

Heating Manifolds



Topway T2 Pre-assembled heating manifolds

- Nickel plated extruded brass manifold pre-assembled for immediate mounting for both radiator and underfloor systems
- Available in 1" and 1 1/4" sizes, from 2 ways to 12 ways with integral flow control valves to suit a wide range of system requirements
- Provided with integral double regulating lockshields or flowmeter lockshields, and electrothermic bodies (ready for electrothermic heads) per circuit.
- Can be surface mounted, concealed in a choice of purpose designed plastic or metal cabinets or within a partition wall for a flexible solution to location
- Manifold flow and return outlets are offset for space saving and ease of installation
- For ball valves and Monoblocco pipe connectors for a wide range of pipe types and sizes, see pages 11 and 12
- For electrothermic actuators and matching zone controls to meet or exceed Building Regulations Part L requirements, see pages 36-37.



EMMETI
UK

Emmeti Product Focus

Heating Manifolds

Emmeti UK consider themselves now well experienced in the application of manifolds to plumbing and heating systems, and have CPD courses open to those who wish to explore deeper the many advantages.

The advantages

Heating manifolds, unlike today's common practice of non-manifold ring heating circuits, allow independent circuits thermally different to each other.

This is because they supply flow and return water directly to each radiator, in a star pattern. This makes it easy to hydraulically balance each independent circuit.

Taking into account pipe runs, the hot water is circulated to all the radiators at the same time. This avoids the balancing or sequencing issues with a non-manifold system, where one radiator can be producing maximum heat well before another has started. A more constant temperature across all manifolds circuits is maintained (providing the balancing is done correctly).

Manifolds encourage the use of small diameter pipes, 10 mm or 12 mm, PB, PEX or Multilayer. This type of pipe is easy to handle and flexible. No further connections are required between the manifold and the radiator.

The connectors on the radiator and on the manifold are mechanical. This means that there are far fewer joints in total and none at all which are concealed so leaks are kept to a bare minimum and because they are not concealed, relatively easy to locate and deal with.

Manifold Types

To make understanding the Emmeti range of heating manifolds easier, we have organised them into three simple types, matching each type to a heating system and controls to make the application clear.

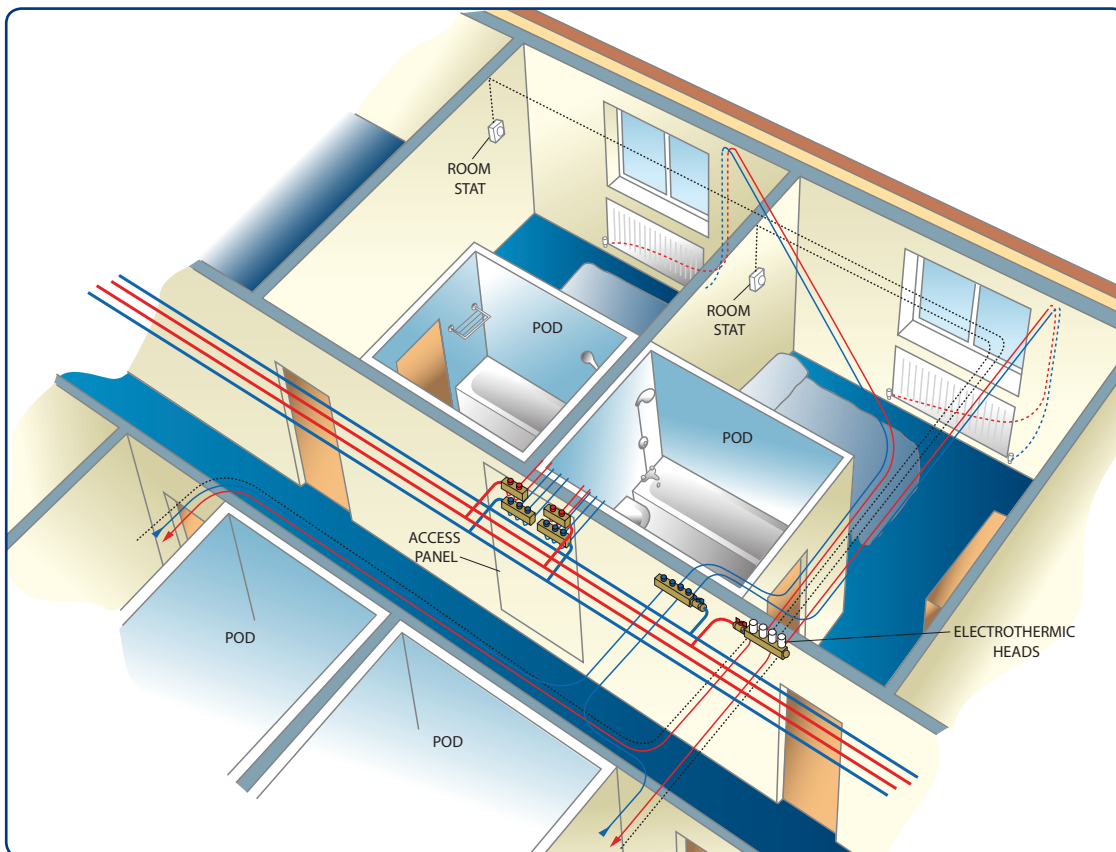
Type 1 (T1): These are for wall hung radiator (WHR) systems with a Thermostatic Radiator Valve (TRV) and Lockshield valve (LS) on the radiator.

