INSTRUCTION MANUAL

6-Way Characterized Control Valves (CCV)

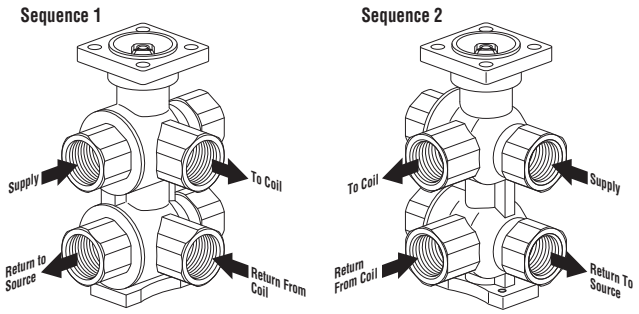
6-Way Characterized Control Valves

Chrome Plated Brass Ball and Nickel Plated Stem (B) 1/2" and 3/4" NPT female ends

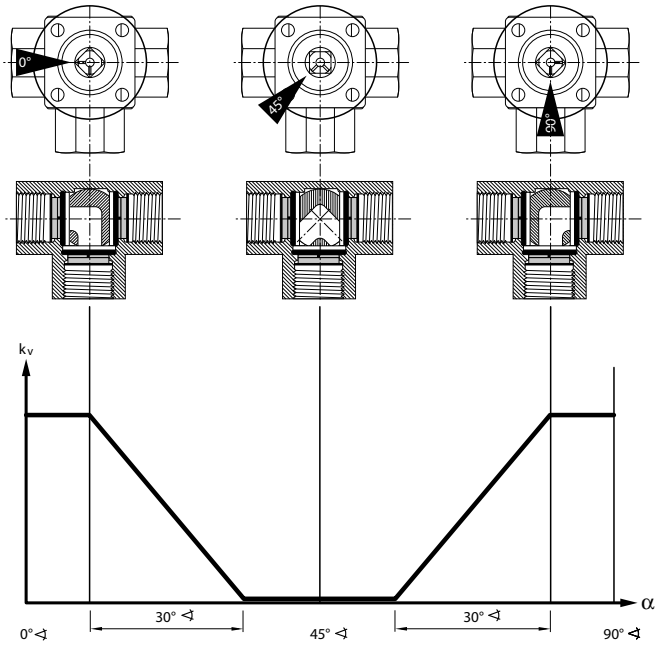
Technical Data	
Service	chilled or hot water, 60% glycol
Flow characteristic	linear
Controllable flow range	sequence 1 - (0 to 30° angle)[1] Dead zone 30° to 60° sequence 2 - (60° to 90° angle)[2]
Size	1/2" and 3/4"
End Fitting	FNPT
Media temp	43 to 122°F (6°C to 50°C)
Max ΔP	15 psi max
Leakage	air bubble tight

Flow Pattern

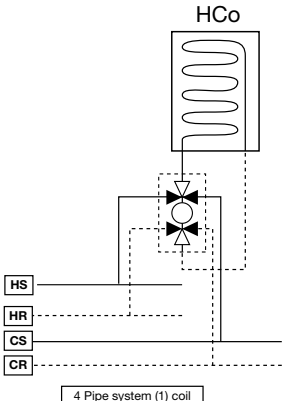
The flow direction must be observed. The position of the ball can be identified from the L-marking on the stem.



Valve Characteristic Curve

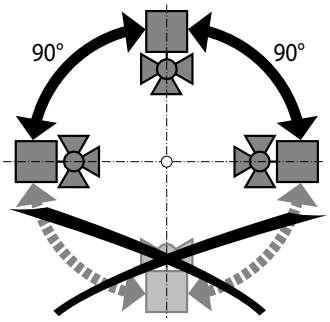


Operation/Installation



Operation/Installation

The control valve can be mounted either vertically or horizontally. Do not install the ball valve with the stem pointing downwards.



Maintenance

- Characterized control valves and rotary actuators are maintenance-free.
- Before any kind of service work is carried out, it is essential to isolate the actuator from the power supply (by disconnecting the power).

