

INSTALLATION AND MAINTENANCE INSTRUCTIONS

2-WAY DIRECT-ACTING SOLENOID VALVES
FOR COOLING APPLICATIONS USING LIQUID CO²
NORMALLY CLOSED OPERATION — 1/8 NPT

BULLETIN

8264

ASCO

Form No. V5320R3

DESCRIPTION

Bulletin 8264's are 2-way direct-acting solenoid valves. These valves have been designed to automatically control the discharge of liquid CO². They have nickel plated brass, angle type bar stock bodies, stainless steel seats and a resilient disc for tight shut-off. Standard valves are provided with a TYPE 1, General Purpose Solenoid Enclosure. Valves may be provided with a combination watertight & explosion-proof solenoid enclosure designed to meet Enclosure TYPE 4 Watertight, TYPE 7 (C & D) - Explosion-proof Class I, Groups C & D and TYPE 9 (E, F & G) - Dust Ignition-proof Class II, Groups E, F & G. Installation and Maintenance Instructions for the Watertight & Explosion-proof Solenoid Enclosure are shown on Form No. V5391.

OPERATION

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

INSTALLATION

Check nameplate for correct catalog number, pressure, voltage and service. **IMPORTANT:** Before installing valve, refer to "How to Prevent Freeze". When installing the valve, purge valve and system of all moisture by using a clean dry gas. Be sure the system is kept free from all moisture.

HOW TO PREVENT FREEZE:

The following precautions should be taken to avoid freezing the valve or the lines downstream of the valve:

- A. Do not mount valve inside the cooling chamber. Bulletin 8264 valves are built with materials that are suitable for fluid temperatures as low as -75°F, but for best valve operation it is recommended that the valves be mounted outside the cooling chamber to keep the fluid temperature as warm as possible.
- B. A strainer is recommended upstream of the valve to prevent dirt buildup on the valve seat. Dirt on valve seat will cause leakage resulting in expansion of the liquid CO² and formation of solid CO² at the seat. Formation of the solid CO² cools the valve and may cause the liquid to freeze inside the valve. The solid CO² particles can also block small passages downstream of the valve.
- C. Improper sizing of downstream tubing or piping will cause solid CO² to form. The valves should always be used with piping or tubing installed in the valve outlet in order to locate the refrigeration point (formation of solid CO²) downstream away from the valve. The formation of dry ice in the valve orifice can be prevented by providing a smooth uninterrupted flow passage downstream of the valve orifice. Figure 1 shows a typical injection tube installation that eliminates the formation of dry ice inside the valve. The cavity that exists between the valve orifice and the injection tube fitting has been eliminated by extending the tubing up to the valve orifice and filling the cavity with a rubber grommet. If these measures are not taken, solid CO² formed on repeated cycling of the valve can plug any small passages downstream.
- D. When a Y-connection is desired to provide two sources of liquid CO² into one or two chambers, the use of two separate valves is recommended. If two separate valves are not used, the tubing should be sized as shown in Figure 2 to prevent expansion of the liquid CO² and formation of solid CO² at the Y-connection.

POSITIONING

Bulletin 8264 valves are 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 from accumulating in the core tube area.

MOUNTING

For direct mounting installation, the valve is supplied with a mounting base and lower body gasket to seal the joint between the valve outlet and the surface on which it is mounted, (see Figures 3 & 4).

PIPING

Connect piping to the valve according to markings on its body. Apply pipe compound sparingly to male pipe threads only; if applied to valve threads, it may enter the valve and cause operational difficulty. Avoid pipe strain by proper support and alignment of piping. When tightening the pipe, do not use valve body or solenoid as a lever. Locate wrenches applied to valve body or piping as close as possible to the 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. Periodic cleaning is required, depending on service conditions. See Bulletin 8600, 8601 and 8602 for strainers.

WIRING

Wiring must comply with local codes and the National Electrical Code. The solenoid housing has a 1/2-inch conduit connection. To facilitate wiring, the solenoid enclosure may be rotated 360° 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. **NOTE:** Alternating Current (A-C) and Direct Current (D-C) solenoids are constructed differently. To convert from one to the other, it is necessary to change the complete solenoid, including the core assembly and plugnut/core tube sub-assembly.

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 for only an instant. This is a safe operating temperature. Any excessive heating will be indicated by the smoke and odor of burning coil insulation.

MAINTENANCE

NOTE: It is not necessary to remove the valve from the pipeline for repairs. **WARNING:** Turn off electrical power and depressurize valve before making repairs.

CLEANING

A periodic cleaning of all solenoid valves is desirable. 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. Clean valve strainer or filter when cleaning the valve.

