

Models 106-PR-48 / 206-PR-48 Pressure Reducing Valve with Low Flow By-Pass



106-PR-48 Globe

KEY FEATURES

- Maintains stable flow right down to zero
- Precise and reliable pressure setting
- By-pass piped in parallel to reduce space requirements

Product Overview

The 106-PR-48 and 206-PR-48 series pressure reducing valves with low flow by-pass are based on the 106-PG or 206-PG main valve. In addition, a direct acting pressure reducing valve is piped in parallel, using the main valve back port connections.

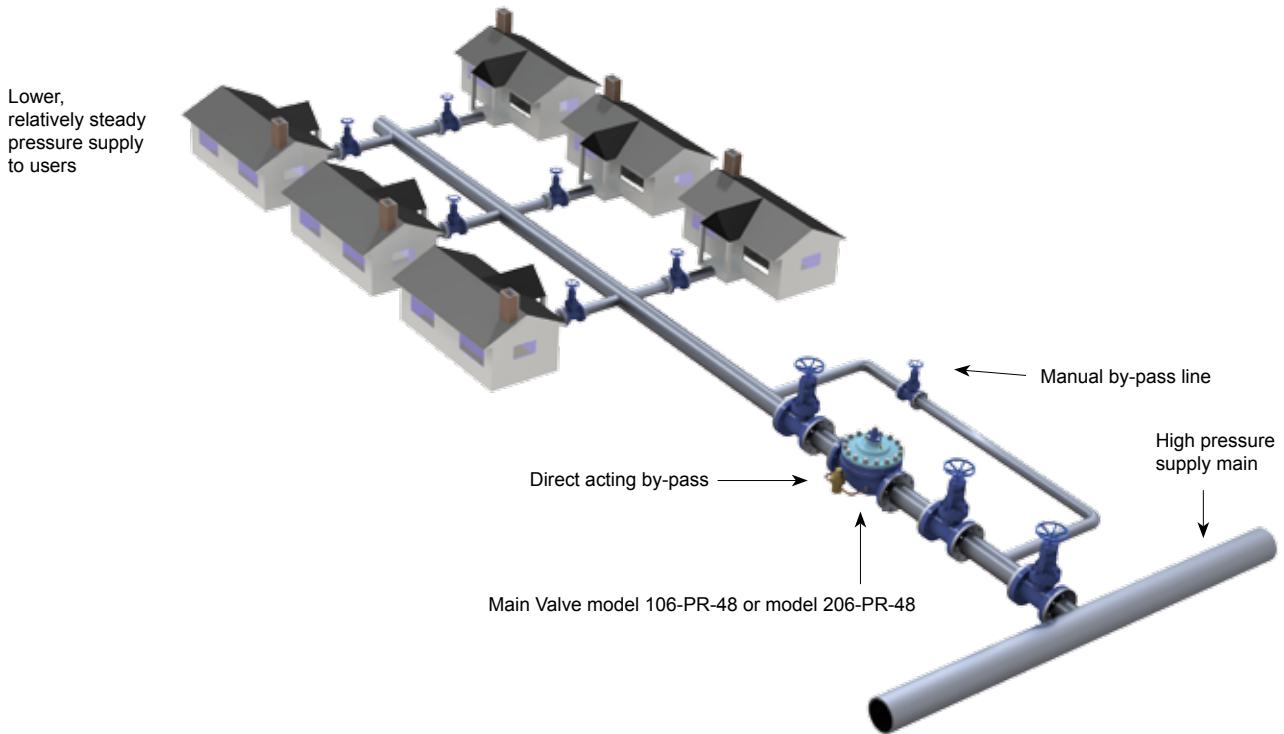
The pilot valve senses the downstream pressure through a connection at the main valve outlet. Under flowing conditions, the pilot reacts to small changes in pressure to control the main valve position by modulating the pressure above the diaphragm. The downstream pressure is maintained relatively steady at the pilot set-point.

The by-pass valve is set 5 psi / 0.35 bar higher than the main valve. Under low flow conditions, the main PR valve closes and the by-pass stays open, controlling the pressure at very low flows without seat chatter.

