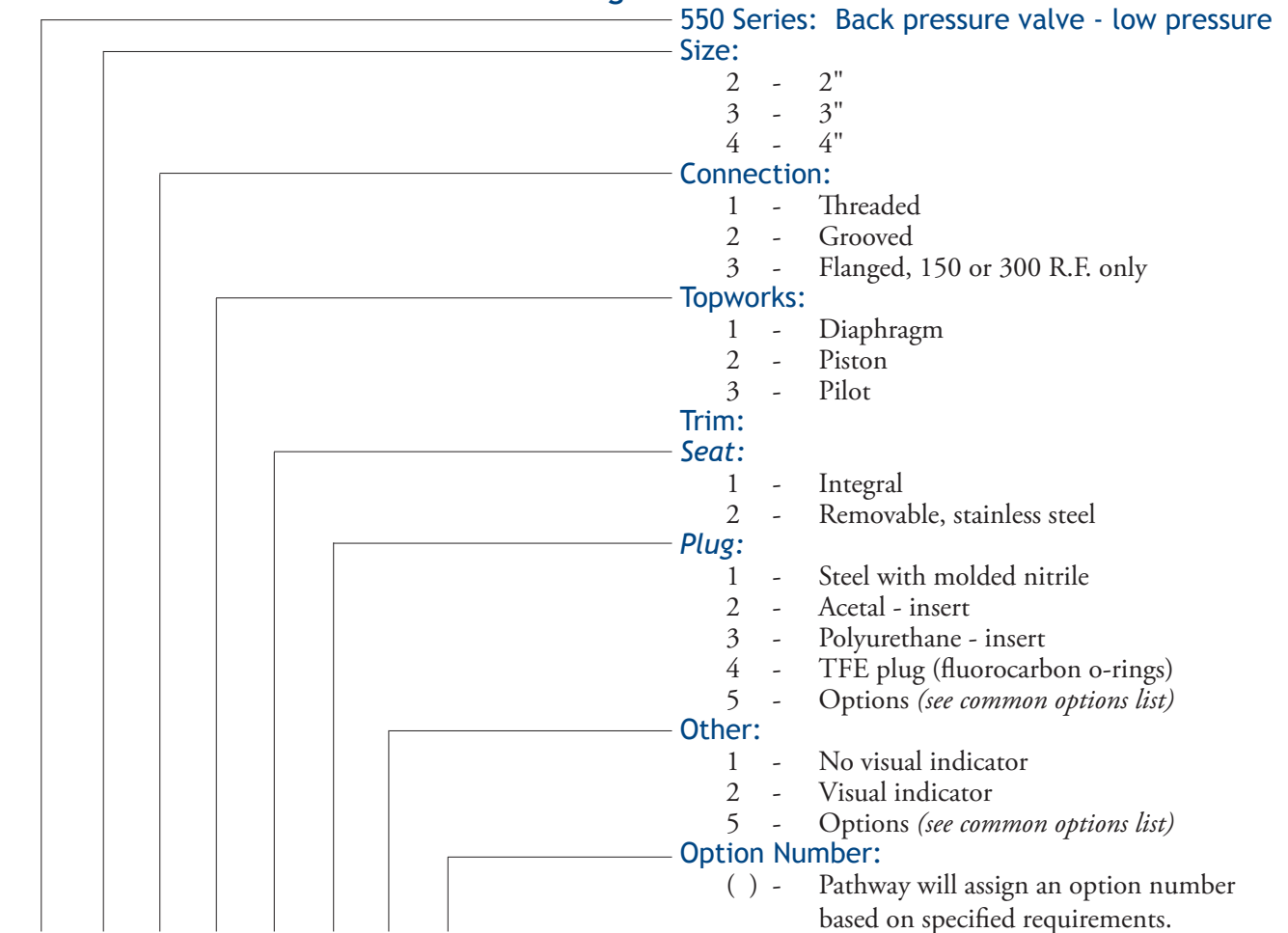
Model 2"	3"	4"				
Item	Part #	Part #	Part #	Description	Material	Qty
1.....	30222	30222	30222	Pilot - R2800.....	See R2800 Parts List.....	1
2.....	10748	10748	10748	Bushing.....	Plated.....	1
3.....			11458	Plug.....	Plated.....	1
4.....	10172	10180	10180	Lock Nut.....	Plated.....	1
5.....	20696	30071	30071	Diaphragm Plate.....	Cold Rolled Carbon Steel Plate ..	2
6.....	30049	30101	30101	Upper Diaphragm Housing.....	Fabricated Carbon Steel.....	1
7.....	10207			Cap Screw.....	Plated.....	12
		10207	10207	Cap Screw.....	Plated.....	16
8.....	10175			Hex Nut.....	Plated.....	12
		10175	10175	Hex Nut.....	Plated.....	16
9.....	10094	10028	10028	Diaphragm.....	Nylon Reinforced Nitrile.....	1
10.....	20630	20690	20640	Stem, Integral Seat.....	303 ss.....	1
11.....	30057	30054	30050	Lower Diaphragm Housing.....	Fabricated Carbon Steel.....	1
12.....	10138	10144	10147	O-Ring.....	Nitrile.....	1
13.....	21212	21348	21348	Packing Gland Assembly.....	Brass/Nitrile.....	1
14.....	20384	20833		Plug.....	Molded Nitrile.....	1
15.....	10173	10181	10181	Lock Nut.....	18-8 ss.....	1
16.....	30109	30114	40092	Body, Threaded, Integral Seat.....	Ductile ASTM A395.....	1
	30108	30113	40091	Body, Grooved, Integral Seat.....	Ductile ASTM A395.....	1
	30079	40095	50027	Body, 150# RF Flanged, Integral Seat.....	Ductile ASTM A395.....	1
	30398	40790		Body, 300# RF Flanged, Integral Seat.....	Ductile ASTM A395.....	1
17.....	11457	11457	11457	Tube Fitting.....	Plated.....	2
18.....	18316	18316	18316	Tubing.....	316 ss.....	1
19.....	11481	11481	11481	Nipple.....	Plated.....	1
20.....	23338	23338	23338	Vent Assembly.....	Plated.....	1
21.....	20629	20690	20483	Stem, Removable Seat.....	303 ss.....	1
22.....	20631	20635	30073	Seat.....	303 ss.....	1
23.....	10136	10141	10146	O-Ring.....	Nitrile.....	1
24.....	30112	30116	40094	Body, Thread, Removable seat.....	Ductile ASTM A395.....	1
	30111	30115	40553	Body, Grooved, Removable seat.....	Ductile ASTM A395.....	1
	30110	40096	50028	Body, 150 #RF Flange, Removable seat ..	Ductile ASTM A395.....	1
	30399	40793		Body, 300# RF Flange, Removable seat ..	Ductile ASTM A395.....	1
25.....	20625	20637		Plug Disc.....	303 ss.....	1
			20849	Plug Disc.....	Carbon Steel.....	1
26.....	20626	20638		Plug Retainer.....	303 ss.....	1
			20851	Plug Retainer.....	Carbon Steel.....	1
27.....	20627	20639	20996	Plug Insert.....	Polyurethane.....	1
	21140	21144	20880	Plug Insert.....	Acetal.....	1
	21419	21143	20850	Plug Insert.....	TFE.....	1
28.....			30072	Cage.....	Carbon Steel.....	1
29.....			10207	Cap Screw.....	Plated.....	8
30.....			20641	Plug Disc.....	Carbon Steel.....	1
			20851	Plug Retainer.....	Carbon Steel.....	1
31.....			10559	Plug Insert.....	Nitrile.....	1
			20642	Plug Insert.....	Polyurethane.....	1
			20884	Plug Insert.....	Acetal.....	1
32.....			20995	Plug Insert.....	TFE.....	1
33.....			20237	Plug.....	Molded Nitrile.....	1
	10016	10016	10016	Name Plate (not shown).....	18-8 ss.....	1
	10324	10324	10324	Drive Screw (not shown).....	18-8 ss.....	2

