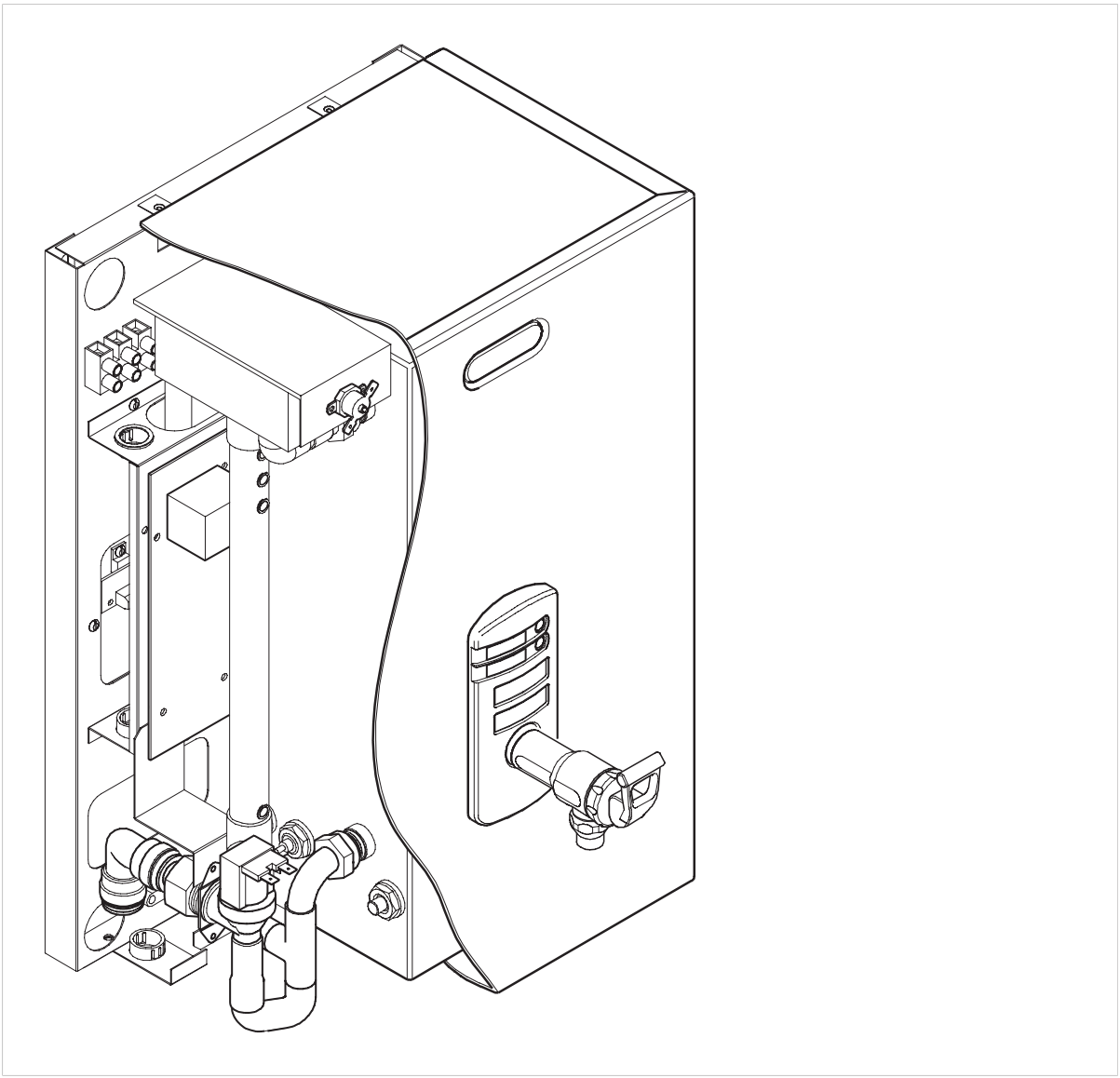
calomax

Clipper2

Patented Wall-mounted Catering Water Boiler

INSTALLATION, OPERATION AND MAINTENANCE MANUAL



Read these instructions thoroughly before commencing installation or undertaking maintenance work.

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TEL: 0113 249 6681 FAX: 0113 235 0358 www.calomax.co.uk

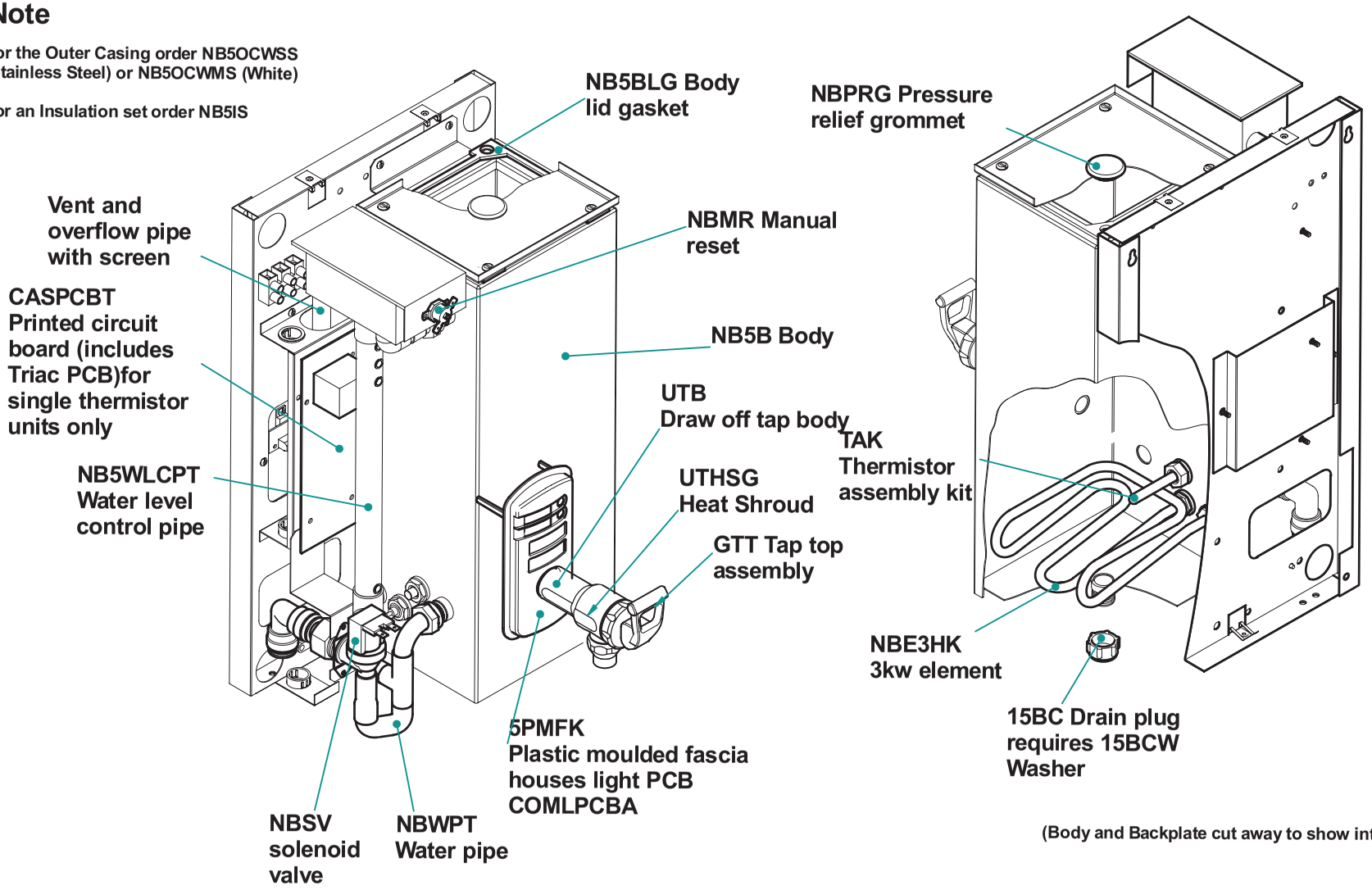
If parts required are not identified, please contact Calomax ltd

