osmobil ONE X

OSMOBIL ONE X

Translation of the original operating instructions in English

Current version dated February 2026.
All previous versions are replaced by this version.

CE

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OSMOBIL ONE X

Technical details:

Permeate output	max. 240 l/h
Electrical connection power	0,375 kW
Total salt content of inlet water	max. 1000 ppm
Salt retention	min. 95%
Yield	30-50%
Inlet water pressure	2.0-6.0 bar
Inlet water temperature	8°-25°
Suitable inlet water	Municipal water in accordance with German drinking water regulations
Ambient temperature	3°-40° C
Mains connection	230 V and 50 Hz
Dimensions in cm (H*W*D)	50 x 38 x 90
Weight (dry)	29 kg

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EC Declaration of Conformity

We hereby declare that the mobile reverse osmosis system 'OSMOBIL ONE X' complies with the applicable EC directives in terms of its design and construction in the form in which it is marketed by our company.

Any modification to the system that has not been agreed with our company will invalidate this declaration.

Applicable EC Directive:

EC Machinery Directive (2006/42/EC)

Manufacturer:	VF Reinigungstechnik GmbH Daimlerstraße 5 32130 Enger info@vf-reinigungstechnik.de	Name of the plant: Serial number:	OSMOBIL ONE X see type plate

Signatory: Tobias Becker (CEO)

Date/Signature of the manufacturer: 01.09.2025

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1 1 General information and overview

1.1 Introduction

Dear user,

Please find enclosed the instructions for your new ‘OSMOBIL ONE X’ reverse osmosis system. It describes the basic functions and components of the device in simple terms. It also provides important information for your safety as a user and for avoiding misuse and damage to the device or its surroundings.

Attention: Please read the instructions thoroughly and carefully. This will prevent damage and misuse! The device may only be operated by competent persons who have read these instructions.

1.2 Overview – side view

1: Membrane housing
2: Pressure gauge
3: Flush valve
4: Pre-filter cup
5: Mains water inlet
6: Accessory bag

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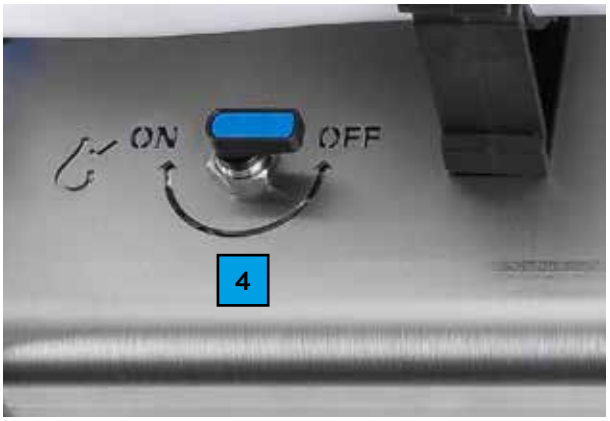
1.3 Overview – Header page ‘Water’ & ‘Flush valve’



1: Concentrate outlet (mineral-containing water)
2: Pure water outlet (mineral-free water)
3: Personal safety plug
4: Close-up of flush valve (here in the ‘Pure water off’ or ‘Flush’ position)

1.4 Function

The OSMOBIL ONE X is based on a special reverse osmosis membrane in combination with an electronic pump. This enables a maximum production capacity of 240 litres of ultrapure water per hour (depending on the water supply and water temperature). The device is designed to produce pure H2O without an additional buffer tank and with minimal running costs (less than £1 per 1,000 litres of ultrapure water). To do this, municipal water is forced through a special membrane under high pressure (usually 10–15 bar), which only allows H2O molecules to pass through. The remaining components dissolved in the water remain in front of this membrane and are flushed out of the device with the concentrate. In this way, the ultrapure water produced achieves a quality of approx. 0.5–1% residual salt content (or 99–99.5% salt retention). This generally corresponds to a water quality of 0–15 ppm. Please refer to section 2.8, 'Measuring water quality'. The only component that needs to be replaced regularly is the pre-filter, which is located in a transparent housing on the underside of the device (please refer to section 4, 'Maintenance, care and safety').

1.5 Intended use

The device has been designed primarily for the following activities:
- Production of pure H2O for cleaning work

1.6 X-Flow system / shut-off and water volume control

The OSMOBIL ONE X has an X-Flow system. This system controls the amount of water supplied by the OSMOBIL ONE X on the clean water side depending on the maximum possible water flow at the clean water outlet (permeate) and regulates the amount of clean water down to 'zero' if necessary.

