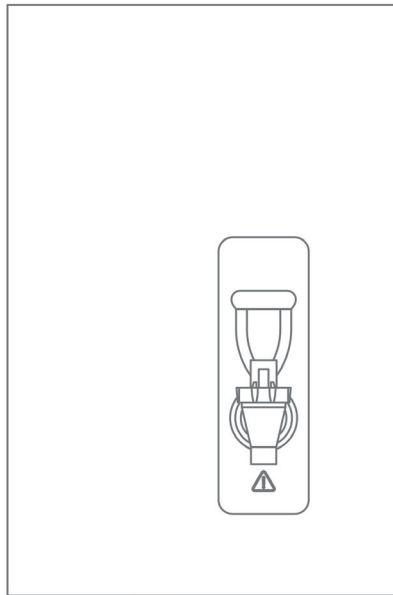




Product Instruction Manual
Microboil Smart



MS3W, MS3SS
MS6W, MS6SS
MS10W, MS10SS

Wall Mounted Boiling Water Heater













Overview

Thank you for purchasing a Microboil Smart wall mounted boiling water heater. Available in 3, 6 and 10 litre capacities, it will provide hot water for making tea and coffee in the work place.

Please read and follow these instructions to ensure that installation and operation are as simple and safe as possible.

Important Safety Points

-  This appliance is intended to be used in household and similar applications such as:
 - staff kitchen areas in shops, offices and other working environments;
 - farm houses;
 - by clients in hotels, motels and other residential type environments;
 - bed and breakfast type environments.
-  This appliance can be used by children aged from 8 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved.
-  Parts of this appliance – especially the vent pipe and tap– can become very hot in use and can also generate steam. Consider and avoid the risk of injury to people or damage to property when installing the appliance.
-  The appliance should only be installed and maintained by a competent person in accordance with any local electrical and plumbing regulations.
-  Do not install the appliance if there is any sign of damage to the supply cable.
-  Do not locate the appliance where the consequences of a water leak could be unusually serious.
-  If the supply cord is damaged, it must be replaced by the manufacturer, its service agent or similarly qualified persons in order to avoid a hazard.
-  The appliance must be permanently connected to the electrical supply through an appropriately rated isolating switch with a contact separation in all poles.
-  Only connect the appliance to an electrical supply that meets the specification detailed on the rating label.

-  This appliance must be earthed.
-  This appliance is intended to be permanently connected to the water mains and should not be connected by a detachable hose-set.
-  Only connect this appliance to a water supply that meets the min/max pressures specified in the specifications section of this manual.
-  Do not confuse the vent and the inlet pipes – serious damage may result.
-  Any plastic pipework or fittings connected to the vent pipe must be rated to 100°C minimum.
-  Failure to comply with the venting requirements detailed in these instructions may cause permanent damage to the appliance and will invalidate the warranty.
-  Cleaning and user maintenance shall not be made by children without supervision.
-  Children shall not play with the appliance.
-  Isolate the appliance from the electrical supply before performing any maintenance task.
-  Ensure the appliance has cooled down before performing any maintenance task.
-  The appliance should be drained if it will be switched off and unattended for any length of time, particularly during the colder months of the year where a possibility of freezing temperatures exists.
-  For installations in areas with hard water, consider scale reduction filters to minimise the need for future descaling.

1. Installation

1(a) Remove the Cover

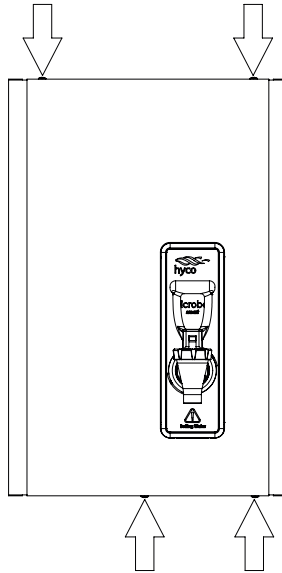


Diagram 1

- The cover is attached to the back frame by means of two screws at the base and top of the appliance (see Diagram 1).

1(b) Select Mounting Position



Ensure the mounting surface is suitable for the weight of the appliance when full.



Parts of this appliance – especially the vent pipe and tap – can become very hot and also could generate steam. Consider and avoid the risk of injury to people or damage to property when installing the appliance.




