

Installation & Maintenance Instructions

2-WAY INTERNAL PILOT-OPERATED SOLENOID VALVES
NORMALLY OPEN OPERATION — 3/8", 1/2" OR 3/4" NPT
FUEL GAS SERVICE

SERIES

8214

Form No.V6675R3

NOTICE: See separate solenoid installation and maintenance instructions for information on: Wiring, Solenoid Temperature, Causes of Improper Operation, and Solenoid Replacement.

DESCRIPTION

Series 8214 valves are 2-way normally open internal pilot-operated solenoid valves designed for fuel gas service. Valve bodies are made of rugged aluminum with trim and internal parts made of steel and stainless steel. Series 8214 valves may be provided with a general purpose or watertight/explosionproof solenoid.

OPERATION

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

Operating Pressure Differential

- Minimum 0 psig
- Maximum 5 psig

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.

Temperature Limitations

For valve ambient and fluid temperatures, refer to chart below.

Catalog Number †	Solenoid Insulation Class	Minimum and Maximum Ambient and Fluid Temperatures
8214G13 8214G23 8214G33	F	–40°F (–40°C) to 125°F (54°C)
	H	–40°F (–40°C) to 140°F (60°C)

† Includes catalog numbers with prefix "EF"

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 solenoid base sub-assembly area.

*DuPont's Registered Trademark

Mounting

For mounting bracket (optional feature) dimensions, refer to Figure 1.

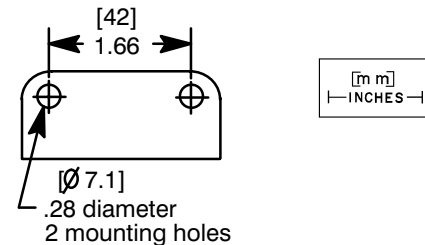


Figure 1. Partial view of mounting bracket.

Piping

Connect piping 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. Valves should be checked for external leakage at piping connections after installation, see **Testing for External Leakage** section.

⚠ CAUTION: To avoid damage to the valve body, **DO NOT OVERTIGHTEN PIPE CONNECTIONS.** If Teflon* tape, paste, spray, or similar lubricant is used, use extra care when tightening due to reduced friction.

⚠ CAUTION: 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, 8601 and 8602 for strainers.

Testing for External Leakage

⚠ WARNING: To prevent the possibility of severe personal injury or property damage, extinguish all open flames and avoid any type of sparking or ignition.

1. Apply pressure to valve within nameplate rating with solenoid energized.
2. Apply a soapy solution or a commercially available leak detecting solution to the pipe connections and check for bubbles. If the valve has been disassembled and reassembled for inspecting, cleaning, or rebuilding apply the solution around solenoid base sub-assembly, and bonnet/body joint.
3. If leakage exists, depressurize valve and turn off electrical power supply. Tighten connections as required and retest following the above steps.

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.

NOTE: It is not necessary to remove the valve from the pipeline for repairs.

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.
- While in service, the valve should be operated at least once a month to insure proper opening and closing.
- 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)

1. Disassemble valve in an orderly fashion. Use exploded view for identification and placement of parts.
2. Remove solenoid, see separate instructions.
3. Unscrew solenoid base sub-assembly from valve bonnet.
4. Remove solenoid base sub-assembly, core, plugnut gasket, plugnut assembly and solenoid base gasket from valve bonnet.
5. Remove bonnet screws, valve bonnet, disc holder sub-assembly, disc holder spring, diaphragm/spring sub-assembly and body gasket.
6. All parts are now accessible for cleaning or replacement. If parts are worn or damaged, install a complete ASCO Rebuild Kit.

Valve Reassembly

1. Reassemble using exploded views for identification and placement of parts.
2. Lubricate plugnut gasket, solenoid base gasket and body gasket with a light coat of DOW CORNING® 200 Fluid lubricant or an equivalent high-grade silicone fluid.
3. Position body gasket and diaphragm/spring sub-assembly in valve body. Locate the two bleed holes in diaphragm/spring sub-assembly approximately 90° from valve outlet.
4. Position disc holder spring and disc holder sub-assembly on diaphragm/spring sub-assembly.
5. Replace valve bonnet and bonnet screws on valve body. Hand thread screws a few turns into valve body; then torque bonnet screws in a crisscross manner 70 ± 8 in-lbs [$8,0 \pm 0,9$ Nm].
6. Install solenoid base gasket, plugnut assembly, plugnut gasket, core (small end up), and solenoid base sub-assembly.
7. Torque solenoid base sub-assembly to 175 ± 25 in-lbs [$19,8 \pm 2,8$ Nm].
8. If removed, reinstall pipe plug in valve body. Apply a small amount of Loctite Corporation's PST® Pipe Sealant 567 (or equivalent) to the pipe plug threads. Then tighten pipe plug securely in valve body using a 3/16" hex key wrench.
9. Replace solenoid (see separate instructions) and make electrical hookup.

▲ WARNING: To prevent the possibility of severe personal injury or property damage, check valve for proper operation before returning to service. Also check for external leakage (with a nonhazardous, noncombustible fluid if practical).

10. Check valve for external leakage as indicated under the *Piping* section.
11. Restore line pressure and electrical power supply to valve.
12. After maintenance is completed, operate the valve a few times to be sure of proper operation. A metallic *click* indicates 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	Torque Value In—lbs	Torque Value Nm
Solenoid base sub—assembly	175 ± 25	19,8 ± 2,8
Bonnet screws	70 ± 8	8,0 ± 0,9

