

Series "EASYMT" & "EASMT" Solenoid Valves

Installation Data Sheet

OPERATION

All Series "EASYMT" and "EASMT" PTFE Bellows solenoid valves are direct acting, 2-way, and normally closed valves. When their solenoid coils are de-energized the valves are closed, and open when the coils are energized. Valves with 20 watt coils can be energized continuously. **CAUTION!** Valves with 58 watt coils can only be energized a maximum of 15 minutes or less with an equal cooling period.

FAIL-DRY® DESIGN

All series "EASYMT" and "EASMT" valves utilize the PLAST-O-MATIC patented FAIL-DRY® safety design which features a vented chamber separating two (2) sealed sections of the valve body. This concept is extremely important for solenoid valves used in the chemical processing industry as it protects the metal operating components from corrosion that could cause valve failure and offers a warning of valve leakage before a failure occurs.

INSTALLATION

Please check the nameplate for correct part number, pressure ratings, and voltage. Also check the flow label located on the side of the valve body to insure proper flow direction.*

PLAST-O-MATIC solenoid valves operated by 58 watt coils **MUST ALWAYS BE MOUNTED VERTICALLY** with the coil above the valve body. Solenoid valves operated by 20 watt coils can be mounted horizontally or vertically; however, vertical mounting (coil up) is preferred since it results in longer cycle life.

Valves should **NEVER** be mounted with the coils on the bottom. When installing these valves in a piping system they should only be connected to plastic pipe or plastic fittings. All male threads should be wrapped with PTFE tape or other acceptable pipe sealant. To prevent stringing of the PTFE tape into the inner workings of the valves, be sure to keep the tape at least one full thread from the end of the pipe.

Whenever PTFE tape or other pipe sealants are used there is a tendency to over-torque because of the reduced friction. Therefore, connections should only be made hand-tight followed by a one quarter turn more. Greater forces tend to stretch or distort the plastic bodies which could lead to future ruptures. Strap wrenches may be used for assembly. Metal pipe wrenches should **NEVER** be used as they can deeply scratch the plastic surfaces causing additional stresses.

Wiring should comply with all applicable electrical codes, local or otherwise. Care should be taken to insure that the solenoid coil leads cannot be pulled from the coil. If flexible conduit is not used to connect to the solenoid housing the supply conduit must be properly aligned and supported to prevent stressing the solenoid assembly. See Wiring Diagram.

* If flow label is missing, the inlet can be distinguished from the outlet port. The outlet is always deeper than the inlet.

VALVE PRESSURE RATINGS

These PLAST-O-MATIC solenoid valves are direct acting and do not require minimum operating pressure differentials, but the maximum inlet and back pressure ratings must not be exceeded. If the maximum inlet pressures are exceeded the valves will not open and the coil can burn out.

Back pressure can result in two (2) ways. First, from a separate pressure source in the downstream piping. And second, from the flow of liquid through the downstream piping. If the back pressure rating is exceeded in the first situation the valve will open and a reverse flow will take place if there is a lesser inlet pressure. In the second situation the valve will not close and flow will continue. When back pressures are caused by the liquid flow it naturally follows that any restriction in the downstream piping will cause even higher back pressures. This is especially true with spray nozzles.

MATERIALS TEMPERATURE vs. PRESSURE								
MAT'L	MAX. TEMP	MAXIMUM INLET PRESSURES AND TEMPERATURES						
		75°F (24°C)	110°F (43°C)	140°F (60°C)	180°F (82°C)	220°F (105°C)	240°F (116°C)	284°F (140°C)
		PSI Bars	PSI Bars	PSI Bars	PSI Bars	PSI Bars	PSI Bars	PSI Bars
PVC	140°F (60°C)	140 9,6	100 6,8	40 2,7	N.R	N.R	N.R.	N.R
CPVC	180°F (82°C)	140 9,6	100 6,8	80 5,4	40 2,7	N.R	N.R.	N.R
GPP**	220°F (105°C)	140 9,6	120 8,2	100 6,8	80 5,4	40 2,7	N.R.	N.R
PVDF	284°F (140°C)	140 9,6	130 8,8	120 8,2	100 6,8	60 4,1	30 2,0	10 0,7

N.R. = Not Recommended

GPP** = Glass-Filled Polypropylene

MAINTENANCE

The major causes of solenoid valve failure are usually either chemical incompatibility, damage from water hammer or foreign matter in the valve. Commonly encountered foreign matter includes pipe sealants, mineral and salt deposits, and other solids.**

Before disassembling a valve for examination or cleaning make sure all electrical power and fluid line pressure are turned off. It should be noted that even after a pump is shut down to eliminate fluid line pressure there may still be pressure trapped in the piping system. One example of this would be head pressure located in a vertical run of pipe. If this situation is possible, extreme caution should be exercised when removing the top housing from the valve body. It would be advisable to place a clear plastic shield over the valve during disassembly to avoid injuring a worker. **CAUTION:** Avoid breathing dangerous vapors and avoid skin contact with chemicals.

