

Installation Guide

Mounting

⚠ CAUTION

Best installation practice includes initial system flushing and proper chemical water treatment.

Foreign particles can damage the ball seals. Clean the lines upstream of particles larger than 1/16 inch (1.6 mm) diameter (e.g., welding slag, pipe scale, sand, and other contaminants). If the system experiences large amounts of debris, steps should be taken to keep the system clean, such as a 20 mesh strainer installed upstream of the valve. Remove all strainers/filters before flushing.

Ensure that the fluid chemistry in the pipes is compatible with the valves. Do not use boiler additives, solder flux, or wetted materials that are petroleum based or contain mineral oil, hydrocarbons, or ethylene glycol acetate. Compounds which can be used, with minimum 50% water dilution, are diethylene glycol, ethylene glycol, and propylene glycol (antifreeze solutions).

Before using any lubricant or additive in a water or ethylene glycol base, consult the substance manufacturer for compatibility with EPDM (Ethylene Propylene Diene Monomer) since using mineral oil lubricants or other incompatible substances in system fluids may damage EPDM rubber seats in valves.

Freeze protection is required for fluid temperatures below 32° F (0° C).

⚠ CAUTION

Mount the valve between aligned pipes. Mounting the valve on pipes that are not aligned causes leakage at the valve-to-pipe connection.

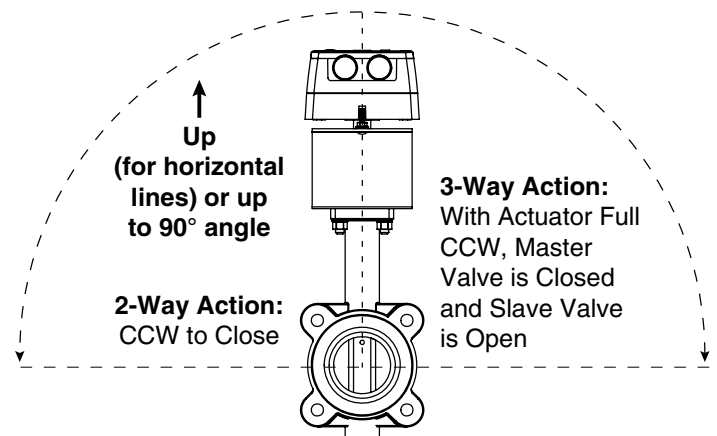
1. Ensure the valve and lines are ready for installation. Clean the lines upstream from the valve. Rotate the valve stem to make sure that the valve stem operates freely.
2. Align the valve assembly according to the system flow requirements. VEF-56 three-way valves can be used in either mixing or diverting applications (see the VEF-56 3-Way Details section).

NOTE: No flange gaskets are needed because of the design of the seat face.

3. The valve may be mounted on either vertical or horizontal pipe lines. On horizontal lines, mount the valve so the actuator is positioned upright and over the valve. (Leave sufficient room on all sides to service the actuator and valve.)

⚠ CAUTION

To prevent condensation from dripping onto the actuator housing on horizontal lines, mount the valve with the actuator in the upright position or, at most, at a 90° angle. See the Mounting (2-Way and 3-Way) illustration.

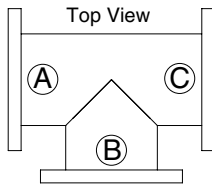


Mounting (2-Way and 3-Way)

4. Bolt the valve to the pipes. See the VEB-53 or VEB-56 series data sheet for bolt size and pattern details.
5. Eliminate air from the system to keep the valves full of fluid during operation.

VEF-56 3-Way Details

VEF-56 Arrangement	Master Valve (Actuator)	Slave Valve	Common Port
1	A	B	C
2	A	C	B
3	B	C	A
4	B	A	C
5	C	B	A
6	C	A	B

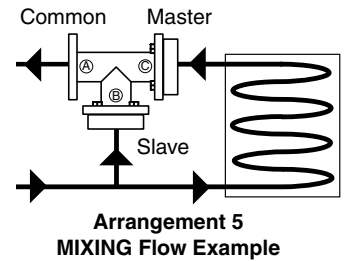
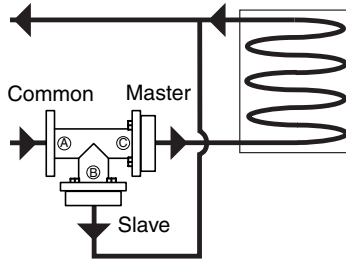
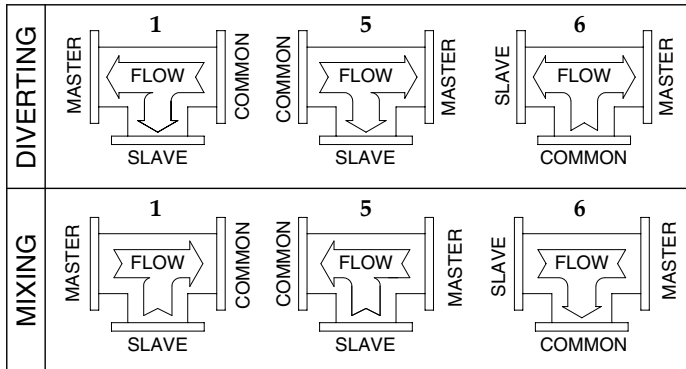
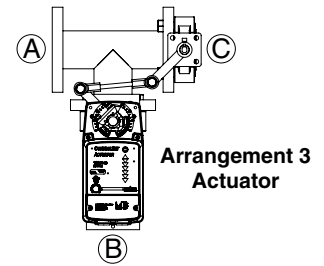


