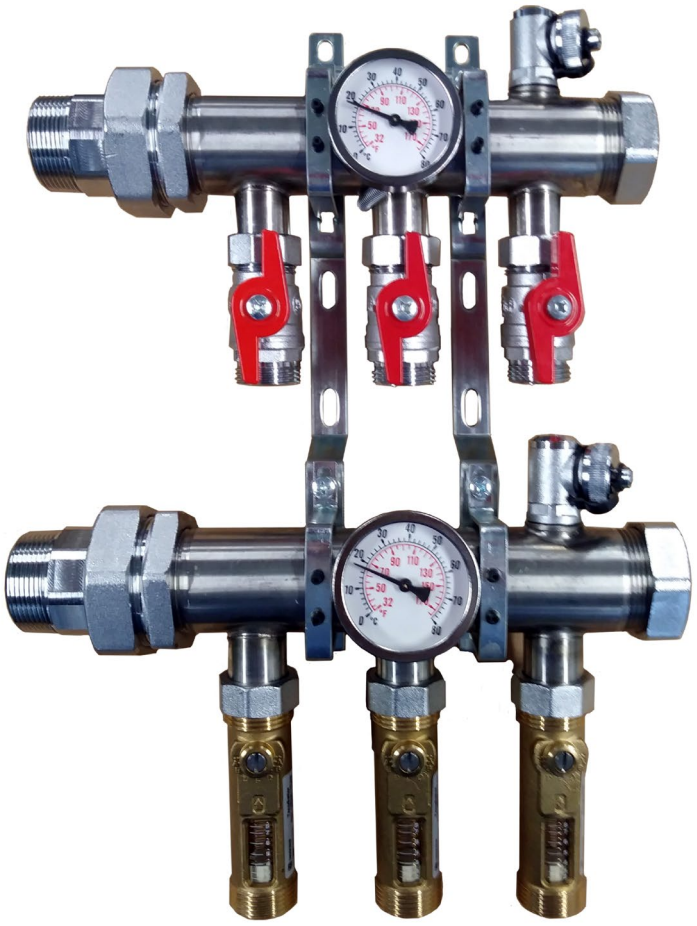
MrPEX® 1 ½" Stainless Steel Manifold

Installation Guide



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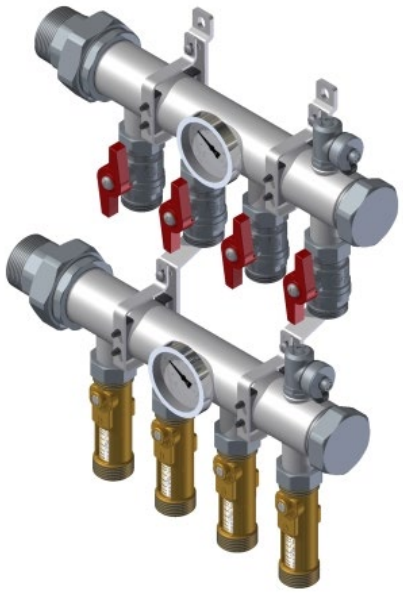
14799 Jackal St NW, STE 100
Ramsey, MN 55303

Design



MrPEX 1 ½" Stainless Steel Manifolds are made from high quality materials machined and welded to obtain the highest long-term strength and reliability and is designed for high flow systems while keeping pressure losses at a minimum. The 326 manifold series is offered in 3 through 13 loop configurations and is preassembled and mounted on brackets ready to install. Manifold comes with 1 ½" Male NPT x flat gasket union pieces for the connection of mains, basic end caps, strap-on thermometer, and a fill/drain valve on top of each body for easy filling and purging of the system.

The SUPPLY manifold loop connections come with G1" Flat Gasket x EK 25 on/off full port ball valves allowing isolation of each loop.

The RETURN manifold loop connections come with G 1" Flat Gasket x EK 25 inline visual balancing flowmeters with a readable range of 0 to 8 GPM allowing flow adjustment of each individual loop. The flowmeters are brass with a sight glass made of temperature and impact resistant techno polymer material anti-freeze resistant up to a 50% mix.

The manifold comes ready for a left-hand connection. Connection from the right can be done by removing the manifold body from the brackets and flipping them over.

