

Pressure Reducing And Pressure Sustaining Valve



The Singer model -PR-R pressure reducing and pressure sustaining valve employs the basic Singer model 106-PG or 206-PG main valve. In typical applications, the reduced port model 206-PR-R is often the best selection.

Provided the upstream pressure setting is satisfied, the sustaining pilot 81-RP is kept open, permitting the valve to be controlled by the pressure reducing pilot 160. The PR pilot senses downstream pressure. Under flowing conditions it reacts to small changes in pressure to control the valve position by modulating the pressure above the diaphragm.

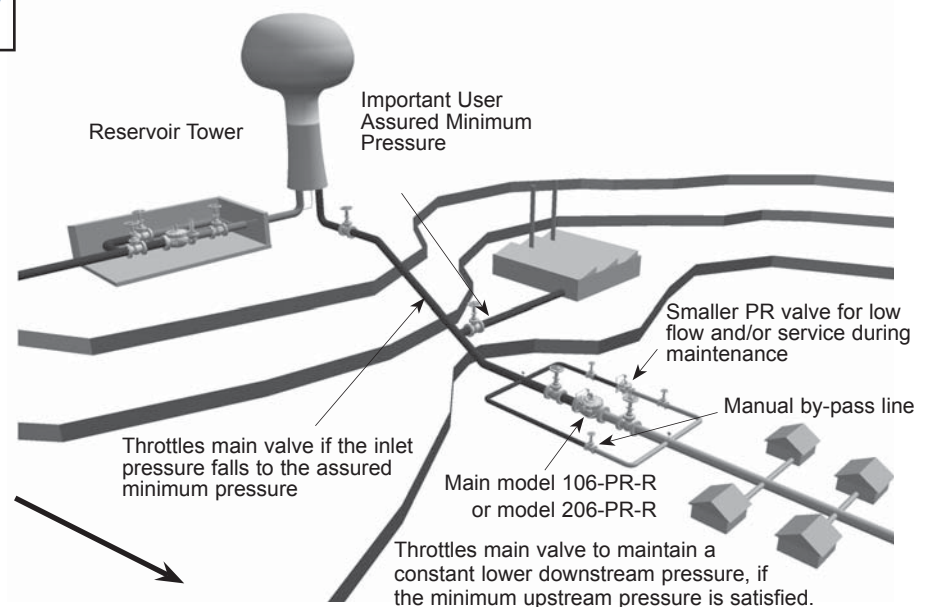
Should high demand cause the inlet pressure to fall to the sustaining pilot 81-RP setting, the upstream pressure has priority and the valve will modulate to prevent the upstream pressures from dropping below the 81-RP setpoint.

When the valve is modulating to sustain upstream pressure above the minimum 81-RP setpoint, the downstream pilot 160 may try to open the valve to maintain its setpoint, but upstream has priority and downstream pressures will fall below expectations.

- STABLE LOW FLOW
- PRECISE AND EASILY ADJUSTABLE DOWNSTREAM PRESSURE
- ENSURES A MINIMUM UPSTREAM PRESSURE
- COMPLETE SERVICE IN LINE

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 Ranges

Typical Application:

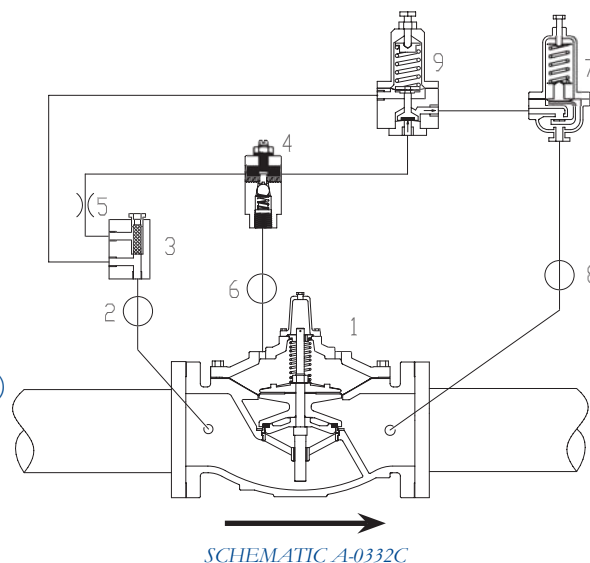


Pressure Reducing And Pressure Sustaining Valve:

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 3.5bar), 10 to 80 psi (.7 to 5.5bar),
 100 to 300 psi (6.9 to 21 bar).
8. Isolation Valve - standard all sizes
9. Model 81-RP pilot - standard spring 20 to 200 psi (1.38 to 13.8 bar)
 -specify for 5 to 50 psi (.35 to 3.5bar), 10 to 80 psi (.7 to 5.5bar),
 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 trim



106-PR-R	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-R	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-R	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-R	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
Maximum Continuous (USGPM)	16500	33600	33650	33700	33800
Maximum Continuous (L/s)	1041	2120	2123	2126	2132

*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 (see Technical & Sizing Section).
2. Check the operating flow against valve minimum.
3. If the outlet pressure is less than 35% of the inlet pressure, consult the factory.
4. Ensure that the flange rating exceeds the maximum operating pressure.

Specifications:

The valve shall be a Singer Valve model 106 (206) -PR-R, 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 Pilot (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-0332C.

- The valve shall maintain accurate control of the downstream pressure regardless of fluctuation in flow or upstream pressure until the upstream pressure drops to a predetermined value. The sustaining pilot shall override the pressure reducing function at such time as the upstream pressure drops to the predetermined value maintaining constant upstream pressure.

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.