Do not locate the appliance where the consequences of a water leak would be unusually serious.

- The appliance must be installed in a frost free environment. Frost damage is not covered by the warranty.
- Ensure there is a wholesome water supply connection to the appliance with isolating valve to facilitate future maintenance.
- Position the appliance bearing in mind it will contain scalding water.

- Units are typically mounted above a draining board or drip tray in a kitchen or similar setting. The tap height should be convenient for both the operator and such that visual contact is maintained with the liquid level of any vessel being filled.
- Ensure adequate clearance is left above the appliance to access the cover screws using a screwdriver in order to remove the cover for servicing. Ensure there is sufficient clearance under the drain for a bucket or similar container.

1(c) Secure to Wall

 Ensure there are no hidden cables or pipework before commencing any drilling.

- Mark positions of the keyhole slots, drill and plug the holes (see Diagram 2).
- Hang the appliance on the two screws and mark the two mounting holes in the bottom of the appliance. Remove the appliance from the wall, drill and plug the two holes. Rehang the appliance on the top two screws and screw the appliance to the wall.

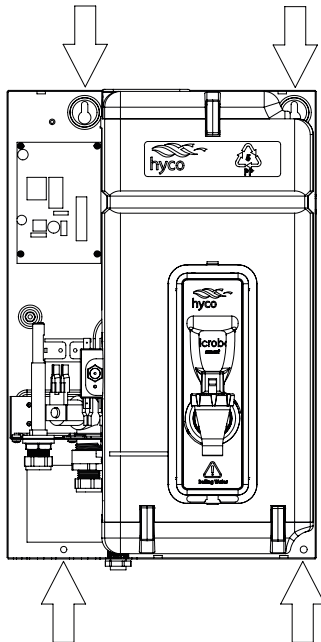


Diagram 2

2. Plumbing Connection

- ⚠ This appliance is intended to be permanently connected to the water mains and should not be connected by a detachable hose-set.
 - ⚠ Only connect this appliance to a water supply that meets the min/max pressures specified in the specifications section of this manual.
 - ⚠ Any plastic pipework or fittings connected to the vent pipe must be rated to 100°C minimum.
 - ⚠ The appliance should only be used with the tap provided. Do not attempt to change or modify in any way.
 - ⚠ Do not confuse the vent and the inlet pipes – serious damage may result.
 - ⚠ The appliance will malfunction if steam cannot easily escape via the vent pipe.
 - ⚠ Failure to comply with the venting requirements detailed in these instructions may cause permanent damage to the appliance and will invalidate the warranty.
- If incoming water pressure is above 1MPa (10 bar), a pressure reducing valve (not supplied) must be fitted.
 - The appliance has movable inlet and vent connections. This allows the appliance to be retrofitted to previously installed pipe work. The height from the mounting surface and the distance between the pipes can be adjusted by loosening the screws and moving to the required position (see Diagram 3).
 - The appliance can be installed with concealed or exposed plumbing connections. Cold water pipes must be flushed before connection to the inlet.

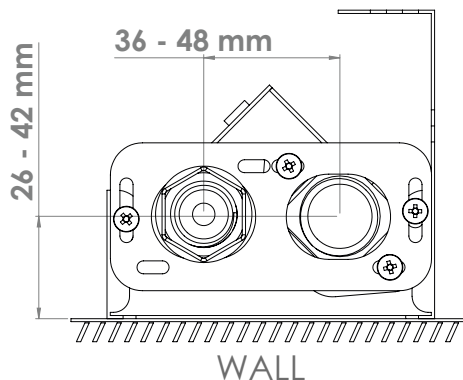
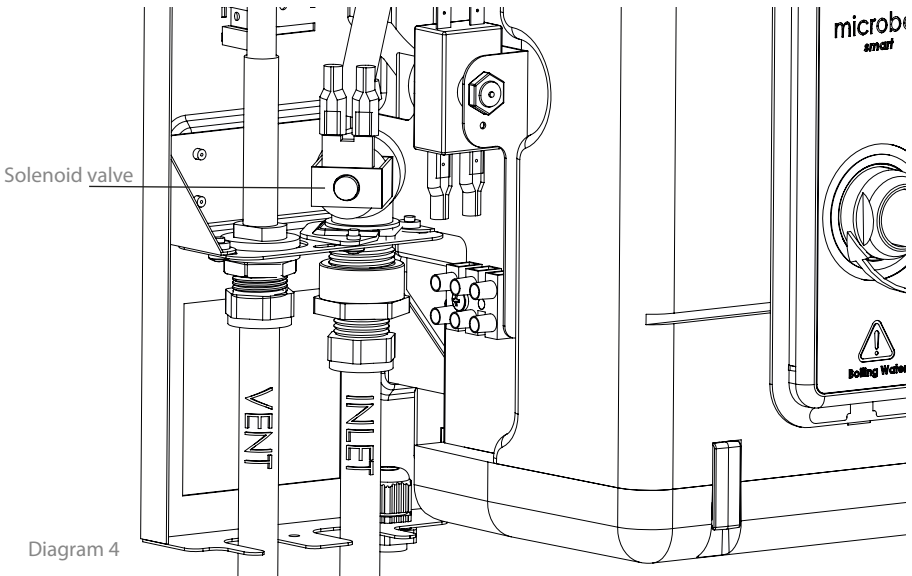