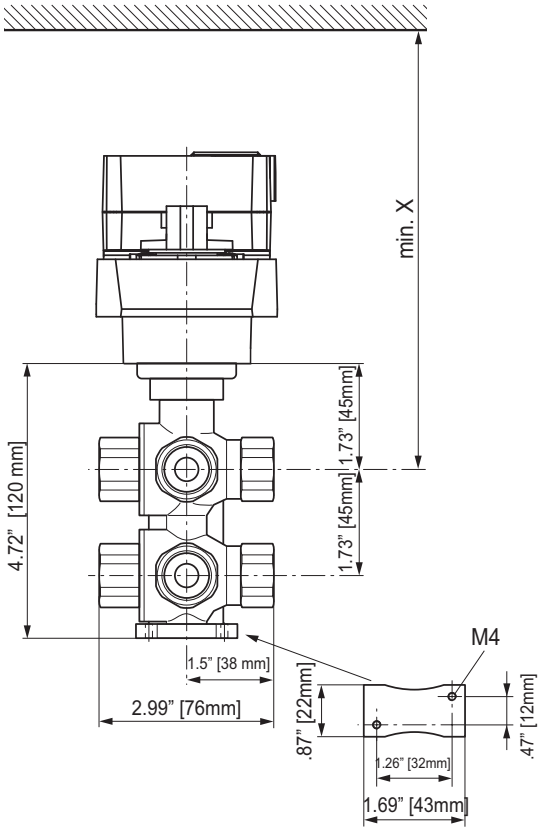
6-Way Characterized Control Valves™ (CCV)

Instruction Manual

Installation

1. Inspect shipping package, valve, linkage, and actuator for physical damage. If shipping damage has occurred notify appropriate carrier. Do not install.
2. Install valve with the proper ports as inlets and outlets. See drawings on page 1. Check that inlet and outlet of 2-way valves are correct; check that the “A”, “B”, and “AB” ports of three-way valves are piped correctly. Flow direction arrows must be correct.
3. Blow out all piping and thoroughly clean before valve installation.
4. Clean male pipe threads with wire brush and rag. If threads have been damaged or exposed to weather, running a tap or die over the threads may straighten them. Clean pipes, threads, and valve threads before installation; check for any foreign material that can become lodged in trim components. Strainers should be cleaned after initial startup.
5. Pipe sealing compound should be applied sparingly after cleaning and may not be applied to the two lead threads of a screwed pipe, which are innermost inside the valve. Sealing compound is to be placed on male threads only. The purpose is to lubricate the pipes when tightening.
6. Valve must be installed with the stem towards the vertical, not below horizontal.
7. Start the connection by turning the valve or pipe by hand as far as possible. Be certain the threads mate by the “feel” of the connection.
8. Use wrenches to tighten the valve to the pipe. Do not over tighten or strip the threads. Two wrenches are necessary to avoid damaging the valve.

Do not force. Do not use the actuator to turn the pipe or the stem. Do not use any toothed tool such as pliers, which may damage the stem.



Warning!

- Valve should not be used for combustible gas applications. Gas leaks and explosions may result. Do not install in systems, which exceed the ratings of the valve.
- Avoid installations where valve may be exposed to excessive moisture, corrosive fumes, vibration, high ambient temperatures, elements, or high traffic areas with potential for mechanical damage.
- Valve assembly location must be within ambient ratings of actuator. If temperature is below -22°F a heater is required.
- The valve assembly will require heat shielding, thermal isolation, or cooling if combined effect of medium and ambient temperatures – conduction, convection, and radiation – is above 122°F for prolonged time periods at the actuator.
- Following standard procedure, a strainer should be installed before the coil and valve or in another appropriate place in the system.
- Visual access must be provided. Assembly must be accessible for routine schedule service. Contractor should provide unions for removal from line and isolation valves.
- Avoid excessive stresses. Mechanical support must be provided where reducers have been used and the piping system may have less structural integrity than full pipe sizes.
- Sufficient upstream and downstream piping runs must be provided to ensure proper valve capacity and flow response. Five diameters in each direction are recommended.
- Life span of valve stems and O-rings is dependent on maintaining non-damaging conditions. Poor water treatment or filtration, corrosion, scale, other particulate can result in damage to trim components. A water treatment specialist should be consulted.
- Normal thread engagement between male pipe thread and valve body should be observed. Pipe run that is in too far will damage the valve.

Storage: The valves should be stored in the open or closed position. The valves must always be either completely open or completely closed to avoid deformation of the PTFE seat on one side. The valves must be protected against dust and dirt.