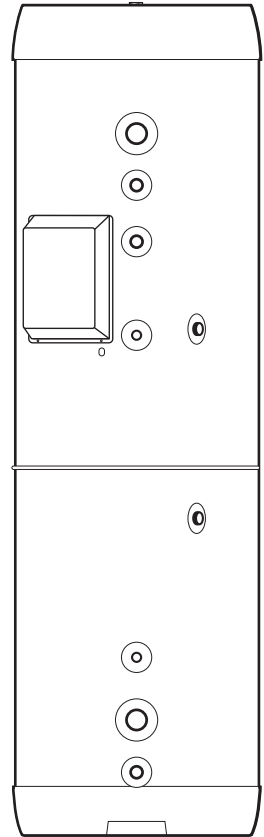


# Maxi Geocoil - MGC

400 l.

EN



SAFETY INFORMATION  
O&M INFORMATION  
INSTALLATION MANUAL  
TDS – TECHNICAL DATA SHEET

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**OSO HOTWATER**

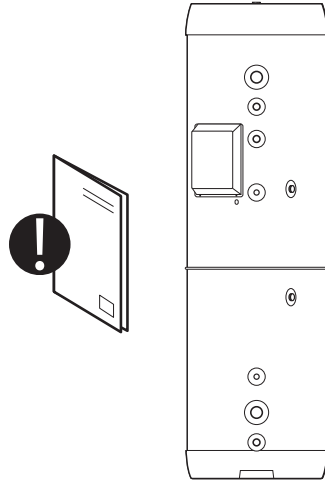
# CONTENTS

<b>1. Safety instructions</b> .....	3
1.1 General information.....	3
1.2 Safety instructions for users.....	4
1.3 Safety instructions for installers.....	4
<b>2. Product description</b> .....	5
2.1. Product identification.....	5
2.2. Intended use .....	5
2.3 CE marking.....	5
2.4 Technical data.....	5
2.5. ErP data (TDS).....	5
<b>3. Installation instructions</b> .....	6
3.1. Products covered by these instructions ..	6
3.2. Included in delivery.....	6
3.3. Product dimensions .....	6
3.4. Requirements for installation location	7
3.5. Pipe installation.....	8
3.6. Electrical installation.....	10
<b>4. Initial commissioning</b> .....	12
4.1. Filling with water .....	12
4.2. Turning on the power .....	12
4.3. Control points.....	12
4.4. Emptying of water .....	12
4.5. Handover to end-user.....	12
<b>5. User Guide</b> .....	13
5.1. Settings.....	13
5.2. Maintenance.....	13
<b>6. Troubleshooting</b> .....	14
6.1. Faults and fixes.....	14
<b>7. Warranty conditions</b> .....	15
7.1. Warranty and registration.....	15
7.2. Customer service.....	15
<b>8. Removing the product</b> .....	15
8.1. Removal.....	15
8.2. Returns scheme .....	15

# 1. SAFETY INSTRUCTIONS

## 1.1 General information






- Read the following safety instructions carefully before installing, maintaining or adjusting the buffer tank.
- Personal injury or material damage may result if the product is not installed or used in the intended manner.
- Keep this manual and other relevant documents where they are accessible for future reference.
- The manufacturer assumes compliance (by the end-user) with the safety, operating and maintenance instructions supplied and (by the installer) with the fitting manual and relevant standards and regulations in effect at the date of installation.






Symbols used in this manual:





	WARNING	Could cause serious injury or death
	CAUTION	Could cause minor or moderate injury or damage to property
	DO NOT	
	DO	





## 1.2 Safety instructions for users

 WARNING	
	The overflow from the safety valve must NOT be sealed or plugged.
	The product must NOT be modified or changed from its original state.
	Children must NOT play with the product or go near it without supervision.
	Maintenance/settings should only be carried out by persons over 18 years of age, with sufficient understanding

 CAUTION	
	The product must not be exposed to frost, over-pressure, over-voltage or chlorine treatment. See warranty provisions.
	Maintenance/settings should not be carried out by persons of diminished physical or mental capacity, unless they have been instructed in the correct use by someone responsible for their safety.

## 1.3 Safety instructions for installers

 WARNING	
	The overflow from the safety valve must NOT be sealed or plugged. Safety valve supplied with the product
	Any overflow pipe from the safety valve MUST be $\geq 18$ mm inside, clear, undamaged and frost-free with a fall to the drain.
	The relevant regulations and standards, and this installation manual, must be followed.

