

## SINGER MODEL 43

Differential (On-Off) Float Pilot Drawings A0943A and A0944A  
Installation, Operating and Maintenance Manual

### DESCRIPTION:

Singer Model 43 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 Drawings A0943A and A0944A.

Body (1) has three ports marked "IN", "B" and "X". Depending on the position of Inner Valve (3) 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 rotary design.

Float (22) is free to move along Float Rod (25) between Adjustable Stops (23). The linkage assembly is weight balanced by Counterweight (18) and pressure balanced as noted above.

When the level rises, Float (22) hits the upper adjustable stop (23) and lifts Float Rod (25) up. Inner Valve (3) is rotated to connect port "IN" to port "B". Port "X" is closed. Bonnet of the main valve is pressurized and the Main Valve closes. Refer to description "106/206-F-V" and "106/206-PG".

Level differential is adjusted by Adjustable Stops (23).

### 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 Main Lever Arm (13) and Counterweight Lever Arm (16) are parallel. Float Rod (25) should move freely up and down and remain vertical through its travel.
5. Adjust Counterweight (18) 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 the Main Valve. Port "X" is exhaust to tank or reservoir. Use at least 1/4" pipe, preferably copper.

### ADJUSTMENT PROCEDURE:

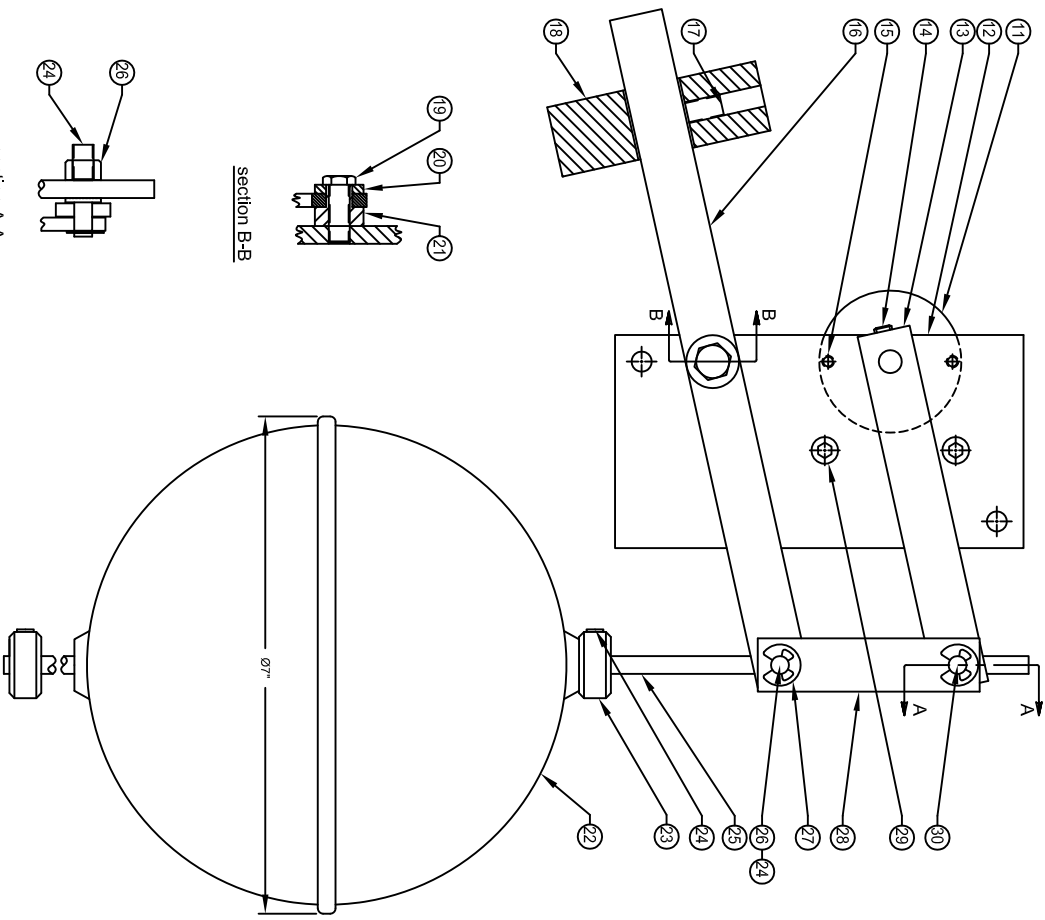
1. Loosen Clamp Capscrew (27) and move Float Rod (25) to adjust level.
2. Adjust upper and lower Adjustable Stops (23) to give desired level differential.

