

Chapter 4:

Uponor distribution components

This section outlines the manifold sets available for use with radiant floor heating and cooling systems in residential and commercial applications.



Figure 4-1: Uponor stainless-steel manifold



Figure 4-2: Uponor TruFLOW™ manifold



Figure 4-3: Uponor engineered polymer (EP) manifold

Uponor stainless-steel manifold

The Uponor stainless-steel manifold is targeted for commercial and residential radiant heating and cooling applications, the Uponor stainless-steel manifold is available in 1" and 1¼" sizes and comes pre-assembled right out of the box for faster installs and greater material cost savings.

Features

- 1" and 1¼" manifold offering
- Competitively priced metal alternative
- Corrosion-resistant, stainless-steel barrel
- NPT-threaded ball valve for easy, cost-effective transition
- Balancing and isolation valves for complete loop isolation
- Compatible with all glycols used in radiant heating and cooling systems
- Integrated, full-port ball valves with temperature gauges
- Integrated flow meters for simple system balancing
 - 1" manifold features 1.5 gpm flow meters
 - 1¼" manifold features 2 gpm flow meters
- Temperature/pressure ratings:
 - 68°F (20°C) at 145 psi
 - 158°F (70°C) at 87.4 psi
 - 194°F (90°C) at 43.8 psi
- Pre-assembled and ready to install right out of the box

