

Models 106-RPS-D / 206-RPS-D Pressure Differential Sustaining Valve



206-RPS-D Globe

KEY FEATURES

- Maintains a minimum differential pressure
- Easily adjustable differential pressure setting
- Valve closes drip-tight when the pressure differential is less than the pilot setting

Product Overview

The 106-RPS-D and 206-RPS-D pressure differential sustaining valves are based on the 106-PG or 206-PG main valve.

The RPS-D uses the 81-RPD pilot valve and has two sensing connections. The valve and pilot remain closed until the difference between the two pressures exceeds the pilot setting.

Under flowing conditions, the pilot reacts to small changes in pressure to control the valve position by modulating the pressure above the diaphragm. The pilot setting establishes a differential pressure that is held relatively steady despite changes in system pressure or flow.

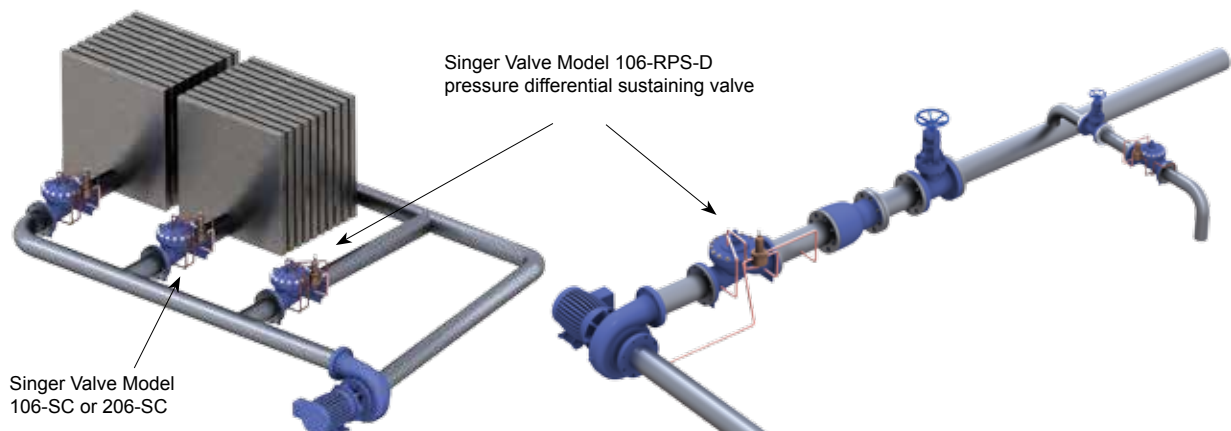
Typical Applications

Parallel Application

As the number of operating heat exchangers in the circuit vary, the Singer RPS-D maintains a relatively steady differential for maximum chiller efficiency.

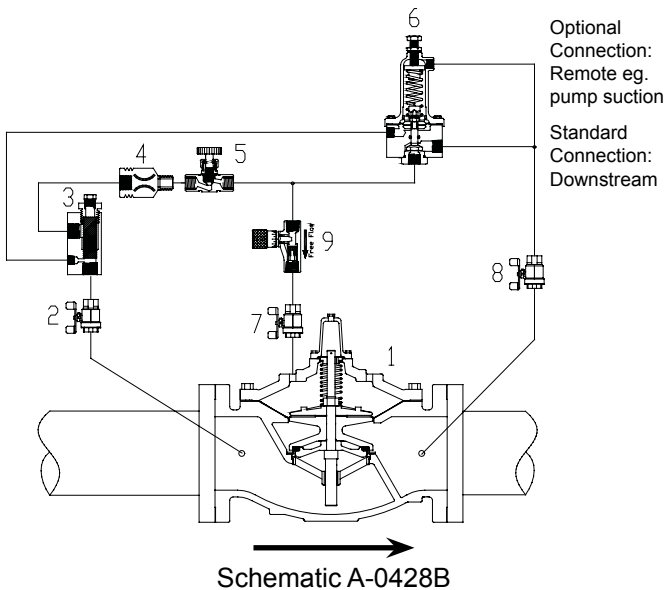
Series Application

In a booster pump application, the Singer RPS-D ensures the pump operates near its best efficiency and without cavitation or overload, should the suction conditions vary.



