Honeywell

SH & SZ Series
Multiple Zone Valve Manifolds

INSTALLATION INSTRUCTIONS

GENERAL

SparcoZone$^{2™}$ is an electrically operated 3 or 4 multiple zone valve manifold. It is available with or without Honeywell Hydronic Zone Valve Controls. The SparcoZone^2 is factory-assembled bracket mounted and pre-wired for ease of installation.

SPECIFICATIONS

Supplied Valves: Normally Open.

Ambient Temperature Rating: -20° to 100° F (-29° to 38° C).

Material: Body: Bronze, Valves: Brass and stainless steel, Seals: EPDM.

Maximum Water Temperature: 220° F (104° C).

Maximum Working Pressure: 125 psi (862 kPa).

Maximum Differential Pressure: 17.5 psi (121 kPa).

Length: 40 ft (12 mm).

Approvals: Underwriters Laboratories Inc. Listed: File no. E4436.

Additional Information:

- For use in residential and light commercial application.
- Provide zone valve controls and burner controls for up to four zones in hot water systems.
- Zone 1 may be selected to give priority to the indirect water heater (See R8889 Product Data Sheet).
- SparcoZone^2 controllers may be wired together for expansion of up to four panels or 16 zones.
- Includes replaceable 24V transformer to provide power for low voltage control circuit and valve loads.
- Includes diagnostic light-emitting diodes (LEDs) for troubleshooting.
- Clearly marked terminal designations provide easy wiring.
- Compatible with electronic and electromechanical thermostats.
- Zones can be pre-balanced to desire flow rate with built-in balancing valve.
- Compatible with water-glycol mixtures.
- With the PowerTrack™ operator installed, valves are normally closed - power to open (See PowerTrack Submittal Data Sheet).
- PowerTrack operator runs on 24 VAC with a current draw of 0.25 amp. This operator is a 4 wire design with normally open auxiliary switch.
- Branch Circuit Cv = 6.5
- Heat anticipator in thermostat must be set at 0.30 amp.
- Mount controller horizontally only.

Table 1. Multiple Zone Valve Models

Product No.	Description		Size	
	Zones	Controls	Main	Branch
SZ3S1 SZ4S1 SZ3T1 SZ4T1	3 4 3 4	Return Manifold without Zone Control Panel Includes MZV Actuators	1¼" NPT / Sweat 1¼" NPT / Sweat 1¼" NPT / Sweat 1¼" NPT / Sweat	¾" Sweat ¾" Sweat ¾" Threaded ¾" Threaded
S2Z3S3 S2Z4S3 S2Z3T3 S2Z4T3	3 4 3 4	Return Manifold with Zone Control Panel Includes MZV Actuators	1¼" NPT / Sweat 1¼" NPT / Sweat 1¼" NPT / Sweat 1¼" NPT / Sweat	¾" Sweat ¾" Sweat ¾" Threaded ¾" Threaded
SH4S SH4T	4 Zone Supply Header Only 4 Zone Supply Header Only		1¼" NPT / Sweat 1¼" NPT / Sweat	¾" Sweat ¾" Threaded
S2Z8889-RP	Hydronic Zone Valve Control only		See R8889 Technical Sheet	
MZV520-RP SZ001 SZ002	POWERTRACK™ Operator Valve Kit Plug Kit		See form no. 62-3099 When ordered separately	
SZ4SIL	Snow Melt Manifold		See SD/IS 590 for information	

