

Uponor

HEATING SOLUTIONS

April 2008

Uponor Heating Manifold Systems

Uponor Heating Solutions are pleased to announce the arrival of our latest range of Underfloor Heating (UFH) and Radiator Manifolds. To complete the launch, a new Control Pack has been designed and for the first time the Pack is available to purchase pre-assembled to the UFH manifold.



Uponor Heating Manifolds

With functionality, quality and installation ease in mind Uponor set out to design and deliver a range of manifolds suitable for both UFH and radiator plumbing.

Uponor have developed a range of manifolds to suit various applications in domestic and commercial buildings. Three new manifolds are now available primarily designed for radiators and underfloor heating.

Manifold Plumbing

Manifold plumbing is becoming increasingly popular in the UK as installers and designers are becoming aware of the range of benefits; for both hot and cold water services, and as a distribution point to serve a heating system. Further advantages to heating installations can be found on manifolds where loops can be isolated via electrically operated actuators thus allowing sophisticated controls to be integrated into the system.

Benefits

Benefits of manifold plumbing used in conjunction with electrically operated controls include:

- Higher efficiency due to advanced controls
- Increased thermal comfort for occupants
- Independent control over each circuit
- Less fittings required and none under the floor
- One central point for isolating each circuit



The Uponor Manifolds

To complement Uponor's existing range of high quality hot and cold (H&C) water manifolds Uponor are introducing three heating manifolds. The new range of Uponor manifolds include:

- The Uponor TM Manifold with Topmeters (manifold also available with the underfloor heating Compact Control Pack V4 already assembled).
- The Uponor LS Manifold with lockshield valves.
- The Uponor NV Manifold without loop isolation.

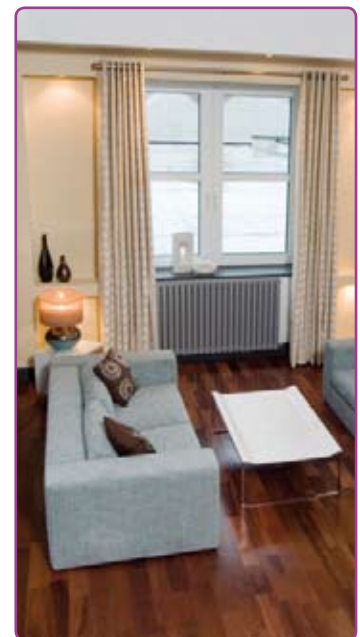


The 3 Uponor manifolds are all made of high quality, chromed solid brass with a unique "Thistle bar" profile, supported by nickel plated manifold brackets. The manifolds are a true 1" bore with 1" BSP FT connections onto the manifold and 3/4" Eurocone outlets to the UFH circuits or the radiators. Each manifold comes complete with fill and drain points for simple filling and venting of the system and single port extension kits are available along with a range of accessories.

Uponor Control Pack (V4)

To coincide with the launch of the manifolds Uponor are also adding an improved Compact Control Pack to the range of UFH water temperature controls.

The Uponor Control Pack (V4) is responsible for blending and circulating water around the underfloor heating circuits and will serve an area of up to 160m² with a 14kW maximum heat load. For detailed information on the Compact Control Pack see page 5 for details.



Uponor Heating Manifolds - Plumbing Systems

- For use in radiator applications to serve radiators or towel rails (95°C, 10 bar).
- Available in configurations from 2 port to 8 port. Single port extension kits are also available.
- Pipework connections on to the manifold are 1" BSP Female.
- True 1" bore with ¾" Eurocone threaded outlets.
- Comes complete with Fill/ Drain valves.
- Pre-mounted on nickel plated brackets for secure mounting and enhanced aesthetics.
- Made from high quality, chromed solid brass with unique "Thistle" profile.

Uponor LS Manifold

The Uponor LS Heating Manifold is designed to be used in radiator heating systems that would typically use a number of hard wired or radio thermostats to control the temperature in each room with a radiator fitted. The manifold also allows the system to be balanced at the manifold by adjusting the lockshield valves fitted to each manifold port.



- The lockshield valves can be adjusted by using a 5mm Allen key for accurate balancing at the manifold.
- Caps are fitted on the return manifold that if removed allows thermal actuators to be fitted enabling control by room thermostats.