Models 106-RPS-D / 206-RPS-D Pressure Differential Sustaining Valve

Schematic Drawing



1. Main Valve - 106-PG or 206-PG
2. Isolation Valve - standard 4 in / 100 mm and larger
3. Strainer - standard 4 in / 100 mm and larger
4. Fixed Restriction - 1/8 in / 3.2 mm
5. Model 852-B Closing Speed Control
6. Model 81-RPD 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.
7. Isolation Valve - standard 4 in / 100 mm and larger
8. Isolation Valve - standard all sizes
9. Opening Speed Control (optional)

Standard Materials

Standard materials for pilot system components are:

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

Specifications

- The valve shall be a Singer Valve model 106-RPS-D / 206-RPS-D, 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 81-RPD Differential Pilot spring range shall be “___ to ___” psi / bar, with set-point preset at Singer Valve to “___” psi / bar. Assembly shall be according to Schematic A-0428B.
- The valve will automatically open when the pressure differential across the valve exceeds the pilot set-point. Under flowing conditions, the pilot reacts to small changes in pressure to control the valve position by modulating the pressure above the diaphragm. The pilot setting establishes a differential pressure, which is held relatively constant despite changes in system pressure or flow.
- Refer to Main Valve section, see 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, see page 265, Model 81-RPD Differential Pressure Pilot for detailed information pertaining to materials and specifications.

Selection Summary

1. Select the valve with sufficient capacity using the available pressure drop.
2. Usually operating in the continuous, “C”, service range up to 20 ft/s / 6 m/s

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- If the outlet pressure is less than 35% of the inlet pressure, check for cavitation.
- Ensure that the maximum working pressure rating of the valve and of the flange exceeds the maximum operating pressure.

Ordering Instructions

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

Additionally, include the following information for this product:

- Full port (106) or reduced port (206)
- Pilot range

106-RPS-D	Flow Capacity (See 106-PG in Main Valve section for other valve data)								
Size (inches)	1/2 in	3/4 in	1 in	1-1/4 in	1-1/2 in	2 in	2-1/2 in	3 in	4 in
Size (mm)	15 mm	19 mm	25 mm	32 mm	40 mm	50 mm	65 mm	80 mm	100 mm
Minimum (USGPM) Flat Diaphragm	1	1	1	1	1	5	5	5	10
Minimum (L/s) Flat Diaphragm	0.1	0.1	0.1	0.1	0.1	0.3	0.3	0.3	0.6
Maximum Continuous (USGPM)	12	19	49	93	125	210	300	460	800
Maximum Continuous (L/s)	0.8	1	3	6	8	13	19	29	50

106-RPS-D	Flow Capacity (See 106-PG in Main Valve section for other valve data)								
Size (inches)	6 in	8 in	10 in	12 in	14 in	16 in	20 in	24 in	36 in
Size (mm)	150 mm	200 mm	250 mm	300 mm	350 mm	400 mm	500 mm	600 mm	900 mm
Minimum (USGPM) Flat Diaphragm	20	40	-	-	-	-	-	-	-
Minimum (USGPM) Rolling Diaphragm	1	1	3	3	3	3	10	10	20
Minimum (L/s) Flat Diaphragm	1.3	2.5	-	-	-	-	-	-	-
Minimum (L/s) Rolling Diaphragm	0.1	0.1	0.2	0.2	0.2	0.2	0.6	0.6	1.3
Maximum Continuous (USGPM)	1800	3100	4900	7000	8500	11000	17500	25800	55470
Maximum Continuous (L/s)	114	196	309	442	536	694	1104	1628	3500

206-RPS-D	Flow Capacity (See 206-PG in Main Valve section for other valve data)								
Size (inches)	3 in	4 in	6 in	8 in	10 in	12 in	16 in	18 in	20 in
Size (mm)	80 mm	100 mm	150 mm	200 mm	250 mm	300 mm	400 mm	450 mm	500 mm
Minimum (USGPM) Flat Diaphragm	5	5	10	20	40	-	-	-	-
Minimum (USGPM) Rolling Diaphragm	-	-	-	-	-	3	3	3	3
Minimum (L/s) Flat Diaphragm	0.3	0.3	0.6	1.3	2.5	-	-	-	-
Minimum (L/s) Rolling Diaphragm	-	-	-	-	-	0.2	0.2	0.2	0.2
Maximum Continuous (USGPM)	300	580	1025	2300	4100	6400	9230	16500	16500
Maximum Continuous (L/s)	19	37	65	145	260	404	582	1040	1040

206-RPS-D	Flow Capacity (See 206-PG in Main Valve section for other valve data)							
Size (inches)	24 x 16 in	24 x 20 in	28 in	30 in	32 in	36 in	40 in	
Size (mm)	600 x 400 mm	600 x 500 mm	700 mm	750 mm	800 mm	900 mm	1000 mm	
Minimum (USGPM) Rolling Diaphragm	3	3	10	10	10	10	20	
Minimum (L/s) Rolling Diaphragm	0.2	0.2	0.6	0.6	0.6	0.6	1.3	
Maximum Continuous (USGPM)	16500	21700	33600	33650	33700	33800	62000	
Maximum Continuous (L/s)	1040	1370	2120	2123	2126	2132	3912	