PREVENTIVE MAINTENANCE

1. Keep the medium flowing through the valve as free from dirt and foreign material as possible.
2. While in service, the valve should be operated at least once a month to insure proper opening and closing.
3. Periodic inspection (depending on 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.

ASCO Valves

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IMPROPER OPERATION

1. **Faulty Control Circuit:** Check the electrical system by energizing the solenoid. A metallic "click" signifies that the solenoid is operating. Absence of the "click" indicates loss of power supply. Check for loose or blown 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. Check supply voltage; it must be the same as specified on the nameplate.
3. **Low Voltage:** Check voltage across the coil leads. Voltage must be at least 85% of nameplate rating.
4. **Incorrect Pressure:** Check the 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. However, for best results, replace all parts that are supplied with an ASCO Spare Parts Kit.
6. **Failure to Open or Close:** Check for moisture in the system which would cause internal valve parts to freeze. Purge the system with clean dry gas. Installation of a dryer should be considered if this condition becomes repetitive.

COIL REPLACEMENT (Refer to Figure 3.)

WARNING: Turn off electrical power supply and disconnect coil lead wires. Proceed as follows:

1. Remove retaining cap or clip, nameplate and cover. **CAUTION:** When metal retaining clip disengages, it will spring upward.
2. Slip yoke containing coil, sleeves and insulating washers off the plugnut/core tube sub-assembly. Insulating washers are omitted when a molded coil is used.
3. Reassemble in reverse order of disassembly. Use exploded view for identification and placement of parts.

CAUTION: The solenoid must be fully reassembled because the housing and internal solenoid parts complete the magnetic circuit. Be sure to replace insulating washers at each end of a non-molded coil.

VALVE DISASSEMBLY AND REASSEMBLY (Refer to Figure 3.)

WARNING: Depressurize valve and turn off electrical power supply. Disconnect conduit and lead wires when necessary.

1. Remove the retaining cap or clip and slip the entire solenoid enclosure off the plugnut/core tube sub-assembly. **CAUTION:** When metal retaining clip disengages, it will spring upward.
2. Unscrew bonnet with special adapter wrench (Special Wrench Adapter Kit Order No. 218-948) provided in Spare Parts Kits. Remove plugnut/core tube sub-assembly with bonnet gasket attached.
3. Remove body gasket, core assembly, rider rings (rider rings present on A-C construction only) and core spring. When replacing core spring, place wide end in core first, closed end protruding from top of core.
4. All parts are now accessible for cleaning or replacement. Replace worn or damaged parts. However, for best results, replace all parts that are supplied with an ASCO Spare Parts Kit.
5. Reassemble in reverse order of disassembly. Use exploded view provided in Figure 3 for identification and placement of parts.
6. Lubricate body gasket with DOW CORNING® 200 fluid silicone oil. Torque bonnet to 90 ± 10 inch-pounds [10.2 ± 1.1 newton meters].
7. After maintenance, operate the valve a few times to be sure of proper operation. A metallic "click" signifies the solenoid is operating.