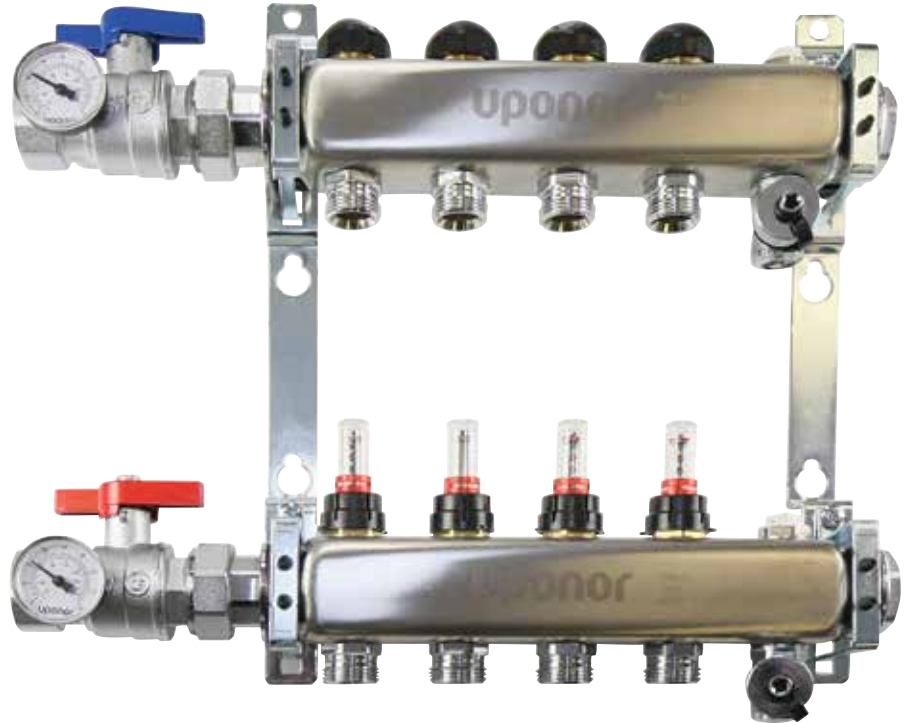


Figure 4-4: Uponor stainless-steel manifold

Stainless-steel manifolds exploded view

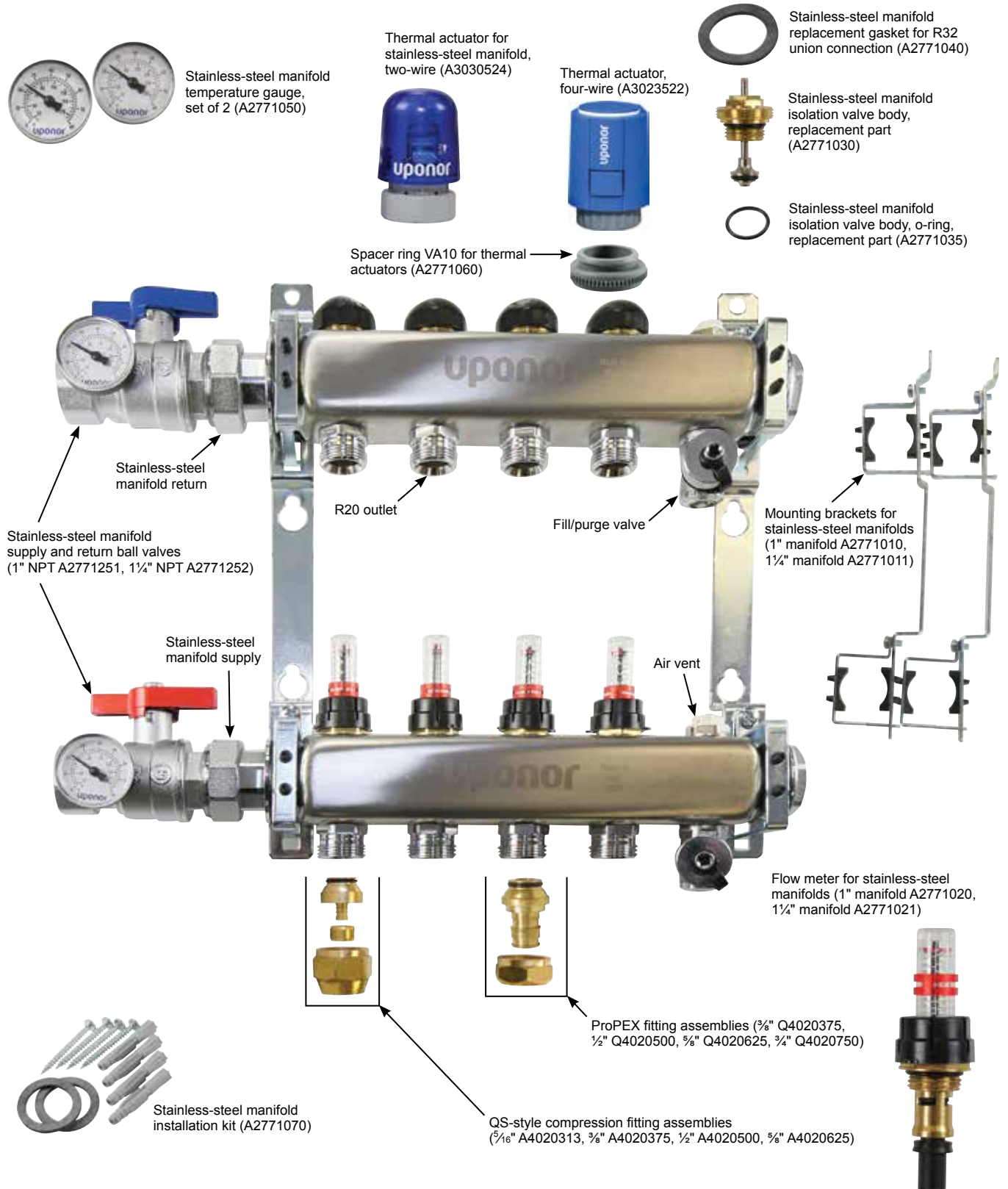


Figure 4-5: Exploded view of Uponor stainless-steel manifold

Uponor engineered polymer (EP) heating manifold

The Uponor engineered polymer (EP) heating manifold is constructed of thermoplastic, high-performance, advanced materials suitable for use under conditions of high impact, heat and moisture. They are a lightweight, economically priced and a sustainable choice for both residential and commercial radiant applications.

The EP heating manifold is rated with the following capabilities:

- 140°F at 87 psi
- 158°F at 72 psi
- 176°F at 58 psi
- 194°F at 44 psi

The manifold comes with a mounting bracket for fast and easy installation on a wall. Simply snap the manifold into the mounting bracket, and installation is complete.

