Singer Pressure Reducing & Pressure Sustaining Valve

SINGER®
a MUELLER brand

Technical Guide W4.79

The 106-PR-R and 206-PR-R pressure reducing and pressure sustaining valves are based on the 106-PG, or 206-PG main valve with the addition of the sustaining pilot 81-RP and pressure reducing 160 PR.

Applications

- Pressure Control
- Remote and standalone applications
- Mining Applications

Product Attributes

- Quick opening relief
- No electrical services required
- Easily adjustable pressure settings

Approvals/Standards

- AS 5081:2008
- Flanges to AS/NZS 4087 Fig. B5
- Coating complies with AS/NZS 4158

WaterMark **Licence Number:** *WMK/SMK26726*

We are the supply partner of choice for New Zealand's civil construction industry, specialising in water and infrastructure based solutions.

HYNDSwater

The 106-PR-R and 206-PR-R pressure reducing and pressure sustaining valves are based on the 106-PG, or 206-PG main valve with the addition of the sustaining pilot 81-RP and pressure reducing 160 PR. Provided the upstream pressure setting is satisfied, the 81-RP pilot is kept open, permitting the valve to be controlled by the 160 pilot. The 160 pilot senses downstream pressure and 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 81-RP pilot setting, the upstream pressure has priority, and the valve will modulate to prevent the upstream pressures from dropping below the set-point.

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

In typical applications, the reduced port model 206-PR-R is often the best selection.