The X-Flow system continuously monitors the clean water outlet and the respective back pressure. This ensures that the system always supplies as much water as necessary and as little as possible. In everyday use, this can save up to 25% water, which the OSMOBIL ONE X draws less from the tap. In addition, the water in the 'OSMOBIL ONE X to telescopic rod' pipe can be turned off and on with various options (valve, kink, bend angle with valve).

2 Production of pure H2O

2.1 Setting up the workplace

First, you should organise a sufficient supply of municipal water and electricity at the respective work site. It is important to ensure that vehicles, doors or other circumstances do not cause hoses to the or from the device to become kinked or blocked during subsequent operation. This could damage the device.

Caution: In addition, ensure that live parts such as cables, cable reels, sockets, etc. are kept strictly separate from parts that carry water (hose, pump, device, etc.). Despite the built-in personal safety plug, we ask you to observe this for your own safety. Furthermore, the device must not be placed under water or under continuously running water.

In addition, always choose a location for the device that is not sensitive to water leakage or has a floor drain. It is best to place the device outdoors or on a tiled floor with a drain. Alternatively, the appliance can also be placed in a sufficiently large tub. If hoses burst due to improper use, the pressure relief valve on the appliance 'opens' or water leaks in any other way, this will prevent possible consequential damage.

2.2 The right water source

Caution: When selecting a water source, pay particular attention to where the water used for production comes from. In its normal configuration, the OSMOBIL is only intended for use with approved municipal water! The use of other water can cause considerable damage to your OSMOBIL! And this can happen after just a few litres of production. Therefore, make sure that you only use municipal water that is suitable for consumption and complies with the German Drinking Water Ordinance.

If you are not familiar with the water sources at the respective place of use, please consult with individuals who are knowledgeable about the local water supply (e.g., your client, building technician, etc.) before commencing work. If you use water from a well, cistern, rain barrel, or other source, your device may be damaged after only a few minutes of use. A sudden failure of the water supply (e.g. in agriculture due to animal feeding) can also cause damage to your device. If there is no drinking water supply at the respective construction site or if you frequently have to work under such conditions, please contact your specialist dealer. The problem may be solved by installing additional pre-filters. When using the system on drinking water pipes, the user must ensure that the relevant tap on the building has a non-return valve to prevent water from flowing back into the drinking water pipe! If water sources other than municipal water are used (e.g. well water, cisterns, lake water, etc.), a water analysis must be carried out beforehand to determine the suitability of the water for the filter system. Water qualities that deviate from municipal water in accordance with the German Drinking Water Ordinance can damage the system and also have a negative effect on the cleaning result.

2.3 Hoses and couplings

Next, connect the water supply hose to the 'mains water' connection on the device. Please use hoses with a diameter of at least 3/4" (or larger) for this purpose. You can also use a hose to drain the waste water (concentrate) from the device into the sewer system or another drain, but this hose must not be longer than 5 metres and must have a diameter of at least 1/2'. Please ensure that the waste water can always drain freely and do not use any 'water stop couplings" for this purpose. Connect an extension (no thicker than a 1/2' hose, 3/8' and 50 metres are ideal) or your desired telescopic rod directly to the clean

water outlet (permeate). If your machine is in its delivery condition, please remove the screw caps on the clean water inlet and waste water outlet and screw on the supplied male connectors (Gardena compatible).

2.4 Connect the consumer, adjust the flush valve and start the water supply

Now connect a 'consumer' to the machine's pure water outlet.
This can be a telescopic rod or, if necessary, an extension hose with a double nipple. During subsequent operation, there will be so much pressure on the pure water outlet, which has a non-return valve, that you will not be able to connect a consumer here. Now you should make sure that the 'flush valve' is set to 'pure water off' or 'flush'. You can then turn on the water supply or open the tap. Before doing so, it is advisable to flush the pipes and hoses that are used without connecting the OSMOBIL ONE X. This will flush out any rust residues and deposits so that they do not enter the device or the pre-filter. Once you have turned on the tap, the device will fill with water and approximately 95-100% of the water will flow out of the waste water or concentrate outlet.

2.5 Switch on the pump

First, connect the personal safety plug to the mains. If in doubt, please use a cable reel with a cross-section of 2.5 mm that is completely unrolled as an extension. Then press the green 'RESET' button on the personal safety plug of the OSMOBIL ONE X. The pump should now start up.

2.6 Flushing mode

The mode that is now active is called 'flushing mode'. This mode is used to clean the system, as it flushes out any residues that have accumulated inside the membranes. The flush mode must always be activated for a few minutes before starting work and after finishing (see below) to ensure a long service life for your membranes. It is normal for the pump to sometimes 'knock' or make noises when starting up. These will subside during production operation at the latest. The pump should then run quietly and evenly.

