

HHWCH51 Galvanised Hot Water Coil Heater

Installation and Maintenance Instructions.

THESE INSTRUCTIONS MUST BE READ FULLY BEFORE COMMENCING INSTALLATION.

Owner / installer: The life of this apparatus and its efficiency will be increased if its use and maintenance is carried out in accordance with these instructions and current statutory requirements. The installation and initial adjustments should be carried out by a qualified and competent technician. Hydor Limited should be consulted before substituting or fitting parts from another manufacturer. It is the responsibility of the installer to verify that the installation is in accordance with the following standards and the owner is given the current User's Manual.

Any modifications to the unit or its installation, even the smallest modification, change or elimination of security components or pieces that influence the efficiency or loss of ventilation, will result in the CE Certification and Hydor's warranty being cancelled.

1. General

- 1.1 These instructions cover only Hydor products and do not include the supply or installation of any safety equipment that may be required, e.g. proper electrical isolation.
- 1.2 Any declarations made by Hydor about product installation and safety, are dependent on the unit being used within installations which themselves meet the relevant Standards and Directives of your region.
- 1.3 The Unit is designed to operate in normal ambient temperature of up to 55°C and up to 90% RH. The unit is not suitable for corrosive or explosive atmospheres.
- 1.4 The installer should consider future maintenance and ensure the unit is easily accessed.
- 1.5 This product is not intended for use by persons (including children) with reduced physical sensory or mental capabilities or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the product by a person responsible for their safety. Children should be supervised to ensure that they do not play with the product.

2. Description and Operation

2.1 Description of the HHWCH51 Unit:

Cast iron coil hot dipped galvanised steel fins for highly efficient heat transference. A Hydor high efficiency 630mm diameter fan unit. An angled mesh diffuser matching the ceiling angle for uninterrupted air flow within the building.

2.2 Code of Practice:

The unit should be installed by suitably qualified and competent personnel in accordance with all statutory regulations. It is important to connect the electrical power supply and the water flow and return correctly. It is the responsibility of the installer to ensure that the installation is in accordance with the following processes; the current user's manual is given to the customer on the completion of installation.

3. Location of HHWCH51 Units

- 3.1 The heater unit is delivered assembled and must be mounted horizontally to ensure the most effective venting of the heater coil.
- 3.2 Before installing inspect the unit for any minor fin damage to the heat exchanger.
- 3.3 The ideal position for these units is equally spaced between ventilation roof fans on the centre line of the building.
- 3.4 The unit is supplied with suspension/lifting eyes and these should be used to suspend the unit from secure points in the ceiling. Provision should be made to winch the units up and down, to ease cleaning and maintenance.

4. Installation

- 4.1 Connect the water, supply and return, ensuring the correct orientation. It is advisable to use lengths of flexible hose and shut-off valves for the final connections. Allow for lowering the units.
- 4.2 All threaded connections should be made using the approved method of jointing, Boss white and hemp. The threads fitted to the coil should be supported at all times whilst making joints.
- 4.3 All external piping should be supported independently from the coil.
- 4.4 It is recommended that fluid filters are fitted.
- 4.5 Please consult your plumbing contractor in regards to pipe layout.

5. Electric Connections

- 5.1 Electrical installation must be carried out by suitably qualified and competent personnel in accordance with all current statutory requirements.
- 5.2 All electrical connections must be of the correct size conductors and earthed in accordance with local requirements.
- 5.3 Connect the fan motor to the controller using a screen cable [type SY or CY] to reduce the effects of EMC generated by the inverter speed

control. The screen should be earthed ensuring that the earth bonding is continuous.

6. Technical Information

Performance and Electrical Data

Supply Voltage V-Ph-Hz	Heater Area m ²	Airflow Max m ³ /s	Electrical Power W	Heat Output kW	FLC Amps A	Start Amps A	Speed Max r/min
230-1-50	0.84	4.74	390	51	2.7	7.6	900

Dimensions

Length mm	Width mm	Height mm	Weight Empty kg	Weight Operational kg
1400	740	900	195	220

7. Commissioning Preparation

- 7.1 Once the unit is installed and all joints are sealed, a nitrogen pressure test should be carried out on the system to check for leaks. Following a successful pressure test the coil may be filled. It is important that all air is excluded from the coil and particular attention should be paid to the venting system.