Type 2 (T2): These are for either **wall hung radiator or underfloor heating (UFH) systems**. The manifold is fitted with an electrothermic valve and lockshield to control each circuit; this replaces for example the TRV and LS on a radiator. The electrothermic valves are controlled by a thermostat or programmable thermostat.

Type 3 (T3): These are **underfloor heating (UFH) systems only** and have a temperature controller and pump to ensure that the water is at the correct temperature for the underfloor heating circuits.

Each type has its own section on our website (www.emmeti.co.uk) which gives further details of each manifold.

Example of Type 2 (T2) Heating Manifold System in Hotel Construction



Topway T2 Manifold System

Heating manifolds



T2 manifolds

T2 manifolds can be used in heating applications not only for **WHR Wall Hung Radiator** or other heat emitter based systems but also for **UFH underfloor heating/cooling systems** using a separate low temperature heat source or mixing valve control set (like our T3 Control Set).

For radiator based or perimeter heating systems time and temperature control is centralised at the manifold allowing individual room temperature control if required. No TRV is needed in the room itself which can be controlled by a **room thermostat** or programmable room thermostat.

The **thermostat** is wired back to the manifold via a wiring centre which requires electrothermic heads on the return rail. This method is in compliance with Building Regulations Part L1 (conservation of fuel and power) and best practice GPG301, 302 and GIL 59 (ChES).

The function of the TRV (temperature control) and the lockshield (balancing) are now integrated on the manifold.

More importantly, the electrical interlock required by Building Regulations Part L1 is provided directly by the thermostats controlling room temperature.

For **underfloor heating systems**, see details of our separate range of our T3 UFH Control Sets on the following pages. The individual time and temperature control allowed by Topway T2 manifolds would be connected as for radiator systems using a wiring centre and one thermostat or programmable thermostat per underfloor heating zone.

The advantages

This state of the art option is pre-assembled onto the bracket, making for quick and easy installation. It has an electrothermic body integrated for each return circuit, ready to be actuated by the **electrothermic head**. The

electrothermic heads, via a **wiring centre**, are connected to the **room thermostats** located in each room or **zone**.

The manifold includes **lockshields** on the flow rail, **double regulating** for individual circuit isolation, and manual setting of flow control for heat balancing per radiator. It also includes **automatic air vents** and **drain-off (filling)** points as standard, and a standard option with **integrated flowmeters** is also available. All of these reduce commissioning time, no longer having to physically move to each room or zone.

Integrated functions

Central control for distribution, manual isolation by circuit or by floor, commissioning of each zone by balancing, system air venting and automatic “electrical” flow isolation when a room is up to temperature. This also allows individual circuit purging.

Optional functions

Measuring of flow using flowmeters, allowing reading of dynamic flow during balancing. **Measuring of temperature** using thermostats integrated into the ball valves, one on the flow and one on the return rail.

These aid installation by allowing the installer to verify the hot water is flowing, and how much, as well as what flow and return temperatures are being achieved.

