

# Models 106-BPC / 206-BPC Booster Pump Control Valve – Double Chamber



106-BPC Globe

## KEY FEATURES

- Suitable for most pumping applications including suction lift and low differential head
- Prevents pump starting and stopping surges
- Built-in non-slam mechanical check reduces surges on loss of power
- Separate opening and closing speed controls

## Product Overview

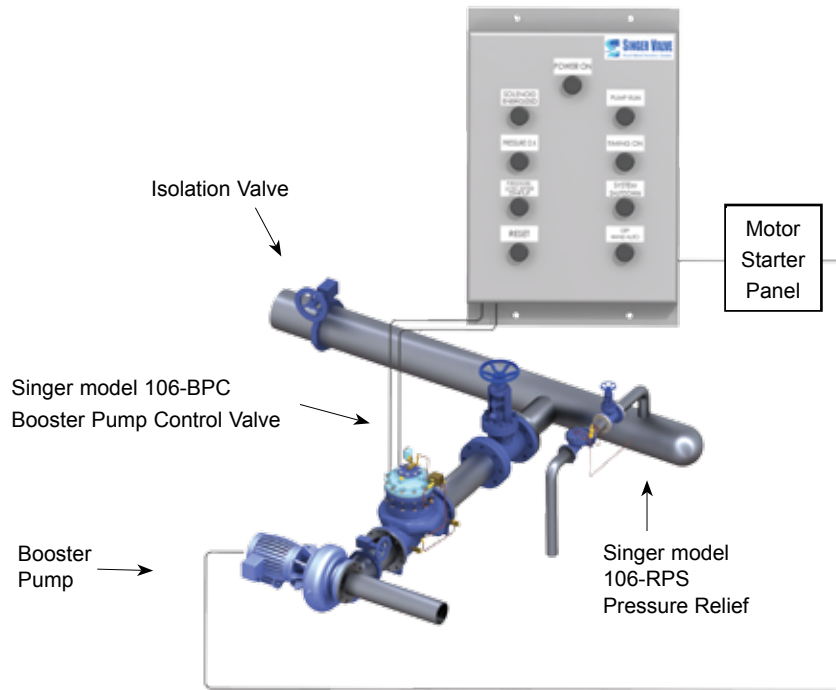
The 106-BPC and 206-BPC booster pump control valves are installed in-line, directly downstream of the pump discharge.

The pump control valve is normally closed and on pump start-up, a pilot solenoid is energized to open the valve, at a rate governed by the opening speed control. When shut-down is required the pilot solenoid on the valve is de-energized to commence closing. The pump is kept running while the valve slowly closes. When the valve is almost fully closed and flow is virtually zero, a stem mounted cam triggers the limit switch to stop the pump.

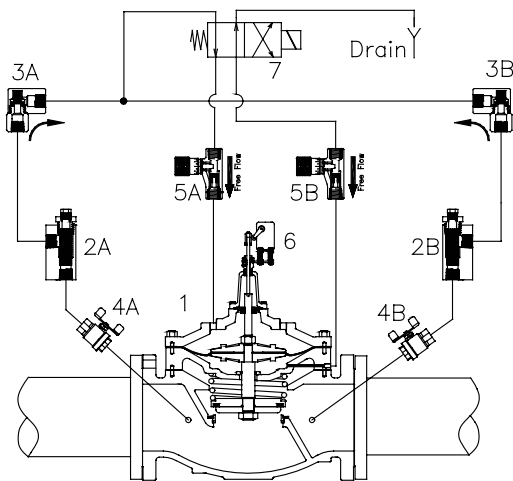
In the event of a power failure, the built-in mechanical drop check closes immediately when the flow stops, independently of the valve position. Surges are minimized by closing the valve before reverse flow occurs.

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## Typical Application



## Schematic Drawing



Schematic A-0426H

1. Main Valve - 106-PTC or 206-PTC
2. Strainer - (2A,2B) - 40 mesh stainless steel
3. Check Valves - (3A,3B)
4. Isolation Valves - (4A,4B)
5. Micrometer Flow Control Valves - (5A Opening Speed Control, 5B Closing Speed Control)
6. Model X129 Limit Switch Assembly - NEMA 4, SPDT
7. Solenoid Valve - four way, NEMA 4

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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

Refer to Electronic Control section (SPC product), see 245, and consult Singer Valve for pump control panel options.

