User Guide

Viega Copper Manifolds - Valved

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.

Installation

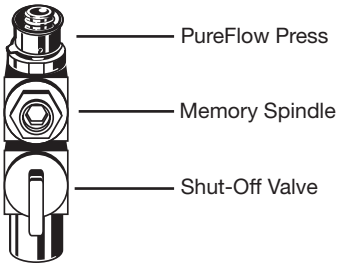
1. Viega's copper manifolds are copper (male) on the inlet and outlet of the header, which can be connected to the primary loop (boiler loop) with ProPress or soldered connections. The length of the header is in accordance with ProPress insertion depths and ProPress minimum clearance to existing solder connection. Copper manifolds should be installed using isolation valves (ball valves) on the supply and return headers. End caps should also be used on at least the return manifold for ease of pressurizing and purging.
2. Soldering Viega's copper manifolds should be done prior to the connection of Viega Barrier PEX. Excessive heat can cause the PEX Press connections and outlet connections to leak.
3. When using ProPress the PureFlow Press connections can be made at any time during installation.
4. For more information on Viega's ProPress or PureFlow Press, see the appropriate product instructions at www.viega.us or contact your Viega salesperson.

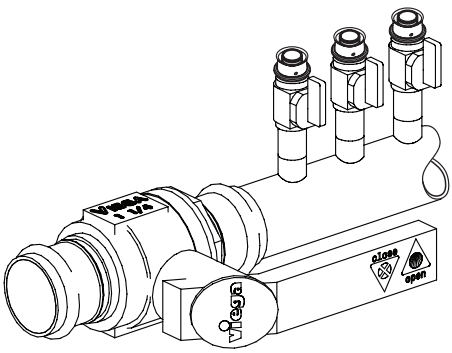
Solder Installation

1. Cut copper tubing cleanly with tube cutter.
2. Ream and deburr cut copper tubing.
3. Clean the inside of the copper end cap and copper tubing (fitting brush/emery cloth). The copper should shine.
4. Brush an even layer of flux over the copper tubing and copper end cap.
5. Push the joint together until the copper tube seats full depth. Wipe off excess flux.
6. Heat the joint with a torch, moving the flame back and forth to heat evenly. Hold the solder against the joint on the side opposite the flame until it melts and flows into the joint. Touch the solder 360° around the tubing. The joint should appear full on all sides. The solder hardens as it cools.
7. Avoid overfeeding the joint with solder. The amount of solder required is equivalent to the diameter of copper tubing being soldered.

Purging and Pressurization

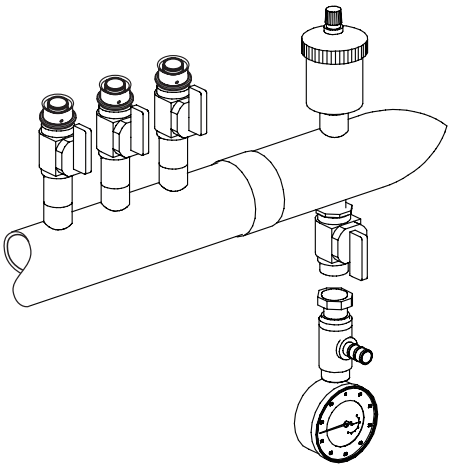
1. Open the supply and return isolation valve (ball valve) and all supply and return circuits to fill the copper manifold from the heat source (N/A for valveless manifolds).
2. Connect drain hose (i.e. washing machine hose) to hose thread on the return manifold copper end cap purge valve (draw-off).
3. Open purge valve (draw-off)
4. Close supply isolation valve and leave the return isolation valve open. Purge the return line.
5. Close return isolation valve and open the supply isolation valve. Purge the supply.
6. Close supply and return shut-off / balancing valves on manifold, leaving the memory spindle on the balancing valves fully open.
7. Open the supply manifold circuit and return manifold circuit that is furthest from the draw-off; push air through the entire circuit and out the draw-off eliminating air from that circuit.
8. Once the air has been purged, close the supply and return circuits.
9. Move onto the next circuit; watch the pressure gauge on the heat source; do this for each circuit: open, purge, close.
10. Once purging is complete, close draw-off and disconnect hose; open circuits and balance if necessary.
11. Open the return isolation valve.





Shut-Off Ball Valve

Automatic Vent



Purge Valve (Draw-Off)

Balancing Circuits

It is important to balance the circuits on the manifolds to ensure even distribution of the radiant heating. The fluid (water and glycol mix) flows in the path of least resistance. Longer circuit lengths causes higher pressure drops (resistance). The shut-off / balancing valves can equalize the pressure drop (resistance) in every circuit. For proper balancing see calculations and diagrams below and to the right.

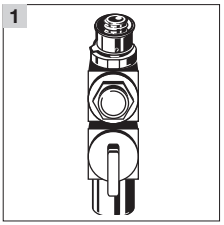
Calculations

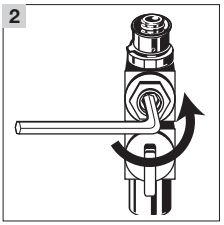
$$\frac{\text{Circuit Length (ft)}}{\text{Longest Circuit (ft)}} \times 10 = \text{\# of Turns for Balancing*}$$

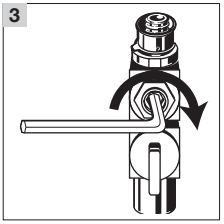
**The number of full 360° turns open from a fully closed position*

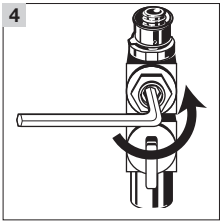
Circuit	Circuit Length (ft)	Number of Turns Open to Set Memory Spindle
1	250	250/250 x 10 = 10 turns (fully open)
2	200	200/250 x 10 = 8 turns
3	150	150/250 x 10 = 6 turns
4	100	100/250 x 10 = 4 turns

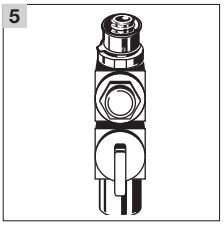
- Circuit 1 is the longest at 250', so it is fully open (counter clockwise).
- Circuit 2 is 200', so divide 200' by 250', which equals 0.8. Then multiply 0.8 by 10, and the answer is 8. This represents the number of 360° turns open needed for proper balancing (counter clockwise).











Balancing Manifolds

1. Remove tamper resistant cap (counter clockwise)
2. Open memory spindle of the longest loop fully (counter clockwise)
3. Close all other memory spindles fully (clockwise)
4. Turn the memory spindle counter clockwise slowly to achieve desired balance (calculation to the left)
5. Re-install tamper resistant cap (clockwise)

Each 360° turn of the memory spindle restricts approximately 10% of flow.

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