

# Commercial Stainless-steel Manifold Instruction Sheet

## Overview

The Uponor Commercial Stainless-steel Manifold is the ideal solution for distribution and loop isolation in hydronic hot-water heating, chilled water, and radiant heating and cooling applications. The manifold features ball valves for easy loop isolation along with flow meters on the return manifold to balance the loops.

## Features

- 3-8, 10, and 12 loops
- 0-4 gpm flow meters
- 1½" distribution ball valves
- 1" loop isolation ball valves
- R25 connection for outlet fittings (sold separately)
- Outlet fittings available in ⅝" and ¾" compression or ⅝", ¾", and 1" ProPEX®

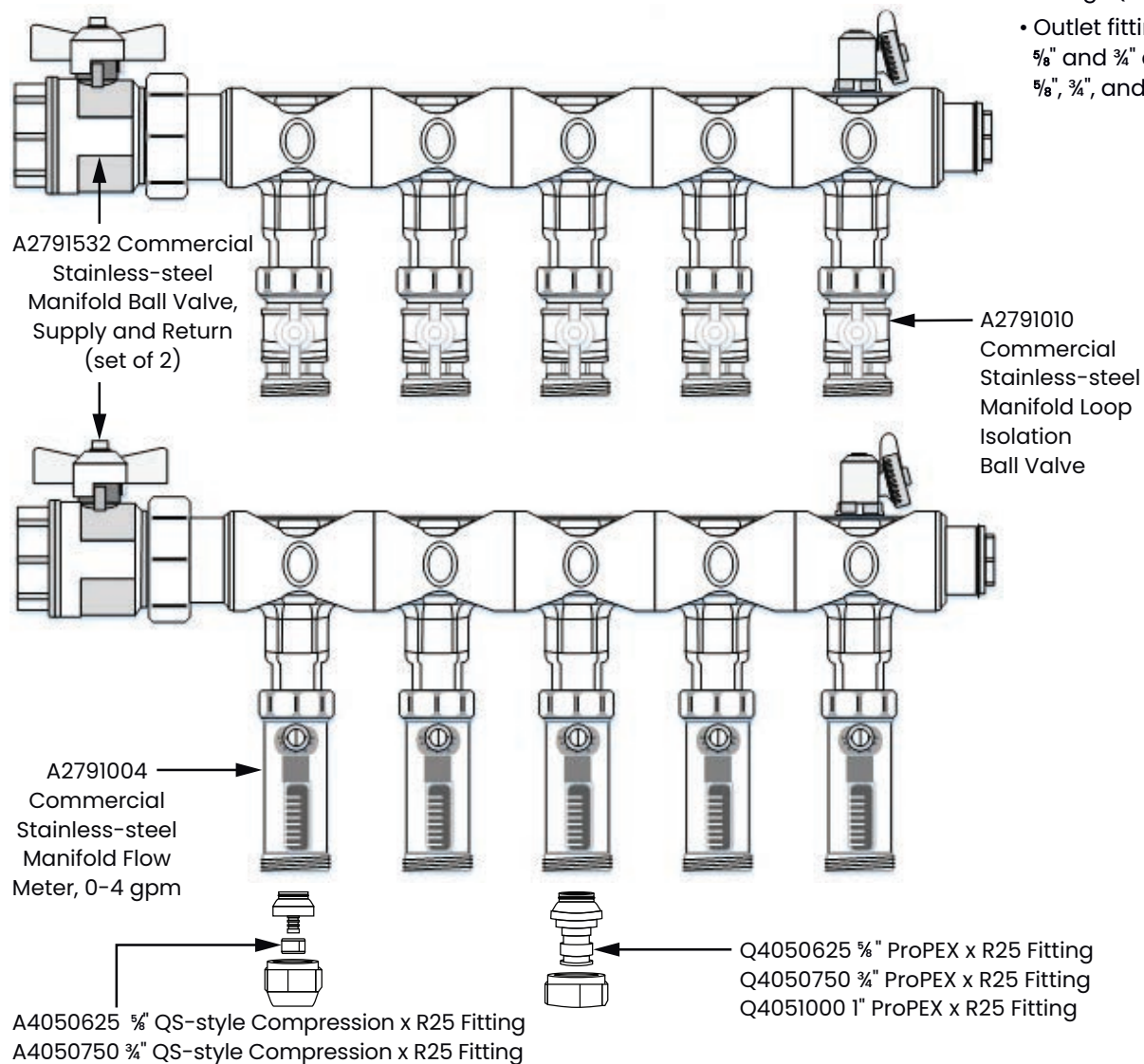


Figure 1: Commercial Stainless-steel Manifold

## Mount Manifold

Fasten the manifold using a rigid anchor and mounting screws. Mounting orientation does not influence the operational performance of the manifold. Can be mounted indoors or outdoors in an enclosure. Not approved for direct burial.