PARTS IDENTIFICATION FOR CLIPPER 5L

Note

For the Outer Casing order NB5OCWSS (Stainless Steel) or NB5OCWMS (White)

For an Insulation set order NB5IS



(Body and Backplate cut away to show internal components)

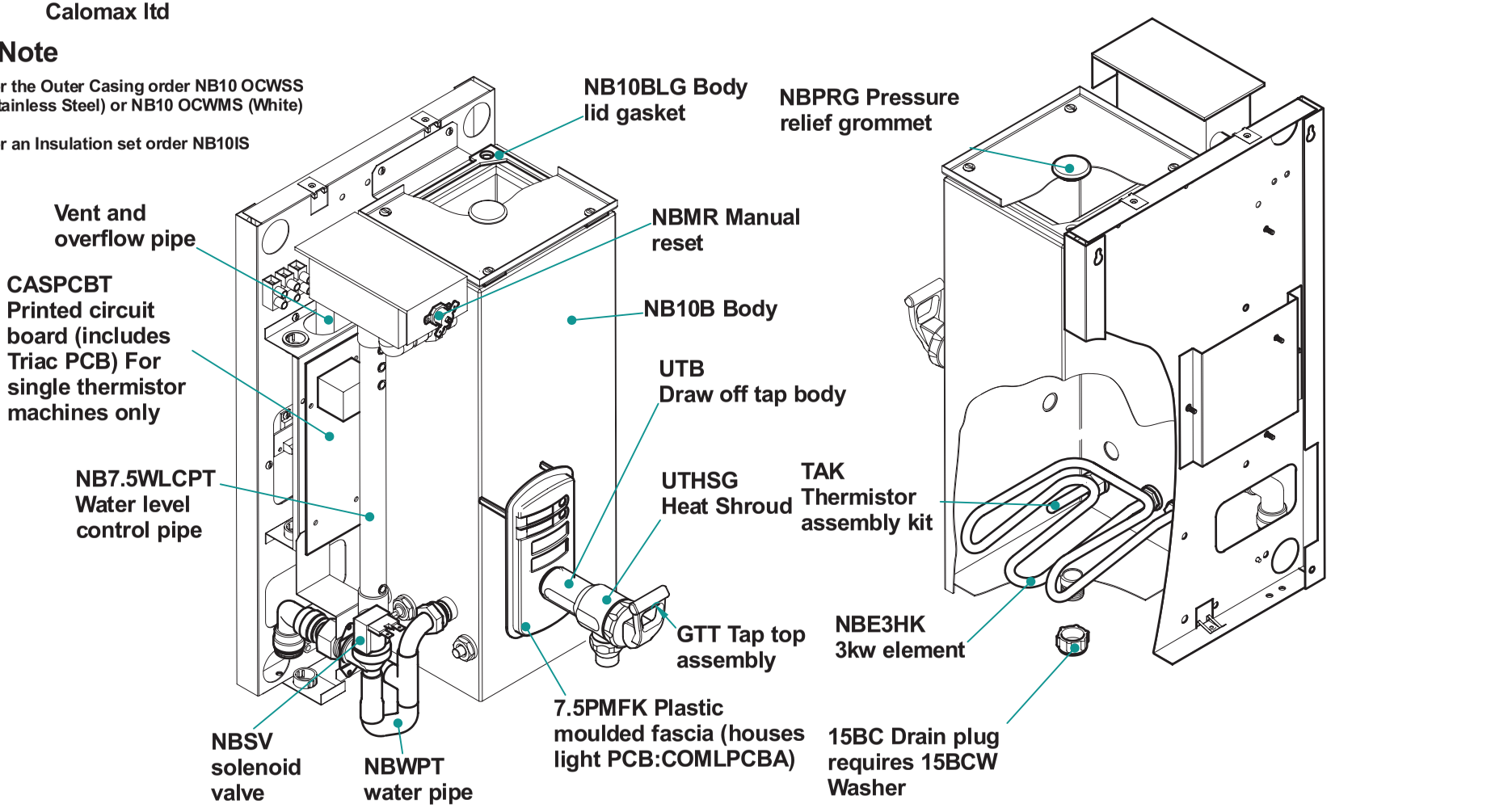
If parts required are not identified, please contact Calomax ltd

PARTS IDENTIFICATION FOR CLIPPER 7. 5L

Note

For the Outer Casing order NB10 OCWSS (Stainless Steel) or NB10 OCWMS (White)

