



# UNDERCOUNTER

## SERVICE MANUAL

**Ecoboiler UC4L 2.4kW**

(1000740#)

**Ecoboiler UC10L 2.8kW**

(1000741#)

**Ecoboiler UC10L 5.6kW**

(1000742#)

**Ecosmart UC4L 2.4kW**

(1000750#)

**Ecosmart UC10L 2.8kW**

(1000751#)

**Ecosmart UC10L 5.6kW**

(1000752#)

(where # is either blank or a suffix of one or more alphanumeric characters)

|  |  |
|--|--|
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## 1. INTRODUCTION:

The information provided in this manual is intended to assist in the installation and maintenance of the Marco EcoBoiler Water boiler. Please read the instructions carefully to prevent accidents and ensure an efficient installation.

This manual is not a substitute for any safety instructions or technical data affixed to the machine or its packaging. All information in this manual is current at the time of publication and is subject to change without notice.

Only technicians or service providers authorised by Marco should carry out installation and maintenance of these machines.

Marco accepts no responsibility for any damage or injury caused by incorrect or unreasonable installation and operation.

## 2. SAFETY INSTRUCTIONS:

- Read all instructions.
- To protect against electric shock do not immerse mains cord in water or other liquid.
- To prevent chafing of the cable, do not let the mains cord hang over the edge of a table or counter; or touch hot surfaces.
- Do not operate any appliance with a damaged cord, plugs, or after the appliance malfunctions or has been damaged in any manner.
- Switch off at the mains (unplug or disconnect from outlet) and turn off the water supply when not in use and before cleaning. Allow to cool before removing components.
- The use of spares and accessories not recommended by Marco may cause damage and/or injuries.
- Do not use outdoors. Do not place on or near a hot gas or electric burner.
- Do not use the appliance for anything other than its intended use.
- Save these instructions.

## 3. BASIC INSTRUCTIONS:

### 3.1. INSTALLATION DETAILS:

#### **Electrical installation:**

Refer to rating plate for electrical information.

#### **Plumbing installation procedure:**

**Note:** Marco cannot be held responsible for any flood damages.

- Mains water pressure required (limits): 5-50psi (35-345kPa)
- Fit a stop Valve on a cold water line and attach a 3/4" BSP male fitting, (e.g. 3/4" x 1/2" 311 or washing machine type stop valve).  
For US versions use 3/8" NPT male fitting
- Connect straight tailpiece of the inlet hose to the stop valve fitting. Make sure that the pre-attached sealing washer is fitted.
- Turn on the water to flush any impurities, dust etc from the inlet hose and water pipe. Allow several gallons through.
- Connect right-angled tailpiece of the hose to the inlet valve of the boiler (again 3/4" BSP). Make sure the sealing washer is fitted here also.
- Turn on water and check for leaks.

### 3.2. OPERATION:

- Check that all installation procedures have been carried out.
- Ensure water valve is on.
- Plug boiler into a suitable socket and press power button on the front of the machine marked 'Power'.

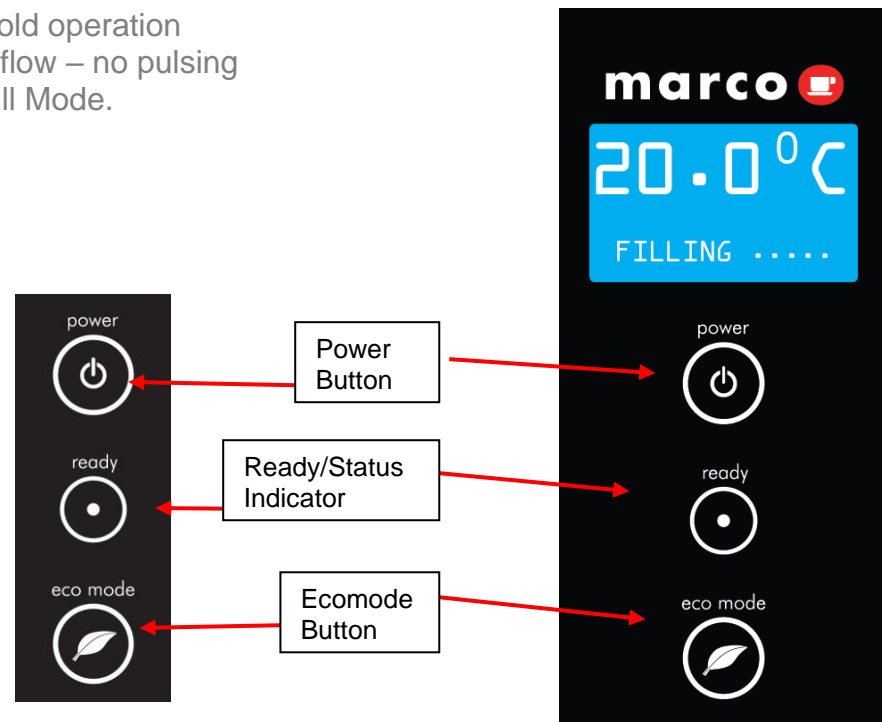
#### **Ecoboiler UC4L/ Ecoboiler UC10L**

- The "power on" light will glow green and the machine will fill to a safe level, above the elements, before heating.
- The "Ready/Status" light will cycle two red flashes while the machine is filling to the safe level.
- After this amount of water has heated to about 96°C the boiler will draw more water in until the temperature drops by 1 or 2 degrees. The boiler will then heat again. This heat fill cycle continues until the boiler is full.
- On a 10L machine, whilst the machine is above the safe level and filling, the "Ready/Status" light will remain blank.
- The "Ready/Status" light will glow green when the machine is both full and up to normal operating temperature.
- The boiler is now ready for use.

#### **Ecosmart UC4L /Ecosmart UC10L**

- The "power on" light will glow green and the machine will fill to a safe level, above the elements, before heating. The display will show the current water temperature and the status "Filling..."
- The "Ready/Status" light will cycle two red flashes while the machine is filling to the safe level.
- After this amount of water has heated to about 96°C the boiler will draw more water in until the temperature drops by 1 or 2 degrees. The boiler will then heat again. This heat fill cycle continues until the boiler is full.

- While filling, the “Ready/Status” light will remain blank.
- The “Ready/Status” light will glow green when the machine is both full and up to normal operating temperature. For 10L machines allow approx 30 minutes.
- The boiler is now ready for use – the display will show the Water Temperature and the status “READY”.
- The Boiler may now be used to dispense Hot Water to the preset factory settings.
  - 94°C
  - Push and Hold operation
  - Continuous flow – no pulsing
  - Auto heat Fill Mode.



Ecoboiler UC4L/ Ecoboiler UC10L

Ecosmart UC4L /Ecosmart UC10L

**NOTE:**

Because the boiler is electronically controlled no priming is necessary. The element cannot switch on until a safe level of water is reached.

**3.3. TEMPERATURE CALIBRATION**

**Ecoboiler UC4L/ Ecoboiler UC10L**

The Ecoboiler control PCB (1600345) has the ability to have the desired set-point temperature at whatever setting is required. During manufacture of the PCB it is set to the default temperature of around 94°C.

If the temperature setting needs to be modified on-site please follow the steps below:

1. To Enter Calibration mode:
  - a. Turn the machine off at the mains power supply.
  - b. Then, whilst depressing the tactile switch on the PCB, turn the mains power back on.
  - c. All available LED's on the front panel will now blink continuously.
  - d. The machine is now in Calibration mode.
2. In Calibration Mode the machine will heat continuously until the tactile switch on the PCB is pressed for a second time (NB: The tactile switch should be pressed for at least 1 second)
3. Using a thermometer to measure the temperature at the thermistor pocket, the machine should be allowed to reach the desired set-temperature. (NB: It may be necessary to let the unit cool down if the desired set point is lower than the units current temperature)
4. Following a correct calibration procedure the tank temperature should be maintained within 3°C of the desired set-point temperature.

In the event of an incorrect calibration process the steps below should be followed:

5. If the tactile switch is pressed too early and the temperature is set lower than desired, the tester should simply repeat calibration.
6. If the tactile switch is pressed too late and the set temperature is too high, the tester will need to wait for the temperature in the tank to cool, or add cool water, and then repeat calibration.

## Ecosmart UC4L /Ecosmart UC10L

**PLEASE REFER TO INSTRUCTION BOOKLET FOR TEMPERATURE CALIBRATION.**

### 3.4. TIME/VOLUME DISPENSE CALIBRATION

#### Ecoboiler UC4L/ Ecoboiler UC10L

1. Open the service panel.
2. Make sure that the machine is powered, filled and heated (ready lamp green).
3. Press calibration tactile button on the PCB for a second until status lamp starts blinking red-green.
4. Set new dispense time by pressing dispense button to obtain the required output volume of water. Button may be pressed several times – all times / volumes will be added together.
5. To confirm and save new value press calibration button on the PCB for a second until the status lamp stops blinking.
6. Setting dispense time / volume to zero (omit step 4) will make the machine work as “push & hold” (water dispensed as long as the button is pressed).

### 3.5. TROUBLESHOOTING

The Ready/Status light signals various errors or problems.

A cycle of red flashes indicates an error. The number of flashes in a cycle corresponds to the symptom in the table below:

#### **Status/Diagnostic light guide:**

| No of flashes | Symptom  | Action required   |
|---------------|--|---|
| 2             | Water level below elements. Normal when machine first fills. | Check water pressure , if this is OK then call service agent. |
| 3             | Temperature sensor failure (s/c)                             | Call service agent  |
| 4             | Water not heating  | Call service agent  |
| 5             | Temperature sensor failure (o/c)                             | Call service agent  |
| 6             | Machine not filling  | Check water pressure.   |

**Note:** Some of the error sequences will be displayed if there is low water pressure. Please check that there is water pressure and that the water stop-valve is open before calling your service agent.

For a more detailed description of error indicators and corrective actions see section 4.7 of this manual.

### 3.6. MAINTENANCE:

Marco machines have been designed to give many years of trouble free service. Marco Beverage Systems manufacture and test to ISO9002:2000 standard. The only regular maintenance required is occasional de-scaling.

#### Descaling Procedure:

- Isolate machine from power supply.
- Isolate machine from water supply.
- ALLOW TO COOL COMPLETELY!
- Drain water from machine.
- Remove all lids.
- Remove as much scale as possible by hand, paying particular attention to level probes (White plastic with steel tab). Be very careful not to damage any attachments.
- Use Scale Kleen, Marco part No. 8000270 or similar. Follow instructions carefully.
- Thoroughly clean and flush the machine before re-use.
- Follow installation and first time operation instructions

### 3.7. CLEANING:

The exterior of these machines may be cleaned with a damp cloth and a light detergent. Do not use abrasive cloths or creams, as this will spoil the finish of the machine. Do not use a water jet or spray. Beware of accidentally operating the draw off tap or push button when cleaning the front of the machine.

### 3.8. LIMESCALE:

In common with all water boiler manufacturers, service calls resulting from lime scale are not covered by warranty. Fitting a scale reducer is recommended, especially in hard water areas. This can reduce the build-up of scale but may not stop it altogether. The frequency that descaling is required depends on the local water supply; hard water areas need more attention. A scale reducer can reduce the build up of scaling, but may not stop it altogether. Descaling of the machine should ideally be carried out by qualified service personnel.

