

Installation & Maintenance Instructions

SERIES

8340

4-WAY DIRECT ACTING SINGLE SOLENOID VALVES
SINGLE VALVES AND GROUP MOUNTING CONSTRUCTION
1/4 NPT - AIR SERVICE

DESCRIPTION

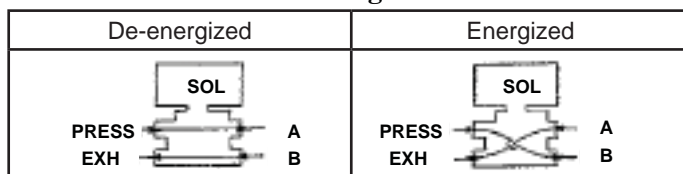
Series 8340 are 4-way direct acting single solenoid valves having a plastic seal. Series 8340 requires no minimum operating pressure and no minimum flow for its operation. Some 8340 valves are designed for individual installations while others are designed to be group-mounted as a factory assembled unit, 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 explosionproof/watertight solenoid enclosure is shown on a separate sheet of Installation and Maintenance Instructions, V5380.

OPERATION

Solenoid De-energized: Flow is from Pressure to Cylinder A and from Cylinder B to Exhaust.

Solenoid 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 catalog number are provided with a manual operator which allows manual operation when desired or during an interruption of electrical power. To operate valve manually, push stem at base of valve upward and rotate 90°. Retract manual operator before operating electrically.

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. 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 vertically and upright to reduce the possibility of foreign matter accumulating in the solenoid base sub-assembly 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 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

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.

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

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. Housing for all solenoids are provided with a 7/8 diameter hole or connections to accommodate a 1/2 inch conduit. The general purpose enclosure may be rotated to facilitate wiring by removing the retaining clip.

CAUTION: When metal clip disengages, it will spring upward. Rotate to desired position. Replace retaining clip before operating.

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.

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.

Coil Replacement

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 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 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

1. Disassemble valve in an orderly fashion using exploded views for identification and placement of parts. Refer to Figure 2.
2. Remove retaining clip and slip entire solenoid enclosure off the solenoid base sub-assembly.

CAUTION: When metal clip disengages, it will spring upward..

3. Remove bonnet screw (2) and mounting screw (2). Valve can now be completely disassembled
4. Remove bonnet plate, washer and solenoid base sub-assembly, core spring guide, core spring, core assembly and solenoid base gasket. Remove discs (2), sleeve and quad ring gasket from core assembly.
5. Remove mounting plate, body plug and plug gasket
6. 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.

7. 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 (Refer to Figure 2)

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 reassembles was group-mounted, refer to paragraph of "Group Mounting of Valves In The Field".
4. Replace core sub-assembly. **IMPORTANT:** When replacing core subassembly, it must be replaced from 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 assembly will cause improper operation.
5. Place core spring guide in core spring and insert into top of core sub-assembly. For DC 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 mounting plate screws (2) and torque in a crisscross manner to 20 $\frac{3}{4}$ in.-lbs. Be sure bonnet plate and mounting plate are even with side of valve body.
9. Replace solenoid enclosure and retaining clip.
10. After maintenance is completed, operate the valve a few times to be sure of proper operation. A metallic *click* signifies that 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.

