

CALOMAX PATENT WATER BOILERS/STEAM INJECTORS INSTALLATION OPERATION AND MAINTENANCE MANUAL

CB/S RANGE ELECTRICALLY OPERATED

ISSUE 5- DCR 518



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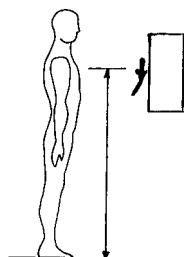
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INSTALLATION INSTRUCTIONS - CB/S RANGE

To comply with recommendations from the health and safety executive it is important that due consideration be given to 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 shown below. Consideration should also be given to the servicing requirements of the machine.



The height from floor to draw off tap handle should be 1300mm +/- 100mm

Install the Boiler in a position having adequate ventilation on a level and firm surface suitable for a working temperature of 90°C. Allow clearance for the easy removal of the outercasing lid and left hand side panel. Holes are provided in the boiler base for fastening down. Use M5 bolts and nuts.

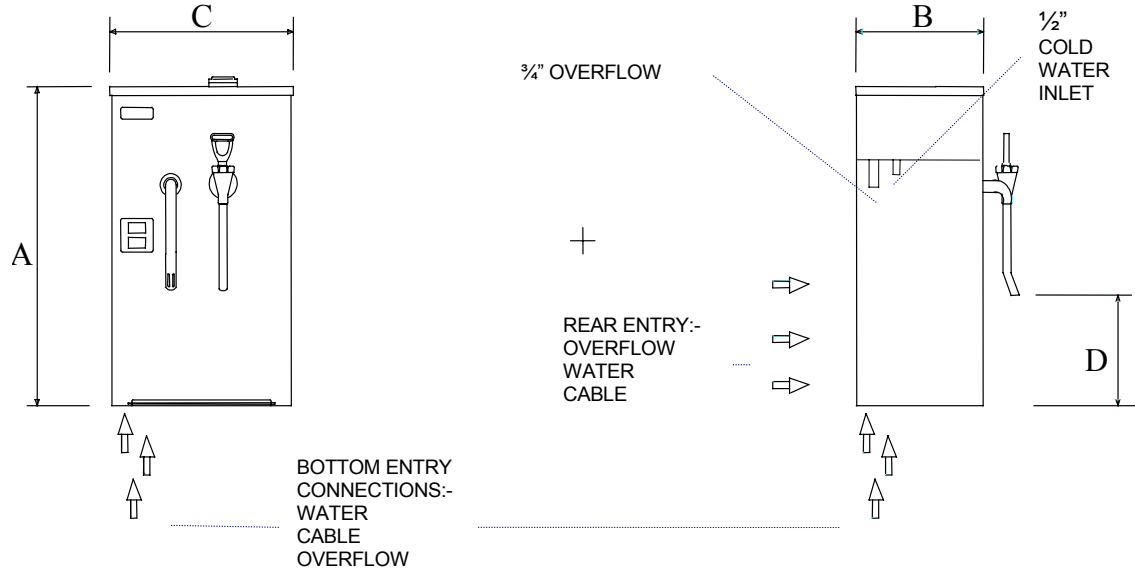
Remove left hand side outercasing panel to make connections. New boiler outercasings have a protective vinyl coating which is easier to remove when warm after commissioning but make sure access will still be available to do this before fixing the boiler.

BELOW COUNTER CONNECTIONS can be concealed inside the outercasing and make a neat installation. Drill access holes in the counter top as shown in Fig 1. A union should be provided (not supplied by Calomax) at the point of connection to the ½" BSPT male thread of the water float valve. A ¾" plastic union is provided on the overflow stand pipe. Both unions are in standard positions to facilitate interchangeability between boilers for planned maintenance.

ABOVE COUNTER CONNECTIONS can be made after removing the blanks from the rear of the outercasing. Clearance must be allowed at the rear of the boiler for pipe connections. Fit unions immediately adjacent to the boiler, in a standard position to facilitate interchangeability between boilers for planned maintenance.

A range of Stands, Worktops, Wall Mounting Brackets and Drip Trays is available (see Calomax Boiler Accessories Leaflet).

Fig.1. DIMENSIONS AND WEIGHTS



MODEL		A	B	C	D	DRY WEIGHT	WORKING WEIGHT
CB34/s	mm	675	260	340	225	18.5 KG	43 KG
CB64/s	in	26.62	10.25	13.37	8.87	41 LBS	95 LBS
CB94/s							

WATER SUPPLY

In hard water districts the use of a Dosaphos Scale Reducer (obtainable from Calomax (Engineers) Limited), for the alleviation of scale, is recommended.

A 1/2" (15mm) drinking water supply within a constant pressure range from 8 to 150 psig (0.6 to 10.5 bar gauge) and having a flow rate compatible with the boiler maximum output, should be connected via an isolating stop cock fitted near the boiler. **The boiler is supplied complete with 'High Pressure' and 'low Pressure' restrictors . It is the responsibility of the Installation Engineer to select the appropriate restrictor and fit it to the float valve in accordance with the instruction sheet provided. Correct selection of restrictor can significantly reduce noise associated with Water Hammer / Pipe Hammer.**

BEFORE CONNECTING, THE SUPPLY PIPE MUST BE THOROUGHLY FLUSHED OUT TO ENSURE THAT FOREIGN MATTER DOES NOT BLOCK THE FLOAT VALVE

If the water supply contains excessive solids in suspension it is recommended that a fine mesh "in line" water filter is fitted in the pipework after the stop cock.