### SUGGESTIONS:

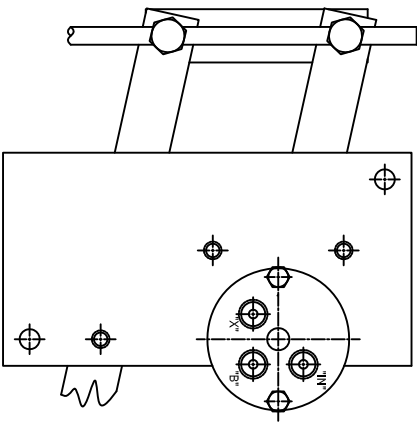
If the pilot does not operate properly, check the following:

1. Check all points under "Installation".
2. Remove Float (22). Check that Float Rod (25) moves freely and is properly balanced.
3. Remove Body (1) and Inner Valve (3). Check for dirt, scale and damage. Pay particular attention to "O" Rings.

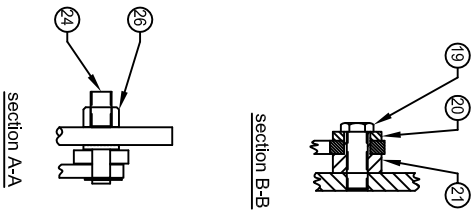
FRONT



BACK



| ITEM | PART #      | QTY | PART NAME                        | STANDARD MATERIAL |
|------|-------------|-----|----------------------------------|-------------------|
| 11   |             | 1   | Model 43 pilot                   |                   |
| 12   | M1964A      | 1   | Mounting bracket                 | Brass             |
| 13   | M1665A      | 1   | Main lever arm                   | Brass             |
| 14   | SST4x1/2SS  | 1   | Main lever arm set screw         | SST               |
| 15   | BHF 8x3/4SS | 2   | Mounting capscrews               | SST               |
| 16   | M1966A      | 1   | Counterweight lever arm          | Brass             |
| 17   | SSC4x3/8SS  | 1   | Counterweight set screw          | SST               |
| 18   | M1967A      | 1   | Counterweight                    | Cast iron         |
| 19   | BHC4x7/8SS  | 1   | Counterweight lever arm capscrew | SST               |
| 20   | W00808B     | 1   | Washer                           | SST               |
| 21   | H0099A      | 1   | Guide bushing                    | SST               |
| 22   | M0674A      | 1   | Float                            | Copper            |
| 23   | M0136A      | 2   | Adjustable stop                  | Brass             |
| 24   | SSC4x1/4SS  | 4   | Adjustable stop set crew         | SST               |
| 25   |             | 1   | Float rod                        | Brass             |
| 26   | M1968A      | 1   | Model 43 clamp - short           | Brass             |
| 27   | W0118A      | 2   | Retaining ring                   | SST               |
| 28   | M1969A      | 1   | Spacer bar                       | Brass             |
| 29   | BSC4x1/2SS  | 2   | Stroke stop                      | SST               |
| 30   | M1986A      | 1   | Model 43 clamp - long            | Brass             |



