RADIANT HEATING AND COOLING SYSTEMS

ENGINEERED PLASTIC (EP) HEATING MANIFOLD

INSTALLATION GUIDE

EP Heating Manifold Installation Guide

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Published by Uponor
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Apple Valley, MN 55124 USA
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www.uponorpro.com

Second Edition April 2011
First Printing November 2008
Printed in the United States of America

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Section 1

General Recommendations

Safety Measures

- Read and follow the instructions in this guide.
- A qualified person must install this product according to local code.
- It is prohibited to make changes or modifications not specified in this guide.
- Uponor is not responsible for damages or injuries that may result from not following the instructions in this guide.

Symbols Used in this Manual

Warning: Risk of bodily injuries. Nonobservance may harm health or cause damage to product components.

Caution: Important note on functionality. Do not use ethylene glycol with the EP Heating manifold. Propylene glycol can be used.

Information: Important advice and information

See another document.

See another page in the guide.

Required tools

Check that everything is okay.

Temperature

Time

Operating Pressure

Designated Application

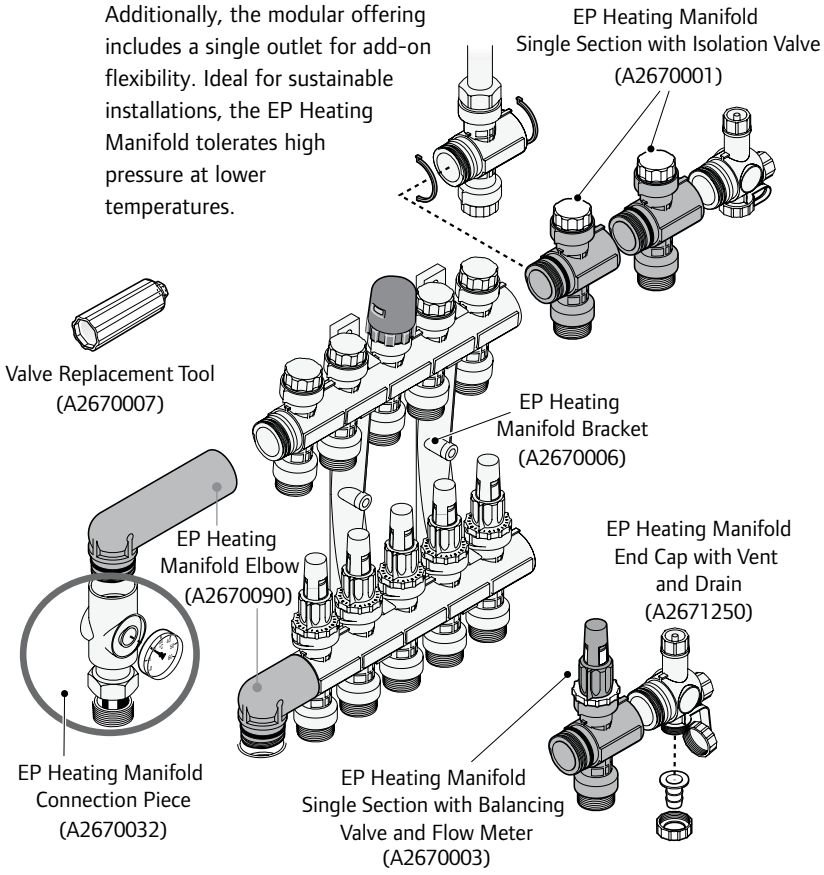
The EP Heating Manifold distributes water through the radiant floor heating/cooling system. Typically it is installed on the wall or in a manifold cabinet (surface or concealed installation).

Contact Uponor before modifying the EP Heating Manifold. Uponor is not liable for damage resulting from misuse.

Section 2

EP Heating Manifold Overview

Featuring two to eight loops, the Uponor Engineered Plastic (EP) Heating Manifold comes fully assembled with flow meters and R32 union connections. The valve body with the preassembled flow meters is the supply manifold. The valve body without the flow meters is the return manifold. The return manifold is where the actuators (if used) will mount. Additionally, the modular offering includes a single outlet for add-on flexibility. Ideal for sustainable installations, the EP Heating Manifold tolerates high pressure at lower temperatures.



Preparation Before Installation

Verify product contents.

Note: Manifold fittings are sold separately. Use QS-style fittings. (Refer to the Uponor Product Catalog for more information.)

Tools Required

- Tubing cutter
- Wrench
- Level
- Flat screwdriver
- Electric drill
- Pressure testing equipment
- Valve replacement tool

Section 3

EP Heating Manifold Connection Options

See **Figures 3-1** and **3-2** for connection options.