For an Insulation set order NB10IS



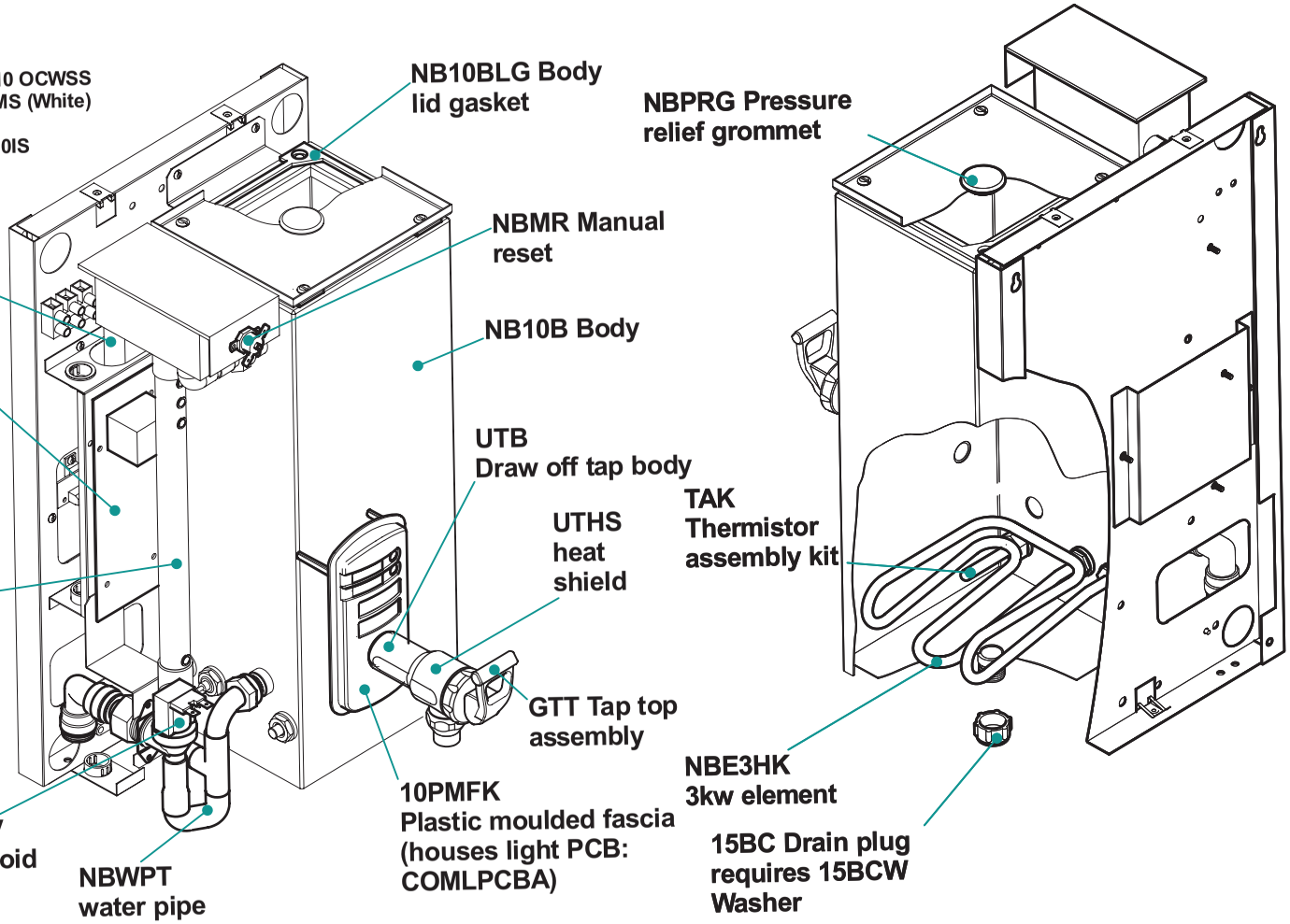
(Body and Backplate cut away to shown internal components)

PARTS IDENTIFICATION FOR CLIPPER 10L

Note

For the Outer Casing order NB10 OCWSS (Stainless Steel) or NB10 OCWMS (White)

For an Insulation set order NB10IS



(Body and Backplate cut away to show internal components)

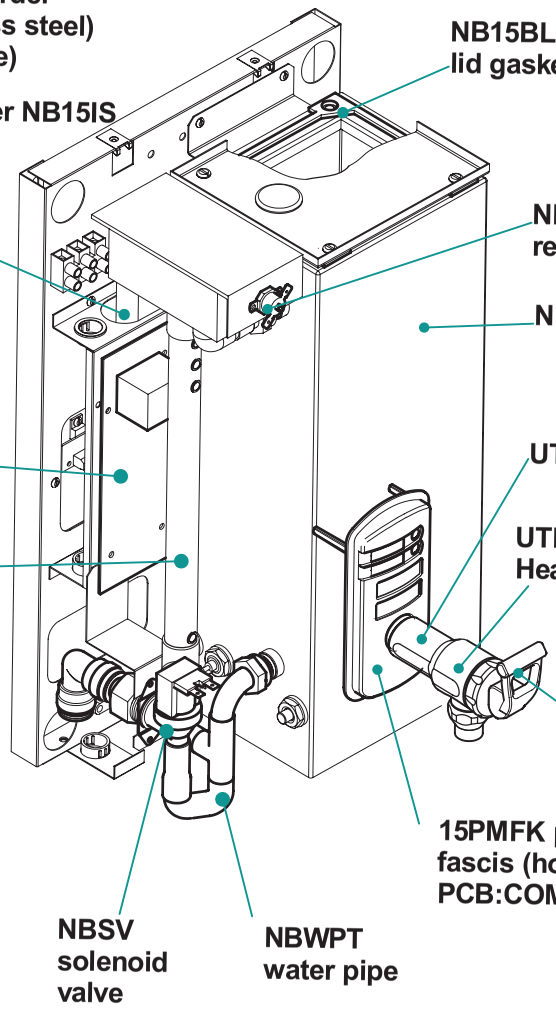
If parts required are not identified, please contact Calomax ltd