8. Commissioning

- 8.1 Start fans and pumps.
- 8.2 Measure, record and adjust the airflow to within 20% of the design. Measure and record the air pressure drop across the heater battery.
- 8.3 Measure, record and adjust the water flow to within 20% of the design. Measure and record the water pressure drop.
- 8.4 Measure and record the air temperature into the coil. Measure and record the air temperature leaving the coil. Note: Do not exceed maximum working pressures or velocities.

9. Operation

- 9.1 There are three main functions of operation: - De-stratification; Low Heat and High Heat. However, these can be selected to operate in various modes.

With the Manual Mode selected the following operations can be selected:

De-stratification: The fan will run continuously at the speed selected on the Fan Speed dial and will be displayed on the inverter screen [0 –50Hz], inside the panel. The Water Pump and the Water Valve power is Off. [Valve Closed].

Low Heat: The fan will run at the speed selected on the Fan Speed dial and will be displayed on the inverter screen [0 – 50Hz] inside the panel. The Water Pump and the Water Valve power is switched On. The Valve position is selected on the Low Heat Setting dial [0 –10Vdc].

High Heat: The fan will run at full speed [50Hz displayed on the inverter screen]. The Water Pump and the Water Valve power is switched On. The Valve is fully open [10Vdc].

9.2 With the Auto Mode selected the following operations can be selected:

High Heat: The unit switches from Destratification to High Heat to Destratification, as temperature rises and falls.

Low Heat: The unit switches from Destratification to Low Heat to Destratification, as the temperature rises and falls.

High to Low: The unit switches from Low Heat to High Heat to Low Heat, as temperature rises and falls.

10. Filter Cleaning

10.1 An optional function, to ensure the Filter Mesh does not clog, an automatic filter cleaning mode can be built-in to the control system. Every 6 hours the fan switches to “cleaning mode”, reversing the fan which runs at full speed for 15 seconds, blowing off any dust on the filter mesh. Depending on environmental conditions it is highly recommended that the coil is lowered to the ground for thorough cleaning during the growing period.

11. Interlock

11.1 An optional function, if fitted. In Auto mode, if the Interlock Switch is On, a voltage signal [230Vac or 24Vac, determined when ordering] is received from the main ventilation thermostat when cooling is required, will switch off all the heating and destratification functions. When the house is being cooled by the main fans, any heat generated would be wasted, as it would be drawn straight out of the building.

12. Indicator Lights

Lights are provided to indicate the state of the operation modes: - High Heat; Low Heat; Destratification and Cleaning.
An additional light will illuminate if the fan motor trips for any reason.

13. Frost Protection

All coils should be protected from frost. This can be achieved by adding inhibited antifreeze solution to the circulation water or heating the environment around the coils. It is not always possible to fully drain water out of a coil matrix when the tubes are horizontal. To minimise the retained water and drain down the system for frost protection: -

13.1 Drain the water coil and blow out any remaining droplets of water with compressed air.

13.2 Completely fill the coil with inhibited antifreeze of appropriate concentration for the minimum temperature that will occur.

13.3 The antifreeze solution can be drained and stored to repeat the procedure at other times.

Note Uses of only inhibited antifreeze is important as uninhibited products may cause formicary corrosion within the pipes.

14. Maintenance

14.1 Finned surfaces should be inspected regularly, and cleaned if necessary.

14.2 The coil should be inspected for any signs of corrosion.

14.3 Circulating fluid should be kept free from impurities and corrosive elements.

14.4 Vent air from the coil on a regular basis. Automatic air vents are recommended.

14.5 Check all connections; fluid and electrical and tighten if necessary.

Guarantee

Hydor or its agents will, within a period of one year from the date of dispatch from their works, at its option, replace any goods, which are proven to have defects as a result of defective materials or workmanship. The goods must be inspected by a Hydor official and if necessary returned, with a Returns Note Number, carriage paid, for further examination.

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