User Guide

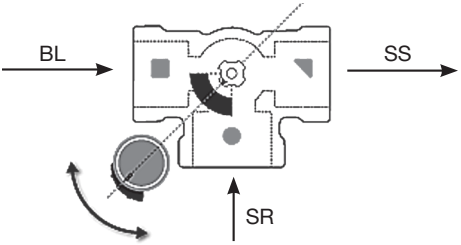
Viega Three Way Mixing Valve

This document is subject to updates. For the most current Viega technical literature please visit www.viega.us.

Viega products are designed to be installed by licensed and trained plumbing, mechanical, and electrical professionals who are familiar with Viega products and their installation.
Installation by non-professionals may void Viega LLC's warranty.

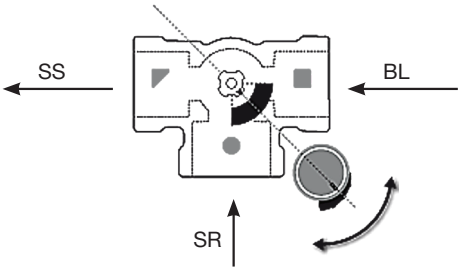
Scenario 1 Wiring and Piping

Boiler loop on left,
System supply on right,
System return into branch



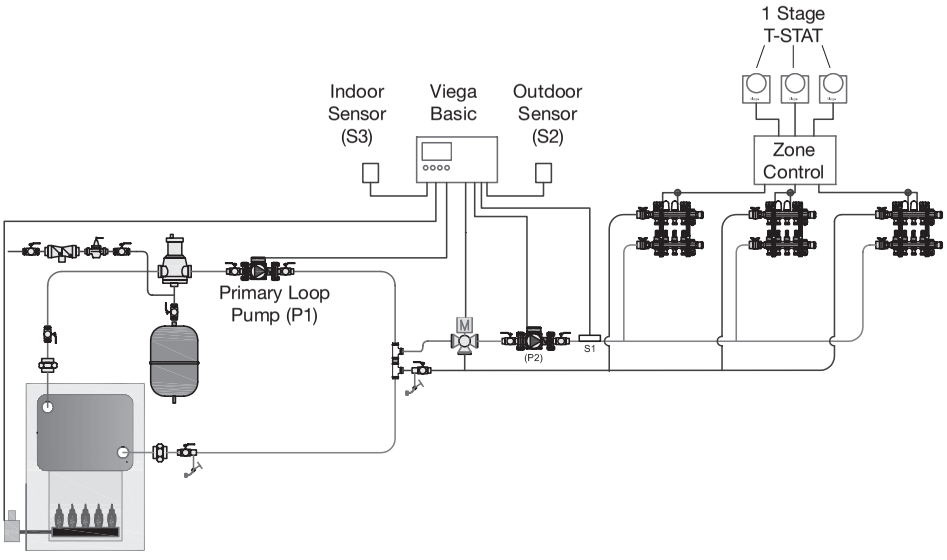
Scenario 2 Wiring and Piping

Boiler loop on right,
System supply on left,
System return into branch



For precise temperature control it is imperative that the initial position of the valve used is half open. This can be accomplished by positioning the groove of the white plastic adapter between Boiler Supply and Boiler Return. The actuator itself can be mounted onto the valve in any position.

Piping Schematic of Basic Heating Control with Three Way Mixing Station Valve and 3 Manifolds in Parallel

