

MrPEX 1 1/4" Stainless Steel Manifold Installation Guide

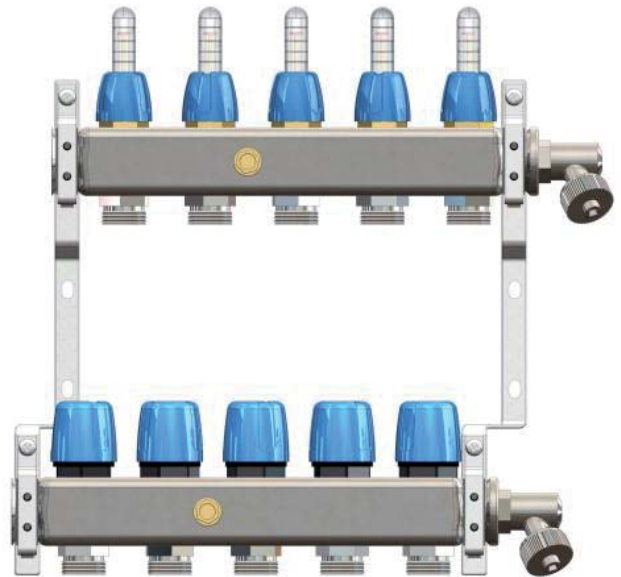
Design

MrPEX 1 1/4" Stainless Steel Manifold is made from high quality stainless steel, and is offered in 2 through 12 loop configurations. The manifold is delivered pre-mounted on brackets. The manifold comes with thermometer wells on the supply and return body (ready for an optional thermometer part 3230001 or remote sensors), and end caps with fill/drain valves that are also used for air purging.

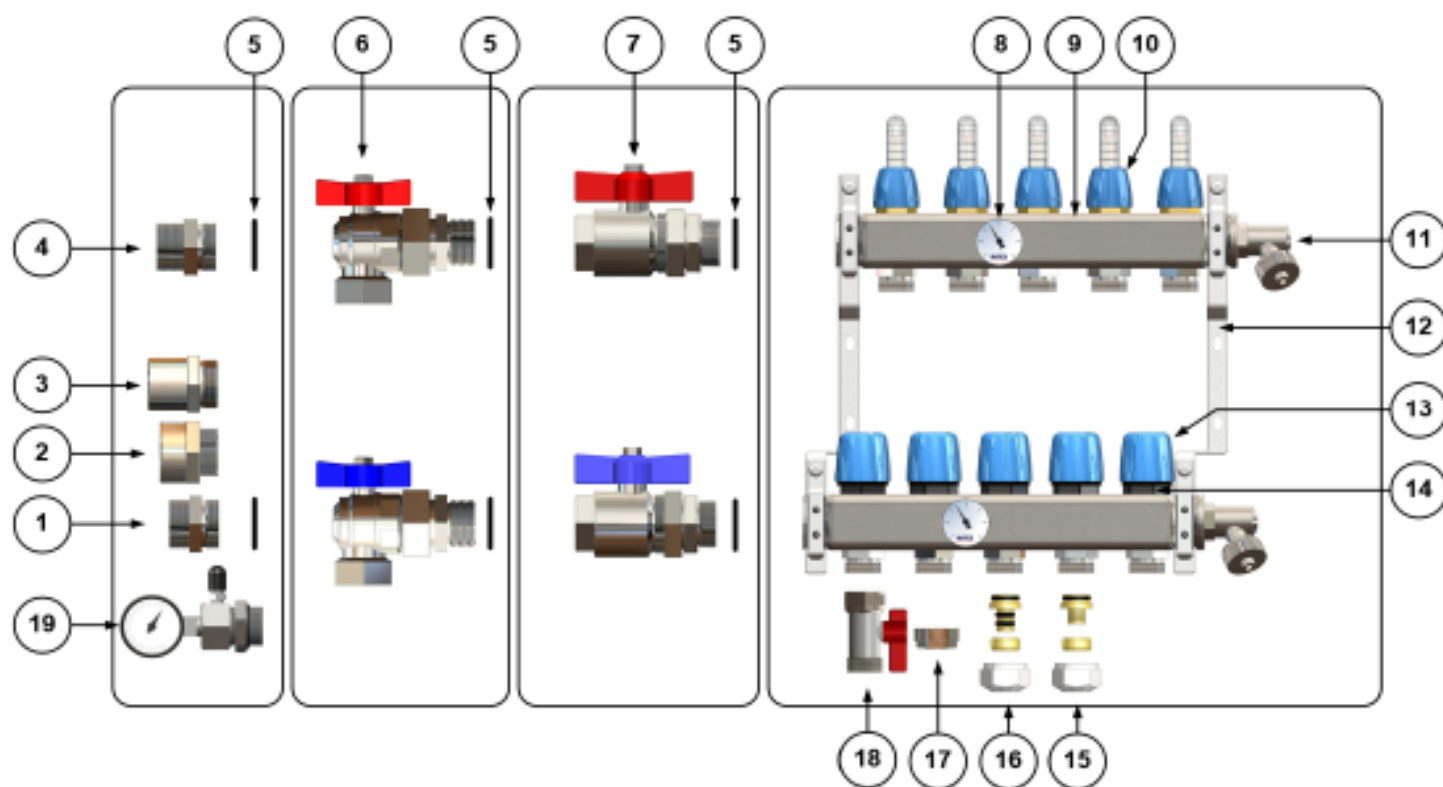
The upper manifold marked "SUPPLY" is fitted with balancing flowmeters with a readable range of 0.15 - 1.45 gallons/min. The built-in balancing valves allow for flow adjustment of each individual loop. The flowmeters are made of temperature and impact resistant plastic. The plastic is resistant to anti-freeze, as well as glycol and ethanol up to a 50% mix.