SPARE PARTS KITS

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

ORDERING INFORMATION FOR SPARE PARTS KITS

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

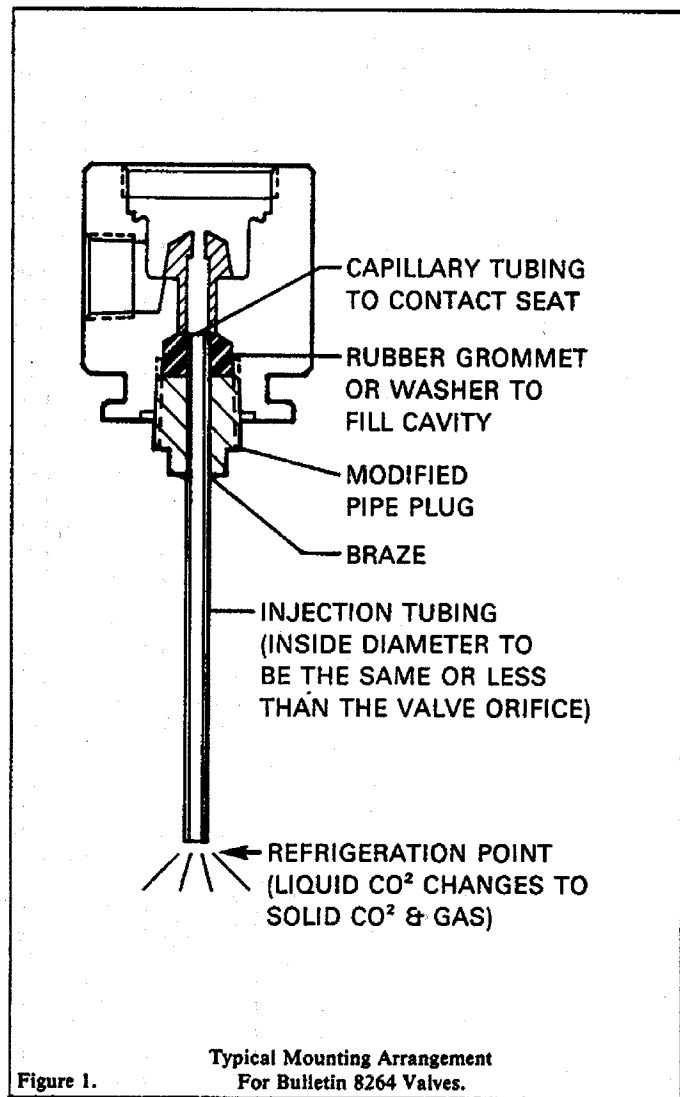


Figure 1.

Typical Mounting Arrangement
For Bulletin 8264 Valves.

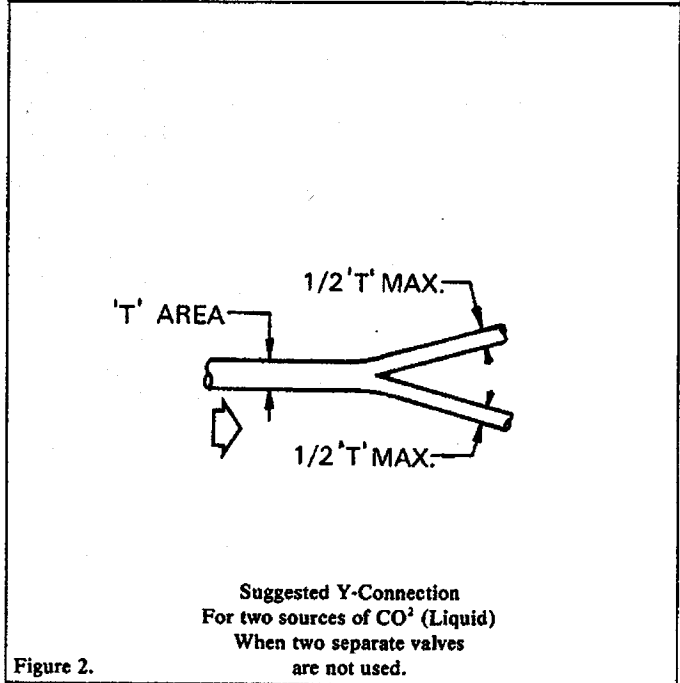


Figure 2.

Suggested Y-Connection
For two sources of CO² (Liquid)
When two separate valves
are not used.