### 3.9. CAUTIONS AND SAFETY TIPS:

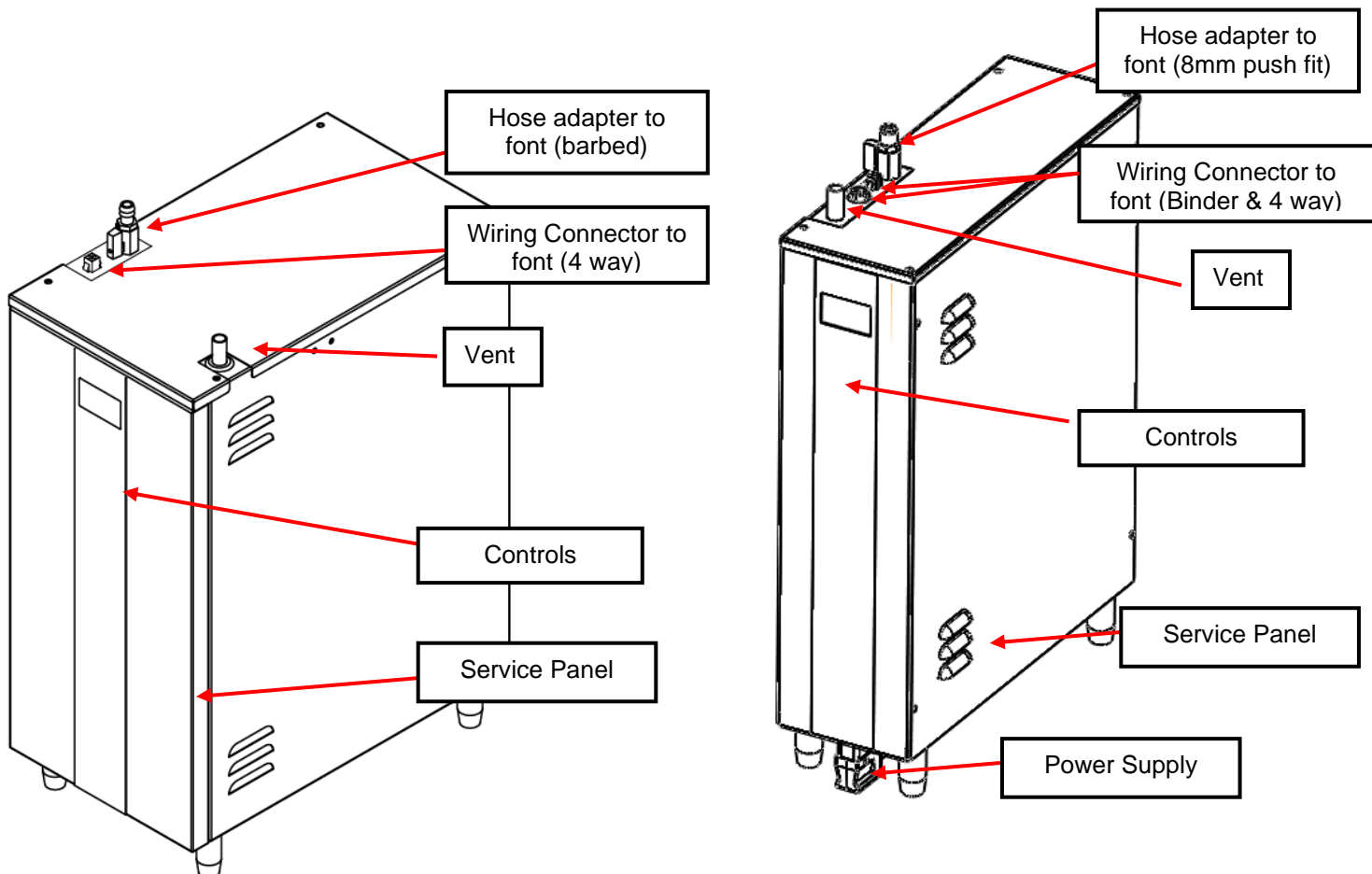
- This appliance must be earthed. If the moulded plug supplied is not used then ensure that the green/yellow cable is connected to a suitable earth.
- Risk of flooding. The hose supplied with this unit is non-toxic food quality tested to 190psi. However, a hose is not a permanent connection. It is, therefore, advisable to switch off boiler and close the stopcock valve when boiler is not in use, e.g. overnight, weekends etc.
- Risk of scalding. Beware of accidentally operating the water draw off tap especially when cleaning the front of the boiler.
- The utmost care has been taken in the manufacture and testing of this unit. Failure to install, maintain and / or operate this boiler according to the manufacturer's instructions may result in conditions that can cause injury or damage to property. If in any doubt about the serviceability of the boiler always contact the manufacturer or your own supplier for advice.

## 4. Technical Data:

### 4.1. GENERAL DESCRIPTION:

|             |                             | Ecoboiler UC4L<br>2.4kW  | Ecoboiler UC10L<br>2.8kW | Ecoboiler UC10L<br>5.6kW | Ecosmart UC4L<br>2.4kW | Ecosmart UC10L<br>2.8kW | Ecosmart UC10L<br>5.6kW |
|-------------|-----------------------------|--|--------------------------|--------------------------|------------------------|-------------------------|-------------------------|
| Dimensions  | Height (mm)                 | 394  | 394                      | 394                      | 394                    | 394                     | 394                     |
|             | Width (mm)                  | 135  | 226                      | 226                      | 135                    | 226                     | 226                     |
|             | Depth (mm)                  | 585  | 585                      | 585                      | 585                    | 585                     | 585                     |
| Performance | Immediate Draw-Off (litres) | 4L   | 10L                      | 10L                      | 4L                     | 10L                     | 10L                     |
|             | Max. Hourly Output (L/hr)   | 24L  | 28L                      | 56L                      | 24L                    | 28                      | 56L                     |
| Plumbing    | Fittings Pressure           | 0.75" BSP<br>Food grade inlet hose supplied<br>5-50 psi (35-345 kPa) |                          |                          |                        |                         |                         |

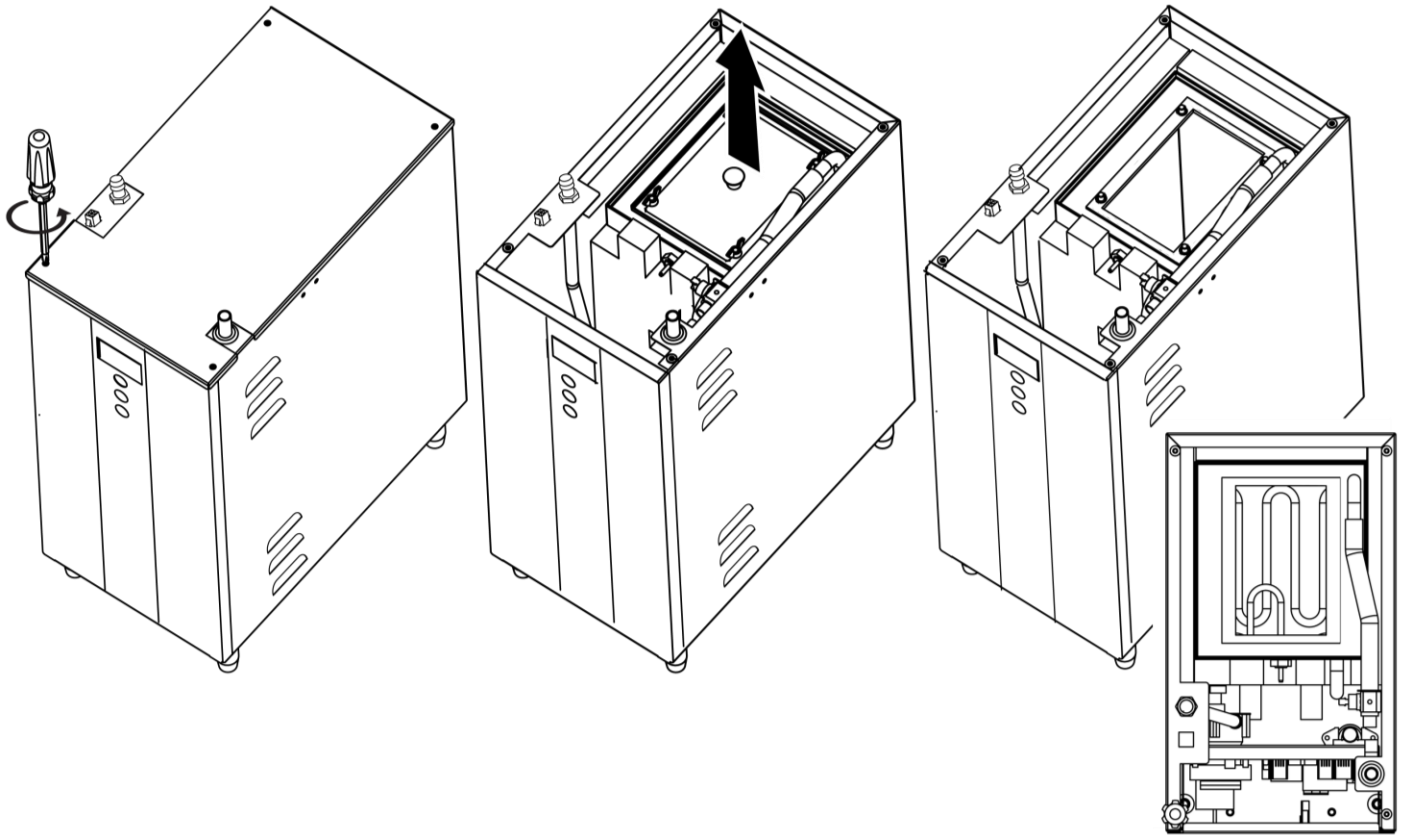
### 4.2. EXTERNAL ARRANGEMENT



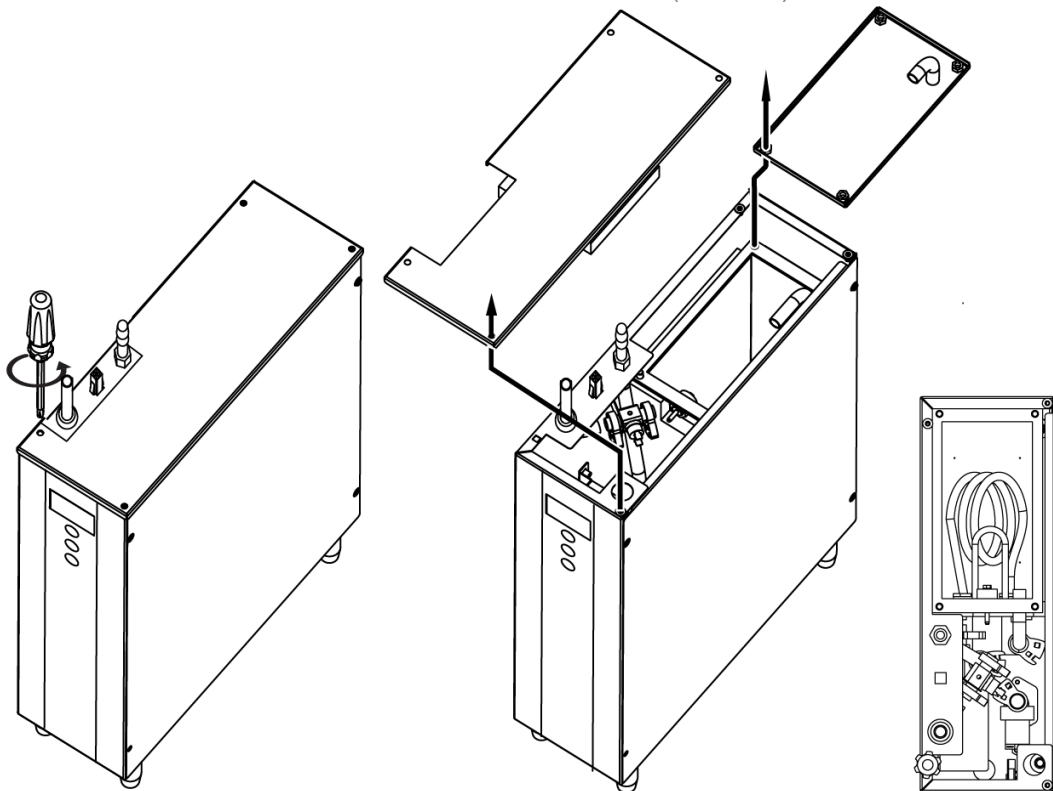
### 4.3. ACCESS TO INTERNAL COMPONENTS:

#### To access the tank:

Allow to cool. Remove the outer lid. To remove outer lid, undo 4 pozi headed screws. Ensure that the tank is cool, before removing insulation and inner lid. To remove inner lid, undo 4 butterfly nuts.