Technical data

Maximum working pressure (at 70 °F)	145 psi
Maximum working temperature	212 °F
Fluids admitted	Water / Mixture of water with anti-freeze liquids
Flow indication scale	0 to 8 GPM (precision ± 10%)
Thermometer scale	32 to 175 °F
Supply full port Ball Valve	Cv 35
Return Balancing Flowmeter (wide open)	Cv 5.78
Manifold Union	1-1/2" NPT Male x G1-1/2" Female with Flat gasket
End cap	G1-1/2" Female
Ball valve connections	G1" Male Flat Gasket x G1" Eurocone (EK25)
Flowmeter connections	G1" Male Flat Gasket x G1" Eurocone (EK25)
Fill and Drain valve connections	3/4" GHT
Rubbers and seals	EPDM
Manifold body material	Stainless Steel AISI 304L (1.4307 EN10088)
Brass components material	ASTM B124 C37700 (CW614N and CW617N)
Bracket material	Carbon steel white zinc plated

This manifold is not intended for potable water applications

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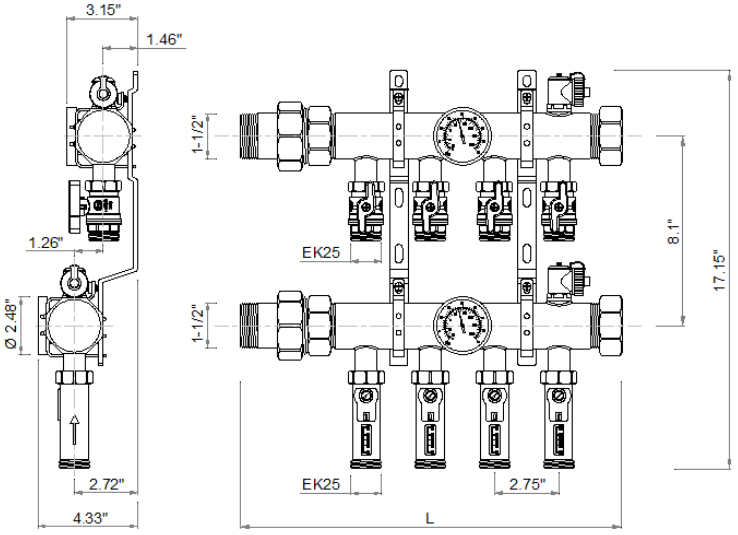
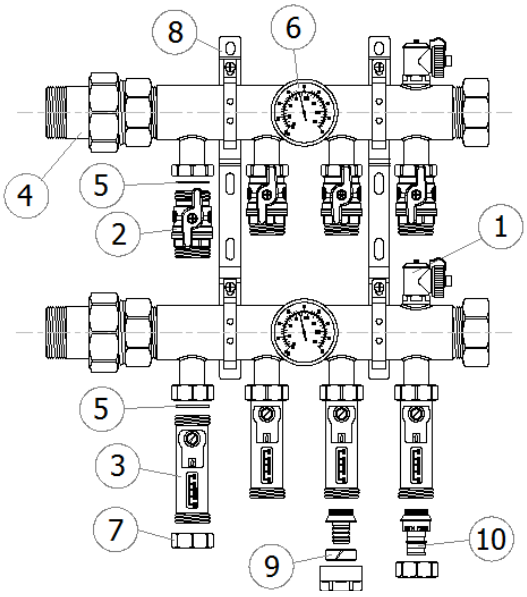
Dimensions



PART	TYPE	LENGTH L (inch)	Weight (lb)
3260300	3 Branches	11.80"	14.3
3260400	4 Branches	14.55"	17.1
3260500	5 Branches	17.30"	19.8
3260600	6 Branches	20.05"	22.6
3260700	7 Branches	22.80"	25.4
3260800	8 Branches	25.55"	28.1
3260900	9 Branches	28.30"	30.9
3261000	10 Branches	31.05"	33.6
3261100	11 Branches	33.80"	36.4
3261200	12 Branches	36.55"	39.1
3261300	13 Branches	39.30"	41.9

Accessories and Spare Parts



Position	Part#	Description	Type	Unit
1	3740002	Fill/Drain Valve, spare part, for manifold series 326XXXX	G1/2" x 3/4 GHT	Each
2	3761174	Branch On/Off Valve, spare part	G 1" Flat gasket x EK25	Each
3	3761172	Inline Flowmeter, spare part	G 1" Flat gasket x EK25	Each
4	3760001	Union Connection for manifold series 326XXXX, spare part	G 1-1/2" Female x 1-1/2" NPT	Set of 2
5	3761176	Flat Gasket 1", spare part	Rubber EPDM 60 SH	Each
6	5240748	Strap On Thermometer with spring, spare part	32°F ÷ 176 °F	Each
7	3610004	Loop Cap for manifolds G1"	G1" for EK25	Each
8	3761171	1-1/2" Manifold Bracket, spare part, for manifold series 326XXXX		Set of 2
9	4320625	PEX Fitting Assembly (3 Pieces) for EK25	5/8 to EK25	Each
9	4320750	PEX Fitting Assembly (3 Pieces) for EK25	3/4 to EK25	Each
10	4360625	PEX Expansion Fitting Assembly F1960	5/8 to EK25	Each
10	4360750	PEX Expansion Fitting Assembly F1960	3/4 to EK25	Each

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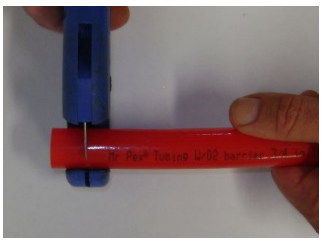
Connecting the mains to the manifold

The manifold is supplied with 1 ½" Male NPT x flat gasket union for the supply and return. Remove the 1 ½" Male tail piece from the union and connect to a ball valve (supplied by others) using appropriate thread seal such as Teflon® tape or similar prior to connecting the manifold body. Make sure the EPDM Gasket and connection is free from dirt before assembly.
NOTE: To avoid damage to the supplied thermometers, install with supplied spring only after the installation is complete.

The union pieces and the end caps are factory assembled on the manifold body with high strength thread lock. If there is a need to remove any of these components, you will first need to heat the connection with a heat gun prior to disconnecting. Due to possible over heating of the EPDM gasket or other components, please disconnect the inlet union and gasket and any loop valves to avoid any damage.

Connecting the pipes to the manifold

The MrPEX® Stainless Steel Manifolds have G1" Eurocone (EK25) loop connections. To connect PEX and PEX-AL-PEX pipes, use the appropriate MrPEX® compression fittings or cold expansion fittings that fit our manifolds (see MrPEX® Part Catalog).



Start by making a square cut at the end of the tube even with the bottom of the ball valve or of the flowmeter (without the fitting) using a suitable tubing cutter. If PEX/AL/PEX Tubing is used, also ream the tubing by using our reaming tool.

Compression fitting assembly steps are:
1 – Slide on the nut and the compression ring on the pipe
2 – Put the insert into the end of the pipe and push it all the way in until it stops. Insert should be fully inserted into the pipe
3 – Push the insert into the manifold connection seat making sure the O-ring doesn't get pinched. Some saliva or silicone spray may help.
4 – Holding the tubing straight and in place, slide up the compression nut and thread it onto the connection until hand tight. 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 to 30 minutes to ensure tightness.

Expansion fitting assembly steps are:
1 – Push the brass insert into the manifold connection seat making sure the O-ring doesn't get pinched. Some saliva or silicone spray may help.
2 – Thread the nut onto the connection and tighten with suitable wrench.
3 – Slide the PEX reinforcement ring onto the pipe making sure its fully seated and expand the pipe using a correct tool, and right away push pipe onto the barb all the way until it fully seats.
4 – Allow at least 15-20 min for pipe to fully seat before pressure testing. If in cold weather situation it can take much longer for fittings to seat. A heat gun can be used to apply some warm air to speed up the process.

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Pressure Testing the Manifold

To ensure the system is installed correctly and without leaks, it is necessary to do a pressure test. The pressure test can be done with pressurized air or water. However, due to the risk of water freezing and damaging the system, MrPEX® recommends air testing.

To make the test, connect the MrPEX® pressure test kit with a 0 to 100 psi gauge and an air valve, or other pressure test device, to the manifold. Pressure test any portion of the system that will be embedded in the floors, walls or ceilings of the building to 40 to 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 appears during the test. Reduce test pressure to 30 psi prior to embedding the tubing. A 30 to 40 psi pressure test should remain during phases of construction to monitor system integrity.

Note 1: If tubing is to be left under pressure for a longer period, make sure to reduce the pressure to 30 psi
Note 2: Consult local mechanical code for specific requirement in your area
Note 3: Maximum pressure during the test should not exceed 145 psi

Filling and purging the manifold

To ensure proper performance, it is important to fully fill the system with clean water and purge all the air contained. In case of underfloor heating systems is suggested to do this operation directly at the manifold.

The simple steps to fill and purge the manifold are as follows:
1 – Close the inlet supply and return ball valves to the manifold.
2 – Connect a hose from a safe water source to the fill valve on the supply manifold. Another hose should be connected to the fill valve positioned on the return manifold. The end of the hose connected to the return need to be placed into a large bucket or into a drain within view.
3 – Close all flowmeters and on/off ball valves on the manifold.
4 – Open the fill valves on supply and return manifolds by using the square tool on the caps of the valves. After this operation the water fills the supply manifold but doesn't go into the circuits because the ball valves are closed.
5 – Open the loop ball valve and the flowmeter of the first loop. The water flows into the circuit and pushes the air out. Continue filling until no more bubbles are visible in the exit water or bucket.
6 – When the first circuit is filled, close first the flowmeter, and then the corresponding ball valve
7 – Repeat steps 5 and 6 to fill and purge each manifold loop. Purging/filling one circuit at a time, ensures that all the air gets removed from each loop
8 – When all circuits are filled, close the fill and drain valve positioned on the return manifold and subsequently the fill and drain valve of the supply manifold. Remove the hoses from the fill valves.
9 – Open all the on/off ball valves and all flowmeters, and then use the fill and drain valves that are positioned on the top of each manifold body, as manual air vent to remove the remaining air in the manifold body and afterwards repositioning the safety valve caps
10 – Once the mains are totally filled and purged, open the manifold supply and return ball valves

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Balancing the Manifold and Loops – Inline Flowmeters

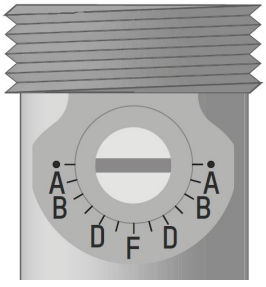
The MrPEX® 326 manifold series is equipped with G 1" Flat Gasket x EK 25 inline visual balancing flowmeters with a readable range of 0 to 8 GPM allowing flow adjustment of each individual loop. The flowmeters are brass with a sight glass made of temperature and impact resistant techno polymer material anti-freeze resistant up to a 50% mix.

Installation and Operation

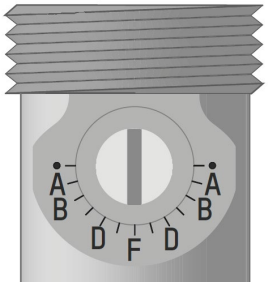
The flowmeter can be installed in horizontal, vertical or inclined position. The installation should be done with an appropriate wrench by using only the two flat parts located on the body. Avoid applying excessive efforts in other parts of the flowmeter that could produce damage. **Care should be taken that the arrow is pointing in the direction of the flow**. The flow measurement is based on the principle of a baffle float with return spring integrated into the housing. By opening and closing an integrated mini-ball valve, it is possible to adjust the water flow. The balancing can be carried out with a screwdriver at the adjusting stem positioned on the top of the flowmeter. When the notch in the stem correspond to the flow direction the flowmeter is wide open, while when the notch in the stem is perpendicular to the flow direction the flowmeter is totally closed. **The reading position is the bottom line of the baffle float.**

Technical data

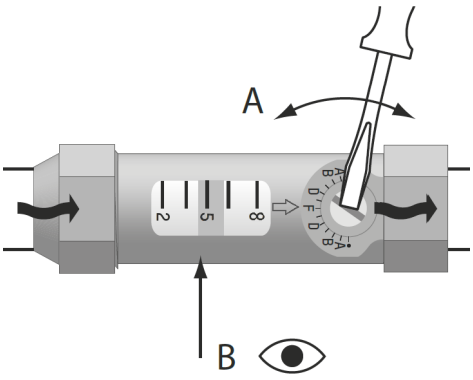
Maximum working pressure (at 70 °F)	145 psi
Maximum working temperature	212 °F
Fluids admitted	Water / Mixture of water with anti-freeze liquids
Flow indication scale	0 to 8 GPM (precision ± 10%)
Connections	G1" Male Flat Gasket x G1" Eurocone (EK25)
Brass components material	ASTM B124 C37700 (CW614N and CW617N)