550 Series
Back Pressure, Low Pressure Valve

Specifications:

Size:	2"	3"	4"
Working Pressure:			
<i>Diaphragm Operated:</i>	100 psig	90 psig	50 psig
<i>Piston Operated:</i>	200 psig	150 psig	N/A
<i>Pilot Operated:</i>	350 psig	300 psig	200 psig
Temperature:	-20°F to + 180°F; available to +240°F		
Topworks:	Pressed steel housing with nylon reinforced nitrile diaphragm; 50 psig maximum supply pressure.		
C_v Factor:	45	80	111
Trim:			
<i>Seat:</i>	Integral in the valve body or removable stainless steel.		
<i>Plug:</i>	Steel with molded nitrile standard; optional fabricated acetal, polyurethane or TFE inserts.		
Materials:			
<i>Body:</i>	Ductile ASTM A395		
<i>Stem:</i>	Stainless steel		
<i>Packing:</i>	Poly Pak and/or o-rings		

Ordering Chart:



550- [] ()
Example: 550-211-121

8150 Series Back Pressure or Pressure Reducing, High Pressure Valve

Application:

The 8150 Series maintains constant pressure upstream (back pressure) or downstream (pressure reducing) of the valve. The back pressure valve is used to keep a preset pressure on separators, vessels or any line where a constant pressure is critical. The pressure reducing valve limits the pressure downstream of the valve to protect equipment or instruments from higher pressure.

Operation:

The pressure to be controlled is applied to the pressure pilot. The output from the pilot is a 3 to 15 psig pneumatic signal that throttles the valve to maintain the desired pressure. The back pressure version takes the signal from and controls the pressure upstream of the valve. The pressure reducing unit takes the signal from and controls the pressure downstream of the valve.

Features:

- Optional flow patterns with "T" body. Straight through or angle flow for easy installation.
- Easily serviced with the internal parts removable from the top of the valve without removing the body from the line.
- 17-4 PH heat treated stainless steel trim is standard. Available in carbide or soft trim to fit your application.
- Long packing life provided by stainless steel stem working in a replaceable bushing.
- Self lubricating TFE stem packing assures a positive seal without maintenance.
- Easy trim replacement without dismantling topworks.



8150 Series

Back Pressure or Pressure Reducing, High Pressure Valve

Dimensions

Size	1" - 45	1" - 62	2" - 45	2" - 62
A.....	10 1/2"	13 1/16"	10 1/2"	13 1/16"
B.....	11 1/8"	14 3/4"	11 3/8"	15"
C.....	2 1/8"	2 1/8"	3 1/2"	3 1/2"
D.....	6 1/4"	6 1/4"	7"	7"

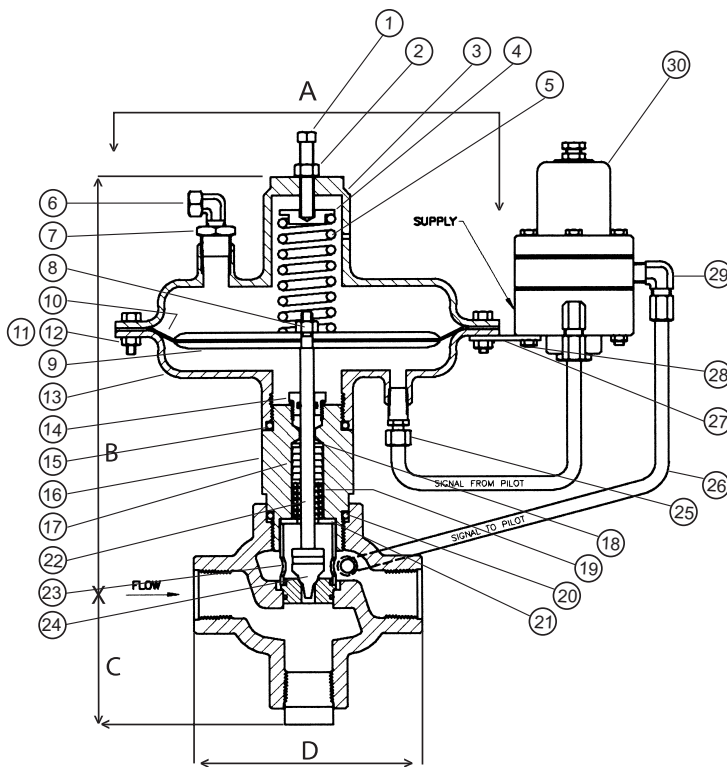
Flanged Models

Flange	Face to Face	W.P. @ 100°F
1" 150# RF or RTJ	7"	275 psig
2" 150# RF or RTJ	7 1/2"	275 psig
1" 300# RF or RTJ	7 1/4"	720 psig
2" 300# RF or RTJ	7 7/8"	720 psig
1" 600# RF or RTJ	7 3/4"	1440 psig
2" 600# RF or RTJ	8 3/8"	1440 psig
1" 900# RF or RTJ	8 5/8"	2160 psig
2" 900# RF or RTJ	9 3/4"	2160 psig
1" 1500# RF or RTJ	8 5/8"	3600 psig
2" 1500# RF or RTJ	9 3/4"	3000 psig

Special Face to Face available on flanged and beveled connections.

CAUTION:

Remove spring tension by backing off adjustment screw OR apply air pressure under diaphragm BEFORE removing topworks. Otherwise, trim will be damaged!



Trim Chart - 8150 Series

Description	1/8"	1/4"	3/8"	1/2"	3/4"	1"
17-4 ss, Throttling.....	20736	20737	20738	20739	20740	20741
Carbide, Throttling.....		20749	20750	20751	20752	
Carbide K Coated, Throttling.....	23779	23780	23781	23782	23783	23784
Acetal Plug, Throttling.....		20797	20798	20799	20800	20801
Seat (for Soft Trim).....		20755	20756	20757	20758	20759

8150 Series

Back Pressure or Pressure Reducing, High Pressure Valve

Model	45 sq. in. top	62 sq. in. top			
Item	Part #	Part #	Description	Material	Qty
1	10210	10213	Adjustment Screw	Plated	1
2	10177	10182	Jam Nut	Plated	1
3a	30045	30051	Upper Diaphragm Housing, Press. Reducing	Fabricated Carbon Steel	1
3b	30049	30101	Upper Diaphragm Housing*, Back Pressure	Fabricated Carbon Steel	1
4	20628	20602	Spring Retainer	Carbon Steel	1
5a	10075	10061	Spring, Pressure Reducing	Oil Tempered Steel	1
5b	10074	10061	Spring*, Back Pressure	Oil Tempered Steel	1
6	23339	23339	Vent Assembly	Plated	1
7	10748	10748	Bushing	Plated	1
8	10172	10172	Lock Nut	Plated	1
9	20696	20696	Diaphragm Plate	Cold Rolled Steel Plate	2
10	10094	10028	Diaphragm	Nylon Reinforced Nitrile	1
11	10207		Cap Screw	Plated	11
		10207	Cap Screw	Plated	15
	10640	10640	Cap Screw	Plated	1
12	10175		Hex Nut	Plated	12
		10175	Hex Nut	Plated	16
13	30056	30052	Lower Diaphragm Housing	Fabricated Carbon Steel	1
14	21521	21521	Packing Gland Assembly	Brass/Nitrile	1
15	10149	10149	O-Ring	Nitrile	1
16	30021	30021	Packing Block	Plated	1
17	10153	10153	Packing	TFE	1
18	20694	20694	Packing Follower	Brass	2
19	10076	10076	Packing Spring	316 ss	1
20	10149	10149	O-Ring	Nitrile	1
21	10082	10082	Packing Retainer	Plated	1
22	20697	20698	Stem (Hard Trim)	303 ss	1
23	20693	20693	Cage	Carbon Steel	1
24		See Trim Chart	Trim Set	See Chart	1
25	11001	11001	Tubing Fitting	Plated	2
26	18365	18365	Tubing	304 ss	1
27	20888	20888	Bracket	Carbon Steel	1
28	10168	10108	Hex Nut	Plated	1
29	11000	11000	Tubing Elbow	Plated	3
30	30222	30222	Pilot Assembly	See R2800 parts list	1
	10016	10016	Name Plate (<i>not shown</i>)	18-8 ss	1
	10324	10324	Drive Screw (<i>not shown</i>)	18-8 ss	2

