Installation & Maintenance Instructions

ASCO RedHat NEXT GENERATION

3–WAY NORMALLY CLOSED DIRECT MOUNTED SOLENOID VALVES
FOR NAMUR ACTUATORS — 1/4″ NPT — AIR OR INERT GAS SERVICE
BRASS OR STAINLESS STEEL CONSTRUCTION

SERIES

8320

I&M No.V7569

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

DESCRIPTION

Series 8320 valves are 3–way normally closed direct mounted solenoid valves designed for air or inert gas service. Valves are made of rugged brass or stainless steel. Series 8320 valves are provided with a general purpose solenoid enclosure. Series EE8320 is the same as Series 8320 except it is provided with a Class I, Division 2 explosionproof/watertight solenoid enclosure.

OPERATION

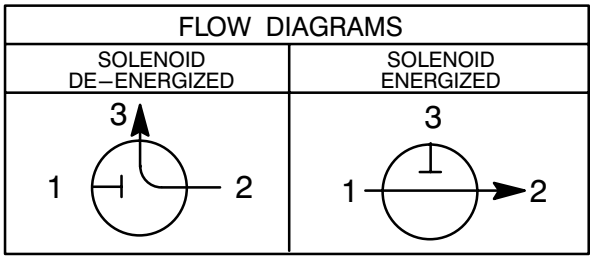
Normally Closed (Pressure at Port 1)

Solenoid De–energized: Flow is from Port 2 to Port 3. Port 1 is closed.

Solenoid Energized: Flow is from Port 1 to Port 2. Port 3 is closed.

Breather Function: Allows for spring side of a spring return actuator to vent at all times through valve exhaust port 3. **IMPORTANT: Because of the breather function, the use of a metering / flow control device at exhaust port 3 (to control actuator speed) is not recommended.**

NOTICE: No minimum operating pressure differential required.



Manual Operation

Manual operator (optional feature) allows manual operation when desired or during an electrical power outage. Depending upon valve requirements, two types of manual operators are available:

Momentary Push Type (Suffix MO) Manual Operator

To engage push type manual operator, push stem at base of valve body upward as far as possible. Valve will now be in the same position as when the solenoid is energized. To disengage manual operator, release stem. Manual operator will return to original position.

Maintained Screw Type (Suffix MS) Manual Operator

To engage screw type manual operator, turn red knob clockwise until it hits a stop. Valve will now be in the same position as when solenoid is energized. Rotate knob fully counterclockwise to disengage.

⚠ **CAUTION: For valve to operate electrically, manual operator must be fully disengaged.**

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.

Future Service Considerations

Provision should be made for performing seat leakage, external leakage, and operational tests on the valve with a nonhazardous, noncombustible fluid after disassembly and reassembly.

Temperature Limitations

See separate solenoid Installation and Maintenance Instructions for maximum ambient temperature Maximum fluid temperature is 180°F (82°C)

Positioning

Valve may be mounted in any position.

Mounting Solenoid Valve to NAMUR Actuator

Valves are supplied with a hardware kit containing two port gaskets and three sets of mounting screws; sizes: M5, .190–24 UNC–2A and .190–32 UNF–2A. Align port 2 and 3 port gaskets and solenoid valve on actuator. Then install two hex head screws in offset center holes on either side. Hand thread screws a few turns into actuator. Then tighten screws evenly using a 5/16″ or 8 mm wrench.

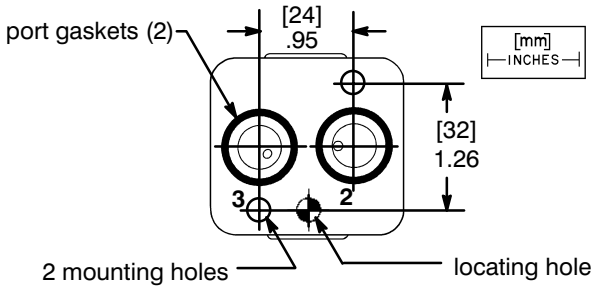


Figure 1. Mounting Dimensions

Piping

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.

NOTE: The exhaust and/or pressure lines may be restricted to control actuator speed.

⚠ **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.**

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MAINTENANCE

⚠ WARNING: To prevent the possibility of death, serious injury or property damage, turn off electrical power, depressurize valve, and vent fluid to a safe area before servicing the valve.

Cleaning

All solenoid valves should be cleaned periodically. The time between cleaning 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 shift. Clean strainer or filter when cleaning the valve.

Preventive Maintenance

- Keep 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 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 install a complete ASCO Rebuild Kit.

Valve Disassembly (Refer to Figures 2 & 3)

1. Disassemble valve in an orderly fashion using exploded view for identification of parts.
2. Disconnect electrical hookup to solenoid and piping to valve body.
3. Remove solenoid, see separate instructions.
4. Remove two hex head mounting screws from offset holes in valve body using a 5/16″ or 8 mm wrench.
5. Unscrew solenoid base sub−assembly from valve body. Then remove solenoid base gasket and core assembly with core spring and core guide.
6. Unscrew end cap or optional manual operator and remove disc holder spring, disc holder assembly and end cap gasket from valve body.
7. 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 valve using exploded views for identification and placement of parts.
2. Lubricate all gaskets with DOW CORNING® 200 Fluid lubricant or an equivalent high−grade silicone fluid.