PARTS IDENTIFICATION FOR CLIPPER 15L

Note

For the outer-casing order NB15OCWSS (Stainless steel) or NB15OCWMS (white)

For insulation set order NB15IS



Vent and overflow pipe WITH SCREEN

CASPCBT Printed circuit board (includes Triac PCB)For single thermistor units only

NB15WLCPT Water level control pipe

NB15BLG Body lid gasket

NBMR Manual reset

NB15B Body

UTB universal tap body

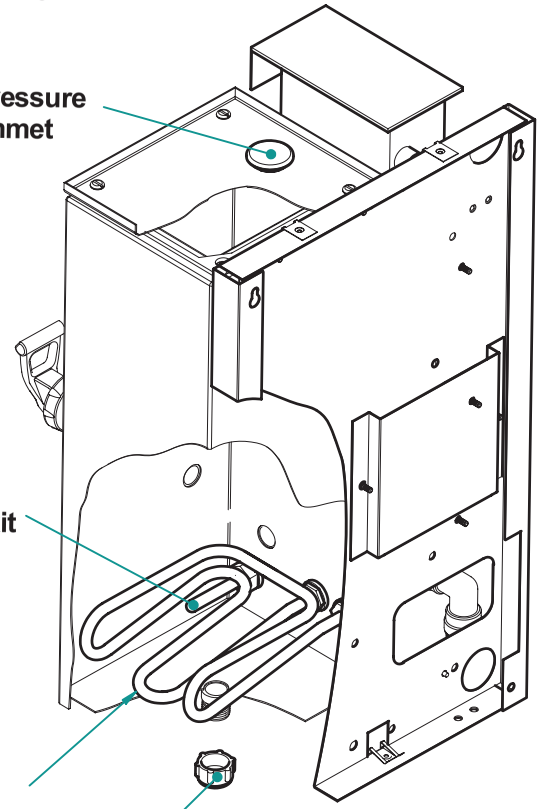
UTHSG Heat Shroud

GTT grey tap top

15PMFK plastic moulded fascis (houses light PCB:COMLPCBA)

NBSV solenoid valve

NBWPT water pipe



NBPRG Pressure relief grommet

TAK Thermistor assembly kit

NBE3HK 3kw element

15BC Drain plug requires 15BCW Washer

(Body and Backplate cut away to show internal components)

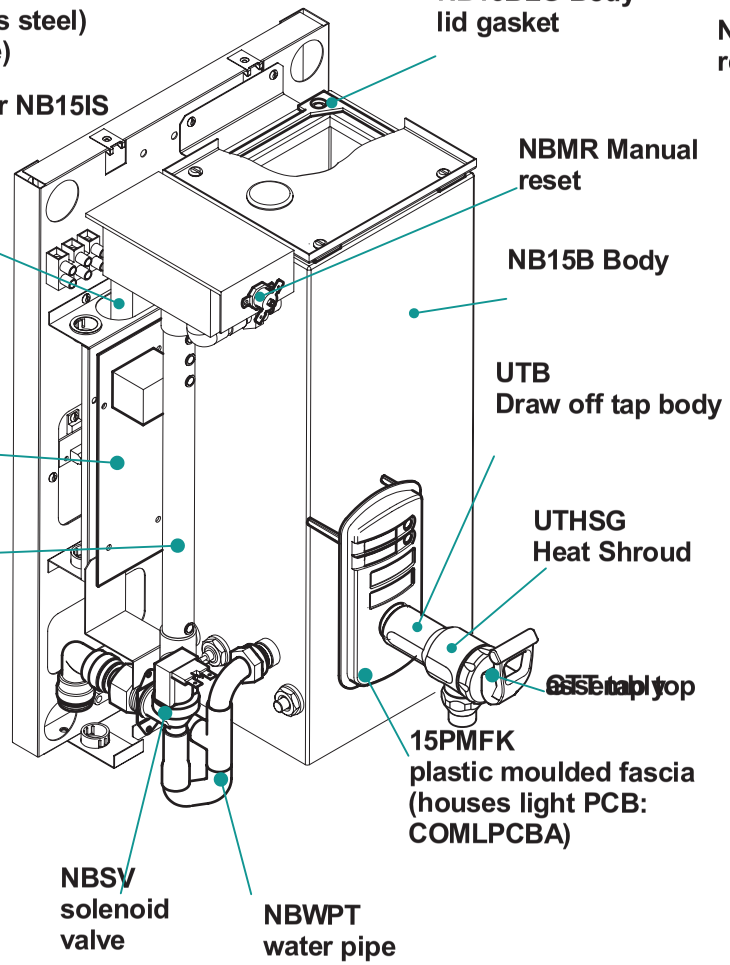
If parts required are not identified, please contact Calomax ltd

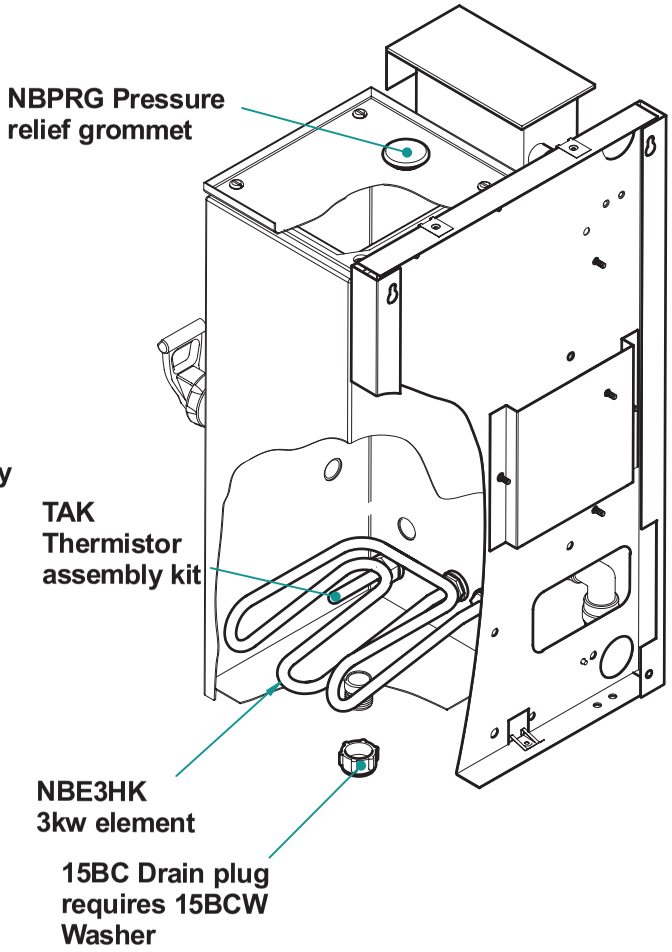
PARTS IDENTIFICATION FOR CLIPPER 15L

Note

For the outer-casing order NB15OCWSS (Stainless steel) or NB15OCWMS (white)

