

## SINGER MODEL 39

Differential (On-Off) Float Pilot Schematic A0411A  
Installation, Operating and Maintenance Manual

### DESCRIPTION:

Singer Model 39 is a three-way, non-modulating float pilot designed to operate an on-off float valve. Level differential (level where valve opens to level where the valve closes) is adjustable.

### DESCRIPTION OF OPERATION:

Refer to Drawing A0411.

Body (1) has three ports marked "IN", "B" and "X". Depending on the position of inner valve (4) port "B" is connected to either port "IN" or port "X". Pressure in ports "IN" and "B" will not move the inner valve because the inner valve is fully balanced spool design.

Float (16) is free to move along float rod (14) between adjustable stops (25). The linkage assembly is weight balanced by counterweight (15) and pressure balanced as noted above.

When the level rises, float (16) hits the upper adjustable stop (25) and lifts the float rod (14) up. Inner valve (4) is pushed up and port "IN" is connected to port "B". Port "X" is closed. The bonnet of the main valve (106) is pressurized and the valve closes. Refer to description "106-F-V" and "106-PG".

Level differential is adjusted by adjusting stops (25).

### INSTALLATION:

1. Install the pilot into tank or reservoir close to desired level. Be careful not to damage the pilot.
2. Waves and turbulence may hinder operation or damage float rod; it may be necessary to construct a protective cage or install the pilot where turbulence is minimal.

3. Make sure the pilot is installed vertically.
4. Check that lever arm (9) and counterweight lever arm (8) are parallel. Float rod should move freely up and down and remain vertical through its travel.
5. Adjust the counterweight (15) to balance the assembly when float is held off the stops or removed. The linkage should hold any given position when not moved by the float. The pilot will not operate unless it is properly balanced.
6. Connect pilot to main valve as shown on schematic. Port "IN" is connected to main valve inlet (upstream), port "B" is connected to the bonnet of main valve. Port "X" is exhaust to tank or reservoir. Use at least 1/4" pipe, preferably copper.

### ADJUSTMENT PROCEDURE:

Adjust upper and lower adjustable stops (25) at desired open and close positions.