Whenever disassembling a valve it is wise to carefully inspect all of the parts to insure proper operation when it is reassembled. It is also a good idea to have a spare seal kit on hand.

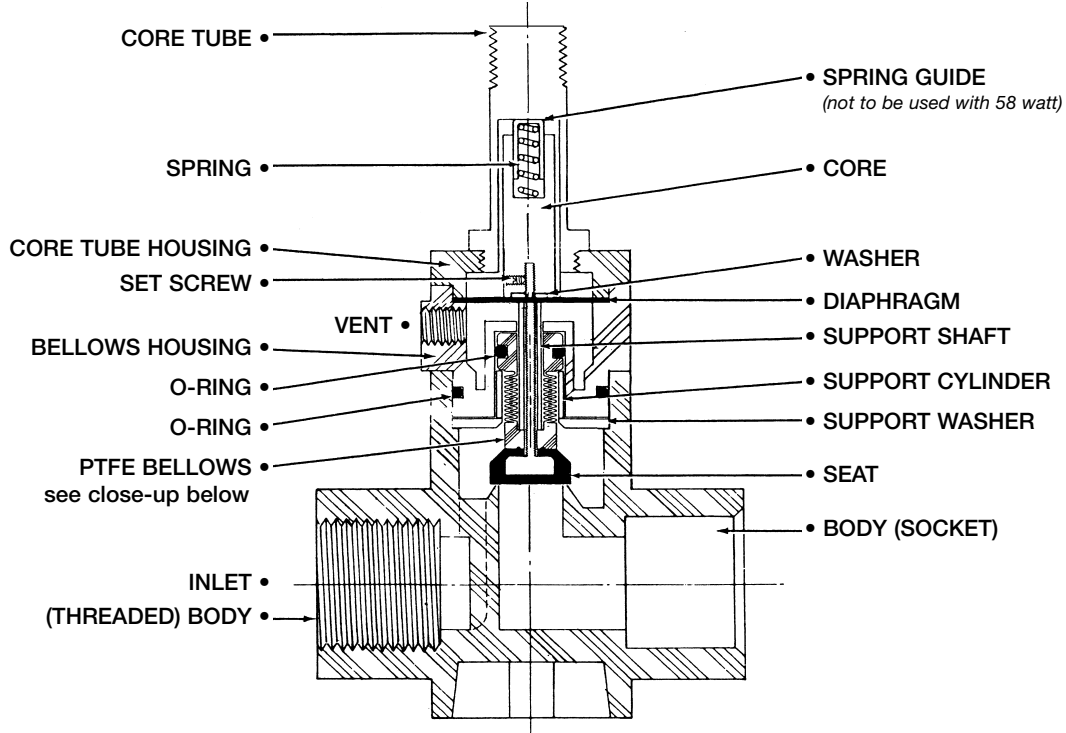
When removing foreign matter or deposits on the valve seat or other internal parts, care should be taken not to scratch or nick the parts being cleaned.

After reassembly, operation should be checked by energizing the solenoid coil. If the valve is operating properly, a sharp metallic click will usually be heard when the valve's coil is energized.

** Water hammer may be minimized by adhering to a safe piping velocity of 5 feet per second.

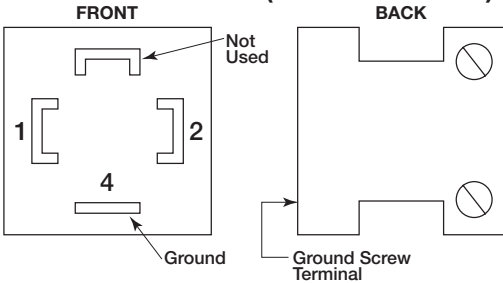
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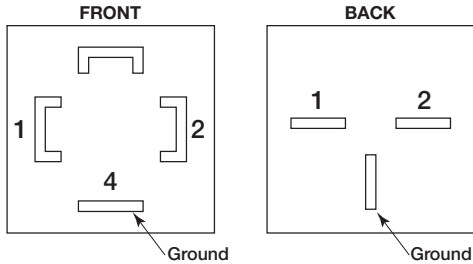
WIRING DIAGRAMS

Connector 6353 (with circuit board)



Terminals 1 and 2 are not polarity sensitive.
Hot wire can be connected to 1 or 2.

Connector 5443



Terminals 1 and 2 are not polarity sensitive.
Hot wire can be connected to 1 or 2.

PTFE BELLOWS ASSEMBLY