 CAUTION	
	The product should be placed in a room with a drain, in accordance with the wetroom standard / latest TEK. Alternatively, fit an automatic stop valve with sensor and overflow from safety valve to drain. Liability for consequential damage will only apply if this is followed.
	The product should be properly aligned vertically and horizontally, on a level floor suitable for the total weight of the product when in operation. See type plate.
	The product must have a clearance for servicing of 40 cm in front of the junction box / 10 cm over the top connection.

## 2. PRODUCT DESCRIPTION

### 2.1 Product identification

Identification details for your product can be found on the type plate fixed to the product. The type plate contains details of the product in accordance with EN 12897:2016 and EN 60335-2-21, as well as other useful data. See Declaration of Conformity at [www.osohotwater.com](http://www.osohotwater.com) for more information.

OSO products are designed and manufactured in accordance with:

- Pressure vessel standard EN 12897:2016
- Safety standard EN 60335-2-21
- Welding standard EN ISO 3834-2

OSO Hotwater AS is certified for

- Quality ISO 9001
- Environment ISO 14001
- Work environment ISO 45001

### 2.2 Intended use

The Maxi Geocoil is designed for use as a buffer for tap water at electrical peak load. The MGC is fitted for external energy sources.

### 2.3 CE marking



The CE mark shows that the product complies with the relevant Directives. See Declaration of Conformity at [www.osohotwater.com](http://www.osohotwater.com) for more information.

The product complies with EU Directives for:

- Low voltage LVD 2014/35/EU
- Electromagnetic compatibility EMC 2014/30/EU
- Pressurised equipment PED 2014/68/EU

The safety valve(s) used must be CE marked and conform to PED 2014/68/EU.

### 2.4 Technical data

NRF no.	Product code:	Capacity, persons	Weight, kg.	Diameter x height mm	Freight vol. m <sup>3</sup>	Heating time, hours $\Delta t$ 65°C	Actual vol. l.
800 1852	MGC 400 - 15 kW / 3 x 230V + HX 2.6 m <sup>2</sup>	-	95	ø595 x 2175	0.79	-	363

### 2.5 ErP data - Technical Data Sheet

Brand	Model-no.	Model name	ErP profile	ErP rating	AEC - kWh/a	Thermo-stat setting °C	Volume 40°C water	Heat loss W
OSO Hotwater AS	800 1852	MGC 400	-	C	-	75	-	96
Directive: 2010/30/EU Regulation: EU 812/2013			Directive: 2009/125/EC Regulation: EU 814/2013					
Heat loss tested acc. to standard: EN 12897: 2015								

### 3. INSTALLATION INSTRUCTIONS

#### 3.1 Products covered by these instructions

800 1852 Maxi Geocoil - MGC 400

#### 3.2 Included in delivery

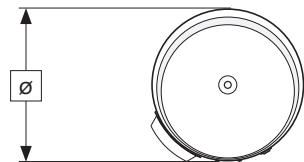
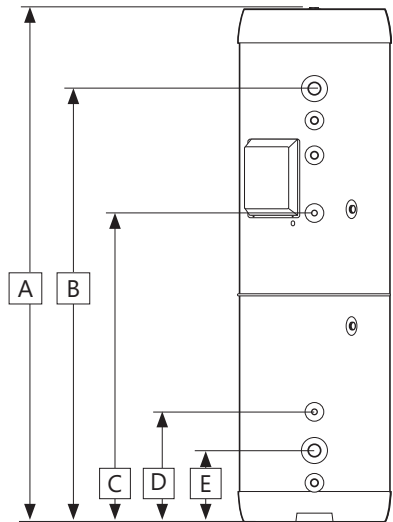
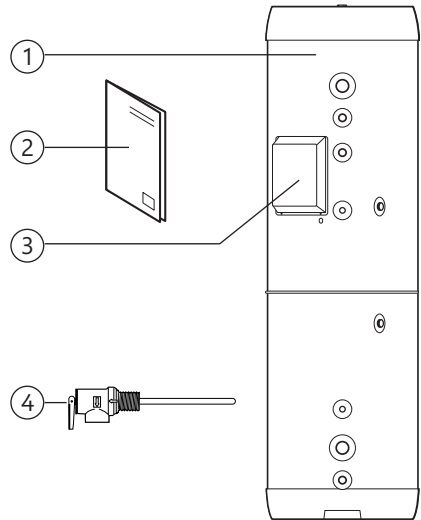
Ref no.	Number of	Description
1	1	Buffer tank with electrical peak load + coil
2	1	Installation manual (this document)
3	1	Junction box with 3 elements/thermostats
4	1	PT valve 10 bar/99°C (supplied loose)

#### 3.3 Product dimensions

All dimensions in mm.