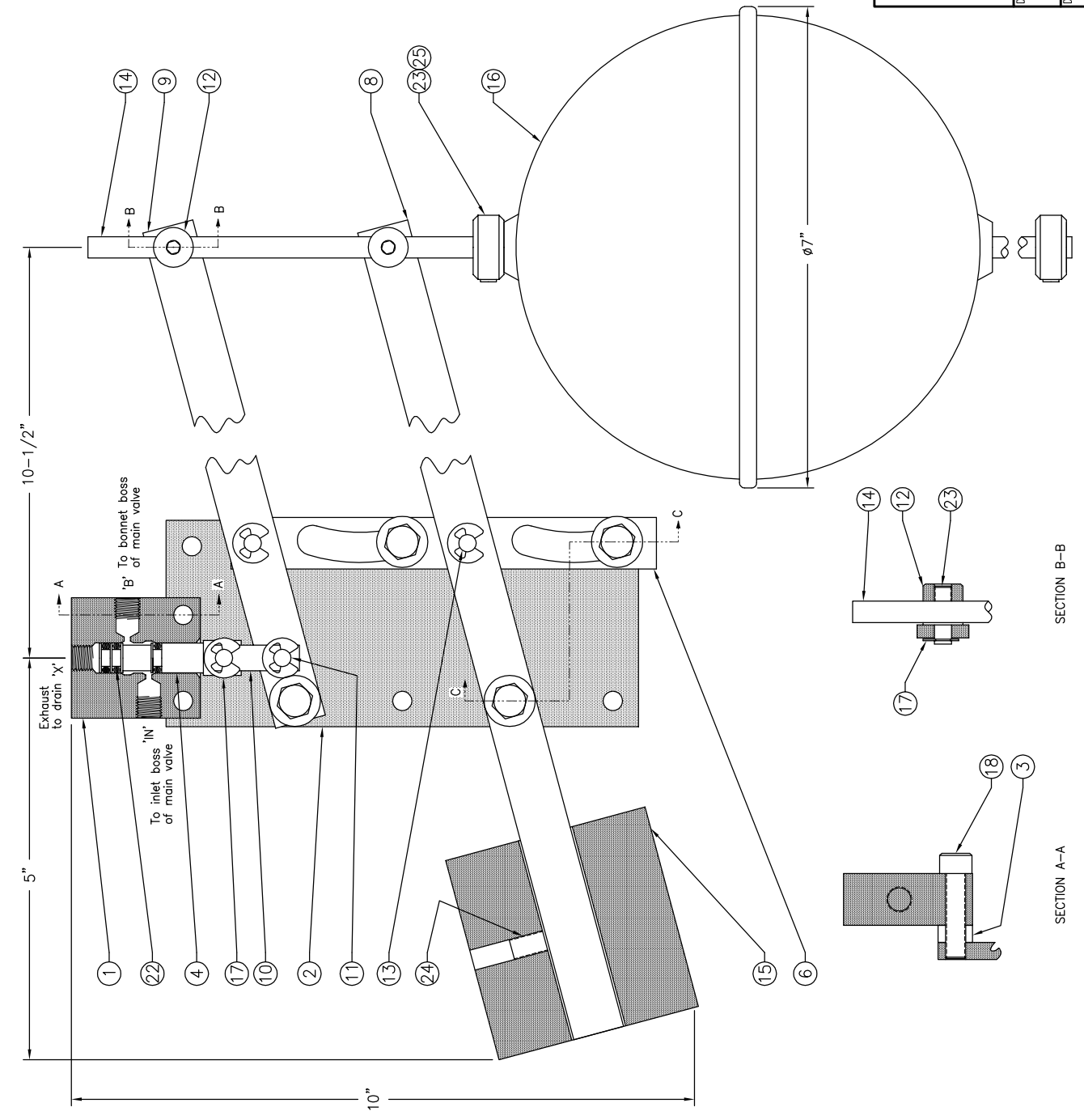
### SUGGESTIONS:

If the pilot does not operate properly, check the following:

1. Check all points under "Installation".
2. Remove float (16). Check that float rod moves freely and is properly balanced.
3. Remove body (1) and inner valve (4). Check for dirt, scale and damage. Pay particular attention to "O" Rings.

# DIFFERENTIAL (ON-OFF) FLOAT PILOT

| ITEM | PART NAME               | STANDARD MATERIAL |
|------|-------------------------|-------------------|
| 1    | Body                    | Brass             |
| 2    | Mounting bracket        | Brass             |
| 3    | Spacer washer (2)       | Brass             |
| 4    | Inner valve             | Brass             |
| 5    | Guide bar bushing (2)   | Stainless steel   |
| 6    | Guide bar               | Brass             |
| 7    | Lever arm bushing (2)   | Stainless steel   |
| 8    | Counterweight lever arm | Brass             |
| 9    | Level arm               | Brass             |
| 10   | Connector bar (2)       | Brass             |
| 11   | Retaining pin (2)       | Brass             |
| 12   | Clamp (2)               | Brass             |
| 13   | Guide bar pin (2)       | Brass             |
| 14   | Float rod               | Brass             |
| 15   | Counterweight           | Cast iron         |
| 16   | Float                   | Copper (soldered) |
| 17   | Retaining pins (10)     | Stainless steel   |
| 18   | Body capsews (2)        | Stainless steel   |
| 19   | Guide bar capsews (2)   | Stainless steel   |
| 20   | Lever arm capsews (2)   | Stainless steel   |
| 21   | Washer (4)              | Stainless steel   |
| 22   | Inner valve o-rings (3) | Buna-N            |
| 23   | Clamp set screw (4)     | Stainless steel   |
| 24   | Balance weight screw    | Stainless steel   |
| 25   | Adjustable stop (2)     | Brass             |



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