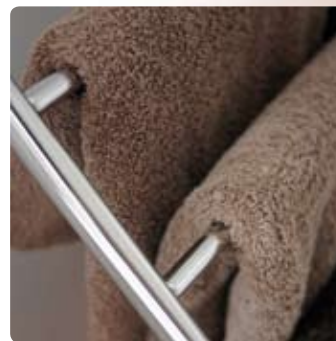
- Fittings are available to go onto 12,16 & 20mm MLC Pipe (Multi Layer Composite Pipe).
- Fittings are available to go onto 12,15 & 20mm PEX Pipe (Cross Linked Polyethylene Pipe)

Uponor NV Manifold

The Uponor NV Heating Manifold is designed to be used in radiator heating systems that would typically use traditional thermostatic radiator valves fitted to each radiator or towel rail.



- Supplied with 2 manual air vents



Uponor Heating Manifolds - UFH Systems

Uponor TM Manifold

The Uponor TM Heating Manifold is specifically designed for UFH. The unit is to be installed in a central location and act as a distribution and regulating point for the UFH system.

Water based UFH systems work by running warm water through coils of embedded pipe work which heats the floor. This effectively turns the floor into a very large radiator. Since the floor gives a large heated area, a low floor temperature is required to maintain a comfortable environment.

On a mixed heating system where radiators are used on the first floor and UFH is used on the ground floor then the floor heating system will require a lower water temperature but generally a higher flow. The Compact Control Pack V4 would manage the blending and pumping of the UFH heating flow water. Alternatively either the UNiset Mini could be used or the UP36 Weather Compensator could be used in conjunction with a UNiset Midi or Maxi. The regulation of the individual circuits is set at the manifold to ensure that there is a sufficient flow around each circuit to heat the room.

Each coil is run from a centrally positioned manifold where the filling, venting and commissioning takes place.



- Heating manifold for use in underfloor applications with unique 'Thistle' profiling.
- Made from high quality, chromed solid brass.
- Available in configurations from 2-port to 12-port (with single port extension also available).
- Pre-mounted on nickel plated brackets for secure mounting and enhanced aesthetics.
- High quality top meters with 0-6 L/M indication for accurate flow measurement and regulation.
- True 1" manifold bore for good flow characteristics
- Colour coded tamper proof flowmeters and valve caps.
- Comes complete with 2 fill/drain valves.
- Pipework connections (flow/return) at the manifold are 1" BSP female.
- Maximum temperature 70°C.
- 3/4" Eurocone outlets suitable for 14 & 16mm MLCP and 12, 15 & 20mm PEX pipes.
- Fill and drain points included as standard. Fill and drain point with manual or automatic airvents also available.

Control the Room Temperature

The manually adjustable caps can be removed to allow electrically operated thermal actuators to be fitted. These actuators open to allow a flow of water around when the actuators corresponding room thermostat calls for heat.

If the manifold is supplying just one room it would not be necessary to use actuators on the manifold. Instead a two port motorized zone valve would be fitted on the flow to the manifold.



Uponor Water Temperature Control

Compact Control Pack V4

The Compact Control Pack is a solid and robust unit dedicated to serving and regulating the UFH system. The unit is available as a stand alone unit or alternatively it can be bought pre-assembled to the Uponor™ Manifold saving valuable installation time.

The Compact Control Pack is designed to mix the primary boiler flow water with the under floor heating return water. This is managed via a two port injection valve which is situated on the boiler flow which when open, allows the higher temperature boiler flow water to blend with the UFH return water in the return manifold. This maintains the required UFH flow temperature. An internal pipe sensor is fitted within the 90° elbow which operates the two port thermostatic injection valve. A secondary pump then circulates the water around the UFH loops. To ensure that the majority of the water is forced around the UFH pipe network, a lockshield is positioned on the return back to the boiler which is used for balancing the system.

The Compact Control Pack also includes a fail-safe device. A high limit thermostat is fitted to ensure that water exceeding 60°C will not flow around the UFH system (as per BS EN:1264) since high temperature water may damage floor coverings.

As the name suggests the unit is deceptively small and ideal for fitting in a range of situations. As with its predecessors the unit is primarily designed for running boiler flow and return pipework to the left hand side of the unit and all the pre-assembled packs are supplied this way. This can simply and quickly be changed if the primary pipework is feeding the right hand side of the unit.



