This manual must be kept with the appliance
Part No E134

October 2010

Mini-Plate

Installation Instructions

Working towards
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ANDREWS
WATER HEATERS

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WATER HEATERS

Andrews Mini Plate has been designed and manufactured to comply with current International standards of safety. In the interests of the health and safety of personnel and the continued safe, reliable operation of the equipment, safe working practices must be employed at all times. The attention of U.K. users is drawn to their responsibilities under the Health and Safety Regulations 1993.

All installation and service on the Andrews Mini Plate must be carried out by properly qualified personnel, and therefore no liability can be accepted for any damage or malfunction caused as a result of intervention by unauthorised personnel.

The Andrews Water Heaters policy is one of continuous product improvement, and therefore the information in this manual, whilst completely up to date at the time of publication, may be subject to revision without prior notice.

Further information and assistance can be obtained from:

Andrews Water Heaters
Wood Lane, Erdington, Birmingham B24 9QP
Tel: 0845 070 1055 Fax: 0845 070 1059
Sales: 0845 070 1056
Technical: 0845 070 1057
Service: 0845 070 1058

Email: andrews@andrews-waterheaters.co.uk
www.andrewswaterheaters.co.uk

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GENERAL INFORMATION

To ensure the continued, trouble-free operation of your heater at maximum efficiency, it is essential that correct installation, commissioning, operation and service procedures are carried out strictly in accordance with the instructions given in this manual. By law, installation and commissioning of the heater must be carried out by properly qualified personnel.

The Mini Plate must be installed in accordance with the following requirements;
The current BUILDING REGULATIONS.
The current WATER SUPPLY (WATER FITTINGS) REGULATIONS 1999.

Additionally, installation should be performed in accordance with all relevant requirements of the Local Authority and recommendations of the British Standards and Codes of Practice detailed below.

BRITISH STANDARDS AND CODES OF PRACTICE

BS 6700: 1997	Specification for design, installation, testing and maintenance of services supplying water for domestic use within buildings and their curtilages. This standard supersedes the following British Standards and Codes of Practice: CP99, CP310, CP324, 202, CP342 Part 2, Centralised Hot Water Supply.
BS 5546:1990	Installation of gas hot water supplies for domestic purposes.
BS 7206:1990	Specification for unvented hot water storage units and packages.
NOTE:	**Consideration should be given to amendments or updates to the above standards.**

HEALTH AND SAFETY REGULATIONS 1993

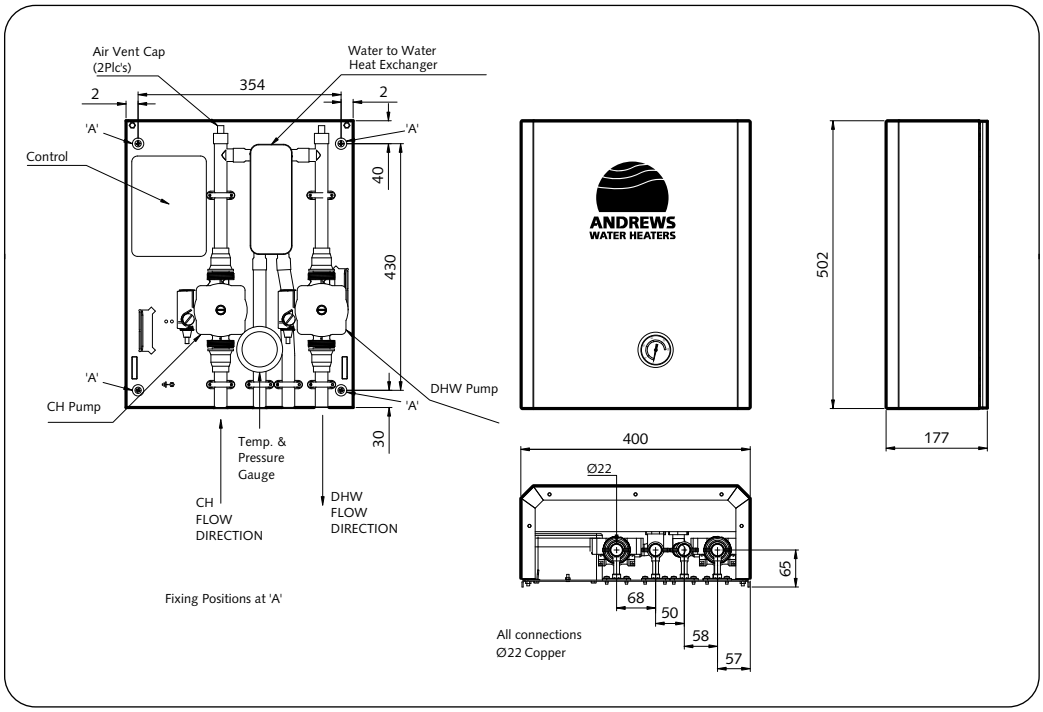
It is the duty of manufacturers and suppliers of products for use at work to ensure, so far as is practicable, that such products are safe and without risk to health when properly used and to make available to users, adequate information about their safe and proper operation.