Ecoboiler UC10L / Ecosmart UC10L(SHOWN)

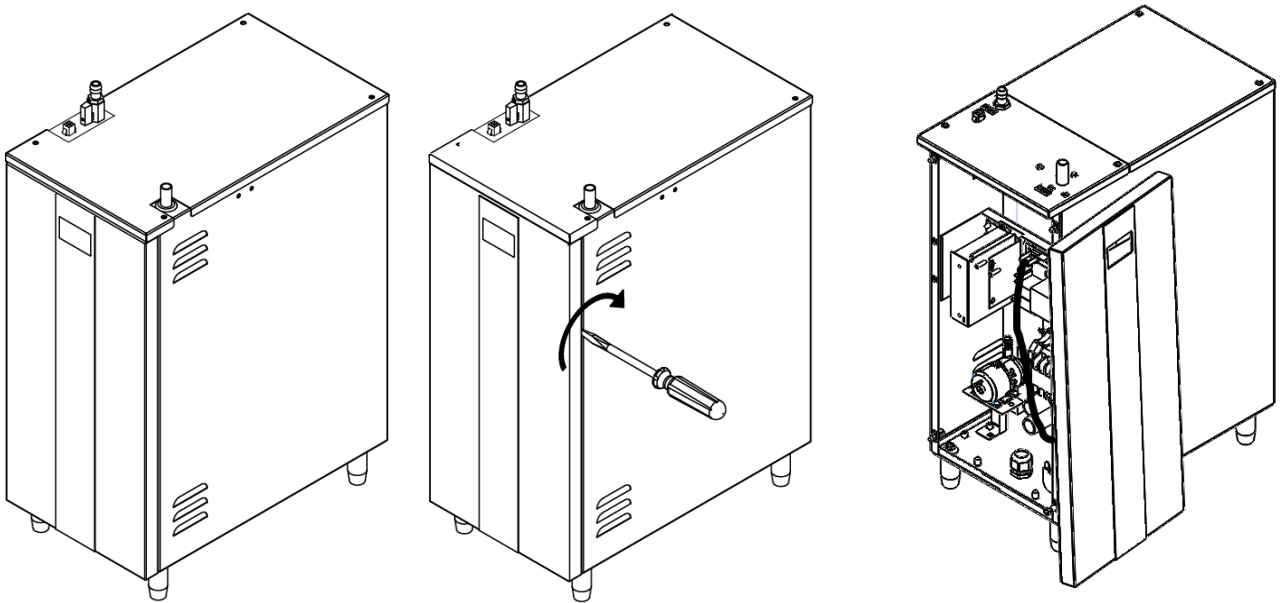


Ecoboiler UC4L / Ecosmart UC4L(SHOWN)

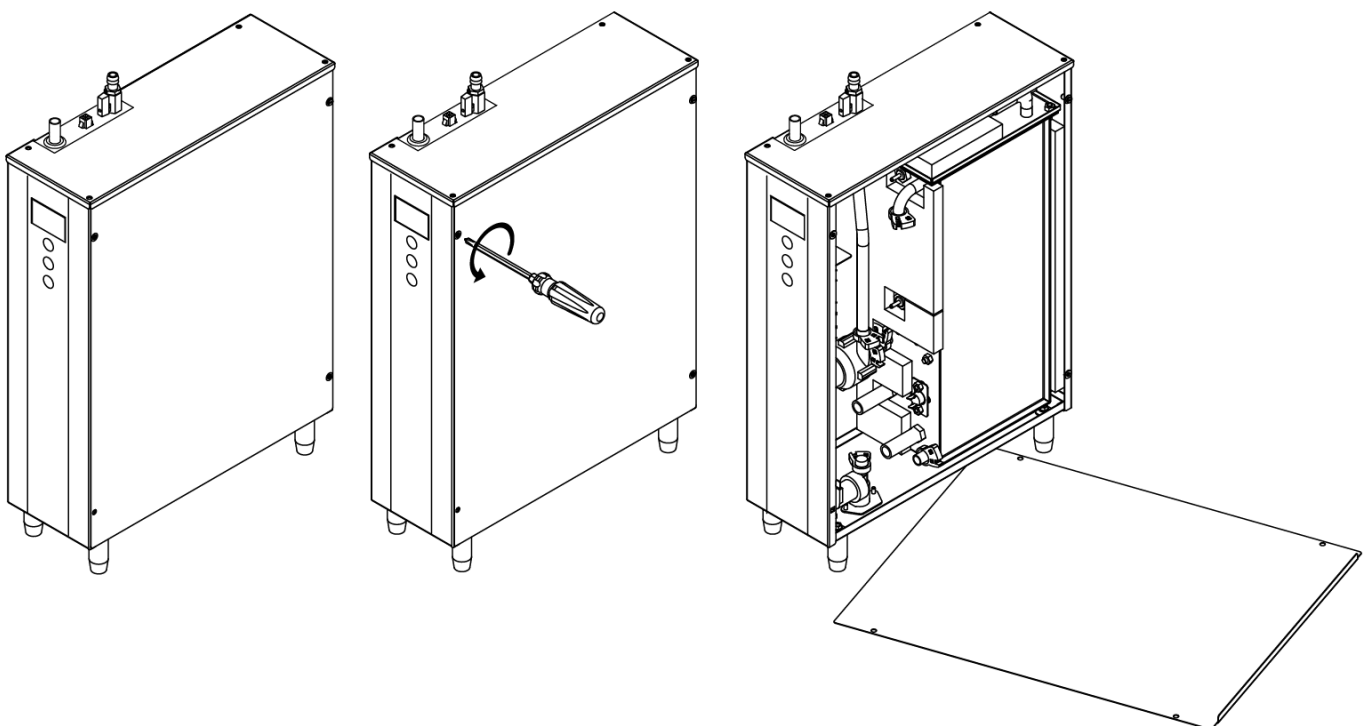


### To access the internal components:

- Disconnect the machine from the electrical supply.
- Allow to cool sufficiently.
- On the 10L machine insert a flat headed screwdriver at the four locations indicated on the picture above and rotate. **Note:** - There is no need to 'lever' the screwdriver – a small rotation is all that is required.
- In the case of the 4L machine remove the 4 screws on the service panel located on the right hand side.
- Place the panel to the side of the machine. This allows access to most of the internal components and the machine does not need to be drained for most maintenance or service operations.
- The Tank can be drained by removing the plug from the end of the drain hose, and draining into an external drain or a large enough container.

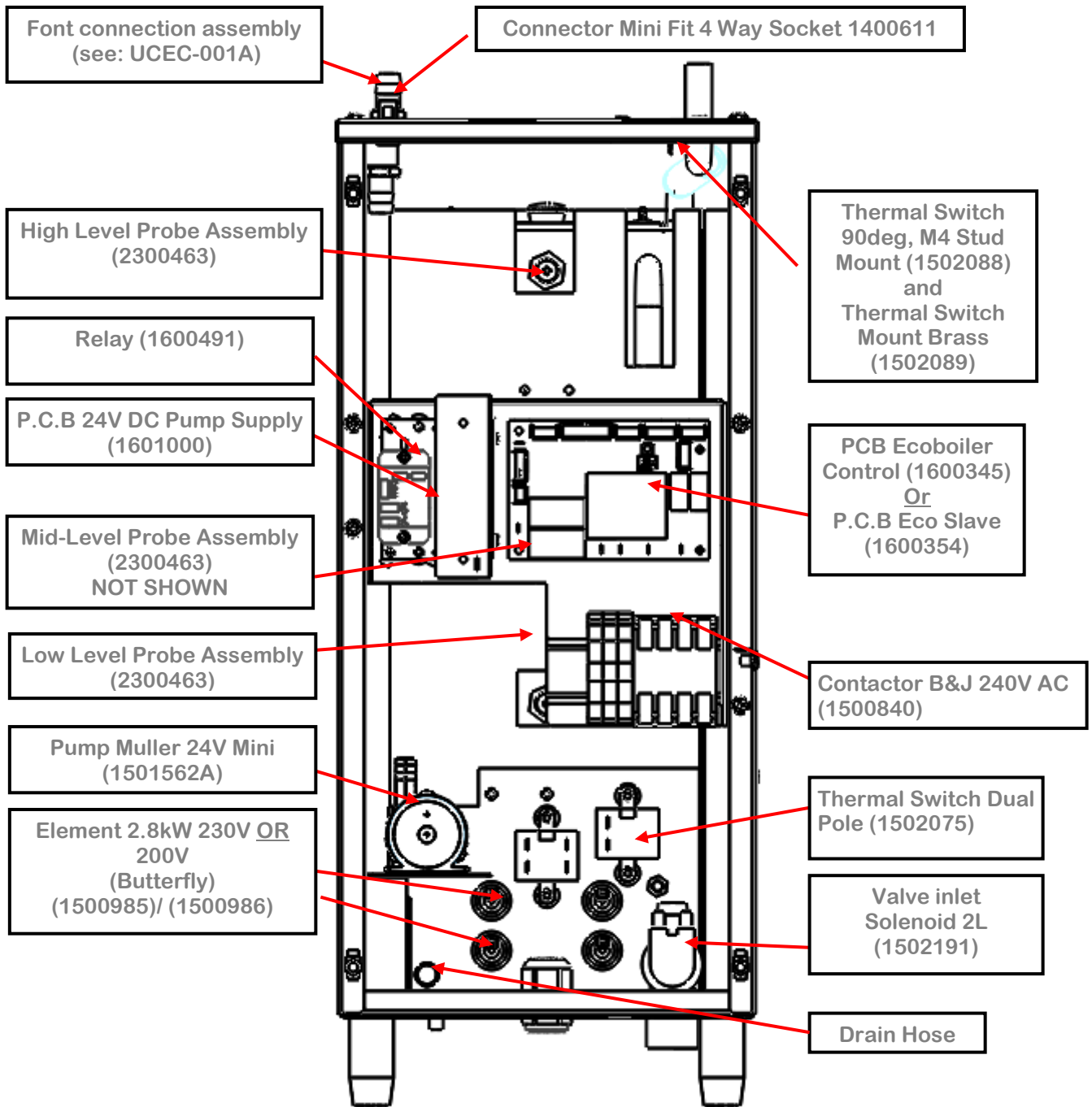


Ecoboiler UC10L / Ecosmart UC10L (SHOWN)

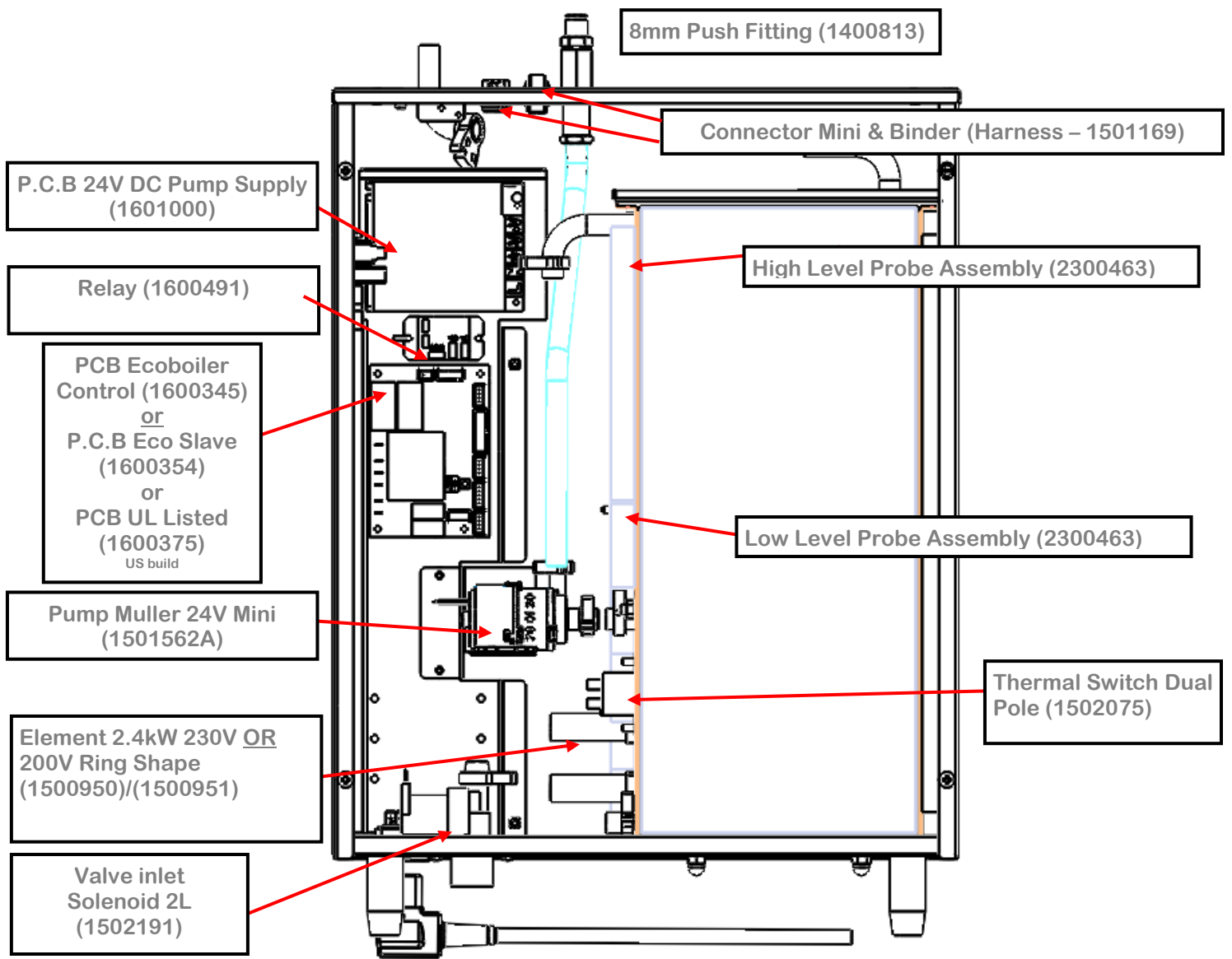


Ecoboiler UC4L / Ecosmart UC4L (SHOWN)

#### 4.4. INTERNAL ARRANGEMENT:



EcoBoiler UC10L/Ecosmart UC10L



Ecoboiler UC4/Ecosmart UC4

## 4.5. PCBs:

### 4.5.1. PCB Layout:

#### Ecoboiler UC4L/Ecoboiler UC10L

PCB Ecoboiler Control (1600345):

- Controls the heater switching
- Controls the water inlet switching
- Controls tank temperature/temperature adjustment

PCB Ecoboiler Display 10L (1600349) consists of:

- Power On/Off button
- Power On LED
- Status/Ready LED
- ECO Mode On/Off Button
- ECO Mode On LED