When tightening the union connection to the float valve, hold the float valve body to prevent it turning inside the tank and disturbing the joint in the tank bottom.

Check that the float valve operates correctly whilst initially filling the boiler and ensure that it cuts off at the level indicator. The float must not foul against the side of the tank. For further details of the float valve see Maintenance Instructions.

IMPORTANT Ensure cold water discharges from draw off tap before switching on electricity.

The electric supply to the boiler must always be turned off before the water supply.

OVERFLOW

A $\frac{3}{4}$ " overflow warning pipe should be connected from the boiler to discharge in such a manner to give visible warning of an overflow condition without causing damage to persons or property.

BOILER VENT

The boiler vent must not be obstructed by placing anything over the outlet.

ELECTRIC WIRING

Cable entry to the unit can be either from the base or the rear of the boiler.

Site electrical connection must comply with current I.E.E. regulations and be made in accordance with the wiring diagram supplied in appendix.

There is a 20mm dia. hole in the control plate which will accept 20mm conduit/a cable gland.

The cable must be connected to the terminal block as follows:

SINGLE PHASE

Red or Brown to terminal marked L
Black or Blue to terminal marked N
Green/Yellow or Green to terminal marked E

THREE PHASE (MODEL CB94B/S)

Red to terminal L1
Yellow to terminal L2
Blue to terminal L3
Black to terminal N
Green/Yellow to terminal E

If in doubt consult a competent electrician.

N.B. Attention is drawn to the warning label on the boiler outercasing loose panel.

GENERAL

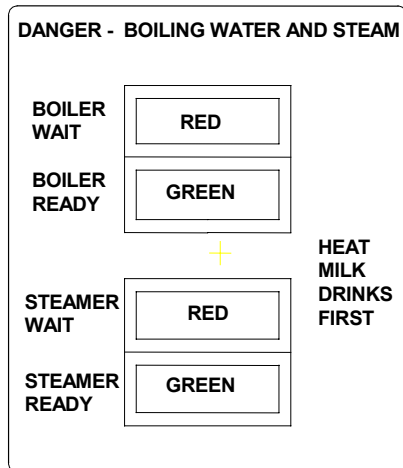
Make sure that there are no leaks and that the boiler, all pipework and fittings, etc. are dry before replacing the outercasing loose side panel and lid.

OPERATING INSTRUCTIONS CB/S RANGE

Switch off the Boiler when not in use at nights and weekends etc.

Switch on the electricity supply only after making sure the water supply is on.

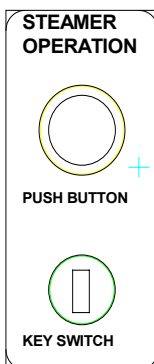
INDICATOR LIGHTS, STEAM BUTTON AND STEAM KEY SWITCH



The top red "**BOILER WAIT**" light is illuminated until the top green "**BOILER READY**" light comes on indicating boiling water is available for draw off.

The bottom red "**STEAMER WAIT**" light is illuminated until the bottom green "**STEAMER READY**" light comes on indicating the steam injector is available for use.

The **PUSH BUTTON** or **STEAM KEY SWITCH** on the left hand side of the boiler operates the steam injector when the green "**STEAMER READY**" light is illuminated. The steam injector is operated before boiling water is drawn off to avoid possible recovery delays. Do not operate the steamer when the red "**STEAMER WAIT**" light is illuminated.



LOW WATER LOCKOUT - When the "**BOILER READY**" and "**BOILER WAIT**" lights are **ON** at the same time a shortage of water is indicated and the boiler will not operate until the fault is rectified (see fault finding chart).

STEAM INJECTION

A Steamer Stand provided with the Boiler supports containers at the correct height with the injection nozzle positioned near the bottom of the container. The Key operated switch allows "hands free" operation of the steam injector when using the steamer stand. The push button is used for heating drinks made in hand held containers. Avoid splashing by positioning the injector at the bottom, with slots below the surface and intermittent use of the push button.

IMPORTANT - THE BOILER VENT MUST NOT BE OBSTRUCTED BY PLACING ANYTHING SUCH AS TEA TOWELS ETC OVER THE OUTLET

CLEANING

The stainless steel outercasing should be cleaned with hot soapy water and always wiped dry with a soft clean cloth. The steam injector pipe should be removed for cleaning with a bottle brush. Do not use detergents, wire wool pads or abrasive cleaning materials.

MAINTENANCE INSTRUCTIONS CB/S RANGE

Before carrying out any maintenance always switch off the electric supply and turn off the water.

