

Installation & Maintenance Instructions

2-WAY INTERNAL PILOT-OPERATED SOLENOID VALVES
DIAPHRAGM TYPE — 3/8 , 1/2 AND 3/4 NPT
NORMALLY OPEN OPERATION

SERIES
8210
8211

DESCRIPTION

Series 8210 valves are 2-way normally open, internal pilot operated solenoid valves. Valve body and bonnet are of brass construction.

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

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 maximum ambient and fluid temperatures, refer to chart below. For higher ambient and fluid temperatures, consult factory. Check catalog number and watt rating on nameplate to determine the maximum temperatures.

Construction	Max. Fluid Temp, °F
AC Construction (Alternating Current)	200
DC Construction (Direct Current)	180

NOTE: For Maximum Ambient Temperature specifications, see separate solenoid instructions.

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.

Mounting

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

Piping

Connect piping to valve according to markings on valve body. Apply pipe compound or PTFE tape 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.

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 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.

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.
- 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.

Coil Replacement (See separate solenoid instructions)

Valve Disassembly

Depressurize valve and turn off electrical power supply. For brass construction, refer to Figure 2. For stainless steel construction, refer to Figure 3. Proceed in the following manner:

1. See separate solenoid instructions.
2. Remove retaining cap or clip and slip the entire solenoid enclosure off the solenoid base sub-assembly. **CAUTION:** When metal retaining clip disengages, it will spring upwards.
3. Unscrew solenoid base sub-assembly and remove core, plugnut gasket, plugnut assembly and solenoid base gasket.
4. For stainless steel construction, remove adapter and adapter gasket.
5. Remove bonnet screws (4), valve bonnet, disc holder sub-assembly, disc holder spring, diaphragm/spring sub-assembly and body gasket.

- All parts are now accessible for cleaning or replacement. Replace worn or damaged parts with a complete Spare Parts Kit for best results.

Valve Reassembly

- Reassemble in reverse order of disassembly paying careful attention to exploded views provided for identification and placement of parts.
- Lubricate body gasket and solenoid base gasket with DOW CORNING® 200 fluid lubricant or an equivalent high-grade silicone fluid. Lubricate manual operator stem gasket with DOW CORNING® 111 Compound lubricant or an equivalent high-grade silicone grease. On oxygen valves Suffix "N" and special cleaning valves where silicone lubricants are not allowed use FLOROLUBE® GR-362 , LG-160 or KRYTOX® GPL -226.

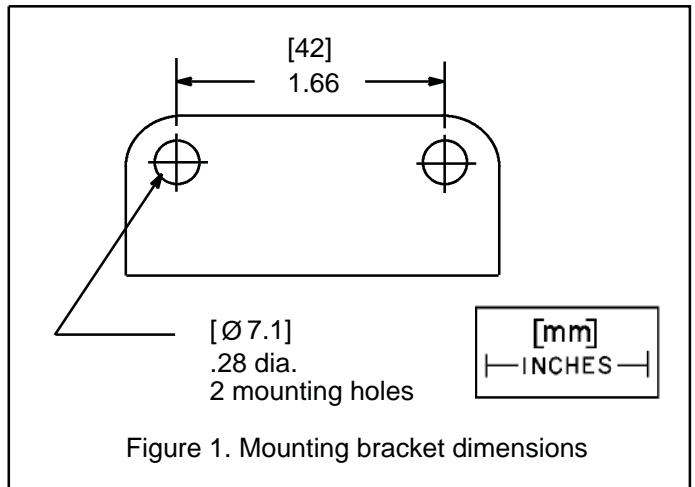
Note: Only the gaskets specified above should be lubricated.

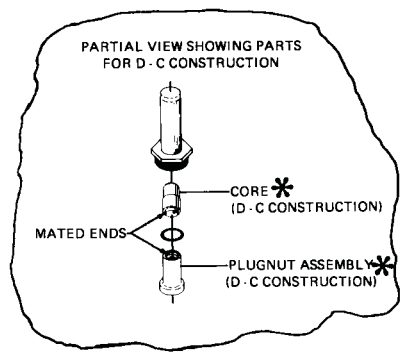
- Replace body gasket and core/diaphragm sub-assembly. Locate the bleed hole in core/diaphragm sub-assembly approximately 45° from the valve outlet. **NOTE:** Should diaphragm/spring sub-assembly become disassembled, be sure to replace the diaphragm/spring support with lip facing upward towards the valve bonnet.
- Replace disc holder spring and disc holder sub-assembly.
- Replace valve bonnet and bonnet screws. Torque bonnet screws in a crisscross manner to 95±10 inch pounds.
- For stainless steel construction, replace adapter gasket and adapter. Torque adapter to 175±25 inch pounds.
- Install solenoid base gasket, plugnut assembly and plugnut gasket. Position core (small end up for AC Construction) on plugnut assembly. For DC Construction, be sure plugnut assembly and core are installed with mated ends together.