#### Ecosmart UC4L/Ecosmart UC10L

PCB Eco Slave (1600354):

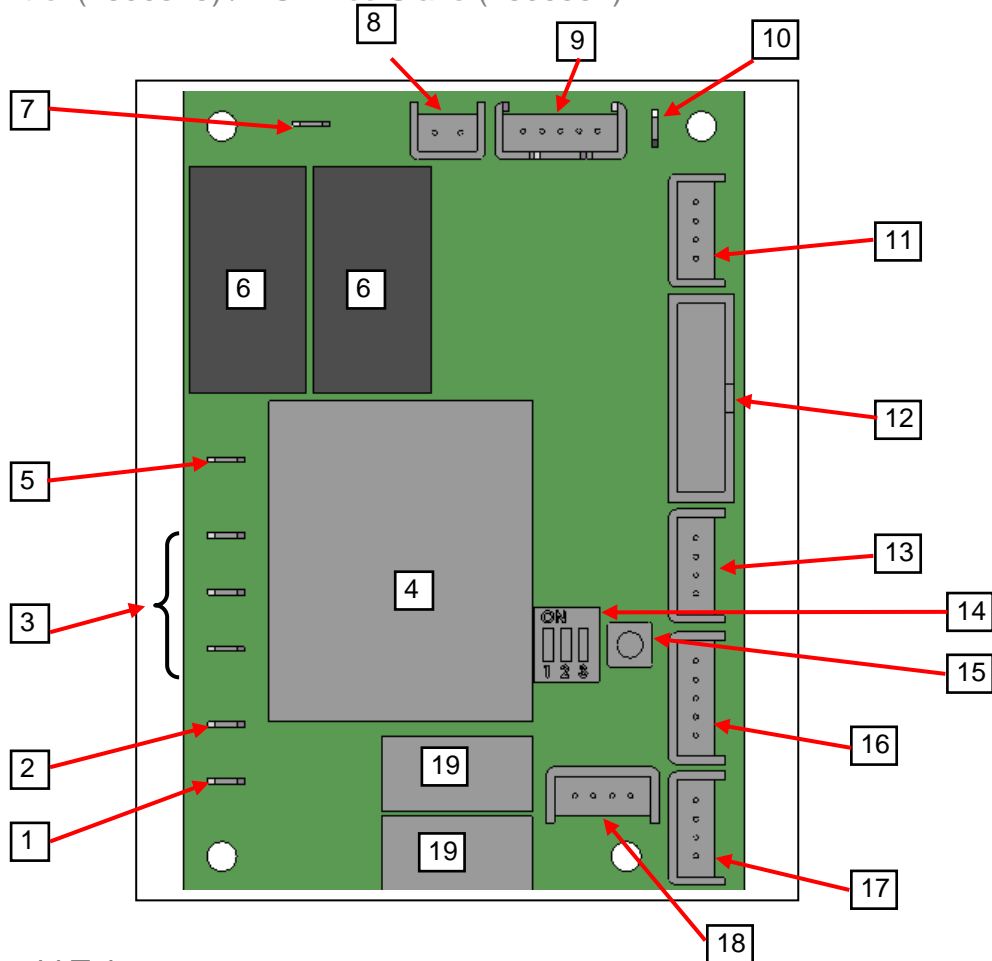
- Controls the heater switching
- Controls the water inlet switching
- Controls tank temperature/temperature adjustment

PCB Ecosmart display (1600367) consists of:

- LCD screen
- Power On/Off button
- Power On LED
- Status/Ready LED
- ECO Mode On/Off Button
- ECO Mode On LED

#### 4.5.2. PCB Eco boiler Control:

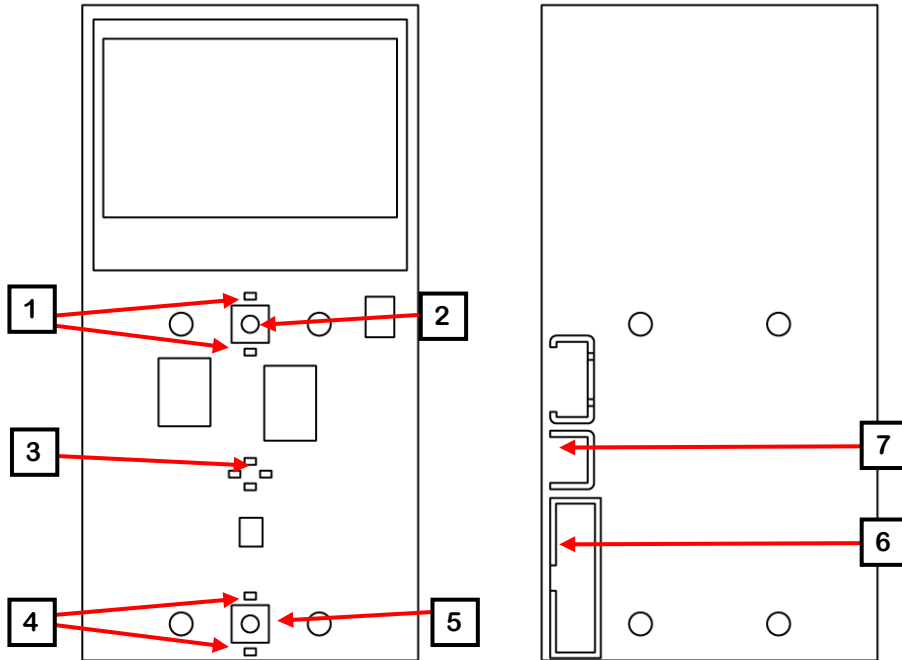
PCB Eco boiler Control (1600345) / PCB Eco Slave (1600354):



1. Dispense Solenoid Tab
2. Inlet Solenoid Tab
3. Neutral Tabs
4. Transformer
5. Mains Live In Tab
6. Relays - Heater. Switch the element
7. Heater Tab
8. On/Off 2-way Connector. Short circuited on this Eco boiler machines – power switch controlled through the display PCB
9. LED 5-way Connector
10. Earth Tab
11. Daughter PCB Connector (low voltage). Connects to Daughter PCBs – allows switching of more than one element
12. External Connector
13. Thermistor Connector
14. Dip Switch – 3 way. Allows selection of software for specific machine
15. Tactile Switch. For use during calibration procedure (refer to Calibration in Sec 3.3)
16. Water Level – 5-way connector (low voltage). Connects to Low level and High level probes. Also connects push button on PB variants.
17. Button Connector – 4-way
18. Data I/O Connector – 4-way

**4.5.3. PCB ECOSMART Display (1600357)**

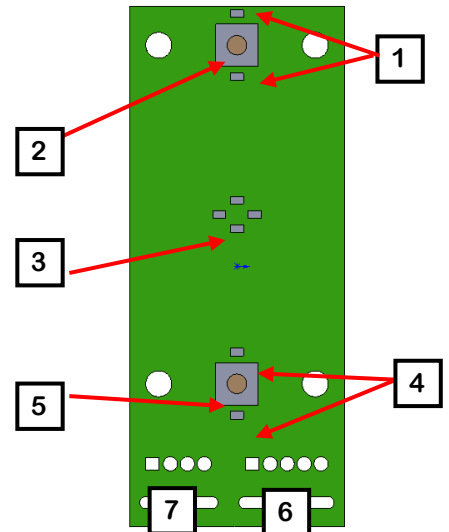
1. Power On LED's. Shows that machine is switched on
2. Power On/Off switch
3. Status LED's. Displays Error signals via a flashing RED LED
4. Eco Mode On LED's
5. Eco Mode On/Of Switch
6. 2 way connector – to Font connector
7. 16 way connector – to PCB EcoBoiler 1600354



( For assembly order of 1600357 see :ECOS-020A PCB ECOSMART DISPLAY ASSEMBLY)

**4.5.4. PCB Display EcoBoiler 10L (1600349)**

1. Power On LED's shows that machine is switched on
2. Power On/Off switch
3. Status LED's. Displays Error signals via a flashing RED LED
4. Eco Mode On LED's
5. Eco Mode On/Of Switch
6. 5 way connector – to PCB EcoBoiler LED connector
7. 4 way connector – to PCB EcoBoiler BUTTONS connector



## 4.6. TROUBLESHOOTING – DIAGNOSTIC GUIDE:

**NOTE FOR THE ECOSMART RANGE IN ADDITION TO THE STATUS LED FLASHING TO INDICATE AN ERROR – THE DISPLAY WILL ALSO PROVIDE INFORMATION**

### 2 FLASH CYCLE – BELOW LOW LEVEL

|                              |   |
|------------------------------|---|
| Display pattern:             | <ul style="list-style-type: none"><li>• 2 flashes then a short pause - repeated.</li></ul>  |
| Electronic check and action: | <ul style="list-style-type: none"><li>• This indicates that the low level circuit is open i.e. the probe is not in contact with the water.</li><li>• The element is switched OFF at this stage and the inlet is left ON.</li><li>• (Note that if this is a low probe wiring fault, the water will stop at the high level probe regardless of the status of the low level).</li><li>• This is a recoverable error i.e. the machine does not need to be reset when the problem is solved. (e.g. if a closed mains water stop valve is the problem, opening the valve will allow water into the machine and normal function will resume when the low level probe is reached)</li></ul> |
| Probable causes:             | <ul style="list-style-type: none"><li>• The water level is below the low level probe, which is normal when the machine fills for the first time. (Can be flashing for up to 2 min at start up)</li><li>• The low level probe wire is disconnected, or there is another wiring fault</li><li>• (e.g. a bad earth (return) connection between the PCB and the Tank)</li></ul>   |
| Action required:             | <ul style="list-style-type: none"><li>• Check that the water pressure is OK and ensure that the stop valve is open.</li><li>• Check that the inlet solenoid is working.</li><li>• If the water level is above the level of the low probe, check the probe circuit wiring</li></ul>  |

### 3 FLASH CYCLE – THERMISTOR OPEN CIRCUIT

|                              |  |
|------------------------------|--|
| Display pattern:             | <ul style="list-style-type: none"><li>• 3 flashes then a short pause - repeated.</li></ul>   |
| Electronic check and action: | <ul style="list-style-type: none"><li>• This indicates that the Thermistor is measuring such a large resistance that it assumes the thermistor circuit is open.</li><li>• The element and inlet valve are turned OFF when this error is detected</li><li>• This is a recoverable error. When the correct range of resistance is measured, normal operation resumes</li></ul> |
| Probable causes:             | <ul style="list-style-type: none"><li>• The thermistor probe is unplugged from the 4way connector on the PCB or the thermistor has failed open circuit.</li></ul>  |
| Action required:             | <ul style="list-style-type: none"><li>• Check that the thermistor is plugged in to the PCB correctly. If it is, replace the thermistor.</li></ul>  |

#### 4 FLASH CYCLE – NOT HEATING

|                              |   |
|------------------------------|---|
| Display pattern:             | <ul style="list-style-type: none"><li>• 4 flashes then a short pause - repeated.</li></ul>  |
| Electronic check and action: | <ul style="list-style-type: none"><li>• This checks that the temperature is increasing when the heater is on.</li><li>• Measures the rate that the temperature increases in a specified time. This error is only displayed after 20 mins of the heater being on continuously. When the error is detected, the element and inlet valve are turned off.</li><li>• This is a non recoverable error. The machine needs to be reset when this problem is solved.</li></ul> |
| Probable causes:             | <ul style="list-style-type: none"><li>• The elements have failed</li><li>• Wiring fault</li></ul>   |
| Action required:             | <ul style="list-style-type: none"><li>• Check that the resistance on the elements. If there is a reasonable resistance (15-25<math>\Omega</math>) on the element it probably has not failed, so the wiring might be at fault.</li></ul>   |

#### 5 FLASH CYCLE – THERMISTOR SHORT CIRCUIT

|                              |   |
|------------------------------|---|
| Display pattern:             | <ul style="list-style-type: none"><li>• 5 flashes then a short pause - repeated.</li></ul>  |
| Electronic check and action: | <ul style="list-style-type: none"><li>• This indicates that the Thermistor is measuring zero resistance. It assumes the thermistor has failed sort circuit.</li><li>• The element and inlet valve are turned OFF when this error is detected</li><li>• This is a recoverable error. When the correct range of resistance is measured, normal operation resumes.</li></ul> |
| Probable causes:             | <ul style="list-style-type: none"><li>• The thermistor has failed.</li></ul>  |
| Action required:             | <ul style="list-style-type: none"><li>• Replace the thermistor.</li></ul>   |

#### 6 FLASH CYCLE – NOT FILLING

|                              |  |
|------------------------------|--|
| Display pattern:             | <ul style="list-style-type: none"><li>• 6 flashes then a short pause - repeated.</li></ul>   |
| Electronic check and action: | <ul style="list-style-type: none"><li>• This checks that the water in the tank cools when the inlet solenoid valve is switched on.</li><li>• This is a non-recoverable error. This checks that the water in the tank is cooled by when the inlet solenoid valve is opened. If the water pressure is within the specifications (5-50psi), the inlet solenoid should not be on for more than a few seconds. If this water temperature has not decreased by the required amount</li><li>• (1 degree per minute), the inlet solenoid is switched off and the 6 flash cycle is displayed.</li></ul> |
| Probable causes:             | <ul style="list-style-type: none"><li>• Mains water pressure problem or the mains water stop valve is closed.</li><li>• Inlet solenoid valve failure.</li></ul>  |
| Action required:             | <ul style="list-style-type: none"><li>• Check the mains water supply. (Note: Temporary loss of water pressure can occur in certain sites – particularly when various machines are plumbed to the same mains water supply.) If the water supply is ok, reset the machine (switch the machine Off and On again). This will reset</li></ul>   |

the error and if the water supply is ok, the machine will return to normal operation.