For insulation set order NB15IS





(Body and Backplate cut away to show internal components)

2. PLANNING THE INSTALLATION

All installation and maintenance work must be carried out by competent persons

2.1 Water Requirements

The unit is designed to be connected to a cold water rising mains supply, using 15mm Table 'X' copper tube. with a minimum pressure of 20 KPa (0.2bar) and a maximum pressure of 1000 KPa (50bar).

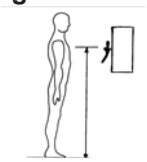
So as to comply with the U.K. Water Supply Regulations a single-check valve must be fitted to the cold water mains supplying the boiler. It is also recommended that an isolating valve be fitted to the mains water supply to facilitate maintenance.

The formation of scale in hard water areas is a problem associated with all hot water appliances. Damage to the boiler caused by excessive scale deposits is not covered by the manufacturer's warranty.

2.2 Electrical Requirements

The installation must comply with the current I.E.E. Wiring regulations, if in doubt consult a qualified electrician.
This appliance must be earthed.
The boiler complies with the Electrical Equipment Safety Regulations (SI1994/3260) and has been independently tested to BS EN 60335-2-63 :.
The boiler operates a nominal 3 kW element at 240V. 50Hz. supply. A circuit diagram is provided on page 9.

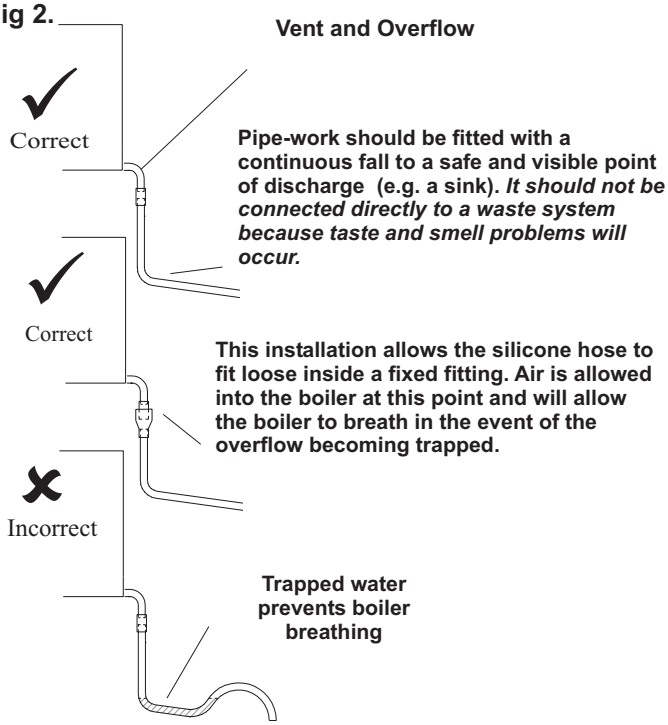
Fig 1



The height from floor to draw off tap handle should be 1200mm +/- 100mm

Fig 2.

Vent and Overflow



Pipe-work should be fitted with a continuous fall to a safe and visible point of discharge (e.g. a sink). ***It should not be connected directly to a waste system because taste and smell problems will occur.***

This installation allows the silicone hose to fit loose inside a fixed fitting. Air is allowed into the boiler at this point and will allow the boiler to breath in the event of the overflow becoming trapped.

Trapped water prevents boiler breathing

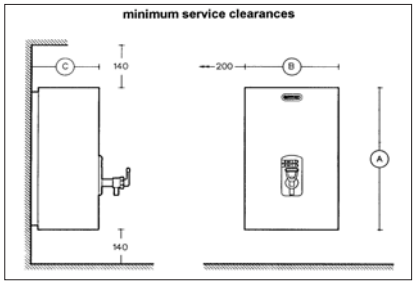
2.3 Installation Location

To comply with recommendations from the health and safety executive it is important that due consideration be given to the safe operation of the controls of the boiler. The boiler should therefore be mounted in such a manner that the operator can stand directly facing the machine with the controls at the recommended height . **See fig. 1** ***Consideration should also be given to the servicing requirements of the machine. Ensure the type of wall construction and fixings are suitable to support the working weight of the boiler***
See fig.3

2.4 Vent / Overflow Pipe Requirements

The vent and overflow pipe should be extended on site using 15mm Speed-fit plastic tube or 15mm Table 'X' copper tube. The pipe must be laid with a ***continuous fall***, discharging to a safe and visible position. ***The vent and overflow pipe should not be connected directly to a soil pipe and should never be allowed to become blocked or restricted .See fig 2***

Fig 3



Model	Physical Dimensions			Weights (kg)	
	A	B	C	Dry	Working
5L	511	313	226	10	17
7.5L	582	368	251	13	24
10L	582	368	251	13	27
15L	623	401	274	15	35

All dimensions in mm

Fig 4

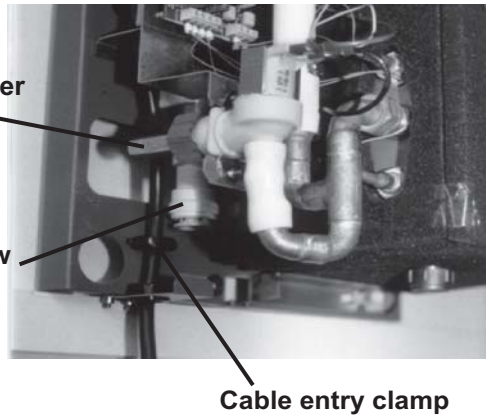
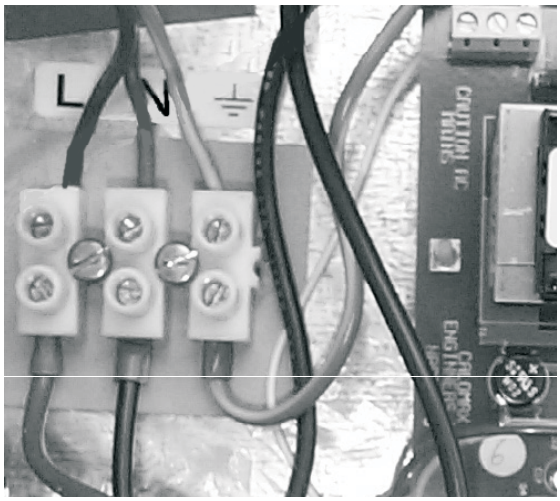


Fig 5.