*back pressure valve - not shown

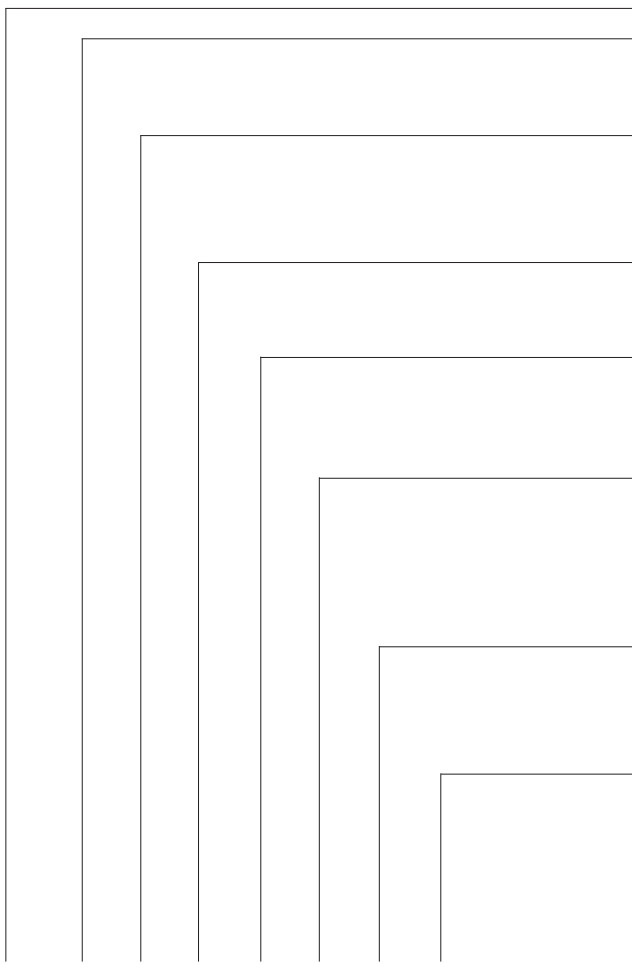
8150 Series

Back Pressure or Pressure Reducing, High Pressure Valve

Specifications:

Size:	1" Tee Body	2" Tee Body
Working Pressure:	6000 psig	3000 psig
Temperature:	-20°F to +180°F standard; available to +240°F	
Topworks:	Pressed steel with nylon reinforced nitrile diaphragm; 50 psig maximum supply pressure.	
Effective Area:	Choice of 45 sq. in. or 62 sq. in.	
C_v Factor - Orifice:	Angle	Globe
	Angle	Globe
1/4"	2.3.....	1.9.....
3/8"	4.6.....	4.2.....
1/2"	8.3.....	7.2.....
3/4"	15.0.....	12.8.....
1"	21.0.....	16.1.....
Trim:	17-4 PH stainless steel or carbide	
Material:		
Body:	Cast Steel	
Stem:	Stainless steel	
Packing:	TFE	

Ordering Chart:



8150 Series: Pressure control valve

Size:

- 1 - 1"
- 2 - 2"

Connection:

- 1 - Threaded
- 3 - Flanged, specify type
- 4 - Beveled for weld

Type:

- 3 - Back pressure
- 4 - Pressure reducing

Trim Type:

- 2 - Throttling (stainless steel)
- 4 - Throttling (carbide)
- 7 - Throttling (carbide - K coating)

Trim Size:

- 1 - 1/4"
- 2 - 3/8"
- 3 - 1/2"
- 4 - 3/4"
- 6 - 1" (not available in carbide)

Other:

- 1 - No visual indicator
- 2 - Visual indicator
- 5 - Options (*see common options list*)

Option Number:

- () - Pathway will assign an option number based on specified requirements.

**flanged models available in 150# to 1,500# RF or RTJ. Specify pressure required.*

8150 ()
Example: 8150-213-111

Maximum controlled pressure with 2800 Series Pilot is 350#. Higher pressures available with alternate Pilots.

8950 Series Back Pressure or Pressure Reducing, Overbalanced Valve

Application:

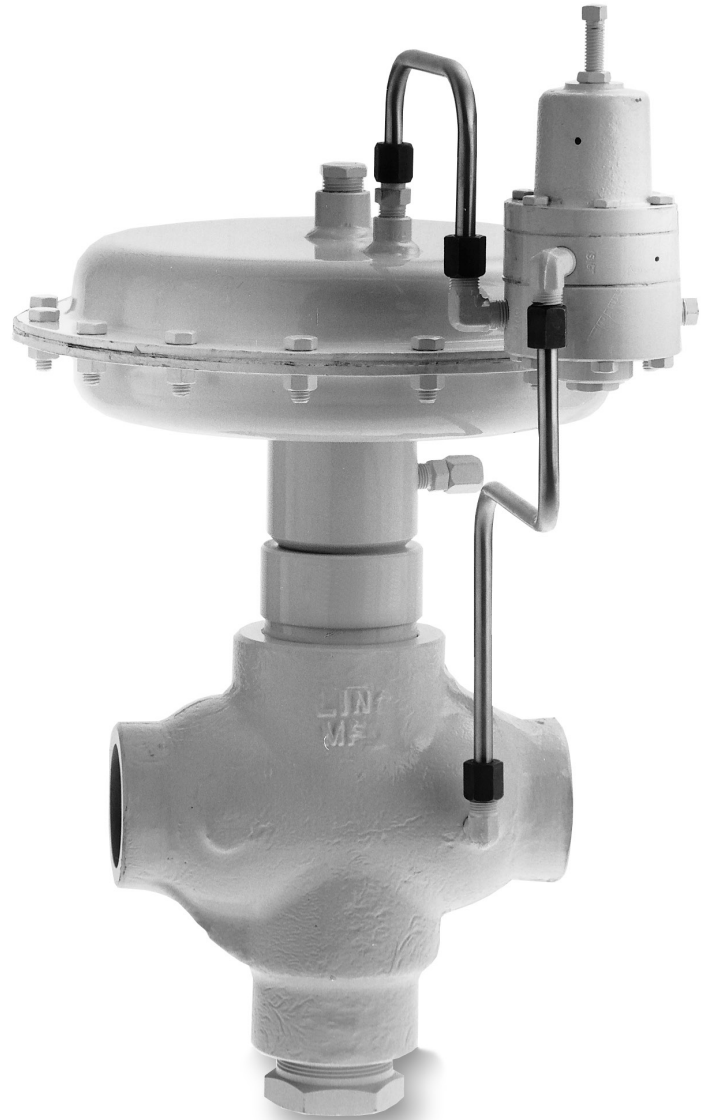
This Series can maintain a constant pressure upstream (back pressure) or downstream (pressure reducing). The back pressure unit is used to maintain pressure on separators, vessels or any location where constant pressure is vital. The pressure reducing version is suited on gas lift operations to protect surface equipment and to replace fixed orifice devices. The 8950 Series is available in a 316L stainless steel 2" body to CF8M specification.

