

## 2-PORT AND 3-PORT ZONE VALVES

Specification No. 181-X-XXX

The ZY range of zone valves are designed to be used in conjunction with the AY range of actuators in HVAC applications. The use of the ZY range in open systems is not recommended as the high levels of dissolved oxygen and chlorine which are characteristic to such systems may attack the valve materials, resulting in premature failure.

It is imperative that the valves be piped so that the paddle closes against the direction of the flow.

\* For full specification, replace the four X's with the appropriate numbers in the Type column of the table overleaf.



## FEATURES

- Suitable for Chilled and Hot Water Applications, up to 50% glycol
- Range of Actuators available for direct connection
- Forged Brass Body
- Brass Seat
- Nickel-Plated Stem
- 100% Tight shut-off



MLI 4.001 - Mounting Instructions  
DS 3.030 - AY Actuator



**SPECIFICATION**

Group	Size	Type	*Kv <sub>s</sub>	Maximum ΔP (kPa)	Compatible Actuators:
2-port, BSP (Female) Parallel Fitting	½"	<b>ZY 1201</b>	1.04	350	AY 1201 - 230Vac NC
	½"	<b>ZY 1202</b>	2.60	350	AY 1251 - 230Vac NO
	½"	<b>ZY 1203</b>	3.63	350	AY 1301 - 24Vac NC
	¾"	<b>ZY 1204</b>	3.63	175	AY 1351 - 24Vac NO
	¾"	<b>ZY 1205</b>	5.19	175	
	¾"	<b>ZY 1206</b>	7.30	175	
3-port, BSP (Female) Parallel Fitting	½"	<b>ZY 1301</b>	1.04	350	AY 1201 - 230Vac NC
	½"	<b>ZY 1302</b>	2.60	350	AY 1251 - 230Vac NO
	½"	<b>ZY 1303</b>	3.63	350	AY 1301 - 24Vac NC
	¾"	<b>ZY 1304</b>	3.63	175	AY 1351 - 24Vac NO
	¾"	<b>ZY 1305</b>	5.19	175	
	¾"	<b>ZY 1306</b>	7.30	175	

\* Cv<sub>s</sub> = Flow in US gal/min to produce 1 lbf/in<sup>2</sup> pressure drop when the valve is fully open. Kv<sub>s</sub> = Cv<sub>s</sub> x 1.038

**CONSTRUCTION**

<b>Body:</b>	Forged Brass
<b>Stem:</b>	Nickel Plated
<b>Seat:</b>	Brass
<b>Paddle:</b>	Buna N
<b>'O' Ring Sealing:</b>	Ethylene Propylene
<b>Pipe Connections:</b>	BSP parallel female
<b>Operating Pressure Limits:</b>	300 PSI - PN20 (2,100kPa)
<b>Seat Leakage:</b>	100% Tight Shut-off - (Zero Leakage)
<b>Min/Max Temperature Limits:</b>	<b>Operating:</b> 0 to 40°C <b>Storage and Transit:</b> -18 to 65°C
<b>Valve Type:</b>	Paddle Action
<b>Suitable Medium:</b>	Water with max. 50% glycol

## GOOD DESIGN PRACTICE

### CONTROL MEDIUM

These valves are suitable for use with hot or chilled water in closed circuits. If the circuit is open, for example mains water systems, it is possible that a build-up of mineral deposits may impair the operation of the valve and frequent maintenance will be necessary. Appropriate precautions should be taken.

Other fluids - for example sea water, oils etc: Satchwell cannot accept responsibility for use of these valves with fluids other than water.

Descriptions of all materials in contact with the fluid are given on Page 2 and it is the responsibility of the specifier to check their suitability.

### INSTALLATION

1. Select a location that is as close as possible to the heater exchanger or fan coil unit being controlled, and is reasonably clean and free from damp and condensation. Ensure there is adequate access for wiring the motor; allow a minimum clearance of 130mm from the centre of the pipe.
2. Ensure the maximum ambient temperature for the motorised valve is not exceeded.
3. The valve must be installed horizontally and the actuator must never be below the valve.

