



Installation of Two-Way and Three-way Ball Valve Assemblies

(Failure to adhere to these instructions will void warranty. Please read carefully.)

SAFETY:

EXTREME CAUTION SHOULD BE USED when depressing the gear release on the actuator. If the control valve is under pressure this could cause the override handle to move rapidly towards the open or closed position, which **COULD CAUSE BODILY INJURY**.

MOUNTING/INSTALLATION:

Because of the higher temperature solders used in current systems, control valves should **NEVER** be sweat in place (*this will void warranty*). Always use sweat to screwed union adapters on each side of the valve. These adapters should be installed first, prior to the control valve installation. Direct heat should **NEVER** be applied to the control valve body or fittings while the control valve is being installed.

All motorized ball valves should be mounted with valve stems oriented at or above the horizontal position. This will prevent possible leakage from dripping onto the actuator. When the control valve is used for hot water or higher temperature applications, the valve assembly should be laid over on its side with the stem in the horizontal position. Mounting the unit this way will decrease the temperature at the actuator. Insulation should be provided around the valve body after installation. The pipe in which the ball valve is to be placed should be properly supported in order to allow for the weight of the complete valve assembly when installed. When installing the valve assembly in a vertical line the conduit connector and cable should always be located so that the cable or wire enters the unit from the bottom. The conduit connector should be facing the floor if the unit is oriented properly.

INSULATION:

The control valves should be well insulated after installation. The purpose for insulating the valve thoroughly is to maintain the valve actuator within its ambient temperature limits. After installation the actuators must be kept within their ambient temperature limits as high temperature or excess condensation will cause premature failure. The body of the valve should be wrapped completely with an insulation type wrap, and the pipe insulation should be brought up to (but not tightly against) the valve stem on each side. On high temperature applications it may be necessary to place an aluminum or metal wrap around the insulation of the control valve, with a notch cut out at the valve stem. This will decrease the radiant heat through the insulation to which the actuator is subjected.

LOCATION:

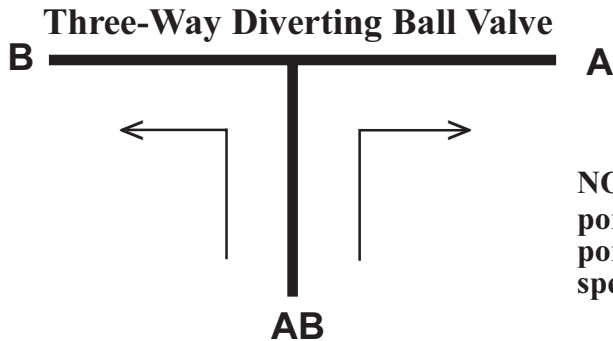
The control valve should be located so that the actuator is not placed immediately adjacent to the heating or cooling coil. The coil at full load may radiate enough heat to raise the temperature of the actuator above its ambient temperature limits. The control valve should not be located outside or in a moist environment without a weathershield enclosure. DEI offers various types of enclosures for its control valve assemblies. Please contact the factory for information. When mounting the control valve inside a building make sure it is not located under a strainer, trap or clean-out location of any type, or in any location where leakage could occur onto the actuator, as this could damage the actuator. If it is necessary to mount the control valve in one of these locations, an enclosure should be used.

APPLICATION:

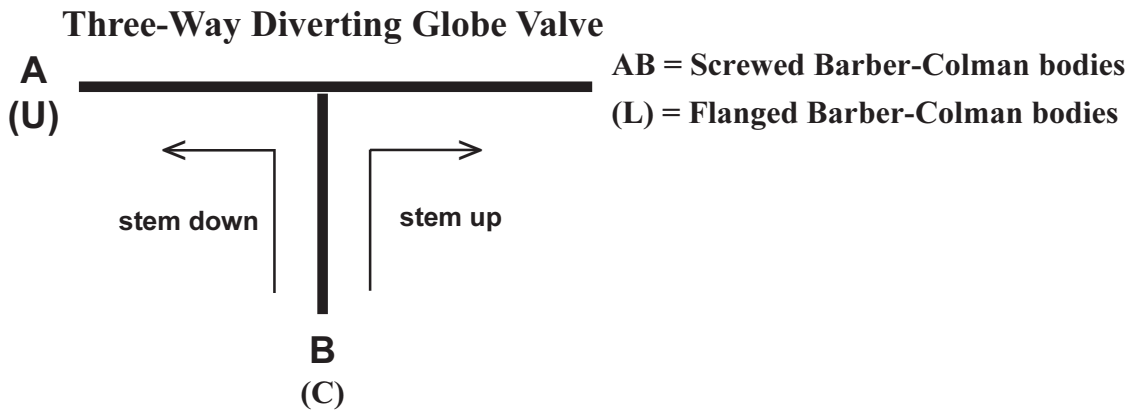
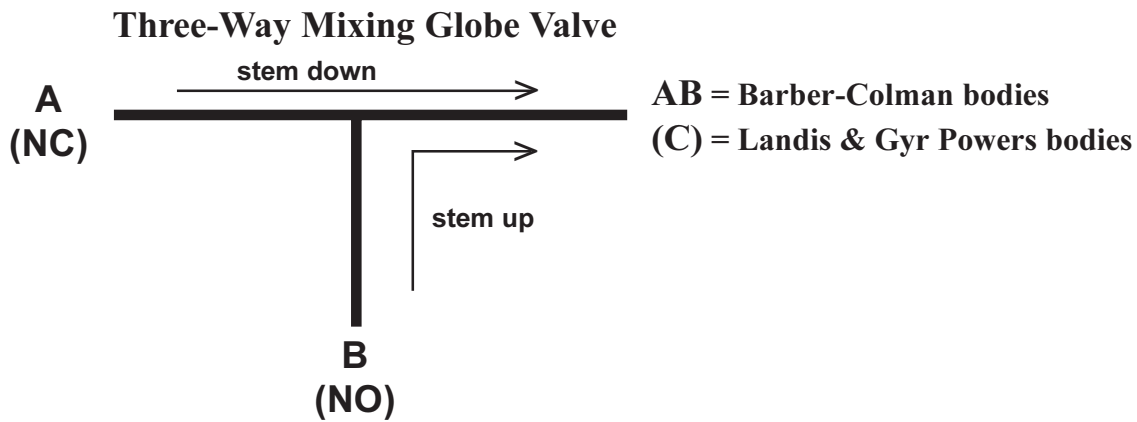
DEI has special ball valve assemblies ("-HT" version) for high or low temperature applications. DEI does not recommend using our standard ball valve assemblies for steam, high temperature hot water (above 200°F), or low temperature applications, as there is an excessive amount of heat transfer to the electronic actuator, even with proper insulation. An "-HT" valve assembly should be used for these applications as it locates the electronic actuator farther from the heat, and less surface area of the actuator is exposed to the heat. DEI highly recommends that stainless trim is used for any modulating applications. Bronze trim will not hold up when subjected to continual modulation long term.



Ball and Globe Valve Flow Patterns



NOTE: View is from top of assembly, ports are marked. On 1/2" valves, port A is the limited Cv port, unless specified otherwise.