- Now available as a stand alone unit or supplied pre-assembled to the manifold.
- As standard it will be left hand justified but can easily be changed to be right hand justified.
- A preset robust high limit thermostat is included to protect floors.
- ¾" injection and lockshield valves reduce the response time.
- Large floor coverage due to increased size of injection valve (max 160m² and 14kW).
- ¾" BSP FT on the primary flow and return valves allow a range of pipe sizes to be connected.
- The Version 4 pack is a solid unit with no plastic parts that can be easily broken or damaged.
- Aesthetically the Compact Control Pack is a polished, quality unit.
- The flow temperature sensor is mounted internally for an accurate reading.
- Fill and drain points are included along with a high quality isolation valve situated below the pump for easy filling.
- The unit includes a three speed, Grundfos 15-60 pump.
- It is possible to isolate via the injection and lockshield valve so there's no need for additional ball valves.
- The unit is compact so can be installed in a large variety of locations.
- Joints are created using O-rings. No PTFE or jointing compounds are required.
- A thermostatic head is included with a temperature range from 20-60°C which allows simple control over the water temperature.

Often our customers choose UFH for the ground and first floors of their properties but this is not always the case. Many customers feel that UFH is the right choice for the ground floor and a radiator system is the most suitable for the first floor of their property.

Introduction

At Uponor we have found that in response to the Governments push towards reducing carbon dioxide emissions; installers, designers and developers are recognising that the overall efficiency and effectiveness of any heating system is directly related to the system controls. By investing in their controls, customers will in return receive a more efficient system with increased controllability and also create a more comfortable environment for the occupants.

The next two pages look at how through the use of modern technology a radiator and UFH system can be combined and controlled.

Example Installation

The illustration below shows a typical domestic property where an underfloor heating (UFH)

system has been installed on the ground floor and radiators installed on the first floor with both of the systems controlled by the Uponor Control System – Radio (a wired system is also available).

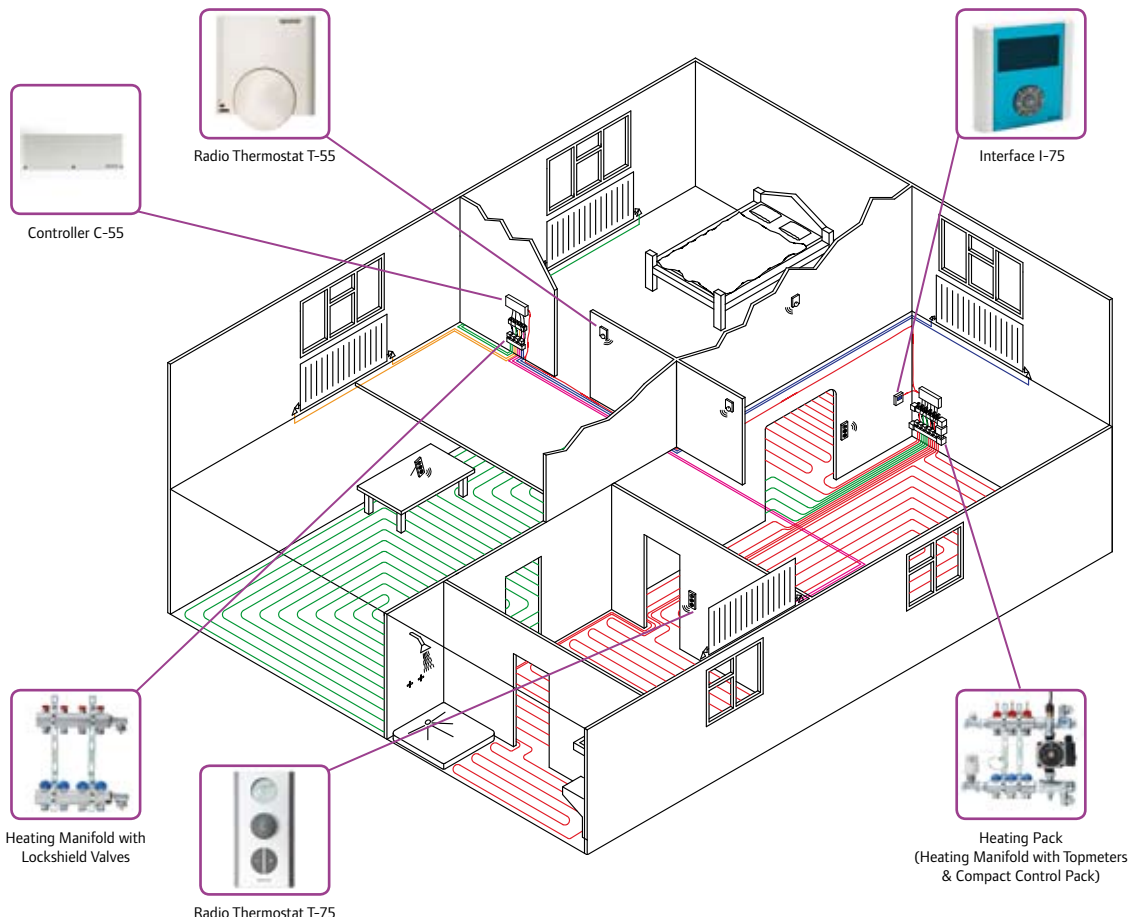
The UFH is fed by an Uponor TM Manifold with a Compact Control Pack fitted to blend and circulate the water. The radiators are shown supplied via an Uponor LS Manifold which is designed to handle the higher temperature water.