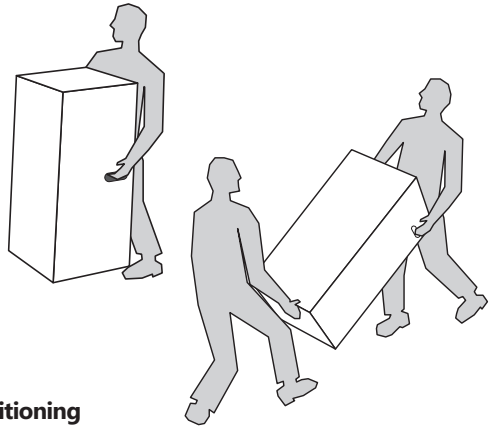
Product.	A	B	C	D	E	Ø
MGC 400	2175	1856	1300	400	286	595

Tolerance +/- 5 mm



### 3.3.1 Delivery

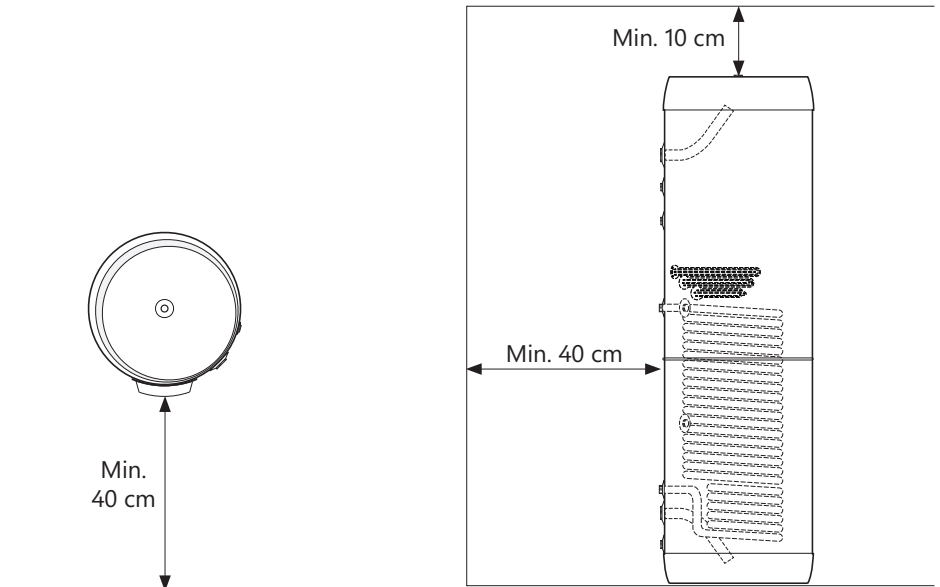
The product should be transported carefully as shown, with packaging. Use the handles in the box.



CAUTION
<p>Pipe stubs, valves etc. should not be used to lift the product as this could cause malfunctions.</p>

### 3.4 Requirements for installation location and positioning

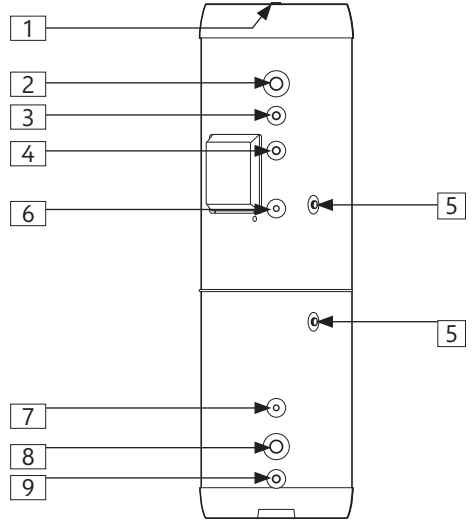
CAUTION	
❗	The product should be placed in a room with a drain, in accordance with the wetroom standard / latest TEK. Alternatively, fit an automatic stop valve with sensor and overflow from safety valve to drain.
❗	The product should be placed in a dry and permanently frost-free position.
❗	The product should be placed on a level floor suitable for the total weight of the product when in operation. See type plate.
❗	The product must have a clearance for servicing of 40 cm in front of the junction box / 10 cm over the top connection.
❗	The product should be easily accessible for servicing and maintenance.



### 3.5 Pipe installation

The product is designed to be permanently connected to the mains water supply. Approved pipes of the correct size should be used for installation. The relevant standards and regulations must be followed.

