

Model 106-RF

Rate Of Flow Control Valve

Specifications:

The valve shall be a Singer Valve model 106 (206) -RF, 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-RF Rate Of Flow Pilot shall have a flow set point, preset at factory to "____" USGPM (Liters/Second). Assembly shall be according to Schematic A-7427C.

- The valve maintains a constant flow rate by sensing the pressure differential across the specially sized orifice plate (Orifice housings are provided as an option only). The flow rate is adjustable by changing the pilot's setting (differential across orifice). When the pressure differential is less than the set point the valve opens allowing flow to meet predetermined demand. When the pressure drop across the orifice exceeds the set point, the valve closes slightly, limiting flow to the pre-set maximum.

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 "Main Valve Option" section, Model x107 Position Indicator for detailed information pertaining to materials and specifications.

Refer to "Pilot and Accessories" section, Model 160-RF Rate Of Flow Pilot and Model 26 Flow Stabilizer for detailed information pertaining to materials and specifications. Orifice Plate sizing and specification information is available from the factory.

Main Valve:

- Valve(s) shall be a hydraulically operated globe (angle) valve. The inner valve assembly shall be top and bottom guided by means of easily replaceable bearing bushings. The inner valve assembly shall be the only moving part and shall be securely mounted on a 316 stainless steel stem. The stainless steel stem shall be provided with wrench flats on all valves 1" (25mm) to 8" (200mm), for ease of assembly and maintenance.
- All pressure containing components shall be constructed of ASTM A536-65/45/12 ductile iron. The flanges shall be designed to ANSI Class 150 or Class 300 standards. Flange drilling to ANSI shall be standard however British, ISO and other drillings shall be available upon request.
- Valve(s) shall have a protective fusion bonded epoxy coating internally and externally. The protective fusion bonded epoxy coating shall conform to the ANSI/AWWA C116/A21.16 (current version) specification.
- Valve(s) 8" (200mm) and smaller shall provide smooth "frictionless" motion with actuation being achieved by the use of a flat style EPDM diaphragm. They shall be constructed of nylon fabric bonded with synthetic rubber. The diaphragms shall not be used as a seating surface. No lip seals or packing may be used to seal the actuator.

Singer Valve Inc.

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- Valve(s) 10" (250mm) and larger shall provide smooth "frictionless" motion and maximum low flow stability with actuation being achieved by the use of the Singer rolling diaphragm technology. The diaphragms shall not be used as a seating surface. No lip seals or packing may be used to seal the actuator.
- The valve cover shall have a separate stem cap giving access to the stem for alignment check, spring installation and ease of assembly.
- On valve(s) 1"(25mm) and larger, bonnets shall be accurately located to bodies utilizing locating pins. Locating pins shall eliminate corrosion resulting from the use of uncoated ductile iron to ductile iron surfaces.
- Valve(s) 3"(80mm) and larger shall have the 316 stainless steel seat, bolted in place, utilizing "Spiralock" thread tapping technology. The 316 stainless steel seat ring shall be easily replaceable without special tools.
- The valve(s) shall form a drip tight seal between the stationary stainless steel seat ring and the resilient disc, which has a rectangular cross-section and is retained by clamping on three and one half sides. The resilient disc shall be constructed of Buna or EPDM for normal service conditions.
- All external fasteners shall be 18/8 stainless steel with 18/8 washers.
- All repairs and maintenance shall be possible without removing the valve from the line. To facilitate easy removal and replacement of the inner valve assembly and to reduce unnecessary wear on the guide, the stem shall be vertical when the valve is mounted in a horizontal line.
- Each valve shall be tested prior to shipment. The standard test shall include a pressure test and a full functional, operational test when pilots and accessories are fitted to suit a particular application.
- The valve(s) shall be covered by a minimum three year (3) warranty against defects in materials and workmanship. The stainless steel seat ring shall be covered by a lifetime replacement warranty.
- The valve shall be a Singer Model.... Refer to other Catalog Sections for further details.

Pilots & Accessories:

The pilot shall be Singer model 160-RF with the spring range specified.

- The normally open pilot shall be of bronze construction with a spring to adjust the pressure setting and as a result, flow rate.
- The pilot seat, stem and inner valve shall be of stainless steel 316 construction and the inner valve shall have EPDM resilient compound for seating. The EPDM compound must adhere safely to the inner valve and be ground flat and square to assure maximum performance.
- The pilot guide stem shall be guided by a Delrin bushing in the spring casing above the diaphragm and totally removed from the flow of water in the main pilot chamber. The pilot guide and stem location above the diaphragm shall eliminate debris buildup and sticking as well as minimize turbulence and false readings on the diaphragm.
- The pilot shall be self-cleaning and self-flushing by locating the outlet in the bottom of the pilot ninety degrees to the inlet.
- A sensing port shall be provided in the spring casing above the diaphragm.
- Maximum Working Temperature: 180 degree F (82 degree C)
- Maximum Working Pressure: 400 psi (27 bar)

		Approximate PSI per Turn
• Spring Ranges: Standard:	2 to 20 psi (.137 to 1.37 bar)	2 PSI (.137 bar) per Turn
Optional:	25 to 50 psi (1.7 to 3.4 bar)	4 PSI (.27 bar) per Turn

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The flow stabilizer shall be a Singer Model 26.

- The flow stabilizer body shall be of stainless steel construction.
- The flow stabilizer shall allow unrestricted flow into the main valve bonnet while offering adjustable restricted flow out of the bonnet.
- The flow stabilizer shall be self cleaning and resistant to plugging
- The Singer proprietary tapered internal orifice and inner valve shall offer precise adjustment, which shall be lockable by utilizing the top locknut.
- The flow stabilizer shall improve low flow stability when incorporated with other "Singer Low Flow" proprietary automatic control valve enhancements.
- Maximum Working Temperature: 180 degree F (82 degree C)
- Maximum Working Pressure: 400 psi (27 bar)
- Connections: 1/4" (7.5mm) NPT

The Position Indicator shall be a Singer Model X107.

- The Position Indicator stem shall be pinned to main valve stem on all valves 2-1/2" (65mm) and larger. The Position Indicator stem shall be threaded to main valve stem on all valves 2" (50mm) and smaller.
- The top of the Position Indicator shall be complete with a brass petcock to allow for easy removal of air from the valve bonnet.
- The Valve Position Indicator stem shall be contained within a brass housing and Pyrex sight tube. No dynamic O-Rings shall be permitted.

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