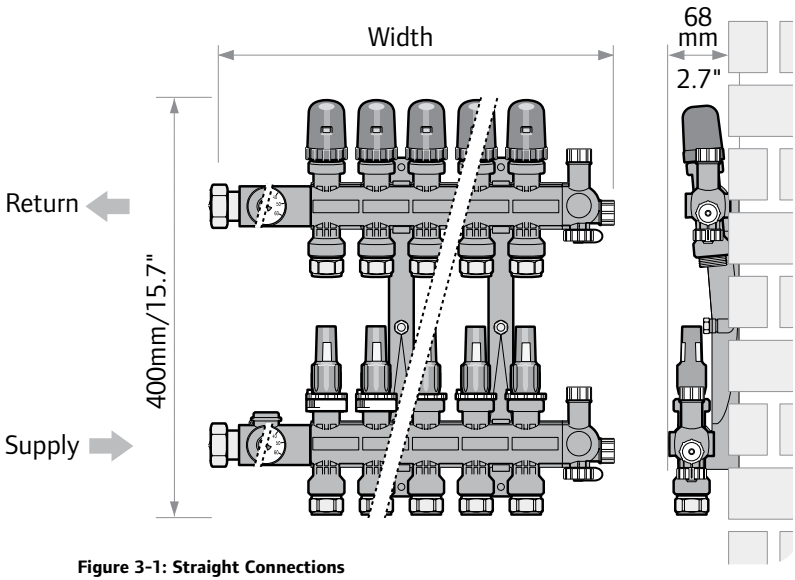


Figure 3-1: Straight Connections

Number of Loops	Part No.	Width
2	A2670201	9.6" (245mm)
3	A2670301	11.6" (295mm)
4	A2670401	13.6" (345mm)
5	A2670501	15.6" (395mm)
6	A2670601	17.6" (445mm)
7	A2670701	19.5" (495mm)
8	A2670801	21.5" (545mm)

Table 3-1: Manifold Widths

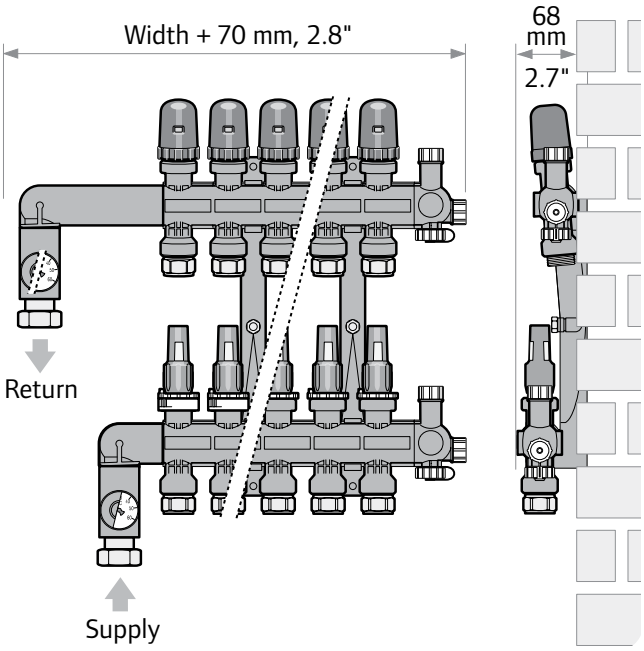


Figure 3-2: Angle Connections

Number of Loops	Part No.	Width
9	A2670801 + A2670001 A2670003	23.5" (595mm)
10	A2670801 + 2 x A2670001 2 x A2670003	25.5" (645mm)
11	A2670801 + 3 x A2670001 3 x A2670003	27.5" (695mm)
12	A2670801 + 4 x A2670001 4 x A2670003	29.5" (745mm)

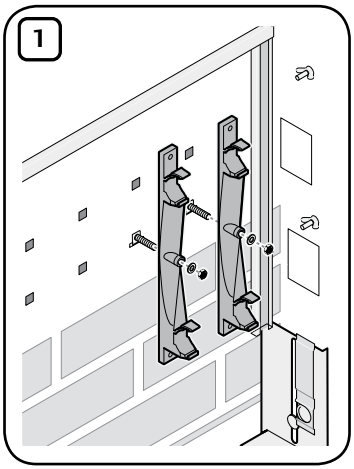
Table 3-2: Manifold Widths

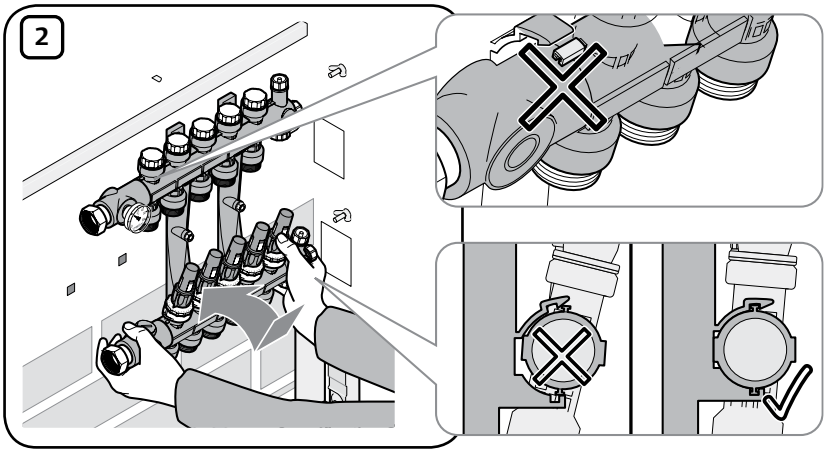
Section 4

EP Heating Manifold Mounting Instructions

Mounting Manifold to a Wall or Cabinet

1. Mount the bracket to the wall or in a cabinet. See **Table 4-1** on **page 8** for proper spacing of the bracket bars.
2. Snap the manifold into the bracket. Make sure the manifold locks into position. Listen for the click.