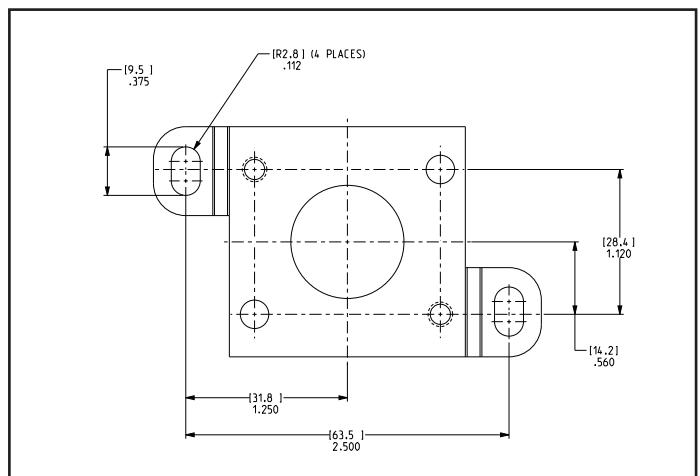


Figure 1. Mounting Dimensions Lower Mounting Plate

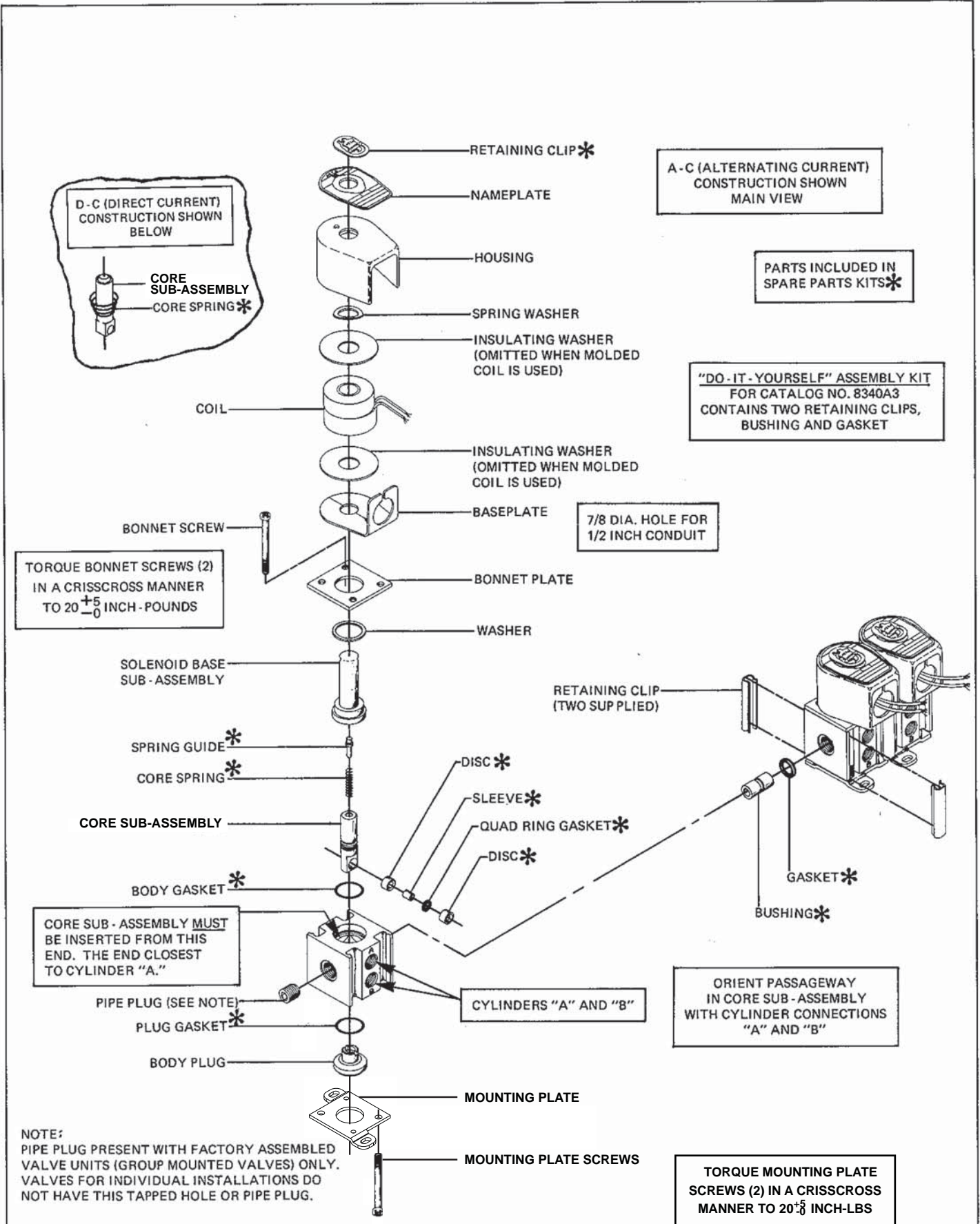


Figure 2. Bulletin 8340
Group Mounting — "Do-It-Yourself" Assembly Kit
General Purpose Solenoid Enclosure Shown.
For Explosion-Proof/Watertight Solenoid Enclosure, See Form No. V-5380.