Diagram 3

- All models will take 15mm pipe by means of compression fittings.
- Connect the cold water supply to the inlet connection below the solenoid valve (see Diagram 4).



- For the vent connection it is important that the vent pipe installation adheres to the following specification;
 - Falls continuously.
 - Has a maximum total length of 400mm before any air gap.
 - Is open to the atmosphere (no blockages).
 - All fittings must be rated for continuous operation at a minimum of 100°C.
- The vent pipe can be more than 400mm long but if it is, a tundish or other air gap device must be fitted within the 400mm distance to the appliance (see Diagram 5).

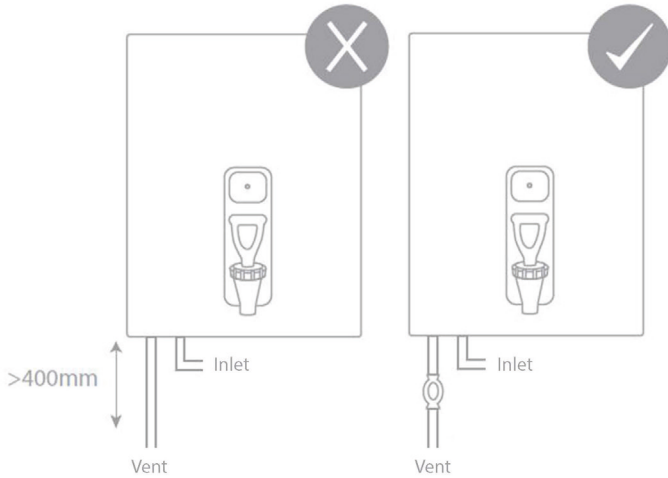


Diagram 5

3. Refitting the Cover and Installing the Tap

- Slide the cover back over the appliance, taking care not to trap the vent tube at the side of the appliance. Then secure with the 4 cover screws (see Diagram 1).
- Press the tap stem into the tank outlet, whilst holding the tap vertically so the tap outlet points downward (see Diagram 6). Tighten the securing nut using a spanner (see Diagram 7). Take care to not scratch the chrome.
- Ensure the tap is tight and correctly orientated. The stem and outlet of the tap are hot when in use.

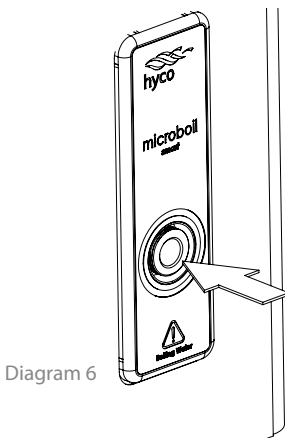


Diagram 6

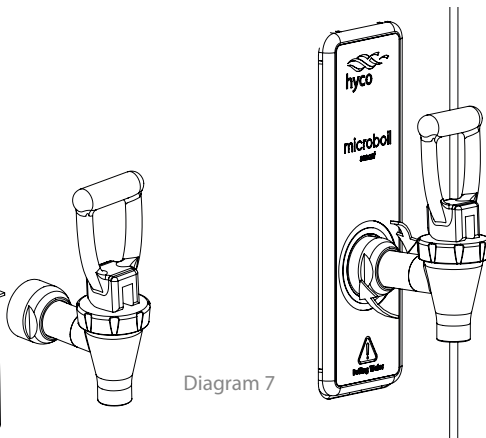


Diagram 7

4. Electrical Connection



The appliance must be permanently connected to the electrical supply through an appropriately rated isolating switch with a contact separation in all poles



Only connect the appliance to an electrical supply that meets the specification detailed on the rating label.