No	Dimension	Connection description
1	3/4" internal thread.	Ventilation / hot water (supplied plugged)
2	1 1/2" internal thread.	Hot water out
3	3/4" internal thread.	PT valve
4	3/4" internal thread.	Hot water circulation / Thermometer
5	1/2" int. thread	Sensor
6	3/4" internal thread.	Coil connection, upper
7	3/4" internal thread.	Coil connection, lower
8	1 1/2" internal thread.	Cold water in
9	3/4" internal thread.	Draining/safety valve

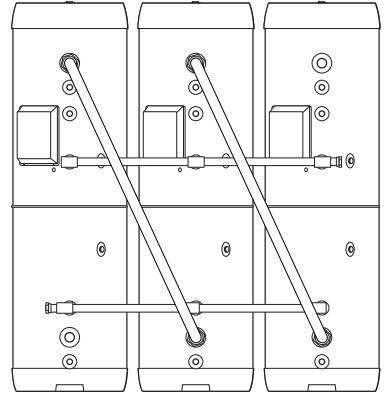


#### 3.5.1 Incoming water pressure

The efficiency of the product depends on the incoming cold water pressure. The water pressure should be min. 2 bar and max. 6 bar throughout the day. Excessive water pressure can be adjusted by installing a pressure reduction valve.

#### 3.5.2 Fitting pipes

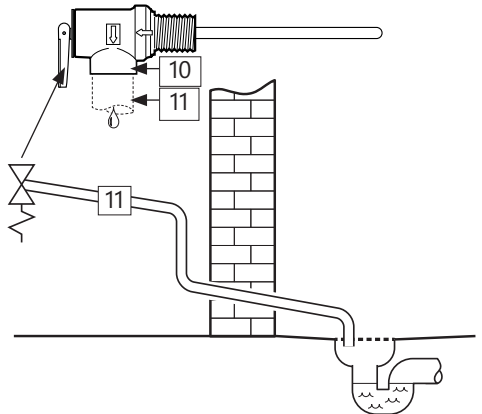
- A) Run a pipe of suitable size to the connections shown, and affix with suitable sealant. Unused connections must be plugged securely.
- B) The product can be connected in series for increased capacity in the system. Use OSO prefabricated SRS joints pipes. See illustration.



#### 3.5.3 Fitting of overflow pipe

Overflow pipe (11)  $\geq 18$  mm inside run to PT safety valve;

- Connected to the overflow (10) of the PT safety valve (3/4" internal thread).
- Clear, undamaged and frost-free with a fall to the drain.





### 3.5.4 Fitting instructions

⚠ CAUTION	
❗	The product should be placed in a room with a drain, in accordance with the wetroom standard / latest TEK. Alternatively, fit an automatic stop valve with sensor and overflow from safety valve to drain.
❗	The product should be properly aligned vertically and horizontally, on a level floor suitable for the total weight of the product when in operation. See type plate.
❗	The product must have a clearance for servicing of 40 cm in front of the junction box / 10 cm over the top connection.

### 3.5.5 Fitting recommendation

RECOMMENDATION	
-	If the maximum water pressure exceeds 6 bar in a 24-hour period, a reduction valve and expansion vessel should be fitted.
-	For installation in a rooms which does not conform to the wetroom standard, a watertight drip tray with overflow pipe $\geq 18$ mm. inside diameter should be fitted under the product, in addition to an automatic stop cock with sensor. This will prevent possible material damage.

### 3.6 Electrical installation

Fixed electrical fittings must be used for installation. Any electric fittings must be installed by an authorised electrician. The relevant standards and regulations must be followed.

#### 3.6.1 Electrical components

Component	Note
Safety thermostat	98°C thermal cut-out
Work thermostat	60-90°C adjustable
Heating element	3-phase 230 V
Internal wires	Heat-resistant

#### ⚠ WARNING

Constant voltage present at the terminals. Before any electrical work is done, the power supply must be disconnected and secured against activation while the work is in progress.

#### 3.6.2 Electrical connections in the junction box

A) Supply cable connected to Ensto terminal (1)

as shown. Supply wires should be secured with suitable strain relievers.