- Replace bonnet gasket and solenoid base sub-assembly. Torque solenoid base sub-assembly to 175±25 inch pounds.
- Replace solenoid enclosure and retaining cap or clip.
- After maintenance, operate the valve a few times to be sure of proper opening and closing.

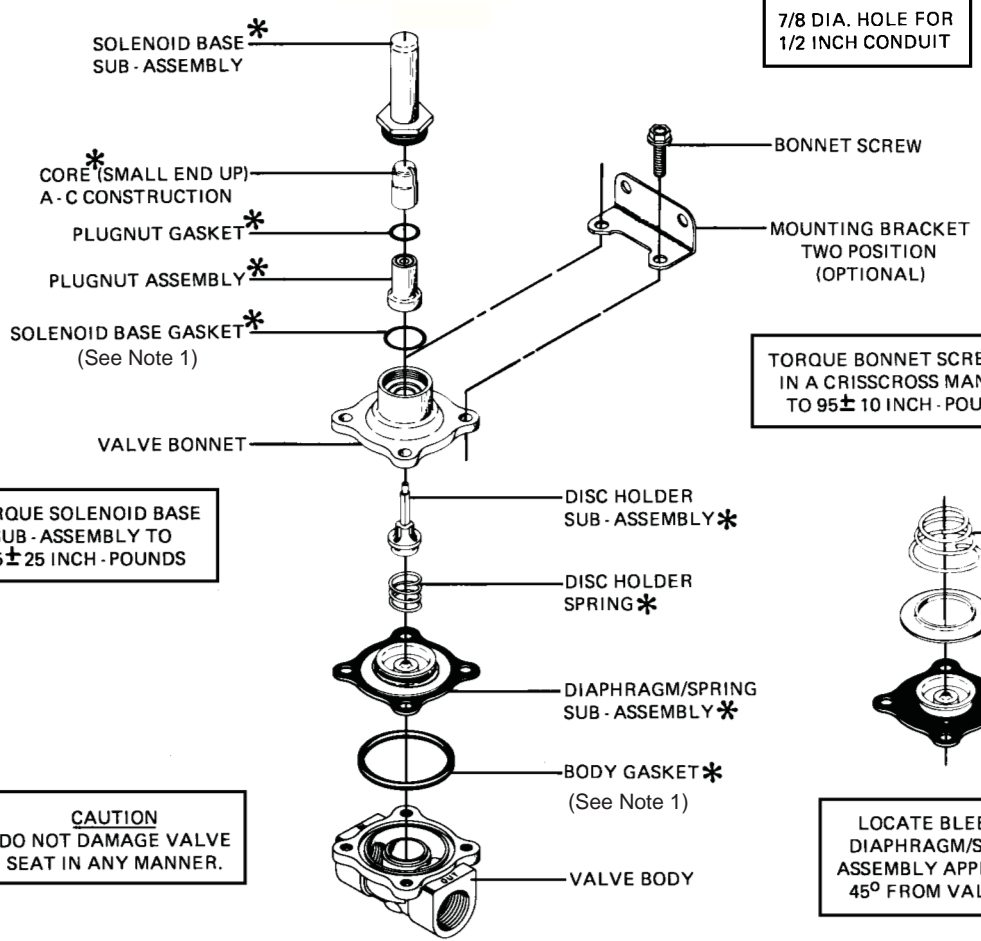
ORDERING INFORMATION FOR ASCO REBUILD KITS

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.