Uponor Control System - Radio

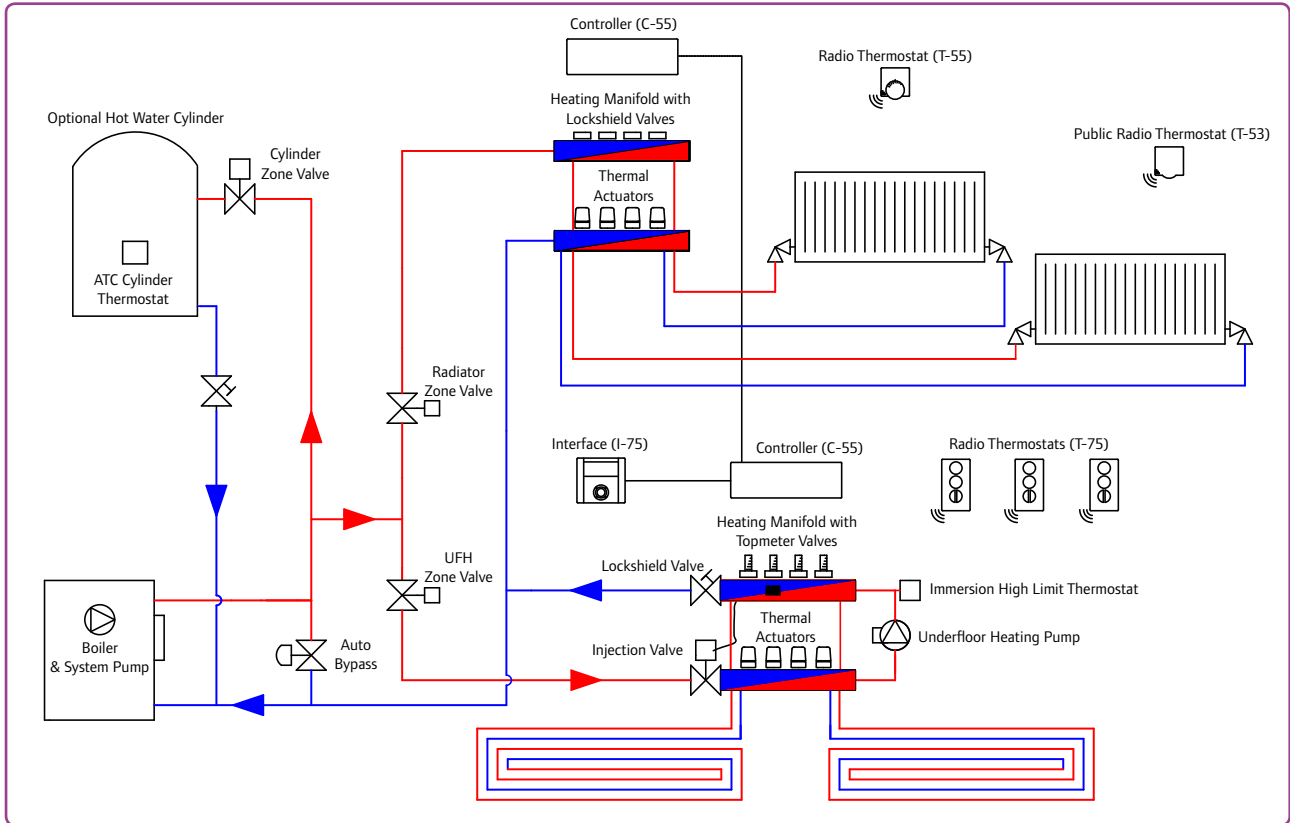
The temperature in each room of the property is controlled via a radio frequency thermostat. A choice of three thermostats are available which can be mixed to suit the client requirements.

The time control is carried out via the single Interface I-75, which controls both the radiator and the UFH system.

