

## MANIFOLDS & WATER TEMPERATURE CONTROL

### Large Control Pack (CP250)



The Control Pack CP250 is a pre-assembled water blending and pumping unit which is designed to be connected, via ball valves, to the UFH manifold. The pack is suitable for use with floor areas of up to 250m<sup>2</sup> or a maximum output of 20kW. It is good practice to fit a 2 port motorised zone valve on the primary flow to manifold and Maincor will usually supply one. We recommend fitting an automatic bypass (supplied by others) on the primary flow prior to the 2 port motorised zone valve.

- Blending valve and 'A' rated energy efficient pump.
- Ideal for large area UFH systems.
- Supplied complete with high quality actuator.
- Left-hand and right-hand configurations available.
- Temperature controller complete with sensor.
- Quick and easy to set up - saving time on site.

### Large Control Pack (CP250) - Installation

#### Fitting the Actuator

The valve needs to be in its mid position (with the red indicator pointing between 3 and 6 o'clock, as is supplied - see fig 1) before the actuator is fitted. Pull off the black dial from the valve spindle to prepare for the fitting of the actuator, so that you can see the black actuator mounting ring (note; this should not be removed as it is required to ensure the valve stem retaining ring is held in position).

The actuator is supplied in mid position and is factory ready to be fitted onto the blending valve (fig 2). To enable the actuator to lock onto the valve spindle, there is a white hexagonal drive coupling included. On one side of the drive coupling, there's a deep groove that needs to be aligned with the shoe, at the mid position between 3 and 6 o'clock (as per fig 3).

The actuator can be mounted in any of four 90° positions. Pull the manual override dial off the actuator (fig 4), fit the actuator onto the valve over the drive coupling, and secure through the middle of the actuator with the supplied retaining screw (take care not to overtighten as this will start to rotate the valve). Replace the manual override dial ensuring it fully engaged. There should be no visual red between the actuator and the dial. If there is 5mm of red showing between the actuator and the dial then it is in manual mode and needs to be moved slightly left or right so that it can fully engage.



Figure 1.



Figure 2.



Figure 3.



Figure 4.



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### Mounting the Sensor

The sensor that is pre-fitted to the actuator, is to be mounted on the flow manifold (top bar) and secured using the reflective tape supplied with the unit.

The actuator is factory set and configured for the correct orientation, however actuator settings will vary, therefore these parameters are to be set at installation.

Power should be applied to the unit using the included power supply.

### Installation - Pump

The pump comes with a flying lead with live (brown), neutral (blue) and earth wires (green/yellow). Typically, these are to be connected to the wiring centre where a relay is housed that will control the operation of the pump. The pump should be set to the "constant differential pressure mode" (via the Operation Button for pump adjustment) for underfloor heating systems: 



1. Pump.
2. Connection to Return Manifold.
3. Connection to Flow Manifold.
4. Pump Power Lead.
5. Power Unit for Actuator.
6. Actuator Motor.
7. Temperature Sensor.

### Water Temperature

There are a range of factors which influence the system temperature requirement. The floor structure, pipe centres, the floor covering and the buildings' heat-loss will all influence the temperature requirement.

When a building is insulated to comply with current Building Regulations and pipes are laid at 200mm centres within a screed floor, the flow temperature should be set between 40-45°C. Where a suspended or floating floor is utilised, the typical settings are slightly higher, between 45-50°C. Please contact the Maincor technical office for further details if required.

- 1) Set the Upper Limit – This is the maximum limit the set point (mixed flow) can be set to and should be used to protect floors against overheat  
Press and hold down the thumb wheel for 5 seconds. The small upwards arrow will flash to indicate you are in the upper limit settings. There should be a small spanner icon to indicate set up mode.

Press the thumb wheel. The temperature will now flash and the up arrow will constantly be on.

Use the thumb wheel to scroll left and right to set the required upper limit (note, this should be a minimum of 10°C above the set point).

Press the thumb wheel in again so that the up arrow is again flashing.

- 2) Set the Lower Limit – This is the minimum temperature that the set point can be adjusted to and can be used to protect sensitive equipment.  
You should have the upper arrow flashing. Turn the thumb wheel to the left. You should now have the down arrow flashing. (Again there should be a small spanner icon to indicate set up mode).

Press the thumb wheel. The temperature will now flash and the down arrow will constantly be on.

Use the thumb wheel to scroll left and right to set the required lower limit (10°C below the set point).

Leave the unit for approx. 20 seconds and it will revert back to showing the temperature that the sensor is currently reading.

- 3) Set the required Flow Temperature – This MUST be within the range you've specified above from setting the upper and lower limits.

Press the thumb wheel briefly. You should see the temperature flashing and a small spanner icon to indicate set up mode.

Use the thumb wheel to scroll left and right to set the required flow temperature which must be within the parameters set during stage 1 & 2.

Leave the unit for approx. 20 seconds and it will revert back to showing the temperature that the sensor is currently reading.