- **NOTE: If the water supply is the problem, ensure that this is rectified or this error will re-occur.**
- If there is no problem with the mains water supply, check that the inlet solenoid valve is working.

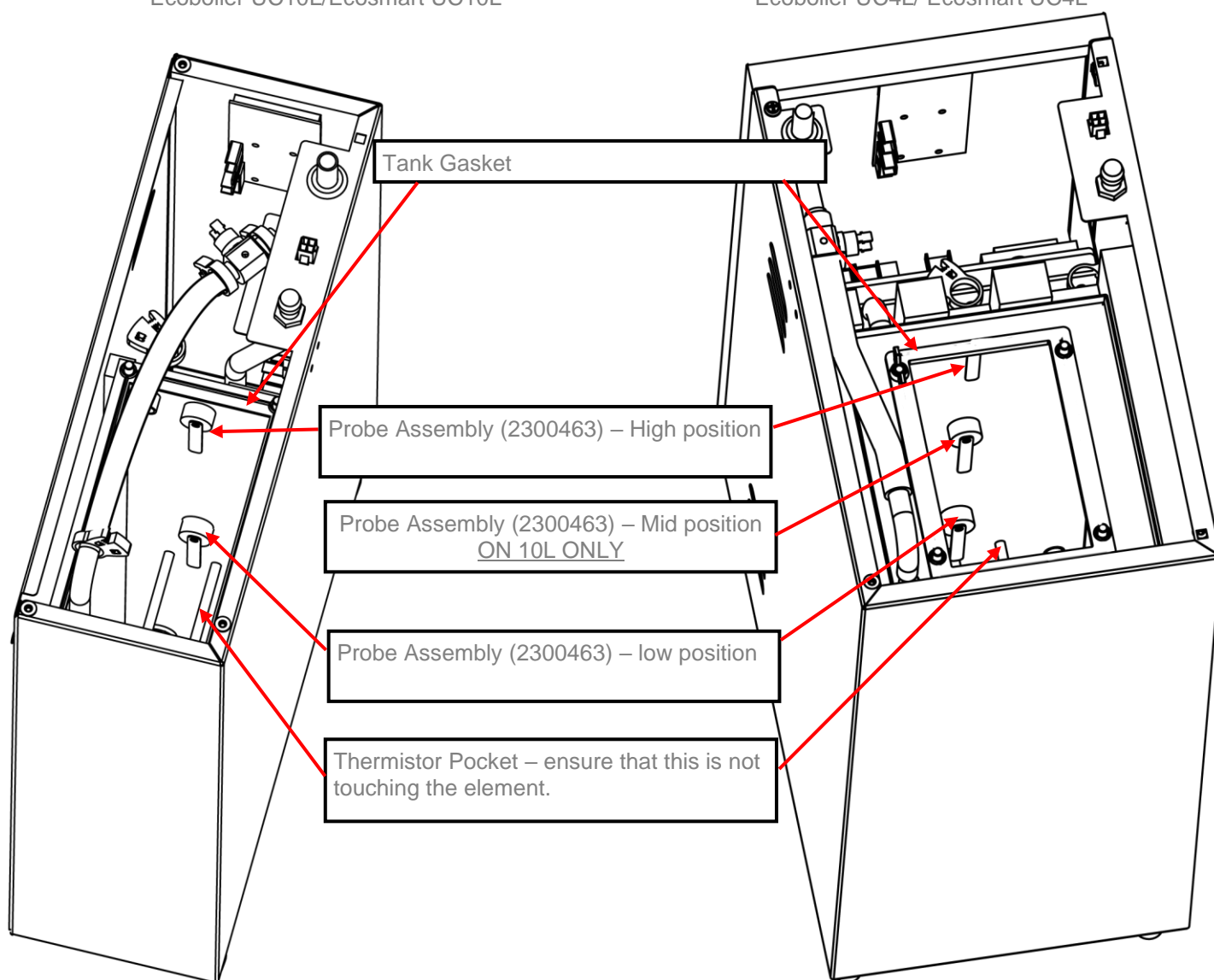
## 4.7. Tank Components

The tank internals are detailed below. Care should be taken when cleaning inside the tank. The level probes provide much of the control inputs into the PCB and are critical to the operation of the machine. The wiring to these should be checked regularly and the probes themselves should be cleaned whenever the machine is serviced.

There are 3 level probes on the 10L EcoBoiler versions and 2 level probes on the 4L versions.

Ecoboiler UC10L/Ecosmart UC10L

Ecoboiler UC4L/ Ecosmart UC4L

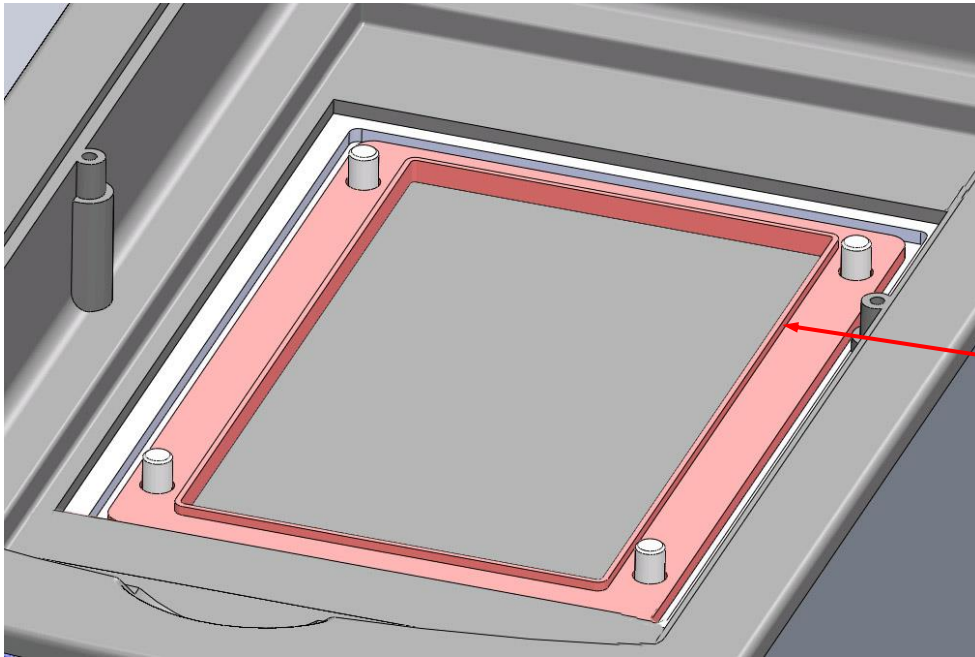




## 4.8. Descaling Procedure

To descale the machine thoroughly:

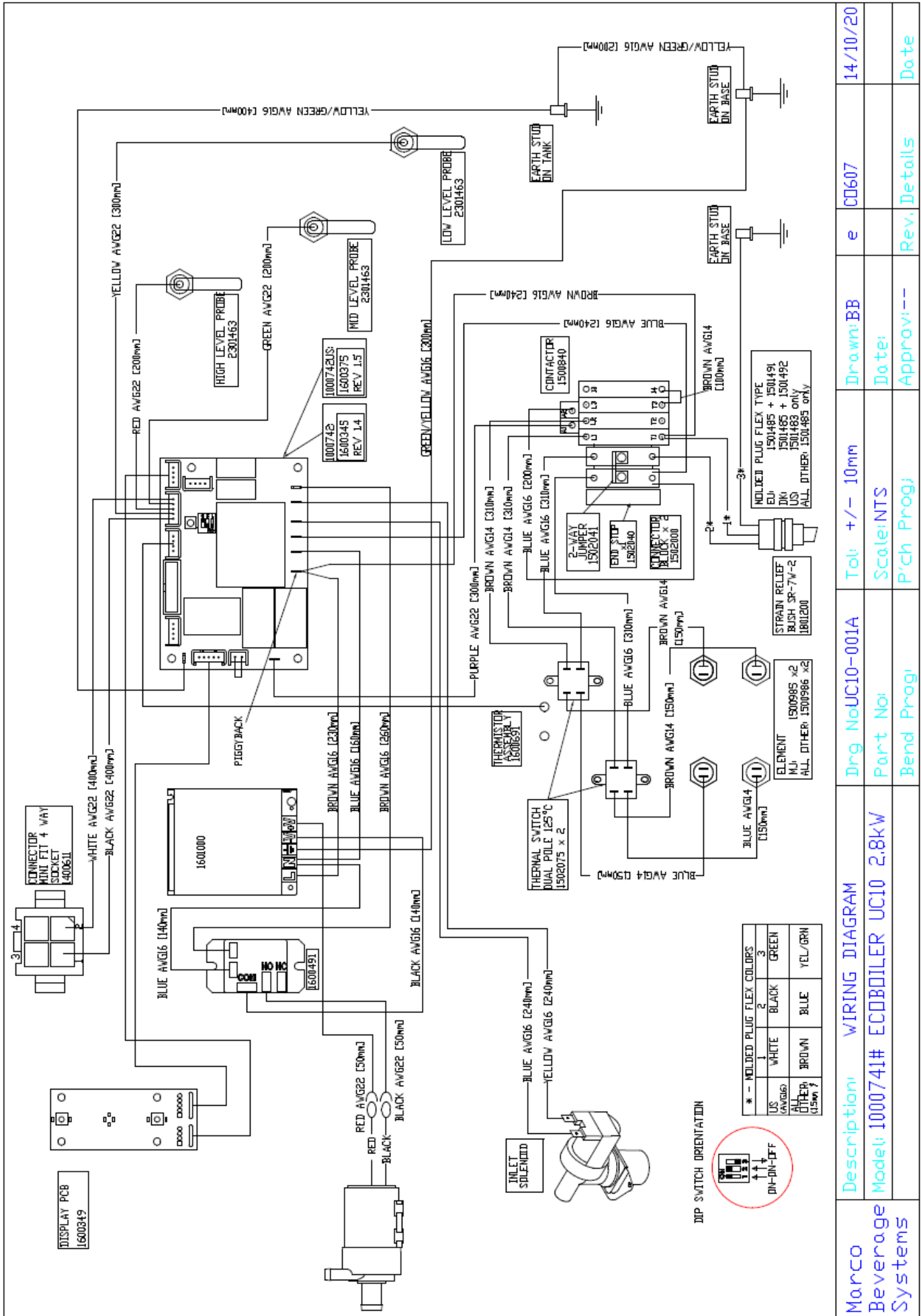
- Unplug the machine.
- Disconnect from the water supply.
- Drain as much water from the tank as possible.
- Remove the lids and allow the machine to cool completely.
- Drain all the water from the machine.
- Attempt to remove as much scale as possible by hand.
- Reconnect machine and start up once again.
- Add a descale solution (follow instructions as given). Flush the machine thoroughly before use



Tank Gasket Orientation  
(Inner Lip faces upwards)