The lower manifold marked RETURN has manual on/off valves for shutting off flow to individual circuits. The manual knob can be removed to accommodate the MrPEX Actuator 5120700 (see MrPEX Valve Actuator section). Supply and return mains can be connected from the left or right side.

The manifold comes ready for a left-hand connection. Connection from the right can be done in two ways, either by removing the manifold body from the bracket and flipping it over, or, by loosening the end cap with vent and install on opposite side of the manifold body.



Part#	Description	Type
3230200	1 1/4" Stainless Steel Manifold, w/ Flowmeter, Fully Assembled	2 Branches
3230300	1 1/4" Stainless Steel Manifold, w/ Flowmeter, Fully Assembled	3 Branches
3230400	1 1/4" Stainless Steel Manifold, w/ Flowmeter, Fully Assembled	4 Branches
3230500	1 1/4" Stainless Steel Manifold, w/ Flowmeter, Fully Assembled	5 Branches
3230600	1 1/4" Stainless Steel Manifold, w/ Flowmeter, Fully Assembled	6 Branches
3230700	1 1/4" Stainless Steel Manifold, w/ Flowmeter, Fully Assembled	7 Branches
3230800	1 1/4" Stainless Steel Manifold, w/ Flowmeter, Fully Assembled	8 Branches
3230900	1 1/4" Stainless Steel Manifold, w/ Flowmeter, Fully Assembled	9 Branches
3231000	1 1/4" Stainless Steel Manifold, w/ Flowmeter, Fully Assembled	10 Branches
3231100	1 1/4" Stainless Steel Manifold, w/ Flowmeter, Fully Assembled	11 Branches
3231200	1 1/4" Stainless Steel Manifold, w/ Flowmeter, Fully Assembled	12 Branches



Manifold Options

#	Part#	Description	Type
1	3620002	Manifold Transition for 1 1/4" Stainless Steel	1" BSP to 3/4" NPT
1	3620003	Manifold Transition for 1 1/4" Stainless Steel	1" BSP to 1" NPT
2	3620004	Manifold Transition for 1 1/4" Stainless Steel	1" BSP to 1" FIP
3	3620001	Manifold Transition for 1 1/4" Stainless Steel	1" BSP to 1" and 1 1/4" CU
4	4372510*	NPT Transition	1" NPT to EK 25
4	4373210*	NPT Transition	1" NPT to EK 32
4	3620006*	Manifold Transition for 1 1/4" Stainless Steel	1" BSP to EK 25
5	3711390	O-rings, spare part for 1" BSP Manifold transitions	for 1 1/4" Stainless Steel Manifold
6	3620021	Manifold Transition Ball Valve for 1 1/4" Manifolds	1" BSP Angle Isolation Union to 1" Female NPT
7	3620019	Manifold Transition Ball Valve for 1 1/4" Manifolds	1" BSP Union to 1" Female NPT
8	3230001	Manifold Thermometer	for 1 1/4" Stainless Steel Manifold
9		MrPEX® 1 1/4" Stainless Steel Manifold 2 loop - 12 loop	
10	3721172	Flowmeter Valve, spare part	for 1 1/4" Stainless Steel Manifold
11	3610001	End Cap with Swivel Fill/Drain Valve	for 1 1/4" Stainless Steel Manifold
12	3721171	Mounting Bracket	for 1 1/4" Stainless Steel Manifold
13	3721173	Manual Plastic Cap, spare part	for 1 1/4" Stainless Steel Manifold
14	3721174	On/Off Valve Assembly, spare part	for 1 1/4" Stainless Steel Manifold
15	**	PEX Fitting Assembly	
16	**	PEX-AL-PEX Fitting Assembly	
17	3610003	Loop End Cap	EK 20
18	3610005	Loop Branch Ball Valve	EK 20 x EK 20
19	3610005	Pressure Test Kit, (100psi gauge, Air valve & Basic End Cap)	1" BSP

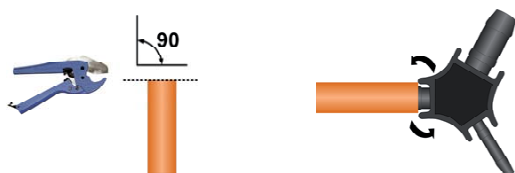
* Requires EK Compression fitting, see compression fitting section in MrPEX Price List

** see compression fitting section in MrPEX Price List

Connecting the pipes to the manifold using compression fittings

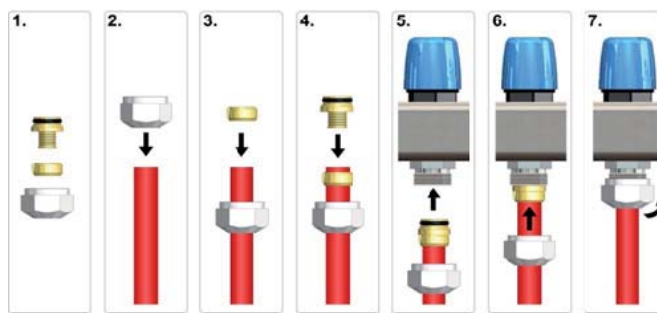
The Mr PEX® residential manifolds use a 20mm Eurokonus (EK 20) connection. You must use one of the Mr PEX® fitting assemblies that fit our manifold. Use the three piece EK compression fitting assembly for "MrPEX® PEXa Tubing" and "MrPEX® PEX-AL-PEX Tubing". Both types of tubing can be connected to our manifolds using these style fittings.

Start by making a square cut at the end of the tube even with the bottom of the manifold outlet nipple (without the fitting) using a suitable tubing cutter. If PEX-AL-PEX tubing is used, also ream the tubing using our reaming tool.



For three piece compression fittings:

- Slide on the large nut over the tubing (threads facing up).
- Slide the compression ring on the pipe.
- Put the insert into the end of the pipe and push it all the way in until it stops. You can use a non-metallic object such as a block of wood and gently tap it to make sure it is completely seated.
- Slide the compression ring up against the insert.
- Lubricate the o-ring at the top of the insert.
- Gently push the insert into the manifold seat making sure the o-ring doesn't get caught.
- Holding the tubing straight and in place, slide up the compression nut and thread it onto the manifold outlet. Tighten nut with suitable wrench. The tubing will relax slightly under the pressure, so the fitting needs to be tightened a second time after about 20–30 minutes to ensure tightness.



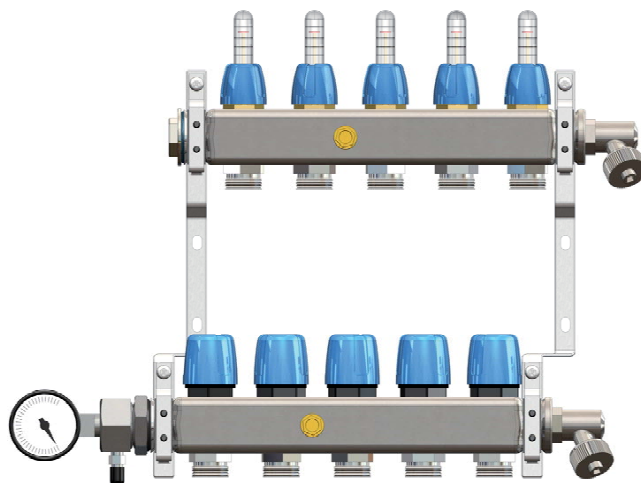
Pressure Testing The Manifold

Once all loops have been installed and connected to the manifold, it is time to pressure test the tubing and manifold.

- Connect a pressure test kit with a 0–100 psi gauge and an air valve to the manifold (3610005).
- Pressure test any portion of the system that will be embedded in the floors, walls or ceilings of the building to 40 - 60 psi or as indicated by local code, whichever is greater, for at least 30 minutes or for a sufficient period of time to determine if any leaks exist in the system. Reduce pressure to 30 psi prior to embedding the tubing. A 30–40 psi pressure test should remain during phases of construction to monitor system integrity.

NOTE: If tubing is to be left under pressure for a longer period, make sure to reduce the pressure to 30 psi.

NOTE: Consult local mechanical code for specific requirement in your area.



MrPEX Valve Actuator 24 V AC

Part# 5120700

To install a MrPEX actuator, first remove the blue plastic manual valve knob on the return manifold, the black plastic base is left on the valve and acts as the adapter for the actuator.

Do not install any actuators before pressure testing and venting.



Balancing the Manifold and Loops

Balancing the manifold is the key to having the right heat delivered to the correct loop, zone, or room. The manifold is the distribution point where all the loops connect. Depending on design requirements, each loop will cover a specific area, and subsequently, its length and heat demand will be different from that of the other loops on the manifold. To meet the heat demand of a particular loop, first, flow needs to be established, then, the pressure drop of the worst loop so that a pump can be selected.

The pump is sized to deliver the correct flow to the manifold. However, that's not the end of it. Water will travel the path of least resistance. A longer loop will have a higher pressure drop compared to a shorter loop, so, given the opportunity, the water will try to go the path of least resistance, through the short loop. This results in too much flow through the short loops (potentially over-heating), and too little flow (never satisfying the thermostat) in the long loops.

Balancing takes in account the heat demand (flow) needed and the pressure drop, and diverts the flow to accurately give all the loops their required amount. All MrPEX® Manifolds have loop flowmeters. Use the MrPEX® Design Software to complete the design, each manifold and loop will have a target design flow and pressure drop. The manifold info is used for pump sizing and the loop flow for balancing the loops by dialing in the correct flow on the flow meters.

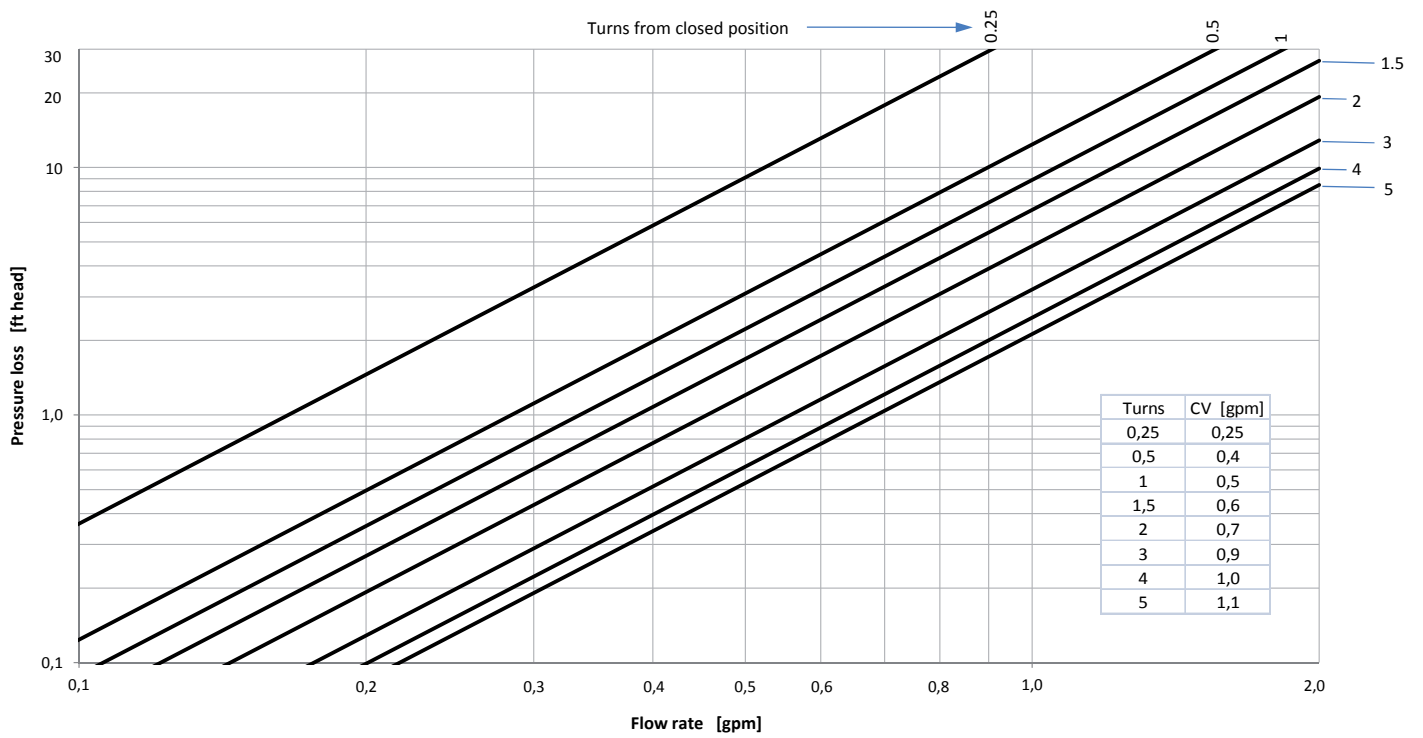
Always begin by ensuring that all of the manifold's return valves are fully open. Then adjust the manifold's flowmeter. Remove of the blue cap and adjust the flowmeter valve by hand (tools, e.g. pliers must not be used). Find the target flow requirement per loop in your MrPEX Design Software printout.

