Maxi - M

400 l.

EN

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

OSO HOTWATER

Manufactured by OSO Hotwater AS
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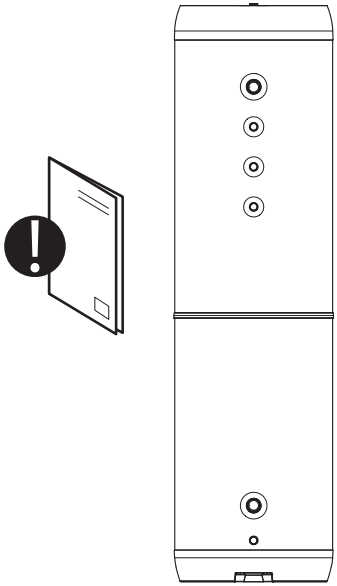
1. SAFETY INSTRUCTIONS

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

❗	This document should be kept in a suitable place where it is accessible for future reference.

1.2 Safety instructions for users

⚠ WARNING	
⊘	The safety valve overflow shall 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 shall 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 shall 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 safety valve overflow shall NOT be sealed or plugged. Safety valve is supplied with the product.
❗	The discharge pipe from any safety device shall be at least one pipe size larger than the nominal outlet size of the safety device (< 9m length). The discharge pipe shall have continuous fall to drain, be uninterruptible and frost-free at all times.
❗	The relevant regulations and standards, and this installation manual, must be followed.

⚠ CAUTION	
❗	The product shall be placed in a room with a floor drain. The manufacturer assumes no responsibility whatsoever if this provision is not followed.
❗	The product shall 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 front / 10 cm over the highest point.

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 as well as other useful data. See Declaration of Conformity at www.osohotwater.com for more information.

OSO products are designed and manufactured in accordance with:

- Pressure vessel standard EN 12897:2016

OSO Hotwater AS is certified for

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

2.2 Intended use

Maxi M400 is intended as an accumulator for cooling or heating systems as well as domestic hot water. The M400 is a pure accumulator tank without electric peak load. Suitable for use in an OSO Turbo system, and is also suitable as a buffer tank in closed systems.

2.3 CE marking

CE

The CE mark shows that the product complies with the relevant Directives. See Declaration of Conformity at www.osohotwater.com for more information.

The product complies with 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.	Packaging dimensions LxWxH mm.	Freight vol. m³	Heating time, hours △t 65°C	Actually vol. l.
8001462	M 400	-	78	ø595x2180	0.81	-	376

2.5 ErP data - Technical Data Sheet

Brand	OSO product no.	Model name	ErP profile	ErP rating	AEC - kWh/a	Thermostat setting °C	Volume 40°C water	Heat loss W
OSO Hotwater AS	11009866	M 400	-	C	-	-	-	89
Regulation: 2017/1369/EU - Regulation: EU 812/2013			Directive: 2009/125/EC - Regulation: EU 814/2013					
Heat loss tested acc. to standard: EN 12897: 2015								

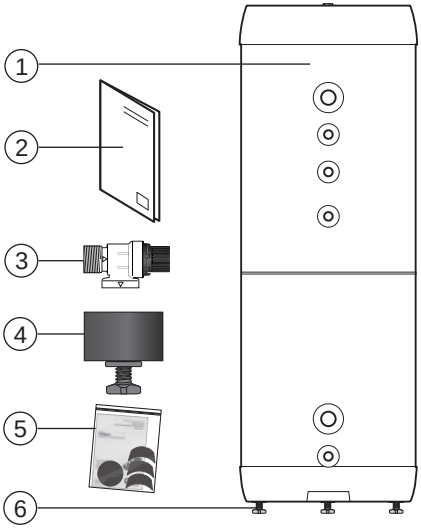
3. INSTALLATION INSTRUCTIONS

3.1 Products covered by these instructions

Maxi M 400

3.2 Included in delivery

Ref no.	Num-ber of	Description
1	1	Buffer tank without electric backup
2	1	Installation manual (this document)
3	1	Safety valve, 9 bar (supplied)
4	1	Center support (supplied)
5	1	Cooling kit (supplied)
6	3	Adjustable feet (factory fitted)



3.3 Product dimensions

All dimensions in mm.

