

ZRU INSTALLATION GUIDE

UNDER FLOOR HEATING TO SINGLE AREAS
(UNDER 30m²) OR CONSERVATORIES

UTILISING THE POLYPIPE ZONAL REGULATION UNIT* (ZRU) PB970028

Introduction

The Polypipe Zonal Regulation Unit (ZRU) allows single rooms and extensions up to 30m² to be connected to an existing heating system without time consuming and expensive hydraulic and electrical alterations. When connected to an existing radiator heating system the ZRU converts the water flow and temperature to that suitable for underfloor heating.

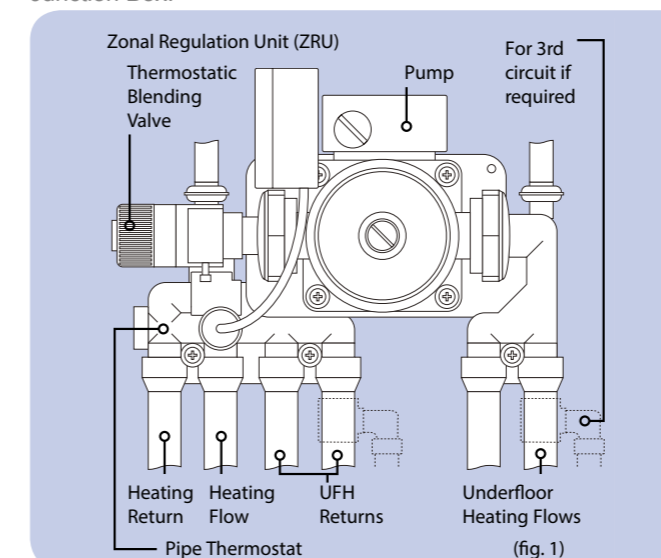
- The ZRU boosts flow, ensuring that the underfloor system is not reliant on existing pump pressure
- Water is thermostatically blended to provide the ideal safe flow temperature control
- Sensors within the unit ensure operation only occurs when heat is available from the existing heating system
- An optional volt free room thermostat can be used to regulate the air temperature in the space being heated.
- Although designed to be surface mounted in the heated area, the ZRU can be positioned elsewhere within the property
- The ZRU can be used in both domestic and commercial buildings
- As the ZRU thermostatically controls water temperature the unit can also be used where low surface temperature heating by radiators is required

Pipe Connections at ZRU

Provision for two heating circuits is provided on the ZRU. If only one circuit is required, blank off the unused ports with spigot blanking plugs.

Elbows should be used underneath the ZRU to exit pipe from the floor and a small section of floor plate should be cut away to allow the pipes to exit the floor at the correct position.

These elbows should be covered with Polystyrene prior to, and during screeding to allow for future excavation if required. Alternatively they can be enclosed within a PolyPlumb Junction Box.



Connecting to the existing heating system

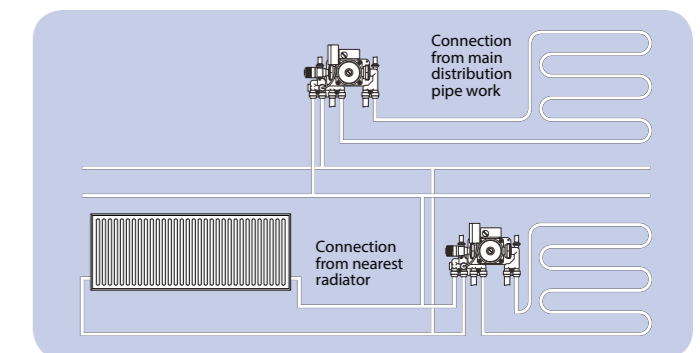
The pipe work connections to the ZRU are for 15mm diameter pipe and the ZRU should not be connected to the system from any pipe smaller than 15mm.

A small number of boilers can be affected hydraulically by the use of a second pump in the system.

NOTE: Check with the boiler manufacturer to ensure compatibility with the ZRU.

The preferred connection to the ZRU is to the main flow and return pipe work of a 2 pipe system, i.e. typically from 22mm distribution pipe work. However it can also be connected to the nearest existing radiator.

