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## 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.



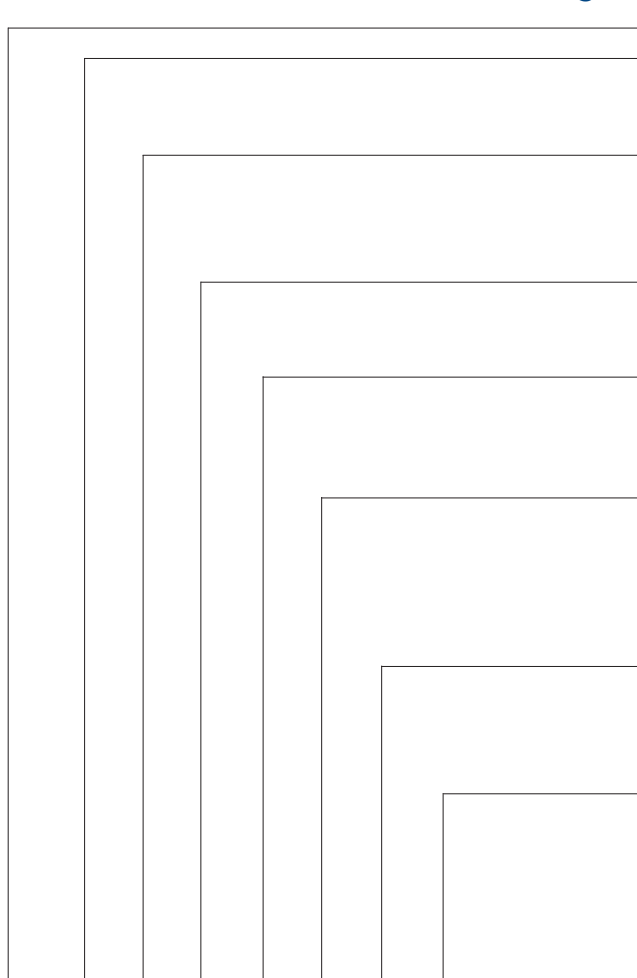
## 8150 Series

### Back Pressure or Pressure Reducing, High Pressure Valve

**Specifications:**

<b>Size:</b>	<b>1" Tee Body</b>	<b>2" Tee Body</b>
<b>Working Pressure:</b>	6000 psig	3000 psig
<b>Temperature:</b>	-20°F to +180°F standard; available to +240°F	
<b>Topworks:</b>	Pressed steel with nylon reinforced nitrile diaphragm; 50 psig maximum supply pressure.	
<b>Effective Area:</b>	Choice of 45 sq. in. or 62 sq. in.	
<b>C<sub>v</sub> Factor - Orifice:</b>	<b>Angle</b>	<b>Globe</b>
	<b>Angle</b>	<b>Globe</b>
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 .....
<b>Trim:</b>	17-4 PH stainless steel or carbide	
<b>Material:</b>		
<i>Body:</i>	Cast Steel	
<i>Stem:</i>	Stainless steel	
<i>Packing:</i>	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.

8150 -213-111 ( )  
**Example: 8150-213-111**

*\*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.*

## 8150 Series

### Back Pressure or Pressure Reducing, High Pressure Valve

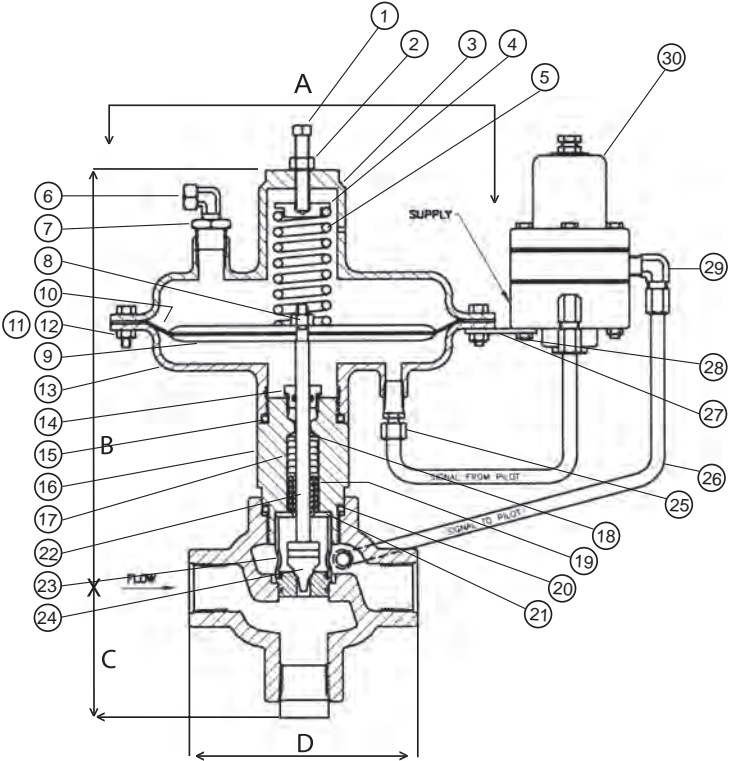
<b>Dimensions</b>				
Size	1" - 45	1" - 62	2" - 45	2" - 62
A .....	10 1/2"	13 1/16"	10 1/2"	13 1/16"
B.....	11 1/8"	14 3/4"	11 3/8"	15"
C.....	2 1/8"	2 1/8"	3 1/2"	3 1/2"
D.....	6 1/4"	6 1/4"	7"	7"

<b>Flanged Models</b>		
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!



<b>Trim Chart - 8150 Series</b>						
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

## 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

### Specifications:

#### Pressure:

<i>Signal:</i>	25 psig to 350 psig maximum, liquid or gas
<i>Supply:</i>	5 to 50 psi, air or gas
<i>Output:</i>	0 to full supply

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

#### Material:

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

### Ordering Chart:

R2800 Series: Pressure pilot

#### Type:

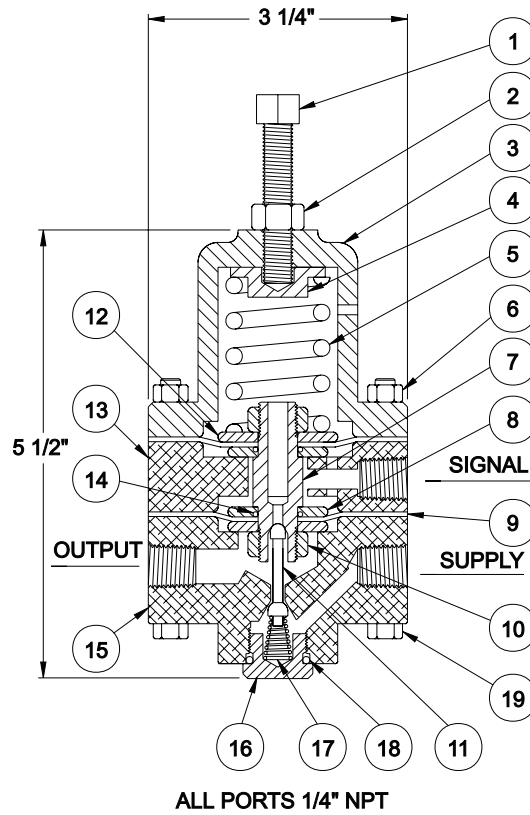
- 01 - Standard
- 05 - Options (*see common options list*)

#### Option Number:

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

R2800-  ( )  
Example: R2800-01

## R2800 Series Pressure Pilot



Model Item	R2800 Part #	Pressure Actuated Pilot 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