



KEYSTONE

The Figure 809 and 810 valves are simple to maintain and operate. No special tools are required for any of the procedures described below.

Spare Parts

The recommended spare parts for the Figure 809 and 810 are:

1. Spring
2. Seat O-Ring, if applicable

Storage Requirements

For best results store the valve on a pallet in a clean dry warehouse. If a clean, dry warehouse is not available, always do the following:

1. Keep the valve off the ground and high enough to avoid standing water.
2. Cover the valve with a water repellent cover (not supplied by Tyco) and keep protected.

Installation Guidelines

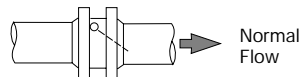
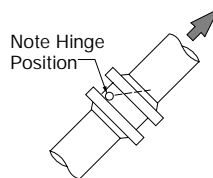
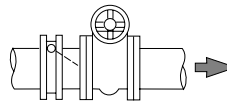
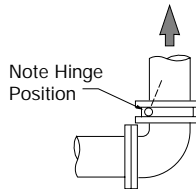
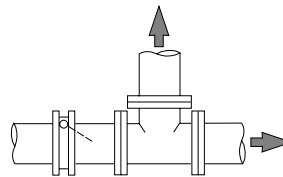
Insert the valve between two flanges with gaskets. Install the Figure 809 between ANSI 300# flanges or standard 250# cast iron flanges. Install the Figure 810 between ANSI 150# flanges or standard 125# cast iron flanges. See Figure 1 for correct installation positions.

Caution

1. Never use the valve with reciprocating compressors or in other pulsating services.
2. Position the valve to promote smooth flow.
3. Allow clearance for disc movement.

Figure 809 and 810 Keystone Check Valve Operation & Maintenance Manual

CORRECT POSITION



INCORRECT POSITION

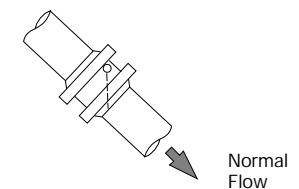
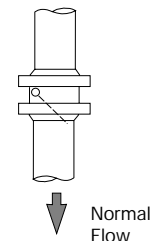
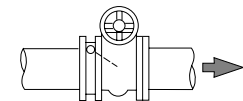
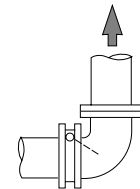
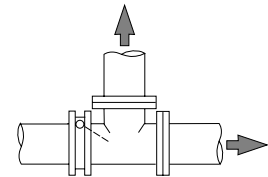


Figure 1. Installation Positions
Elevation View

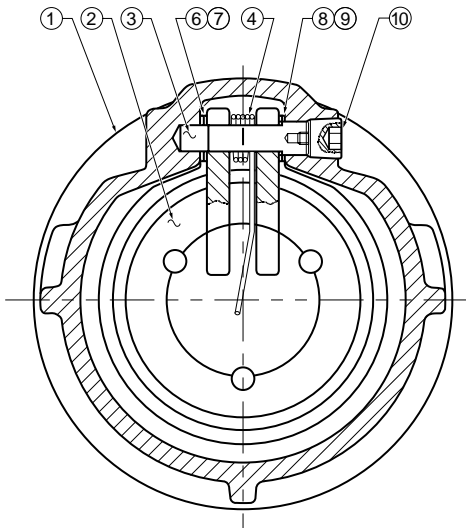


Figure 2. Components of Figure 809 & 810 Check Valves

| Item No. | Part Name |
|----------|-------------------------|
| 1 | Body |
| 2 | Disc |
| 3 | Stem |
| 4 | Spring |
| 5 | O-ring Seat (not shown) |
| 6 | Washer |
| 7 | Washer |
| 8 | Washer |
| 9 | Washer |
| 10 | Pipe Plug |
| 11 | Not shown |

Operation Procedure

The Figure 809 and 810 valves are fully automatic in operation as received. No special procedures are required for shutdown. Valves are ready for operation as received. Do not adjust.

Caution

1. Do not attempt to open the valve against pressure or static head. Personal injury as well as damage to the valve will occur.
2. Keep media free of air bubbles, as they may cause damage to the valve. Air trapped downstream of the valve may cause uncontrollable slamming and water hammer on pump shutdown.

Maintenance Procedure

The maintenance requirements of the Figure 809 and 810 are minimal. No lubrication is required. In the event a part requires replacement, following are the valve disassembly/-assembly instructions referencing Figure 2.

1. Place the bottom of the valve in a vise. Protect the valve faces by using wooden (or other suitable material) spacers between vise faces and valve faces.
2. Remove the pipe plug (10).
3. While holding the disc (2) in place, pull the stem (3) out of the body (1).
4. Remove the washer (6 to 9 depending on the valve) and spring (4).
5. Set the disc aside.
6. If seat (11) replacement is required, proceed to Seat Replacement Procedure.
7. Replace worn parts.
8. Place the washers (6 to 9), spring (4) and disc (2) into the valve body as shown in the SMO drawing. Run the stem into the body through the first set of washers, first arm of disc, spring, second arm of disc and last set of washers.
9. Seal the pipe plug threads with PTFE tape and install the plug.
10. Push the disc completely open several times by hand to ensure the disc is not binding and to verify proper seating.

Figure 3. Seat Types

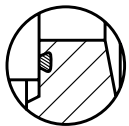


Figure 809 & 810
Integral
O-Ring Seat

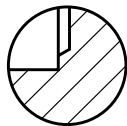


Figure 809 & 810
Integral
Hard Seat

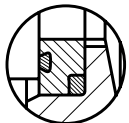


Figure 810
Replaceable
O-ring seat
(obsolete)

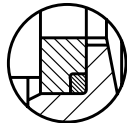


Figure 810
Replaceable
metal to metal seat
(obsolete)

Seat Replacement Procedures

Identify the type of seat. See Figure 3 for drawings of the different seat types. If the valve has an integral O-ring seat, proceed to Step 1 below. If the valve has replaceable O-ring or replaceable metal-to-metal seat, it is obsolete and no replacement seats are available. A new valve must be purchased. If the valve has an integral metal-to-metal seat, the seat is not repairable because it is machined directly into the body.

1. Cut the O-ring and pry it out of the dovetail groove. Take care not to damage dovetail groove. Throw the old seat away.
2. Lubricate the new O-ring with silicone oil.
3. Place the O-ring in the dovetail groove that is machined into the body.
4. Verify that the O-ring is not twisted or pinched.

| Symptom | Possible Cause | Resolution |
|---------------------------|--|---|
| Valve slamming | 1. The valve usually slams as a result of air trapped downstream of the valve. | Bleed the air traps. |
| Valve bouncing at closure | 1. The disc may bounce due to column separation upstream of the valve. | Add a vacuum breaker. |
| Valve leaking | 1. Check for foreign material caught in the seat. 2. Damaged seat seal. | Remove the material from the seat area. Replace seat seal. |