Product	A	B				ø
M 400	0-40	2172				595

Tolerance +/- 5 mm (not measure A).

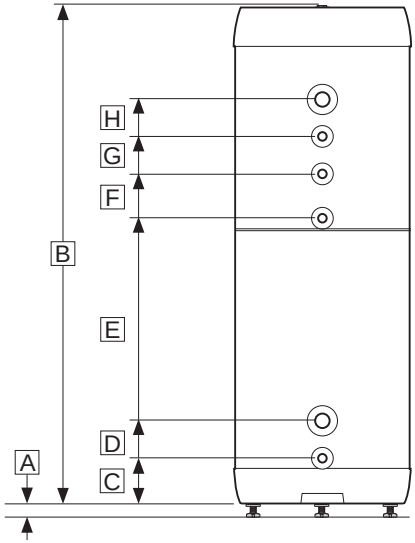
3.3.1 Connection heights

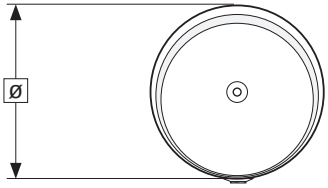
All dimensions in mm.

Product	C	D	E	F	G	H
M 400	155	286	1406	1556	1706	1856

Tolerance +/- 5 mm.

For connection descriptions, see pt. 3.7.

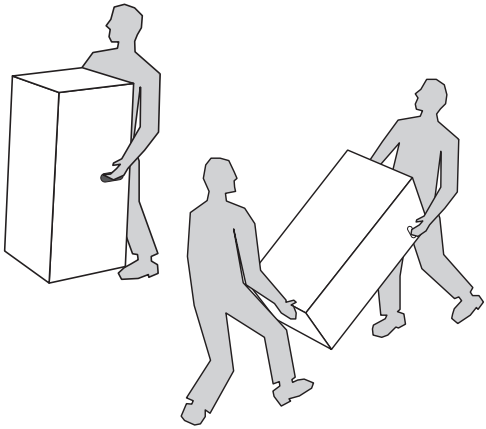




3.3.1 Delivery

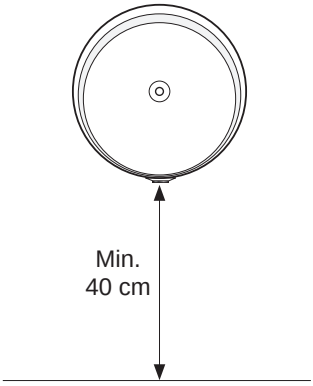
The product should be transported carefully as shown, with packaging. Use the handles in the box.

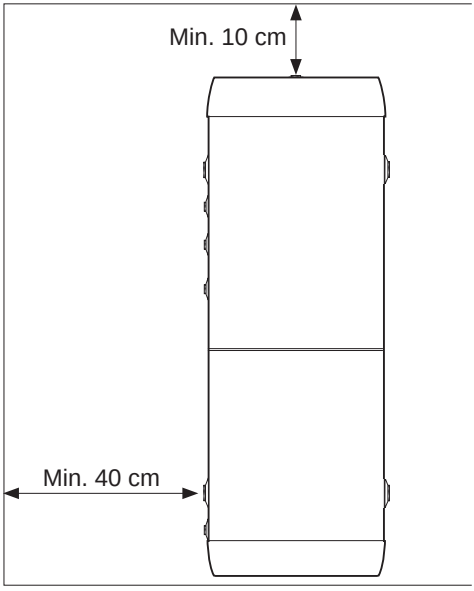
⚠ CAUTION
Pipe stubs, valves etc. should not be used to lift the product as this could cause malfunctions.