Caution: Always observe the rule for switching on the OSMOBIL ONE X: 'Water first, then electricity!' Caution: To operate the system, always ensure that both the waste water and the ultrapure water can drain completely. Therefore, do not use hose connections with water stops and ensure that there are no kinks or knots in the hoses used and that no vehicles, objects or persons are standing on the hoses.

2.7 Production mode

If you now want to start producing water, simply turn the flush valve to the left to 'Production' or 'Pure water on'. The system will then build up the necessary pressure. Once the required pressure has been reached, a certain amount of water will come out of the waste

water outlet (“concentrate”). The other part will now flow out of the ultrapure water outlet (‘permeate’).

Depending on the inlet pressure (which must be high enough), both water outlets will now have the same flow rate, or the flow rate at the waste water outlet (‘concentrate’) will be slightly higher than at the ultrapure water outlet (“permeate”). The pump should run smoothly in this state (in flush mode, it may sometimes ‘knock’ slightly). We call the ratio between permeate and concentrate the ‘ratio’. This must never exceed 50/50 to the detriment of the ultrapure water (70% concentrate and 30% permeate is fine, but the reverse is a problem).

Caution: If you produce more ultrapure water than waste water, please refer to section 4.6 ‘Troubleshooting’ under ‘Too much ultrapure water?’. This can be the case, especially in industrial facilities with extremely high water pressure. When producing water, please always pay attention to the pressure gauge in addition to the ratio of the two water flows. This must not exceed 15 bar! Otherwise, this could cause damage to your device! You also need a normal inlet pressure (approx. 2–4 bar). If your device makes loud, knocking noises during the production process, interrupt operation and look for a solution in the chapter ‘Troubleshooting’.

2.8 Measuring the water quality of the ultrapure water (‘permeate’)

Once the system has built up pressure and is producing water, please use your testing device to measure the water quality at the ultrapure water outlet (‘permeate’) before you start the actual work. To do this, fill the cap of your testing device with water. Then switch on the test device and insert it into the filled cap (for OSMOBIL with a permanently installed measuring device, simply switch it on). The water value is now shown on the display. It is displayed in the unit ‘PPM’. This stands for ‘parts per million’ and refers to the ‘remaining foreign molecules per million H2O molecules’. Basically, this unit indicates the degree of purity of the H2O mixture present.

The following applies to the required water quality in each case:
0-30 PPM – Perfect quality for façade, PV and solar cleaning
0-15 PPM – Perfect quality for window cleaning

Important for cleaning work with the H2O produced:
Within the first 1–2 minutes after switching on the device, it is not unusual for the water value to still be around 20–30 PPM or higher. This regulates itself downwards within a short time. In addition, with new devices, it is important to note that up to 10,000 litres of water must be produced with the new device or with the new membrane before the membranes reach their full performance capacity.

Once the required water quality has been achieved, you can begin the desired work. Please refer to the instructions provided later in this manual. If you are unable to achieve the required water quality, you will find useful tips in the ‘Troubleshooting’ section.

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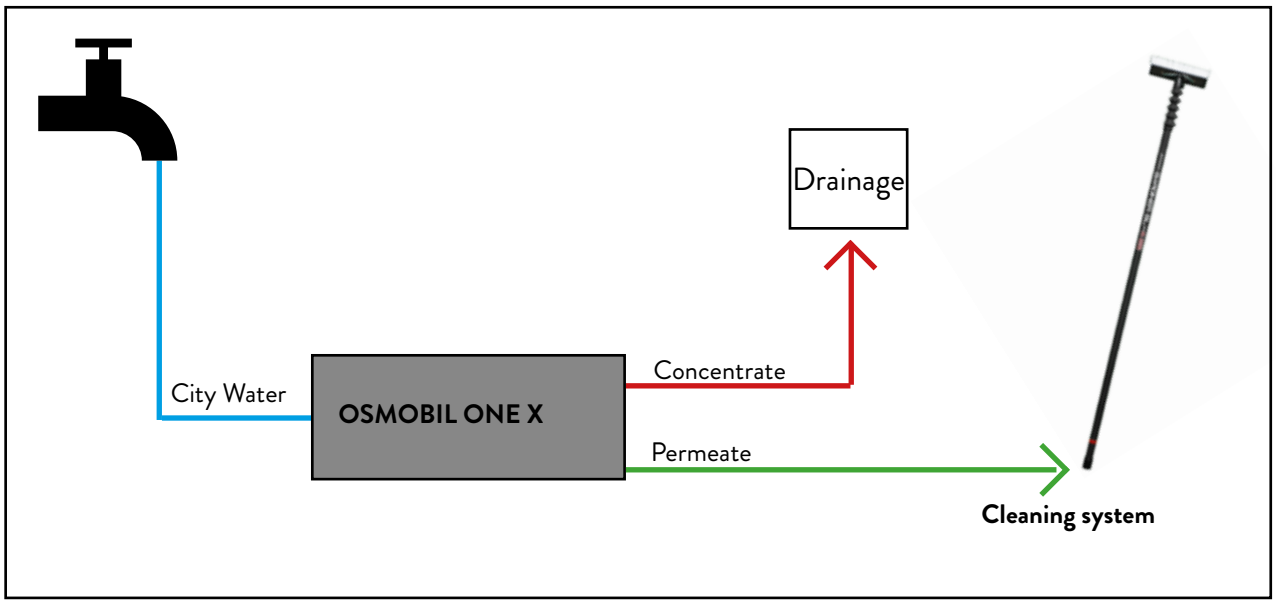
2.9. Finishing the work