In hard water areas, deposits of scale will occur on the internal water surface of the boiler. The amount of scale will depend upon the usage of the boiler and the actual hardness of the water. The use of a Dosaphos Scale Reducer (which is obtainable from Calomax (Engineers) Limited) is recommended for the alleviation of scale and corrosion.

WATER FLOAT VALVE

Before turning on the water supply it is most important that any foreign matter and sediment from new or existing pipework which can possibly cause a malfunction of the float valve is flushed clear before connecting pipework to the boiler, otherwise a water shortage may occur resulting in a blocked integral float valve filter and overheating the electric element. Check that the delivery tube header piece is firmly seated on the valve body and the retaining lip is held by the front cap ring which must be firmly hand tightened. **DO NOT TIGHTEN WITH SPANNER.** Check that both float arm hinge pins are correctly located in their cap bearings.

Turn on the water supply by slowly but fully opening the mains water stop valve. The operation of the float valve should be checked during filling the boiler by manually raising the float arm. After an interval of between 4 and 20 seconds (depending on the water pressure) the valve will close. Ensure the stop valve is fully open.

If the valve fails to operate properly check that all air and dirt in both valve and pipework has been eliminated. There should be a constant drip of water from the front cap during operation. If the valve still fails to operate properly it is almost certainly due to dirt between the diaphragm and valve seating, a blocked integral valve filter, or the isolating stop valve is not fully open. To clear diaphragm, manually operate float valve by lowering and raising float arm several times at approximately 15 second intervals. If necessary lower water level by opening draw off tap, if this fails to flush clear obstruction proceed as follows:-

Turn off electric and water supplies. Remove the float and float arm, unscrew front cap-ring and remove front cap, diaphragm and integral filter. Carefully wash diaphragm and filter in clean water to remove any dirt. Take care not to damage the precision made diaphragm. Reassemble filter and diaphragm, with centre projection into body. Take care to locate the small bush (in the diaphragm) over steel pin (on the body). Reassemble cap ring, arm and float. Hand tighten front cap ring. Draw off some water from the draw off tap. Turn on water supply. Check that valve operates correctly.

DO NOT attempt to remove small bush or centre assembly from diaphragm.

DO NOT use sharp tools, or over tighten any parts of valve assembly as serious damage to the precision-made parts may occur.

Failure of the valve to close most likely results from:-

- (1) Insufficient water pressure, possibly stop valve not fully open
- (2) Blocked integral float valve filter.
- (3) Diaphragm dirty, foreign matter and sediment within valve body.
- (4) Float arm hinge pins not correctly located in their cap bearings.
- (5) Float binding against side of water tank.

DRAW OFF TAP

Dismantle and clean. Worn parts must be replaced as found necessary (see Recommended Spares).

LOW WATER CUT OUT THERMOSTAT

The thermostat immediately above the element terminal connections is specially calibrated by Calomax to break contact when the element temperature is excessive. The thermostat is preset by Calomax and must not be adjusted.

A partial or total shortage of water is indicated when the Boiler **"READY"** and **"WAIT"** lights are on. The safety cut out thermostat will then have disconnected the electric supply to the element(s) at an excessive temperature.

The electric supply to the element(s) can only be re-connected by manually switching off the boiler for a period of 30 seconds after the water supply has been restored and/or the element has cooled to its normal operating temperature.

PRINTED CIRCUIT BOARD

A 100mA anti-surge fuse protects the P.C.B. In the event of this requiring repeated replacement, or a P.C.B. not functioning correctly the P.C.B. must be replaced.

The P.C.B. can be removed after disconnecting the push on wiring connections and the three fixing screws.

The replacement P.C.B. should be fitted in accordance with instructions supplied. Make sure the two earthing cables are firmly secured under the fixing screws.

Special thermal and electrical insulating requirements are involved in mounting the P.C.B. on the control panel heat sink.

P.C.B. TEMPERATURE ADJUSTMENT

The operating boiler temperature is set and sealed with nail varnish during a Works Test to control with a minimal discharge of steam vapour from the boiler vent. **Further adjustment of this set point is not normally necessary and should not be made within the guarantee period without first consulting Calomax.**

Access to the temperature adjustment is obtained by removing the left hand outercasing loose panel. An insulated screwdriver is used to turn the adjustment on the P.C.B. after carefully removing the seal with nail varnish remover.

MINIMAL CLOCKWISE rotation **INCREASES** the control set temperature

MINIMAL ANTI-CLOCKWISE rotation **DECREASES** the control set temperature

The boiling point will be indicated by the volume of steam vapour discharged from the boiler vent. The P.C.B. set point may be adjusted minimally anti-clockwise below this point and re-sealed with nail varnish.

Boiling point varies with barometric pressure. It is preferable to make a P.C.B. temperature control adjustment only when the barometric pressure is low (see local weather forecast or contact local weather station).

THERMISTORS

Replacements can be fitted by removal of body top lid, unscrewing the external backnut and withdrawing internally after unplugging the wiring connection to the P.C.B.

BOTTOM THERMOSTAT TEMPERATURE ADJUSTMENT (CB64/S and CB94/S Models only)

This thermostat is adjusted and sealed to switch off the bottom element at a surrounding water temperature of 80°C.