Andrews Water Heaters should only be used in the manner and purpose for which they were intended and in accordance with the instructions in this manual. Although the heaters have been manufactured with paramount consideration to safety, certain basic precautions specified in this manual must be taken by the user.

It is imperative that all users of the heater must be provided with all the information and instruction necessary to ensure correct and safe operation.

CONSTRUCTION

The Andrews Mini-Plate is designed for use with the range of Andrews Storage Water Heaters. It consists of two pumps, one of which is bronze for the domestic hot water circuit and the other is a conventional circulating pump both connected to opposite sides of the stainless steel brazed heat exchanger. An electronic control system monitors the function of the Mini-Plate and ensures that the domestic hot water requirements always take priority.



FIXING DIMENSIONS Fig. 1

TECHNICAL DATA

Weight			14kg
Maximum capacity of heat exchanger*			23kW
Water connection heating side			22mm
Water connection, domestic side			22mm
Electrical supply			230V 1ph 50Hz
Electrical load, control panel			20W
Pumps	Speed 1	Speed 2	Speed 3
Input power (watts)	40	65	95
Speed RPM	800	1200	1900
Full Load Current (A)	0.17	0.28	0.42
Maximum Working Pressure			5 bar
Test pressure			7.5 bar

*Dependent upon water temperatures

HEATING CIRCUIT PUMP

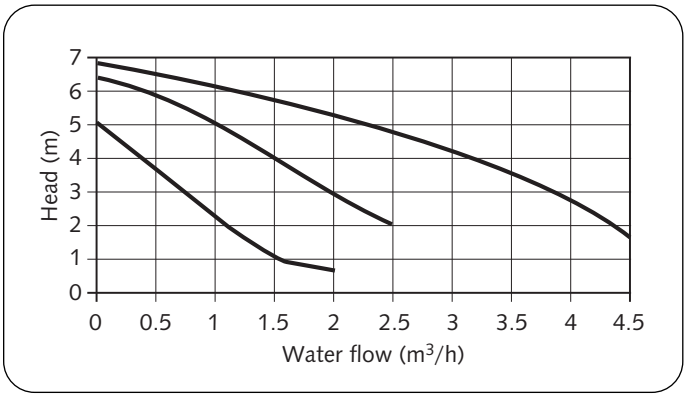


Fig. 2

BRONZE DOMESTIC HOT WATER PUMP

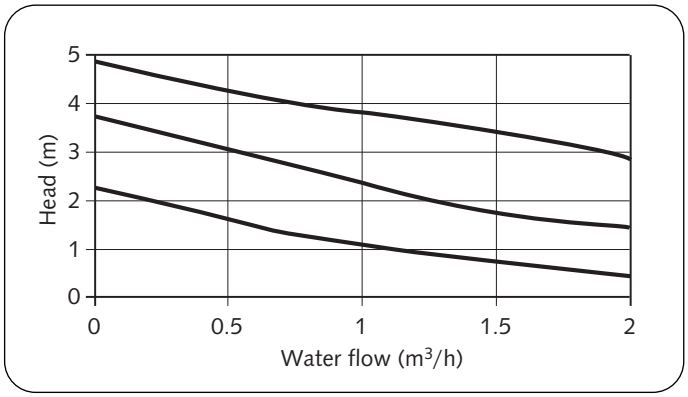


Fig. 3

SYSTEM DESIGN

The maximum load of the Mini-Plate is dependent upon the supply and return temperature of the water, the maximum output is around 23kW. Size the storage water heater using the Andrews Size-it guide and then add the heating load to the heater input to give the size of Andrews Storage Water heater required.