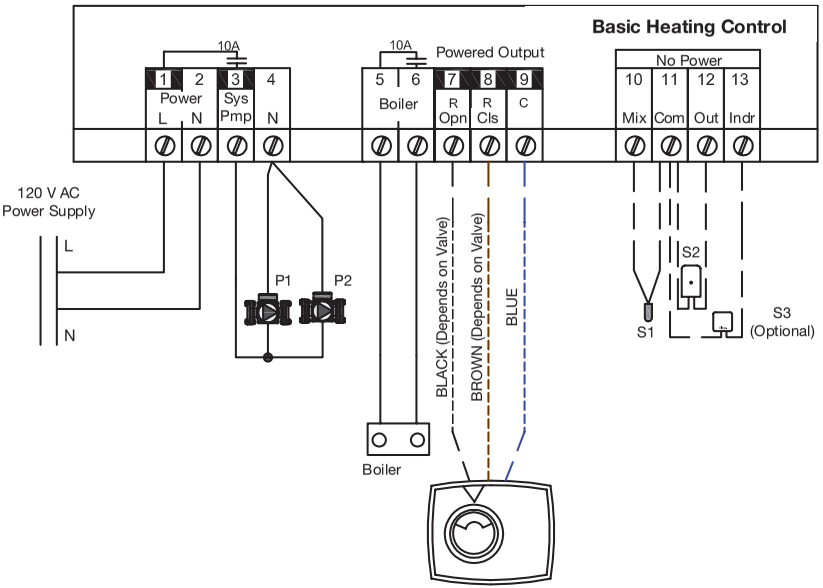


Legend: 4-Way Mixing Valve and Motor			
	4-Way Mixing Valve and Motor		Pressure Differential Bypass Valve
	Spring check		Stainless Manifold w/ Flow Gauges
	Circulator		Baseboard Zone(s)
	Draw Off (Purge Valve)		Diaphragm-Type Expansion Tank
	Make-up Water		Zone Valve

Piping

- This drawing shows system piping concept only. Installer is responsible for all equipment and detailing required by local codes.
- Size header piping for maximum flow velocity of 2 ft./sec.
- All other piping should be sized for a maximum flow velocity of 4 ft./sec.
- Install a minimum of 12 diameters of straight pipe upstream of all circulators and check valves.
- Install isolating flanges or isolating valves on all circulators.
- Install purging valve(s) on all circuits.
- All closely spaced tees shall be within 4 pipe diameter center-to-center spacing.
- Install minimum of 6 pipe diameters of straight pipe upstream and downstream of all closely spaced tees.
- Differential pressure bypass valve prevents flow noise under partial load conditions (some zone valves closed).
- Set differential pressure bypass valve to delta P of distribution system with all zones open + 1 psi
- Not all components may be required depending on control strategy (i.e. constant circulation).

Wiring Schematic of Basic Heating Control with Three Way Mixing Station Valve and 3 Manifolds in Parallel



Legend: Basic Heating Control	
— — — — Sensors	P2 = Mixed Temperature Circulator
- - - - - - - - - - Low Voltage	S1 = Mix Sensor
———— Line Voltage	S2 = Outside Sensor
P1 = Primary Loop Circulator	S3 = Inside Sensor

Wiring

- This drawing shows system wiring concept only. Installer is responsible for all equipment and detailing required by local codes.
- All wiring shall be in conformance with the latest edition of the National Electrical Code.
- Maximum current rating of Basic and Advance Heating Control Relay is 10 Amps, Basic and Advance Snow Melting Control. Relay is 5 Amps, Maximum current rating of Zone Control Relays is 5 Amps, if circulator draw exceeds this use pilot relay with 120 VAC coil operated by Viega Control.
- Consult with control / boiler manufacturer for limitations and installation instructions.
- Do not run the wires parallel to telephone or power cables. If the sensor wires are located in an area with strong source of electromagnetic interference (EMI), shielded cable or twisted pair should be used or the wires can be run in a grounded metal conduit. If using shielded cable, the shield wire should be connected to the Com or Com Sen terminal on the control and not to earth ground. Use 18 AWG copper wiring for all sensor wiring. Sensors should be located 12" down stream of mixing point.
- DHW priority relay must be rated to handle full amperage load of zone circulator relay center.
- Other configurations are possible, but all space heating zone circulators must turn off when DHW mode is on or heat source needs to be sized for multiple loads.

Viega LLC
585 Interlocken Blvd.
Broomfield, CO 80021

Phone (800) 976-9819
www.viega.us

UG_HC 521096 1119 Three Way Mixing Valve (EN)