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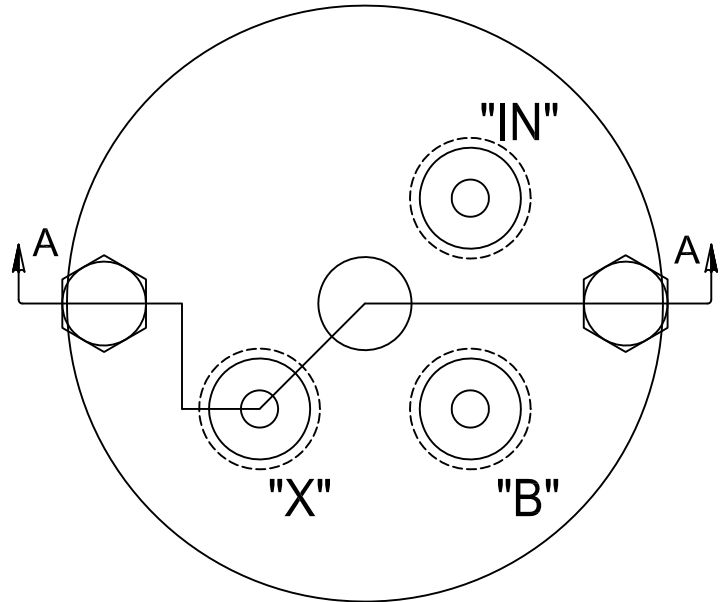
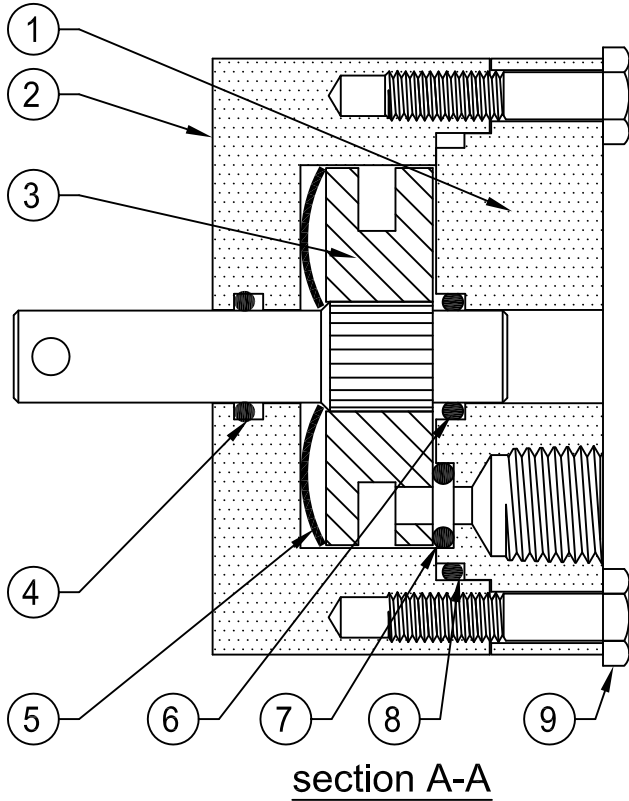
Drawn By: VICTOR SCHLESINGER

Approved By:

Date: MARCH 14th 2008

Drawing: AO944A

MODEL 43 DIFFERENTIAL FLOAT PILOT



**LETTERING DETAILS:**

"IN" = Inlet boss main valve

"B" = Bonnet boss main valve

"X" = Exhaust to drain

| ITEM | PART #     | QTY | PART NAME          | STANDARD MATERIAL |
|------|------------|-----|--------------------|-------------------|
| 1    | B1386A     | 1   | Body               | SST               |
| 2    | E0223A     | 1   | Casing             | SST               |
| 3    | V0629A     | 1   | Inner valve        | Teflon or Delrin  |
| 4    | R0011A     | 1   | O-ring             | Buna-N            |
| 5    | X0541A     | 1   | Wave spring washer | SST               |
| 6    | R0011A     | 1   | O-ring             | Buna-N            |
| 7    | R0007A     | 3   | O-ring             | Buna-N            |
| 8    | R0028A     | 1   | O-ring             | Buna-N            |
| 9    | BHF8x3/4SS | 2   | Screw              | SST               |



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Drawn By:

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Date:

APRIL 4th 2008

Drawing:

A0943A

**MODEL 43 MAIN PILOT**