

VSE-VDE 2-Port and 3-Port Zone Valves

VSE/VDE motorized valves provide easy installation for a variety of heating and cooling applications. Valve's actuator can be installed after valve body has been installed onto fan coil, HWS cylinder or Zone Heating System. Spring release. BSP female thread. Auxiliary microswitch.

Features

- Direct replacement for all existing two-position applications.
- Hysteresis synchronous motor for long life.
- Spring return operation provides a fail-safe.
- Actuator mounts directly onto valve body without need for linkages or calibration.
- Manual override lever.
- VSE-VDE valves are maintenance-free
- Actuator can be replaced without any tools, or removal of Auxiliary End-Switches
- BSP Female Thread



Model Type	Model	Description
	VSE1	2-Port Zone Valve ½" BSP with 230V Actuator
	VSE2	2-Port Zone Valve ¾" BSP with 230V Actuator
	VSE3	2-Port Zone Valve 1" BSP with 230V Actuator
	VDE1	3-Port Zone Valve ½" BSP with 230V Actuator
	VDE2	3-Port Zone Valve ¾" BSP with 230V Actuator
	VDE3	3-Port Zone Valve 1" BSP with 230V Actuator

Technical Data	ACTUATOR
Power Supply	230Vac 50Hz, 7.5VA/6.5W
Motor	Hysteresis Synchronous Motor with Spring Return
Control Signal	On/Off, 2 Position, Spring Return
Timing	30 Sec max for 50Hz, 9s Spring Return
Materials	Stainless Steel Base Plate, Aluminium Cover
Operating Temperature	Up to 40°C (fluid max 93°)
Storage Temperature	-40 to 70°C
Humidity	5 to 95 %rh, non-condensing
Weight	1.1 kg
Agency Approvals	EMC: 89/336/EEC LVD: 72/23/EEC

	VALVE BODY
Nominal Pressure	PN20 (20bar)
Close Off Pressures	See Table
Operating Temp	Fluid Max to 93°C

Allowed Fluids	Hot and Chilled Water, Water with up to 50% Glycol
Leakage	ANSI Class IV (0.01%)
Body	Forged Brass
Stem	Nickel-plated
Seat	Brass
Paddle	Buna N

Maximum Differential Close-Off Pressure (kPa)

DN	Connection Type	Close-Off Pressures Delta P
1/2"	Female Thread	276 kPa
3/4"	Female Thread	172 kPa
1"	Female Thread	117 kPa

Operation

VSE-VDE are two position spring return valves. When powered, the actuator moves to the desired position, tensing the spring return system. When power is removed the actuator returns to the normal position. Two position spring return valves are equipped with an optional built-in auxiliary SPDT end switch for interfacing or signalling; for example, zone pump or boiler control.

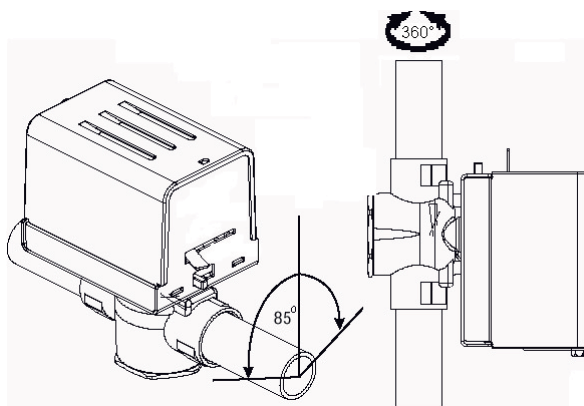
Installation

Use a 25 to 40 mm wrench (not provided). Installer must be a qualified, experienced technician.

General Precautions

- Electrical shock hazard! Disconnect power before installation to prevent electrical shock or equipment damage.
- Make all connections in accordance with the electrical wiring diagram and in accordance with national and local electrical codes. *Use copper conductors only.*
- All conductors shall be provided with insulation rated for the highest voltage motor and end switch circuits.

The valves can be mounted in horizontal or vertical piping. When installed in horizontal piping, the actuator must be above the valve body. When installed in horizontal piping the actuator can be tilted left or right but it must not be tilted below 85° from vertical.