Pipe connection to operate underfloor heating at the same time as the boiler

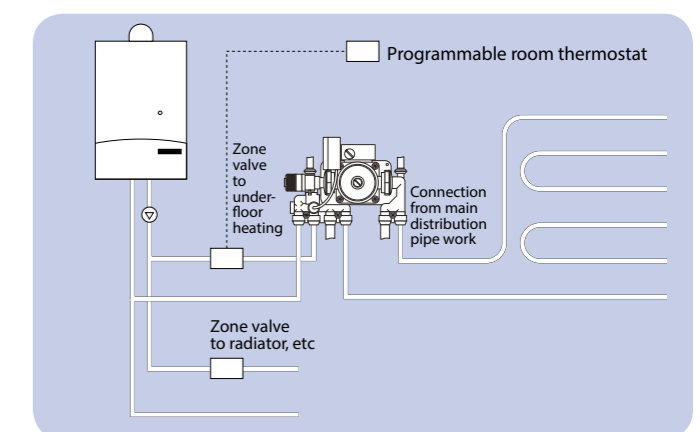


The diagram above shows the ZRU connected to operate with the boiler on / off firing. Due to the quick response of low mass systems (Overlay™, Overlay™ Lite, MHP, etc.) this is likely to be suitable.

Using this method for solid floor installations may require the timings of the existing heating to be altered to allow the underfloor heating system to reach comfort temperature.

If the room is to be controlled independently of the existing central heating system, a zone valve needs to be installed between the boiler and the ZRU.

Pipe connection to operate ZRU / underfloor heating independently

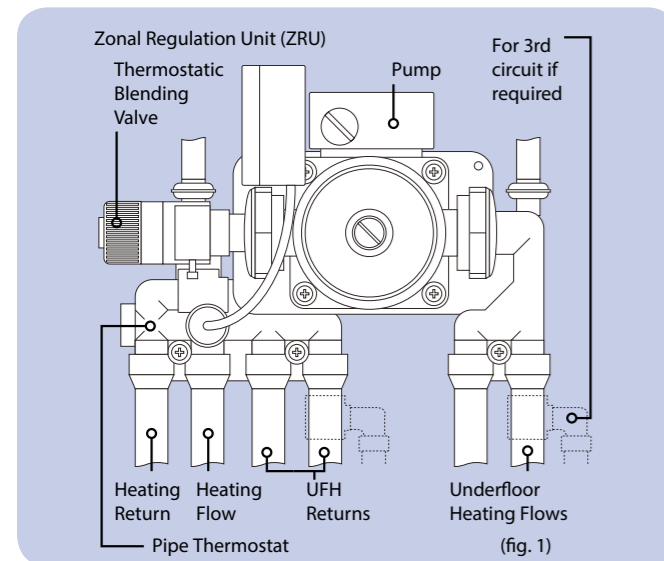


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Operational Sequence

1. Heating water from the existing system is pumped through the heating flow by the existing heating pump and returns through the heating return forming a simple loop.
2. The pipe thermostat senses that heating water is available i.e. when the main heating system is on and sends a live signal to the pump.
NOTE: The water temperature must be 45°C to operate the unit.
3. If the room thermostat (if fitted) is also calling for heat the pump operates.
4. A mixture of heating flow and underfloor heating return water is drawn through the thermostatic blending valve at the correct temperature and pumped into the underfloor heating.
5. As the room reaches temperature, the room thermostat will break the live signal to the pump and stop the pump from operating.
6. As the boiler shuts down and the main heating flow cools, the pipe stat will break the live signal to the pump and stop the pump from operating.



Performance & Safety Data Info

1. Maximum ambient air temperature is 60°C at 95°C fluid temperature.
2. Pressure rating is PN6.

Technical services

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Installation of the ZRU

The ZRU can be positioned either in the room where the underfloor heating is installed or in an adjacent area, 100mm from the finished floor level to allow for pipe connections. Tape fixing template to wall showing fixing positions. Drill wall and fix plugs.

Fitting the ZRU

Step 1: Screw unit to wall.

Connecting the ZRU

Step 2: Connect heating pipe work via an isolation valve.

Step 3: Connect underfloor heating circuit(s) using an isolation valve. Use tees and spigot elbows to form connections for 3rd circuit systems.

Step 4: Connect mains wiring (as per diagram below) via fused spur.

Filling (All Systems)

The pipe system should be filled, usually by means of a hosepipe, prior to screeding or floor covering if the ZRU is to be installed at a later time than the underfloor circuit, e.g. to allow for plastering, etc. Pipework should be temporarily capped and remain full of water preferably at pressure. Special precautions are necessary if the pressure testing is to take place in sub-zero temperatures.

Wiring Details

All electrical installations must be in accordance with the latest version of the relevant legal requirements.

The ZRU must be installed with means for disconnection from the supply mains having a contact separation in all poles that provides full disconnection under overvoltage category III. The means for disconnection must be incorporated in the fixed wiring in accordance with the wiring rules.

If in any doubt, contact a qualified electrician. The wiring diagram is as shown.

NOTE: The water temperature must be 45°C to operate the unit.