This appliance must be earthed.



The appliance should only be installed and maintained by a competent person in accordance with any local electrical and plumbing regulations.



Ensure a water supply is present prior to turning on the electrical supply.

- Electrical connection should be made via a 13A switched fuse spur.
- Make connections as below;
 - Green/Yellow earth wire to terminal marked ⊕
 - Brown live wire to the terminal marked 'L'
 - Blue neutral wire to the terminal marked 'N'

5. Commissioning (first power on)

- Ensure water supply is on.
- Switch power on.
- Automatic commissioning will then commence under the control of the electronic circuit board. The (automatic) stages in commissioning are as follows:
- At first power on, the water tank will completely fill with cold water through the solenoid valve. This will take approximately 5 - 20 minutes depending on capacity of the appliance.
- When the electronic level sensor detects that the tank is full of water, the heating element is switched on.
- The status ring on the base of the tap stem will indicate the appliance is heating (red).
- When the water has reached operating temperature the commissioning phase ends and the appliance switches to normal operating mode. The heating phase will take approximately 5 - 20 minutes depending on capacity of the appliance.
- The status ring will now indicate the appliance is ready to use (green).
- In operating mode, the electronic circuit board optimises boiling water availability. The circuit board prioritises heating over filling, adding cold water only when the contents of the tank are already at operating temperature.

6. Operation



Parts of this appliance – especially the vent pipe and tap– can become very hot in use and can also generate steam. Consider and avoid the risk of injury to people or damage to property when installing the appliance.



This appliance can be used by children aged from 8 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved.



Children shall not play with the appliance.

- The Microboil Smart is fitted with a two way tap.
- For instant boiling water for cups of tea and coffee gently pull the top of the tap forward. Boiling water will flow until the tap handle is released. This mode of operation gives precision control for safe filling.
- To fill larger items such as caffetieres, tea pots or pans, rotate the tap 180 degrees and gently pull down until the tap handle locks into a horizontal position. Boiling water will flow until the tap is returned to the vertical position.

7. Smart Technology

- The appliance incorporates Smart Technology which increases energy efficiency.
- Sophisticated electronic algorithms learn and predict boiling water usage so the appliance is on when you need it and off when you don't (sleep mode).
- No time is wasted programming or reprogramming a timer as algorithms are constantly updating if your usage pattern changes.

Status Ring

- A status ring on the base of the tap stem indicates ready or heating (green/ red). It also indicates when the appliance is in sleep mode.







Caution Indicator

- The caution indicator is a highly visible warning alerting users the appliance contains boiling water. This indicator will slowly blink while the appliance is filling the first time. It also indicates the appliance has mains power.

Action	Status Ring	Caution Indicator
Filling	None	Pulsing
Initial heating	Red	Solid
Ready	Green	Solid
Sleep mode	None	Solid
Permanent fault	Flashing red	Solid
Temporary fault	Flashing green	Solid

See troubleshooting (section 13) for more fault information.

8. Cleaning and Maintenance

-  The appliance should only be installed and maintained by a competent person in accordance with any local electrical and plumbing regulations.
 -  Cleaning and maintenance shall not be made by children without supervision.
 -  Do not use abrasive or corrosive chemicals to clean this appliance.
 -  Use a soft damp cloth when cleaning the cover, avoid excessive use of liquids.
 -  It is recommended that the appliance is inspected periodically for signs of scale build up in the tank and around the element. Damage resulting from scale build up is not covered by the warranty.
 -  Always switch electrical power off if the water supply needs to be disconnected for more than a few minutes. Failure to do so can damage the solenoid valve.
- Periodically (at least every 6 months) remove internal lime-scale build up using a standard domestic kettle de-scaling compound. Access to the tank and water level probe are gained from a black plastic screw cap at the top of the tank under the top section of insulation. The cap is accessed by removing the plastic locking clip and pulling the insulation up and forward (see Diagrams 8 and 9).

