



INSTALLATION INSTRUCTIONS

SUPERIOR REMOVABLE ACTUATOR VALVES

GENERAL INFORMATION

The SUPERIOR valve is a motorized zone control valve designed to provide maximum fuel economy and personal comfort when installed in a closed loop hydronic heating and/or cooling system. Accurate room temperatures are maintained by the ability of the SUPERIOR valve to control the flow of water through a heat exchanger, in response to the demand of a room or cabinet-mounted thermostat.

SUPERIOR valve bodies are available in 2- and 3-port patterns. Sizes range from 1/2" to 1" and 15mm to 28mm. Connections available are CxC, NPT, BSP, JIS, Union flare CxC or Compression. There are a selection of valve orifices to satisfy requirements over a broad range of pressure differential and C_v factors. (see catalog for details). If not otherwise specified, all valves are shipped with the "standard" orifice.

Actuators may be ordered in a choice of 24V, 120V, 208V, 220V, 240V, or 277V, 50/60 HZ.

The actuator may be removed and replaced by removing the 4 silver screws in the base of the actuator, without draining the system. Two diagonally placed screws are all that is required to retain the actuator. The motor may be replaced by bending the retaining tabs up.

SPECIFICATIONS

VOLTAGE 50/60 HZ	AMPERAGE
24V	0.356A
100V	0.074A
120V	0.064A
208V	0.037A
220V	0.033A
240V	0.032A
277V	0.027A

Electrical connections	4" - 96" leads
	36" cable and terminal board
Motor	Stall type, synchronous
End Switch*	5 AMP Ind. at 125/250 VAC
Changeover Switch*	Encapsulated, strap-on mounting
Pressure plate	Isotherm™

*Optional

PRESSURE LIMITS

Maximum static pressure	
Isotherm™ (Standard)	75 PSIG
Brass (Optional)	600 PSIG

FLOW COEFFICIENT (C_v) AND PRESSURE DIFFERENTIAL (ΔP)

2 & 3 PORT VALVE							
Orifice	Diameter		Standard or Option	Flow		Pressure	
	in.	cm		C_v	Kv	PSI	BAR
Low	3/16	.476	Option	0.8	11.4	50	3.4
Med	5/16	.794	Standard	2.9	41.4	25	1.7
High	7/16	1.11	Option	4.8	68.5	10	.68
Special High	8/16	1.27	Option	7.1	101.3	6	.40

Kv based on litres per minute flow, with pressure drop of 1kg/cm² at 20°C.
14.504 PSI = 1 bar

MAXIMUM TEMPERATURE LIMITS

	Water	Ambient
Standard	220° F/104° C	110° F/43° C
Optional	250° F/121° C	180° F/82° C

INSTALLATION PROCEDURE

The SUPERIOR valve should be piped and wired in accordance with the specific systems requirements, and all applicable federal, state and local plumbing and electrical codes.

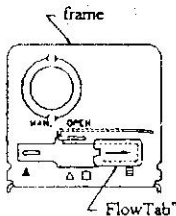
Select the appropriate wiring diagram and piping layout from the general applications shown on the other side of this page.

IMPORTANT

Overheating the valve while sweating the solder connections will void the warranty. Installation should be performed by a professional and the following points should be observed:

- Do not overheat sweat connections. Use solder with a melting temperature below 600° F (i.e. 50/50, 95/5).
- When soldering, flame must be directed toward the pipe and away from the valve body. Do not allow flame to contact the pressure plate.
- To avoid damaging internal valve parts when installing a sweat body, be sure the valve operator is in the MANUALLY OPEN position as shown below in diagram #2.
- Do not exceed the maximum ratings of the valve. (Valves used on steam systems have severely reduced ΔP ratings).
- Flush system after installing valves. Oil or other petroleum distillates in a system will adversely affect valve operation.
- It is not necessary to remove the actuator before installation.
- Do not overtighten threaded connections.

FlowTab OPERATION



To install FlowTab:

1. Push up into position as shown.
2. Slide FlowTab in direction of arrow.

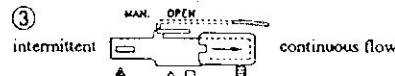
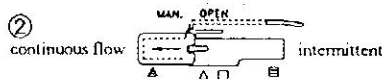
For manual open:

1. Move the lever to the right then release the lever and engage the manual open spring.
2. The valve will automatically return to normal operation when electrically activated.

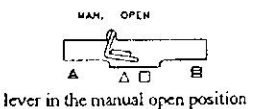
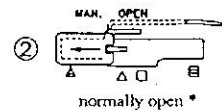
3 Port Valves



3 port valves normally do not use a FlowTab



2 Port Valves

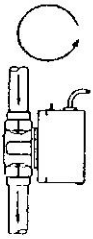


* Body must be ordered N/C or N/O.

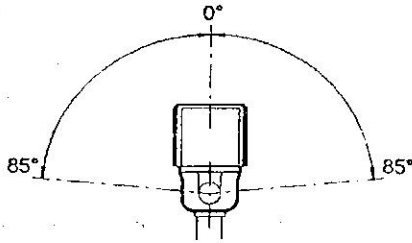
Actuator symbols "Δ" and "□" correspond to body symbols "A" & "B" respectively.