If a larger heating load is required more than one Mini-Plate can be used. Check with the pump curves on page 3 in case the circuit head of the heating system selected requires a secondary pump.

Refer to Andrews Water Heater installation manual for water heater details.

1. Cold feed
Install water heater in accordance with the Andrews Water Heater Instructions Manual.

2. Non return valve

3. Bronze domestic water pump

4. Plate heat exchanger

5. Heating System pump

6. Heating System expansion tank

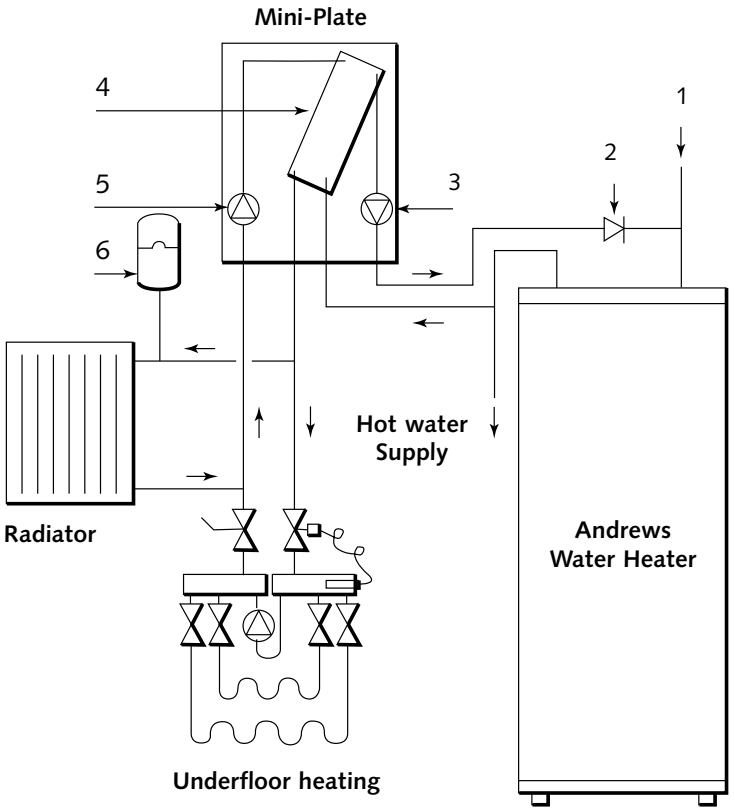


Fig. 4 TYPICAL SYSTEM LAYOUT

INSTALLATION

1. Mounting
Mount the Mini-Plate on the wall above and as close as possible to the water heater. Fix using suitable wall fixings through the four 6mm knock outs on the rear of the enclosure. (See Fig.1).

2. Water connections
The Mini-Plate can be connected to a Water Heater supplied from a vented or unvented system. Refer to the water heater installation manual for water heater connections and the drawing fig.4 for the Mini-Plate system.
Using compression fittings connect the domestic hot water supply to the 22mm copper connections at the base of the Mini-Plate. Connect the heating system supply to the 22mm copper connections. Ensure a check valve is fitted to the hot water return pipe.

3. Electrical connections (see Fig.5 page 5).
Wiring external to the Mini-Plate must be installed in accordance with the current I.E.E Regulations for the wiring of buildings and to any local regulations that may apply.
The Mini-Plate is designed to run off 220/230V 1Ph 50Hz supply and the fuse rating is 5 Amp. The thermostat circuit is 24V AC.