Operation:

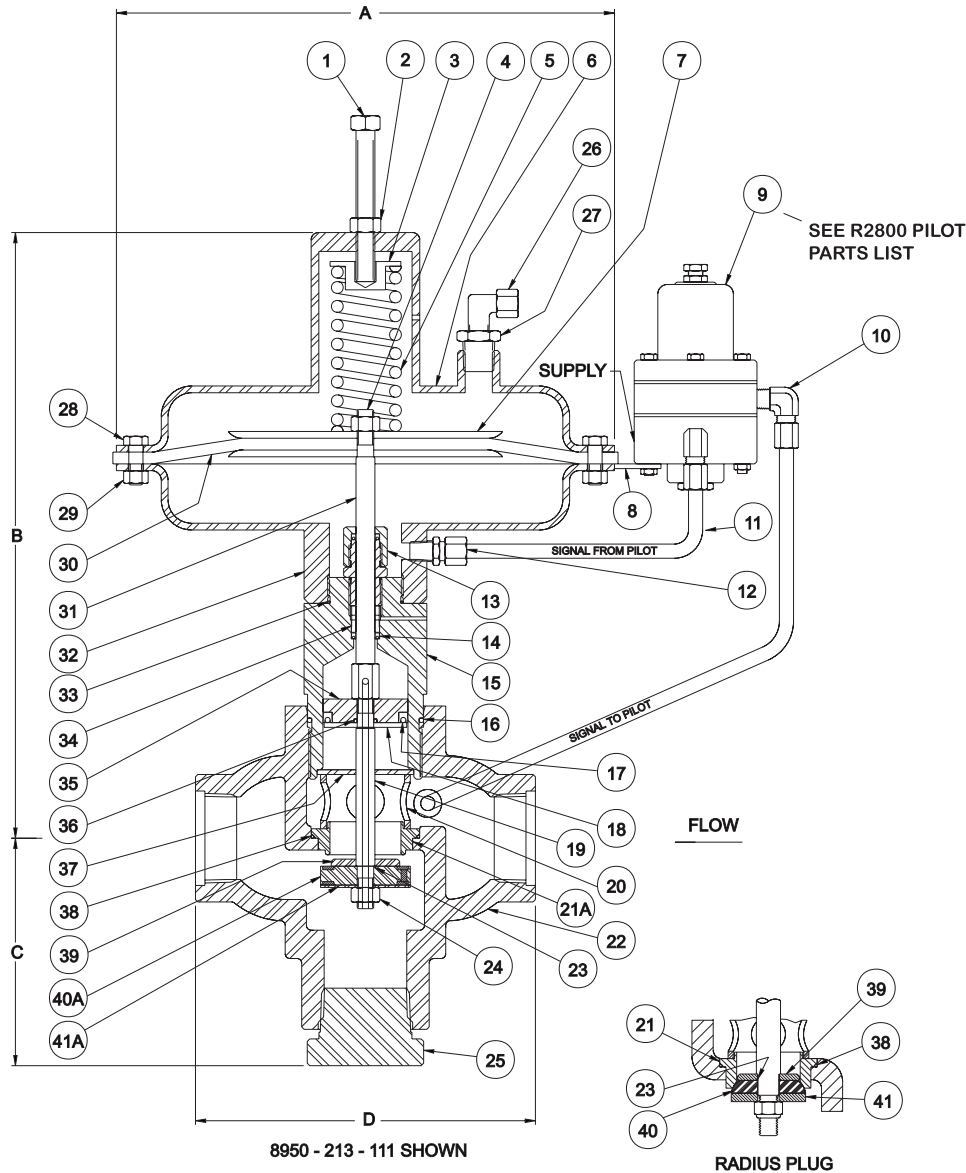
Upstream pressure is applied to the plug and the piston. The piston is larger than the plug on the pressure reducing valve causing it to fail closed. It is smaller on the back pressure valve causing it to fail open. Pressure to be controlled is monitored by a pressure pilot. Output from the pilot throttles the valve to maintain a desired pressure.

Features:

- Fail safe operation by sizing the piston to the application.
- Soft trim provides tight shut off.
- Easy maintenance because the trim is replaceable from the top of the valve without having to remove the valve body from the line.
- Stainless steel stem, piston housing and seat.
- Self-lubricating seal on the piston means less service.
- Bypass system is available.
- Available in a 316L stainless steel 2" body to CF8M specification.



8950 Series
Back Pressure, Overbalanced Valve



Flanged Models

Flange	Face to Face	W.P. @ 100° F
1" 150# RF or RTJ	6 3/4"	275 psig
1" 300# RF or RTJ	6 3/4"	720 psig
1" 600# RF or RTJ	6 3/4"	1440 psig
1" 900# RF or RTJ	7 1/4"	1500 psig
1" 1500# RF or RTJ	7 1/4"	1500 psig
2" 150# RF or RTJ	9 5/8"	275 psig
2" 300# RF or RTJ	10 1/4"	720 psig
2" 600# RF or RTJ	10 3/8"	1440 psig
2" 900# RF or RTJ	12"	1500 psig
2" 1500# RF or RTJ	12"	1500 psig

Dimensions

Size	1"	2"
A	10 1/2"	13 1/16"
B	11 1/8"	15 1/2"
C	3 1/8"	6 1/8"
D	6 1/4"	9"

Special Face to Face available on flanged and beveled connections.

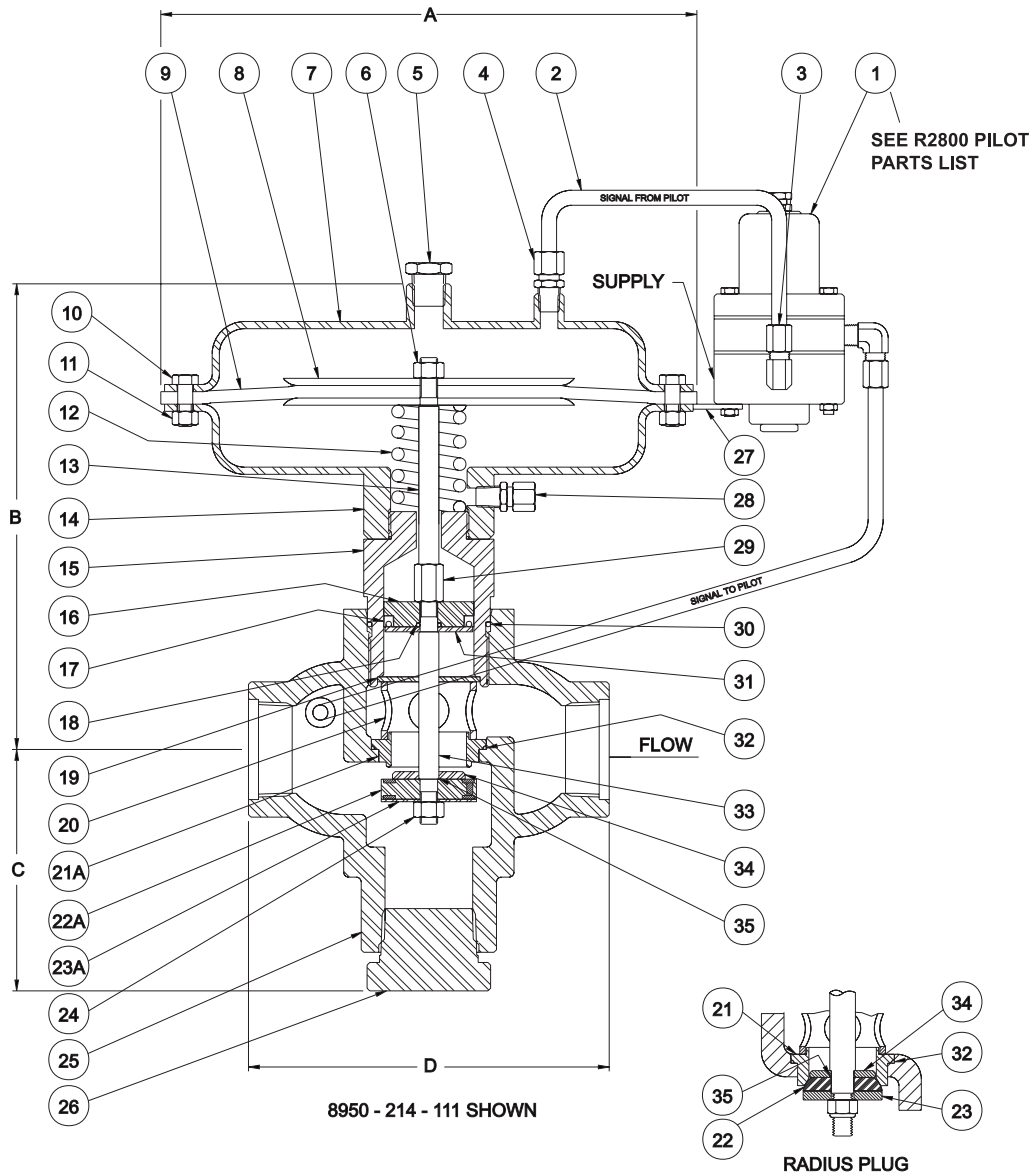
8950 Series
Back Pressure, Overbalanced Valve