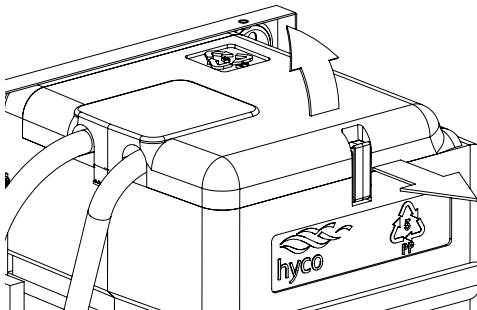


Diagram 8

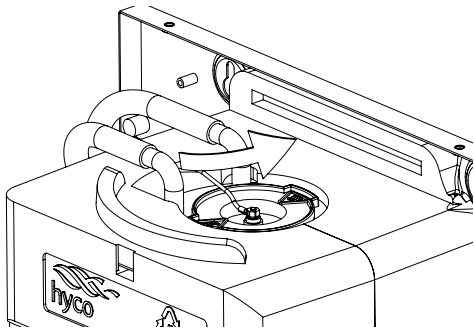


Diagram 9

- To aid de-scaling, the appliance has a drain plug which can be found on the underside of the water tank behind the bottom insulation. This is accessed by removing the plastic clips and pulling the insulation down and forward (see Diagrams 10 and 11).

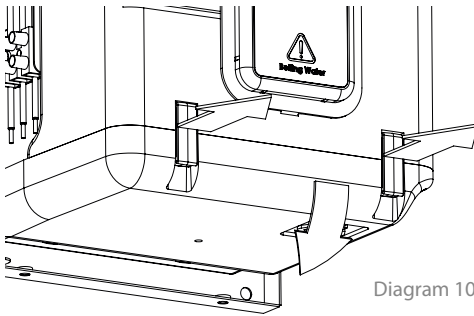


Diagram 10

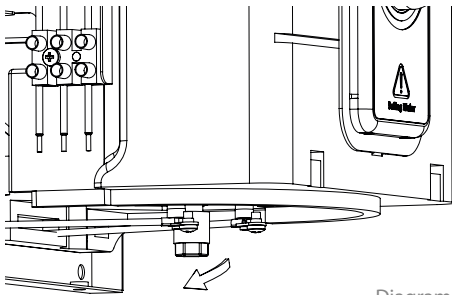


Diagram 11

9. Advanced Information

Reversing the Inlet and Vent Positions



The appliance should only be installed and maintained by a competent person in accordance with any local electrical and plumbing regulations.



Always switch electrical power off if the water supply needs to be disconnected for more than a few minutes. Failure to do so can damage the solenoid valve.

For some retro fit installations where existing pipe work is to be used but the inlet and vent is reversed, it is possible to switch the inlet and vent connections on the appliance to suit. To reverse the inlet and vent positions the procedure is as follows.

- With the cover removed, unscrew the brass reducer connected to the solenoid valve.
- Unscrew the compression nut and olive and remove the brass nut securing the vent connection part.
- Unscrew the 2 screws securing the solenoid valve and disconnect the wiring from the solenoid valve. Once done remove the tube for the solenoid valve and then remove the solenoid.
- Remove the tube from the top of the plastic vent temperature sensor housing and unplug the thermistor connector from the top of the PCB.
- Remove the plastic vent temperature housing by pressing in the circular lock tab, this can be done with a small screwdriver.
- The back plate has two mounting brackets but only one is folded up. The folded-up bracket needs to be folded flat and the bracket that was flat needs bending up to 90 degrees.
- Refit the plastic vent temperature housing by pressing it down onto the newly folded up bracket, this will snap into position. At the same time the brass section should be slotted through the appropriate hole on its respective mounting bracket.
- Reconnect the thermistor connector at the top of the PCB making sure the wiring is not tangled round the inlet and vent tubes.
- Refit the vent tube to the top of the plastic vent temperature housing and secure with a cable tie. This tube must not be kinked or twisted in any way.
- Refit the brass securing nut to the thread on the vent connection and then refit the compression olive and nut.

- Place the solenoid through the remaining hole in the mounting bracket next to the vent and secure with the two screws.
- Refit the brass reducer to the solenoid valve, it is best practice to renew the fibre washer when refitting.
- Refit the inlet tube securing with a cable tie and refit the solenoid wires ensuring it does not kink any tubing.

