

SINGER MODEL 106/206-PT

Power Globe Valve with Double Acting Actuator

SIZES: 2-1/2" - 8" 106 DWG. A0505E 4" TO 10" 206 DWG. A0744B

Installation, Operation and Maintenance Instructions

DESCRIPTION:

Singer Model 106/206-PT is a hydraulically operated, diaphragm actuated valve with two operating chambers.

Unless otherwise specified, the valve will be assembled for service temperatures to 180°F (80°C).

DESCRIPTION OF OPERATION:

The valve is normally open when the operating chambers are vented to atmosphere and inlet pressure exceeds the outlet pressure.

When the top side of the diaphragm is pressurized and the bottom side of the diaphragm is vented to atmosphere, the valve closes.

By varying the pressures in the operating chambers with a SINGER Automatic Pilot Circuit the valve can be made to modulate.

The operating pressure may be either line pressure or external pressure. If external pressure is used, it must be equal to or greater than line pressure.

INSTALLATION:

Use washers under nuts when bolting valve flanges to pipe flanges to protect the Epoxy Coating.

1. For the most convenient operation and maintenance, manual shut off valves should be installed.
2. A suitable bypass should be provided to allow for servicing of the valve without interrupting the flow.
3. Install pressure gauges upstream and/or downstream of valve as appropriate. This will make it easier to set the pilot system.
4. A strainer with a suitable basket should be installed ahead of the valve to protect it from foreign material.

5. Sufficient space should be provided around the valve for disassembly.
6. Flush system of all foreign matter before installing the valve.
7. Check direction of flow (arrow in the valve body shows flow direction) and install the valve accordingly.
8. It is possible that seals and diaphragms may take a set after being in storage. If leaks are observed on gasket surfaces, de-pressurize the valve, tighten the screws, bolts or nuts and re-pressurize.

SERVICE SUGGESTIONS

TROUBLE: Fails to Open

POSSIBLE CAUSE / REMEDY

1. Insufficient inlet pressure. / Increase pressure.
2. Pressure in the top chamber is not released or lack of pressure in the bottom chamber due to:
 - Isolating valves on pilot lines closed. / Open valves.
 - Pilot components not functioning. / Refer to specific instructions on pilot components.
 - Foreign material in pilot system. / Clear obstructions.
 - Ruptured diaphragm. / Replace.

TROUBLE: Fails to Close

1. Lack of pressure in the top chamber or pressure in bottom chamber is not released due to:
 - Isolating valves on pilot lines closed. / Open valves.
 - Pilot components not functioning. / Refer to specific instructions on pilot components.
 - Foreign material in pilot system. / Clear obstructions.
2. Ruptured diaphragm. / Replace.
3. Obstruction in valve. / Remove obstruction.
4. Worn main valve disc. / Replace disc.

MAINTENANCE:

The SINGER Model 106/206-PT requires a minimum of maintenance. All parts are accessible for inspection and repair without removing the valve from the line.

DISASSEMBLY: Refer to drawing A0505D [106] or A0744A [206] for main valve and drawing A0707A for limit switch details.

1. Isolate the valve.
2. Disconnect pilot lines.
3. Refer to drawing A0505D. Remove bonnet. If bonnet does not come free readily, it can be pried loose with a small pry-bar.
4. Remove adaptor and stem as a unit.
5. Remove spindle locknut, upper clamp plate, diaphragm and lower clamp plate.
6. Pull spindle through adaptor bushing.
7. Remove inner valve and disassemble by removing the inner valve sleeve nut. NOTE: Avoid damaging seat when removing inner valve.
8. Do not attempt to remove seat ring unless inspection shows that seat is damaged. When necessary to remove seat ring on size 2-1/2" (threaded in), make a wrench out of a length of pipe. Cut three notches into one end to engage the spokes of the seat ring. Insert the wrench and turn counterclockwise. On sizes 3" and over, the seat ring is held by Seat Screws and Retaining Washers. To remove seat ring, remove the Seat Screws and Retaining Washers.

CLEANING AND INSPECTION:

1. Clean all parts, paying particular attention to resilient disc, diaphragm, 'O' rings, 'O' ring grooves and guiding and sealing surfaces.
2. Use suitable lubricant such as silicon lubricant when assembling 'O' rings.
3. Assure that parts are assembled as shown in the enclosed drawing.
4. Assure that pilot piping is assembled as shown in the enclosed drawings or schematics.

NOTE REGARDING FREEZING:

This valve does not drain completely when inlet and outlet pipes are drained. Where freezing conditions are expected, one of the following must be performed:

1. Drain valve and pilot system completely.
2. Provide insulation and/or heating to keep the valve from freezing.