3.4 Requirements for installation location and positioning

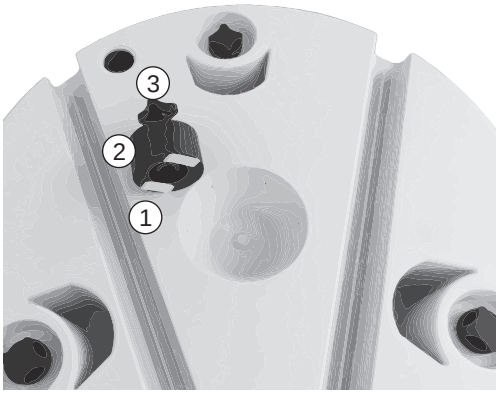
⚠ CAUTION	
❗	The product shall be placed in a room with a floor drain. The manufacturer assumes no responsibility whatsoever if this provision is not followed.
❗	The product shall be placed in a dry and permanently frost-free position.
❗	The product shall be placed on a level floor suitable for the total weight of the product when in operation. See type plate.
❗	The product must have a clearance for servicing of 40 cm in front of front / 10 cm over the highest point.
❗	The product shall be easily accessible for servicing and maintenance.

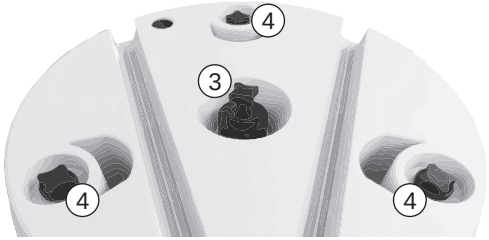




3.5 Center support installation - M400 Heat only

A. Unpack the heater and lay it on its side. Use the packaging cardboard as a substrate, take care so that the product does not suffer cosmetic damage.
B. Two adhesive pads are included with the center support. Remove the protective paper on one side and fit the adhesive pads as shown (1).
C. Remove the second protective paper of the adhesive pads and fit the center support (2) with the foot (3) in the center hole in the bottom of the product (see illustration). Press the support firmly into place.
D. Unscrew the support foot (3) to the desired height. Raise the boiler so that it stands on the foot of the central support and place the boiler in the desired position in the room.
E. Adjust the three outer feet (4) until the product is plumb and level. Middle support foot MUST be in full contact with the floor after the adjustment.
F. Install pipes to the product and fill up with water according to the pipe installation instructions in this manual.





3.6 Cooling kit installation - M 400 Cool only

If the M 400 is used in a cooling system, the supplied Cooling kit must be fitted. See the manual supplied with the set.
It is not necessary to fit the center support if the product is used in a cooling system.

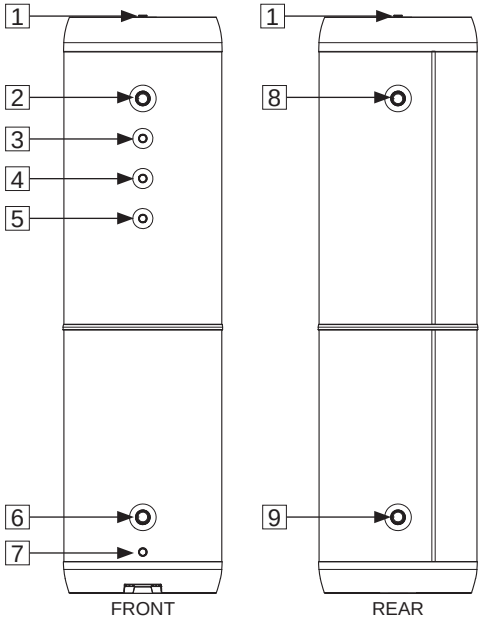
IMPORTANT

If the product is used as a buffer tank in a closed system any anode (5) MUST be removed and the connection must be plugged securely.

3.7 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	G 3/4" F	Ventilation / hot water (plugged)
2	G 1 ½" F	Flow/return, front
3	G 3/4" F	Thermometer
4	G 3/4" F	Hot water circulation
5	G 3/4" F	Anode (not supplied)
6	G 1 ½" F	Flow/return, front
7	G 3/4" F	Draining/safety valve
8	G 1 ½" F	Flow/return, rear
9	G 1 ½" F	Flow/return, rear



3.7.1 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.

3.7.2 Pipe fitting

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 connected in series for increased capacity in the system. Use OSO prefabricated SRS joints pipes.

