User Guide
Viega Diverting Valves

Operations
Diverting Valves have one entry port and two exit ports. Depending upon the position of the valve stem, flow is diverted from one exit port to the other.

Installation
The Diverting Valve is provided with a pre-installed temperature High Limit Kit. This kit is installed into the 3-way valve to allow a maximum supply water temperature to be set. This kit must be unscrewed when purging the system and should then be set according to the instructions below.

1. Remove (A) gray plastic cap from (B) valve body. (This cap can be used to adjust the water temperature manually.)
2. Loosen (A) hex lock nut from the (B) valve body with brass key tool.
3. Use opposite side of (A) brass key tool and turn inner adjustment screw (slotted) clockwise until valve spring resistance is felt. To lower water temperature turn key clockwise; turn counterclockwise to raise it.
4. Turn adjustment screw further clockwise until desired supply water temperature is obtained and count quarter turns for reference. This has to be done carefully and slowly because each quarter turn of the adjustment screw will result in approximately 15°F temperature reduction. Wait until desired water temperature stays consistent.
5. Tighten (A) hex lock nut with wrench. Do not over tighten. To secure high limit adjustment: hold slotted adjustment screw with brass key while tightening nut.

This calibration must be done with the boiler at its highest temperature, the circulator running and all zones open.

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.

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

- 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.
Piping Schematic of Basic Heating Control with Mixing Station, 3 Manifolds in Parallel, and High Temp with Powerheads and Boiler Relay
### Legend: Mixing Station

<table>
<thead>
<tr>
<th>Icon</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mixing Station</td>
<td></td>
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<tr>
<td>Spring check</td>
<td></td>
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<tr>
<td>Circulator</td>
<td></td>
</tr>
<tr>
<td>Draw Off (Purge Valve)</td>
<td></td>
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<tr>
<td>Make-up Water</td>
<td></td>
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<tr>
<td>Pressure Differential Bypass Valve</td>
<td></td>
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<tr>
<td>Stainless Manifold with Flow Gauges</td>
<td></td>
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<tr>
<td>Baseboard Zone(s)</td>
<td></td>
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<tr>
<td>Diaphragm-Type Expansion Tank</td>
<td></td>
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<tr>
<td>Zone Valve</td>
<td></td>
</tr>
</tbody>
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### Piping

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- Set differential pressure bypass valve to delta P of distribution system with all zones open + 1 psi
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All wiring shall be in conformance with the latest edition of the National Electrical Code.

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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.
Piping Schematic of Basic Snow Melt Control with Non-Electric Control

**Piping**

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- 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).

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**Legend**

<table>
<thead>
<tr>
<th>Diverting Valve with 3-Position Actuator</th>
<th>Back Flow Preventer</th>
<th>Stainless Manifold with Flow Gauges</th>
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</thead>
<tbody>
<tr>
<td>3-Way Mixing Valve and Motor</td>
<td>Presser Reducing Valve</td>
<td>Baseboard Zone(s)</td>
</tr>
<tr>
<td>4-Way Mixing Valve and Motor</td>
<td>Flow Check Valve</td>
<td>Diaphragm-Type Expansion Tank</td>
</tr>
<tr>
<td>Circulator</td>
<td>Swing Check Valve</td>
<td>Zone Valve</td>
</tr>
<tr>
<td>Draw Off (Purge Valve)</td>
<td>Pressure Differential Bypass Valve</td>
<td>Metered Balancing Valve</td>
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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" downstream 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.