3. INSTALLATION

Sufficient room must be given above, below and to the left hand side of the boiler to allow maintenance access and removal of the outer casing (see fig. 3).

1. Connect the mains water supply to the boiler solenoid inlet , using the supplied elbow compression fitting.

2.Connect the vent / overflow pipe (see fig.2) using Speedfit plastic tubing or 15mm table 'X' copper tubing.

The Vent/ overflow pipe must be fitted and arranged such that the outlet position is safe, visible and external to the boiler. The overflow pipe must not be connected directly to a soil pipe and should never be allowed to become blocked or restricted .

3. Connect the electrical supply to the unit via the terminal block. The cable must be secured by the cable clamp, (see fig. 4). The electrical connections to the terminal block must be made as shown in fig.5.

red or brown *to the terminal marked* ***L***

black or blue *to the terminal marked* ***N***

green / yellow *to the terminal marked* ⏚

4. COMMISSIONING

1. Turn on the water supply.
2. Turn on the electrical supply.

On initial switch-on only

After a few seconds delay for the electronics to charge, the boiler will begin filling with water and the 'WAIT / READY' light will flash yellow indicating 'WAIT'. When the low water level is reached the element will begin to heat the water. the solenoid will remain on until the normal operating level is reached. Upon reaching the correct temperature the 'WAIT / READY ' light will turn solid orange , indicating 'READY AND FULL ' .

NOTE : PRE-APRIL /02 MODELS HAD SLIGHTLY DIFFERENT MODE OF OPERATION

On subsequent operation of the boiler

The unit will fill and heat the water in cycles. The machine will allow only a limited amount of water to enter the unit and then switch off the solenoid and switch on the element.

Figure 6. shows the approximate times for boiling water to be available at the draw off tap, from commissioning. These times will vary depending on the water pressure of the mains water supply.

Fig 6.

Model	Approximate times for boiling water to be available, from commissioning
5L	18 mins
7.5L	26 mins
10L	32 mins
15L	47 mins

5. USER INSTRUCTIONS

Boiling water is dispensed through the draw off tap, which is operated by pulling the handle forward towards the user. ***Due caution should be exercised as the water is approximately 98 ° C. at all times.*** The tap handle will automatically return to the off position unless pulled fully forward to the locking position.

Two lights mounted on the front facia provide a continuous display of the operation of the boiler. During the initial commissioning process or subsequent switch on from cold, the top '**WAIT / READY**' light will indicate '**WAIT** ' by flashing yellow (water is below normal operating temperature). When the boiler has reached the normal operating temperature, the '**WAIT / READY**' light will indicate '**READY**' by turning to a ***solid yellow*** if the boiler is only part full , or a ***solid orange*** light when maximum draw off capacity is available.

If ***all*** the available water is drawn from the boiler , the flow rate will reduce to a trickle as the unit fills and heats the water (this does not indicate a fault with the boiler). The '**WAIT / READY**' light will continue to show '**READY**' as the temperature of the water is still approximately 98°C.

5.1 Cleaning

When required the unit should be wiped down using a damp cleaning cloth

This appliance is not protected against the ingress of water and therefore should not be washed down in any manner that would allow water to enter the electrical chamber of the unit e.g. the use of a spray water jet .

5.2 Service Indicator Light

Certain types of operational fault will cause the 'SERVICE INDICATOR' light, mounted on the front fascia to flash. If this occurs refer to section on , 'Fault Finding' .

6. MAINTENANCE

Competent persons must carry out all maintenance work.
When the body lid has been removed , It is recommended that a new body lid gasket be fitted on re-assembly to ensure a steam tight seal. Damage to the unit caused by incorrectly sealed gaskets that should be replaced during maintenance is not covered by the manufacturers warranty.

6.1 Scale

Your Clipper 2 boiler incorporates an integral scale inhibitor. In general, independent users throughout the country have benefitted from either a vastly reduced scale build up, and / or much easier maintenance due to the softer nature of the scale which does not adhere rigidly to the internals of the machine. Please note that this is not a scale eliminator and its effect will differ according to the water quality in your area.

To ensure regular, trouble-free operation, periodically check for scale inside the boiling chamber and around the tap nozzle. The production of scale is a natural phenomenon and some de-scaling may be required within the first 12 months. This is not covered under the product's warranty as it is not a fault.

The solenoid valve is fitted with a removable filter at the inlet point. This filter should be cleaned as required.
Check the extent of scale formation on the element, thermistor etc. (See parts identification drawings).

6.2 De-scaling

Allow the contents of the boiler to cool sufficiently for the water to be removed safely using the drain plug (see fig. 7). The body can now be de-scaled **NB Do not over-tighten the drain plug when re-fitting.**

Fig 7

Scale deposits should be removed from all internal surfaces, particularly the heating element, thermistor pocket etc. by gently tapping or scrapping. If the deposits are soft, use a nylon pad and flush out. Abrasive cleaning materials containing scouring powders and detergents must not be used, such materials can cause taste problems. Chemical de-scalants must only be used in accordance with the manufacturer's instructions.

IMPORTANT All chemical agents must be completely flushed out to avoid taste problems, health risks and possible signalling failures.

6.3 Replacing the Element and Thermistor

The element and thermistor can be replaced by removing the back-nuts and washers and withdrawing from inside the body. ***IMPORTANT: a new body lid gasket may be required.***

6.4 Replacing the Printed Circuit Board (PCB)

IMPORTANT: both the main printed circuit board and the Triac printed circuit board must be replaced as a matched pair.