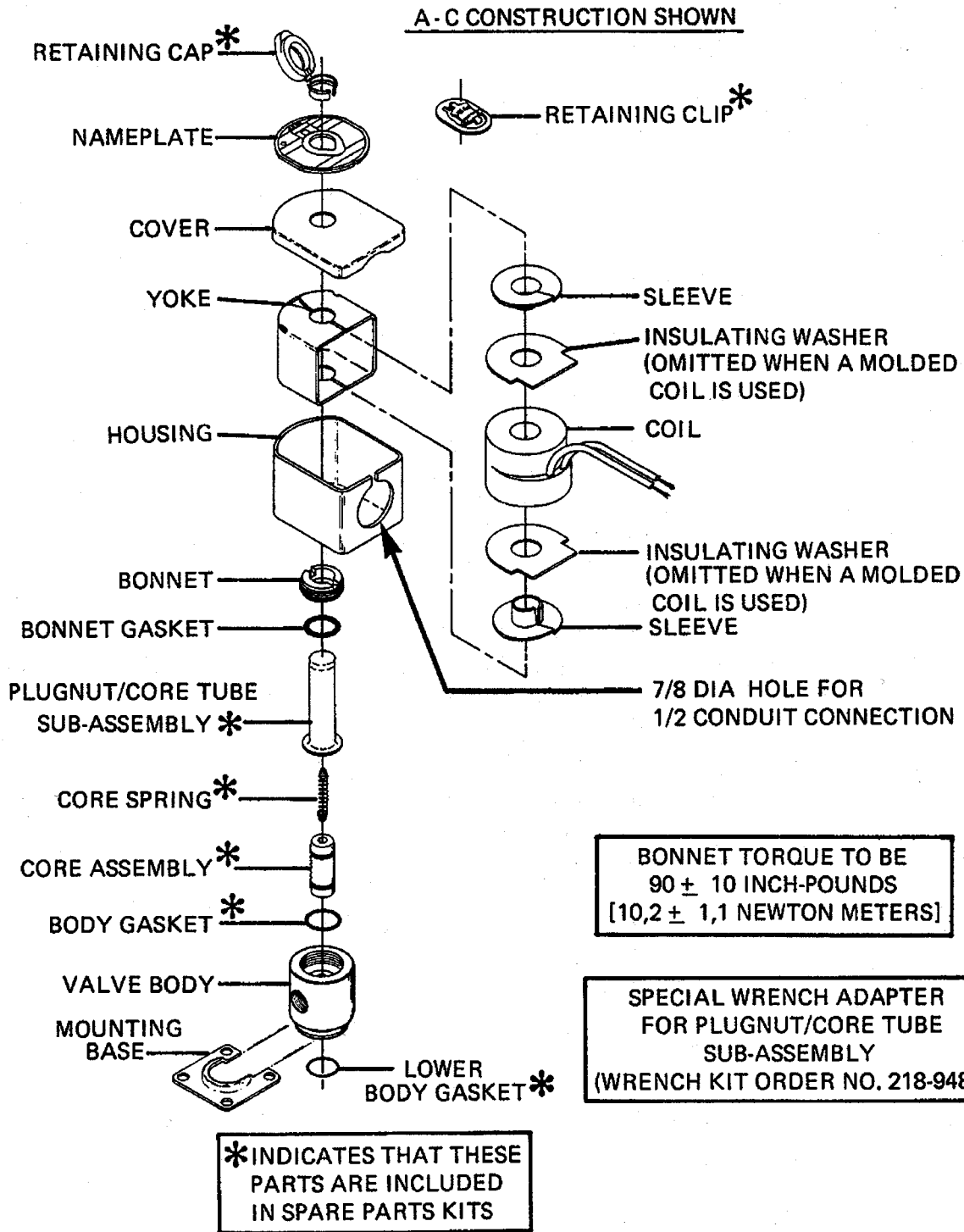
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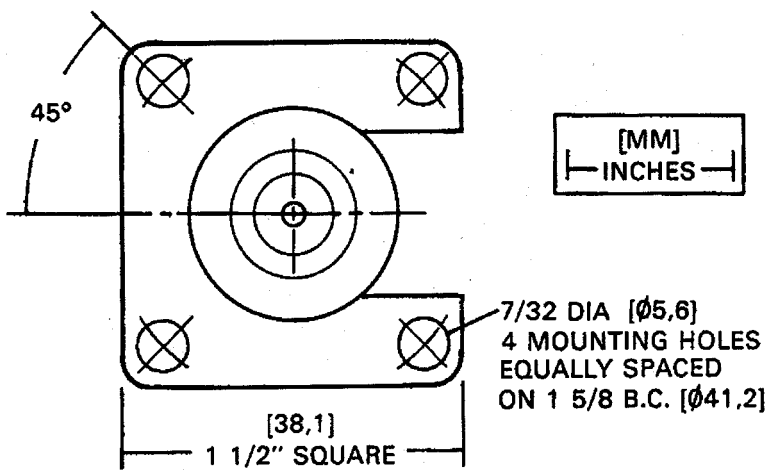
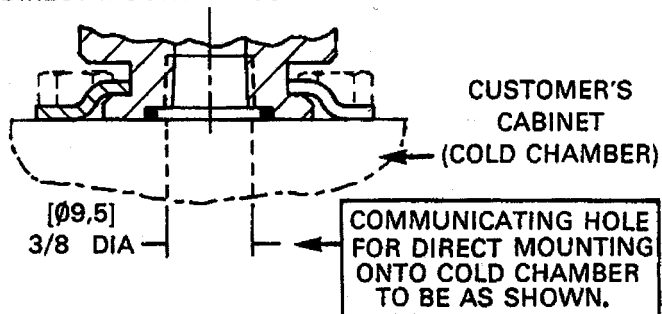
Form No. V5320R3

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Bulletin 8264
General Purpose Solenoid Enclosure Shown.
Figure 3. For Watertight and Explosion-Proof Solenoid Enclosure, See Form No. V5391.

SECTION VIEW OF BODY
AND MOUNTING BASE FOR
DIRECT MOUNTING CONSTRUCTION



Bulletin 8264

Figure 4.

Mounting Base Assembled Onto Valve (Bottom View)