The EP heating manifold is available in two through eight loops, and it accommodates 15.4 gallons per minute (gpm). Uponor also offers single loops to extend service up to 12 loops total. Refer to **page 25** for the exploded EP heating manifold view.

Balancing — Balance an EP heating manifold with the included visual flow meter.

Applicable piping — EP heating manifolds use Wirsbo hePEX and Uponor AquaPEX piping with ProPEX or QS-style fitting assemblies.



Figure 4-6: Uponor EP heating manifold

EP heating manifolds exploded view

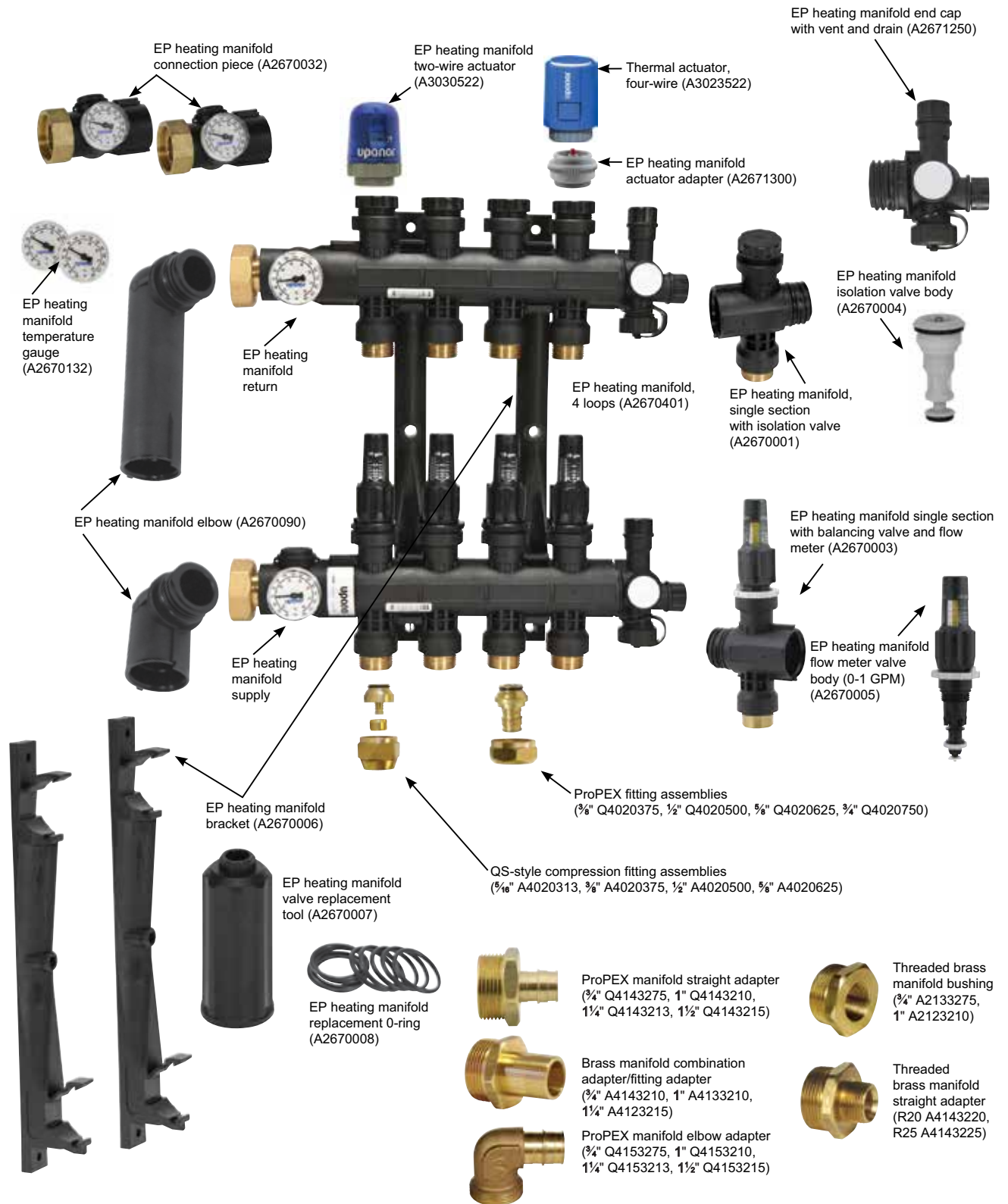


Figure 4-7: Exploded view of Uponor EP heating manifold

TruFLOW manifolds

TruFLOW manifolds are made of highly reliable extruded brass and come preassembled for easy installation. The manifold mounts on a durable metal bracket and features a basic end cap on the supply and an end cap with vent and drain on the return. The inlet side of the manifold is equipped with R32 unions to fit any manifold adapter currently offered. The supply manifold body features calibrated balancing valves. The return manifold comes with on/off valves to mount thermal actuators. Its high-flow capacity can handle up to 12-loop configurations.

Balancing — TruFLOW manifolds traditionally use balancing valves for ease in situations where loop lengths vary across the manifold body. To balance manifolds that do not have visual flow meters, refer to Performing Initial Flow Balance Calculations on **page 96**.

The TruFLOW manifold is also available in a valveless configuration for situations that do not require balancing on the loops. For example, a manifold that has only one zone, equal loop lengths and is configured in a reverse-return orientation would be a great application for the TruFLOW valveless manifold.

The maximum operating temperature and pressure for the TruFLOW manifolds and flow/temperature meters is 220°F at 145 psi. Refer to **page 27** for the exploded TruFLOW manifold view.

Applicable piping — TruFLOW manifolds support the following piping.

- ½", ¾" and 1" Wirsbo hePEX and Uponor AquaPEX piping with ProPEX fitting assemblies
- 5/16", 3/8", 1/2", 5/8" Wirsbo hePEX and Uponor AquaPEX piping with QS-style compression fitting assemblies