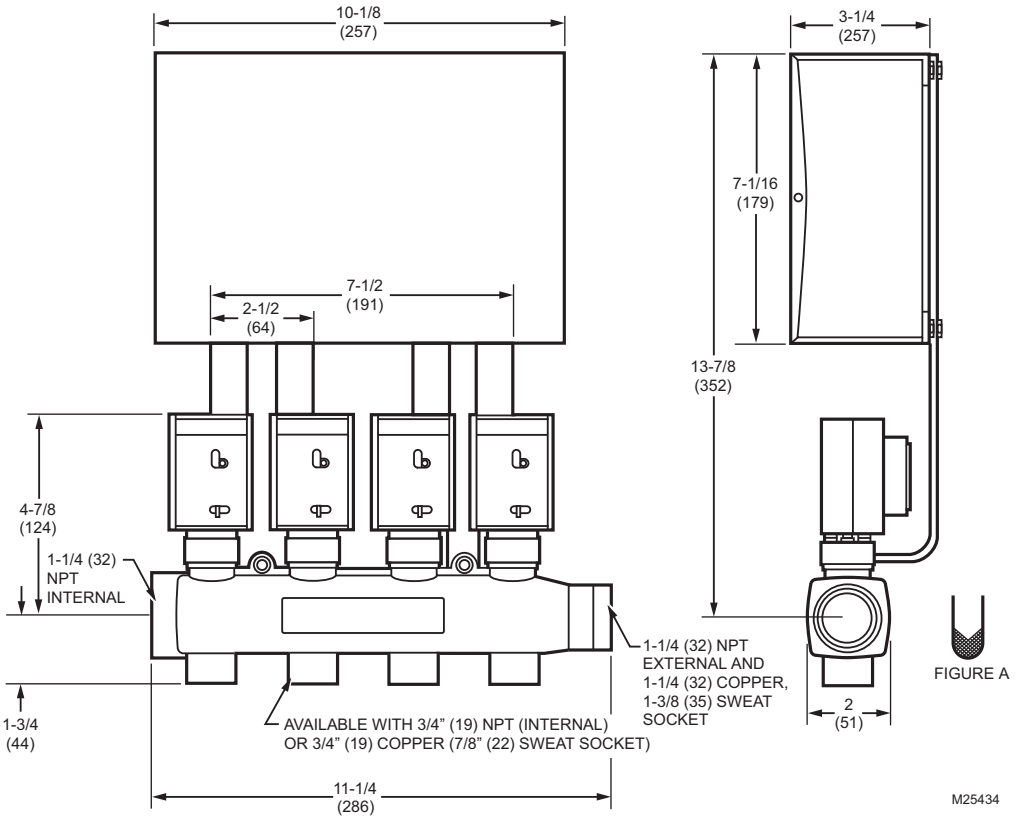


Fig. 1. S2Z Series Multiple Zone Valve Manifold

INSTALLATION

- The SparcoZone^2 header (with zone valves) must be installed in the system return so as to maintain the correct flow direction.
- All SparcoZone^2 are shipped with valves slightly open in order to prevent overheating of the valve when soldering. It is not necessary to completely remove the operator when soldering. After installation is complete, all valves must be closed. Close valves by tightening the brass nut until the pointer is centered over the red dot. See FIGURE A.
- Both zone bodies and headers are provided with a 1¼" NPT utility port. If not used, close with a 1¼" plug.

Pre-Balancing Zones

Each valve station has a built-in balancing plug which permits pre-balancing of zones. To balance, remove the PowerTrack operator and locate the metal plug (w/ holes) on top of the valve. To turn the plug, engage a needle nose plier into the two holes on the top plug and turn the plug clockwise until the valve seat bottoms out (2 to 3 turns). Then back off counterclockwise until the desired flow rate is established. The table below gives approximate flow rate. It is based on commonly used residential circulators and piping practices. For other conditions, different settings may apply.

Turns from fully closed	¼	½	1	1 ½	2
Flow rate in GPM	2	4	6	8	10

Manual Opening of Valves:

To open, hold the PowerTrack operator with one hand and loosen the knurled brass nut 1 to 1½ turns counterclockwise. This opens the valve. To close the valve, push down on the operator and screw the brass nut until the pointer is centered over the red dot. See FIGURE A.. The operator is now properly installed.

NOTE: The brass nut must be tightened 2 to 3 turns before the pointer starts to move.

Replacement of the Valve Cartridge:

SHUT OFF POWER and **DRAIN** the manifold body. Remove the PowerTrack operator. Remove the valve cartridge using a ¾" socket wrench. Install new valve cartridge making sure adapters, cartridges and shaft extensions are properly located.

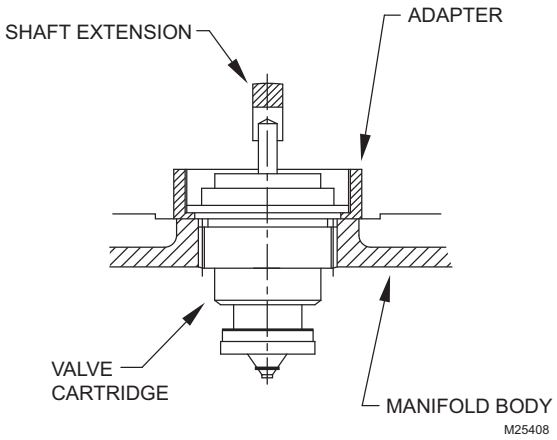


Fig. 2. Valve Cartridge

Typical Piping Diagram

1. SparcoZone^2 Supply Header
2. Drain Valve for Purging
3. SparcoZone^2 Multiple Zone Valve Return Manifold
4. Circulator
5. Boiler Drain
6. Backflow Preventer
7. Boiler Fill Valve
8. Diaphragm Expansion Tank
9. Powervent or Air Purger and Airvent
10. Tridicator

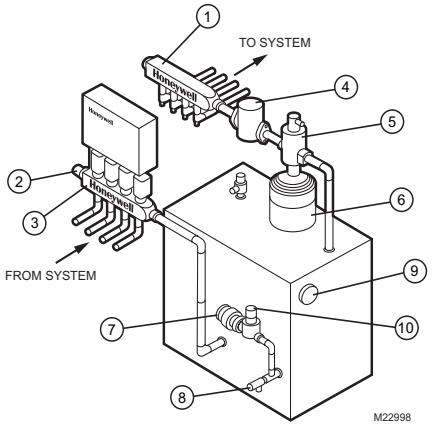


Fig. 3. Piping Diagram

NOTE: Typical boiler system shown. For illustration purposes only.