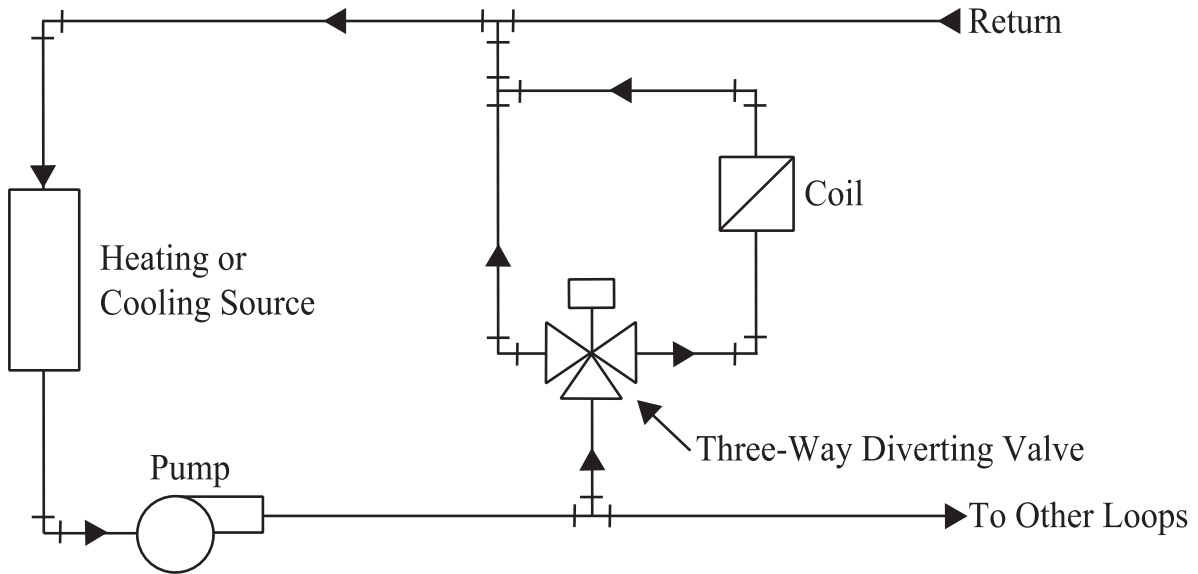


Two-Way Globe Valves: flow in direction of arrow cast into body
stem up = OPEN
stem down = CLOSED

Two-Way Ball Valves: flow in either direction

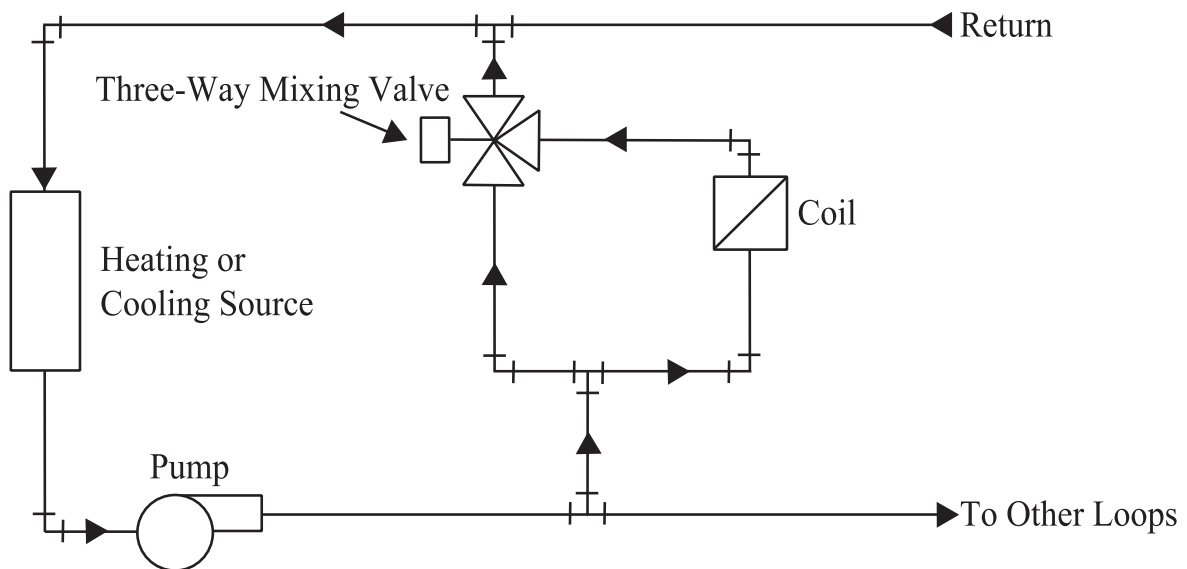


Piping Diagram for Three-Way Diverting Ball Valve



Note: See Ball Valve Installation Guide for specific information

Piping Diagram for Three-Way Mixing Globe Valve



Note: See Globe Valve Installation Guide for specific information