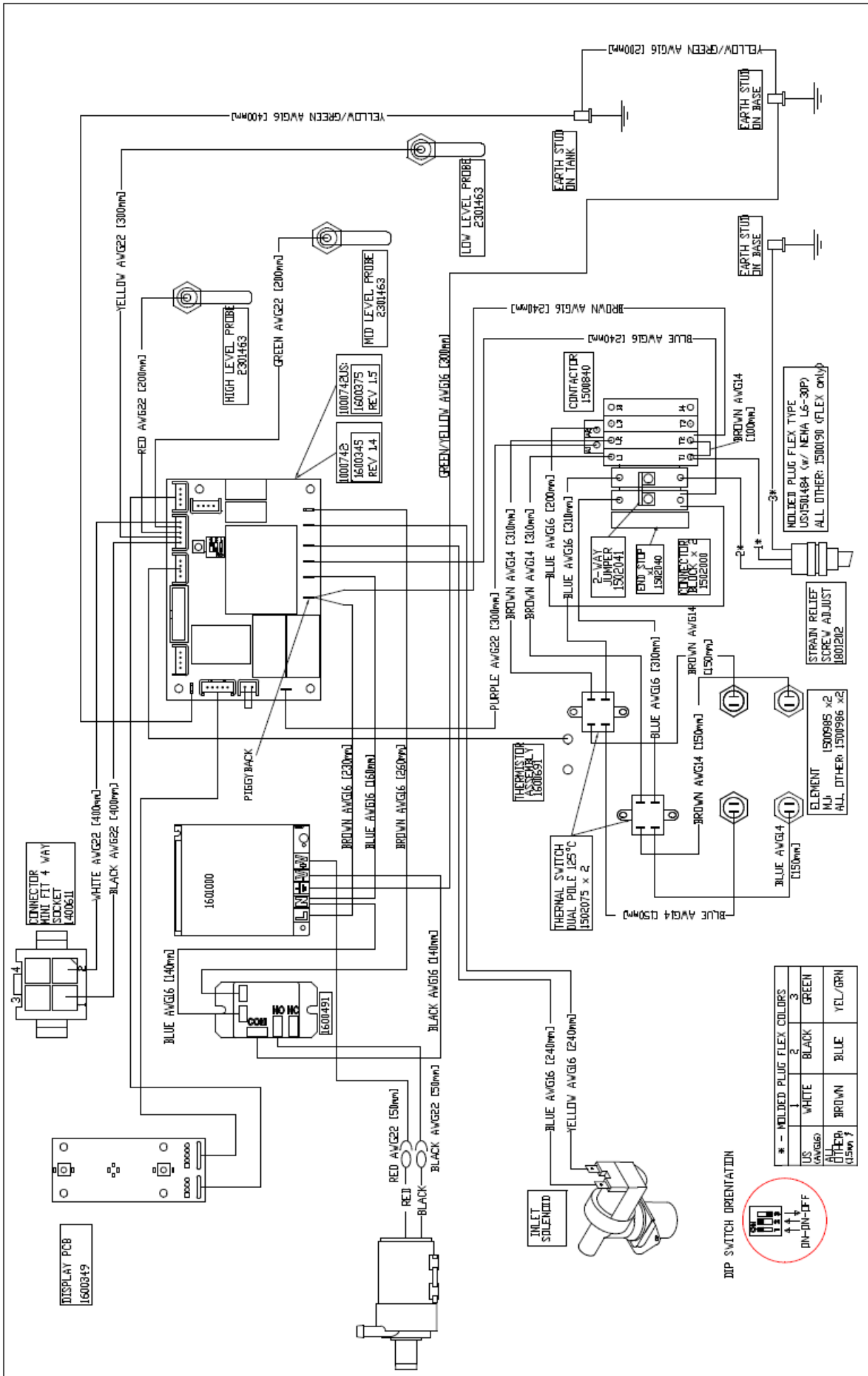


## 4.10. Wiring Diagrams: EcoBoiler UC10L 1000741



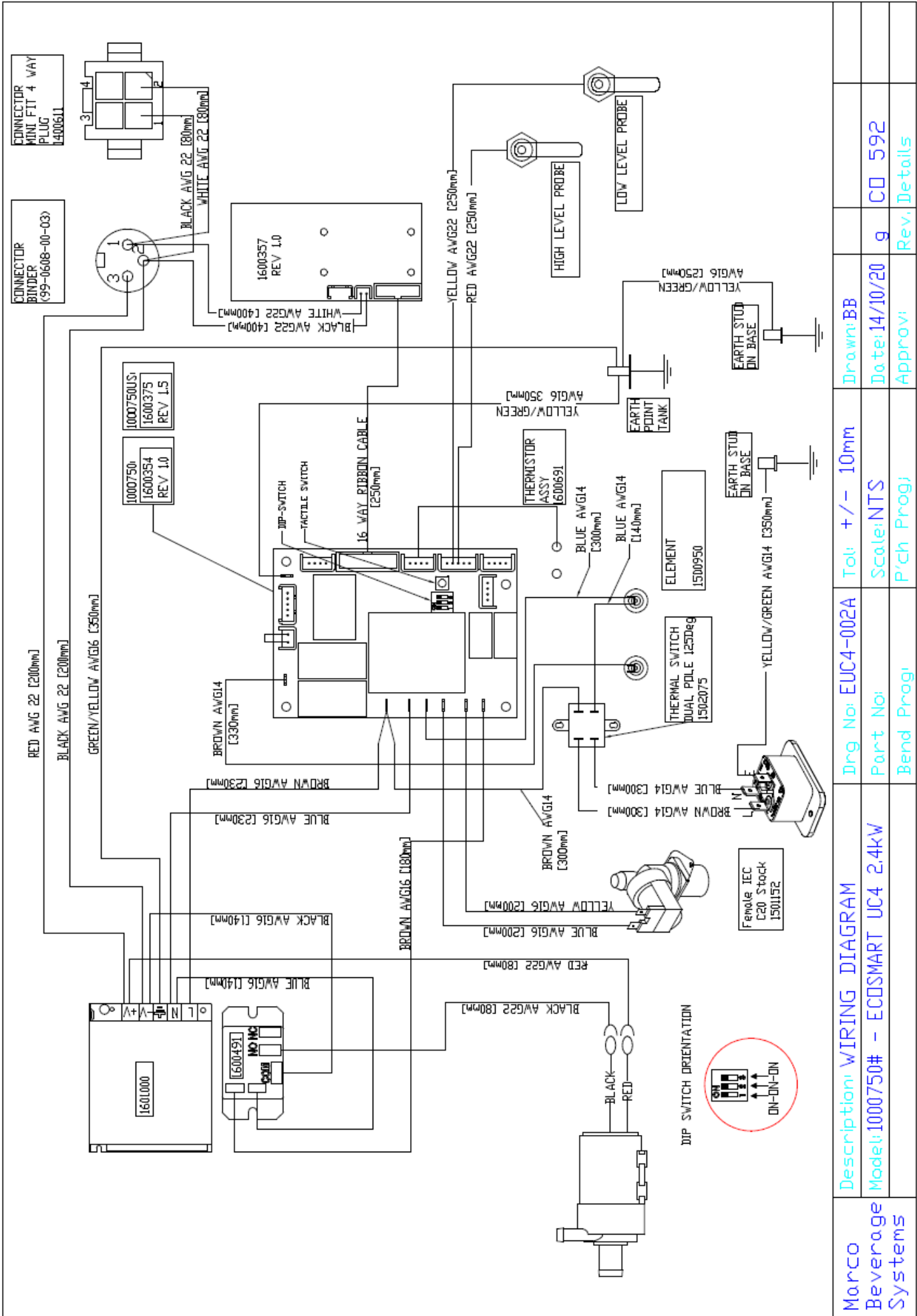
|                        |                                      |                   |               |            |      |         |          |
|------------------------|--------------------------------------|-------------------|---------------|------------|------|---------|----------|
| Marco Beverage Systems | Description: WIRING DIAGRAM          | Dwg No: UC10-001A | Tol: +/- 10mm | Drawn: BB  | e    | CD607   | 14/10/20 |
|                        | Model: 1000741# ECOBOILER UC10 2.8kW | Part No:          | Scale: NTS    | Date:      |      |         |          |
|                        |                                      | Bend Prog:        | P'ch Prog:    | Approv: -- | Rev: | Details | Date     |

# 4.11. Wiring Diagram: EcoBoiler UC10L 5.6kW 1000742



|                        |                                      |                    |               |            |              |          |
|------------------------|--------------------------------------|--------------------|---------------|------------|--------------|----------|
| Marco Beverage Systems | Description: WIRING DIAGRAM          | Drwg No: UC10-002A | Tol: +/- 10mm | Drawn: BB  | f            | 14/12/20 |
|                        | Model: 1000742# ECOBOILER UC10 5.6kW | Part No:           | Scale: NTS    | Date:      |              |          |
|                        |                                      | Bend Prog:         | P'ch Prog:    | Approv: -- | Rev: Details | Date     |

## 4.12. Wiring Diagram: Ecosmart UC4L 1000750



Description: WIRING DIAGRAM

Model: 1000750# - ECOSMART UC4 2.4kW

Part No: Bend Progi

Drwg No: EUC4-002A

Total: +/- 10mm

Scale: NTS

Drawn: BB

Date: 14/10/20

Approv: P'ch Progi

g

CD 592

Rev: Details



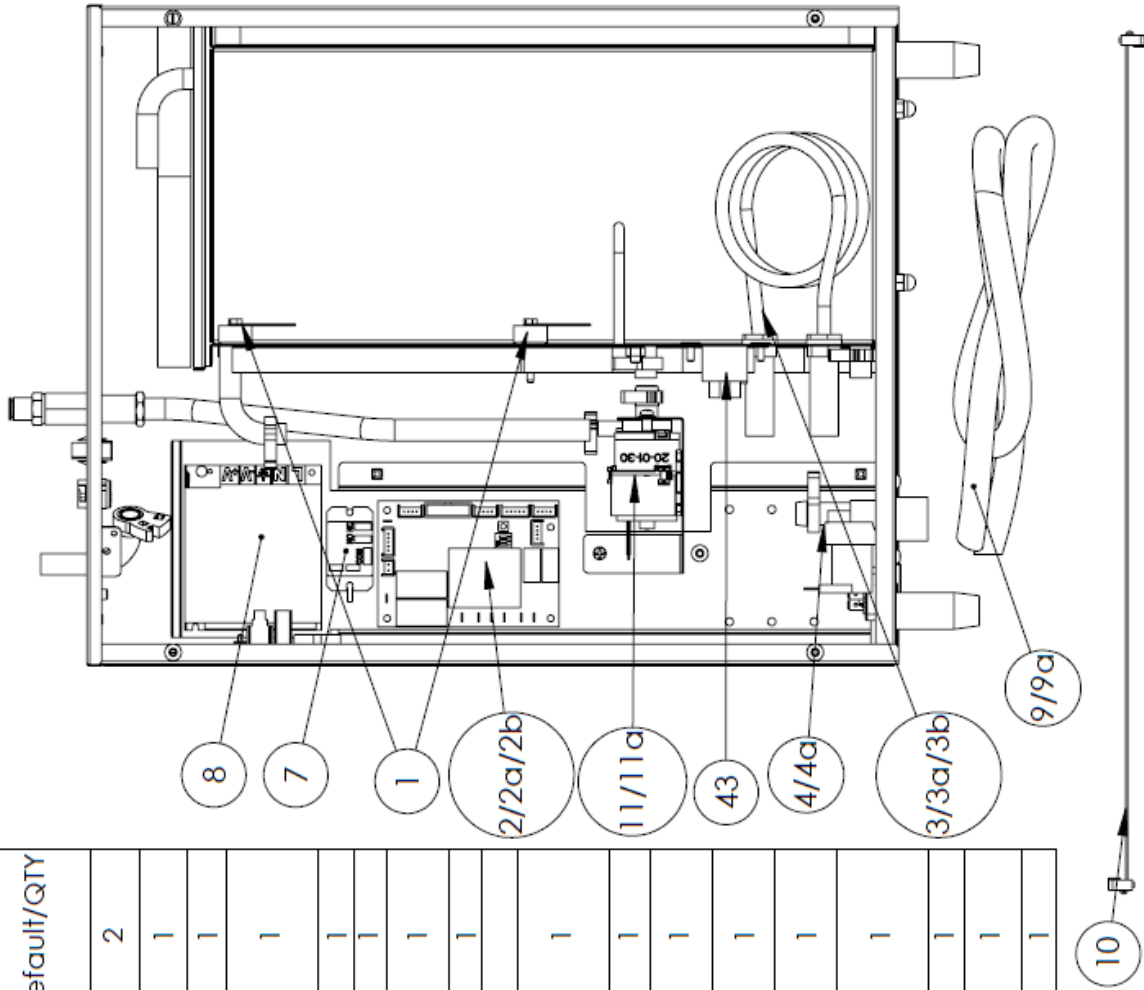






## 4.14 Spare Parts

| ITEM NO. | PART NUMBER | DESCRIPTION  | Default/QTY |
|----------|-------------|--|-------------|
| 1        | 2300463     | Probe Assembly (40mm Tab)  | 2           |
| 2        | 1600345     | P.C.B. EcoBoiler Control (1000740)   | 1           |
| 2a       | 1600354     | P.C.B Eco Slave (1000750)  | 1           |
| 2b       | 1000375     | P.C.B EcoBoiler Control - UL (US only)                                       | 1           |
| 3        | 1500950     | ELEMENT 2.4kW 230V   | 1           |
| 3a       | 1500952     | ELEMENT 120V 1500W (120V US only)  | 1           |
| 3b       | 1500951     | Element 2.4kW 200V Ring Shape (Japan)  | 1           |
| 4        | 1502192     | Valve Inlet 240V - 2Lmin NSF   | 1           |
| 4a       | 1502194     | Inlet Solenoid 110V (US only)  | 1           |
| 5a       | 1600366K    | 24V DC Pump Supply Retrofit Kit (for machines before serial number 0617XXXX) | 1           |
| 7        | 1600491     | Relay 220V 40A   | 1           |
| 8        | 1601000     | Power Supply 24V Dc  | 1           |
| 9        | 1800690     | Hose Water Inlet 3/4" WRC  | 1           |
| 9a       | 1800693     | Hose Water Inlet 9/16"-24 UNE (US)   | 1           |
| 10       | 1500129     | 16 Way Ribbon Cable Assembly 500mm   | 1           |
| 11       | 1501562     | Pump Muller 42V Mini   | 1           |
| 11a      | 1501563K    | Muller Pump Spares kit B (ECO UC4, UC10 & UC45)                              | 1           |
| 12       | 1502175     | Thermal Switch Dual Pole   | 1           |