NOTE

- Make certain there is no overhead water source that may drip onto valve actuator.
- In normal service, some condensation may occur on or around the valve. A drip pan may be necessary or the valve body may be insulated.

Piping

The valves must be piped so that the paddle closes against the direction of flow. Flow is from B to A (Refer to schemes Figure 2).

When installing the actuator to a normally closed valve, the actuator must be placed in the manually open position by using the manual operating lever.

The first time the valve is operated electrically, the manual operating lever of the actuator will transfer to the automatic position. The manual operating lever can be used to allow flushing of the system after installation.

The valves are designed for application in closed hydronic heating and cooling systems. High levels of dissolved oxygen and chlorine found in open systems may attack the valve materials and result in premature failure.

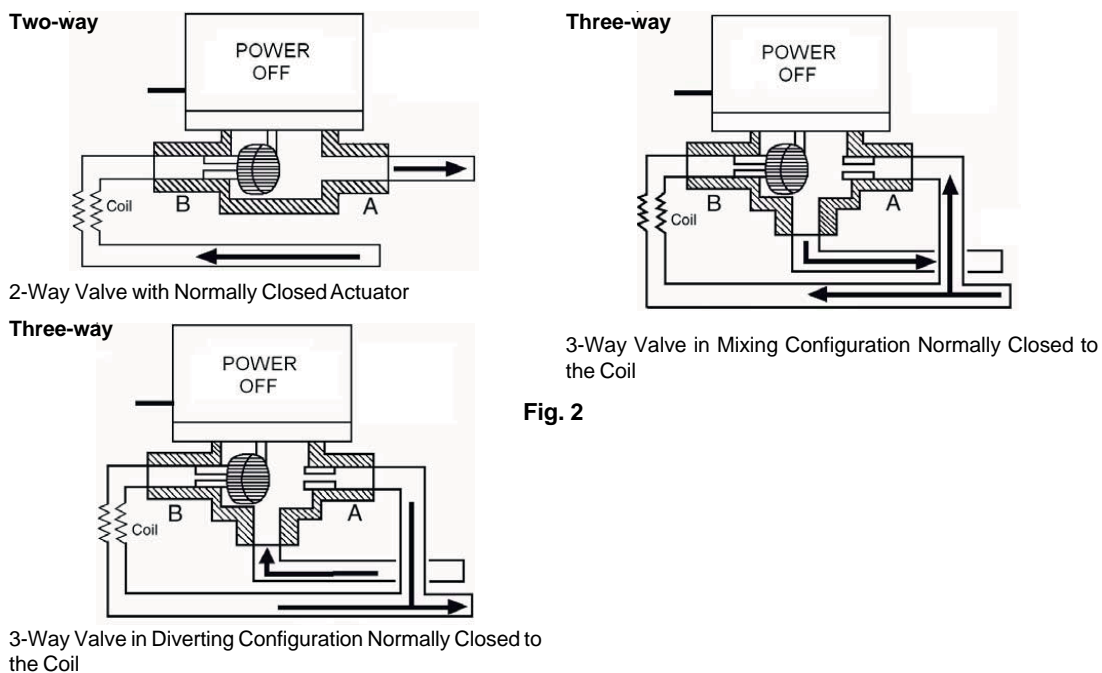
Install over a drip pan if condensation in chilled water applications

CAUTION: Use in systems which have substantial makeup water (open systems) is not recommended.

In order to mount the valve onto the pipe, apply Teflon tape to all but the last two threads of male pipe thread. Hand screw the pipe into the valve, turning it as far as it will go. Use a wrench to fully tighten the valve to the pipe. Do not overtighten or strip the threads.

NOTE

- Three-way valves are always closed at the B port when no power is applied to the motor.
- On power-up the valve closes to A port on three-way valves.
- Orient the three-way valve body as needed for normally.

