

INSTALLATION AND MAINTENANCE INSTRUCTIONS

4-WAY DIRECT ACTING SINGLE SOLENOID VALVES SINGLE VALVES AND GROUP MOUNTING CONSTRUCTION 1/4 N.P.T. — AIR SERVICE

BULLETIN

8340



FORM NO. V-5631R3

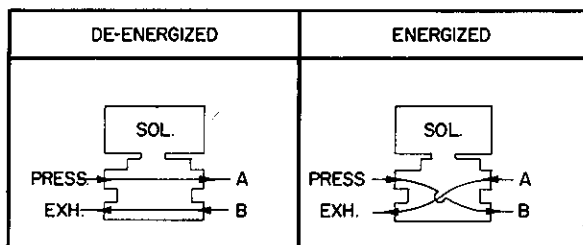
DESCRIPTION

Bulletin 8340's are 4-way direct acting single solenoid valves having a sliding plastic seal. Bulletin 8340 requires no minimum operating pressure and no minimum flow for its operation. Some Bulletin 8340 valves are designed for individual installations while others are designed to be group mounted as a factory assembled unit, or group mounted in the field with a "Do-It-Yourself" assembly kit. Valves can be grouped up to eight units. When group mounted, valves have a common pressure connection at each end and separate cylinder and exhaust connections in each valve. Standard valves have a General Purpose, NEMA Type 1 Solenoid Enclosure. Valves may also be 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 enclosure is shown on a separate sheet of Installation and Maintenance Instructions, Form No. V-5380.

OPERATION

When the solenoid is de-energized, the flow is from Pressure to Cylinder "A" and from Cylinder "B" to Exhaust. When energized, flow is from Pressure to Cylinder "B" and from Cylinder "A" to Exhaust.

Flow Diagrams



IMPORTANT: No minimum operating pressure required. Flow controls or regulators may be placed at any of the pipe connections without adversely affecting valve operation.

MANUAL OPERATOR (Optional)

Valves with Suffix "MO" in the catalog number are provided with a manual operator which allows manual operation when desired or during an interruption of electrical power. To operate manual operator, push stem at base of valve upward and rotate 90 degrees. **CAUTION:** Be sure manual operator is retracted before operating electrically.

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.

Catalog Numbers	Catalog Number Prefix	Coil Class	Maximum Ambient Temp. °F	Maximum Fluid Temp. °F
8340A1 (Single Valve)	None or DP, USP	F	130	130
	HB	H	130	130
8340A3 (Group Mounting)	None or DP, USP, FDP, FUSP	F	104	104
	HB or FHB	H	115	115

POSITIONING

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.

MOUNTING

For base mounting lower plate, refer to Figure 1 for mounting dimensions. For flush mounting brackets, refer to Figure 3 for mounting dimensions. For stand off mounting brackets, (optional) refer to Figure 4, for mounting dimensions.

GROUP MOUNTING OF VALVES IN THE FIELD (Refer to Figure 2)

1. Place bushings and gaskets between the common pressure connections.
2. Lay the valves on their sides and be sure they are in proper alignment. Use a bar clamp or similar clamping device and draw the valves together.
3. Place retaining clip between valves. Lay a block of wood or similar device against the top of retaining clip and strike with mallet. Be sure retaining clip is completely engaged.

PIPING

Connect piping to valve according to markings on valve body (refer to flow diagram provided). 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.

CAUTION: To avoid damage to the valve body, **DO NOT OVERTIGHTEN PIPE CONNECTIONS.** If teflon tape, paste, spray or similar lubricant is used, use extra care due to reduced friction.

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 on 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 provided with a 7/8 diameter hole or connections to accommodate 1/2 inch conduit. The general purpose enclosure may be rotated to facilitate wiring by removing retaining clip. **CAUTION:** When metal retaining clip disengages, it will spring upward. Rotate to desired position. Replace retaining clip before operating.

NOTE: Alternating Current (A-C) and Direct Current (D-C) solenoids are built differently. To convert from one to the other, it is necessary to change the complete solenoid including the core sub-assembly and solenoid base 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 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.