Model	1"	2"			
Item	Part #	Part #	Description	Material	Qty
1	10210	10213	Adjustment Screw	Plated	1
2	10177	10182	Jam Nut	Plated	1
3	20628	20602	Spring Retainer	Carbon Steel	1
4	10172	10172	Lock Nut	Plated	1
5	10075	10043	Spring	Oil Tempered Steel	1
6	30045	30051	Upper Diaphragm Housing	Fabricated Carbon Steel	1
7	20696	20696	Diaphragm Plate	Cold Rolled Carbon Steel Plate	2
8	20888	20888	Bracket	Carbon Steel	1
9	30222	30222	Pilot Assembly	See R2800 Parts List	1
10	11000	11000	Tubing Elbow	Plated	3
11	18365	18365	Tubing	316 ss	1
12	11001	11001	Tubing Fitting	Plated	1
13	21669	21669	Packing Gland Assembly	Brass/Nitrile	1
14	10156	10156	Packing	Molythane	1
15	30060	30063	Packing Housing	303 ss	1
16	10149	10140	O-Ring	Nitrile	1
17	10158	10164	Packing	Molythane	1
18	20322	20340	Packing Retainer	Brass	1
19	20321	20339	Lower Stem	303 ss	1
20	20712	20666	Cage	Carbon Steel	1
21	20514	20331	Seat (Radius Plug)	303 ss	1
21A	20699	20330	Seat (Molded Plug)	303 ss	1
22	See Chart Below		Body	Cast Steel	1
23	10111	10111	O-Ring	Nitrile	1
24	10181	10181	Lock Nut	18-8 ss	1
25	10224	10225	Pipe Plug	Carbon Steel	1
26	23339	23339	Vent Assembly	Plated	1
27	10748	10748	Bushing	Plated	1
28	10207		Cap Screw	Plated	12
28		10207	Cap Screw	Plated	16
29	10175		Hex Nut	Plated	12
29		10175	Hex Nut	Plated	16
30	10094	10028	Diaphragm	Nylon Reinforced Nitrile	1
31	20472	20342	Upper Stem	303 ss	1
32	30056	30052	Lower Diaphragm Housing	Fabricated Carbon Steel	1
33	10149	10149	O-Ring	Nitrile	1
34	20324	20343	Packing Spacer	Brass	1
35	20323	20341	Piston	Brass	1
36	10121	10121	O-Ring	Nitrile	1
37	20713	10367	Travel Stop	Carbon Steel	1
38	10134	10132	O-Ring	Nitrile	1
39	20471	20338	Throttling Plug	303 ss	1
40	21599	20329	Plug	Polyurethane, Radius	1
	21718	21150	Plug	Acetal, Radius	1
		23747	Plug	Glass Filled TFE, Radius	1
40A	20710	20326	Plug	Molded Nitrile	1
41	20719	20325	Plug Backup Plate	303 ss	1
41A	20711		Plug Backup Plate (Nitrile Plug)	303 ss	1
		20327	Plug Backup Plate (Nitrile Plug)	Carbon Steel	1
	10016	10016	Name Plate (not shown)	18-8 ss	1
	10324	10324	Drive Screw (not shown)	18-8 ss	2

Body Chart		Description
30122	40063	NPT Threaded
40465	41426	Flanged, 150# RF
40121	40137	Flanged, 300# RF
40124	40140	Flanged, 600# RF
40130	40146	Flanged, 600# RTJ
40127	40143	Flanged, 1500# RF
40133	40149	Flanged, 1500# RTJ

Other Flange Options Available, Contact Pathway.

8950 Series Back Pressure, Overbalanced Valve



Flanged Models

Flange	Face to Face	W.P. @ 100° F
1" 150# RF or RTJ	6 3/4"	275 psig
2" 150# RF or RTJ	9 5/8"	275 psig
1" 300# RF or RTJ	6 3/4"	720 psig
2" 300# RF or RTJ	10 1/4"	720 psig
1" 600# RF or RTJ	6 3/4"	1440 psig
2" 600# RF or RTJ	10 3/8"	1440 psig
1" 900# RF or RTJ	7 1/4"	1500 psig
2" 900# RF or RTJ	12"	1500 psig
1" 1500# RF or RTJ	7 1/4"	1500 psig
2" 1500# RF or RTJ	12"	1500 psig

Dimensions

Size	1"	2"
A	10 1/2"	13 1/16"
B	11 7/8"	12 1/2"
C	3 1/8"	5 1/16"
D	6 1/4"	9"

Special Face to Face available on flanged and beveled connections.

8950 Series
Pressure Reducing Valve, Overbalanced Valve

Model 1"	2"				
Item	Part #	Part #	Description	Material	Qty
1.....	30222	30222	Pilot Assembly.....	See R2800 Parts List.....	1
2.....	18365	18365	Tubing.....	304 ss.....	1
3.....	11000	11000	Tubing Elbow.....	Plated.....	3
4.....	11001	11001	Tubing Fitting.....	Plated.....	1
5.....	10346	10346	Plug.....	Plated.....	1
6.....	10172	10172	Lock Nut.....	Plated.....	1
7.....	30049	30101	Upper Diaphragm Housing.....	Fabricated Carbon Steel.....	1
8.....	20696	20696	Diaphragm Plate.....	Cold Rolled Carbon Steel Plate.....	2
9.....	10094	10028	Diaphragm.....	Nylon Reinforced Nitrile.....	1
10.....	10207		Cap Screw.....	Plated.....	12
		10207	Cap Screw.....	Plated.....	16
11.....	10175		Hex Nut.....	Plated.....	12
		10175	Hex Nut.....	Plated.....	16
12.....	10074	10043	Spring.....	Oil Tempered Steel.....	1
13.....	20717	20328	Upper Stem.....	303 ss.....	1
14.....	30056	30052	Lower Diaphragm Housing.....	Fabricated Carbon Steel.....	1
15.....	30059	30091	Piston Housing.....	303 ss.....	1
16.....	20715	20336	Piston.....	Brass.....	1
17.....	10160	10161	Packing.....	Molythane.....	1
18.....	10121	10121	O-Ring.....	Nitrile.....	1
19.....	20713	10367	Travel Stop.....	Carbon Steel.....	1
20.....	20712	20666	Cage.....	Carbon Steel.....	1
21.....	20514	20331	Seat (Radius Plug).....	303 ss.....	1
21A.....	20699	20330	Seat (Molded Nitrile Plug).....	303 ss.....	1
22.....	21599	20329	Plug.....	Polyurethane, Radius.....	1
	20718	21150	Plug.....	Acetal, Radius.....	1
		23747	Plug.....	Glass Filled TFE, Radius.....	1
22A.....	20710	20326	Plug.....	Molded Nitrile.....	1
23.....	20719	20325	Plug Backup Plate.....	303 ss.....	1
23A.....	20711		Plug Backup Plate (Molded Plug).....	303 ss.....	1
		20327	Plug Backup Plate (Molded Plug).....	Carbon Steel.....	1
24.....	10181	10181	Lock Nut.....	18-8 ss.....	1
25.....	See Chart Below		Body.....	Cast Steel.....	1
26.....	10224	10225	Plug.....	Carbon Steel.....	1
27.....	20888	20888	Bracket.....	Carbon Steel.....	1
28.....	23338	23338	Vent Assembly.....	Plated.....	1
29.....	20716	20716	Stem Connector.....	303 ss.....	1
30.....	10149	10140	O-Ring.....	Nitrile.....	1
31.....	20714	20337	Piston Retainer.....	Brass.....	1
32.....	10134	10132	O-Ring.....	Nitrile.....	1
33.....	20319	20332	Lower Stem.....	303 ss.....	1
34.....	20471	20338	Throttling Plug.....	303 ss.....	1
35.....	10111	10111	O-Ring.....	Nitrile.....	1
	10016	10016	Name Plate (not shown).....	18-8 ss.....	1
	10324	10324	Drive Screw (not shown).....	18-8 ss.....	2