PERIODIC INSPECTION/DISMANTLING/CLEANING

The frequency and extent of this operation is dependant upon scale formed in hard water areas, efficient operation, and the interests of hygiene. Where the total hardness of the mains water supply exceeds 150 p.p.m. Dosaphos Scale Reducers, supplied by Calomax, are strongly recommended. Design features incorporated in the CB/S range of Calomax Boilers alleviate the problems of maintenance, particularly in hard water districts provided the following instructions are carried out.

PERIODIC INSPECTIONS

If Dosaphos Scale Reducers are fitted check that these are replenished with Gelphos GFR Powder as found necessary (see separate instructions).

Disconnect electric supply, turn off water supply, removing top lid of outercasing and top lid of body. Use hose pipe to syphon water into bucket or adjacent sink. Extent of scale formation can then be assessed to decide if it is necessary to remove boiler to maintenance workshop. Alternatively the in-situ removal of scale from thermistor and thermostat pockets will maintain the thermal sensitivity of these controls. Clearing scale obstructing the outlet connection will maintain the flow rate.

In carrying out Periodic Inspections **never re-use the body top flange joint**. When disconnecting the draw off tap union always hold the hexagon nut of the liner pipe to avoid disturbing the joint of the draw off outlet connection.

DISMANTLING

Remove the outercasing panel, disconnect the water supply and overflow pipes, remove the boiler from position for further dismantling in workshop.

Elements can be replaced by disconnecting wires at the terminals, removing nuts and washers and withdrawing from inside the body. The safety cut out thermostat can be withdrawn from its pocket after unplugging the connecting wire to the P.C.B.

After removal of wiring connections on the control panel to the boiler element(s), thermostat(s), top and bottom thermistors, the 6 pin socket and the light units, the complete control panel assembly can be removed by unscrewing the top and bottom fixing screws and withdrawing the incoming lead(s) through the outercasing.

Remove the draw off tap, steam injector pipe and both outlet liner pipes. At this stage the boiler body complete with the cold water feed tank and pipework sub-assembly can be withdrawn from the outercasing. Disconnect the cold water feed pipe elbow union, remove two water feed tank fixing dome nuts and washers and remove the water tank and pipework sub-assembly.

Examine insulation carefully for signs of dampness from any leaking joints and subsequent sacrificial corrosion of the aluminium foil insulation. Ensure that any joint leakage's are rectified. If necessary fit new insulation and aluminium foil tape to prevent corrosive attack on the stainless steel boiler body. Corrosion only takes place if the insulation becomes wet due to leakage from joints.

CLEANING

Scale deposits should be removed from all internal surfaces, particularly the heating element and thermistor pockets by gently tapping or scraping. If the deposits are soft use a nylon pad and flush out with a hose pipe. Abrasive cleaning materials containing scouring powders and detergents must not be used, such materials may cause taste problems. Chemical descalents must only be used in accordance with suppliers instructions for the minimum period to enable mechanical scale removal. Vinegar is quite effective and will not damage stainless steel. Hydrochloric Acid must **NOT** be used. All chemicals must be completely flushed out to avoid a taste problem. Experience has shown that the use of Dosaphos Scale Reducers supplied by Calomax is preferable to chemical descalents.

Where scale deposits are normally hard and exceptionally difficult to remove incurring high labour costs, it may be less expensive to allow the scale to accumulate on the body and eventually replace the body rather than attempt to remove the most difficult forms of hard scale. It is however important to keep the thermistor pockets reasonably clean to ensure correct temperature control, and the draw off connection clear to give a good flow rate.

RE-ASSEMBLING

Thoroughly clean and remove old jointing materials from jointing surfaces. **Always use new joints supplied by Calomax.** P.T.F.E. Tape must be used on the threads of the draw off tap liner pipe in addition to new gaskets.

MAKE SURE THE TWO EARTHING CABLES ARE SECURELY FITTED UNDER THE FIXING SCREWS.

Allow the boiler to fill with water and attain the correct level in the water tank. Do not switch on the electric supply until cold water can be drawn off from the tap on the front of the boiler.

AFTER SALES SERVICE

Design features incorporated in the Calomax range of Electric Water Boilers allow easy installation, operation and access for the essential regular servicing, routine cleaning, descaling and maintenance in accordance with these instructions. As an alternative we operate a scheme which provides for the supply of a re-conditioned boiler in exchange for the Client's own boiler. Particulars of this service are available on request.

It is the Purchaser's responsibility to install and maintain the Boiler in accordance with these instructions. Difficulties arising from incorrect installation, operation and maintenance; foreign matter in float valves, inadequate services, the deposit of scale in hard water districts and precipitated salts are not the liability of Calomax (Engineers) Limited. If Calomax (Engineers) Limited are requested to attend to such difficulties the cost will be chargeable.

SPARE PARTS

Normally available ex. stock direct from Calomax (Engineers) Limited, Leeds.

Always quote Type and Serial Number of Boiler, as given on the Calomax Label fitted to the boiler body lid which can be seen by removing the outercasing lid.