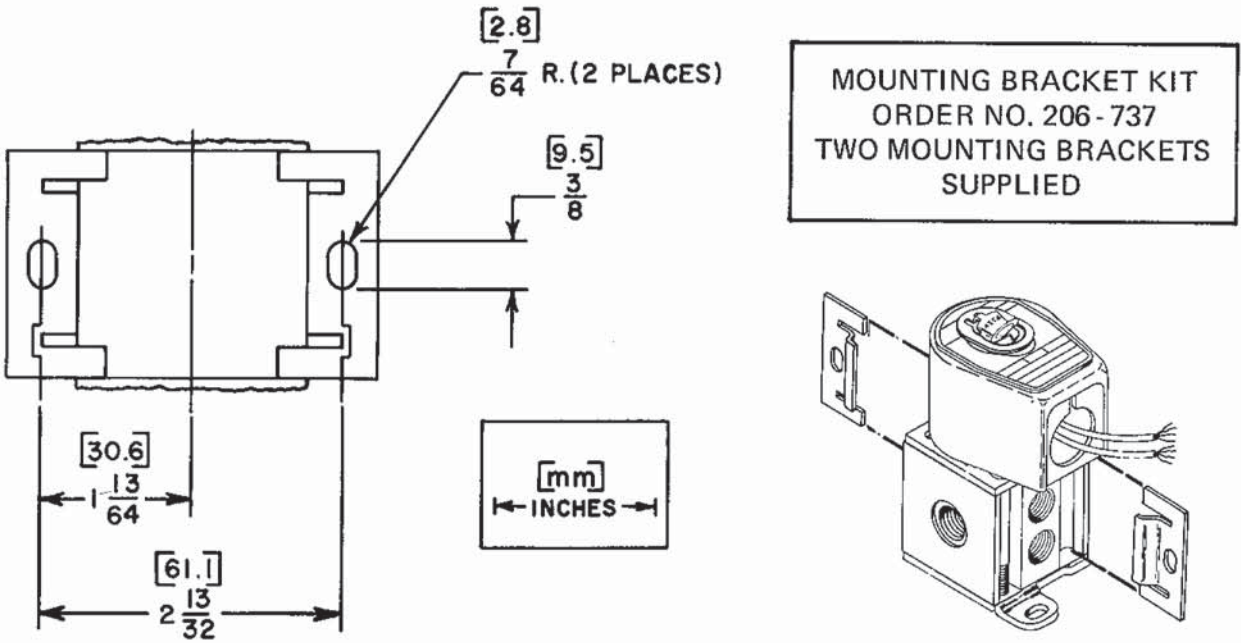


Figure 3. Mounting Brackets (Optional) — Mounting Dimensions Single Valve — Flush Mounting

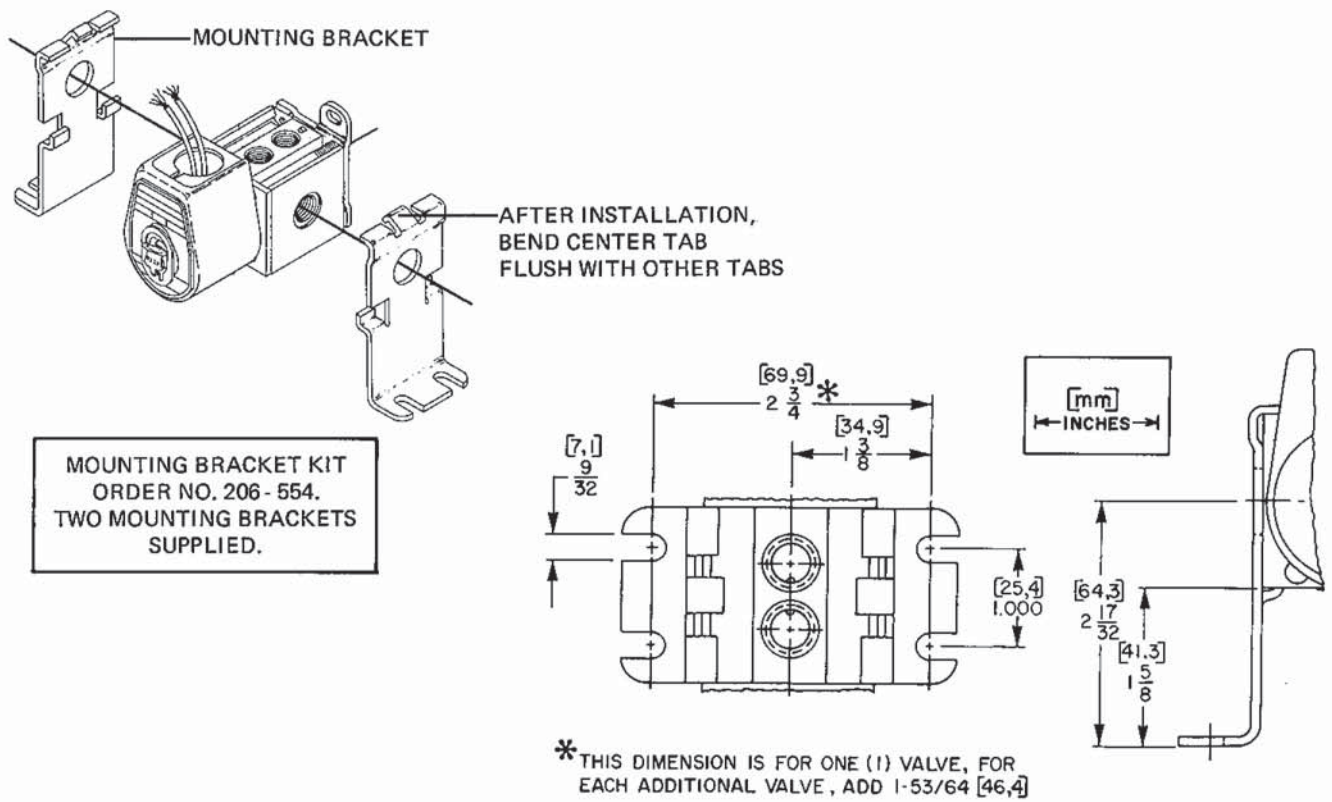


Figure 4. Mounting Brackets (Optional) — Mounting Dimensions Single or Group Mounted Valves — Stand Off Mounting