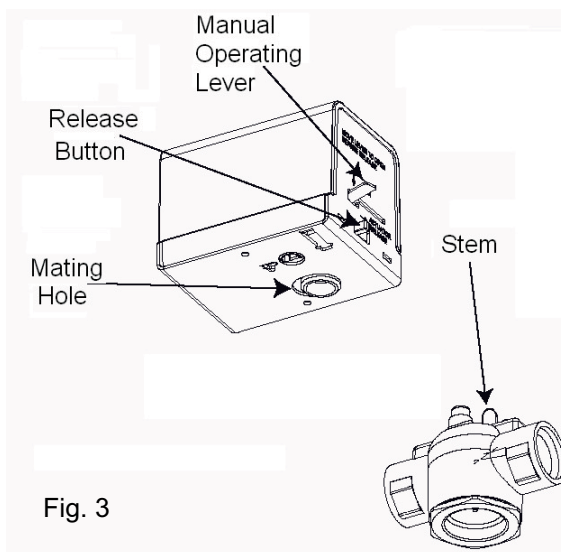


NOTE. Three-way N.O. applications can be achieved when using a N.C. actuator, by piping the valve in reverse. The three-way examples show normally closed actuators.

Installing Actuator on Valve Body

Slowly latch the manual operating lever in the open position.

Depress the release button (see Figure 3). Align the body with the actuator to ensure the stem is inserted into the large mating hole on the bottom side of the actuator. Engage the actuator on the body and release the button.

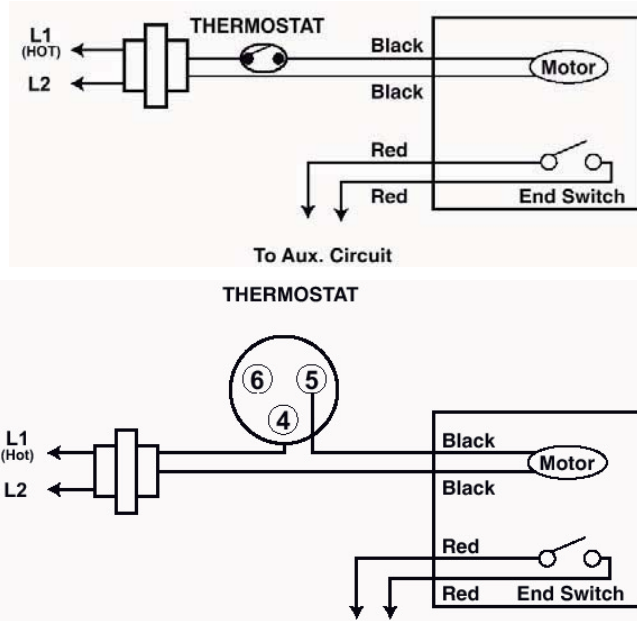


CAUTION. Do not use the valve body to manually open the actuator as damage to the valve actuator will result.

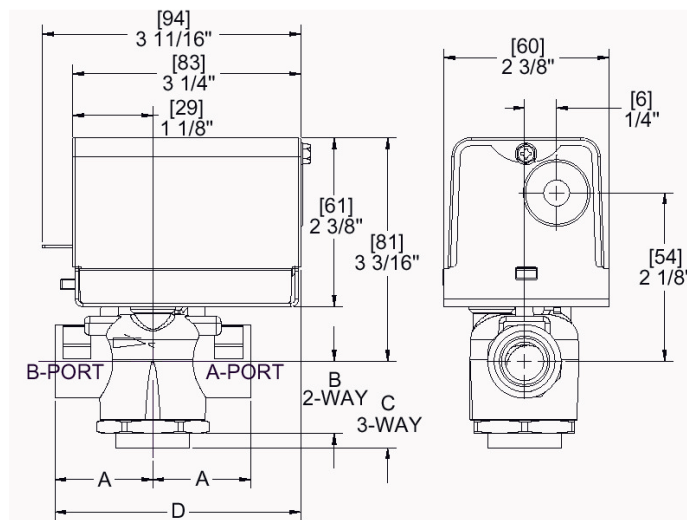
Checkout

- Make sure the valve stem rotates freely before and after installing the actuator.
- If the stem does not operate freely it may indicate that the stem was damaged and may require that the valve be repaired or replaced.
- After the piping is under pressure, check the valve body and the connections for leaks.
- After the valve and actuator are installed, power the actuator and check the operation.

Wiring Diagrams



Dimensions



Valve body	A	B	C	D
1/2"	35	23	33	86
3/4"	43	23	37	92
1"	47	25	43	94