1. Disconnect the wiring connections to the Main PCB
2. Remove the PCB by pulling it forward off the supports.
3. Disconnect the wiring connections to the Triac PCB(see fig 8)
4. Remove the Triac PCB by releasing the fixing screw and pulling it forward off the supports (see fig. 8 for location of Triac PCB).
5. Apply a thin covering of heat transfer compound (supplied) to the mounting platform of the new Triac PCB and fit the new triac P.C.B. onto the two P.C.B. supports, ensure it is positively located ***and secure it with the single fixing screw.***
6. Reconnect the Triac wiring connections, see the circuit diagram on page9.
7. Position the main P.C.B. on the four supports, ensuring that the P.C.B. is positively located.
Reconnect the P.C.B. wiring connections, see the circuit diagram on page 9.

Fig 8.

Triac PCB

6.5 Replacing the Solenoid

IMPORTANT: In areas where scale can be a problem , check that the suspected fault is not due to a blocked filter (this is removable at the inlet to the solenoid) ***before replacing the unit . Scale build-up in the filter can cause intermittent problems.***

1. Allow the contents of the boiler to cool sufficiently for the water to be removed safely using the drain plug (see fig. 7). The body can now be de-scaled **NB Do not over-tighten the drain plug when re-fitting.**
2. Remove the silicone hose that joins the solenoid to the water inlet. ***Warning the pipe will retain a volume of water that will be released when the connection is broken.***
3. Pull the solenoid from the mounting bracket.
IMPORTANT: The correct operation of the boiler relies on a regulated flow of water from the solenoid valve and therefore a genuine replacement part supplied by Calomax must be fitted.
4. Fit the replacement valve onto the existing mounting bracket (if a mounting bracket was supplied with the new valve, remove this first).

6.6 Checking the overflow screen

.
1. Remove the P.C.B. and support bracket as one assembly by releasing the two fixing screws.
3. **Refer to the parts identification drawings on pages 1,2,3 and 4 to identify the location of the overflow screen**. The Overflow screen can be removed by easing off the silicone tubing at each end. Check the screen for blockage. The overflow screen can be cleaned or replaced with a new part (supplied by Calomax) as required.

6.7 Adjusting the Water Temperature Set Point

The temperature potentiometer (Pot) is pre-set at Calomax and will only require adjustment in exceptional circumstances.

The temperature adjustment Pot 1 (located at the bottom left hand corner of the main printed circuit board) controls the operating temperature of the boiler. ½ turn clockwise on this device will raise the temperature of the water by approximately 1 ½ degrees centigrade. ***Water boils at different temperatures depending on barometric pressure. The temperature should not be tuned higher than the pre-set 98 degrees, or overboiling may occur during low barometric pressure conditions, causing the unit to trip the overheat cut-out device.***

Any adjustments made to the P.C.B should be noted on the boiler to aid fault diagnosis if problems persist.

7. FAULT FINDING

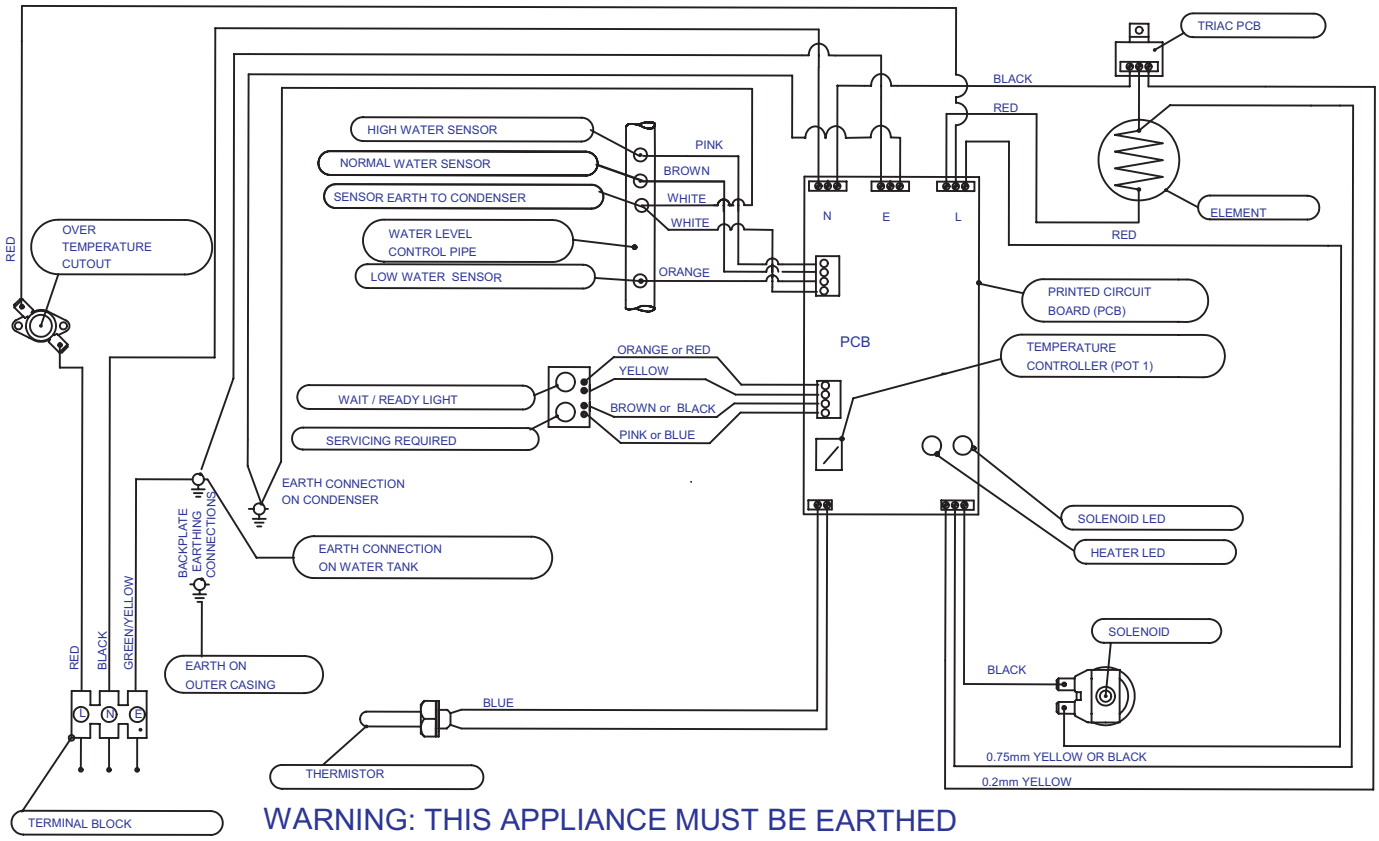
To protect the unit in the event of continuous over boiling, the unit is fitted with a thermal cutout device. This device will cut power to the entire machine and can be re-set manually. Before re-setting the device, the cause of the trip.(de-scale required etc.) should be investigated.
The Service Indicator Light on the front of the machine and Light Emitting Diodes (LED's)fitted to the Main PCB, can be used to diagnose operating problems with the machine.
Certain types of operational fault will cause the green '**SERVICE INDICATOR'** light, mounted on the front facia, to flash certain sequences.