## Manifold Dimensions

Part Number	Loops	Length	Supply Height	Return Height	Supply Depth	Return Depth	Loop Spacing
A2740302	3	15.5"	8.2"	10"	3"	4.3"	3.15"
A2740402	4	18.7"					
A2740502	5	21.8"					
A2740602	6	25"					
A2740702	7	28.2"					
A2740802	8	31.3"					
A2741002	10	34.4"					
A2741202	12	40.8"					

**Table 1: Manifold Dimensions**

## Connect Distribution Pipe

The manifold comes prepackaged with Commercial Stainless-steel Supply and Return Ball Valves (part number A2791532) that feature 1/2" NPT x R32 connections. For straight connections to these ball valves, use Uponor ProPEX Brass Male Threaded Adapters (part number Q5521515) that feature 1/2" NPT x 1/2" ProPEX fittings. To connect piping routed from above or below, use the Commercial Stainless-steel Manifold ProPEX Male Elbow Adapters (part number A2791515) that feature 1/2" NPT x 1/2" ProPEX fittings.

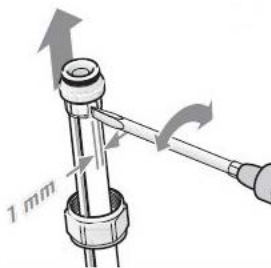
## Connect Piping Loops

Connect piping loops to the manifold using the ProPEX or QS-style connections featured on the previous page.

## Make QS-Style Connections

**Tools required:** PEX cutter, wrench, and screwdriver

1. Use a PEX cutter to square-cut the pipe.
2. While holding the pipe, place the nut thread side up over the pipe.



**Figure 2: Use a screwdriver to open clamp ring and remove fitting**

3. Place the compression ring over the pipe.
4. Insert the PEX pipe over the compression barb so the PEX pipe is pushed all the way into the fitting.
5. Use a wrench to tighten the compression nut to the manifold. Do not overtighten or cause the pipe to twist.

**Note:** To remove a QS-style fitting from the pipe, use a screwdriver to open the compression clamp ring. Then, remove the insert.

## Make ProPEX Connections

**Tools required:** PEX cutter and Milwaukee® M12™ or M18™ ProPEX expansion tools



**Figure 3: Square-cut the pipe**

1. Use a PEX cutter to square-cut the pipe.

**Note:** Do not use a saw or similar cutting tool as the shavings can potentially clog the manifold.



**Figure 4: Slide ProPEX ring onto pipe**

2. Slide the ProPEX ring over the end of the pipe until it reaches the stop edge.



**Figure 5: Expand the pipe**

3. Attach the proper-sized ProPEX expansion head to the expander tool and expand the pipe with the proper number of expansions (see **Table 2**).



**Figure 6: Insert fitting**

4. After expanding the pipe and ring, immediately remove the expansion tool and insert the fitting into the pipe until it reaches the collar. Hold the fitting in place for two or three seconds to ensure a proper seal.

Pipe Size	Milwaukee® ProPEX Tool		Uponor ProPEX Tool	
	M12	M18	Manual	100 and 150
3/8"	7	7	7	7
1/2"	9	8	9	9H*
1"	12	5	14	7H*

**Table 2: Recommended number of ProPEX expansions**

\*Refers to Uponor H-series expander heads.

## Pressure Test

It is acceptable to pressure test with either air or water. However, Uponor recommends pressure testing with air in radiant heating and cooling applications because it allows for easy leak detection during concrete pours and flooring installations. Using water can compromise the concrete or damage the finished floor.

1. Open and close the distribution supply and return ball valves twice to ensure free movement, then close the valves to isolate the manifold from the distribution piping.
2. Open and close the supply manifold loop ball valves twice to ensure free movement, then leave them in the open position.
3. Make sure the return manifold flow meters are in the full-open position.
4. Connect the Uponor Manifold Pressure Test Kit (E6122000) or other pressure test device. Uponor recommends a test pressure of three times the operating pressure, or at least 40 psi.  
**Note:** Maximum pressure when testing with air should not exceed 100 psi.
5. Visually check for leaking and monitor the pressure for the duration specified by local code. (A typical pressure test can range from two to 24 hours.)
6. If there is no reduction in pressure, the system is regarded as sealed.
7. After a successful pressure test, fill and purge the manifold.

## Fill and Purge Manifold

**Note:** Manifold is rated for 50% ethylene or propylene glycol mixture.

**Note:** Maximum operating temperature of 194°F (90°C) at 44 psi (3 bar).

**Tools required:** Two standard garden hoses and a flathead screwdriver

1. Connect a standard garden hose from a water source to the supply manifold.
2. Connect a standard garden hose from the return manifold to a drain or bucket.
3. Close the distribution supply and return ball valves.
4. Close all supply ball valves except for the first loop.
5. Using the flathead screwdriver, close all the flow meters on the return manifold except the loop being filled and purged.
6. Turn the square nut on the hose bib cap to open the fill and purge vent on top of the hose bib.
7. Turn on the water and fill the loop until all bubbles disappear.
8. Close the first loop ball valve and flow meter, and repeat steps 5-7 for the remaining loops.

## Balance Manifold

Balancing the manifold helps ensure the system will perform to the design specification.

**Important!** Be sure to complete system pressure testing first before balancing the manifold.

**Tools required:** Flathead screwdriver and manifold schedule

1. Open distribution supply and return ball valves.
2. Open all supply manifold loop outlet ball valves.
3. Open all return manifold flow meters to maximum flow.
4. Turn on system pump.
5. Refer to the manifold schedule for the proper flow for each loop, and adjust the flow meter until the desired flow is achieved.
6. Set desired flow as indicated on the manifold schedule for each of the remaining loops.

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