Typical Piping Installations

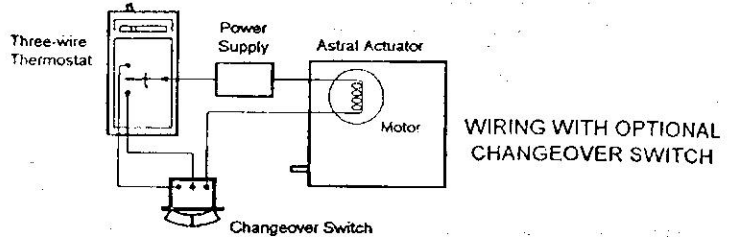
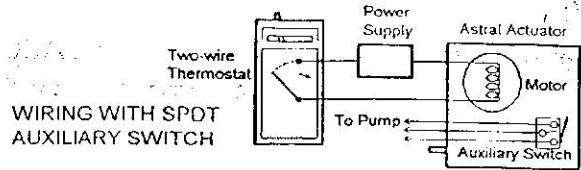
To minimize water damage in the actuator follow these guidelines:



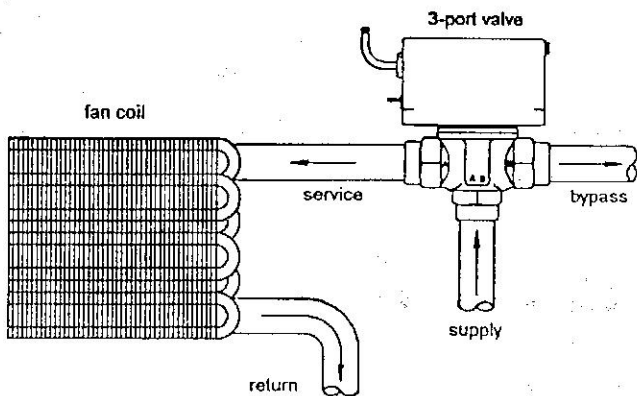
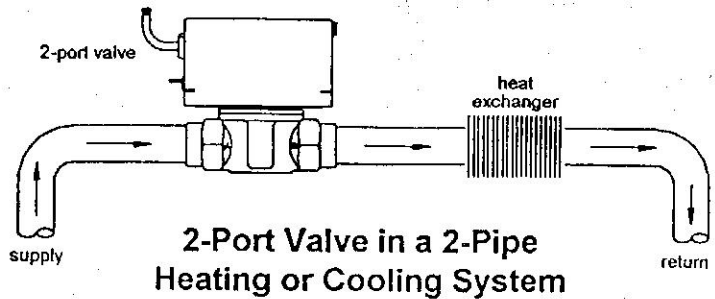
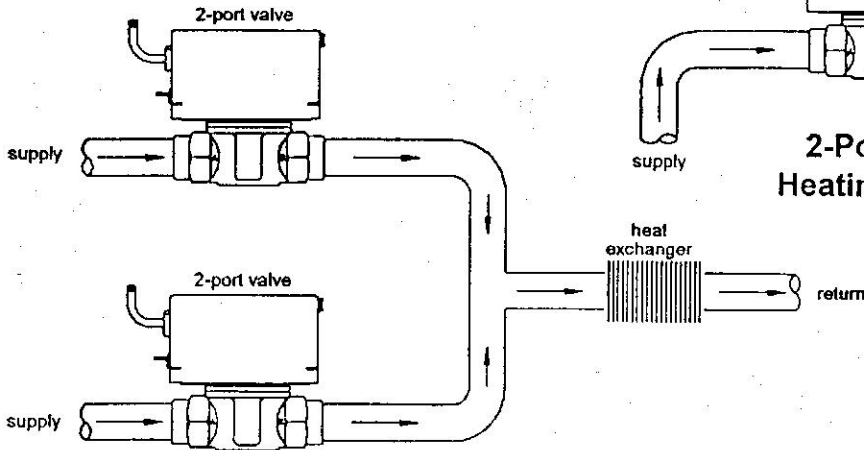
VERTICAL INSTALLATION:
May be mounted in any position.



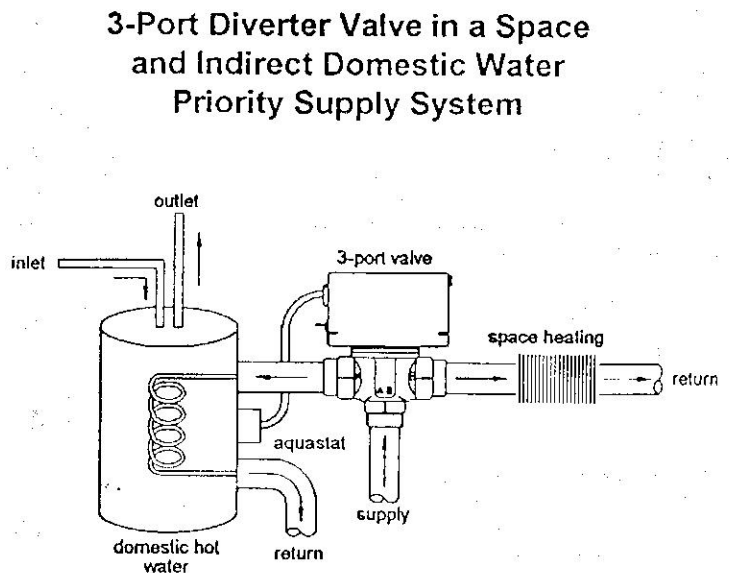
HORIZONTAL INSTALLATION:
Must not exceed 85° of upright.



2-Port Valves in a 3-Pipe Heating and Cooling System



3-Port Valve in a Heating and Cooling Fan Coil System



3-Port Diverter Valve in a Space and Indirect Domestic Water Priority Supply System

Flair pursues a policy of constant improvement. For this reason, all specifications are subject to change without notice.



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