

# INSTALLATION AND MAINTENANCE INSTRUCTIONS

## 2-WAY DIRECT-LIFT SOLENOID VALVES NORMALLY OPEN OPERATION- 1/2 AND 3/4 NPT

BULLETINS

8030

8031

ASCO®

Form No. V-5493R1

### DESCRIPTION

Bulletin 8030's are 2-way, direct-lift solenoid valves. These valves have a forged brass body and soft seating for tight seating on low pressure service. Standard valves have a General Purpose, NEMA Type 1 Solenoid Enclosure.

Bulletin 8031's are the same as Bulletin 8030's except that the solenoids are 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. The Explosion-Proof/Watertight Solenoid Enclosures are shown on a separate sheet of Installation and Maintenance Instructions, Form No. V5380.

### OPERATION

**Normally Open:** Valve is open when solenoid is de-energized and closes when solenoid is energized.

**IMPORTANT:** No minimum operating pressure differential is 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 or DA	77°	77°
B or F	FT or LB	104°	104°
H	HT	140°	140°

### POSITIONING/MOUNTING (Refer to Figure 1)

This valve is designed to perform properly when mounted in any position. However, for optimum life and performance, the solenoid should be mounted vertical and upright so as to reduce the possibility of foreign matter accumulating in the core tube area. Refer to Figure 1 for mounting dimensions.

### 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 valve and cause operational difficulty. Pipe strain should be avoided by proper support and alignment of piping. When tightening 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.

**IMPORTANT:** For the protection of the solenoid valve, install a strainer or filter suitable for the service involved in the inlet side as close to the valve as possible. Periodic cleaning is required depending upon the service conditions. See Bulletins 8600, 8601 and 8602 for strainers.

### WIRING

Wiring must comply with Local and National Electrical Codes. Housings for all solenoids are made with connections for 1/2 inch conduit. The general purpose enclosure may be rotated to facilitate wiring by removing the retaining cap or clip. **CAUTION:** When metal retaining clip disengages, it will spring upward. 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.

### 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

**Turn off electrical power supply and disconnect coil leads. Proceed in the following manner:**

1. Remove retaining cap or clip, nameplate and housing. **CAUTION:** When metal retaining clip disengages, it will spring upward.
2. Remove spring washer, insulating washer and coil off solenoid sub-assembly. Insulating washers are omitted when a molded coil is used.
3. 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 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. 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 upward.
2. Unscrew solenoid base sub-assembly and remove solenoid base gasket.
3. Remove bonnet screws (4) and bonnet.
4. Remove shield, body gasket and core with disc and core spring attached. **NOTE:** Shield is not present on all constructions. Catalog numbers with Suffix "E," Suffix "N" or Suffix "V," shield is omitted.
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. During normal disassembly, it is not necessary to remove disc from core; however, if disc is removed from core, be sure to reassemble disc with chamfered side facing the core spring.
8. Torque solenoid base sub-assembly to  $175 \pm 25$  inch-pounds [ $19,8 \pm 2,8$  newton meters].
9. Torque bonnet screws in a crisscross manner to  $110 \pm 10$  inch-pounds [ $12,4 \pm 1,1$  newton meters].
10. After maintenance, operate the valve a few times to be sure of proper operation.

### SPARE PARTS KITS

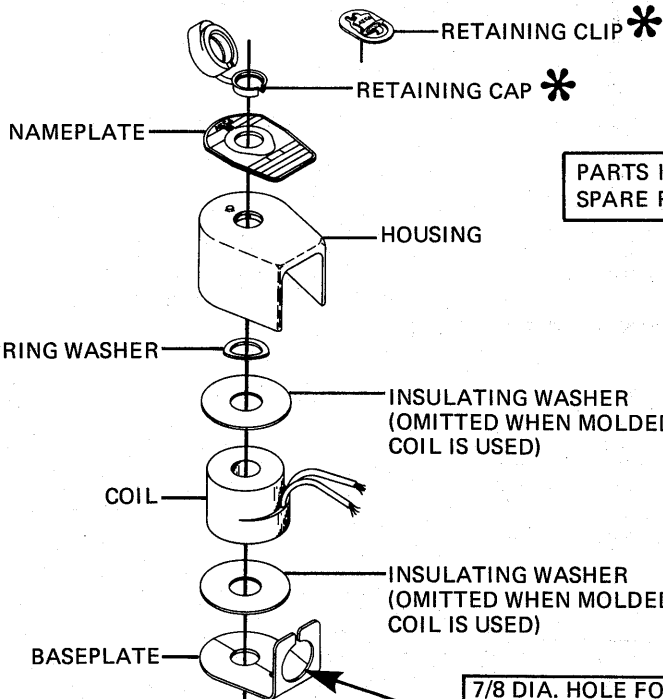
Spare Parts Kits and Coils are available for ASCO valves. Parts marked with an asterisk (\*) are supplied in Spare Parts Kits.

ASCO Valves

ASCO®

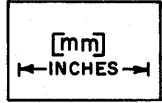
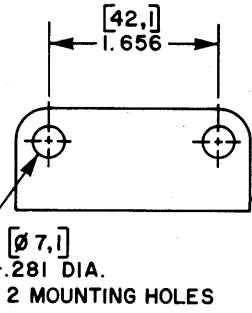
**ORDERING INFORMATION  
FOR SPARE PARTS KITS**

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



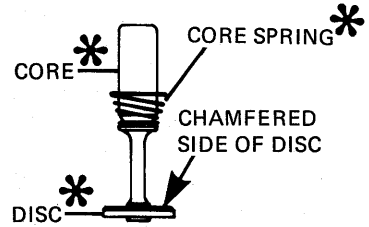
**PARTS INCLUDED IN  
SPARE PARTS KIT \***

**PARTIAL VIEW OF  
MOUNTING BRACKET  
(OPTIONAL)**



**TORQUE SOLENOID BASE  
SUB-ASSEMBLY TO  
175 ± 25 INCH-POUNDS  
[19,8 ± 2,8 NEWTON METERS]**

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



**VIEW OF CORE AND DISC  
SHOWING PROPER POSITIONING  
OF DISC ON CORE**

**TORQUE BONNET SCREWS  
IN A CRISSCROSS MANNER  
TO 110 ± 10 INCH-POUNDS  
[12,4 ± 1,1 NEWTON METERS]**

- NOTES:**
1. IF DISC IS REMOVED FROM CORE, BE SURE TO REASSEMBLE DISC WITH CHAMFERED SIDE FACING CORE SPRING.
  2. SHIELD IS NOT PRESENT ON ALL CONSTRUCTIONS. CATALOG NUMBERS WITH SUFFIX "E," SUFFIX "N" OR SUFFIX "V," SHIELD IS OMITTED.

**Bulletin 8030**

**General Purpose Solenoid Enclosure Shown**

**Figure 1. For Explosion-Proof/Watertight Solenoid Enclosure used on Bulletin 8031, See Form No. V5380**