If you want to finish the job, first set the 'flush valve' to the "flush" or 'clean water off' position. Use the flushing time to stow away extension hoses to the work site and telescopic poles. This should take at least 1-2 minutes. Then press the test switch on the personal safety plug.
You can now turn off the water supply and, if necessary, replace the connectors with the screw caps supplied (this will make the machine airtight and prevent it from leaking in the car).
Caution: When switching off, always follow the rule 'first electricity, then water'!
Then stow the device away.

3 Cleaning with pure H2O

3.1 Setup diagram – water flow during cleaning



4 Maintenance, care and safety

4.1 Changing the pre-filter

The only filter or component that needs to be changed regularly on your OSMOBIL ONE X is the pre-filter in the transparent housing underneath your device. As there is still water in the filter cup, you should choose an environment that is not sensitive to water leakage when changing the filter. Now you can unscrew the filter cup by turning it counterclock-

wise and remove it. Then pour out the water and remove the filter cartridge. You can now dispose of it and replace it with a new one. Please make sure that both rubber seals from the old filter are removed. If necessary, clean the filter cup by simply rinsing it out. Now insert the new filter (with 2 new rubber seals). When inserting the filter cup into the device, make sure that the filter cartridge is upright and that the filter cup is clean and screwed onto the thread straight. Please also ensure that the sealing ring of the cup is intact and in position.
Filter cartridges are available from your specialist dealer. Only original OSMOBIL filters should be used.

4.2 When does the pre-filter need to be replaced?

The capacity of the pre-filter depends on various factors. For this reason, it should be replaced if one of the following points applies:

Colour:	If the filter is visibly brown or red in colour.
Service life:	After 3 months at the latest, as otherwise the existing filter may rot and damage the membrane.
Performance:	If your device is not supplying enough water.
Flow rate:	After 25,000 litres of water have flowed through.

4.3 When do I need to replace the membrane?

In principle, the built-in membrane runs without wear and tear. However, it should be replaced after 1–2 million litres of water have passed through it or after 1–2 years. Over time, problems with water values or water quality can arise due to improper use, the introduction of well water or rainwater, damage caused by falls or transport, frost or other events. If this is the case, your specialist dealer will help you to find out whether your membrane is damaged or whether there is another problem. If the membrane needs to be replaced, you can open the membrane housing and simply replace the membrane body. Your specialist dealer will be happy to explain this to you. There is also detailed video material available on this subject.

4.4 Decommissioning – Winter shutdown

If your device is not used for a longer period of time during the winter months or for other reasons, you must take a few steps to protect your membrane from damage and achieve a ‘standby time’ of 3 months:

1. Insert a new pre-filter and flush the machine to achieve a maximum standby time of 3 months. If, for example, the pre-filter included is already one month old at the start of the standby period, you can still achieve a standby time of up to 2 months (and so on) by following the steps below if you do not want to dispose of the filter before it is due.
2. Ensure that the device is stored in a frost-free location.

3. Place the screw caps on the water inlet and waste water outlet, as the device is ‘airtight’ (the pure water outlet has a non-return valve and is airtight when no consumer is connected).
4. Switch on the device briefly after 3 months of downtime at the latest to replace the residual water it contains and flush the machine. Please also insert a new pre-filter beforehand. Otherwise, the residual water it contains could ‘spoil’ or rot and damage the device or its membrane.
   Filter changes and switch-on dates should be documented accordingly to keep track of them.