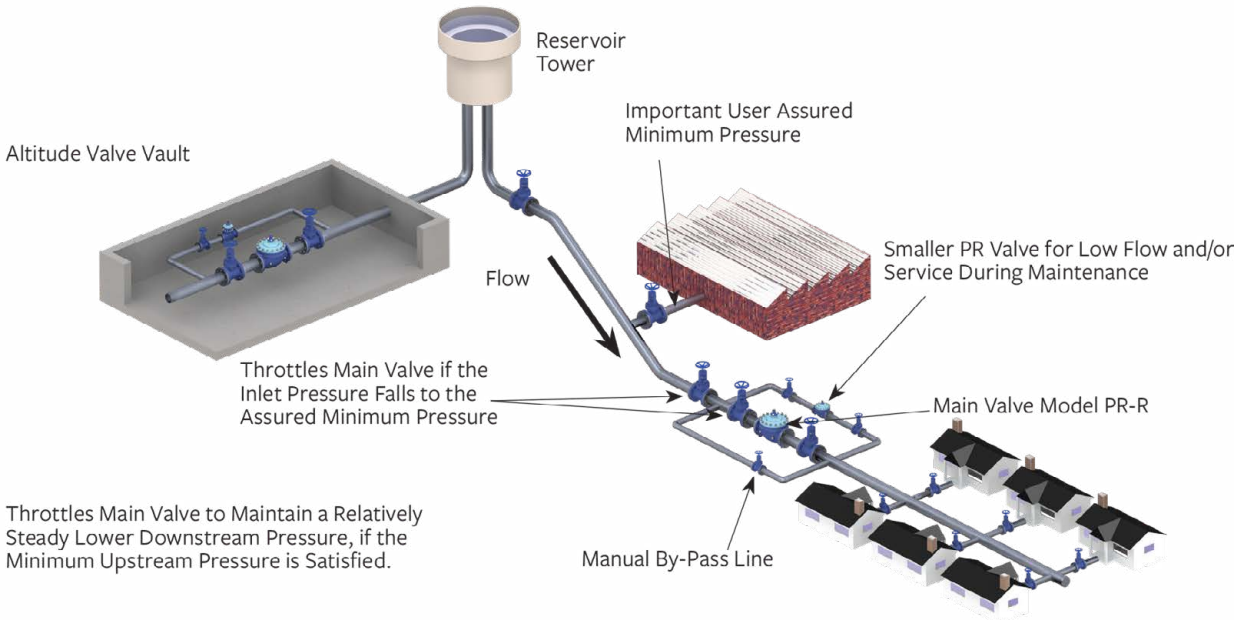

FIG. 1 Typical Application

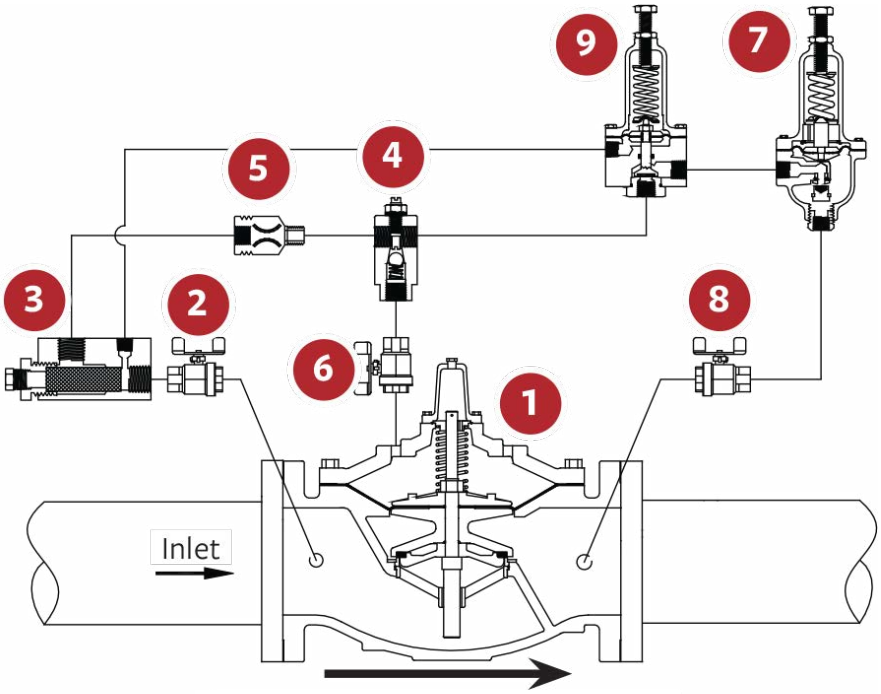

FIG. 2 Schematic A-0332C

Schematic Drawing

1. Main valve - 106-PG, 206-PG or 306-PG
2. Isolation valves - Standard 4" / 100 mm and larger
3. Strainer - Standard 4" / 100 mm and larger
4. Model 26 Flow Stabilizer / Opening speed control standard on valves 8" / 200 mm 106, 10" / 250 mm 206 and smaller
5. Fixed restriction
6. Isolation valves - Standard 4" / 100 mm and larger
7. Model 160 PR 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 / 1.38 to 13.8 bar;
   100 to 300 psi / 6.9 to 20.7 bar
8. Isolation valve - Standard all sizes
9. Model 81-RP Pilot - specify for
   5 to 50 psi / 0.35 to 3.5 bar;
   10 to 80 psi / 0.7 to 5.5 bar;
   100 to 300 psi / 6.9 to 20.7 bar;
   20 to 200 psi / 1.38 to 13.8 bar standard

Standard Materials

Standard materials for pilot system components are:

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

Selection Summary

1. Select the valve series and size with sufficient capacity
2. Check the operating flow against valve minimum
3. If the outlet pressure is less than 35% of the inlet pressure, check for cavitation
4. Ensure that the flange rating exceeds the maximum operating pressure

Ordering Instructions

Refer to the order form and ordering instructions.

Additionally, include the following information for this product:

1. Single chamber *(106)*, *(206)* or *(306)*
2. Pilot ranges

TABLE 1 Singer Pressure Reducing and Pressure Sustaining Valve Models 106 PR-R and 206 PR-R
(See 106-PG and 206-PG main valve section for other valve data)

Size (mm)	**106-PR-R**			**206 PR-R**		
	Min Flat Diaphragm (L/s)	**Min Rolling Diaphragm** (L/s)	**Maximum Continuous** (L/s)	**Min Flat Diaphragm** (L/s)	**Min Rolling Diaphragm** (L/s)	**Maximum Continuous** (L/s)
15mm	0.1	-	0.8	-	-	-
19mm	0.1	-	1	-	-	-
25mm	0.1	-	3	-	-	-
32mm	0.1	-	6	-	-	-
40mm	0.1	-	8	-	-	-
50mm	0.3	-	13	-	-	-
65mm	0.3	-	19	-	-	-
80mm	0.3	-	29	0.3	-	19
100mm	0.6	-	50	0.3	-	37
150mm	1.3	0.1	114	0.6	-	65
200mm	2.5	0.1	196	1.3	-	145
250mm	-	0.2	309	2.5	-	260
300mm	-	0.2	442	-	0.2	404
350mm	-	0.2	536	-	-	-
400mm	-	0.2	694	-	0.2	1040
450mm	-	-	-	-	0.2	1040
500mm	-	0.6	1104	-	0.2	1040
600mm	-	0.6	1628	-	-	-
600 x 400mm	-	-	-	-	0.2	1040
600 x 500mm	-	-	-	-	0.2	1370
700mm	-	-	-	-	0.6	2120
750mm	-	-	-	-	0.6	2123
800mm	-	-	-	-	0.6	2126
900mm	-	1.3	3500	-	0.6	2132
1000mm	-	-	-	-	1.3	3500
1200mm	-	-	-	-	1.3	3500