Number of Loops	A inch (mm)	B inch (mm)	C inch (mm)
2	5.3 (135)	2 (50)	2.6 (65)
3	5.3 (135)	3.9 (100)	2.6 (65)
4	5.3 (135)	5.9 (150)	4.5 (115)
5	5.3 (135)	5.9 (150)	4.5 (115)
6	5.3 (135)	7.9 (200)	4.5 (115)
7	5.3 (135)	7.9 (200)	6.5 (165)
8	7.3 (185)	7.9 (200)	6.5 (165)
9	7.3 (185)	9.8 (250)	6.5 (165)
10	7.3 (185)	11.8 (300)	6.5 (165)
11	7.3 (185)	11.8 (300)	8.5 (215)
12	9.3 (235)	15.7 (400)	8.5 (215)

Table 4-1: Bracket Spacing

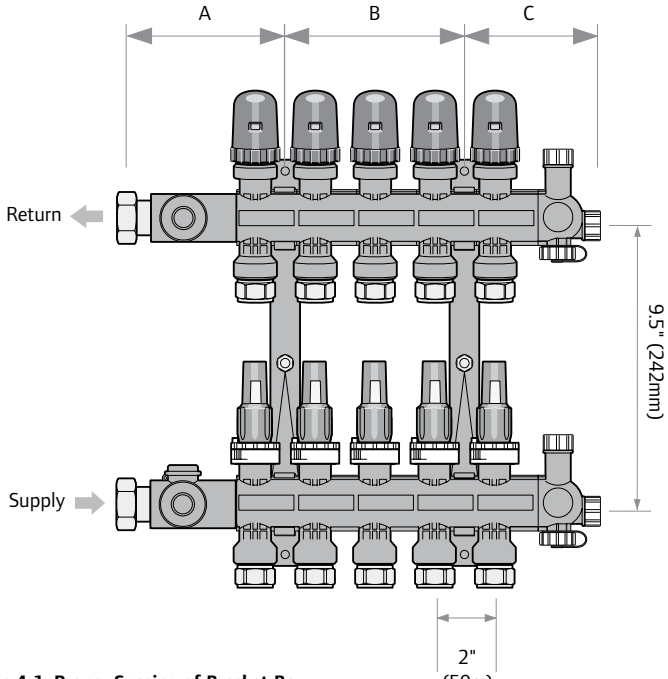
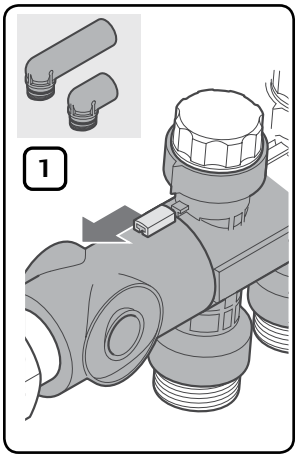


Figure 4-1: Proper Spacing of Bracket Bars

Section 5

Installing Manifold Accessories

Note: Thread tape or similar thread sealants are not necessary for assembling the manifold accessories.



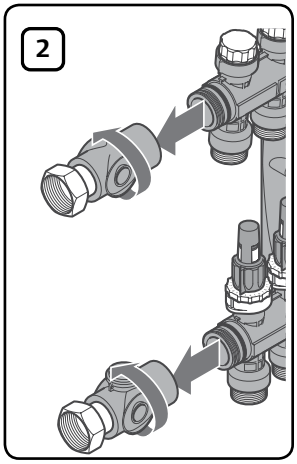
Installing Thermometers

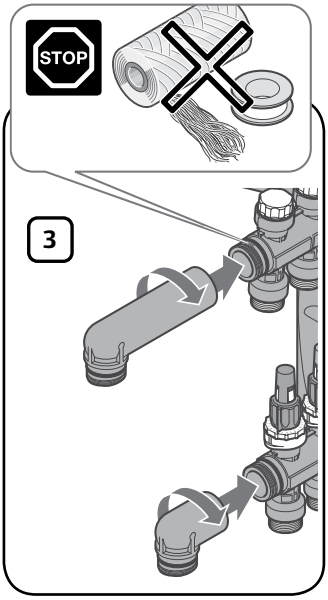
When installing the thermometers into the manifold connections, ensure they snap in firmly until they click.

Installing the Elbow Kit

When mounting the Elbow Kit, follow these steps.

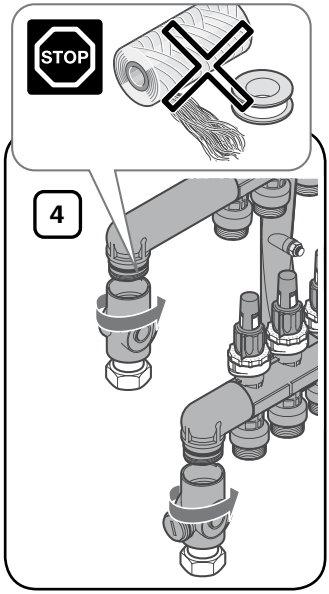
1. Unlock the snap lock.
2. Dismantle the connection fittings.
3. Mount the elbows.