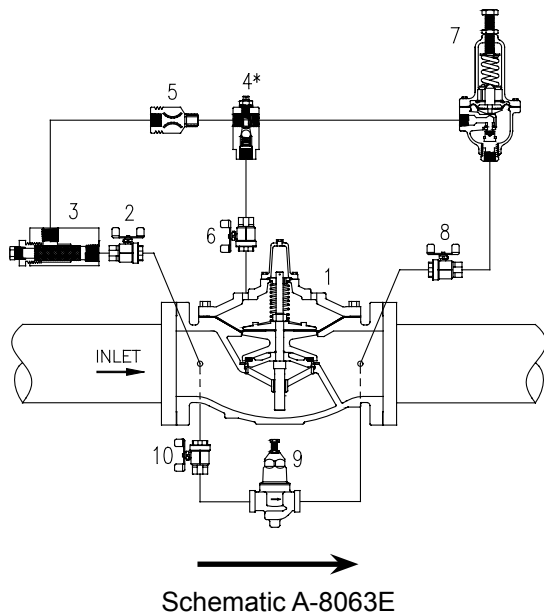
In typical pressure reducing applications, the reduced port Model 206-PR-48 is often the best selection.

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Typical Application



Schematic Drawing



1. Main Valve - 106-PG or 206-PG
2. Isolation Valves - standard 4 in / 100 mm and larger
3. Strainer - standard 4 in / 100 mm and larger
- 4.* Model 26 Flow Stabilizer / Opening Speed Control
 - Standard on valves 8 in / 200 mm 106,
 - 10" / 250 mm 206
5. Fixed Restriction
6. Isolation Valves - standard 4 in / 100 mm and larger
7. Model 160 Pilot
 - Specify for 5 to 50 psi / 0.35 to 3.5 bar,
 - 10 to 80 psi / 0.70 to 5.5 bar,
 - 20 to 200 psi / 1.3 to 13.8 bar,
 - 100 to 300 psi / 6.9 to 20.7 bar.
8. Isolation Valve - standard all sizes
9. Direct Acting by-pass - range 30 – 145 psi / 2.07 – 10 bar or 10 – 35 psi / 0.689 – 2.41 bar
10. Isolation Valve - standard all sizes

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Standard Materials

Standard materials for pilot system components are:

- ASTM B-62 bronze or ASTM B-16 brass;
- AISI 303 / 316 stainless steel trim

Specifications

- The valve shall be a Singer Valve model 106-PR-48 / 206-PR-48, 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 / “___ to ___” bar, with set-point preset at Singer Valve to “___” psi / “___” bar. Assembly shall be according to Schematic A-8063E.
- The valve shall maintain relatively accurate control of the downstream pressure regardless of fluctuation in flow or upstream pressure through main valve with the exception of low flow applications where a direct acting by-pass pressure-reducing valve will override the operation of the main valve.
- Refer to Main Valve section, page 11, 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) and Model 26 Flow Stabilizer for detailed information pertaining to materials and specifications. Consult Singer Valve for Model 36 Low Flow By-Pass specification information.

Selection Summary

1. Select the main PR valve series and size with sufficient capacity. Note that large Singer valves (6 in / 150 mm 106 & 12 in / 300 mm 206 and up) have extremely precise control, even at low flows, making by-pass valves generally unnecessary for stable control, due to Single Rolling Diaphragm technology. Model PR-48 valves are usually required only for valve sizes with significant minimum flows. (3 in / 80 mm to 8 in / 200 mm 106 and 4 in / 100 mm to 10 in / 250 mm 206).
2. If the outlet pressure is less than 35% of the inlet pressure, check for cavitation.
3. Ensure that the flange rating exceeds the maximum operating pressure.
4. Consider using a manual main by-pass line if necessary for service during maintenance periods.

Ordering Instructions

Refer to page 293 for the order form and ordering instructions.

Additionally, include the following information for this product:

1. Full port (106) or reduced port (206)
2. Pilot range

Models 106-PR-48 / 206-PR-48

Pressure Reducing Valve with Low Flow By-Pass

106-PR-48	Flow Capacity (See 106-PG in Main Valve section for other valve data)			
	3 in	4 in	6 in	8 in
Size (inches)	3 in	4 in	6 in	8 in
Size (mm)	80 mm	100 mm	150 mm	200 mm
Minimum (USGPM) Flat Diaphragm	0	0	0	0
Minimum (L/s) Flat Diaphragm	0	0	0	0
Maximum Continuous (USGPM) Flat Diaphragm	460	800	1800	3100
Maximum Continuous (L/s) Flat Diaphragm	29	50	114	196

206-PR-48	Flow Capacity (See 206-PG in Main Valve section for other valve data)			
	4 in	6 in	8 in	10 in
Size (inches)	4 in	6 in	8 in	10 in
Size (mm)	100 mm	150 mm	200 mm	250 mm
Minimum (USGPM) Flat Diaphragm	0	0	0	0
Minimum (L/s) Flat Diaphragm	0	0	0	0
Maximum Continuous (USGPM) Flat Diaphragm	580	1025	2300	4100
Maximum Continuous (L/s) Flat Diaphragm	37	65	145	259