

Installation & Maintenance Instructions

2-POSITION 4-WAY FUNCTION VALVES

MIDGET SIZE - 1/4 NPT

SERIES

8345G/H

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

DESCRIPTION

Series 8345 valves are 2-position 4-way midget size solenoid valves with rugged forged brass or stainless steel bodies. These valves are extremely compact to meet the requirements where space and weight are important and are primarily used to control small double acting cylinders not larger than 4 inches in diameter. Series 8345 valves may be provided with a general purpose or explosionproof solenoid enclosure.

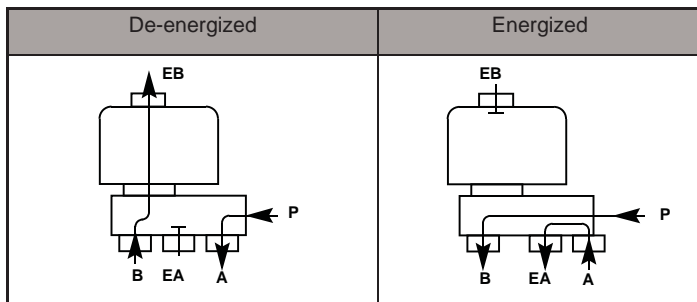
OPERATION

Solenoid De-energized: Flow is from Pressure "P" to Cylinder "A" and from Cylinder "B" to Exhaust "EB". Exhaust "EA" is closed.

Solenoid Energized: Flow is from Pressure "P" to Cylinder "B" and from Cylinder "A" to Exhaust "EA". Exhaust "EB" is closed.

IMPORTANT: Minimum operating pressure differential is 10 psi.

Flow Diagrams



Manual Operator (optional feature)

Manual operator allows manual operation when desired or during an electrical power outage. To operate manual operator, rotate groove pin counter-clockwise 180°. Valve will then remain in the solenoid energized position until stem is rotated clockwise to original position. Manual operator must be in clockwise position for proper electrical operation.

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 valve ambient and fluid temperatures, refer to chart below. Check catalog number on nameplate to determine temperature limitation.

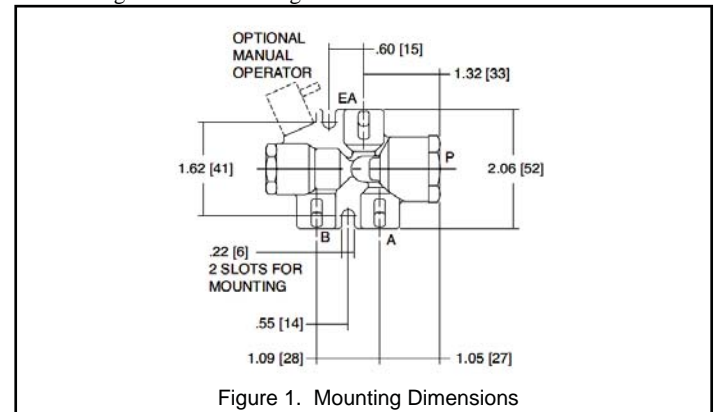
Wattage	Catalog Number Coil Prefix	Coil Class	Max. Ambient Temp. °F	Max. Fluid Temp. °F
10.1	none, KF, SF, SC, EF or EV	F	125	180
10.1	HT, KH, ST, SU, EFHT or EVHT	H	140	180
11.6	none, HT, KF, KH, SC, SF, EF or EV	F or H	104	104

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

Refer to Figure 1 for Mounting dimensions.



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.

To ensure proper operation of the valve, the pressure and exhaust lines must be full area without restriction. A minimum differential pressure (10psi), as stamped on the nameplate, must be maintained between pressure and exhaust at the moment of shifting. Air reservoirs must have adequate capacity to maintain this minimum pressure during shifting. To check pressure during shifting, install a pressure gauge in the piping as close to valve as possible.

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.

Wiring

Wiring must comply with Local and National Electrical Codes. For valves equipped with an Explosionproof/Watertight Solenoid Enclosure, the electrical fittings must be approved for use in the approved hazardous Location. Housings for all solenoids are provided with accommodations or connections for a 1/2 inch conduit. To facilitate wiring, the solenoid enclosure may be rotated 360°.

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 becomes hot and can be touched by hand only for an instant. This is a safe operating temperature. Any excess heating will be indicated by smoke and the odor of burning coil insulation.

MAINTENANCE

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

Note: It is not necessary to remove the valve from the pipeline for repairs. However, piping or tubing must be removed from Pressure "P" connection and Exhaust "EB" connection on air and liquid constructions.

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 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

- **Faulty Control Circuit:** Check the electrical system by energizing the solenoid. A metallic click signifies that the solenoid is operating. The 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.
- **Burned-Out Coil:** Check for open-circuited coil. Replace if necessary. Check supply voltage; it must be the same as specified on nameplate and as marked on the coil.
- **Low Voltage:** Check voltage across the coil leads. Voltage must be at least 85% of nameplate rating.
- **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.

Valve Disassembly

1. Disassemble valve in an orderly fashion using exploded views for identification and placement of parts.
2. Remove solenoid enclosure. See separate instructions.
3. Unscrew solenoid base sub-assembly and remove bonnet gasket.
4. For normal maintenance (cleaning) it is not necessary to disassemble the manual operator (optional feature) unless external leakage is evident. If disassembly is required, remove stem pin, manual operator stem, stem spring and stem gasket from valve body.
5. Remove core spring and core sub-assembly.
6. Unscrew end cap and remove end cap gasket, body gasket and disc.
7. Unscrew end plug and remove end plug gasket, piston and piston U-cup.
8. All parts are now accessible for cleaning or replacement. If parts are worn or damaged, install a complete ASCO Rebuild Kit

Valve Reassembly

1. Lubricate piston U-cup and all gaskets with Parker Super Lube Compound or an equivalent high-grade silicone grease.
2. Position piston U-cup on piston with mouth or open end facing in the direction of the end plug.
3. Install piston into valve body. Position end plug gasket on end plug and install into valve body. Torque end plug to 200±10 in-lbs [22,6±1,1 Nm].
4. Position body gasket and end cap gasket on end cap. Lubricate disc with DOW CORNING® 111 Compound or an equivalent high grade silicone grease. Install disc and end cap into valve body. Torque end cap to 200±10 in-lbs [22,6±1,1 Nm].
5. If removed, assembly and replace manual operator stem, stem spring, stem gasket and stem pin.
6. Position solenoid base gasket in valve body.
7. Install core assembly and core spring into solenoid base sub-assembly. Thread solenoid base sub-assembly into valve body. Torque solenoid base sub-assembly to 175±25 in-lbs [19,8±2,8 Nm].
8. Install solenoid, see separate solenoid instructions. Then make electrical hookup to solenoid.

⚠ 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.

9. Restore line pressure and electrical power supply to valve.
10. After maintenance is completed, operate the valve a few times to be sure of proper operation. A metallic click signifies 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.

Torque Chart

Part Name	Toque Value Inch-Pounds	Torque Value Newton-Meters
solenoid base sub-assembly	175 ± 25	19,8 ± 2,8
end cap/end plug	200 ± 10	22,6 ± 1,1