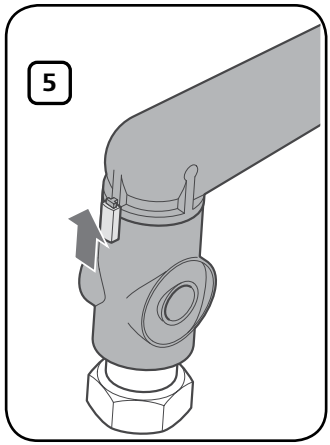




4. Mount the connection fittings.

5. Fasten the snap lock.

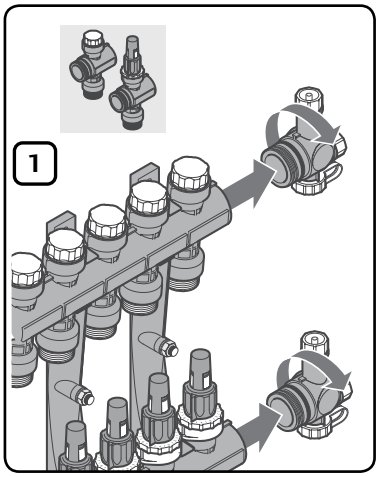


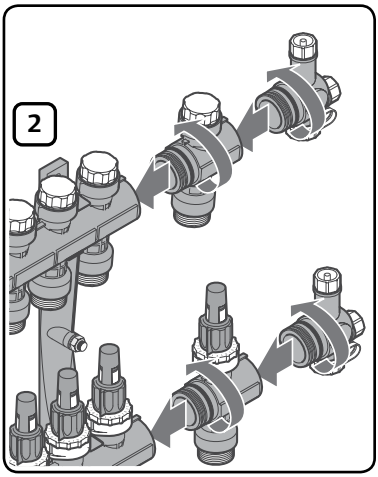


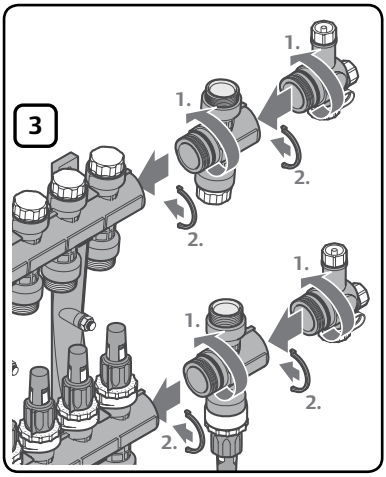
Mounting Additional Manifold Outlets

Refer to the following instructions to properly mount one or more additional outlets on the manifold.

1. Dismantle the End Cap with Vent and Drain.
2. Mount the desired number of extra outlets and reattach the End Cap with Vent and Drain.
3. To angle some of the extra outlets in an opposite direction (e.g., up instead of down), tighten the extra outlet completely and then loosen a half turn.

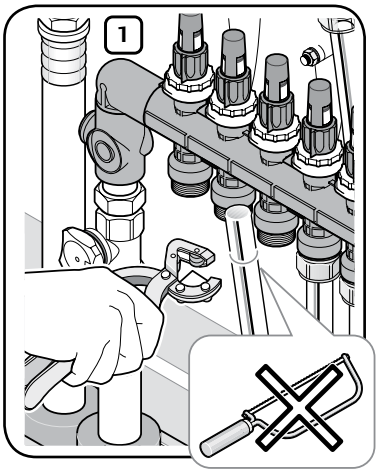






Section 6

Connecting Tubing to the Manifold

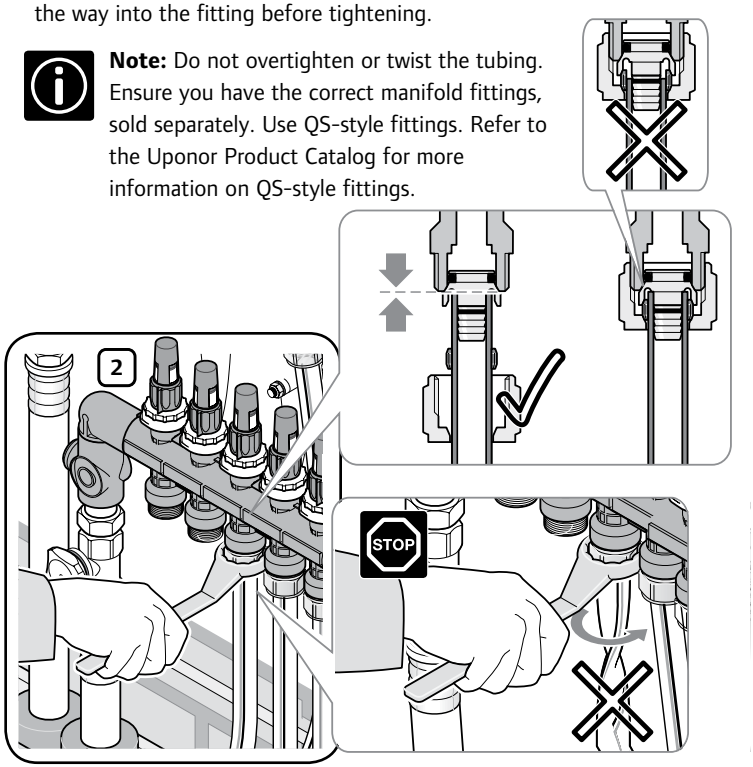


1. Cut the tubing with a tubing cutter to the correct length. The tubing should reach the end of the outlet thread; ensure there is no gap.

Note: Do not use a saw or anything similar to cut the tubing. Shavings may clog manifold valves.