RECOMMENDED SPARES CB/S RANGE
IMPORTANT - PLEASE STATE MODEL NO. AND SERIAL NO. WHEN ORDERING

NORMAL MAINTENANCE SPARES - ALL MODELS

No.off	Part Ref.	Description
1	CBTCW	Draw off Tap Cup Washer.
1	CTT	Draw off Tap Top Assembly.
1	FVD	Float Valve Diaphragm.
1	FVF	Float Valve Filter.
1	CBSBLG	Body Lid Gasket.
1	CBSGS	Complete set of Gaskets.

EMERGENCY BREAKDOWN SPARES

(For 2 year period to cover approximately 10 Boilers)

Normal Maintenance Spares as detailed above

Plus

MODEL CB34/S

1	CBSNC2	Steamer Nozzle.
1	CB64TBC	Draw off Tap Body.
1	CTT	Draw off Tap Top Assembly.
1	CBE3H	Main Element with Thermostat Pocket.
1	CBSEH	Steamer Element.
1	CBT120	Safety Cutout set 120°C.
1	NSNL	Light Unit Indicator.
1	CBSSRS	Steamer Push Button Switch.
1	CBSKOS	Steamer Key Switch.
4	CBSKOSK	Keys.
1	S504100MA	Anti-Surge Fuse (100mA).
1	CBFVM	Float Valve complete with Filter and Gasket.
1	TTA	Top Thermistor.
1	BTA	Bottom Thermistor.
2	CB64R	Relays.
1	CB64PCBT	Printed Circuit Board.

MODEL CB64/S

All as above for Model CB34/S plus:-

1	CBSEH	Bottom Boiler Element.
1	CBT80	Bottom Thermostat set 80°.
1	ILFG	In Line Fuse (500mA).

MODEL CB94/S

All as above for Model CB64/S plus:-

1	CB94ME	Middle Element.
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FAULT FINDING CHART CB/S RANGE OF BOILERS/STEAM INJECTORS - Page 1

SYMPTOM	CAUSE	REMEDY
A1. WATER DISCHARGE FROM OVERFLOW PIPE	DEFECTIVE FLOAT VALVE	Check water level in feed tank. Clean and check operation of float valve as Instructions Page 5.
B1. EXCESSIVE BOILING AND STEAM DISCHARGE FROM VENT PIPE. GREEN BOILER "READY" LIGHT ON - RED STEAMER "WAIT" LIGHT ALSO ON	EXCESSIVE INTERNAL SCALE DEPOSITS	Descale boiler with particular attention to insulating scale deposits on thermistor pockets (see page 7).
B2. AS B1 ABOVE BUT B1 REMEDY FAILS TO CORRECT FAULT	TEMPERATURE CONTROLLER REQUIRES ADJUSTMENT	Lower set point of temperature adjustment as Instructions Page 6.
B3. AS B2 ABOVE BUT B2 REMEDY FAILS TO CORRECT FAULT	DEFECTIVE TEMPERATURE CONTROLLER	Replace PCB as Instructions Page 6.
B4. AS B3 ABOVE BUT B3 REMEDY FAILS TO CORRECT FAULT	WIRING CONNECTIONS TO TOP OR BOTTOM THERMISTOR OPEN CIRCUITED	Check 2 pin connection on PCB to thermistor for continuity when thermistors are above control temperature. Short out 2 pin thermistor connections to check operation of PCB and thermistors. or 1) Remake loose wiring connection. 2) Replace thermistors if PCB operates OK by shorting out thermistors.
B5. CB64/S AND CB94/S MODELS ONLY, EXCESSIVE BOILING AND STEAM DISCHARGE GREEN "READY" LIGHTS ON ALL OTHER LIGHTS OFF	BOTTOM ELEMENT THERMOSTAT NOT CONTROLLING AT 80°C CUT OFF TEMPERATURE	Recalibrate or replace - see Instructions Page 7.

CALOMAX PATENT WATER BOILERS

FAULT FINDING CHART CB/S RANGE OF BOILERS/STEAM INJECTORS - Page 2

SYMPTOM	CAUSE	REMEDY
C1. BOILER "READY" AND "WAIT", NO OTHER LIGHTS ILLUMINATED. WATER FROM DRAW OFF TAP NOT BOILING OR NOT AVAILABLE	CONNECTIONS TO SAFETY CUT OUT THERMOSTAT OPEN CIRCUITED	Check and rectify loose connections from 2 pin connector on PCB - Reset cut out as Instructions page 6.
C2. AS C1 ABOVE BUT C1 REMEDY FAILS TO CORRECT FAULT	SAFETY CUT OUT THERMOSTAT SET TOO LOW	Turn adjustment clockwise - Reset cut out as Instructions Page 6.
C3. AS C2 ABOVE BUT C2 REMEDY FAILS TO CORRECT FAULT	DEFECTIVE SAFETY CUT OUT THERMOSTAT	1. Check PCB by looping across 2 pin connection for thermostat - reset cut out as Instruction Page 6. 2. If fault remedied - renew safety cut out.
C4. AS C3 ABOVE BUT C3 REMEDY FAILS TO CORRECT FAULT	DEFECTIVE P.C.B.	Replace PCB - Instructions Page 6.
C5. AS C1 ABOVE	PARTIAL OR TOTAL SHORTAGE OF WATER	1. Allow electric element to cool. 2. Rectify shortage of water supply. Check water tank operating level and flow rate through float valve. 3. Reset low water cut out as Instructions Page 6.
C6. BOILER "WAIT" STEAMER "WAIT" AND STEAMER "READY" OR BOILER "READY" STEAMER "READY" AND STEAMER "WAIT" LIGHTS ILLUMINATED. WATER NOT BOILING.	A. DEFECTIVE TOP ELEMENT - NO CONTINUITY. B. DEFECTIVE WIRING CONNECTIONS TO TOP ELEMENT.	A. Test Element for continuity and replace. B. Test wiring for continuity and replace.