Body Chart	Description	
30123.....	40135.....	NPT Threaded
40466.....	44322.....	Flanged, 150# RF
40122.....	44322.....	Flanged, 300# RF
40125.....	40141.....	Flanged, 600# RF
40131.....	41047.....	Flanged, 600# RTJ
40128.....	41044.....	Flanged, 1500# RF
40134.....	40150.....	Flanged, 1500# RTJ

Other Flange Options Available, Contact Pathway

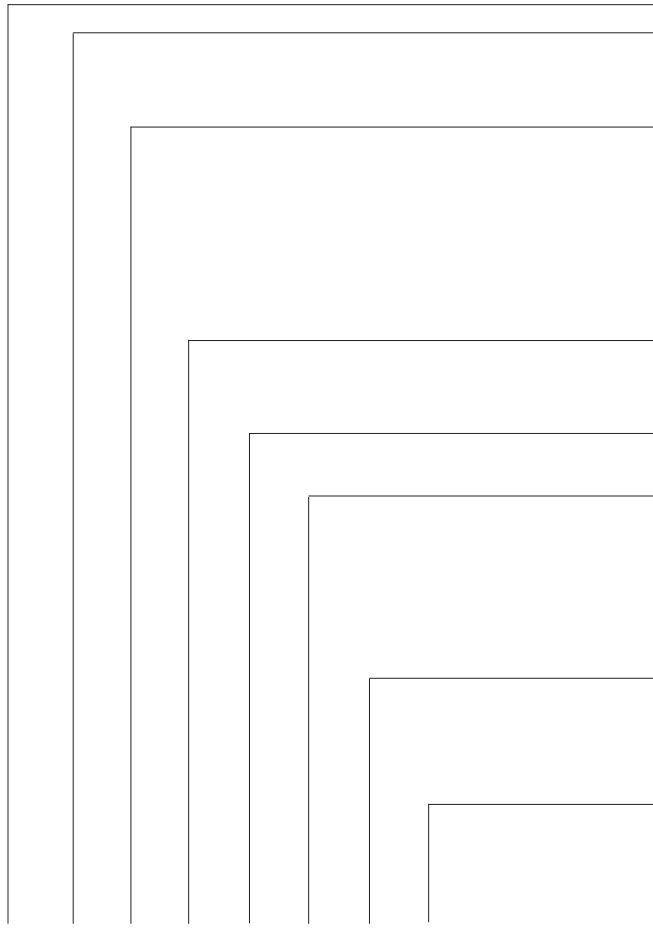
8950 Series

Back Pressure or Pressure Reducing, Overbalanced Valve

Specifications:

Size:	1"	2"
Working Pressure:	1500 psig	1500 psig
Temperature:	-20°F to +180°F; available to +240°F	
Topworks:	Pressed steel with nylon reinforced nitrile diaphragm. 50 psig maximum supply pressure.	
Effective Area:	45 sq. in.	62 sq. in.
C_v Factor :	18	48
Trim:		
Seat:	Stainless steel, removable.	
Plug:	Steel with molded nitrile standard; optional fabricated acetal, polyurethane or TFE inserts.	
Material:		
Body:	Cast steel standard, available in 316L stainless steel (2" size)	
Stem:	Stainless steel	
Packing:	Poly Pak	
Packing Block:	Stainless steel	

Ordering Chart:



8950 Series: Overbalanced pressure control valve

Size:

- 1 - 1"
- 2 - 2"

Connection:

- 1 - Threaded
- 3 - Flanged specify type*
- 4 - Beveled for weld
- 6 - 2" threaded 316L ss (CF8M)
- 8 - 2" flanged 316L ss (CF8M)
- 9 - 2" beveled for weld, 316L ss (CF8M)

Type:

- 3 - Back pressure
- 4 - Pressure reducing

Trim Seat:

- 1 - Removable, stainless steel

Trim Plug:

- 1 - Steel with molded nitrile
- 2 - Acetal (insert)
- 3 - Polyurethane (insert)
- 4 - TFE (glass filled - insert)
- 5 - Options (*see common options list*)

Other:

- 1 - No visual indicator
- 2 - Visual indicator
- 5 - Options (*see common options list*)

Option Number:

- () - Pathway will assign an option number based on specified requirements.

8950 - ()

Example: 8950-213-121

**flanged models available in 150# to 1,500# RF or RTJ. Specify pressure required. Maximum controlled pressure with 2800 Series Pilot is 350#. Higher pressures available with alternate Pilots.*

R2800 Series Pressure Pilot

Application:

The output from this pressure pilot can be used to throttle control valves to maintain a constant field adjustable pressure setting. The 2800 Series are used with both back pressure valves and pressure reducing valves. The pilot will control pressure on separators, vessels, flow lines or any location where the pressure must be maintained at a constant level.

Operation:

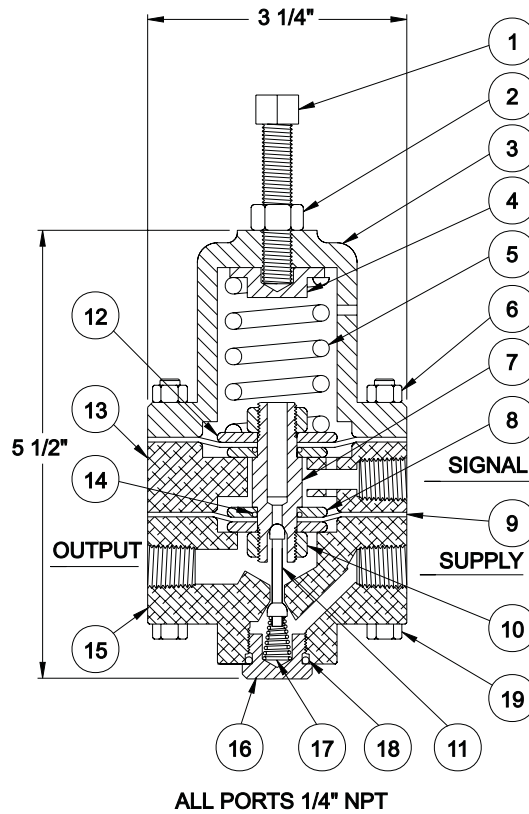
The signal pressure is applied to two opposing diaphragms. The upper diaphragm is larger than the lower diaphragm. As a result, signal pressure tries to move the diaphragm assembly up. Adjustable spring tension opposes this movement.