.A ***two*** -light pulse generally indicates that the low level probe requires a de-scale .
A ***three-*** light pulse indicates a loss of signal from the normal water level probe causing the unit to overfill, The probe requires a de-scale.
A ***four*** -light pulse indicates the machine has over-filled due to debris trapped in the solenoid valve. This is usually solved by drawing **all** water from the tap, causing the valve to operate and flush out the obstruction. The machine will reset itself once the problem has cleared. If this does not rectify the problem, turn off the water supply and clean the valve's filter of debris.
A ***five-*** light pulse indicates the boiler has over filled due to scale on both the low and normal level sensors.
A ***six-*** light pulse indicates the machine has over-filled due to debris trapped in the solenoid valve.(***see four pulse***) but also the low level probe requires a descale.
The unit can be used normally while the service indicator is flashing

LED's fitted to the Main PCB indicate the operation of the solenoid and element. The red LED indicates that the element should be energized and the yellow LED indicates that the solenoid should be energized.
The switching of the element and solenoid is all solid state, driven by the PCB's .In all cases the power to the element and solenoid is switched through the neutral connection.
For further information contact Calomax ltd direct.

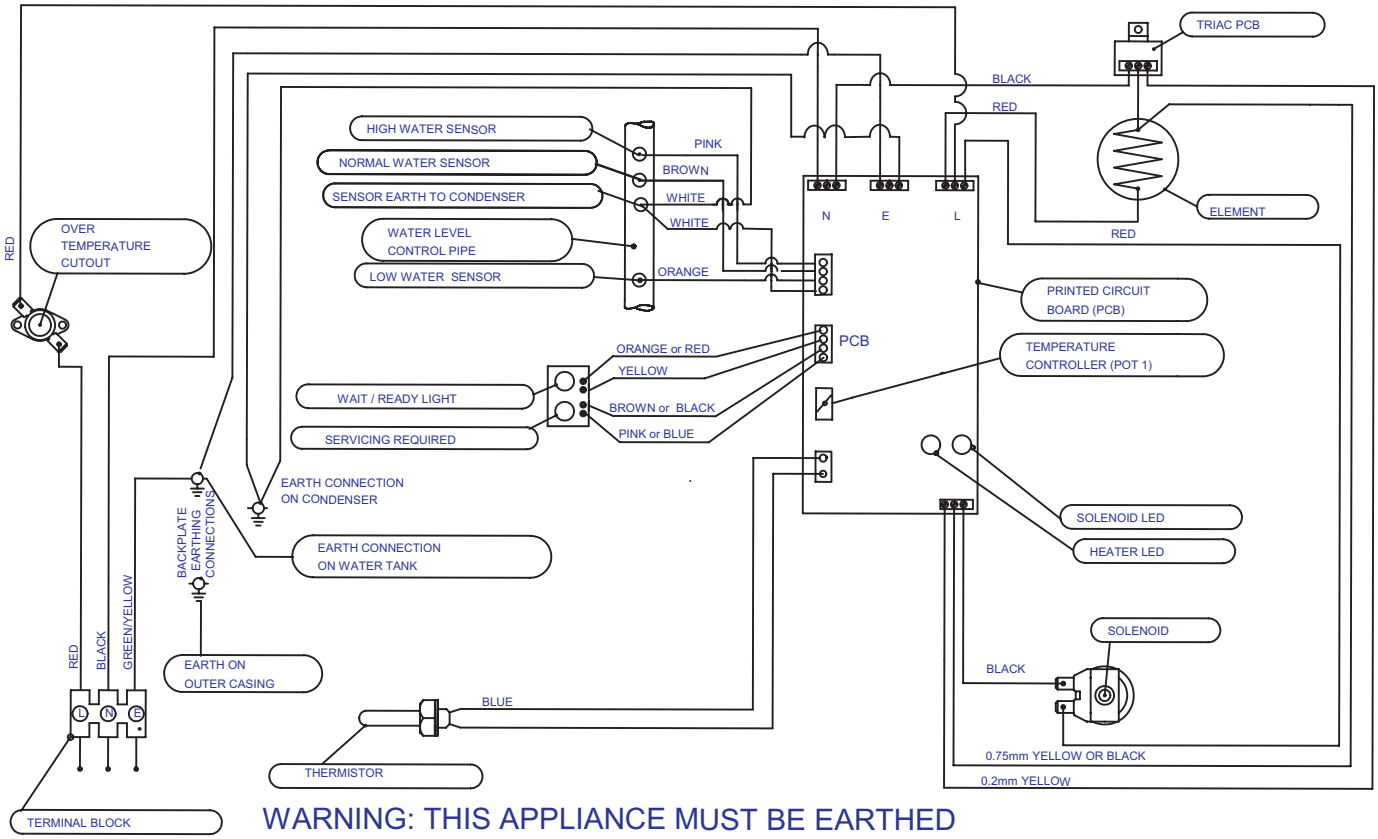
Stating Model, S.No, and fault symptoms.

WIRING DIAGRAM FOR CLIPPER2 WATER BOILERS (using v10 pcb board)



WARNING: THIS APPLIANCE MUST BE EARTHED

WIRING DIAGRAM FOR CLIPPER2 WATER BOILERS (using v11 pcb board)



WARNING: THIS APPLIANCE MUST BE EARTHED