ASCO Valves



CLEANING

A periodic cleaning of all solenoid valves is desirable. The time between cleanings will vary depending upon media 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 media 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 (Refer to Figure 2)

Turn off electrical power supply and disconnect coil lead wires. Proceed in the following manner:

1. Remove retaining clip, nameplate and housing. CAUTION: When metal retaining clip disengages, it will spring upward.
2. Slip spring washer, insulating washer and coil off solenoid base 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: The solenoid must be fully reassembled as the housing and internal parts are part of and complete the magnetic circuit. Place an insulating washer at each end of coil, if required.

VALVE DISASSEMBLY (Refer to Figure 2)

Depressurize valve and turn off electrical power supply. Piping or tubing connections may or may not be removed from valve, depending upon the extent of service required and accessibility of valves. Proceed in the following manner:

1. Remove retaining clip and slip entire solenoid enclosure off the solenoid base sub-assembly. CAUTION: When metal retaining clip disengages, it will spring upward.
2. Remove bonnet screws (2). Valve can now be completely disassembled.
3. Remove bonnet plate, washer, solenoid base sub-assembly, core spring guide, core spring, core sub-assembly and solenoid base gasket. Remove discs (2), sleeve and quad ring gasket from core sub-assembly.
4. Remove mounting plate, body plug and plug gasket.
5. For group mounted valves, it is normally not necessary to replace the gasket between valve bodies, unless external leakage is evident. If gasket replacement is required, remove retaining clip from either side of body. Separate valve bodies and remove bushing and gasket.
6. All parts are now accessible for cleaning or replacement. Replace worn or damaged parts with a complete Spare Parts Kit for best results.

VALVE REASSEMBLY

1. Reassemble in reverse order of disassembly, paying careful attention to exploded views provided for identification and placement of parts.
2. Lubricate internal wall surfaces on which core sub-assembly slides with a light coat of Dow Corning's Valve Seal or an equivalent high grade silicone grease.

3. If the valve being reassembled was group mounted, refer to paragraph on "Group Mounting Of Valves In The Field."
4. Replace core sub-assembly. **IMPORTANT:** When replacing core sub-assembly, it must be replaced from the top of the valve, that is, the end closest to Cylinder "A" connection. The internal wall of the valve body has a chamfer at one end, which allows the core sub-assembly to be inserted without damaging discs (2). When replacing core sub-assembly, be sure to orient passageway in core with Cylinder Connections "A" and "B." Misalignment of core sub-assembly will cause improper operation.
5. Place core spring guide in core spring and insert into top of core sub-assembly. For D-C Construction, core spring slips over core sub-assembly and engages in horizontal grooves.
6. Replace solenoid base gasket, solenoid base sub-assembly, washer, and bonnet plate.
7. Replace plug gasket, body plug and mounting plate. Hold parts in place.
8. Replace bonnet screws (2) and torque in a crisscross manner to $20 \begin{matrix} +5 \\ -0 \end{matrix}$

inch-pounds. Be sure bonnet plate and mounting plate are even with side of valve body.

9. Replace solenoid enclosure and retaining clip.
10. After maintenance, operate 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.