CALOMAX PATENT WATER BOILERS
FAULT FINDING CHART CB/S RANGE OF BOILER/STEAM INJECTORS - Page 3

SYMPTOM	CAUSE	REMEDY
D. WATER FROM DRAW OFF TAP NOT BOILING.		
D1. NO LIGHTS ILLUMINATED	ELECTRIC SUPPLY NOT SWITCHED ON.	Switch on electric supply after making sure water supply is turned on.
D2. AS D1 BUT D1 REMEDY FAILS TO CORRECT	NO SUPPLY TO BOILER DUE TO BLOWN FUSES.	Check both external main fuse and fuse on PCB. Replace as necessary. If fuses continue to blow, locate fault by isolating main switch. Disconnect main neutral and test wiring for insulation to earth and between conductors. Test element for insulation to earth and replace if reading is zero.
D3. AS D2 BUT D2 REMEDY FAILS TO CORRECT	DEFECTIVE TEMPERATURE CONTROLLER.	Replace PCB as Instructions - Page 6.
D4. AS D TOP RED "BOILER WAIT" AND EITHER STEAMER LIGHT ILLUMINATED	CAPACITY EXHAUSTED AS A RESULT OF MAXIMUM DRAW OFF	<ol style="list-style-type: none"> 1. Larger Boiler may be required. 2. Wait for boiler to recover to "Ready" mode before drawing off water.
D5. EXCESSIVE DELAY IN OPERATION OF STEAM INJECTOR WHEN "BOILER READY" AND "STEAMER READY" LIGHTS ARE ILLUMINATED	SET POINT OF PCB TEMPERATURE ADJUSTMENT TOO LOW	Increase set point of temperature adjustment as Instructions - Page 6.

CALOMAX PATENT WATER BOILERS

FAULT FINDING CHART CB/S RANGE OF BOILER/STEAM INJECTORS - page 4

SYMPTOM		CAUSE	REMEDY
E1.	DRAW OFF TAP LEAKING OR STIFF TO OPERATE WITH REDUCED FLOW RATE	REQUIRES REPLACEMENT OR OVERHAUL.	1. Replace or overhaul. 2. Clear scale from outlet connection.
F1.	ALLEGED TASTE PROBLEM AFTER OVERHAUL	INCORRECT GASKETS AND JOINTS USED WHEN REASSEMBLING BOILER.	Only use correct gaskets supplied by Calomax (Engineers) Limited.
F2.	AS F1 BUT F1 REMEDY FAILS TO CORRECT	DESCALENT NOT FLUSHED OUT AFTER OVERHAUL OR DETERGENT USED TO CLEAN BOILER.	Switch off electric and water supply. Remove outercasing loose lid and boiler body lid. Insert hose pipe and syphon out water from boiler body. Switch on water supply and thoroughly flush out.

COMMISSIONING CHECKLIST FOR CALOMAX BOILERS

DATE **SITE**

MODEL NO. **SERIAL NO.**

COMMISSIONED BY

ITEM TO CHECK	YES	NO	COMMENTS
1. Check boiler is installed with all servicing clearances available.			
2. Check brass stand offs in outercasing base have been used to secure boiler to worktop or wall-mounting bracket.			
3. Has cold water feed pipe been flushed out.			
4. Has isolating water valve been fitted near boiler.			
5. Check site made connection to float valve for leaks.			
6. Check float valve cut off level.			
7. Check adequate water flow rate to maintain level in tank during draw off.			
8. Check overflow connected.			
9. Is overflow discharge visible.			
10. Check electrical earth connected.			
11. Is Boiler Vent free of obstruction.			
12. Switch on electricity.			
13. Check operation of lights as boiler heats up.			
14. Has a drip tray been fitted. If so, with or without drain.			
15. Is water hardness in excess of 150 p.p.m.			
16. Has any type of water treatment been provided.			
17. Check operation of Steam Injector if fitted to Boiler.			

IF IN DOUBT-SEE INSTALLATION, OPERATING AND MAINTENANCE INSTRUCTIONS.