TOTALLY CLOSED



WIDE OPEN



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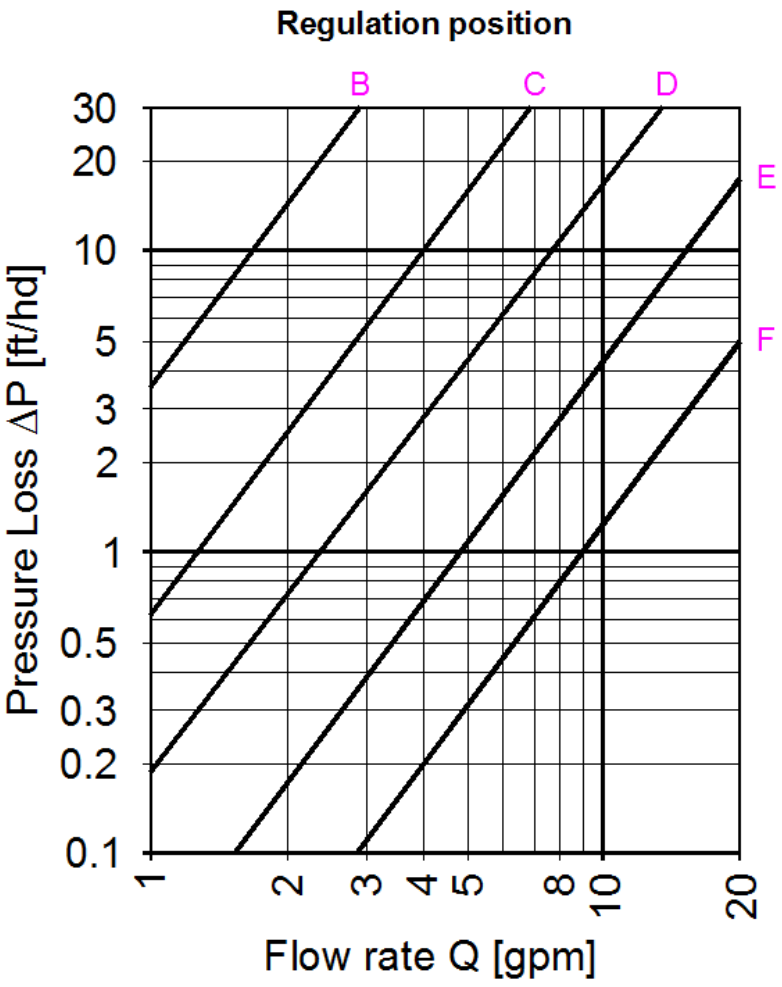
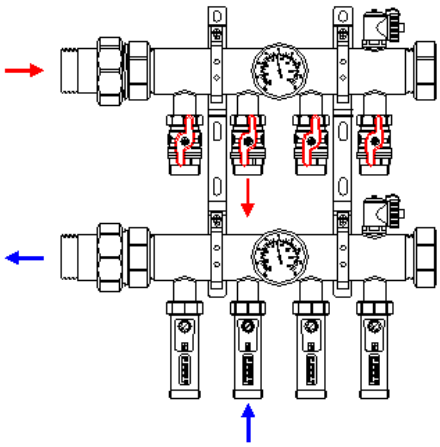
Characteristic diagram

The balancing of the loops can be easily done by turning with a screwdriver the notch in the stem of the flowmeter. With circulator switch on is it possible to see that the flow in the loop increases when the notch passes from the position perpendicular to the flow direction to the position parallel to the flow direction.
The flow through the loop is immediately readable on the flowmeter scale printed on the sight glass by looking the bottom line of the float.
The high capacity flowmeters assembled on the Stainless-Steel Manifolds 326 series can be balanced also by using the characteristic diagram, or the CV factors that are defined for the stem positions and identified with letters from **A** to **F**.
Generally, for this flowmeter the balancing positions most used corresponding to letters **C**, **D** and **E**.
The letter **F** corresponds to the Full Open position. The Closed position is with notch perpendicular to the flow direction and corresponds to the signed on the body point "•" .





Regulation Position	CV
A	-
B	0.35
C	0.82
D	1.55
E	3.10
F - Fully Open	5.78

Supply Ball Valves Fully Open

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