NOTE: Solenoid base gasket and end cap gasket are identical.

3. Reinstall end cap gasket, disc holder assembly, disc holder spring and end cap or optional manual operator in valve body. Torque end cap to 175 ± 25 in−lbs [19,8 ± 2,8 Nm].
4. Position solenoid base gasket in valve body.
5. Install core assembly with core spring and guide into solenoid base sub−assembly and engage with valve body.
6. Torque solenoid base sub−assembly to 175 ± 25 in−lbs [19,8 ± 2,8 Nm].
7. Reinstall valve on actuator, see ***Mounting Solenoid Valve To NAMUR Actuator*** section.
8. Reinstall solenoid and make electrical connections, see separate instructions.
9. Install piping to valve, see ***Piping*** section.

⚠ WARNING: To prevent the possibility of death, serious injury or property damage, check valve for proper operation before returning to service. Also perform internal seat and external leakage tests with a nonhazardous, noncombustible fluid.

10. Restore line pressure and electrical power supply to valve.
11. 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.

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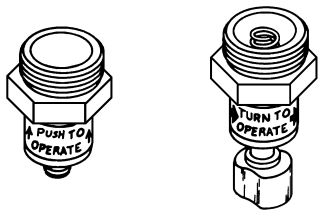

MO
push type

MS
screw type

Manual Operator
(Optional Feature)
Replaces End Cap

* Indicates that these parts are included in ASCO Rebuild Kit

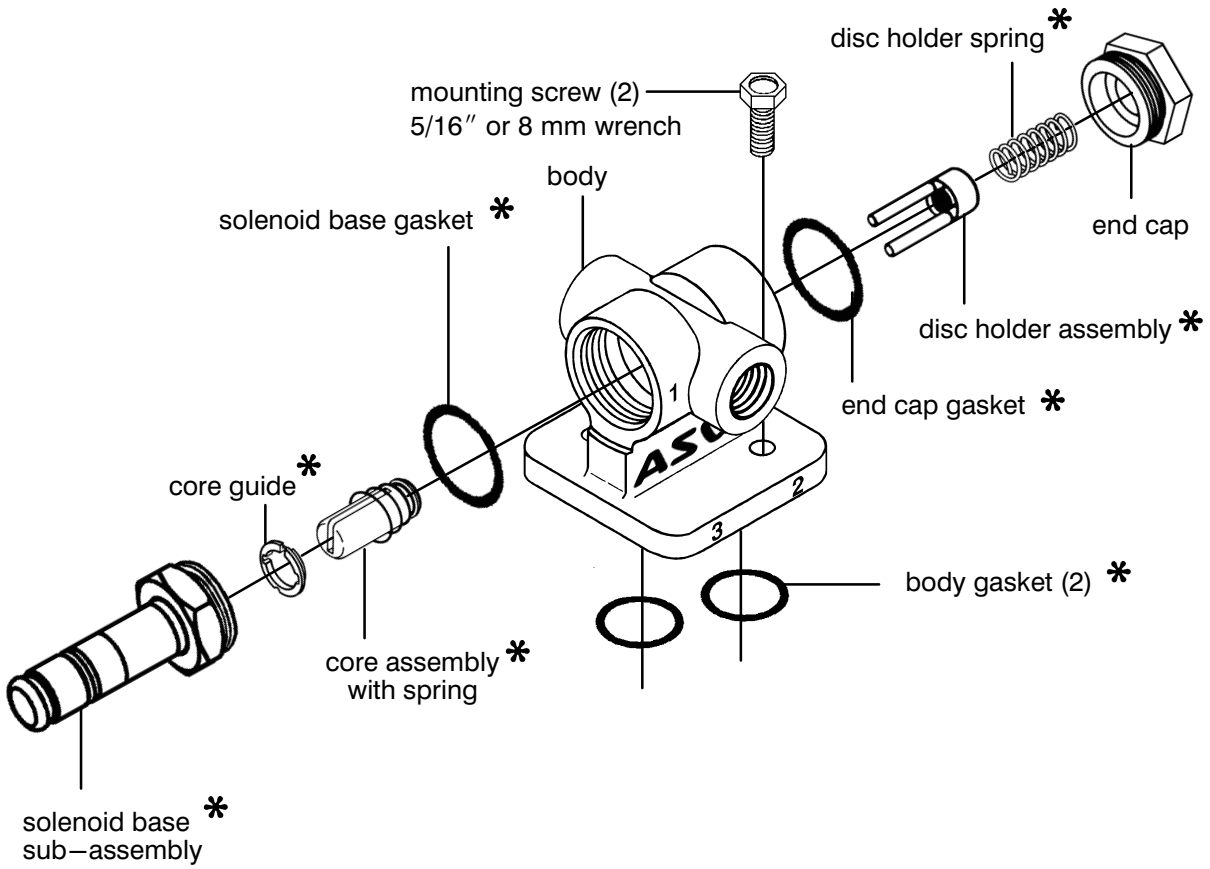

Figure 2. Series 8320 valve without solenoid.

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