Model 106-A-Type 2
One-Way Flow Altitude Control Valve

Specifications:

The valve shall be a Singer Valve model 106 (206) -A-Type 2, 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 301-4 Altitude Pilot spring range (elevation) shall be "___ to ___" feet (meters), with set point preset at factory to "___" feet (meters). Assembly shall be according to Schematic A-0413C.

- The valve allows normal forward flow to fill the reservoir to the maximum level then closes drip tight at the set point. It opens to refill the tank once the level drops a fixed distance below the high water level.

Refer to "Main Valve" section, 106-PG (or 206-PG) and "Main Valve Options" section, Model X107 Position Indicator for detailed information pertaining to valve sizes and materials, selection criteria and specifications.

Refer to "Pilot and Accessories" section, Model 301-4 Altitude Pilot for detailed information pertaining to materials and specifications.

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.
- 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.

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- 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 301-4 with the spring range specified.

- The pilot shall consist of a ductile iron housing and shall have a protective fusion bonded coating, which conforms to the ANSI/AWWA C116/A21.16 (current version) specification.
- The 3-way valve body, seat and stem shall be of stainless steel construction.
- The inner valve shall have EPDM resilient compound for seating. The EPDM compound must be permanently bonded to the inner valve and be ground flat and square to assure maximum performance.
- The pilot shall utilize a rolling diaphragm stem seal to eliminate friction when the pilot actuates.
- The 3-way valve body shall be serviceable without removing the pilot from the valve. The inner valve shall be replaceable through the bottom of the pilot so that pilot tubing need not be disconnected during service.
- Maximum Working Temperature: 180 degree F (82 degree C)
- Maximum Working Pressure: 400 psi (27 bar)
- Spring Ranges:

Model	Spring Range/ Elevation	Approximate Fixed Differential/ Delayed Opening	APPROX. FEET PER TURN
301-4	4 to 20 ft (1 to 6m)	1 ft (0.3m)	1 ft (0.3m) per turn

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301-4	10 to 60 ft (3 to 18m)	2 ft (0.6m)	2 ft (0.6m) per turn
301-4	40 to 125 ft (12 to 38m)	3 ft (0.9m)	3 ft (0.9m) per turn
301-4	60 to 225 ft (18 to 69m)	4 ft (1.2m)	6 ft (1.8m) per turn

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.