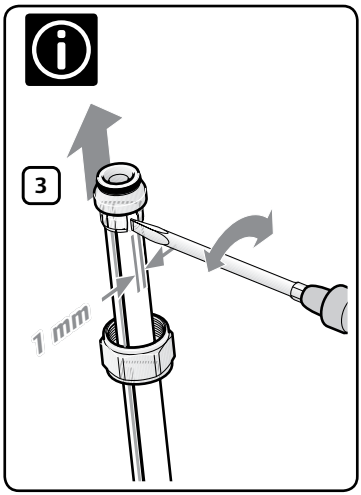
2. Tighten the manifold fitting with the appropriate wrench. Make sure the tubing is pushed all the way into the fitting before tightening.

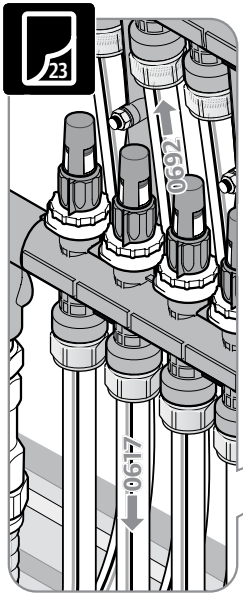
Note: Do not overtighten or twist the tubing. Ensure you have the correct manifold fittings, sold separately. Use QS-style fittings. Refer to the Uponor Product Catalog for more information on QS-style fittings.

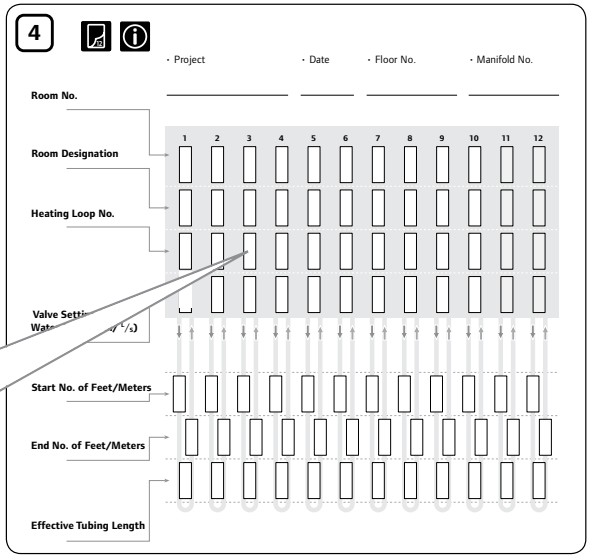


3. If you need to remove the fitting from the tubing, open the clamp ring with a screwdriver and remove the insert.

4. When all tubing is connected to the manifold, measure the length of each loop (subtract the length marking on the return line from the supply line, or vice versa). Record the measurements in **Section 12: Manifold Balancing Form** as this information is needed for balancing.