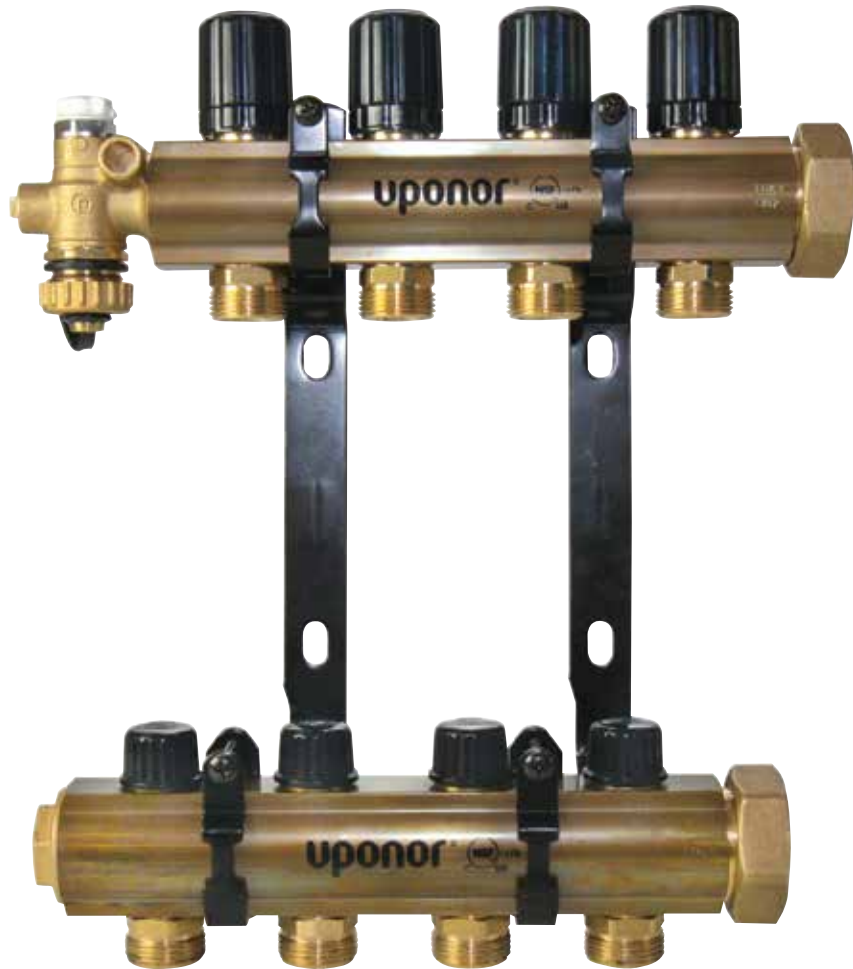


Figure 4-8: Uponor TruFLOW manifold

TruFLOW Classic and Jr. manifolds exploded view

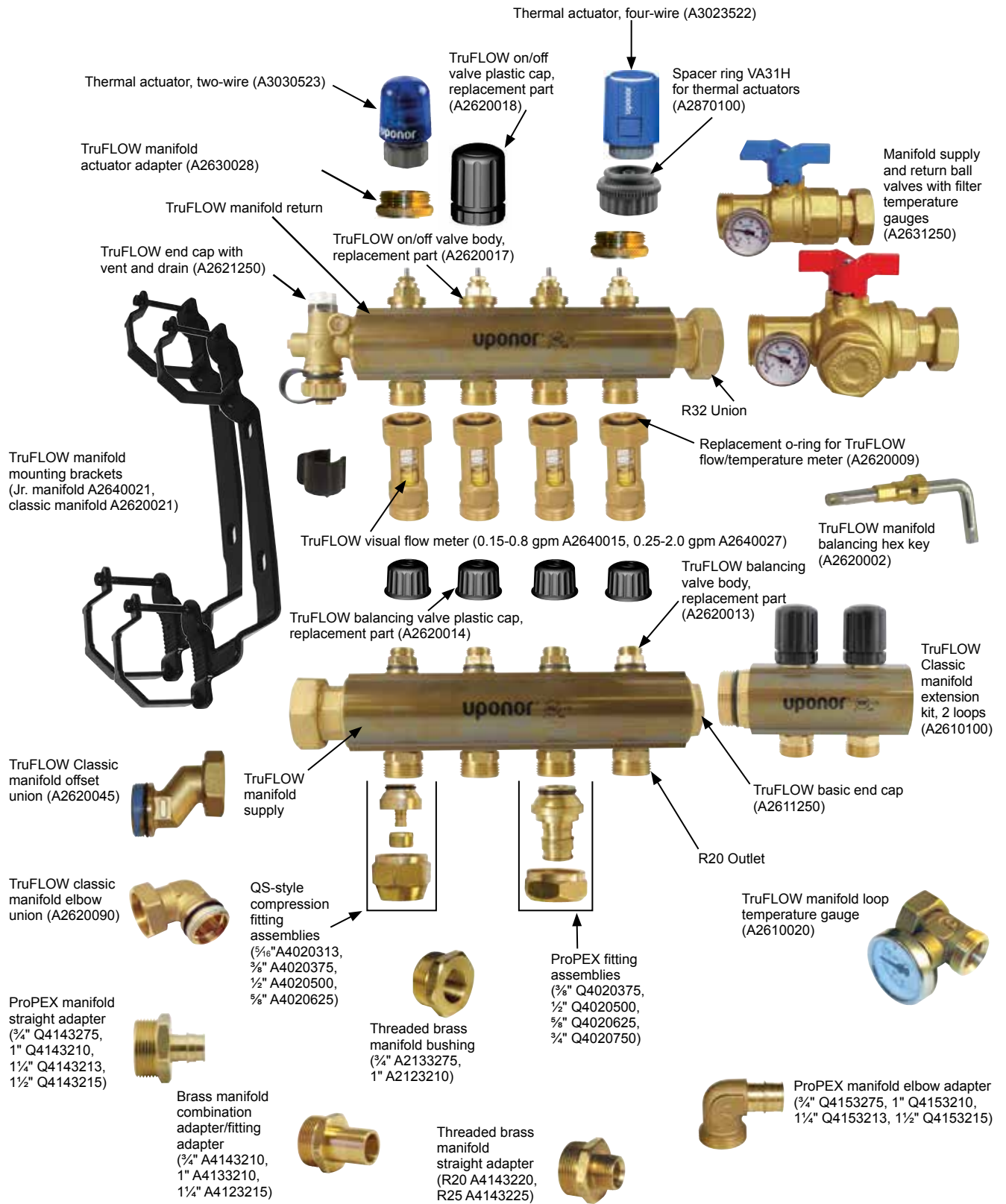


Figure 4-9: Exploded view of Uponor TruFLOW manifold

HDPE valveless manifolds

The HDPE manifolds are available in 3 and 4-inch dimensions. The manifolds feature 300-series stainless steel ProPEX fitting adapters preformed on the HDPE outlets. The manifold is designed to only support 3/4" and 1" PEX

piping. The HDPE manifolds do not offer an oxygen-diffusion barrier. Primary application is for direct burial in systems isolated with a heat exchanger.

Balancing — HDPE manifolds are not designed to balance across the manifold. All loop lengths must be within 3% of each other in length on the manifold.

Example

If the design calls for 267-foot loops on the manifold, then the range of loop lengths must fall within 263 and 271 feet. Three percent of 267 feet is 8 feet — 4 feet on either side of your target length.

Supply and return piping to the manifold should be installed in a reverse-return configuration to allow self-balancing across the manifold.

Applicable piping — HDPE manifolds support the following piping.

- 3/4" and 1" Wirsbo hePEX and Uponor AquaPEX piping with ProPEX fitting assemblies

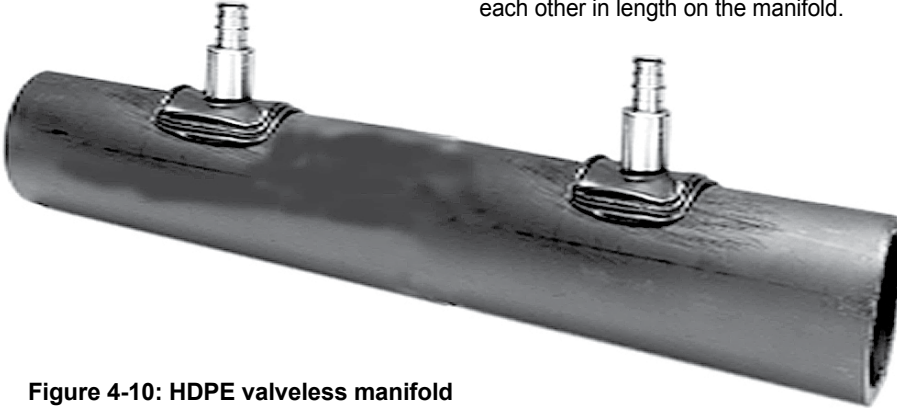


Figure 4-10: HDPE valveless manifold

Copper valved manifolds

These 2-inch copper valved manifolds are 48 inches long with 12 valved outlets. The outlets come in several configurations of ProPEX or male threaded connections. The outlets are valved with either a ball valve (isolation) or a ball valve/balancing valve combination (isolation with balancing).

Balancing — Remove the knurled safety cap from the valve. Using an Allen or hex key, turn the memory spindle clockwise until closed. To balance, turn the hex key (counterclockwise) the number of required turns from close. Replace the safety cap.

The longest loop on the manifold will be left full open. From closed to full open is 10 full turns of the memory spindle. Balance the other loops using this formula:

Loop to be balanced/longest loop on the manifold x 10 = number of turns from closed

Example

Loop to be balanced: 250 feet

Longest loop on the manifold: 300 feet

$$x = 250 / 300 \times 10$$

$$x = 0.83 \times 10$$

$$x = 8.3$$

The memory spindle for that 250-foot loop would be turned open 8.3 turns from closed.

Applicable piping — These copper valved manifolds support the following piping.

- 5/8" and 3/4" Wirsbo hePEX and Uponor AquaPEX piping with ProPEX or QS-style fitting assemblies



Figure 4-11: Copper valved manifolds