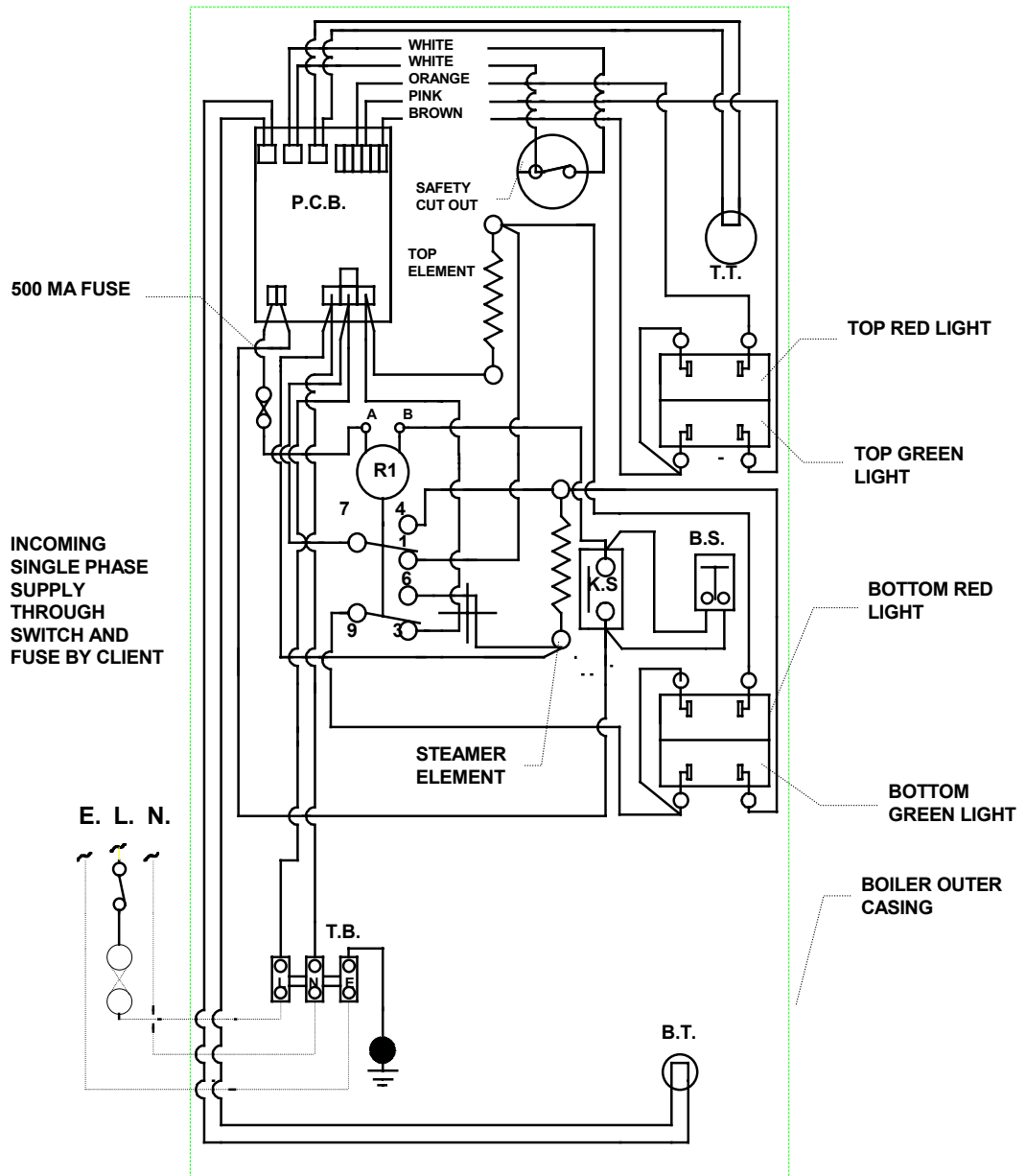
**WIRING FOR MODEL CB34C /S BOILERS / STEAMER
RATED 3KW. AT 240V. 50HZ SINGLE PHASE SUPPLY**

KEY

P.C.B. ---PRINTED CIRCUIT BOARD
 T.T. -----TOP THERMISTOR
 B.T. ---BOTTOM THERMISTOR
 B.S. ---- BUTTON STEAMER SWITCH
 T.B. -----TERMINAL BLOCK
 R1 ----TOP RELAY

K.S. -----KEY SWITCH (STEAMER)
 TOP RED BOILER WAIT LIGHT
 TOP GREEN BOILER READY LIGHT
 BOTTOM RED STEAMER WAIT LIGHT
 BOTTOM GREEN STEAMER READY LIGHT