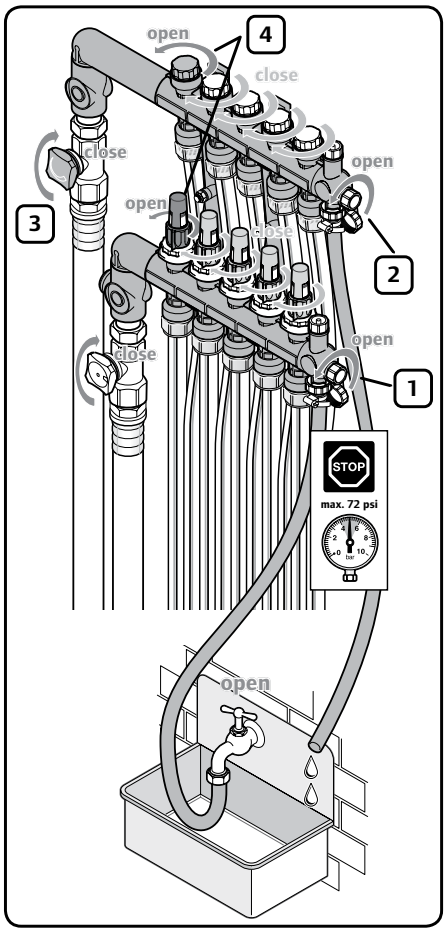
Section 7

Filling and Purging the Manifold

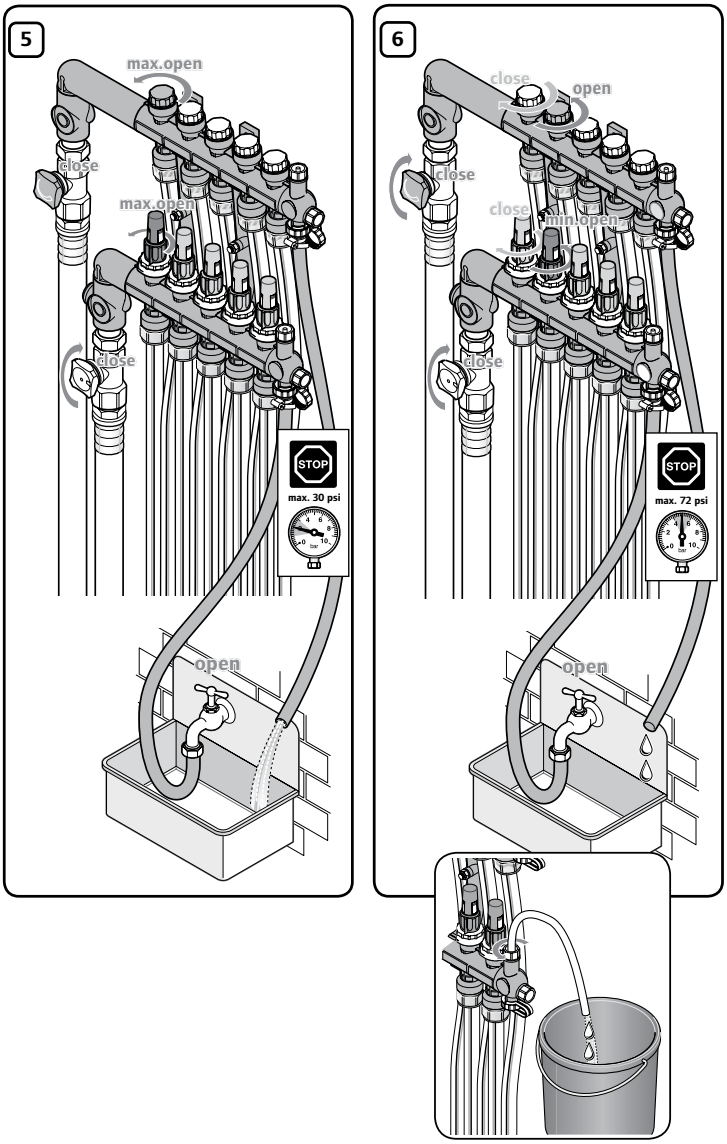
To ensure the manifold provides enough water for superior performance, fill and purge the system at the boiler or at the manifold.

If you choose to fill and purge at the manifold, see the following instructions.

1. Connect a water hose from a faucet to the fill valve on the supply manifold cap.
2. Connect a separate drain hose to the cap on the return manifold and place the other end into a large bucket or into a drain.
3. Close all valves on the manifold (both supply and return manifold), as well as the ball valves installed on the supply lines.
4. Open the valves for the first loop on the manifold.



5. Fill the loop with water and let the water flow until the water coming out of the hose is clear (i.e., no bubbles appear).
6. Repeat **Steps 1** through **5** to fill and purge each manifold loop.



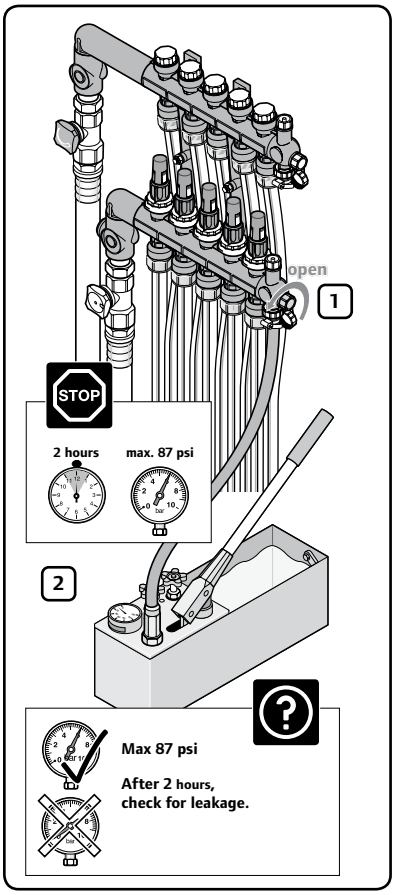
Section 8

Pressure Testing

To ensure the system is installed correctly and operating properly, pressure test the system.

1. Connect pressure testing equipment to the manifold and pressurize a maximum of 87 psi for two hours.
2. When the two hours have elapsed, check that the pressure rating is the same.

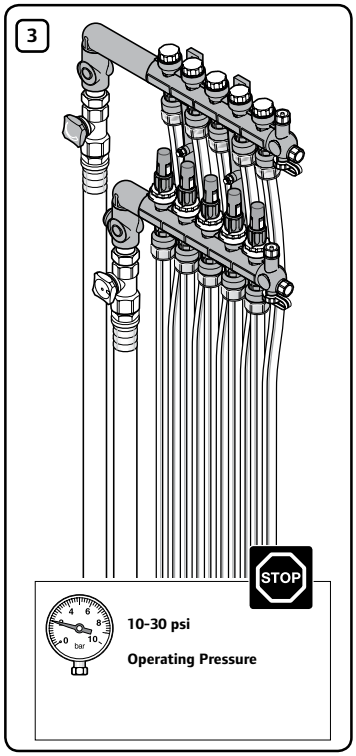
Note: Make sure all valves are open

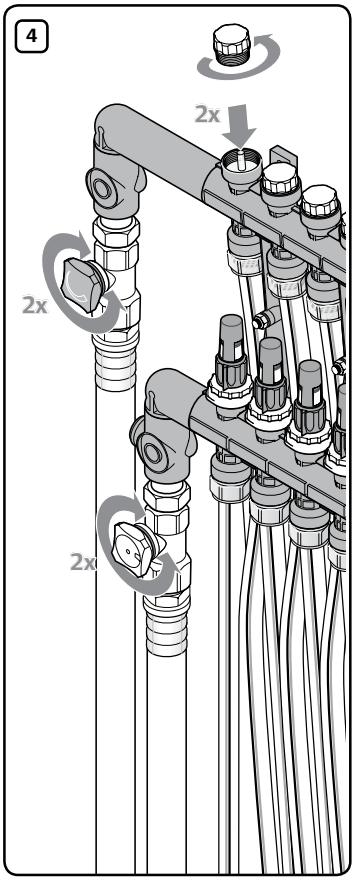


3. After the installation passes the pressure test, set the operation pressure.

Note: If you choose to test with air, the max pressure should be 100 psi. Sustain the pressure for 24 hours or according to local code.

