

## SINGER MODEL 106/206-A-TYPE 1

Altitude Valve, Two-Way Flow  
Schematic A-0412D  
Installation, Operating and Maintenance Instructions

### DESCRIPTION:

Model 106/206-A Type 1 controls water level in elevated tanks, stand pipes and storage reservoirs. The valve senses the hydrostatic head of the reservoir to close on high water level. When the supply pressure drops below the set point of the pilot valve, the valve opens for return flow.

### DESCRIPTION OF OPERATION:

When the bonnet (top of diaphragm) is vented to atmosphere, Main Valve (1) opens fully. When the inlet pressure is directed to the bonnet, the Main Valve closes. Refer to 106/206-PG 'Description of Operation'.

Altitude Pilot (7) connects port 'K' to drain (port 'E') when the reservoir level is low. This vents the bonnet of Main Valve (1) and opens the valve. When the reservoir head is high enough to overcome the spring force of Pilot (7), Pilot (7) connects port 'K' to port 'X'. This connects the inlet pressure of Main Valve (1) to its bonnet and closes the Main Valve. Closing speed is determined by the setting of Closing Speed Control (5).

### INSTALLATION:

1. Refer to 106/206-PG 'Installation'.
2. Note the arrow cast on the side of Main Valve (1). Install the valve with the arrow pointing **TOWARDS THE RESERVOIR**.
3. Connect pilot sensing line (12) to reservoir as shown on schematic A0412D. For best control, the sensing line should be connected directly to the reservoir. If this is inconvenient, it may be possible to connect to the pipe between the valve and the reservoir.
4. Connect pilot exhaust to drain. It is recommended that the pilot exhaust be connected in a manner that makes the flow visible. This helps in adjusting the pilot.
5. **PRESSURIZE THE VALVE SLOWLY** and vent air from the bonnet of the Main Valve by using the bleed valve on top of the position indicator.

### ADJUSTING PROCEDURE:

1. Open Isolating Valve (11) and Isolating Valves (2) and (14).
2. **PRESSURIZE THE VALVE SLOWLY** and vent air from the bonnet of the Main Valve by using the bleed valve on top of the position indicator. Open main line isolating valves to let the valve fill the reservoir. Observe Altitude Gauge (8) and note the level where the valve closes.
3. To increase reservoir level, turn adjusting nut of Pilot (7) clockwise. To decrease reservoir level, turn adjusting nut counterclockwise.

### SERVICE SUGGESTIONS:

In addition to service suggestions listed under individual components, the following points should be considered:

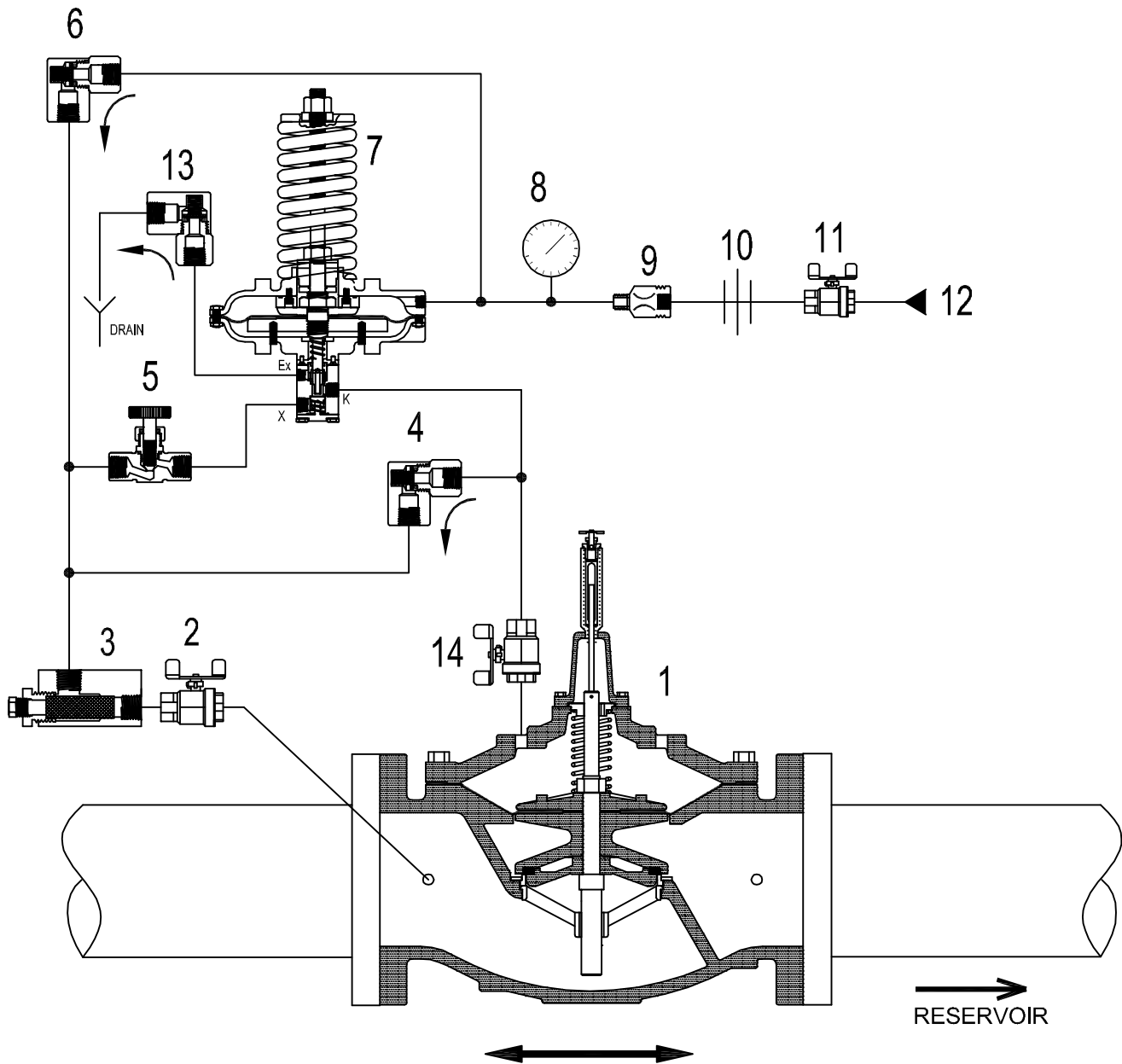
**PROBLEM: VALVE FAILS TO CLOSE ON HIGH WATER LEVEL.**

#### Possible cause / Remedy

1. Pilot (7) set too high. / Lower setting. See 'Adjusting Procedure' above and Model 301-4 Instructions.
2. Isolating Valve (2) or (14) or (11) closed. / Open valve.
3. Closing Speed Control (5) closed tight. / Open 1 turn or as required.
4. Pilot sensing (12) not connected. / Check connection and make sure that sensing line Isolating Valve (11) is open.

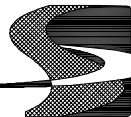
**PROBLEM: VALVE FAILS TO OPEN.**

1. Pilot (7) set too low. / Adjust as required. See 'Adjusting Procedure' above and Model 301-4 instructions.
2. Isolating Valve (2) or (14) or (11) closed.
3. Dirt or scale in the pilot or pilot piping. / Clean as required.



1. Main Valve - Model 106/206-PG c/w X107 Position Indicator.
2. Isolating Valve.
3. Strainer - 40 mesh - J0098A.
4. Check Valve - Model 10.
5. Closing Speed Control - Model 852-B.
6. Check Valve - Model 12.
7. Altitude Pilot - Model 301-4.
8. Altitude Gauge.
9. Fixed Restriction - 1/16".
10. Union.
11. Isolating Valve.
12. CONNECTION TO RESERVOIR.
13. Check Valve - Model 12.
14. Isolating Valve.

Two-Way Flow Altitude Valve.

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<b>Model 106 or 206-A Type 1</b>	