

Pressure Reducing Valve with Downstream Surge Protection



The Singer model -PR-S pressure reducing valve with downstream surge control employs the basic Singer model 106-PG or 206-PG main valve.

The PR pilot valve senses the downstream pressure through a connection at the valve outlet. Under flowing conditions, the pilot reacts to small changes in pressure to control the valve position by modulating the pressure above the diaphragm. The downstream pressure is maintained constant at the pilot set point (adjustable).

The surge pilot senses the downstream pressure. If the pressure rises above the PR pilot setting and reaches the surge pilot setting, the surge pilot opens in order to close the main valve rapidly.

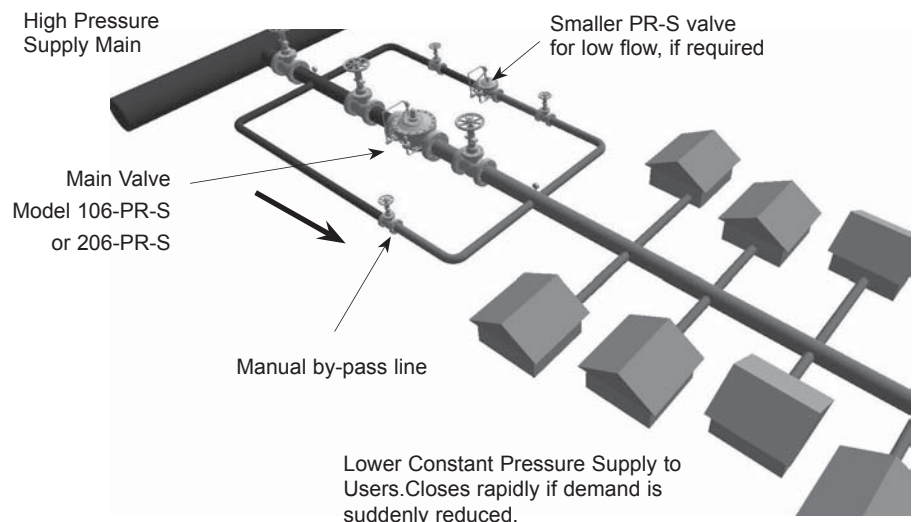
- STABLE LOW FLOW
- PRECISE AND EASILY ADJUSTABLE DOWNSTREAM PRESSURE
- COMPLETE SERVICE IN-LINE
- AUTOMATICALLY REDUCES DOWNSTREAM SURGES DURING SUDDEN DEMAND REDUCTIONS

Pressure Reducing

When Ordering Please Specify

1. Catalog Model # 2. Full Port (106) or Reduced Port (206) (See Main Valves) 3. Globe or Angle Pattern 4. End Connections
5. Valve Size 6. Pilot Range

Typical Application:

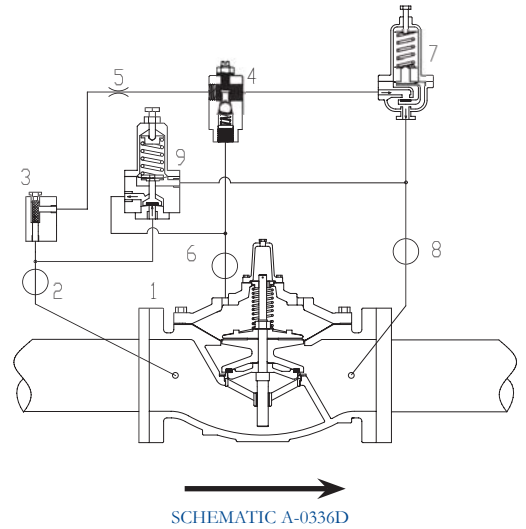


Pressure Reducing Valve With Downstream Surge Control:

1. Main Valve - 106-PG or 206-PG
2. Isolation Valve - standard 4" (100mm) and larger
3. Strainer - standard 4" (100mm) and larger
4. Model 26 Flow Stabilizer
(sizes 8" 106, 10" 206 and smaller)
5. Fixed Restriction
6. Isolation Valve - standard 4" (100mm) and larger
7. Model 160 pilot - standard spring 20 to 200 psi (1.38 to 13.8 bar)
-specify for 5 to 50 psi (.35 to 3.5 bar), 10 to 80 psi (.7 to 5.5 bar),
100 to 300 psi (6.9 to 21 bar).
8. Isolation Valve - standard all sizes
9. Model 81 RP Surge Pilot - standard spring 20 to 200 psi (1.38 to 13.8 bar)
-specify for 5 to 50 psi (.35 to 3.5 bar), 10 to 80 psi (.7 to 5.5 bar),
100 to 300 psi (6.9 to 20.7 bar).