4. To ensure all valves are working accurately, open and close all valves twice.





Section 9

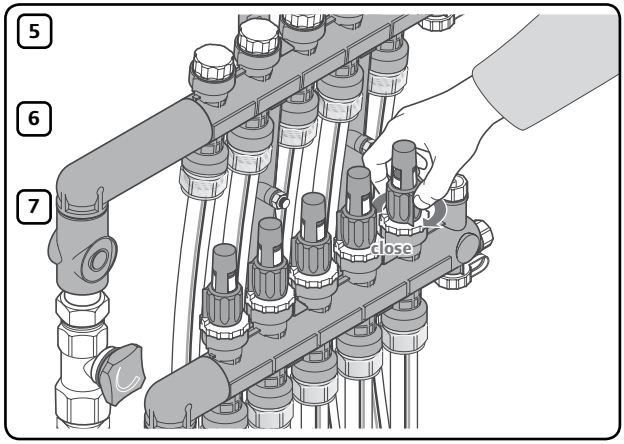
Adjusting Manifold Valves

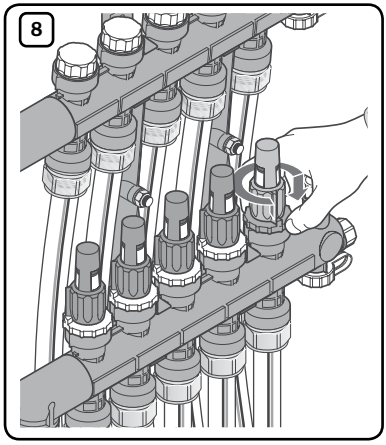
Balance the manifold system to ensure superior performance.

1. Use the manifold flow meters to balance the system.
2. Make sure the system is in operation and water is flowing through the manifold.
3. Turn the balancing valve until the desired flow in the loop is obtained.

Note: Visually check the flow meter window to ensure proper flow.

4. Lift and turn the adjustment ring to the set valve position and push it back down into the locked position.

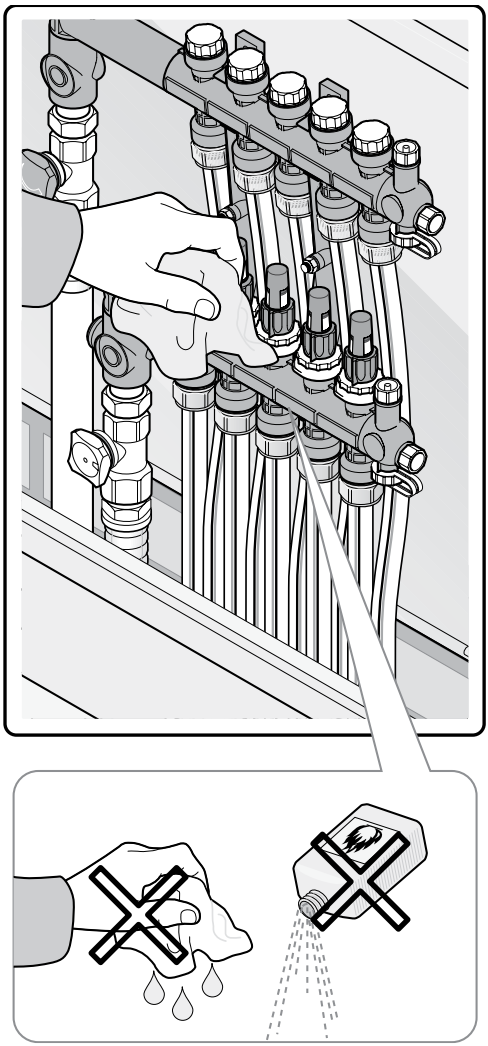




Section 10

Manifold Maintenance

The EP Heating Manifold does not require a maintenance schedule. However, Uponor recommends checking system components regularly.



Use a soft, dry cloth to clean the manifold as needed.

Do not use a damp cloth or cleaning agents.

Section 11
Technical Data

Technical Data	
Connection Dimensions	R32
Max. Operating Temperature and Pressure	
6 bar at 60°C 87 psi at 140°F	
5 bar at 70°C 72 psi at 158°F	
4 bar at 80°C 58 psi at 176°F	
3 bar at 90°C 44 psi at 194°F	
Max. Test Pressure (24 h, ≤ 86°F)	10 bar/145 psi
Max. Water Flow per Manifold	0.97 $^{L}/_{S}$ or 15.4 gpm
Cv Value Inlet/Outlet Valves	1.40
Adaptable Thermal Actuators	EP Heating Manifold Two-wire Actuator (A3030522) or Thermal Actuator, four wire (A3010522) with EP Heating Manifold Actuator Adaptor (A2671300)
Available Sizes	2 to 8 heating/cooling loop connections

Table 11-1: Technical Data

Chemicals

Do not use the chemicals outlined in **Table 11-2** with the EP Heating Manifold.

