SINGER VALVE
Result-Based Solutions. Globally.™

12850-87th Avenue
Surrey, BC. Canada. V3W 3H9
Ph: 604-594-5404
Fx: 604-594-8845
www.singervalve.com

MODEL 106-F-IV

Modulating Float Valve Schematic A0399C (Sizes 1/2" to 2")
Installation, Operating and Maintenance Instructions

DESCRIPTION:

Model 106-F-IV is a pilot operated modulating float valve. The valve admits flow into a tank or reservoir in proportion to the flow out. Main Valve (1) is installed in the supply line into the tank or reservoir; Float Pilot (3) is installed in the reservoir at the required high water level.

DESCRIPTION OF OPERATION:

Main Valve (1) is operated by modulating the pressure in the bonnet (above the diaphragm). When inlet pressure is applied to the bonnet, the Main Valve closes; venting the bonnet opens the Main Valve. Refer to 106/206-PG "Description of Operation".

Bonnet pressure is controlled by a pilot system consisting of Closing Speed Control (2) and Float Pilot (3) (refer to schematic A0399C). Closing Speed Control (2) restricts the flow into the bonnet. When Float Pilot (3) is open, the bonnet pressure is reduced and the Main Valve opens. When Float Pilot (3) is closed, the full inlet pressure is directed into the bonnet and the Main Valve closes. Usually the flow required is less than full capacity and the Float Pilot modulates the bonnet pressure to keep the Main Valve partially open.

INSTALLATION:

MAIN VALVE: See 106/206-PG "Installation".

PILOT VALVE:

1. Check the end connection of the Float Pilot. Roberts R400 pilot has a 3/8" MALE N.P.T. end connection, Model 35 has 1/4" FEMALE N.P.T. end and Model 34 has 1/2" FEMALE N.P.T. ends. Roberts R400 and Model 35 require a horizontal fitting about 4" above the water level. Model 34 has a vertical float rod. See drawing and description of the Float Pilot in this manual.
2. Install the Float Pilot in a convenient location. The float should be located in a place where the surface is relatively undisturbed since turbulence on the surface of the liquid can cause the Main Valve to pulsate and interfere with accurate control.
3. Connect Float Pilot (3) to the Main Valve as shown on the schematic. Use 1/2" or larger copper tubing.
4. Check operation of float:

- Float must move in a vertical plane.
- Make sure that the float does not go close to or past vertical in its lowest position.

ADJUSTING PROCEDURE:

1. Set Closing Speed Control (2) one-half turn open.
2. Open upstream isolating valve (and downstream, if used). Allow the tank to fill to desired high level. Adjust Float Pilot (3) to close the Main Valve at this point.
3. Lower and raise the level and observe the control action. If action is ON-OFF with very small level changes, open Closing Speed Control (2) further until desired control is attained. If level drops excessively and Main Valve does not open wide, close Closing Speed Control (2) until desired modulating control is attained. Do not close the Closing Speed Control tight as this renders the valve inoperative.

SERVICE SUGGESTIONS:

In addition to service suggestions listed under 106/206-PG "Service Suggestions", use the following list:

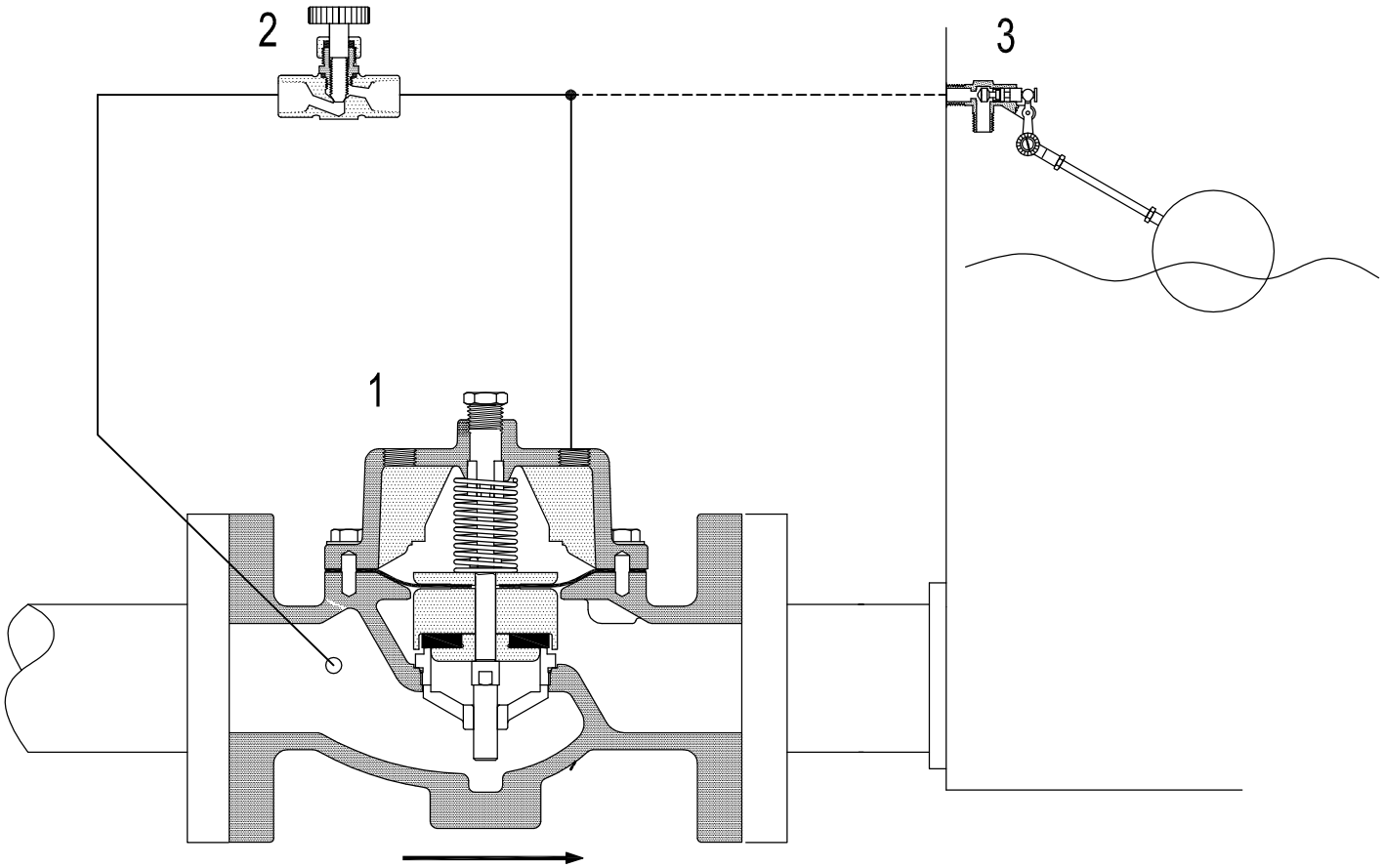
FAILS TO OPEN FULLY:

Insufficient inlet pressure. / Increase pressure or contact your SINGER Rep. for modifications for low pressure service.
Closing Speed Control (2) too much open. / Adjust to proper setting.
Obstruction in Float Pilot (3), piping or insufficient pilot line size./ Clear or replace.
Main Valve faulty. / Refer to 106/206-PG instructions

FAILS TO CLOSE.

Float Pilot (3) does not close./ Check pilot operation.
Closing Speed Control (2) closed./ Open as required.
Obstruction in pilot piping./ Remove obstruction
Faulty Main Valve./ Refer to 106/206-PG Instructions

A-0399C



1. Main Valve - Model 106-PG.
2. Closing Speed Control.
3. Float Pilot - Roberts R400.

----- connected in field

Pilot Operated Modulating Float Valve.
Sizes: 1/2" - 2".

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Drawn By:	Approved By:
Kari Oksanen	Kari Oksanen
Date:	Drawing:
September 3, 2004	A-0399C

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