NOTE*** THESE BOILERS ARE FOR SINGLE-PHASE OPERATION ONLY



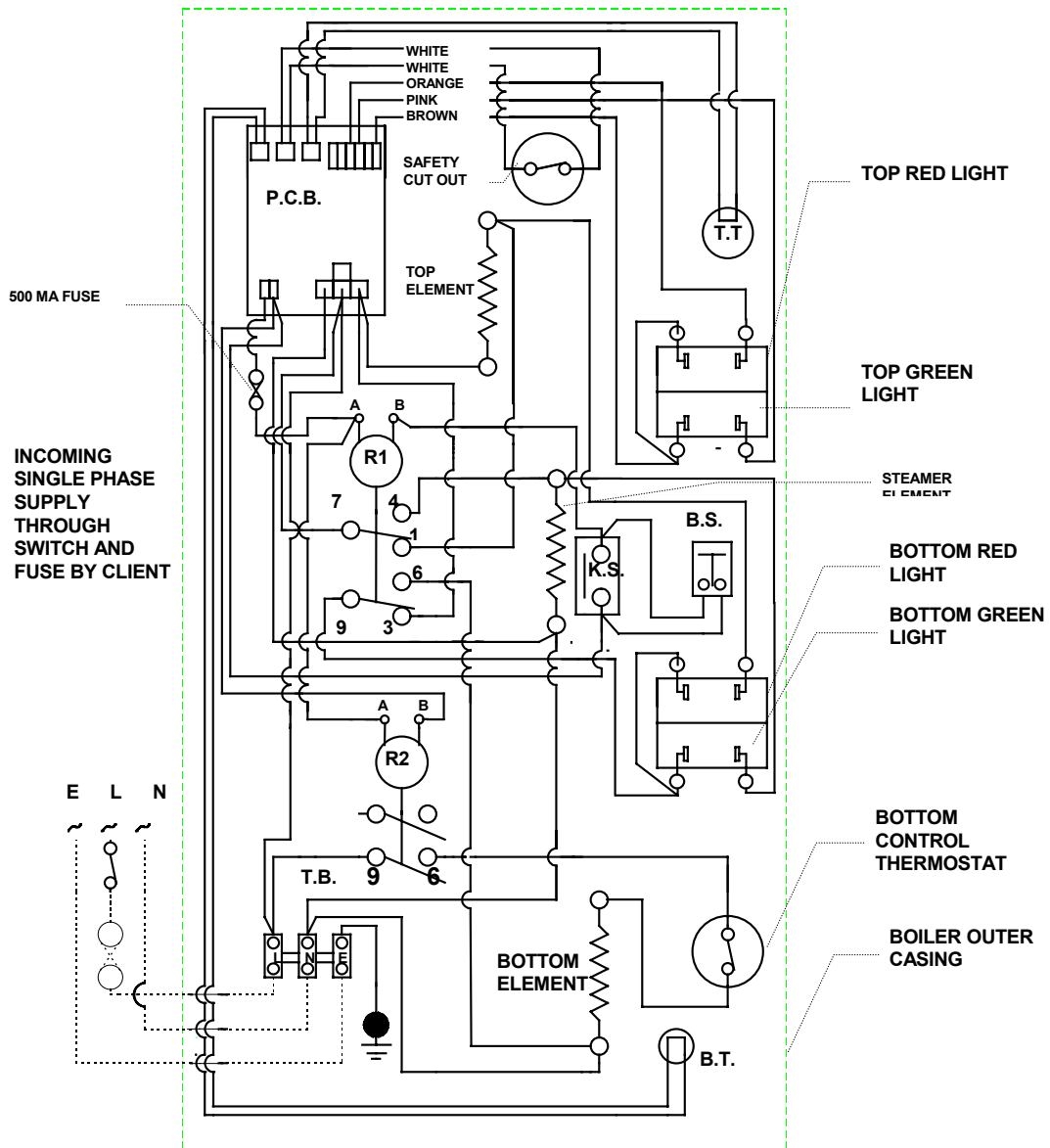
**WIRING FOR MODEL CB64D /S BOILERS / STEAMER
RATED 6KW. AT 240V. 50HZ SINGLE PHASE SUPPLY**

KEY

P.C.B. ---PRINTED CIRCUIT BOARD
T.T. ----TOP THERMISTOR
B.T. ----BOTTOM THERMISTOR
B.S. ---- BUTTON STEAMER SWITCH
T.B. ----TERMINAL BLOCK
R1 ----TOP RELAY

K.S. -----KEY SWITCH (STEAMER)
TOP RED BOILER WAIT LIGHT
TOP GREEN BOILER READY LIGHT
BOTTOM RED STEAMER WAIT LIGHT
BOTTOM GREEN STEAMER READY LIGHT
R2 --- BOTTOM RELAY

NOTE*** THESE BOILERS ARE FOR SINGLE-PHASE OPERATION ONLY



**WIRING FOR MODEL CB94C /S BOILERS / STEAMER
RATED 9KW. AT 415/240V. 50HZ 3 PHASE SUPPLY**

KEY

P.C.B. ---PRINTED CIRCUIT BOARD
T.T. ----TOP THERMISTOR
B.T. ----BOTTOM THERMISTOR
B.S. ---- BUTTON STEAMER SWITCH
T.B. -----TERMINAL BLOCK
R1 ----TOP RELAY

K.S. -----KEY SWITCH (STEAMER)
TOP RED BOILER WAIT LIGHT
TOP GREEN BOILER READY LIGHT
BOTTOM RED STEAMER WAIT LIGHT
BOTTOM GREEN STEAMER READY LIGHT
R2 --- BOTTOM RELAY

NOTE*** THESE BOILERS ARE FOR 3 -PHASE OPERATION ONLY