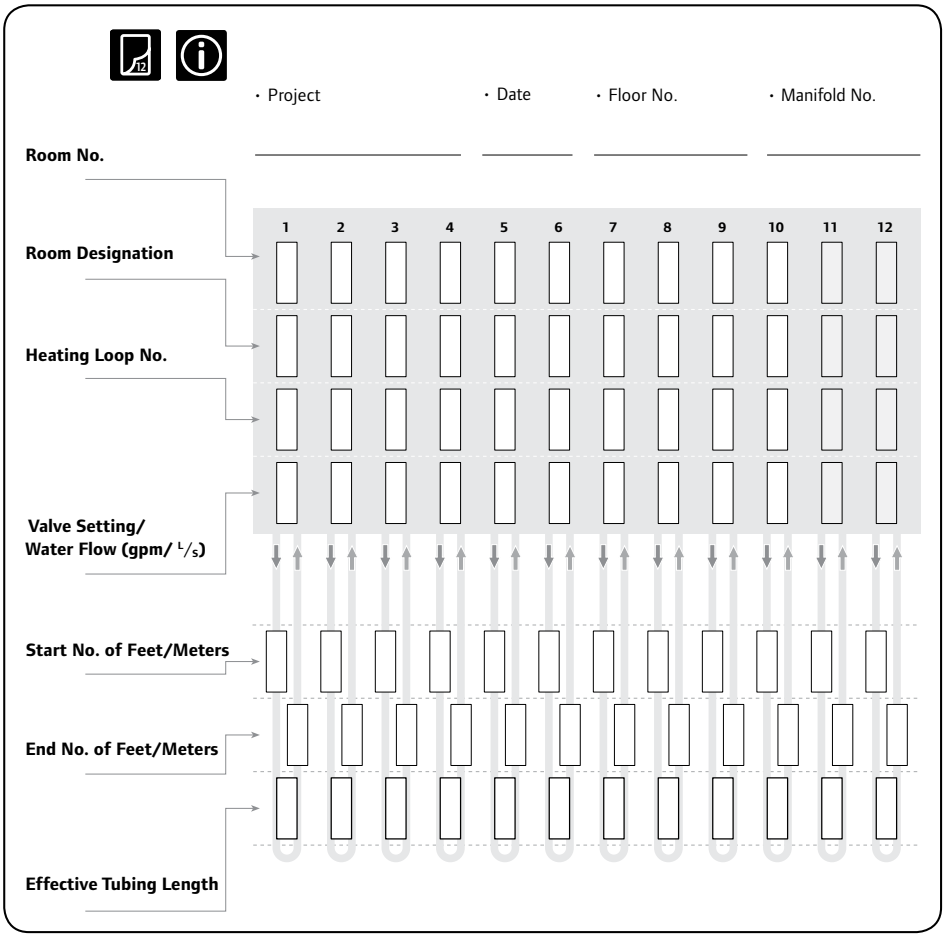
Chemical	Common Uses
Acetaldehyde	Disinfectants, Air Deodorizers, Lacquers/Varnishes
Acetone	Varnish Remover, General Solvent
Acids	Any situation requiring a high concentration of acidic chemicals
Aluminum Salts of Mineral Acids	
Ammonia	Cleansers, Bleach, Fertilizers
Ammonium Chloride	Adhesives, Shampoo
Ammonium Hydroxide	Cleansers, Bleach
n-Amyl Acetate	Paint and Lacquer Removers
Barium Chloride	Dyes, Pesticides
Bromine	Disinfectants, Dyes, Fuel Additives, Pesticides
n-Butanol	Paint Thinners
Calcium Chloride	Antifreeze, Fire Extinguishers
Calcium Thiocynate	Water Treatment (pool)
Chlorine (Concentrated)	Water Treatment
Chloroform	Fire Extinguishers, Dyes, Pesticides
Chlorox	Bleach
m-Cresol	Disinfectants, Insecticides, Photography Developers
Ethylene Dibromide	Insecticides, Fuel Additives
Ethylene Glycol	Antifreeze/coolant
Hexafluoroisopropanol	Electronics Cleansers
Hydrogen Peroxide	Disinfectants
Hydrogen Sulfide	Fuels
Methylene Chloride	Paint Removers, Degreasers, Aerosol Foam Sprays, Pesticides
Phenol	Disinfectants, Herbicides
Potassium Carbonate	Adhesives, Bleach, Cleansers
Potassium Permanganate	Disinfectants, Water Treatment (Pools)
Potassium Thiocyanate	Dyes, Photography Developers
Sodium Hydroxide	Paint Removers, Cleansers, Lye, Drain Cleaners
Sodium Hypochlorite	Bleach, Disinfectants
Stannic Chloride	Dyes, Soaps
Stannic Sulfate	Gypsum, Lacquer/Varnish
Sulfur Dioxide	Bleach
Tetrafluoropropane	Refrigerants, Lubricants

Table 11-2: Chemicals Inappropriate with EP Heating Manifold

Section 12

Manifold Balancing Form

When all tubing is connected to the manifold, measure the length of each loop (subtract the length marking on the return line from the supply line, or vice versa). Record the measurements in the form below as this information is needed for balancing.



Notes

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