Purging Air from System

The following method is one way to successfully purge the heating system:

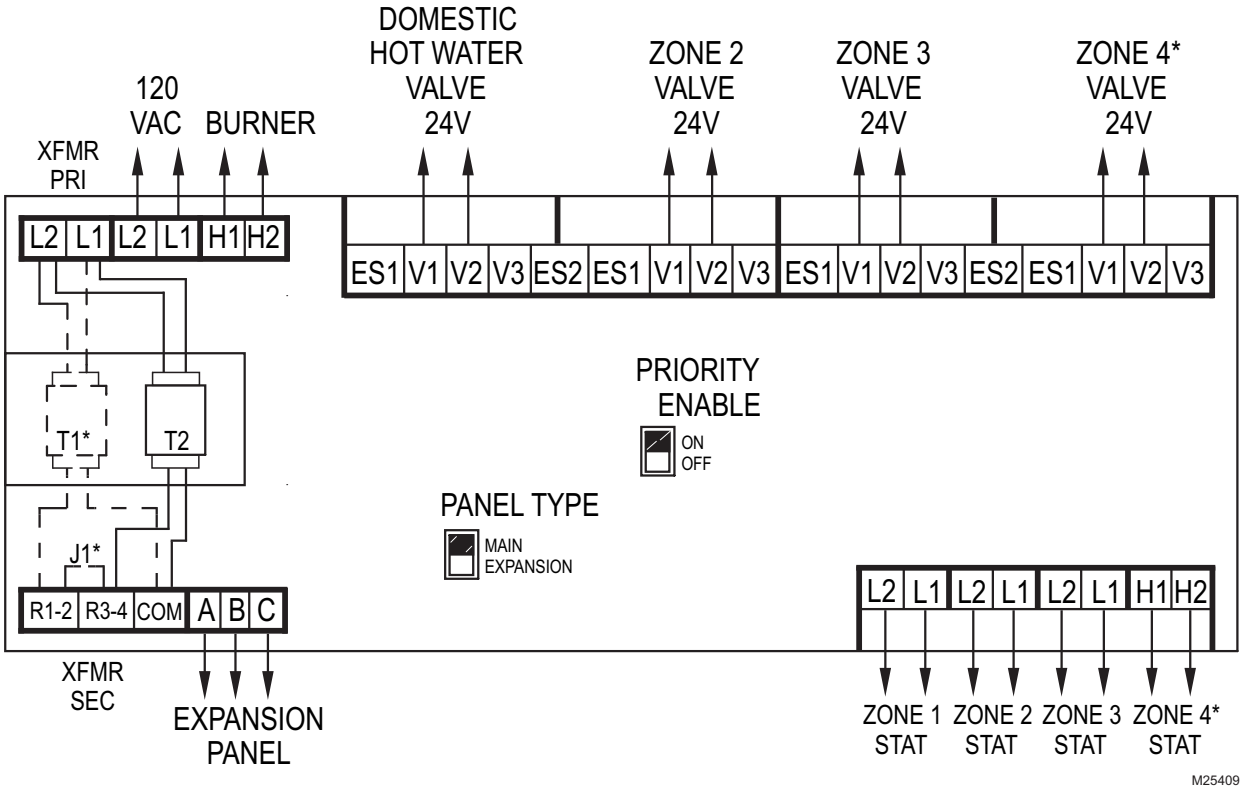
1. Completely shut off all loops by properly adjusting all PowerTrack nuts (see paragraph Manual Opening of Valves).
2. Open one zone (see Manual Opening of Valves) and purge through drain at the top of the SparcoZone^2. Run water until air is no longer discharged, then close the loop.
3. Repeat for every loop.

WIRING

1. Disconnect power supply before beginning installation to prevent electrical shock or equipment damage.
2. Use copper conductors only.
3. Use only NEC Class 1 wire for all line voltage wiring connections. Class 1 wires must be rated for at least 90° F (32° C). All wiring must comply with applicable electrical codes and ordinances.

⚠ CAUTION

Although the green LED (24 Vac power) is not lit with the power connected, line voltage may be present at L1 and L2 terminals if the LED is defective. Check for power across L1 and L2 using a Voltmeter only.



Wiring Connections

Terminal Designation	Connect to System Component
H1, H2	Burner / circulator controls.
L1	Line voltage (hot) power.
L2	Line voltage (neutral) power.

V1	Valve power (hot).
V2	Valve power (common).
ES1	Valve end switch for each zone.
ES2	Valve end switch shared by zones 1-2 and 3-4
A,B,C	Expansion to additional Controls

Fig. 4. Internal Wiring View of Honeywell's Control Box (S2Z8889-RP)

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