DESCRIPTION: UC4 Spare Parts Drawing 2

DWG NO.: UC04-021A

MATERIAL: N/A

UNLESS OTHERWISE SPECIFIED:  
DIMENSIONS ARE IN MILLIMETERS  
TOLERANCES: LINEAR:  $\pm 0.2\text{mm}$   
ANGULAR:  $\pm 0.5^\circ$



DRAWN BY: BB

11/01/21

APPROVED BY: PT

11/02/21

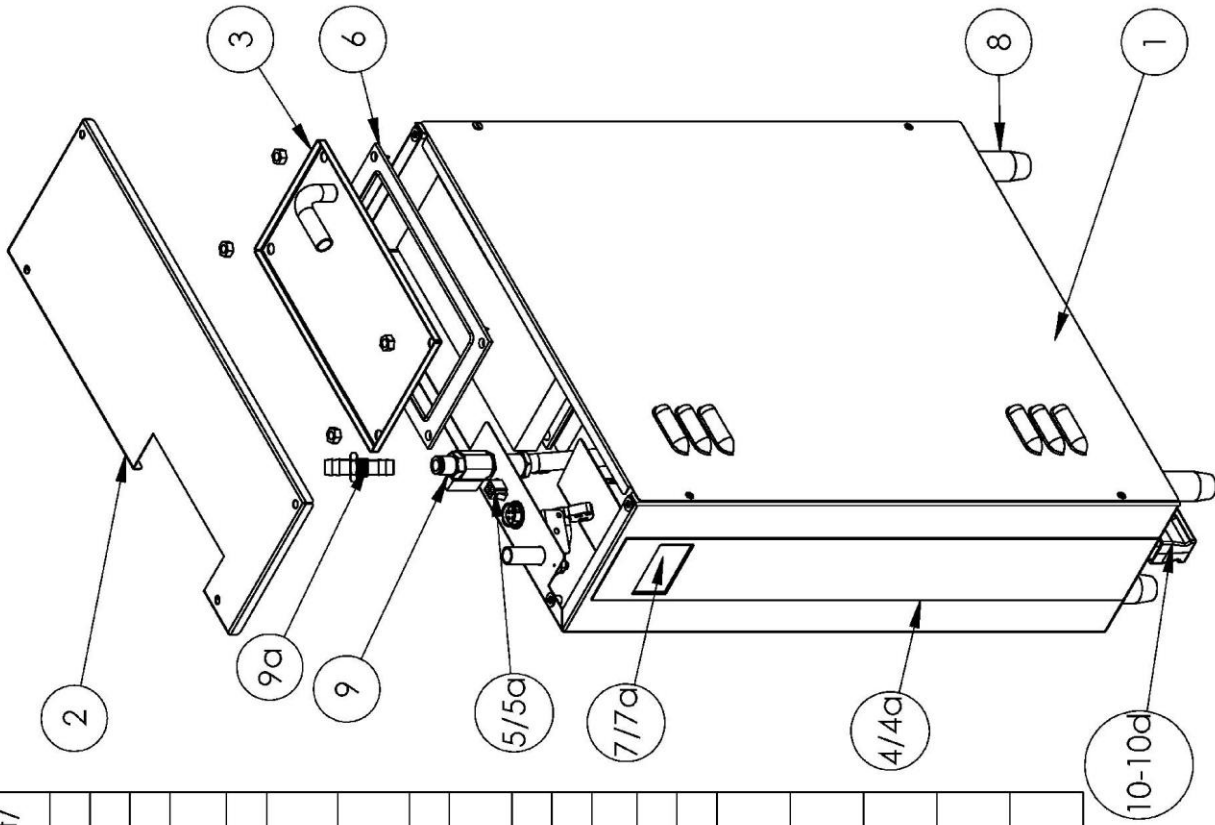
REVISION: d


CO:

607

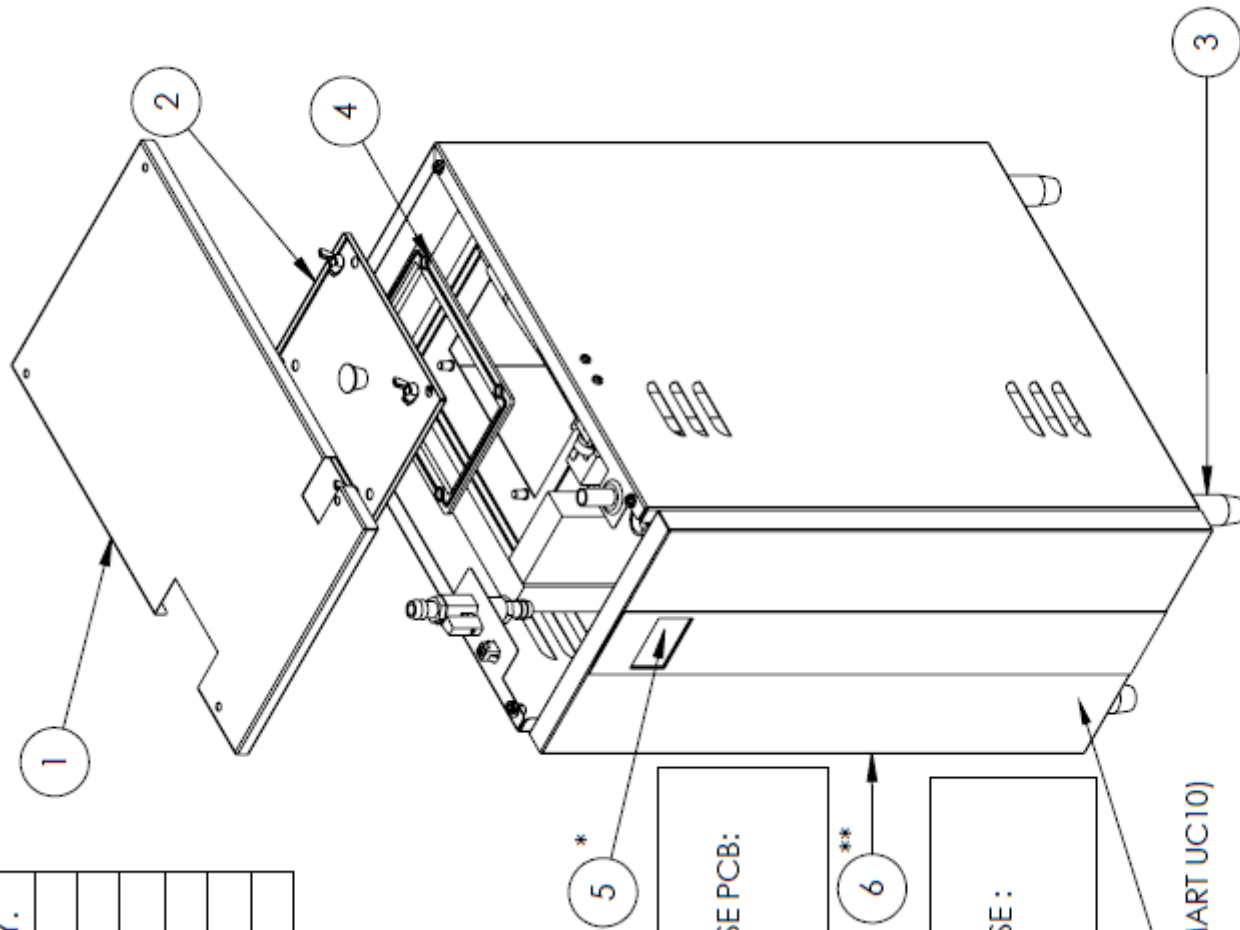
SCALE: 1:4

| ITEM NO. | PART NUMBER | DESCRIPTION   | Default/ QTY. |
|----------|-------------|---|---------------|
| 1        | 2300394     | Service Panel 1000740 1000750                                 | 1             |
| 2        | 2300393     | LID OUTER 1000740 1000750                                     | 1             |
| 3        | 2300389     | LID INNER 1000740 1000750                                     | 1             |
| 4        | 1900673     | Label UC Ecosmart 4-10L (1000750)                             | 1             |
| 4a       | 1900674     | Label UC EcoBoiler 4-10L (1000740)                            | 1             |
| 5        | 1501172     | Ecosmart UC4 Harness Font Connection (1000750)                | 1             |
| 5a       | 1501169     | EcoBoiler UC4 Harness Font Connection (1000740)               | 1             |
| 6        | 1800314     | Gasket Inner UC4  | 1             |
| 7        | 1600357K    | PCB 357 Spares kit (1000750)                                  | 1             |
| 7a       | 1600349     | PCB Display EcoBoiler 10L (1000740)                           | 1             |
| 8        | 1700310     | Leg 50mm Nylon 22mm Diameter                                  | 4             |
| 9        | 1400813     | MALE 1/4" BSPT - 8mm PUSH FIT                                 | 1             |
| 9a       | 1402161     | Tailpiece Hose Dual 1/4" BSP                                  | 1             |
| 10       | 1501489     | Cord set IEC C19 BS1363 UK                                    | 1             |
| 10a      | 1501502     | Plug Molded NEMA 5-15P Cord Set (1000747)                     | 1             |
| 10b      | 1501488     | Cord set IEC C19 CEE7 EU                                      | 1             |
| 10c      | 1501487     | Cord set IEC C19 NEMA L6-20P US 230V                          | 1             |
| 10d      | 1501485     | Plug Moulded 13A 2.4m Crimped (Japan)                         | 1             |
| 11       | 2100350     | Tailpiece Hose Dual 1/4" Bsp X 12mm (not used in US machines) | 1             |



|   |  |              |                           |           |            |            |
|---|--|--------------|---------------------------|-----------|------------|------------|
|  | UNLESS OTHERWISE SPECIFIED:<br>DIMENSIONS ARE IN MILLIMETERS<br>TOLERANCES: LINEAR: $\pm 0.2\text{mm}$<br>ANGULAR: $\pm 0.5^\circ$ | DESCRIPTION: | UC4 Spare Parts Drawing 1 | DRAWN BY: | BB         | 20/03/2020 |
|   | DWG NO.:   | UC04-020A    | APPROVED BY:              | PT        | 20/03/2020 |            |
|   | MATERIAL:  | mm           | REVISION:                 | d         | CO:        | 496        |

| ITEM NO. | PART NUMBER | DESCRIPTION                         | QTY. |
|----------|-------------|-------------------------------------|------|
| 1        | 2300388     | LID 1000741 1000742 1000751 1000752 | 1    |
| 2        | 2300384     | Lid Inner EcoBoiler                 | 1    |
| 3        | 1700310     | Leg 50mm Nylon 22mm Diameter        | 4    |
| 4        | 1800306     | GASKET INNER ECOBOILER              | 1    |
| 5        | 1600357K    | PCB 357 Spares kit                  | 1    |
| 6        | 1801811     | Service Panel 1000751 1000752       | 1    |



\*NOTE:  
ON MACHINES 1000741 AND 1000742 USE PCB:  
p/n: 1600349 PCB Display EcoBoiler 10L

\*\*NOTE:  
ON MACHINES 1000741 AND 1000742 USE:  
1801810 Service Panel 1000741 1000742

MODEL SHOWN IS 1000751 (ECOSMART UC10)



UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE IN MILLIMETERS  
TOLERANCES: LINEAR: +/0.2mm