4.5 General operating instructions and safety

4.5.1 Installation requirements and protection against water damage

- Only set up the device in areas that are not sensitive to water and have a floor drain!
- To avoid puddles, pools of water or damage to meadows and fields, you should also connect a hose to the waste water outlet to direct the water to a suitable location.
- Observe the conditions, regulations and guidelines applicable at the installation site!

4.5.2 General operating instructions

- Do not allow hot water to enter the device (max. 25°C)!
- Protect your device from knocks and falls!
- Store your device in a frost-free location!
- Find out about the water supply!
- Only mains water may be fed into the device!
- Always ensure that the waste water outlet is free to drain!
- Do not leave the device running unattended!

4.5.3 Safety instructions and specific hazards

- If you discover damage to cables, hoses or other water- or electricity-carrying components of the device, these must be repaired immediately by a qualified technician.
- Before carrying out any maintenance or repair work, always ensure that the power supply to the device is disconnected and that all water-carrying parts are depressurised.
- The water produced by the OSMOBIL ONE X is not suitable for drinking!
- Do not touch any electrical components if your hands are wet!
- When using the device, strictly separate the power and water supply from each other.
- Protect the device and, above all, the live parts from rain or splashing water or

other sources of water.

4.6 Troubleshooting

4.6.1 Your water value is incorrect?

- Switch the device off completely and switch it back on in rinse mode. Wait a few minutes in rinse mode. Then switch to production mode and measure the water value regularly. This usually regulates itself after a few minutes.
- Operate the device in rinse mode for 30 minutes. Then measure the water value again in operating mode.
- Your membrane may be damaged due to misuse (overpressure, incorrect ratio, frost, well water). In such cases, please contact your specialist dealer.
- Ensure that the pre-filter is clean and white.
- In some cases, with extremely hard inlet water and simultaneous use of a membrane that has already been in use for several years, the water value may remain permanently too high. Please contact your specialist dealer. The problem can usually be solved by replacing the pre-filter or membrane.

4.6.2 Is your device not supplying enough water?

- Check the respective tap. The water pressure can vary greatly here.
  As a general rule, low inlet water pressure will result in the appliance producing less water.
- Your pump may be incorrectly adjusted. If you are unsure about how to use the pump screw, please contact your specialist dealer!
- In a few cases, very hard inlet water can cause the system to calcify. Your specialist dealer will be happy to advise you on how to proceed in such cases.
- Please use a hose with a diameter of at least 3/4‘ as the supply line to the device. A thinner hose can restrict water production and cause the pump to “nail”. As a general rule: ’Thick hose to the OSMOBIL, thin hose away from the OSMOBIL“.
- The use of unauthorised drinking water may have clogged (‘blocked’) or destroyed your membrane (e.g. due to “iron”, ‘silicic acid’, etc.).
  Please contact your specialist dealer.

4.6.3 Is your device supplying too much ultrapure water (more permeate than concentrate)?

In this case, you must urgently take one of the following steps:
- Turn the tap on the wall slightly until the ratio is correct (50/50 ratio or more waste water).
- Use a pressure reducer upstream of the device. Your specialist dealer will be happy to advise you on this.

4.6.4 Your pump makes loud noises and ‘knocks’ in production mode?

- Low pressure (‘too weak a flow’) is often the problem.
- Use a thicker hose to connect the tap to the device.
- Try (as a one-off measure) to shorten the supply line from the tap to the device.
- Use a different water source.
- Use a pressure booster upstream of the OSMOBIL. Your specialist dealer will be happy to advise you.

4.6.5 You are producing too little water?

- Low water temperatures can reduce the performance of your system.
- Your pre-filter needs to be replaced.
- The use of unauthorised drinking water may have clogged (‘blocked’) or destroyed (‘iron’, ‘silicic acid’, etc.) your membrane.
  Please contact your specialist dealer.
- The respective water source has too low an outlet pressure – see chapter

4.6.6 The pump cannot be switched on?

- Check the power supply.
- In many cases, a defective personal safety plug is to blame if the pump cannot be switched on. This safety component is particularly sensitive to moisture. Replacing this plug usually solves the problem. Your specialist dealer will be happy to advise you on this.

5 Warranty

All OSMOBIL water systems undergo extensive quality control and testing before delivery. The design of the devices is geared towards absolute reliability and durability. However, should any problems or grounds for complaint arise within the warranty period (12 months for tradespeople and companies), please address your replacement claim to VF Reinigungstechnik GmbH. Please note that the warranty only covers devices that have not been structurally modified and have been operated strictly in accordance with the instructions in this manual. Wear parts such as membranes and pre-filters are also excluded from the warranty.