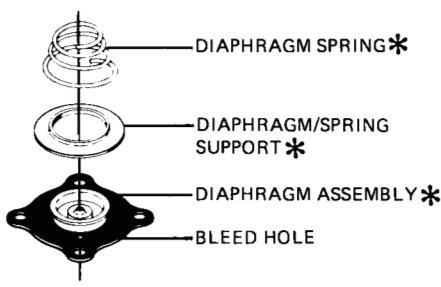
PARTS INCLUDED IN SPARE PARTS KIT *



7/8 DIA. HOLE FOR 1/2 INCH CONDUIT

TORQUE BONNET SCREWS (4) IN A CRISSCROSS MANNER TO 95 ± 10 INCH - POUNDS

TORQUE SOLENOID BASE SUB - ASSEMBLY TO 175 ± 25 INCH - POUNDS



LOCATE BLEED HOLE IN DIAPHRAGM/SPRING SUB - ASSEMBLY APPROXIMATELY 45° FROM VALVE OUTLET

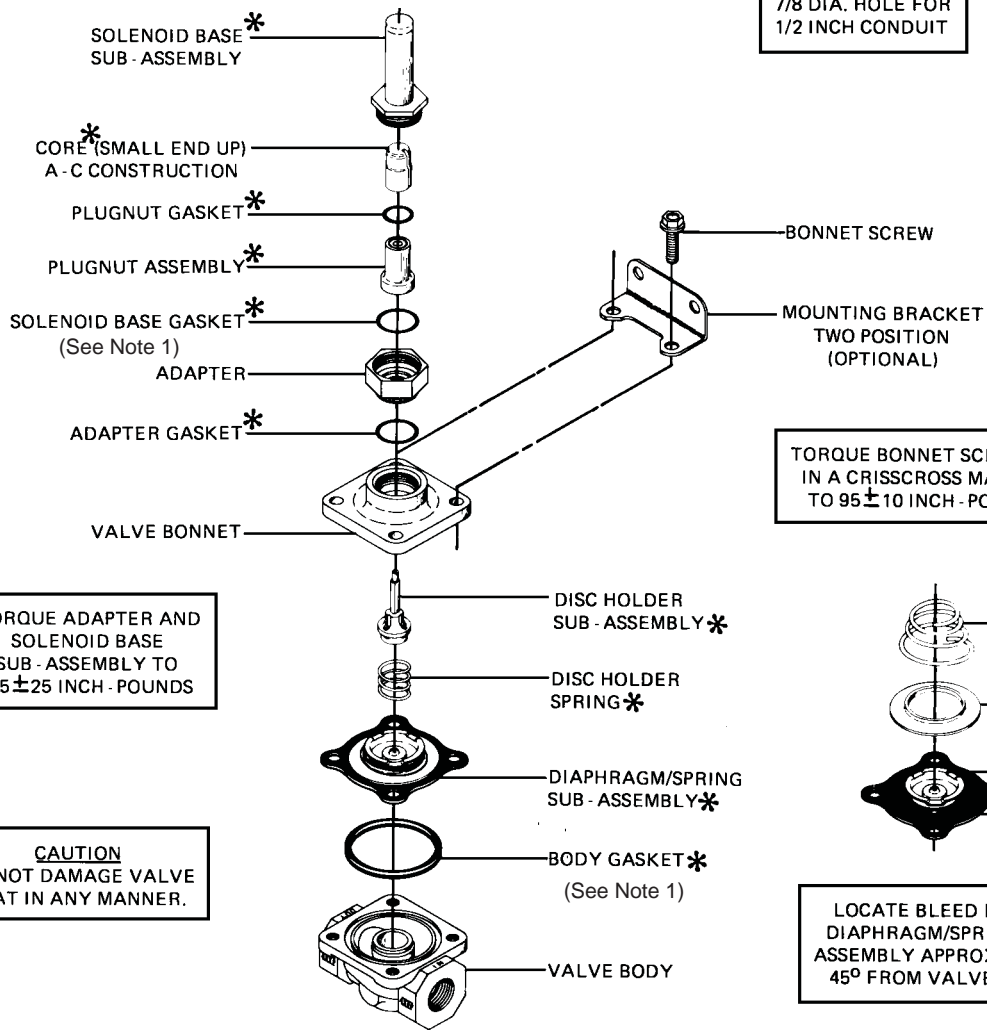
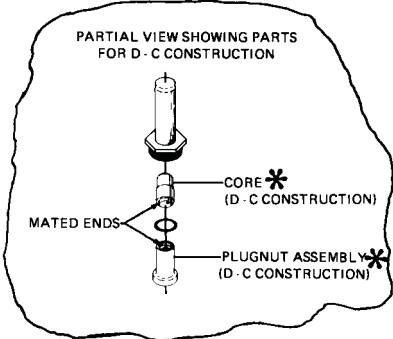
CAUTION
DO NOT DAMAGE VALVE SEAT IN ANY MANNER.

Note 1: Lubrication required for body and solenoid base gaskets. See valve reassembly instructions

**Bulletin 8210 - 3/8, 1/2 and 3/4 N.P.T. - Brass Construction
General Purpose Solenoid Enclosure Shown.**

Figure 2. For Explosion-Proof/Watertight Solenoid Enclosure used on Bulletin 8211, See Form No. V-5709.

PARTS INCLUDED IN SPARE PARTS KIT *



7/8 DIA. HOLE FOR 1/2 INCH CONDUIT

TORQUE BONNET SCREWS (4) IN A CRISSCROSS MANNER TO 95 ± 10 INCH - POUNDS

TORQUE ADAPTER AND SOLENOID BASE SUB - ASSEMBLY TO 175 ± 25 INCH - POUNDS

CAUTION
DO NOT DAMAGE VALVE SEAT IN ANY MANNER.

LOCATE BLEED HOLE IN DIAPHRAGM/SPRING SUB - ASSEMBLY APPROXIMATELY 45° FROM VALVE OUTLET

**Bulletin 8210 - 1/2 and 3/4 N.P.T. - Stainless Steel Construction
General Purpose Solenoid Enclosure Shown.**

Figure 3. For Explosion-Proof/Watertight Solenoid Enclosure used on Bulletin 8211, See Form No. V-5709.

Note 1: Lubrication required for body and solenoid base gaskets. See valve reassembly instructions