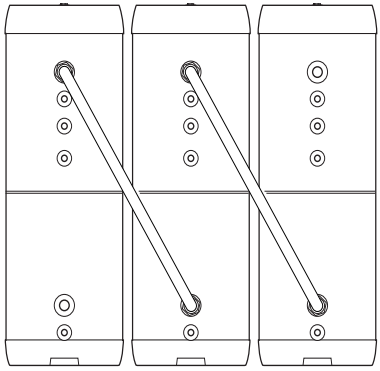
3.7.3 Fitting of overflow pipe

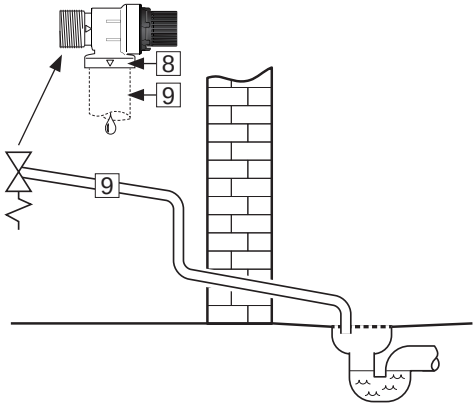
An overflow pipe (9) in a suitable dimension is run to the safety valve;

- Connects to the overflow (8) on the safety valve (3/4"inside thread).
- Must be fitted uninterruptable, undamaged and frost-free with a fall to a suitable drain.

3.7.4 Torque settings

Component	Torque
Flow/return connection (1 1/2")	60 Nm (+/- 3)
Other connections (3/4")	40 Nm (+/- 5)





⚠ CAUTION
Any overflow pipe shall be suited for the supplied safety equipment and must withstand up to 90°C.

3.7.5 Fitting instructions

⚠ CAUTION	
❗	The product shall be placed in a room with a floor drain. The manufacturer assumes no responsibility whatsoever if this provision is not followed.
❗	The product should be properly aligned vertically and horizontally, on a 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 front / 10 cm over the highest point.

3.7.6 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.

4. INITIAL COMMISSIONING

4.1 Filling with water

First check that all pipes are connected correctly. Then proceed as follows:

A) Open a hot tap – leave it open

B) Open the cold water supply to the product.

Check that the water from the open hot water tap is flowing freely, without any air locks. Close hot tap.

4.2 Control points

A) Check that all pipe connections to/from the product are tight and not leaking.

B) Check that the product is standing firmly vertically and horizontally.

4.3 Emptying of water

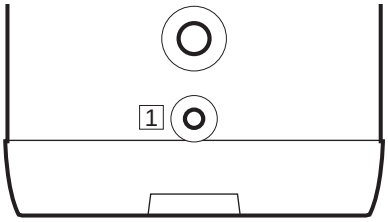
⚠ WARNING
The water temperature in the product may be up to 75°C and could cause scalding. Before emptying, a hot tap should be opened to the max. pressure/temperature for min. 3 minutes.

A) Shut off/disconnect from the heat source.

B) Shut off incoming cold water supply.

C) Open a hot tap to the maximum and leave open (prevents a vacuum).

D) Open the product's drain connection (1). Product emptied. After emptying close the drain connection before the product is refilled with water.



4.4 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

The product should be supported and stable vertically and horizontally.

When the product is placed correctly and is connected according to the guidelines for pipe fitting in section 3.5, there is no need for any additional settings.

5.2 Annual inspection

All components fitted in or to the product must be inspected annually. Inspection must be performed by person older than 18 years of age, with appropriate qualifications. Annual inspection includes:

- Checking all connections for leaks. Tighten or maintain properly if required..
- Inspection of safety valve operation, see pt. 5.3.

5.3 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 approx. 90 degrees to the open position.
-	Visually check that the water is flowing freely to the drain.
-	YES = OK. Close the valve by turning the knob further 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.

1. Water leaking from pipe connection.
   Possible cause: Pipe connection is loose or sealant is insufficient.
   Possible solution: Tighten pipe connection, replace sealant if necessary.
2. Water leaking from the tank, not the pipe connection.
   Possible cause: Leakage from the steel tank.
   Possible solution: Check if it is possible to see the leak point. Contact installer.

