

Installation & Maintenance Instructions

2-WAY INTERNAL PILOT-OPERATED SOLENOID VALVES
 NORMALLY CLOSED OPERATION — SOFT CLOSING
 1/4", 3/8", 1/2" or 3/4" NPT — 1/2" or 3/4" ORIFICE

SERIES
 8210

DESCRIPTION

Series 8210 valves are 2-way normally closed, internal pilot-operated solenoid valves designed for long life and soft closing. Valves bodies are forged brass; internal parts are plastic and stainless steel, with Buna N elastomers.

NOTICE: Brass valves are not certified as lead-free under the Safe Water Drinking Act SWDA 1417 and are not intended for use on drinking water systems. They are intended for control of water in industrial applications. Consult ASCO for valves rated for use in potable water applications.

OPERATION

Normally Closed: Valve is closed when solenoid is de-energized; open when energized.

IMPORTANT: Minimum operating pressure differential required is 5 psi to obtain full flow

INSTALLATION

Check nameplate for correct catalog number, pressure, voltage, frequency, and service. Never apply incompatible fluids or exceed pressure rating of the valve. Installation and valve maintenance to be performed by qualified personnel.

Future Service Considerations

Provision should be made for performing seat leakage, external leakage, and operational tests on the valve with a nonhazardous, non combustible fluid after disassembly and reassembly.

Positioning

This valve is designed to perform properly when mounted in any position. However, for optimum life and performance, the solenoid should be mounted vertically and upright to reduce the possibility of foreign matter accumulating in the core tube area.

Piping

Connect piping or tubing to valve according to markings on valve body. Apply pipe compound sparingly to male pipe threads only. If applied to valve threads, the compound may enter the valve and cause operational difficulty. Avoid pipe strain by properly supporting and aligning piping. When tightening the pipe, do not use valve or solenoid as a lever. Locate wrenches applied to valve body or piping as close as possible to connection point.

IMPORTANT: To protect the solenoid valve, install a strainer or filter suitable for the service involved in the inlet side as close to the valve as possible. Clean periodically depending on service conditions. See ASCO Series 8600 and 8601 for strainers.

MAINTENANCE

▲ WARNING: To prevent the possibility of severe personal injury or property damage, turn off electrical power, depressurize valve, extinguish all open flames, and avoid any type of sparking or ignition. Vent hazardous or combustible fluid to a safe area before servicing the valve.

Cleaning

All solenoid valves should be cleaned periodically. The time between cleanings will vary depending on the medium and service conditions. In general, if the voltage to the coil is correct, sluggish valve operation, excessive noise or leakage will indicate that cleaning is required. In the extreme case, faulty valve operation will occur and the valve may fail to open or close. Clean strainer or filter when cleaning the valve.

Preventive Maintenance

- Keep the medium flowing through the valve as free from dirt and foreign material as possible.
- Periodic exercise of the valve should be considered if ambient or fluid conditions are such that corrosion, elastomer degradation, fluid contamination build up, or other conditions that could impede solenoid valve shifting are possible. The actual frequency of exercise necessary will depend on specific operating conditions. A successful operating history is the best indication of a proper interval between exercise cycles.
- Depending on the medium and service conditions, periodic inspection of internal valve parts for damage or excessive wear is recommended. Thoroughly clean all parts. If parts are worn or damaged, install a complete ASCO Rebuild Kit.

Causes of Improper Operation

- **Incorrect Pressure:** Check valve pressure. Pressure to valve must be within range specified on nameplate.
- **Excessive Leakage:** Disassemble valve and clean all parts. If parts are worn or damaged, install a complete ASCO Rebuild Kit.

Valve Disassembly (Refer to Figure 1 on page 2)

1. Disassemble valve in an orderly fashion. Use exploded view for identification and placement of parts.
2. Remove solenoid - see separate solenoid instructions.
3. Remove bonnet screw and valve bonnet from valve body. Then remove core tube, plugnut spring, plugnut assembly, u-shaped retainer, core spring, core assembly, and diaphragm/support assembly.
4. All parts are now accessible for cleaning or replacement. If parts are worn or damaged, install a complete ASCO Rebuild Kit.

Valve Reassembly

1. Install diaphragm/support assembly into valve body.
2. Holding the core tube upside down, reassemble the parts as follows:
 - A. Drop the plugnut spring into the core tube.
 - B. Drop the plugnut assembly (large hole end first) into the core tube.
 - C. Insert core spring into the core assembly. Then position u-shaped plugnut spacer into grooves of core assembly on top of the core spring.
 - D. Install the core assembly (with core spring and u-shaped plugnut spacer) into core tube, spacer end first.

NOTE: Push core assembly in and out to be sure of proper plugnut and core spring alignment. Core assembly should depress smoothly and return immediately.

- E. While holding this assembly together, position the core tube (with all parts) into the valve body.
3. Replace valve bonnet and bonnet screws. Hand thread screws into the valve body a few turns. Then torque bonnet screws evenly in a crisscross manner, see *Torque Chart* below.

▲ WARNING: To prevent the possibility of personal injury or property damage, check valve for proper operation before returning to service. Also perform internal seat and external leakage tests with a non hazardous, noncombustible fluid.

- 4. Restore pressure and electrical power to valve.
- 5. After maintenance is completed, operate the valve a few times to be sure of proper operation. A metallic *click* signifies the solenoid is operating.

**ORDERING INFORMATION
FOR ASCO REBUILD KITS**

Parts marked with an asterisk(*) in the exploded view are supplied in Rebuild Kits. When Ordering Rebuild Kits for ASCO Valves, order the Rebuild Kit number stamped on the valve nameplate. If the number of the kit is not visible, order by indicating the number of kits required, and the Catalog Number and Serial Number of the valve(s) for which they are intended.

Torque Chart

Part Name	Pipe size (NPT)	Torque Value In-Lbs	Torque Value Nm
Bonnet Screws	1/4, 3/8, or 1/2	25	2,8
	3/4	40	4,5

