

INSTALLATION AND MAINTENANCE INSTRUCTIONS

2-WAY INTERNAL PILOT-OPERATED SOLENOID VALVES HUNG DIAPHRAGM - 2 1/2 AND 3" NPT NORMALLY CLOSED OPERATION

BULLETIN

8215

ASCO

FORM NO. V-5997R1

DESCRIPTION

Bulletin 8215's are 2-way, normally closed, internal pilot-operated solenoid valves having die cast aluminum bodies. Standard valves have a General Purpose, NEMA Type 1 Solenoid Enclosure. Valves may be equipped with an enclosure which is designed to meet NEMA Type 4 - Watertight, NEMA Type 7 (C or D) Hazardous Locations - Class I, Groups C or D and NEMA Type 9 (E, F or G) Hazardous Locations - Class II, Groups E, F or G. For Installation and Maintenance Instructions for Explosion-Proof/Watertight Solenoid Enclosure, see Form No. V-5461.

OPERATION

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

IMPORTANT: No minimum operating pressure differential required.

INSTALLATION

Check nameplate for correct catalog number, pressure, voltage and service.

TEMPERATURE LIMITATIONS

For maximum valve ambient and fluid temperatures, refer to chart below. For higher ambient and fluid temperature limitations, consult factory. Check catalog number on nameplate to determine maximum temperatures.

Coil Class	Catalog Number Prefix	Maximum Ambient Temp. °F	Maximum Fluid Temp. °F
A	None	104	104
F	FT	125	125
H	HT	140	140

POSITIONING

Valve must be mounted with solenoid vertical and upright.

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, it may enter the valve and cause operational difficulty. Pipe strain should be avoided by proper support and alignment of piping. When tightening the pipe, do not use valve as a lever. Wrenches applied to valve body or piping are to be located as close as possible to connection point.

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 due to reduced friction.

WIRING

Wiring must comply with Local and National Electrical Codes. Housings for all solenoids are made with accommodations or connections for 1/2 inch conduit. The general purpose solenoid enclosure may be rotated to facilitate wiring by removing the retaining cap or clip. Rotate enclosure to desired position. Replace retaining cap or clip before operating.

SOLENOID TEMPERATURE

Standard catalog valves are supplied with coils designed for continuous duty service. When the solenoid is energized for a long period, the solenoid enclosure becomes hot and can be touched with the hand only for an instant. This is a safe operating temperature. Any excessive heating will be indicated by the smoke and odor of burning coil insulation.

MAINTENANCE

WARNING: Turn off electrical power supply and depressurize valve before making repairs. It is not necessary to remove the valve from the pipe line for repairs.

CLEANING

A periodic cleaning of all solenoid valves is desirable. The time between cleanings will vary depending on 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. Clean valve strainer or filter when cleaning solenoid valve.

*DuPont's trademark for its TFE-fluorocarbon resin

PREVENTIVE MAINTENANCE

1. Keep the medium flowing through the valve as free from dirt and foreign material as possible.
2. While in service, operate the valve at least once a month to insure proper opening and closing.
3. Periodic inspection (depending on medium and service conditions) of internal valve parts for damage or excessive wear is recommended. Thoroughly clean all parts. Replace any parts that are worn or damaged.

IMPROPER OPERATION

1. **Faulty Control Circuit:** Check the electrical system by energizing the solenoid. A metallic click signifies the solenoid is operating. Absence of the click indicates loss of power supply. Check for loose or blown-out fuses, open-circuited or grounded coil, broken lead wires or splice connections.
2. **Burned-Out Coil:** Check for open-circuited coil. Replace coil if necessary.
3. **Low Voltage:** Check voltage across the coil leads. Voltage must be at least 85% of nameplate rating.
4. **Incorrect Pressure:** Check valve pressure. Pressure to valve must be within range specified on nameplate.
5. **Excessive Leakage:** Disassemble valve and clean all parts. Replace worn or damaged parts with a complete Spare Parts Kit for best results.

COIL REPLACEMENT (Refer to Figure 1)

Turn off electrical power supply and disconnect coil lead wires. Proceed in the following manner:

1. Remove retaining cap or clip, nameplate and cover.
2. Slip yoke containing coil, sleeves and insulating washers (2) off the solenoid base sub-assembly. Insulating washers are omitted when a molded coil is used.
3. Slip coil, sleeves and insulating washers from yoke.
4. Reassemble in reverse order of disassembly paying careful attention to exploded view provided for identification and placement of parts.

CAUTION: Solenoid must be fully reassembled as the housing and internal parts are part of and complete the magnetic circuit. Place an insulating washer at each end of coil, if required.

VALVE DISASSEMBLY AND REASSEMBLY (Refer to Figure 1)

Depressurize valve and turn off electrical power supply. Proceed in the following manner:

1. Disassemble valve in an orderly fashion paying careful attention to exploded view provided for identification of parts.
2. Remove retaining cap or clip and slip the entire solenoid enclosure off the solenoid base sub-assembly.
3. Unscrew solenoid base sub-assembly with special wrench adapter provided in Spare Parts Kit (Wrench Adapter Order No. 98-674-1). Remove solenoid base gasket from valve bonnet.
4. Remove bonnet screws (8), valve bonnet, closing spring, spring retainer, core/diaphragm sub-assembly and body gasket.
5. All parts are now accessible for cleaning or replacement. Replace worn or damaged parts with a complete Spare Parts Kit for best results.
6. Reassemble in reverse order of disassembly paying careful attention to exploded view provided for identification and placement of parts.
7. Lubricate solenoid base gasket and body gasket with DOW CORNING® 111 compound or an equivalent high-grade silicone grease.
8. Replace body gasket and core/diaphragm sub-assembly. Locate bleed hole in core/diaphragm sub-assembly approximately 45° from valve outlet.
9. Replace spring retainer and closing spring with small diameter over spring retainer.
10. Replace valve bonnet and bonnet screws (8). Torque screws in a criss-cross manner to 250 ± 25 inch-pounds [28,3 ± 2,8 newton meters].
11. Install solenoid base gasket and solenoid base sub-assembly. It is recommended that Dow Corning Corporation's MOLYKOTE® anti-seize thread compound be used on the solenoid base sub-assembly threads. Torque solenoid base sub-assembly 40 - 60 foot-pounds [54,2 - 81,4 newton meters].
12. Replace solenoid enclosure and retaining cap or clip.
13. After maintenance, operate the valve a few times to be sure of proper opening and closing.

SPARE PARTS KITS

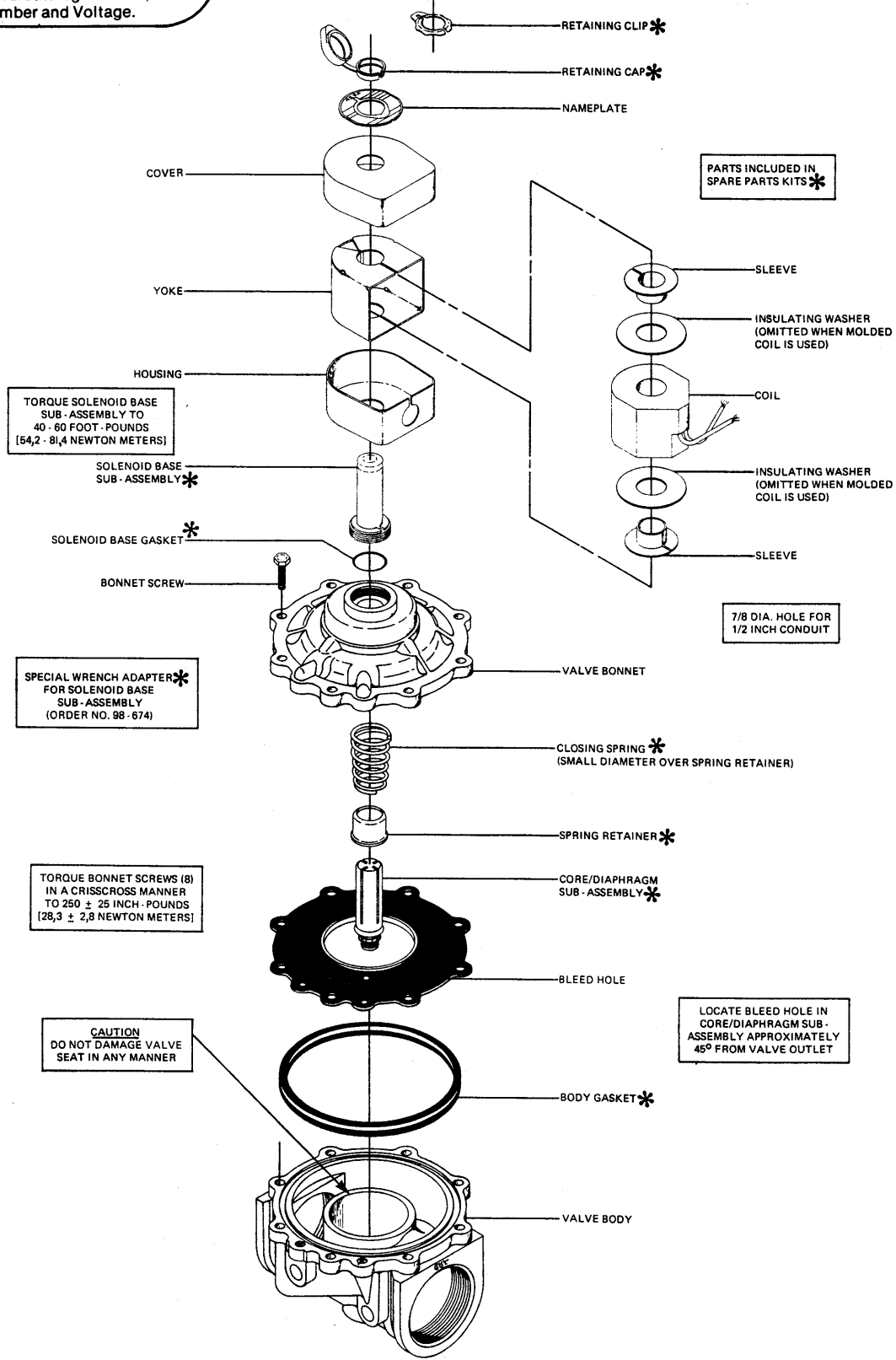
Spare Parts Kits and Coils are available for ASCO valves. Parts marked with an asterisk (*) are supplied in Spare Parts Kits.

ASCO Valves

ASCO

**ORDERING INFORMATION
FOR SPARE PARTS KITS**

When Ordering Spare Parts Kits or Coils,
Specify Valve Catalog Number,
Serial Number and Voltage.



**Bulletin 8215 - 2 1/2 & 3 NPT
General Purpose Solenoid Enclosure Shown.
For Explosion-Proof/Watertight Solenoid Enclosure, See Form No. V-5461.**

Figure 1.