Differential pressure by-pass, to prevent pump wear and tear.

Programmable room thermostats, with set back facility, for the individual zones or rooms.

Wiring centre, allowing boiler interlock and pump stop/start.

Emmeti Product Focus

Topway T2 Manifold System (continued)

Individual room zoning

Energy saving

Installing this kind of system can save a significant amount of money on fuel bills. It is particularly appropriate for use with public access buildings, like **offices, schools and hotels**. However with the increasing emphasis on legislation to save energy in both new and existing homes, Emmeti T2 manifolds offer a cost effective solution to professional installers and specifiers in meeting today's more stringent requirements.

Electrothermic actuation

Electrothermic bodies are integrated into the return manifold, one per circuit. They are almost identical to TRV (Thermostatic Radiator Valve) bodies.

An **electrothermic head** is mounted on top, at 2nd fix or final commissioning. This in turn is wired to a **wiring centre** (linking in to the boiler, pump and wall mounted room thermostats), which in turn is wired to each room or zone **wall thermostat**.

What happens

The electrothermic heads and bodies behave the same as a two port zone valve in a traditional system. They also cost considerably less per circuit.

You are effectively **zoning your heating by rooms or small areas**, allowing individual tailored temperature control.

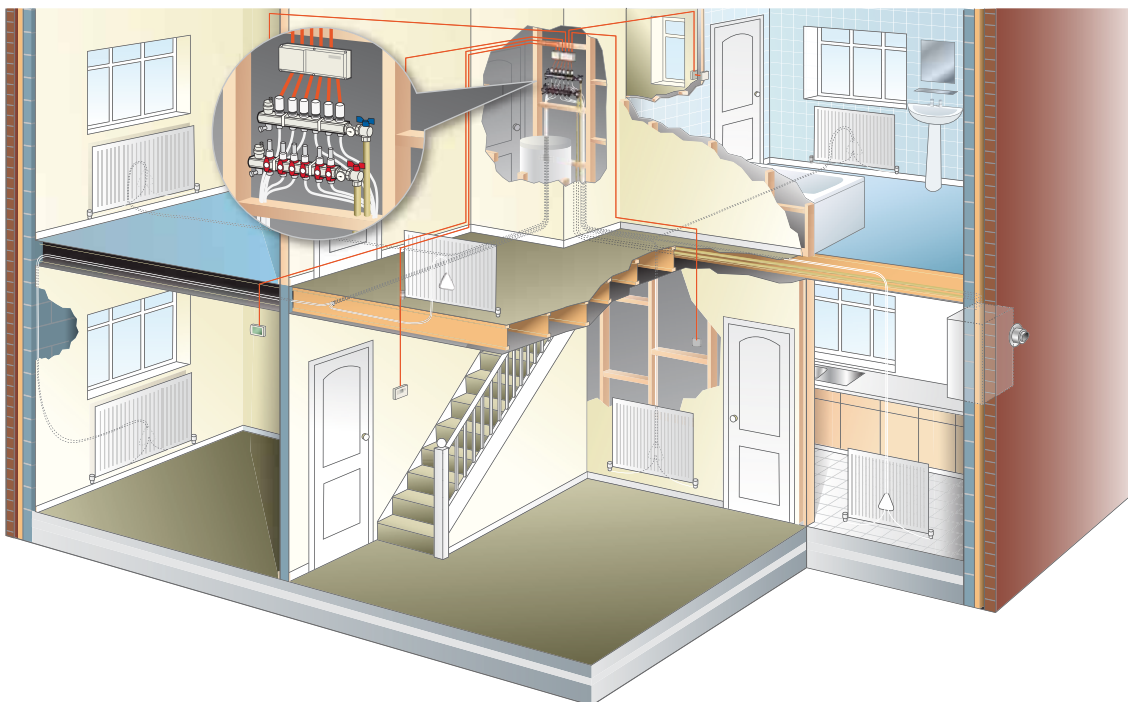
This means when a room or area gets up to temperature, the thermostat signals to the manifold electrothermic head (via the wiring centre), and that circuit is closed. This leaves the remaining circuits free to continue receiving heat. When all circuits have been actuated, closing flow to each, the wiring centre signals the pump (and boiler) to cease pumping (and providing heat).