ORDERING INFORMATION FOR SPARE PARTS KITS

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

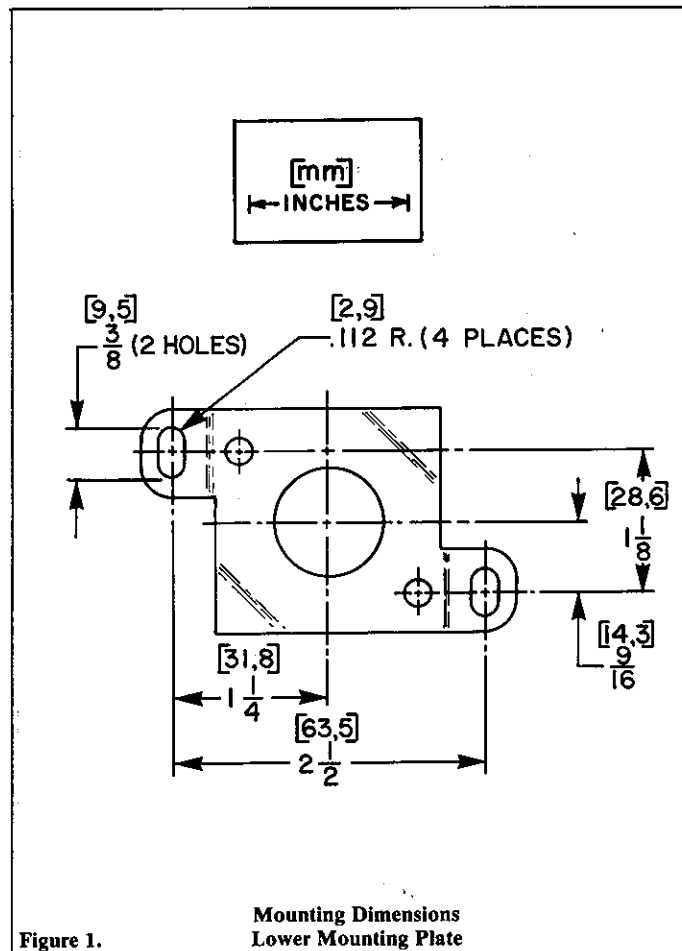


Figure 1.

Mounting Dimensions
Lower Mounting Plate



ASCO Valves
Automatic Switch Co.

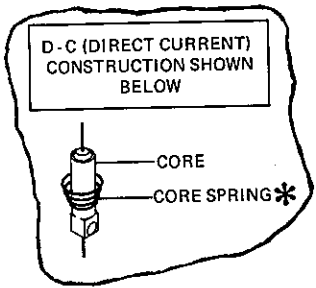
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FLORHAM PARK, NEW JERSEY 07932