Control Board Settings



The switches must only be used with the appliance isolated from the mains electricity.

It is possible for the user to configure some aspects of the appliance's behaviour. These changes can be made by means of the switches located at the top right of the control board inside the appliance.

Pattern Recognition

While the pattern recognition algorithm predicts usage with a high degree of accuracy this feature may not be suitable for everyone's needs, for example, if usage is highly sporadic. The appliance is supplied with pattern recognition ON as default (see Diagram 13). To turn OFF slide to reverse the switch position, however this is the less energy efficient option.

Calibration

Calibration ensures that boiling point is accurate depending on any given atmospheric pressure, altitude and calibration drift in the thermistor and other components. As default the appliance is supplied programmed to calibrate only when powered on (see Diagram 12). This means when the appliance is in sleep mode and therefore saving energy it will not wake up and perform an auto calibration which is very wasteful of energy. Powering on and off will always cause a recalibration. However, it is possible to change so the appliance will calibrate once a week by sliding the switch to its reverse position.

Calibrate
only on power on

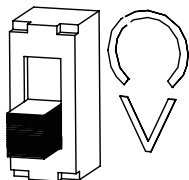


Diagram 12

Pattern recognition
set to on

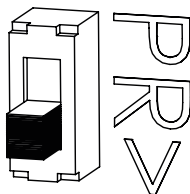
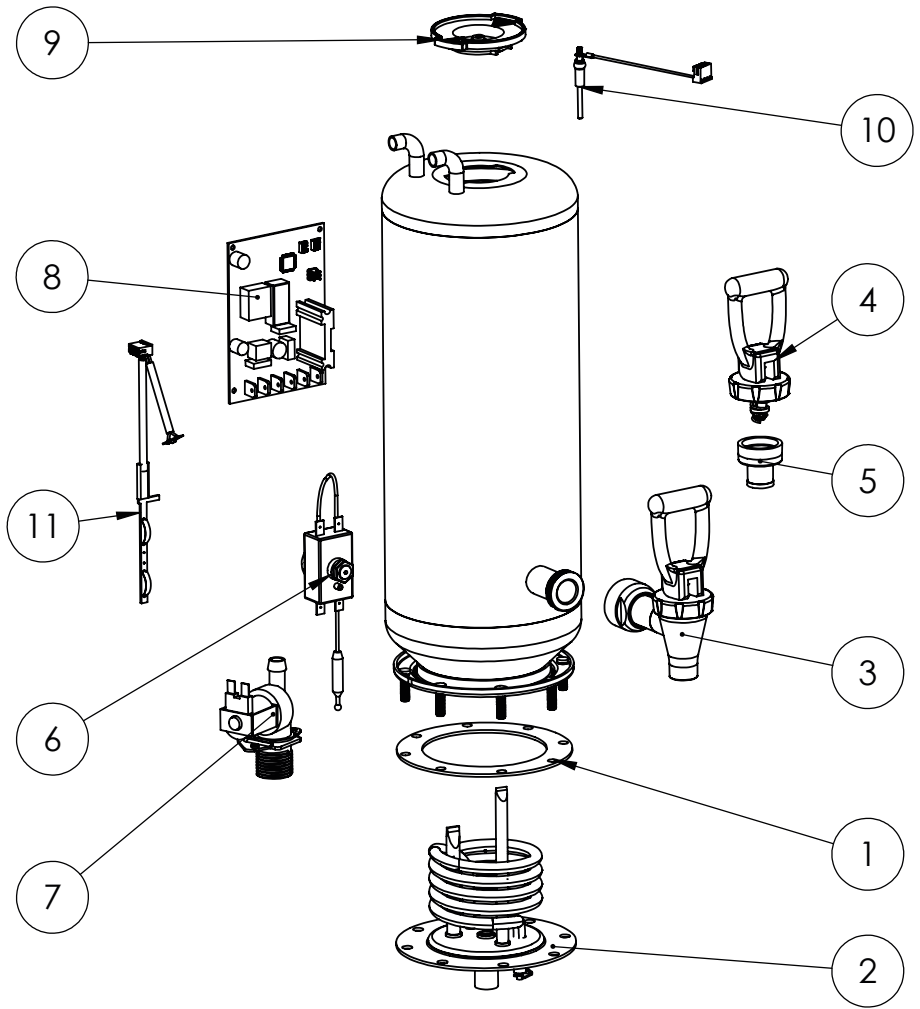