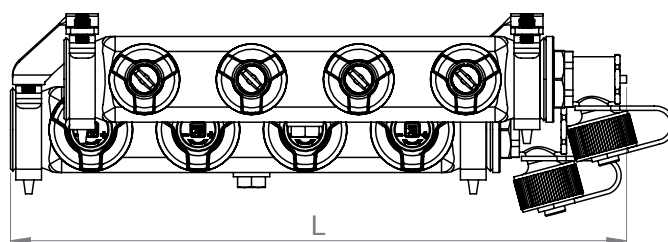
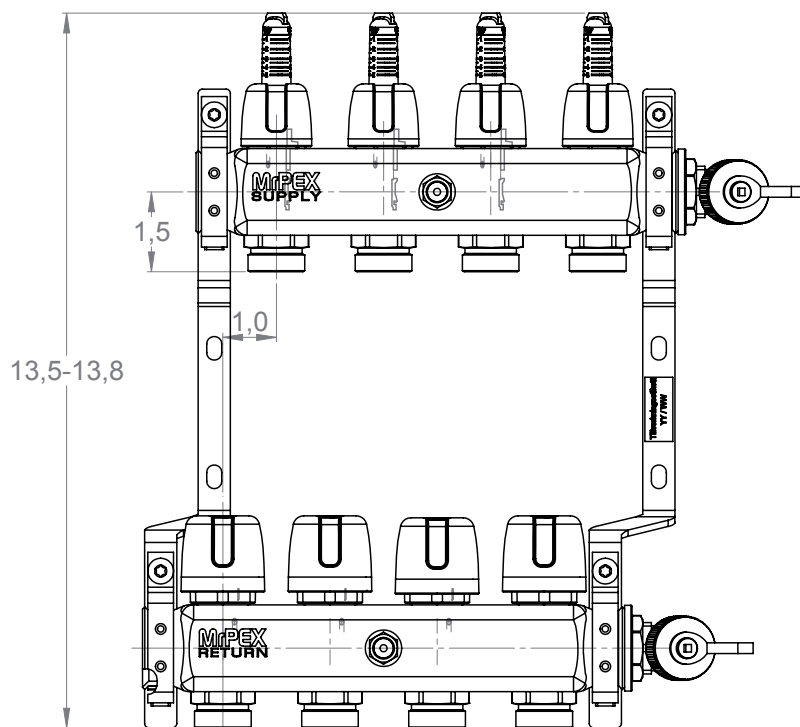
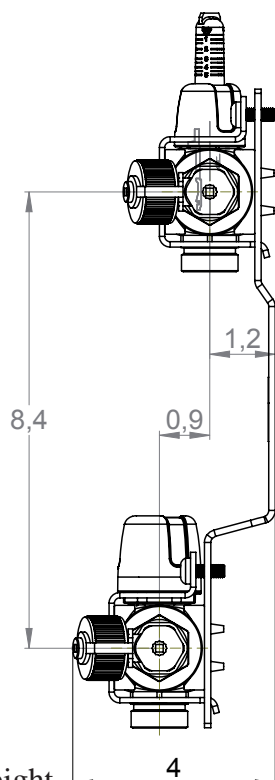
If a flow setter valve is used, first set the total flow to the manifold prior to starting to adjust the individual loop flows.



LKA 431

Characteristic graph diagram (flow control valve)





Loops	Length Inch	Weight lb
2	8,5	4,4
3	10,4	5,5
4	12,4	6,4
5	14,4	7,3
6	16,3	8,2
7	18,3	9,0
8	20,3	9,9
9	22,2	10,8
10	24,2	11,7
11	26,2	12,6
12	28,2	13,5

Technical data

Max. working pressure	145 psi
Max. cont. working temperature	160 °F
Max. instantaneous working	185 °F temperature (max 10 min/day)
Max. differential pressure	14.5 psi
Media 1	Water
Media 2	Water/ethylene glycol 50/50%
Media 3	Water/Ethanol 50/50%
Flow indication scale	0.15-1.45 gallons/min ±10%
Adjustment valve	Cv 1.13
Return valve	Cv 3.0
Connection heat feed	1" BSP female
Circuit connection	¾" male EuroCone (EK 20)
Filling/air bleeding	¾" - 11.5 NH
Thermometer	32-180 °F
Material, manifold	Stainless steel quality EN 10088-3 1.4306.
Material, nipples & isolation	Nickel-plated brass CW 617N EN 12165 Valve.
Material, bracket	Nickel-plated steel