INSTALLATION

The method of connection to the mains electricity supply should facilitate complete electrical isolation of the appliance, preferably by use of an unswitched shuttered socket outlet in conjunction with a fused three pin plug, both complying with the requirements of BS 1363. Fit the plug to the lead fitted to the appliance. The point of connection to the mains should be readily accessible and adjacent to the appliance.
Fit the room thermostat in a suitable location dependent upon the heating system used. Wire to the Mini-Plate by removing the cover to the control box inside the appliance and connect to the top terminals marked 24V KI. The thermostat circuit is 24V AC.

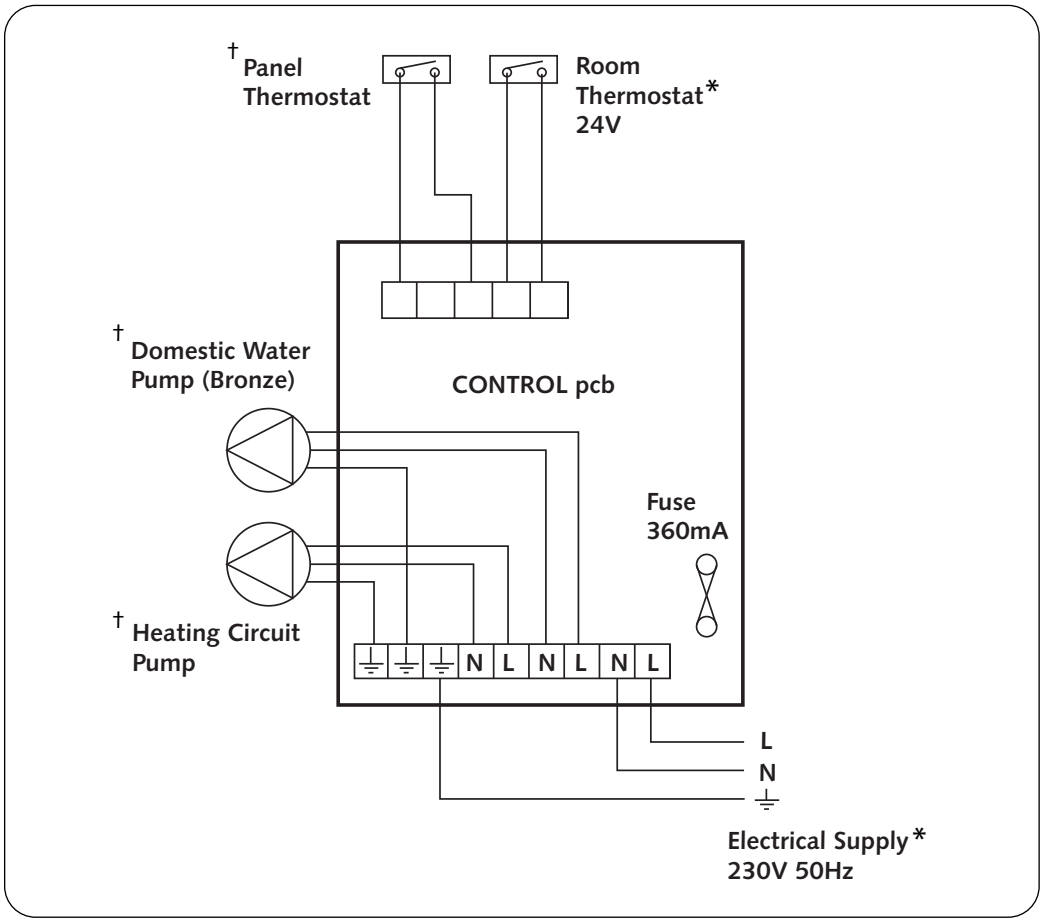


Fig. 5
WIRING DIAGRAM

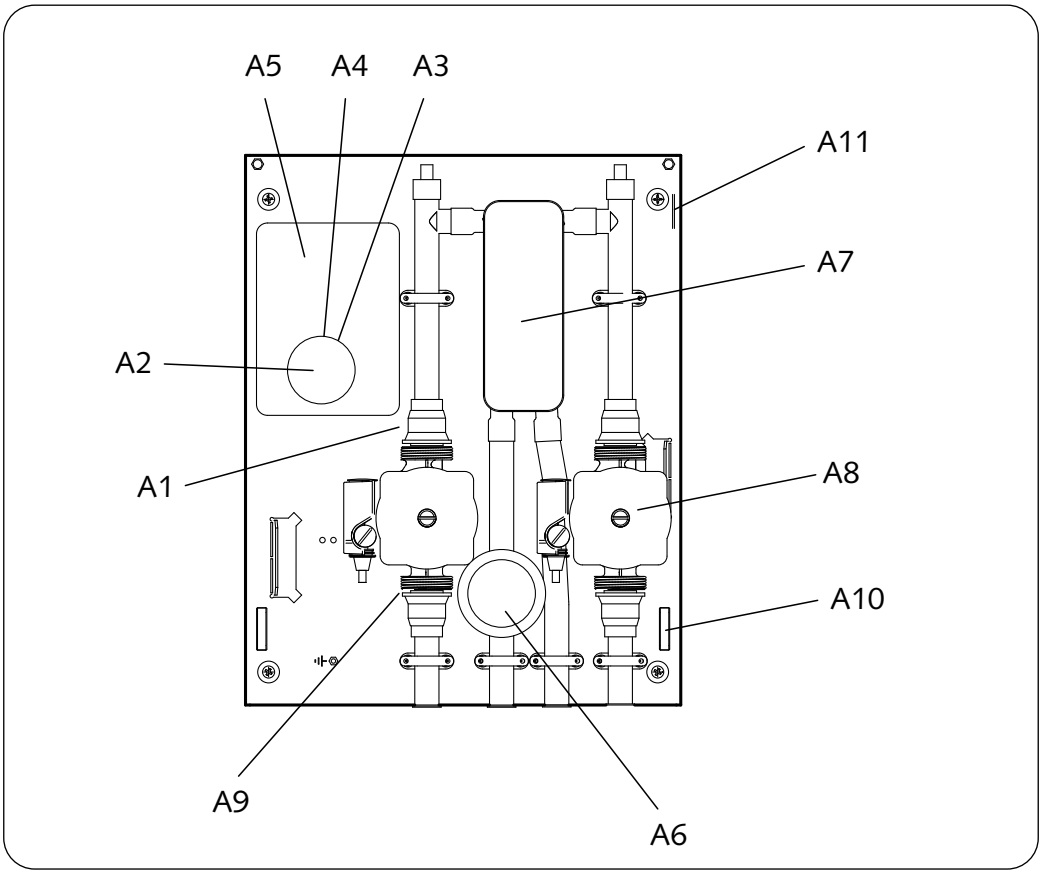
† Factory installed

* To be fitted by customer

COMMISSIONING

Fill the water heater, Mini-Plate and heating system and purge air from the air bleed valves at the top of the Mini-Plate. Commission the water heater in accordance with the operating manual and allow the water heater to reach the set temperature.
Turn on the electrical supply to the Mini-Plate and ensure the room thermostat is calling for heat. The domestic hot water pump will run circulating hot water through the heat exchanger. When the Mini-Plate control thermostat senses the water temperature is higher than the set value, the heating pump will operate. Both pumps will continue running until the room thermostat is satisfied, then the domestic pump will stop. The heating pump will stop after a delay time to maximise the heat withdrawal from the heat exchanger.

At any time, whether the heating system is operating or not, domestic hot water can be taken from the system for showers etc.. If, during this draw off period, the domestic hot water temperature falls below the value adjusted on the Mini-Plate control panel thermostat the heating pump will stop, giving priority to the domestic hot water.
The thermostat temperature should be set at around 55˚C.



Reference	Part Number	Description
A1	E801	11/2" x 22mm pump valve
A2	E802	Thermostat 0 - 90°C
A3	E803	Black Knob 0 - 90°C
A4	E804	Black Bezel
A5	E805	Mini Plate Control Box
A6	E806	Temp & Pressure Gauge
A7	E807	Heat Exchanger
A8	E808	Bronze Pump
A9	E809	Heating Pump
A10	E810	Magnetic Catch
A11	E811	Clip

PART OF BDR THERMEA

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