The Interface I-75 can control up to 3 controllers which can manage the operation of UFH and radiator manifolds or alternatively it can control just radiator manifolds or just UFH manifolds. Time and temperature profiles can be viewed and set from this centralised point along with the holiday mode function, pump/valve exercise function, minimum and maximum room temperatures and also gives the user the ability to view each rooms actual and set point temperature. For further details of the Uponor Control System – Radio and Wired version, please contact our marketing department for a brochure or visit our website.



2D Plumbing Schematic



Primary Connections




The illustration above shows a two dimensional plumbing schematic of a manifold fed radiator and UFH system. Both systems are supplied by the same system boiler and a hot water cylinder is also shown.




Each circuit is isolated via a zone valve. If one of the radiator thermostats calls for heat the thermostat's corresponding thermal actuator will open. The Controller C-55 will then send a demand signal to the radiator circuit zone valve which once fully open will send a demand to fire the boiler.

The UFH will work in a similar way to the radiator system. The hot water cylinder will be supplied by the boiler if the cylinder thermostat calls for heat. This will open the cylinder zone valve which, once open, will again send a signal to fire the boiler. This circuit would not be required if a combi-boiler was installed.



Underfloor & Radiator Heating

Manifolds, Adapters & Accessories			
	Description	Code	Pack Qty
Uponor LS Manifold The Uponor LS Manifold includes lock shield valves on the flow manifold for balancing the system. The manifold includes chrome plated flow and return headers pre-mounted on nickel plated brackets with fill & drain points. Primary connections are 1" BSP and outlet connections are 3/4" Eurocone. Designed for use in Radiator systems. Note: Thermal actuators & Eurocone compression adaptors are supplied separately.			
	1 loop extension set	HTGLS1	1
	2 loops	HTGLS2	1
	3 loops	HTGLS3	1
	4 loops	HTGLS4	1
	5 loops	HTGLS5	1
	6 loops	HTGLS6	1
	7 loops	HTGLS7	1
	8 loops	HTGLS8	1
Uponor NV Manifold The Uponor NV Manifold includes chrome plated flow and return headers pre-mounted on nickel plated brackets with fill & drain points. Primary connections are 1" BSP and outlet are 3/4" Eurocone. Designed for use in Radiator systems. Note: Eurocone compression adaptors are supplied separately.			
	1 loop extension set	HTGNV1	1
	2 loops	HTGNV2	1
	3 loops	HTGNV3	1
	4 loops	HTGNV4	1
	5 loops	HTGNV5	1
	6 loops	HTGNV6	1
	7 loops	HTGNV7	1
	8 loops	HTGNV8	1
Uponor TM Manifold The Uponor TM Manifold includes Topmeters on the flow manifold for balancing and viewing circuit flow rates. Includes chrome plated flow and return headers pre-mounted on nickel plated manifold brackets with fill & drain points. Primary connections are 1" BSP and outlet connections are 3/4" Eurocone. Designed for use with underfloor heating systems. Note: Thermal actuators & Eurocone compression adaptors are supplied separately.			
	1 loop extension set	HTGTM1	1
	2 loops	HTGTM2	1
	3 loops	HTGTM3	1
	4 loops	HTGTM4	1
	5 loops	HTGTM5	1
	6 loops	HTGTM6	1
	7 loops	HTGTM7	1
	8 loops	HTGTM8	1

Manifolds, Adapters & Accessories			
	Description	Code	Pack Qty
Compact Control Pack V4 Designed for the control of the water temperature and the flow rates in underfloor heating systems, floor areas up to 160m ² and a maximum 14kW heat load. The pack is designed to bolt onto the Uponor TM Manifold. Incorporates a high limit protection function preset to 60°C, a two port thermostatic injection valve, an UFH pump and a balancing valve. The picture below shows the unit connected to the Uponor TM Manifold (not included).			
	230v	UFHCV4	1
Uponor Heating Control Pack The pack is made up of the Uponor TM Manifold with a Compact Control Pack V4 prefixed to the manifold. The unit is ready to be wall mounted straight from the box. For supplying UFH systems with floor areas up to 160m ² and a maximum 14kW heat load.			
	HTG Control Pack 2-Port	UFHPK2	1
	HTG Control Pack 3-Port	UFHPK3	1
	HTG Control Pack 4-Port	UFHPK4	1
	HTG Control Pack 5-Port	UFHPK5	1
	HTG Control Pack 6-Port	UFHPK6	1
	HTG Control Pack 7-Port	UFHPK7	1
Uponor 1" Ball Valve For use with Uponor Heating Manifolds (sold separately).			
	1"	590015	1

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