

EN

OPERATING MANUAL
OIL-FILLED RADIATOR



EN This product is only suitable for well insulated spaces or occasional use.

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Notes regarding the operating manual

Symbols


 **Warning of electrical voltage**
 This symbol indicates dangers to the life and health of persons due to electrical voltage.


 **Warning of hot surface**
 This symbol indicates dangers to the life and health of persons due to hot surface.

 **Warning**
 This signal word indicates a hazard with an average risk level which, if not avoided, can result in serious injury or death.

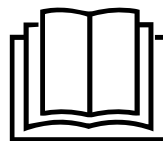
 **Caution**
 This signal word indicates a hazard with a low risk level which, if not avoided, can result in minor or moderate injury.

Note
 This signal word indicates important information (e.g. material damage), but does not indicate hazards.

 **Info**
 Information marked with this symbol helps you to carry out your tasks quickly and safely.

 **Follow the manual**
 Information marked with this symbol indicates that the operating manual must be observed.

You can download the current version of the operating manual and the EU declaration of conformity via the following link:




TRH 28 E




<https://hub.trotec.com/?id=46792>

Safety

Read this manual carefully before starting or using the device. Always store the manual in the immediate vicinity of the device or its site of use.

 **Warning**
Read all safety warnings and all instructions.
 Failure to follow the warnings and instructions may result in electric shock, fire and/or serious injury.
Save all warnings and instructions for future reference.
 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. Cleaning and user maintenance shall not be made by children without supervision.

 **Warning**
 Children of less than 3 years should be kept away from the device unless continuously supervised.
 Children aged from 3 years and less than 8 years shall only switch on/off the appliance provided that it has been placed or installed in its intended normal operating position and they have been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved.
 Children aged from 3 years and less than 8 years shall not plug in, regulate and clean the appliance or perform user maintenance.



Warning

Do not use the device in small rooms if persons are present who cannot leave the room independently and who are not under constant supervision.

- Do not use the device in potentially explosive rooms or areas and do not install it there.
- Do not use the device in aggressive atmosphere.
- Only put up the device in an upright, stable position on firm ground.
- Let the device dry out after a wet clean. Do not operate it when wet.
- Do not use the device with wet or damp hands.
- Do not expose the device to directly squirting water.
- Never insert any objects or limbs into the device.
- Do not cover the device during operation.
- Do not remove any safety signs, stickers or labels from the device. Keep all safety signs, stickers and labels in legible condition.
- Do not sit on the device.
- This device is not a toy. Keep away from children and animals. