



# MANIFOLDS & WATER TEMPERATURE CONTROL

## Overview

Water based underfloor heating (UFH) systems work by turning the entire floor into one large low temperature radiator which is heated via a network of pipes that are embedded within the floor. Since the floor (the 'radiator') is so large it only needs to run at a low temperature to heat your room. This means that the water that flows around the floor needs to be at a far lower temperature than a traditional radiator system.

A range of factors will determine the water temperature required for an underfloor heating system; these will include:

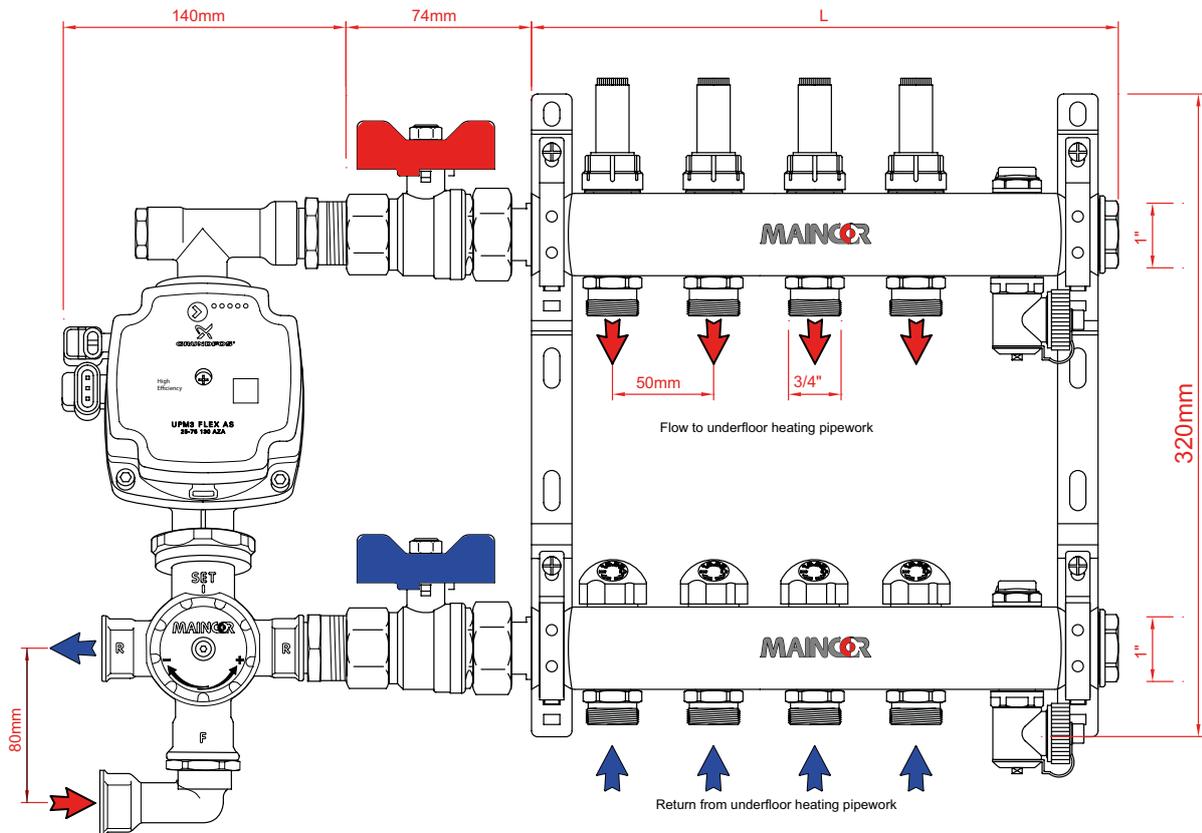
- The floor construction.
- The heat requirement of the space.
- The floor coverings.
- The pipe diameter and pipe centres that are used.

Generally, underfloor heating systems will run at temperatures ranging from 35°C - 50°C. If the boiler or heat source cannot supply the water at the required temperature, either thermostatic or actuated blending controls can be supplied. Typically, a secondary circulating pump would also be required.

Underfloor heating requires a low flow temperature, at design conditions there will be approximately a 7°C temperature drop through the underfloor heating circuits. Maincor usually supply blending valves to blend the primary flow from the boiler to mix with the underfloor heating return water to maintain the required temperature for the underfloor heating system. A pre-assembled thermostatic mixing valve and pumping unit which fits directly onto the Maincor underfloor heating manifold can also be supplied - a control pack.

An alternative method of blending the water is to use an actuated blending valve and weather compensation controller. This is generally a slightly more expensive way of controlling an underfloor heating system, however, it does offer a more efficient way of controlling the water temperature. As the outside temperature decreases, the heating requirement of the building will increase, hence the amount of energy that has to be put back into the building will also increase to ensure comfort conditions are maintained.

The arrangement below acts as a blending, circulating and distribution point for your UFH system:



Primary pipework can be fed into the Control Pack from the side (as per the illustration) or from below by moving the position of the 90°elbow supplied with the kit.

Manifold Size	L (mm)	Manifold Size	L (mm)
1 Port	80	7 Port	380
2 Port	130	8 Port	430
3 Port	180	9 Port	480
4 Port	230	10 Port	530
5 Port	280	11 Port	580
6 Port	330	12 Port	630