Room Thermostats can be either simple electromechanical, electronic, or more sophisticated digital combined time and temperature units.

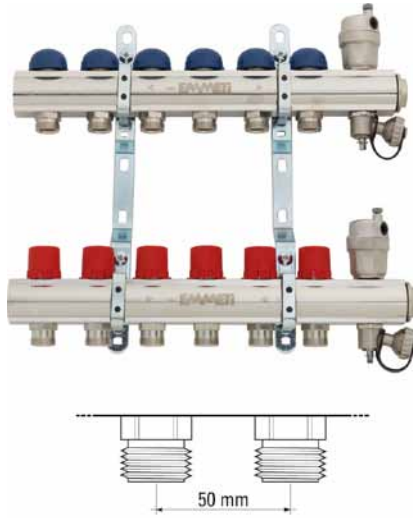
This allows you to choose the time period when you want the room to receive heat, and allows a choice of two temperatures (comfort and energy saving), the choice is dependant on time and use of the room.

For further details of our full range of controls, please see the section on 'Zone Controls' in this document or go to our website (www.emmeti.co.uk).

Example showing house with T2 manifold system installed and individual room controls



T2 Topway LS



1" - 1 1/4" pre-assembled distribution manifold nickel-plated brass, DN20 24x19 takeoffs designed to be used with Monoblocco pipe connectors.

| Size | Ways | Pcs./Pack | Code |
|--------|------|-----------|----------|
| 1" | 2 | 1 | 01299020 |
| 1" | 3 | 1 | 01299022 |
| 1" | 4 | 1 | 01299024 |
| 1" | 5 | 1 | 01299026 |
| 1" | 6 | 1 | 01299028 |
| 1" | 7 | 1 | 01299030 |
| 1" | 8 | 1 | 01299032 |
| 1" | 9 | 1 | 01299034 |
| 1" | 10 | 1 | 01299036 |
| 1" | 11 | 1 | 01299038 |
| 1" | 12 | 1 | 01299040 |
| 1" (*) | 2 | 1 | 01299730 |
| 1" (*) | 3 | 1 | 01299732 |
| 1" (*) | 4 | 1 | 01299734 |
| 1" (*) | 5 | 1 | 01299736 |
| 1" (*) | 6 | 1 | 01299738 |
| 1" (*) | 7 | 1 | 01299740 |
| 1" (*) | 8 | 1 | 01299742 |
| 1" (*) | 9 | 1 | 01299744 |
| 1" (*) | 10 | 1 | 01299746 |
| 1" (*) | 11 | 1 | 01299748 |
| 1" (*) | 12 | 1 | 01299750 |
| 1 1/4" | 4 | 1 | 01299054 |
| 1 1/4" | 5 | 1 | 01299056 |
| 1 1/4" | 6 | 1 | 01299058 |
| 1 1/4" | 7 | 1 | 01299060 |
| 1 1/4" | 8 | 1 | 01299062 |
| 1 1/4" | 9 | 1 | 01299064 |
| 1 1/4" | 10 | 1 | 01299066 |
| 1 1/4" | 11 | 1 | 01299068 |
| 1 1/4" | 12 | 1 | 01299070 |

Takeoffs 50 mm (flow and return).

(*) Flow and return are inverted.

The flow rail has an integrated red capped double regulating lockshield per circuit. The double lockshield regulation allows isolation and flow balancing of each circuit, using an outer (isolating) sleeve and an inner (balancing) sleeve. The lockshield valve can be upgraded to incorporate a flowmeter, with flowmeter kit 01306306 (0 - 4l/min). The return rail has a blue capped integrated electrothermic body (ready for the electrothermic head) per circuit.

Pre-assembled manifold includes no. 2 drain off/fill valves; no. 2 automatic air vents; no. 2 blanking plugs. All pre-mounted onto a double offset bracket.

For ball valves, mounting brackets, blanking plugs, air vents and other accessories, please see 'Accessories' on our website (www.emmeti.co.uk).

For Monoblocco pipe connectors, see page 12 in this document and 'Monoblocco pipe connectors and Threaded fittings' on our website for the complete range of Monoblocco pipe connectors and fittings.