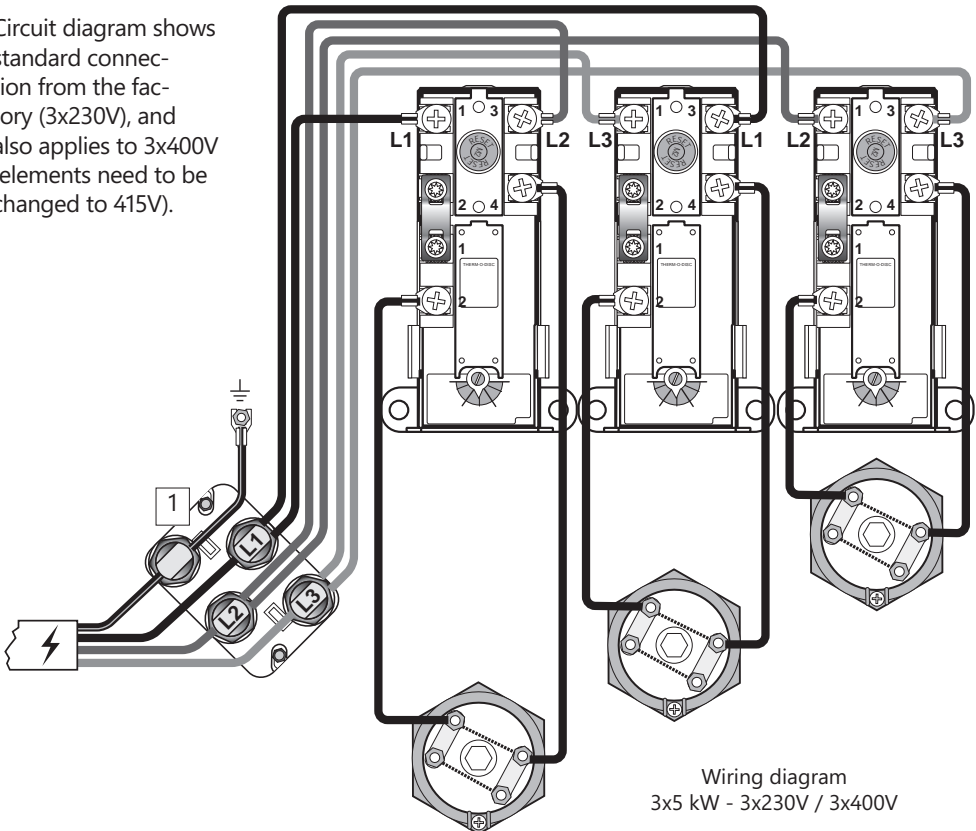
- B) Internal wires from connection piece (1) to thermostats and the wires from thermostats to elements are pre-connected from the factory.
- C) Make sure that the earth wire (yellow wire with green stripe) is connected to the earthing point  $\oplus$

Cover of junction box should be correctly mounted before the power is switched on. The power must not be switched on until the product has been filled with water.

#### 3.6.3 Torque settings

Component	Torque
5/4" heating element	60 Nm (+/- 5)
Thermostat screws	2 Nm (+/- 0.1)
Screw on the element head	2 Nm (+/- 0.1)

Circuit diagram shows standard connection from the factory (3x230V), and also applies to 3x400V (elements need to be changed to 415V).



Wiring diagram  
3x5 kW - 3x230V / 3x400V

### 3.6.4 Fitting instructions

#### ⚠ WARNING

- ❗ The product should be filled with water before the power is switched on.
- ❗ Fixed electrical fittings must be used for installation according to the regulations. Any electric fittings must be installed by an authorised electrician. Components for disconnection must be integrated in the electric connection in accordance with current standards and regulations.
- ❗ The mains cable should withstand 90°C. A suitable strain reliever must be fitted.

#### ⚠ CAUTION

- ❗ The product must have a clearance for servicing of 40 cm in front of the junction box / 10 cm over the top connection.
- ❗ In case of damage to the power supply cable, this should be replaced with new cable with the correct specifications for the installation. All electrical work should be performed by an authorised electrician.