DESCRIPTION: External exploded 1000741 1000742 1000751 1000752

DWG NO.: UC10-020A

MATERIAL: N/A

DRAWN BY: JL

APPROVED BY: NMC

22-05-17

17-08-11

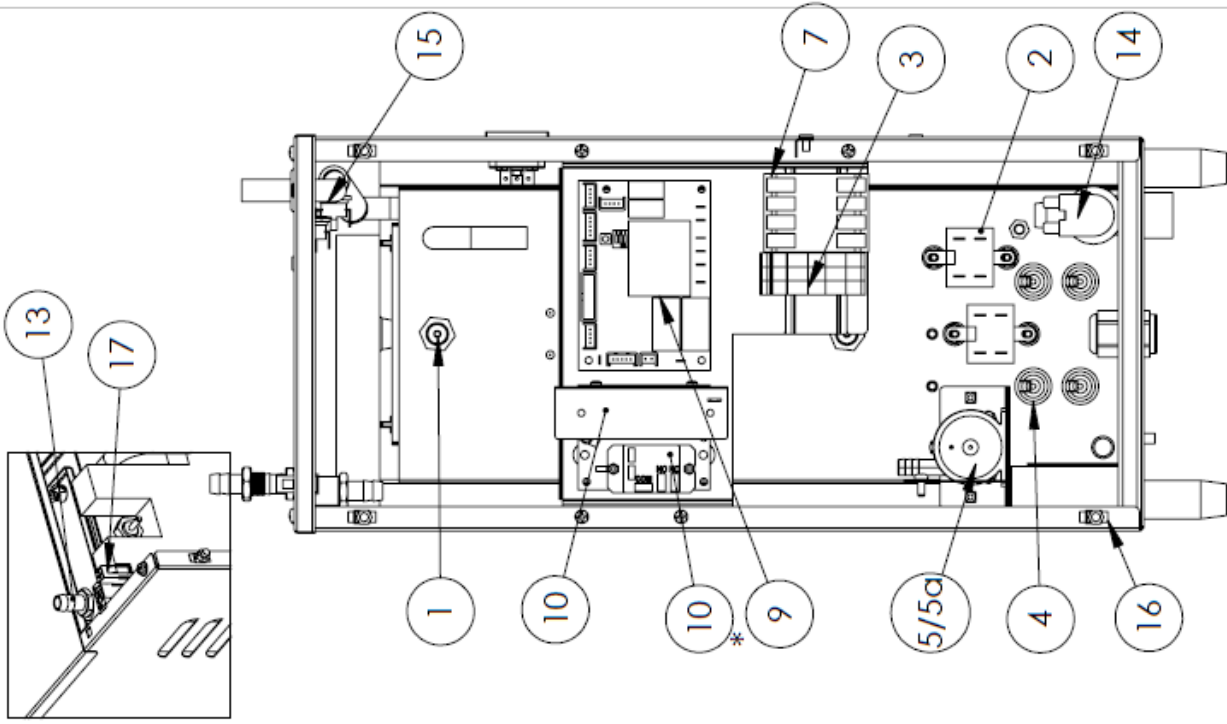
REVISION: b

CO: 356

SCALE: 1:1

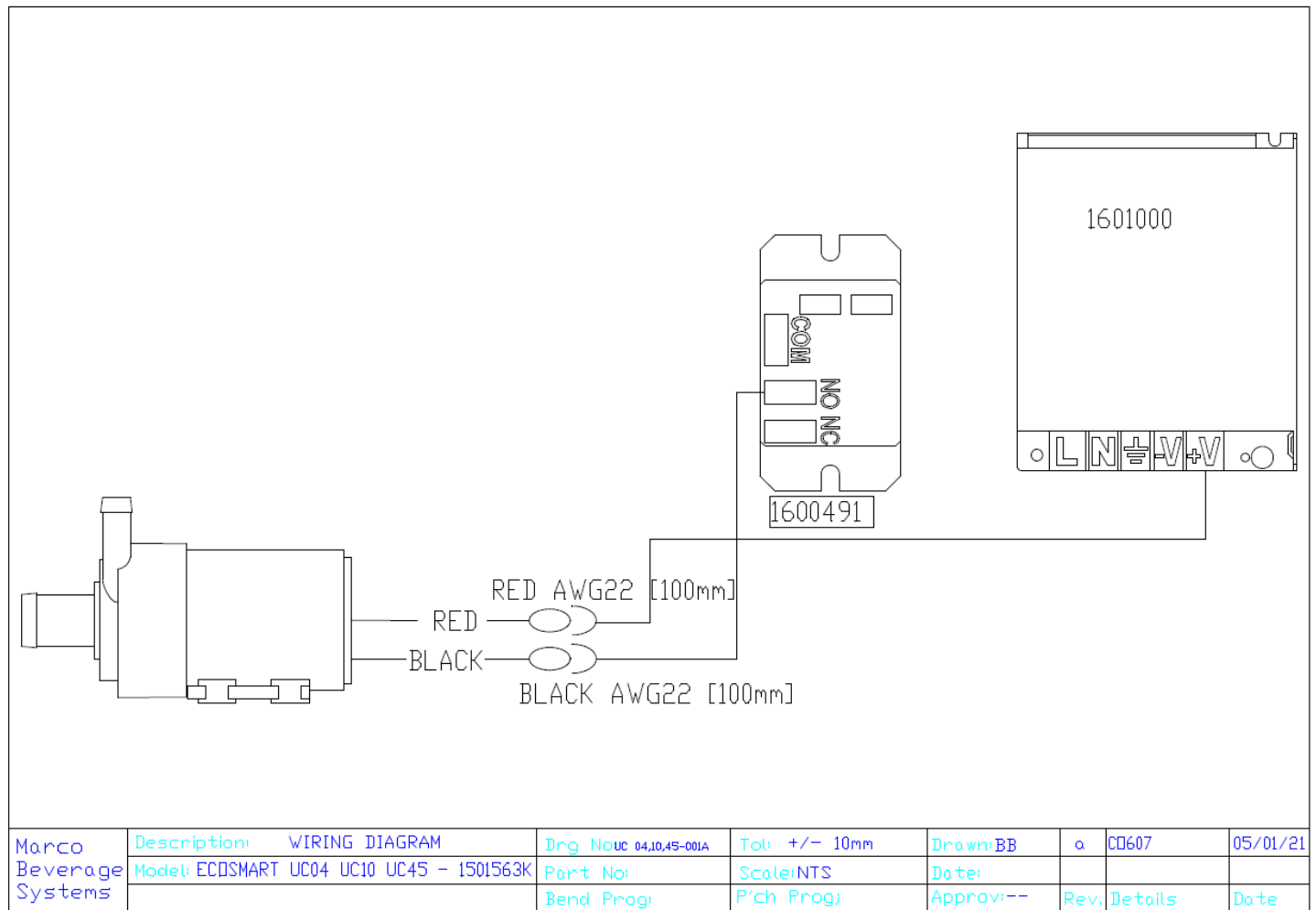
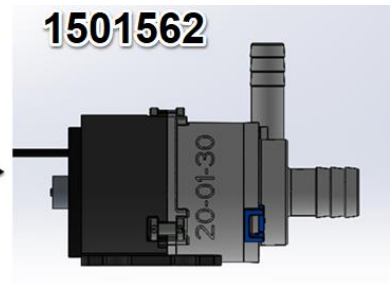
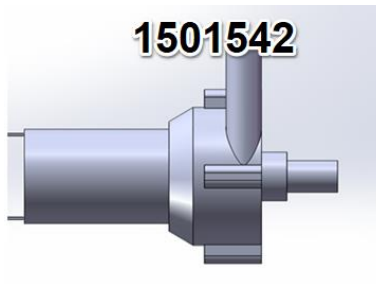
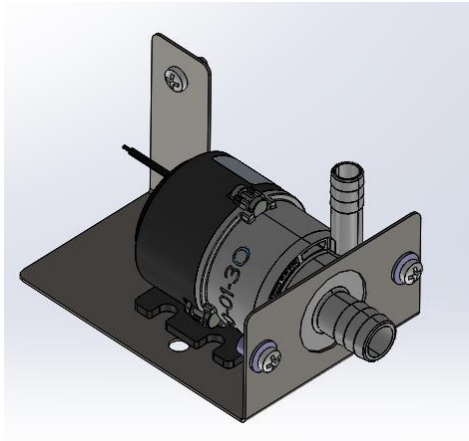
| ITEM NO. | PART NUMBER | DESCRIPTION  | QTY |
|----------|-------------|--|-----|
| 1        | 2300463     | Probe Assembly (40mm Tab)  | 3   |
| 2        | 1502075     | Thermal Switch Dual Pole 125Deg  | 2   |
| 3        | 1502000     | TERMINAL 6mm   | 3   |
| 4        | 1500985     | ELEMENT 2.8kW 230V   | 2   |
| 5        | 1501562     | Pump Muller 42V Mini   | 1   |
| 5a       | 1501563K    | Muller Pump Spares kit B (ECO UC4, UC10 & UC45)                              | 1   |
| 7        | 1500840     | CONTACTOR B&J 240V AC  | 1   |
| 9        | 1600345     | P.C.B. Ecoboiler Control   | 1   |
| 10       | 1601000     | Power Supply 24V Dc  | 1   |
| 11       | 1600491     | Relay 220V 40A   | 1   |
| 10       | 1600366K    | 24V DC Pump Supply Retrofit Kit (for machines before serial number 0617XXXX) | 1   |
| 13       | 1402160     | Tailpiece Hose 1/4" Bsp X 12mm   | 2   |
| 14       | 1502190     | VALVE INLET SOLENOID 240V 3/4"   | 1   |
| 15       | 1502088     | Thermal Switch 90deg, M4 Stud Mount  | 2   |
| 16       | 1402146     | CLIP LATCH SELF MOUNT  | 4   |
| 17       | 1400611     | Ecosmart UC4 Harness Font Connection (1000750)                               | 1   |

**\*NOTE:**  
**On MACHINES 1000751 AND 1000752 USE PCB:**  
**P/N: 1600354 P.C.B Eco Slave**  
**On MACHINES 1000752US USE PCB:**  
**P/N: 1600375**



|   |  |   |  |                             |            |
|---|--|---|--|-----------------------------|------------|
|  | UNLESS OTHERWISE SPECIFIED:<br>DIMENSIONS ARE IN MILLIMETERS<br>TOLERANCES: LINEAR: +/0.2mm<br>ANGULAR: +/0.5° | DESCRIPTION: Internal Exploded 1000741 1000742 1000751 1000752<br>DWG NO.: UC10-021A<br>MATERIAL: N/A | DRAWN BY: BB<br>APPROVED BY: DW<br>REVISION: e | 11/01/21<br>11/01/21<br>607 | SCALE: 1:5 |
|   |  |   | CO:  |                             |            |

4.15 1501563K Muller Pump Spares kit B (ECO UC4, UC10 & UC45)



|                        |   |                          |               |            |      |         |          |
|------------------------|---|--------------------------|---------------|------------|------|---------|----------|
| Marco Beverage Systems | Description: WIRING DIAGRAM               | Dwg No: UC 04,10,45-001A | Tol: +/- 10mm | Drawn: BB  | α    | CD607   | 05/01/21 |
|                        | Model: ECOSMART UC04 UC10 UC45 - 1501563K | Part No:                 | Scale: NTS    | Date:      |      |         |          |
|                        |   | Ben. Progr:              | P'ch Progr:   | Approv: -- | Rev. | Details | Date     |

| Part Number | Description                            | Note                                |
|-------------|--|-------------------------------------|
| 1500950     | Element 2.4kW 230V                     | 2.4kW version only                  |
| 1500985     | Element 2.8kW 230V                     | 2.8kW version only                  |
| 1500951     | Element 2.4kW 200V                     | MJ version only                     |
| 1500986     | Element 2.8kW 200V                     | MJ version only                     |
| 1501562A    | Pump Muller 24V Mini                   | -                                   |
| 1502087     | Thermal Switch 130Deg                  | -                                   |
| 1502088     | Thermal Switch 90deg,<br>M4 Stud Mount | -                                   |
| 1502089     | Thermal Switch Mount<br>Brass          | -                                   |
| 1502191     | Valve Inlet Solenoid 240V<br>- 2L/min  | -                                   |
| 1600345     | PCB Ecoboiler Control                  | <b>Ecoboiler</b> versions only      |
| 1600349     | PCB Eco boiler Display<br>10L          | <b>Ecoboiler</b> versions only      |
| 1600354     | P.C.B Eco Slave                        | <b>Ecosmart</b> versions only       |
| 1600357K    | P.C.B 357 Spares Kit                   | <b>Ecosmart</b> versions only       |
| 1600366     | P.C.B 24V DC Pump<br>Supply            | -                                   |
| 1600691     | Thermistor Assembly                    | -                                   |
| 1800306     | Gasket Inner Ecoboiler                 | UC10 versions only                  |
| 1800314     | Gasket inner UC4                       | UC4 versions only                   |
| 1801810     | Service Panel 1000741<br>1000742       | UC10 <b>Ecoboiler</b> versions only |
| 1801811     | Service Panel 1000751<br>1000752       | UC10 <b>Ecosmart</b> versions only  |
| 1900673     | Label UC Ecosmart 4-10L                | <b>Ecosmart</b> versions only       |
| 1900674     | Label UC Ecoboiler 4-10L               | <b>Ecoboiler</b> versions only      |
| 2300384     | Lid Inner Ecoboiler                    | UC10 versions only                  |
| 2300388     | Lid 1000741 1000742<br>1000751 1000752 | UC10 versions only                  |
| 2300389     | LID Inner 1000740<br>1000750           | UC4 versions only                   |
| 2300393     | LID OUTER 1000740<br>1000750           | UC4 versions only                   |
| 2300394     | Service Panel 1000740<br>1000750       | UC4 versions only                   |
| 2301463     | Level Probe Assembly                   | -                                   |
| 8800121     | Descale Box – 6 Packs                  | -                                   |