Diagram 13

10. Spare Parts Diagram



11. Spare Parts List

Diagram Reference	Part Code	Description
1	MS_GASKET_V1	Microboil Smart gasket
2	MS_ELEMENT_V1	Microboil Smart element
3	MS_TAPSET_V1	Microboil Smart full tap
4	MS_TAPHANDLE_V1	Microboil Smart tap handle
5	MS_TAPSILICONE_V1	Microboil Smart tap silicone
6	MS_CUTOOUT_V1	Microboil Smart thermal cut out
7	MS_SOLENOID_V1	Microboil Smart solenoid valve
8	MS_PCB_V1	Microboil Smart PCB
9	MS_TANKCAP_V1	Microboil Smart tank cap
10	MS_LEVELPROBE_V1 MS10_LEVELPROBE_V1	Microboil Smart level probe for 3 and 6 L model Microboil Smart level probe for 10 L model
11	MS_THERMISTOR_V1	Microboil Smart thermistor

12. Specification

Model	MS3W/SS	MS6W/SS	MS10W/SS
Power	2.84 kW	2.84 kW	2.84 kW
Initial draw off (Cups/Mugs)*	18/12	36/24	62/42
Heat up time	6 mins	12 mins	20 mins
Recovery rate (Cups/hr)	176	176	176
Voltage	230 V~	230 V~	230 V~
Frequency	50 Hz	50 Hz	50 Hz
Min working pressure	0.1 MPa (1 bar)	0.1 MPa (1 bar)	0.1 MPa (1 bar)
Max working pressure	1 MPa (10 bar)	1 MPa (10 bar)	1 MPa (10 bar)
Ambient operating temperature	5 - 30 °C	5 - 30 °C	5 - 30 °C
Capacity	3 L	6 L	10 L
Finish	W - White SS - Stainless Steel	W - White SS - Stainless Steel	W - White SS - Stainless Steel
Dimensions (h x w x d)	453 x 303 x 193 mm	490 x 323 x 228 mm	578 x 370 x 250 mm
Weight empty	8.0 kg	9.9 kg	12.3 kg
Weight full	11.4 kg	16.4 kg	23.0 kg
Approvals	CE, UKCA	CE, UKCA	CE, UKCA

*initial draw off based on 167ml cup and 250ml mug

13. Troubleshooting

Problem	Solution
Tap splutters/ dispenses slowly	Check the vent pipe is not obstructed and clear if necessary
Excessive steam coming from the vent	Switch off and on to force a recalibration
Water flows from the vent	Check the water level probe under the cap for scale
Status ring flashing green	Allow the product to cool and switch off and on. Check water is supplied to the product.
Status ring flashing red	Check connections to the temperature sensors
No lights	Check electricity supply and the thermal cut out
No water dispensed	Check water is supplied to the product
No water dispensed/ reduced flow	Check filter for blockages, if clear replace filter
Water isn't hot enough	Switch off and on to force a recalibration

14. Guarantee and Service Policy

This product is covered by a standard parts or replacement warranty for a period of 1 year from the date of purchase. If there is a manufacturing defect within the warranty period hyco will in its sole discretion replace, repair or refund any faulty unit. Incorrect installation, frost damage, the consequences of limescale deposits or failure to follow correct operating and maintenance instructions are excluded. Consequential costs such as labour charges or damage to fittings and surroundings are expressly excluded.

15. Contact Us

If you experience a problem with this product you should first contact our service department on 01924 225 200 before taking any further action. Experience has shown that issues can often be resolved without the need to return or uninstall the product.



INFORMATION FOR CORRECT DISPOSAL OF THE PRODUCT IN ACCORDANCE WITH THE EUROPEAN DIRECTIVE 2012/19/EU.

At the end of its working life this equipment must not be disposed of as household waste. It must be taken to a local authority waste collection centre or to a dealer providing this service. Disposing of electrical and electronic equipment separately enables its components to be recovered and recycled to obtain significant savings in energy and resources. In order to underline the duty to dispose of this equipment separately, the product is marked with a crossed out dustbin.

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