Form No. V-5631R3

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1977



A-C (ALTERNATING CURRENT)
CONSTRUCTION SHOWN
MAIN VIEW

PARTS INCLUDED IN
SPARE PARTS KITS*

"DO-IT-YOURSELF" ASSEMBLY KIT
FOR CATALOG NO. 8340A3
CONTAINS TWO RETAINING CLIPS,
BUSHING AND GASKET

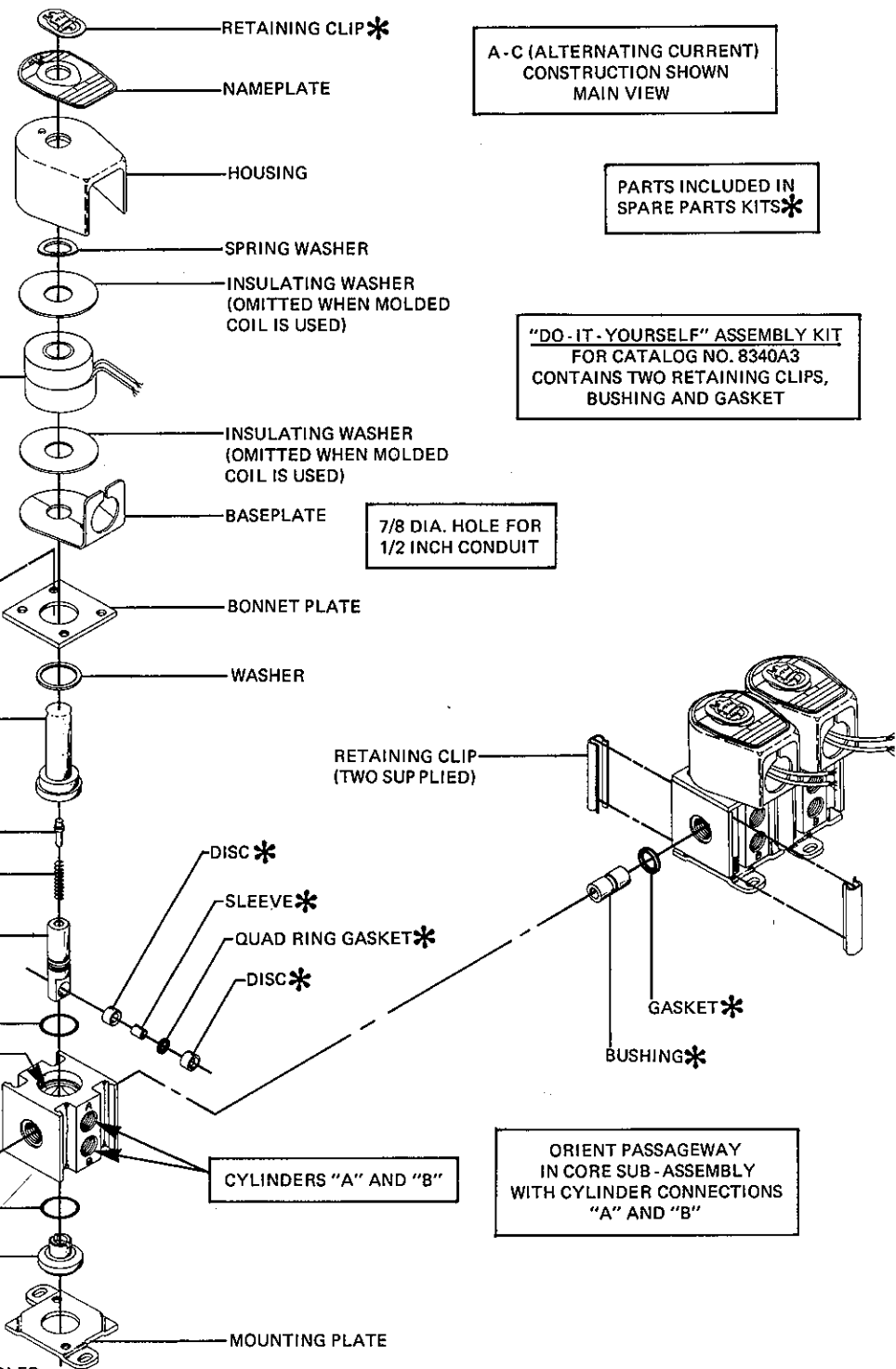
TORQUE BONNET SCREWS (2)
IN A CRISSCROSS MANNER
TO 20^{+5}_{-0} INCH-POUNDS

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

CORE SUB-ASSEMBLY MUST
BE INSERTED FROM THIS
END. THE END CLOSEST
TO CYLINDER "A."

ORIENT PASSAGEWAY
IN CORE SUB-ASSEMBLY
WITH CYLINDER CONNECTIONS
"A" AND "B"

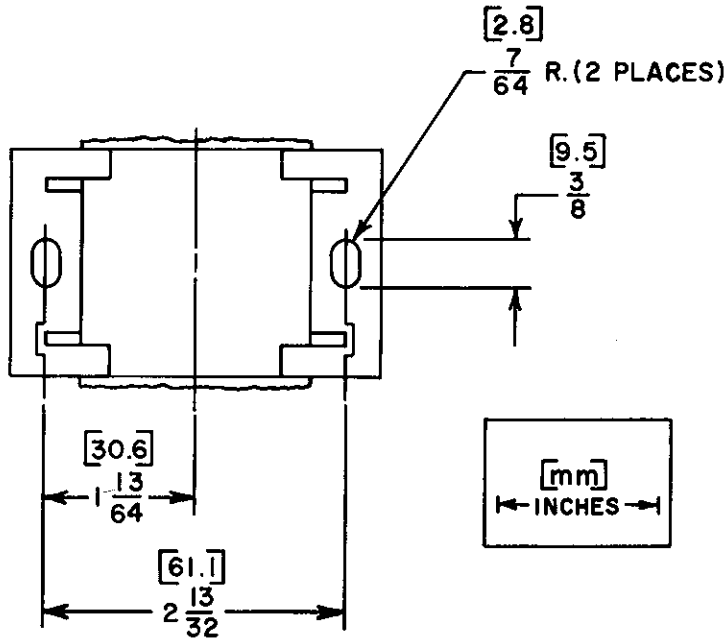
NOTE:
PIPE PLUG PRESENT WITH FACTORY ASSEMBLED
VALVE UNITS (GROUP MOUNTED VALVES) ONLY.
VALVES FOR INDIVIDUAL INSTALLATIONS DO
NOT HAVE THIS TAPPED HOLE OR PIPE PLUG.