If you are unsure what is wrong, contact the installer (see product type plate) or OSO Hotwater AS - see section 7.1.

7. WARRANTY CONDITIONS

1. Scope
OSO Hotwater AS (hereinafter called OSO) warrants for 2 years from the date of purchase, that the Product will: i) conform to OSO specification, ii) be free from defects in materials and workmanship, subject to conditions below. All components carry a 2-year warranty.
The warranty is voluntarily extended by OSO to 5 years for the stainless steel inner tank. This extended warranty only applies to Products purchased by a consumer, that has been installed for private use and that has been distributed by OSO or by a distributor where the Products have been originally sold by OSO. The extended warranty does not apply to Products purchased by commercial entities or for Products that have been installed for commercial use. These shall be subject only to the mandatory provisions of the law. The conditions and limitations set out below shall apply.

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 shall 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. OSO will in such cases not cover any other associated costs.
Any exchanged Product or component will become the legal property of OSO. Any valid claim or service does not extend the original warranty. The replacement Product or part does not carry a new warranty.

3. Conditions
The Product is manufactured to suit most public water supplies. However, there are certain water chemistries (outlined below) that can have a detrimental effect on the Product and its life expectancy. If there are uncertainties regarding water quality, the local water supply authority can supply the necessary data.
The warranty applies only if the conditions set out below are met in full:

- The Product has been installed by a professional installer, in accordance with the instructions in the installation manual and all relevant Codes of Practice and Regulations in force at the time of installation.
- The Product has not been modified in any way, tampered with or subjected to misuse and no factory fitted parts have been removed for unauthorized repair or replacement.
- The Product has only been connected to a domestic mains water supply in compliance with the European Drinking Water Directive EN 98/83 EC, or latest version. The water should not be aggressive, i.e. the water chemistry shall comply with the following:

- Chloride	< 250 mg / L
- Electric Conductivity (EC) @25°C	< 750 uS / cm
- Saturation Index (LSI) @80°C	> - 1,0 / < 0,8
- pH level	> 6,0 / < 9,5

- The immersion heater has not been exposed to hardness levels exceeding 10°dH (180 ppm CaCO3). A water softener is recommended in such cases.
- Any disinfection has been carried out without affecting the Product in any way whatsoever. The product must be isolated from chemically treated water.
- The Product has been in regular use from the date of installation. If the Product is not intended to be used for 60 days or more, it must be drained.
- Service and/or repair shall be done according to the installation manual and all relevant codes of practice. Any replacement parts used shall be original OSO spare parts.
- Any third-party costs associated with any claim has been authorized in advance by OSO in writing.
- The purchase invoice and/or installation invoice, a water sample as well as the defective product is made available to OSO upon request.

Failure to follow these instructions and conditions may result in product failure, and water escaping from the Product.

4. Limitations
The warranty does not cover:

- Any fault or costs arising from incorrect installation, incorrect application, lack of regular maintenance in accordance with the installation manual, neglect, accidental or malicious damage, misuse, any alteration, tampering or repair carried out by a non-professional, any fault arising from the tampering with or removal of any factory fitted safety components or measures.
- Any consequential damage or any indirect loss caused by any failure or malfunction of the Product whatsoever.
- Any pipework or any equipment connected to the Product.
- The effects of frost, lightning, voltage variation, lack of water, dry boiling, excess pressure or chlorination procedures.
- The effects of stagnant (de-aerated) water if the Product has been left unused for more than 60 days consecutively.
- Damage caused during transportation. Buyer shall give the carrier notice of such damage.
- Costs arising if the Product is not immediately accessible for servicing.

These warranties do not affect the Buyer's statutory rights.

7.1 Customer service

In case of problems that cannot be resolved with the aid of the troubleshooting guide in this installation manual, 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

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8. REMOVING THE PRODUCT

8.1 Removal

A) Disconnect the power supply.
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 re-cycling.

OSO
HOTWATER

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