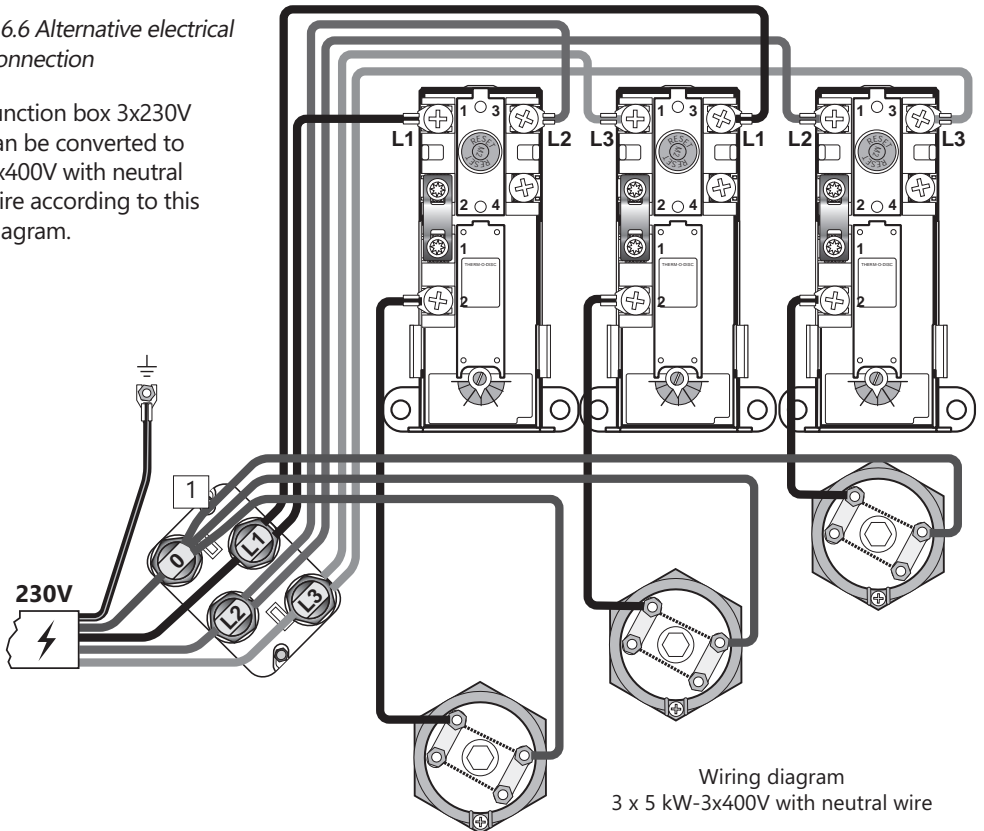
### 3.6.5 Fitting recommendation

#### RECOMMENDATION

- An authorized electrician should calculate the correct supply cable and fuse according to the applicable standards and regulations. Make sure all wires are undamaged and are not pinched..

### 3.6.6 Alternative electrical connection

Junction box 3x230V can be converted to 3x400V with neutral wire according to this diagram.



## 4. INITIAL COMMISSIONING

### 4.1 Filling with water

First check that all pipes are connected correctly. Then fill the tank according to the needs/requirements of the system. Make sure that the tank is vented during filling to prevent air pockets.

### 4.2 Turning on the power

When the cylinder has been filled with water, the power can be switched on.

A) Switch on breaker/fuse.

### 4.3 Control points

- A) Check that all pipe connections to/from the product are tight and not leaking.
- B) Check that the power supply to the product is not at risk of exposure to mechanical, thermal or chemical damage.
- C) Check that any overflow pipe from the safety valve is clear, undamaged and frost-free with a fall to the drain.
- D) Check that the product is standing firmly vertically and horizontally.

### 4.4 Emptying of water

#### WARNING

The water temperature in the product is 75°C and could cause scalding. Before emptying, a hot tap should be opened to the max. pressure/temperature for min. 3 minutes.

- A) Disconnect the power supply.
- B) Shut off incoming cold water supply.
- C) Open a hot tap to the maximum – leave open (prevents a vacuum).
- D) The product is emptied via the drain pipe (5) or by opening the safety valve if this is fitted to the connector (5).

To open the safety valve, see 'Maintenance instructions' in section 5.2.

After emptying, close the pipe (5) or safety valve. Close all open taps.

### 4.5 Handover to end-user

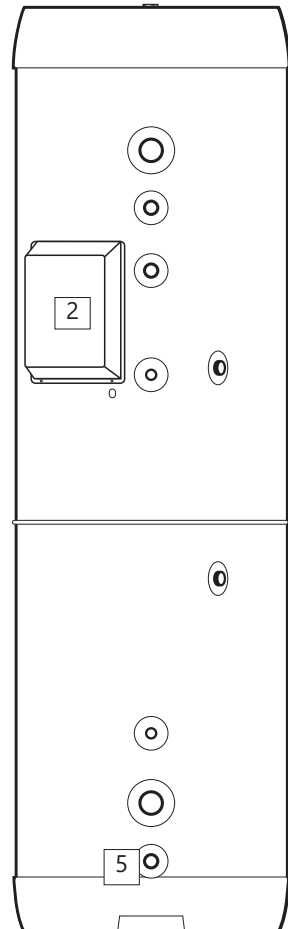
#### THE INSTALLER MUST:

Brief the end-user on safety and maintenance instructions.

Brief the end-user on settings and emptying the product.

Hand this installation manual over to the end-user.

Enter contact details on the type plate on the product.



## 5. USER GUIDE

### 5.1 Settings

#### 5.1.1 Thermostat setting

The product's thermostats are adjustable from 60-90°C. The thermostat should not be set lower than 65°C to prevent bacteria growth. To adjust the temperature:

- A) Disconnect the power supply.
- B) Remove the cover (2) with a screwdriver.
- C) Adjust the temperature on the thermostat (3) with a screwdriver.