The diaphragm assembly moves upward when the pressure is sufficient to overcome this spring tension. This closes the supply and opens the output port to exhaust. The opposite occurs when signal pressure decreases. The diaphragm assembly moves downward closing the exhaust, then opening the supply valve. This combination creates a throttling action that maintains a desired output for the pressure setting required. Output from 0 to full supply pressure is proportional-to-signal pressure.

The 2800 Series is a non-bleed, reverse acting type pilot.



R2800 Series Pressure Pilot



Model	R2800	Pressure Actuated Pilot		
Item	Part #	Description	Material	Qty
1.....	10209.....	Adjustment Screw	Plated.....	1
2.....	10177.....	Jam Nut	Plated.....	1
3.....	20352.....	Spring Housing	Cast Iron	1
4.....	20673.....	Spring Retainer	Carbon Steel.....	1
5.....	10067.....	Spring	316 ss.....	1
6.....	10200.....	Cap Screw	Plated.....	5
7.....	20669.....	Upper Seat	303 ss.....	1
8.....	20672.....	Small Diaphragm Plate.....	303 ss.....	3
9.....	10102.....	Diaphragm.....	Nylon Reinforced Nitrile.....	2
10.....	10183.....	Jam Nut	18-8 ss.....	2
11.....	20649.....	Plug.....	303 ss.....	1
12.....	20671.....	Large Diaphragm Plate.....	Carbon Steel.....	1
13.....	20351.....	Spacer Ring.....	Aluminum.....	1
14.....	10114.....	O-Ring.....	Nitrile	2
15.....	20350.....	Body	Aluminum.....	1
16.....	20670.....	Plug.....	Brass.....	1
17.....	10068.....	Spring	316 ss.....	1
18.....	10124.....	O-Ring.....	Nitrile	1
19.....	10168.....	Hex Nut.....	Plated.....	7
20.....	10329.....	Cap Screw (not shown)	Plated.....	1

R2800 Series Pressure Pilot

Specifications:

Pressure:

Signal:	25 psig to 350 psig maximum, liquid or gas
Supply:	5 to 35 psi, air or gas
Output:	0 to full supply

Temperature:	-20°F to +180°F; available to 240°F
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Material:

Body:	Center housing: aluminum (available in stainless steel)
	Lower housing: aluminum
	Spring housing: cast iron
Plug:	Stainless steel
Seat:	Stainless steel
Diaphragm:	Nylon reinforced nitrile (available in fluorocarbon)
Connections:	All 1/4" NPT

Ordering Chart:

R2800 Series: Pressure pilot

Type:

- 01 - Standard
- 05 - Options (*see common options list*)

Option Number:

- () - Pathway will assign an option number based on specified requirements.

R2800- ()
Example: R2800-01

885 and 992 Series Valve Position Indicators

Application

These devices can close a switch when a valve opens or closes. Use on a diaphragm or piston type valve actuator to indicate an open or closed valve position.

Operation

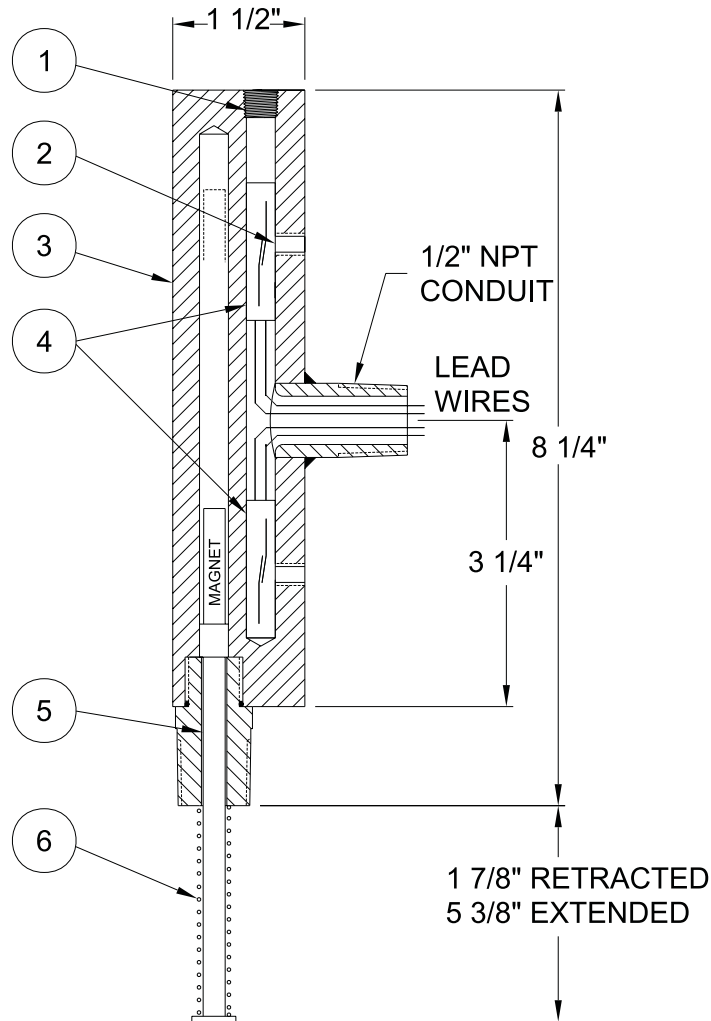
A spring loaded stem rides on the valve actuator. The 885 Series contains micro switches. The 992 Series uses magnetically operated Reed switches. Travel of the valve is monitored by adjusting the switches to indicate a valve open or valve closed position. As the valve actuator moves, the stem follows, causing the switches to operate at the desired point in travel; normally, when the valve is totally open or closed.

Features

- Adjustable for various valve stroke lengths.
- Explosion proof switch enclosure.
- Various adapters available to mount on different actuators.
- Stainless steel body on 992 Series.



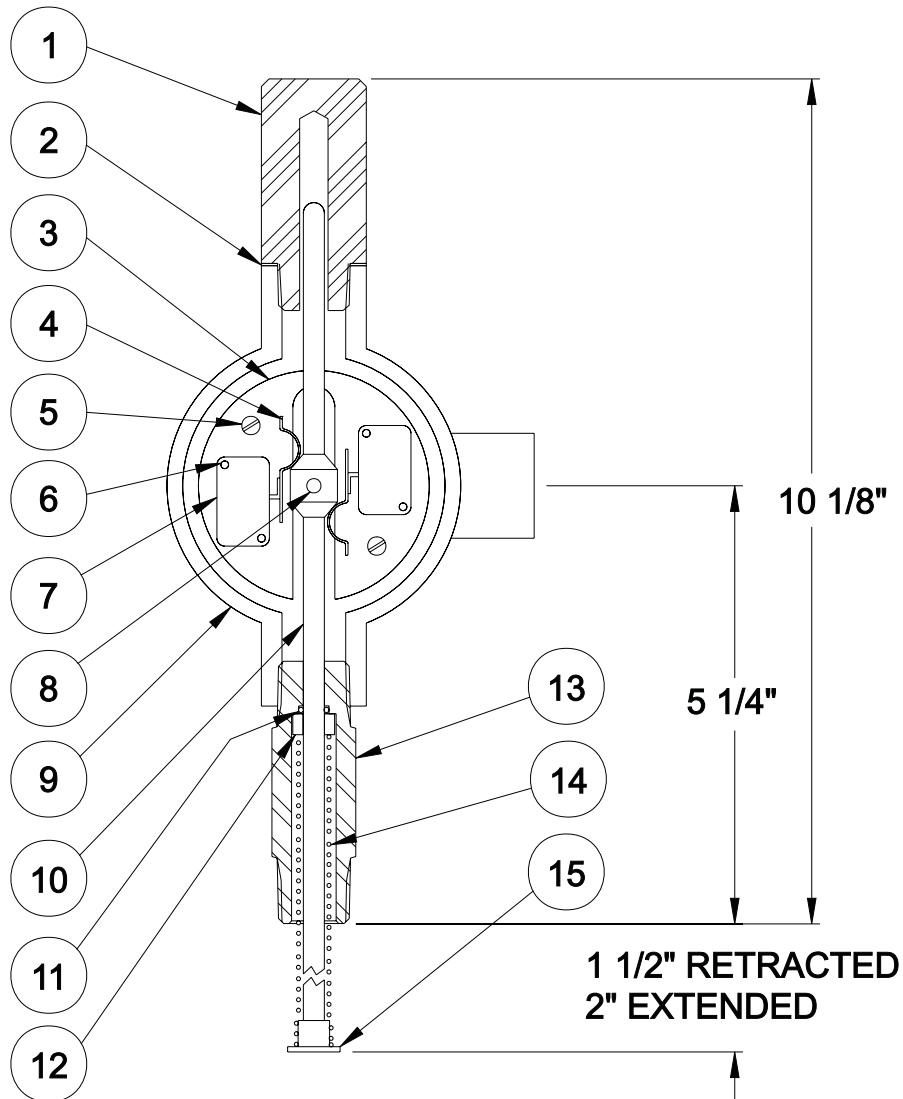
**885 and 992 Series
Valve Position Indicators**