Standard materials for pilot system components are:

- ASTM B62 bronze or ASTM B16 brass
- AISI 303/316 stainless steel trim
- Buna/EPDM diaphragm and seals



106-PR-S	Flow Capacity (See 106-PG in Main Valve Section for other Valve Data)								
Size (inches)	1/2"	3/4"	1"	1-1/4"	1-1/2"	2"	2-1/2"	3"	4"
Size (mm)	15mm	19mm	25mm	32mm	40mm	50mm	65mm	80mm	100mm
Minimum (USGPM)	1	1	1	1	1	5	5	5	10
Minimum (L/s)	0.06	0.06	0.06	0.06	0.06	0.32	0.32	0.32	0.63
Maximum Continuous (USGPM)	12	19	49	93	125	210	300	460	800
Maximum Continuous (L/s)	0.76	1.20	3.09	5.87	7.89	13.25	18.93	29	50

206-PR-S	Flow Capacity (See 206-PG in Main Valve Section for other Valve Data)								
Size (inches)	3"	4"	6"	8"	10"	12"	16"	18"	20"
Size (mm)	80mm	100mm	150mm	200mm	250mm	300mm	400mm	450mm	500mm
Minimum (USGPM)	5	5	10	20	40	5	5	5	5
Minimum (L/s)	0.32	0.32	0.63	1.26	2.52	0.32	0.32	0.32	0.32
Maximum Continuous (USGPM)	300	580	1025	2300	4100	6400	9230	16500	16500
Maximum Continuous (L/s)	19	37	65	145	259	404	582	1041	1041

106-PR-S	Flow Capacity (See 106-PG in Main Valve Section for other Valve Data)								
Size (inches)	6"	8"	10"	12"	14"	16"	20"	24"	36"
Size (mm)	150mm	200mm	250mm	300mm	350mm	400mm	500mm	600mm	900mm
Minimum (USGPM)	20	40	5	5	5	5	50	50	75
Minimum (L/s)	1.26	2.52	0.32	0.32	0.32	0.32	3.15	3.15	4.73
Maximum Continuous (USGPM)	1800	3100	4900	7000	8500	11000	22500	25800	55470
Maximum Continuous (L/s)	114	196	309	442	536	694	1420	1628	3500

206-PR-S	Flow Capacity (See 206-PG in Main Valve Section for other Valve Data)				
Size (inches)	24"	28"	30"	32"	36"
Size (mm)	600mm	700mm	750mm	800mm	900mm
Minimum (USGPM)	5	50	50	50	50
Minimum (L/s)	0.32	3.15	3.15	3.15	3.15

Main Valve Dimensions
 106-PG Page 20
 206-PG Page 29
 Anti-Cav Page 82

Selection Summary:

1. Select the valve series and size with sufficient capacity
- see below and/or the performance curves.
2. Check the operating flow against valve minimum.
3. Surge pilot typically set 5 psi (.35 bar) higher than reducing pilot.
4. If the outlet pressure is less than 35% of the inlet pressure, consult the factory.
5. Ensure that the flange rating exceeds the maximum operating pressure.

Specifications:

The valve shall be a Singer Valve model 106 (206) -PR-S, size "____", ANSI Class 150 (ANSI 300, ANSI flanges drilled to ISO PN 10 / 16/ 25 or 40) pressure rating/ flange standard, globe (angle), style valve. The Model 160 Pressure Reducing (Normally Open Pilot) spring range shall be "___ to ___" Psi (bar), with set point preset at factory to "___" Psi (bar). The Model 81-RP Pressure Relief Pilot (Normally Closed Pilot) spring range shall be "___ to ___" Psi (bar), with set point preset at factory to "___" Psi (bar). Assembly shall be according to Schematic A-0336C.

- The valve shall maintain accurate control of the downstream pressure regardless of fluctuation in flow or upstream pressure. The downstream surge control increases the closing speed of the valve to help the valve maintain control when demand is reduced suddenly.

Refer to "Main Valve" section, 106-PG (or 206-PG) for detailed information pertaining to valve sizes and materials, selection criteria and specifications.

Refer to "Pilot and Accessories" section, Model 160 Pressure Reducing Pilot (Normally Open Pilot), Model 81-RP Pressure Relief Pilot (Normally Closed Pilot) and Model 26 Flow Stabilizer for detailed information pertaining to materials and specifications.