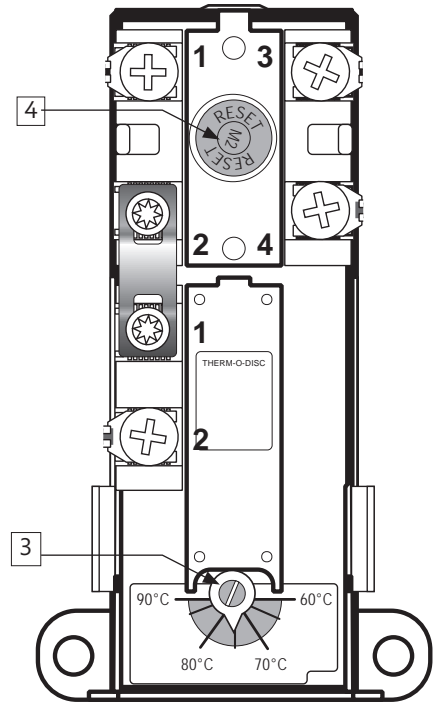
Fit the cover (2) before connecting the power supply.

#### 5.1.2 Resetting the safety thermostat

The safety thermostats on the product cut out when there is a risk of overheating. These are reset by switching off the power supply, removing the cover (2) and pressing the red 'RESET' button (4). If the thermostat cuts out repeatedly, contact the installer.

### ⚠ WARNING

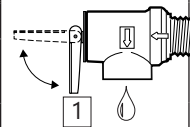
Constant voltage present in the junction box. Before any electrical work is done, the power supply must be disconnected and secured against activation while the work is in progress.



### 5.2 Maintenance

#### MAINTENANCE INSTRUCTIONS

⚠	Maintenance should be carried out by persons over 18 years of age, with sufficient understanding.
⚠	Annual inspection of safety valve:
-	Open valve for 1 min. by turning the knob (1) approx. 90 degrees to the open position.
-	Visually check that the water is flowing freely to the drain.
-	YES = OK. Close the valve by pushing the lever (1) down to the closed position.
-	NO = NOT OK. Disconnect power supply / shut off water supply. Contact installer.



## 6. TROUBLESHOOTING

### 6.1 Faults and fixes

If problems arise when the product is in use, check for possible faults and fixes in the table. If you are unsure what is wrong, contact the

installer (see product type plate) or OSO Hot-water AS - see section 7.1.

TROUBLESHOOTING		
Problem	Possible cause of fault	Possible solution
<b>There is leakage/dripping from the safety valve/there is often water on the floor by the cylinder in the morning</b>	Pressure reduction valve, water meter or blocked non-return valve on the water intake.	Fit AX expansion vessel which absorbs expansion during heating, and fit pressure reduction valve for stable water pressure inside the system. The pressure reduction valve is adjusted in according to the pressure in the expansion vessel. Contact auth. installer.
	Water pressure into the system is too high.	
	The safety valve is worn or there are particles stuck between the membrane and the valve seat because the water is dirty	Try to flush with water through the safety valve. Open valve for approx. 1 minute. See section 5.2. If the valve still leaks, it must be replaced. Contact auth. installer.
	Leak from heating element.	Verify as follows: a) cut the electric supply, b) unscrew the cover, c) visually check whether there is a leak from the heating element. If so, replace the gasket/heating element. Contact auth. installer.
<b>No hot water</b>	Power supply interrupted.	Verify that the fuse is on / the plug is plugged in to the wall contact / the earth breaker has not tripped.
	Thermostat has cut out.	Press the 'RESET' button on the safety thermostat; see 'User guide'.
	Heating element is defective.	Replace heating element. Contact auth. installer.
	Leak in hot water pipe	Verify as follows: a) close the water supply, b) wait 2-3 hours, c) feel the tank to see whether it is hot. If so, there is a leak in the hot water pipe or elsewhere. Contact auth. installer.
<b>Not enough hot water</b>	High consumption in the system.	Switch to a larger OSO water heater. Contact auth. installer.
<b>Not high enough temperature</b>	The thermostat is set for low temperatures.	Check the thermostat settings. Turn up to 75°C; see 'User guide'.
	Change from cold to hot water in taps.	Contact auth. installer.
<b>Fuse/earth breaker trips repeatedly</b>	Possible fault in the heater's electrical system.	Verify as follows: a) cut the electric supply, b) unscrew the cover, c) visually check the junction box for any problems. If so, contact auth. installer to check. Fit the cover.
<b>Long time before the water reaches the tap</b>	Long stretch of pipe from water heater to tap.	Fit circulation wire or heating cable to HW pipe. Or fit an auxiliary heater by the tap. Contact auth. installer.
<b>Knocking in the pipes when the hot tap is closed</b>	Large pressure increase when the tap is closed quickly.	Completely normal. Fit AX expansion vessel if troublesome. Contact auth. installer.