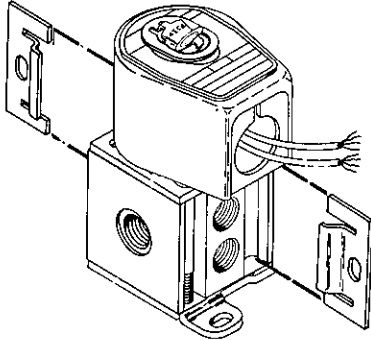
Bulletin 8340
Group Mounting — "Do-It-Yourself" Assembly Kit
General Purpose Solenoid Enclosure Shown.

For Explosion-Proof/Watertight Solenoid Enclosure, See Form No. V-5380.

Figure 2.

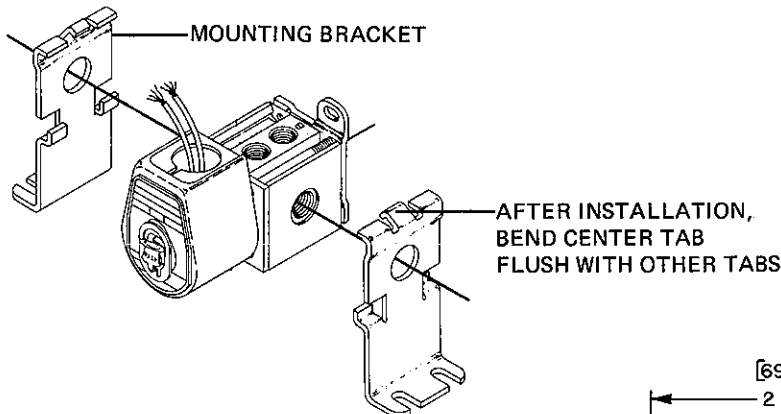


MOUNTING BRACKET KIT
ORDER NO. 206-737
TWO MOUNTING BRACKETS
SUPPLIED

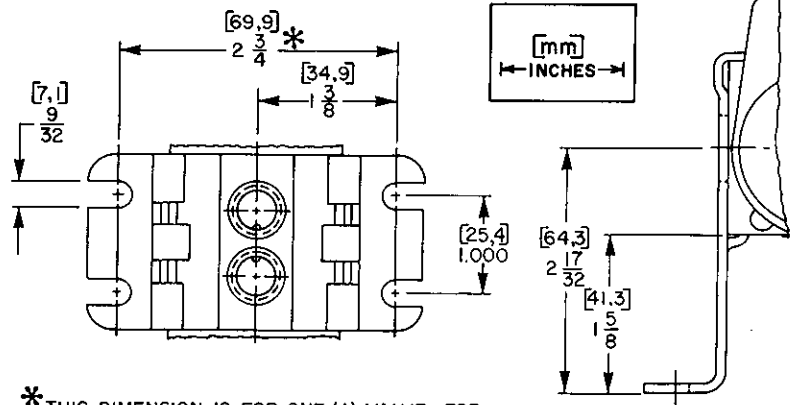


[mm]
← INCHES →

Figure 3. Mounting Brackets (Optional) — Mounting Dimensions
Single Valve — Flush Mounting



MOUNTING BRACKET KIT
ORDER NO. 206-554.
TWO MOUNTING BRACKETS
SUPPLIED.



* THIS DIMENSION IS FOR ONE (1) VALVE, FOR EACH ADDITIONAL VALVE, ADD 1-53/64 [46,4]

Figure 4. Mounting Brackets (Optional) — Mounting Dimensions
Single or Group Mounted Valves — Stand Off Mounting