## Selection Summary

1. In-line pump control valves incur continuous head loss while the pump is running. Refer to the 106 or 206 performance curves (straight line) (See Technical and Sizing section, page 284). Select the smallest size meeting the capacity requirements, with a pressure drop that is acceptable.
2. Standard configuration provides for NEMA 4 watertight enclosures for the Honeywell model OP-AR, SPDT limit switch and the ASCO solenoid with 120 VAC / 60 Hz (or 220 VAC / 50 Hz or 240 VAC / 60 Hz) coil. For other electrical service or higher pressure ratings consult Singer Valve. A manual override is available upon request.
3. Other functions may be combined with Booster Pump Control valves, usually in conjunction with single chamber main valves, e.g. model 106-BPC-R, pump control with pressure sustaining feature.

## Specifications

- The valve shall be a Singer Valve model 106--BPC / 206-BPC, size “\_\_\_\_\_”, ANSI Class 150 (ANSI 300, ANSI flange drilled to ISO PN 10 / 16 / 25 or 40) pressure rating / flange standard, globe (angle), style valve. Solenoid valve shall be four-way de-energized to close valve, with a 120VAC / 60Hz (220 VAC / 50 Hz or 240 VAC / 60 Hz) solenoid coil. Assembly shall be according to Schematic A-0426H.
- The Booster Pump control valve will eliminate surges associated with the normal stopping and starting of booster pumps. On pump start-up, a pilot solenoid is energized to begin opening the valve, at a rate governed by the opening speed control. Separate flow control valves and a double chamber design will allow opening and closing speeds to be adjusted independently.
- When the solenoid is de-energized, the valve slowly closes while the pump continues to run. When the valve is almost fully closed and flow is virtually zero, a stem-mounted cam triggers the limit switch to stop the pump.
- In the event of power failure while the pump is running, or other sudden stop of the pump, an internal drop check valve will prevent reverse flow back through the valve or pump.
- Refer to Main Valve section, page 11, 106-PTC or 206-PTC, page 34, for detailed information pertaining to valve sizes and materials, selection criteria and specifications.
- Refer to Pilot and Accessories section, page 277, Micrometer Flow Control Valves for detailed information pertaining to materials and specifications. Solenoid specification information is available from Singer Valve only at this time.

# Models 106-BPC / 206-BPC

## Booster Pump Control Valve – Double Chamber

### 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. Solenoid voltage
3. Maximum inlet pressure

106-BPC	Flow Coefficient C <sub>v</sub> (See 106-PTC in Main Valve section for other valve data)											
	2 in	2-1/2 in	3 in	4 in	6 in	8 in	10 in	12 in	14 in	16 in	20 in	24 in
Size (in)	2 in	2-1/2 in	3 in	4 in	6 in	8 in	10 in	12 in	14 in	16 in	20 in	24 in
Size (mm)	50 mm	65 mm	80 mm	100 mm	150 mm	200 mm	250 mm	300 mm	350 mm	400 mm	500 mm	600 mm
C <sub>v</sub> <sup>1</sup>	55	80	110	200	460	800	1300	2100	2575	3300	5100	7600
K <sub>v</sub> <sup>2</sup>	13	19	26	47	110	190	310	500	610	780	1210	1800

206-BPC	Flow Coefficient C <sub>v</sub> (See 206-PTC in Main Valve section for other valve data)														
	3 in	4 in	6 in	8 in	10 in	12 in	16 in	18 in	20 in	24 x 16 in	24 x 20 in	28 in	30 in	32 in	36 in
Size (in)	3 in	4 in	6 in	8 in	10 in	12 in	16 in	18 in	20 in	24 x 16 in	24 x 20 in	28 in	30 in	32 in	36 in
Size (mm)	80 mm	100 mm	150 mm	200 mm	250 mm	300 mm	400 mm	450 mm	500 mm	600 x 400 mm	600 x 500 mm	700 mm	750 mm	800 mm	900 mm
C <sub>v</sub> <sup>1</sup>	60	150	250	505	985	1550	2200	3300	3400	3500	5100	7800	7800	7900	8000
K <sub>v</sub> <sup>2</sup>	14	36	60	120	230	370	520	780	810	830	1210	1850	1850	1870	1900

<sup>1</sup>C<sub>v</sub> = USGPM at 1 psi pressure drop

<sup>2</sup>K<sub>v</sub> = L / s at 1 bar pressure drop

$$(Q=C_v \sqrt{\Delta P})$$