# 7. WARRANTY CONDITIONS

## 1. Scope

OSO Hotwater AS ("OSO") warrants for 5 years from the date of purchase that the Product will: i) conform to OSO specifications, ii) be free from defects in materials and workmanship, subject to the conditions below. All components are guaranteed to be free from defects in materials and workmanship for 2 years.

The guarantee is voluntarily extended by OSO to 10 years for the stainless steel pressure tank. This extended warranty only applies to Products purchased by a consumer, installed for private use and distributed by OSO or by a distributor where the Product was originally purchased from OSO and installed by a qualified plumber.

The warranty on products purchased by commercial entities or installed for commercial use is governed solely by the Norwegian Sale of Goods Act and the following warranty conditions and limitations.

## 2. Coverage

If a defect arises and a valid claim is received within the statutory warranty period, at its option and to the extent permitted by law, OSO will either: i) repair the defect, or; ii) replace the product with a product that is identical or similar in function, or; iii) refund the purchase price.

If a defect arises and a valid claim is received after the statutory warranty period has expired, but within the extended warranty period, OSO will supply a product that is identical or similar in function. In such cases, OSO will not cover any other costs associated with the replacement.

Products or components replaced in connection with warranty claims become the property of OSO. The product or component being replaced will not result in an extension of the original warranty period.

## 3. Assumptions

The product is adapted to the water quality from most public water works. However, certain water qualities (see below) may have very negative effects (resulting in corrosion) on the expected service life of the product. If there are uncertainties regarding water quality, the local water supply authority can supply the necessary data.

This warranty applies only if the following conditions are met:

- The product has been installed according to the installation instructions supplied and in compliance with all relevant regulations, standards and requirements in effect at the date of installation.
- The product has not been modified, changed, subjected to abnormal effects, and no factory-fitted or supplied parts have been removed.
- The product has only been connected to public water

works, has been in regular use, and the water quality is as follows:

- Chlorides < 75 mg / L\*
- Conductivity (EC) at 25°C < 230 µS / cm\*

\*In the case of higher values, the anode should be fitted before filling the product with water.

- The heating element has not been exposed to water of a hardness exceeding 5°DH (90 mg/L CaCO<sub>3</sub>).
- Any form of disinfection of the piping has been carried out without affecting the product. The product should be isolated from any form of chlorination.
- The product has been in regular use since the date of installation. If the Product is not to be used for 60 days or more, it must be drained down.
- Service and maintenance have been carried out by an expert according to the requirements in the accompanying installation instructions and all relevant technical regulations. Any component used for servicing is an original OSO spare part.
- Any warranty cost has been approved in writing by OSO before it is charged.
- A purchase receipt and/or receipt for the installation, a water sample and the defective product will be provided to OSO on request.

If the above conditions are not met, this may result in damage to the Product and subsequent water leakage.

## 4. Limitations

The warranty does not cover:

- Any fault or costs arising from incorrect installation or use, lack of maintenance, negligence, misuse, alteration or repair carried out incorrectly or any fault caused by changing the product from its original form.
- Any consequential damage or any indirect loss caused by any failure or malfunction of the Product.
- Any damage caused by frost, over-pressure, over-voltage or chlorine treatment.
- The effects of stagnant water if the Product has been left unused for more than 60 days consecutively.
- Any pipework or equipment connected to the Product.
- Transport damage. The carrier should be notified of any such damage upon receipt.
- Costs due to the fact that the product is not easily accessible for service.

This warranty does not limit the Purchaser's statutory rights in any way.

## 7.1 Customer service

In case of problems that cannot be resolved after consulting the troubleshooting guide in this installation manual (section 6.1), please contact either:

- A) The installer who supplied the product.
- B) OSO Hotwater AS: Tel. +47 32 25 00 00  
oso@oso.no / www.oso.no

# 8. REMOVING THE PRODUCT

## 8.1 Removal

- A) Disconnect from the heat source.
- B) Shut off incoming cold water supply.
- C) Empty the product of water – see section 4.4.

- D) Disconnect all pipes.
- E) The product can now be removed.

## 8.2 Returns scheme

This product is recyclable and should be taken to the environmental recycling centre. If the product is to be replaced with a new one, the installer can take the old cylinder away for recycling.





**OSO Hotwater AS**

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