### APPLICATION DIAGRAMS

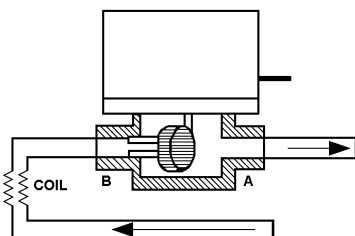


Fig.1 : 2-Way Normally Closed/Open Piping

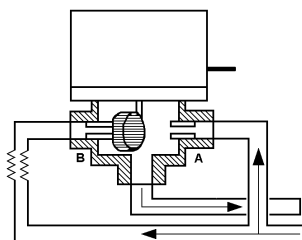


Fig.2 : 3-Way Valve in Mixing Configuration

A-port normally open  
B-port normally closed

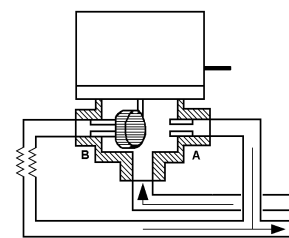


Fig.3 : 3-Way Valve Diverting Configuration

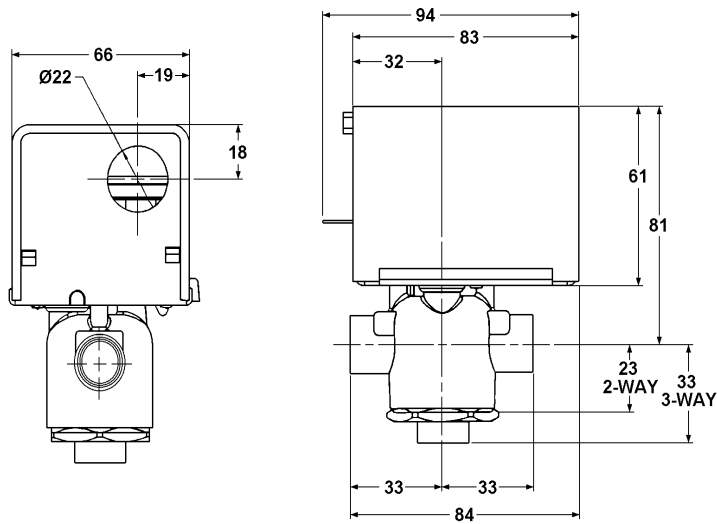
A-port normally open  
B-port normally closed

4. Remove all protective materials from the valve.
5. Remove all foreign matter from pipework.
6. Fit the valve into pipework using the minimum quantity of jointing material.
7. Observe direction of flow, refer to Fig.1, Fig.2 and Fig.3.
8. When all zone valves are 2-port, incorporate independent control of the main water circuit volume and/or differential pressure to maintain the pump head within reasonable limits.
9. When tightening the pipe connections onto the valve hold the valve firmly, but not the actuator.
10. Before filling the system set the valve to the manual position. Return it to the auto position after the system has been filled.

### COMMISSIONING

Check that the valve has been correctly installed in the pipework with regard to the direction of water flow (see Fig.1, Fig.2 and Fig.3) and the flow direction arrows on the valve body.

## DIMENSION DIAGRAMS



Dimensions in mm

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**CAUTION**

- These valves are not recommended for use in systems which have substantial make-up water.
- The valves must be piped so that the paddle closes against the direction of the flow.
- Observe the recommendations under 'Good Design Practice'.
- Observe maximum ambient temperature limits.
- Observe limits of water temperature, system pressure and maximum differential pressure.
- Information is given for guidance only and Satchwell do not accept responsibility for the selection or installation of its products unless information has been given by the Company in writing relating to a specific application.
- Design and Performance of Satchwell equipment are subject to continual improvement and therefore liable to alteration without notice.
- A periodic system check and tuning of the control system is recommended. Please contact your local Satchwell Service Office for details.