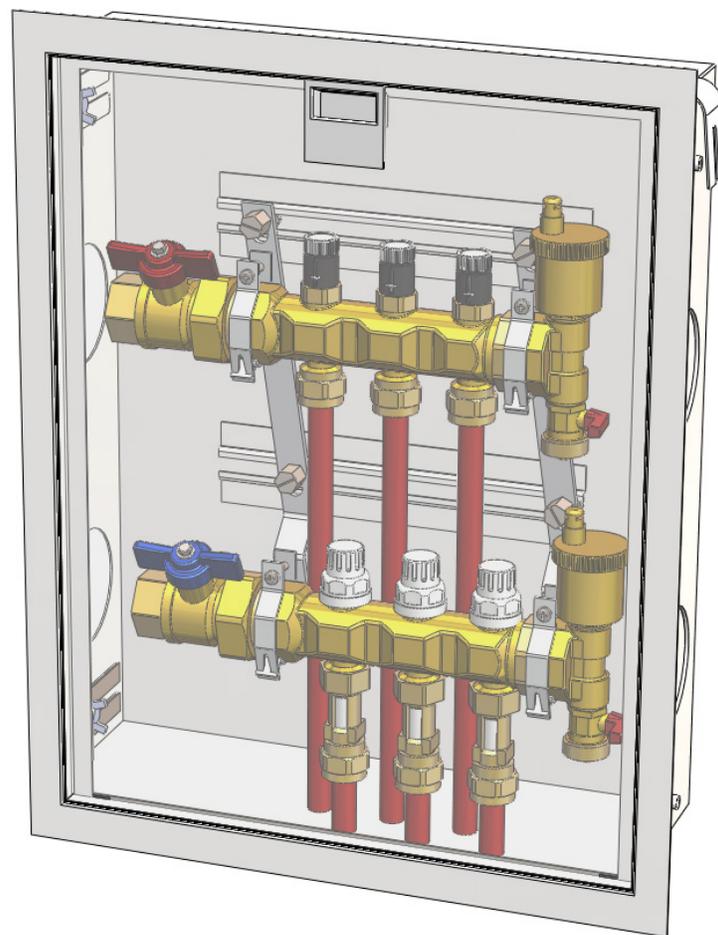

Product Information

Brass Manifolds

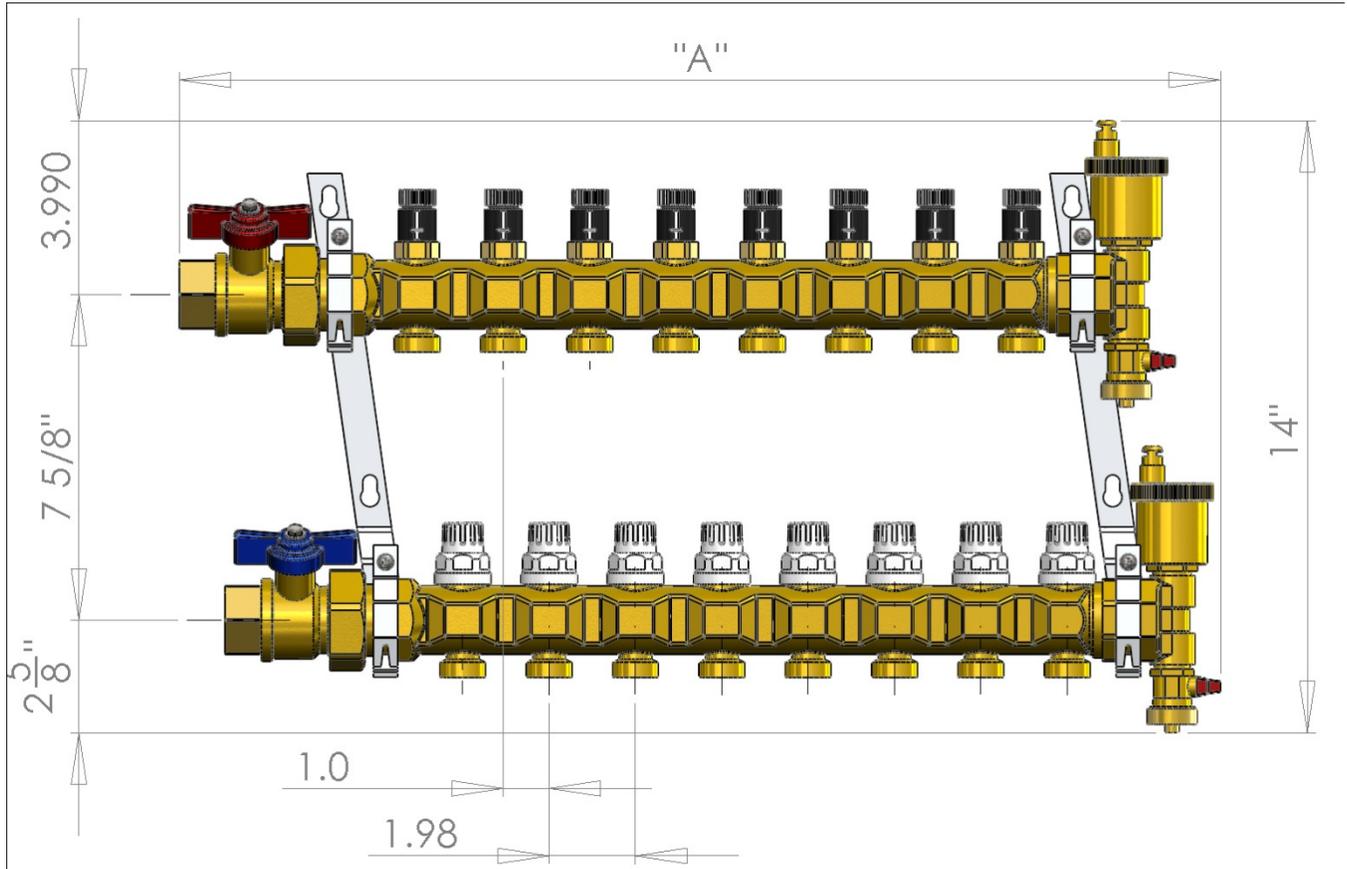


Version A

Introduction

Infloor offers a complete line of brass manifolds for radiant heating applications. This guide explains the how the manifolds work, the setup procedure and the accessory parts for the manifolds. These manifolds offer a lot of flexibility in how the system can be designed and implemented.

Dimensions



1" NPT Connection

Loops	Part Number	"A"	Weight (lbs)
3	22010	13 7/8"	16.1
4	22011	15 7/8"	17.3
5	22012	17 7/8"	18.5
6	22013	19 7/8"	20.9
7	22014	21 7/8"	22.4
8	22015	23 7/8"	23.5
9	22016	25 3/4"	25.3
10	22017	27 3/4"	27.1
11	22018	29 3/4"	28.8
12	22019	31 3/4"	30.4
13	22020	33 3/4"	32.1

1 1/4" NPT Connection

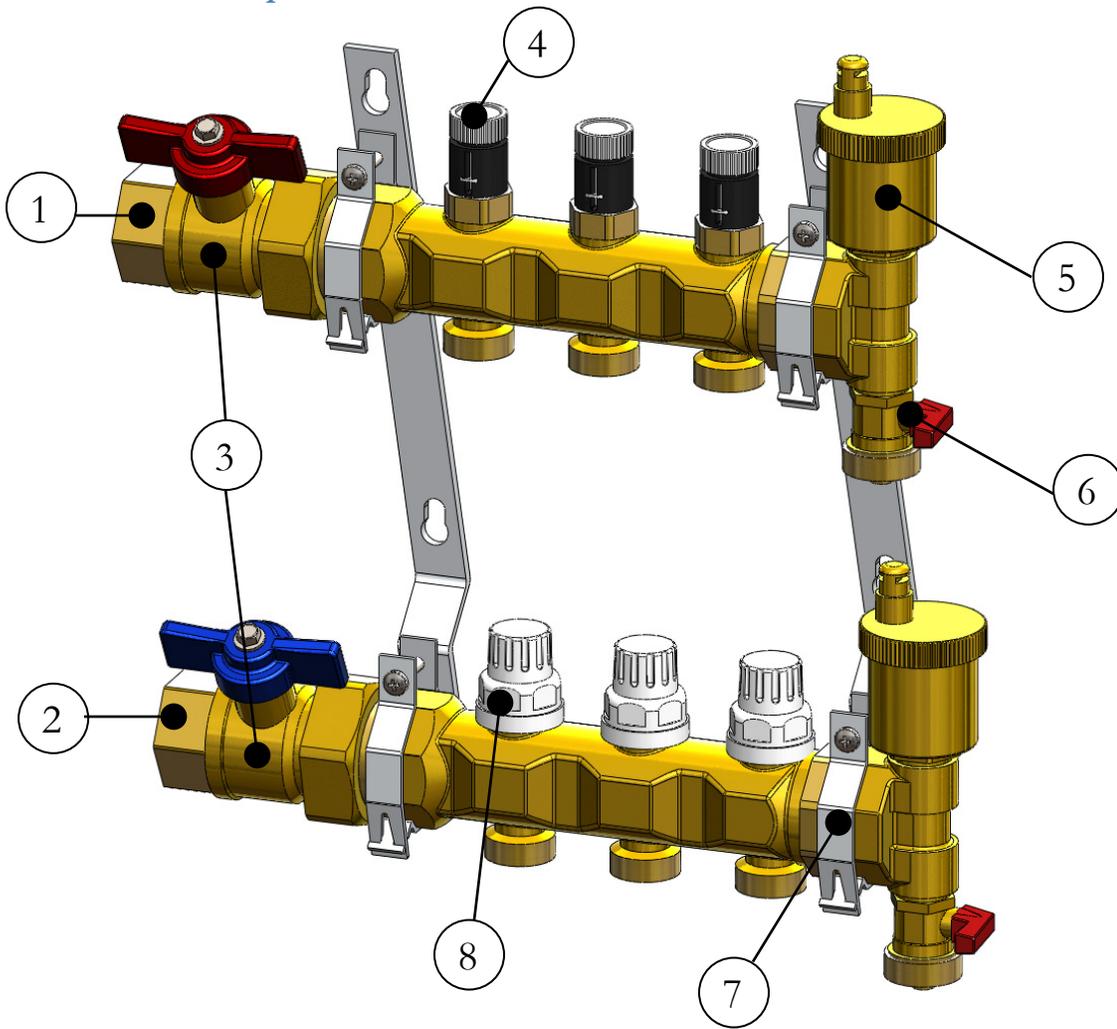
Loops	Part Number	"A"	Weight (lbs)
3	22030	15 3/4"	16.1
4	22031	17 3/4"	17.3
5	22032	19 3/4"	18.5
6	22033	21 3/4"	20.9
7	22034	23 5/8"	22.4
8	22035	25 5/8"	23.5
9	22036	27 5/8"	25.3
10	22037	29 5/8"	27.1
11	22038	31 5/8"	28.8
12	22039	33 5/8"	30.4
13	22040	35 5/8"	32.1

Technical Specifications:

Materials	
Flow Manifold	Brass EN 1982 CB753S
Micrometric balancing valves	
Body	PA
Control device, upper	Brass EN 12165 CW641N
Obturator	POM
Obturator seal	EPDM
Knob	ABS
Shut off valves	
Control device, upper	Brass EN 12165 CW641N
Obturator stem	Stainless steel
Obturator	EPDM
Springs	Stainless steel
Seals	EPDM
Knob	ABS
Ball valve	
Body	Brass EN 12165 CW641N
Ball	Brass EN 12165 CW641N chrome plated
Handle	Aluminum EN AB 46100
End fitting	Brass EN 12165 CW641N
Automatic air vents	
Obturator stem	Brass EN 12165 CW641N
Springs	Stainless steel
Seals	EPDM
Float	PP

Performance	
Medium	Water, or glycol
Max. Glycol percentage	30%
Maximum working pressure	145 PSI
Maximum end fitting discharge pressure	36 PSI
Working Temperature	32 – 176°F
Micrometric regulating scale	1-10
Accuracy	+/- 5%
Main connections	1", or 1 1/4" FNPT
Connection center distance	7 5/8"
Outlet center distance	1.98"

Manifold Components



Number	Description
1	Supply manifold
2	Return manifold
3	Isolation ball valve (2X)
4	Micrometric balancing valves
5	Automatic air vent (2X)
6	Drain cock and shut off valve (2X)
7	Mounting bracket (2X)
8	Shut off valves

Construction Details

Supply Manifold

The supply manifold uses micrometric balancing valves that allow the flow to be equalized between all circuits in the system. These valves feature an upside down 'V' channel to allow for precision adjustment of flow to all zones. If the loop lengths are known, go to www.infloor.com/XX to download the calculator for computing the required position for each of the micrometric balancing valves on the manifold. This step is unnecessary if using flow meters on the system (see below).

Return Manifold

The return manifold comes equipped with manual shut off valves that can be used to shut off flow to individual circuits. An optional telestat is available for individual loop control. The shut off valves screw off the return manifold and the telestats screw on in their place. See below for more information on telestats.

Compared to other manifolds, the Infloor brass manifolds are designed to be nearly silent when shutting flow off with a telestat. The design of the valve seat is such that it doesn't bang quickly into the seat when closing.

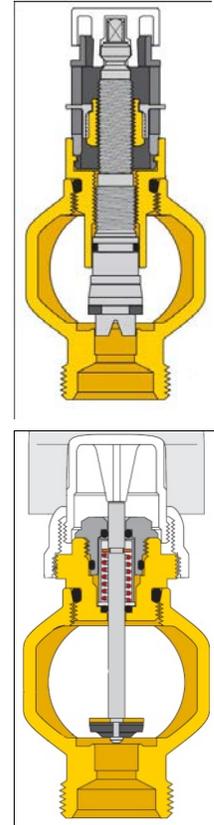
When setting up the system, make certain all the shut off valves on the return manifold are all the way open (spun counter clockwise). This will insure that they are not a flow restriction to the system.

General

The manifold is designed so that the tubing passes easily down from the manifold into the floor. The return manifold is offset forward about an inch to allow the tubes to pass without interference from the supply manifold. There are also slots to allow the tubing to easily pass.

There is an automatic air vent on both the supply and return manifold to make sure all air is purged from the system. The manifolds are designed to be installed above the floor to allow the air vents to function properly. There is a safety cap on top of the air vent that can be opened (to allow air out), or closed to turn this feature on or off.

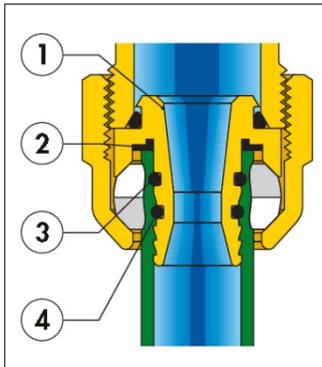
All seals are made from EPDM rubber to insure the longevity of the seal. The stainless steel used in the unit is all polished to help eliminate the buildup of scaling on the surfaces.



Accessories

Manifold Fittings

Fittings are available for PEX or PEX-AL-PEX sized from 3/8" up to 3/4" of an inch. These fittings utilize several features that give them a superior seal to most products on the market.



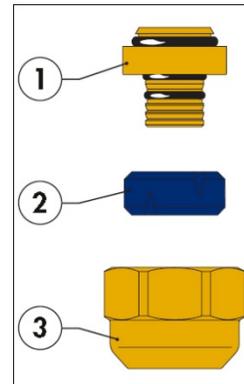
1. The shape of the internal fitting creates a effect when fluid passes through it. This lowers the pressure loss through the fitting by 20% when compared to similar fittings.

2. Isolation Ring; If PEX-AL-PEX is used, contact between the aluminum and brass can create galvanic corrosion. This ring prevents contact between the two materials and this from happening.

3. Upper o-ring seal

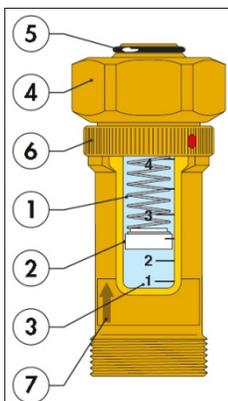
4. Lower o-ring seal: Two seals provide greater confidence that the fitting will seal over the life of the system. The o-rings are slightly different diameters to insure a good seal at high pressures and temperatures.

Fittings are sold in packages of (10) each. Each fittings includes the parts shown to the right (1) adaptor, (2) olive, (3) nut		
Part Number	Tubing	Weight
22070	3/8" PEX	2 lbs.
22071	1/2" PEX	2 lbs.
22072	3/4" PEX	2 lbs.
22073	1/2" PAP	2 lbs.
22074	5/8" PEX	2 lbs.
22080	Plug	3 lbs.



Manifold Flow Meters

For the most accurate measurement of flow going to individual loops, a flow meter is used. The flow meter attaches to the return manifold and then the return tubing attaches to it.



1. The flow meter has a spring that pushes back on;

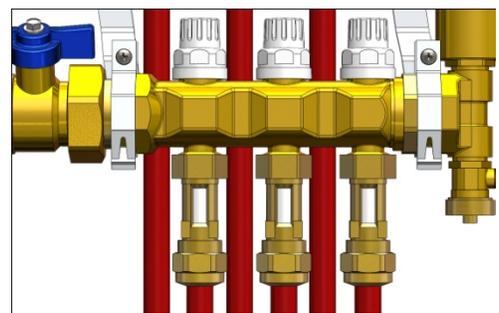
2. The float. The fluid flowing past the float pushed it upwards and the flow rate can be ready by where the bottom of the float is on;

3. The scale. There are three different flow meters available for different flow rates (see table below).

4. A captive nut allows the meter to be rotated to its optimum position for reading.

5. The flow meter seals via an o-ring on the surface of the manifold.

6. Over time, the window can have a buildup of deposits that make the scale difficult to read. By rotating this knob, another scale can be brought into view.



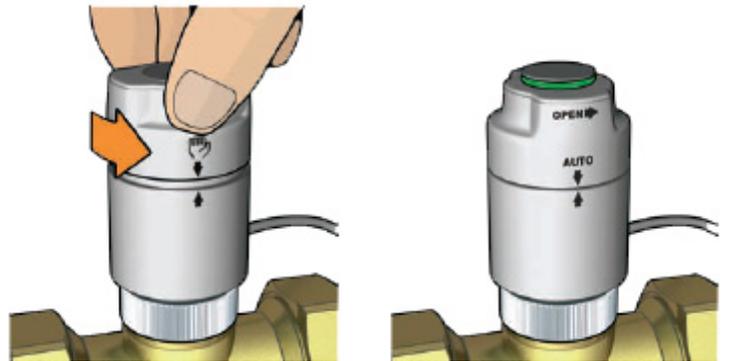
7. Be sure to observe the proper flow direction, or the flow meter will not read!

Flow meters are sold in packages of (1). Be sure to get the correct flow rate for your application!

Part Number	Flow Rate Min (GPM)	Flow Rate Max (GPM)
22081	1/4	1
22082	1/2	2
22083	1	4

Manifold Actuators

Individual loops within a manifold can be activated using the manifold actuators (or telestats). These parts replace the shutoff valve on the return manifold. It is easy to tell if the actuator is on and fluid is flowing through the zone by the ring on the top that shows a green band when this happens. The telestats can also be actuated manually by simply twisting the top until the hand symbol is above the arrow on the bottom. They are available with or without an end switch.



Please note that if a manifold is to be subzoned, all zones will need to have actuators on them. This will allow for flow control to all zones.

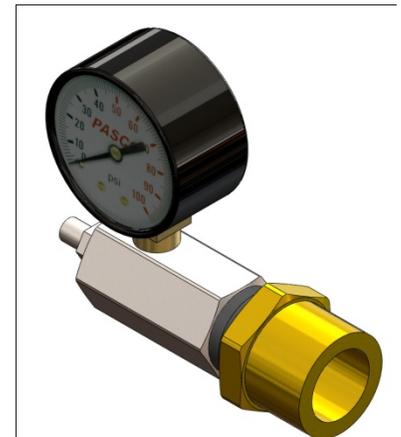
Actuators are sold in packages of (1).

Part Number	End Switch
22002	No
22003	Yes

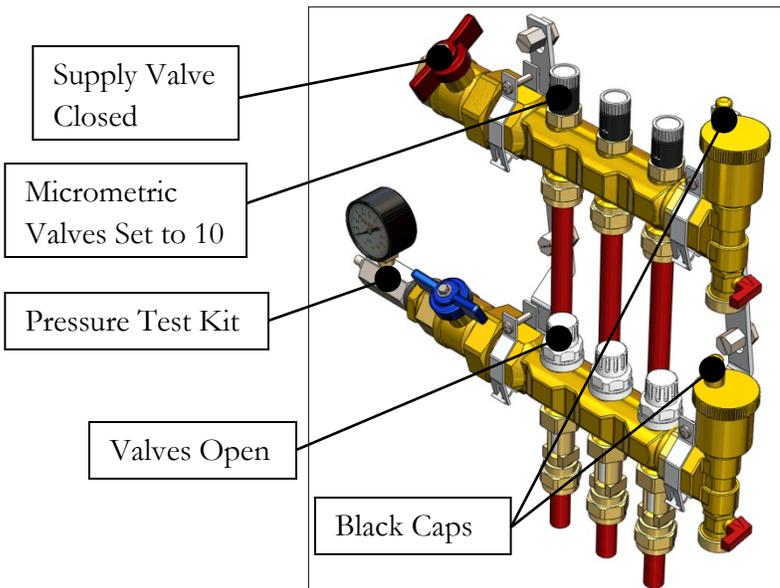
Pressure Test Kits

Infloor has a prepackaged kit for pressurizing the tubing and making certain that it will hold pressure before laying down the flooring material over the tubing. The kit includes a pressure gage, double nipple and bushing to connect up to the end fittings on the manifold. Two sizes are available, one each for the 1" and 1 1/4" manifold connections.

IMPORTANT: When using the pressure testing kit, the brass fittings on the air vents must be replaced with the black caps provided with the manifold! This will insure the air will not leak out of the system. Be certain



to replace the black caps with the brass ones once the pressure test is complete.



To pressure check the system, attach the manifold test kit to the return connection on the manifold and turn the ball valve to the off position on the supply side. Using an air compressor with a Schroeder valve attachment (like you air your car tire up with), apply pressure to the Schroeder valve on the test kit. Continue pressurizing the system until the desired pressure is reached. Leave the system pressurized until it is time to fill the system with water. If a break occurs anywhere in the system, the air pressure will drop over time. Note that temperature can affect system pressure, so a small change in pressure is acceptable.

If a tube is punctured, usually the pressure will drop rapidly in the system and it will be clear where the break occurred. If not, check all the fittings first with soapy water and look for the formation of bubbles. To check for a break in the tubing, use the shut off valves to isolate individual circuits and determine which loop the break has occurred in. For breaks in tubing, the entire loop of tubing must be replaced, since it is not acceptable to have any splices in the floor.

If you are using telestats, note they will be normally closed. They must be opened before the tubing in the loops can be pressurized.

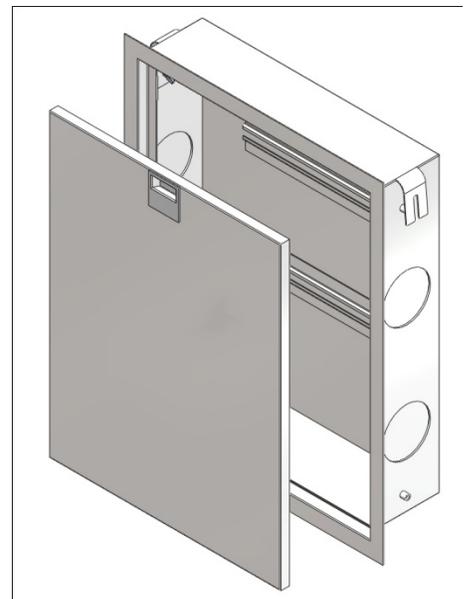
There is one pressure test kit per package.

Part Number	Connection Diameter	Infloor Part Numbers
22029	1" NPT	22010 – 22020
22030	1 1/4" NPT	22030 - 22040

Manifold Cabinets

Cabinets are available for the manifolds to go into in the wall. It is recommended that the manifolds be in a closet in the house and be higher than the floor. The cabinets offer a clean installation solution to accomplish this.

Cabinets are available in several different lengths to accommodate manifolds with different numbers of loops. Infloor recommends the next size up cabinets to make sure there is enough room to work on the manifolds.



Cabinets are 20" high and are adjustable in depth from 4 3/8" to 5 1/2". See below for available widths.

Manifold Cabinets		
Part Number	Width (in)	Max Number of Outlets
22100	16"	3
22101	24"	6
22102	32"	10
22103	40"	13
22104	48"	17