Actuator full CCW:

- Master valve closed
- Slave valve open

Actuator full CW:

- Master valve open
- Slave valve closed

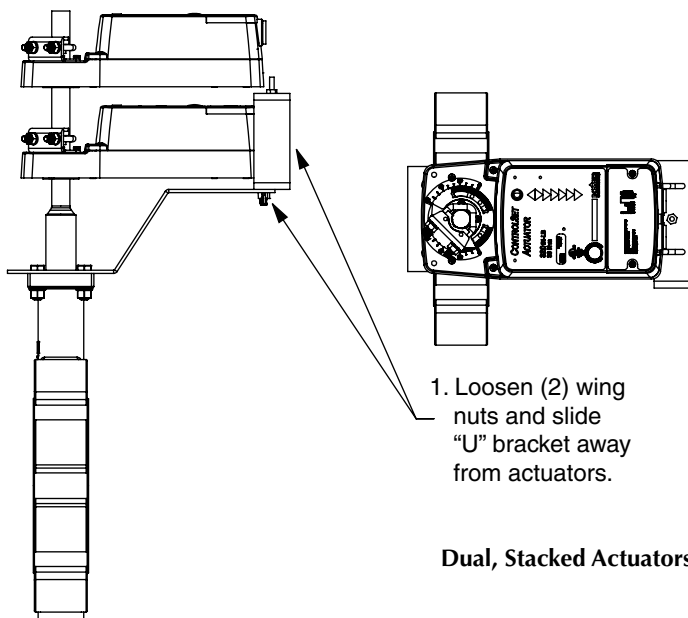


(Arrangements 2 and 4 not illustrated – see actuator illustration below for Arrangement 3)

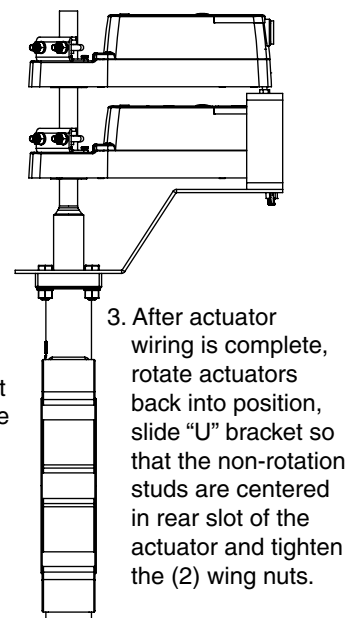
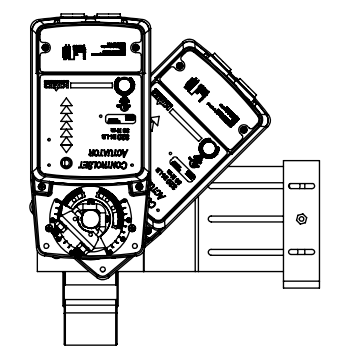
Actuator Wiring

Wiring is dependent on the type of actuator, mounting, and the desired options that are available. Consult the actuator model label and then the relevant sections in the MEP-7500/7800 series actuators [installation guide](#) and [application guide](#) on the

KMC Controls [web site](#) for detailed instructions on the applicable wiring, feedback selector, and actuator/signal reset (auto-mapping) of the valve's actuator. For dual, stacked actuators, follow the process below to access terminals in both actuators.



Dual, Stacked Actuators Wiring Access



Operation

After the mechanical and electrical installations have been completed, cycle the actuator to verify the direction of rotation for normal operation and fail-safe if so equipped.

Maintenance

No routine maintenance is required. Careful installation ensures long-term reliability and performance.

Accessories/Repair Parts

CME-7001	Rotary aux. cam switch, single
CME-7002	Rotary aux. cam switch, double
HMO-4536	Adjustable stop kit
MEP-7xxx	Replacement actuator (see label on actuator or data sheet)

More Information

For **valve models, specifications**, and additional information, see the **VEF-56 Series Data Sheet** on the KMC web site (www.kmccontrols.com) or the **VEF-53 Series Data Sheet**.

For **actuator wiring, feedback/direction selectors, actuator/signal range reset (auto-mapping)**, and other information, see the **MEP-7500/7800 Series Installation Guide**.

For **actuator master/slave wiring, accessories, troubleshooting**, and other information, see the **MEP-7500/7800 Series Application Guide**.

For **actuator specifications** and other information, see the **MEP-7500/7800 Series Data Sheet**.

Important Notices

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