Model 992-01-01

Item	Part #	Description	Material	Qty
1.....	10241	Pipe Plug.....	18-8 ss	1
2.....	10196	Set Screw.....	18-8 ss	2
3.....	30106	Body.....	303 ss.....	1
4.....	20412	Switch Cartridge.....	Sealed	2
5.....	20411	Magnet Arm.....	18-8 ss	1
6.....	10039	Spring.....	316 ss.....	1

885 and 992 Series Valve Position Indicators



Model 885-01-01

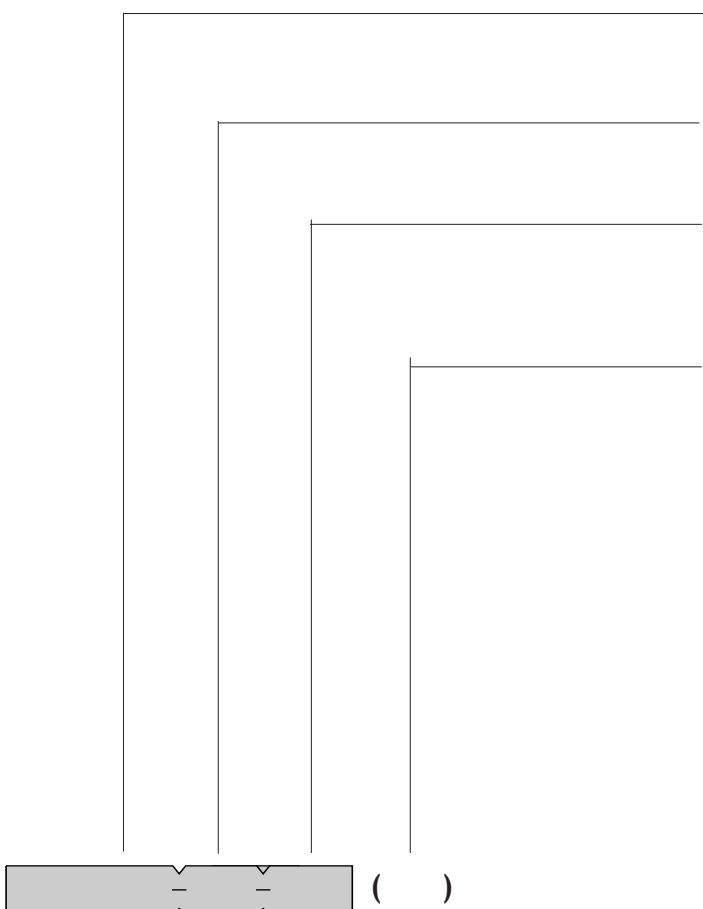
Item	Part #	Description	Material	Qty
1.....	20242	Position Indicator	Plexiglass	1
2.....	10088	Gasket	Nitrile	1
3.....	20651	Switch Plate	Aluminum	1
4.....	10091	Insulating Pad	Fiber	1
4.....	20652	Switch Actuator	Brass	1
5.....	10551	Round Head Machine Screw	18-8 ss	2
6.....	10187	Round Head Machine Screw	Plated	4
7.....	10232	Mirco-Switch & Actuator	Plastic/Plated	2
8.....	10192	Set Screw	Plated	1
9.....	20837	Enclosure	Cast Iron Alloy	1
10.....	20654	Stem	303 ss	1
11.....	10105	O-Ring	Nitrile	1
12.....	20656	Seal Retainer	Brass	1
13.....	20655	Adapter	Brass	1
14.....	10058	Spring	316 ss	1
15.....	20653	Spring Retainer	303 ss	1

885 and 992 Series Valve Position Indicators

Specifications

Series:	885 Series	992 Series
Temperature:	-20°F to +200°F	-40°F to +400°F
Switch Rating:	Two SPDT micro switches, 15 amps, 125 V AC	Two SPST Reed switches, 10 V.A. AC resistive
Connection:		
Mounting:	1/2" NPT standard	1/2" NPT standard
Electrical:	1/2" conduit	1/2" conduit
Material:		
Body:	Cast iron	Stainless steel
Adaptor:	Brass standard; ss available (adaptors available to fit on any piston or diaphragm operated valve)	Stainless steel
Travel:	Stem 1/2" standard; available to 1 1/2"	Magnet arm 2 1/2" std; available to 4"

Ordering Chart:



Series:

- 885 - Valve position indicator with micro switches
- 992 - Valve position indicator with Reed switches

Type:

- 01 - Standard 1/2" NPT connection
- 05 - Other (*specify requirements*)

Other:

- 01 - Travel: standard
- 03 - Travel: (*specify requirements*)
- 05 - Options (*specify requirements*)

Option Number:

- () - Pathway will assign an option number based on specified requirements.

**Specify: distance from the mounting connection to the valve actuator. Valve open is 2.25". Valve closed is 3.5".*

Example: 992-01-05 ()

Control Valve Common Options

Control Valve Common Options	500	8100	8900	304	8500	410	400	550	8150	8950	R2800
Hydraulic electric actuator adaptor	x	x	x	x	x	x					
Nickel plated non-stainless wetted parts	x	x	x	x	x	x	x	x	x	x	x
NACE MR01-75 compliant components	x	x	x	x	x	x	x	x	x	x	x
Stainless steel hard trim (specify grade)	x	x	x	x	x	x	x	x	x	x	
316 stainless steel cage		x	x	x	x	x	x		x	x	
316 stainless steel packing and monel stem	x	x		x	x	x	x	x	x	x	
Inconel packing spring		x			x				x		
Ring bolted bonnet construction			x	x	x	x				x	
High temperature open yoke			x		x	x				x	
High pressure pilot									x	x	
Stainless steel fitting & tubing to pilot								x	x	x	
Special flanged face to face dimensions		x	x		x	x			x	x	
Viton o-rings, packing	x	x	x	x	x	x	x	x	x	x	x
Viton o-rings, packing and diaphragm	x	x	x	x	x	x	x	x	x	x	
Viton plug, o-rings and packing	x		x					x		x	
Seat removal tool	x	x	x	x	x	x	x	x	x	x	

Also available on most products:

- Compliance certificate
 - Hydrostatic test report
 - Functional test certificate
 - Mill test report
 - NACE MR01-75 Certification
 - Certified drawings
 - Additional instruction manuals
 - Repair & maintenance of Pathway products
 - Expedited delivery
- Please contact Pathway for these or other options.



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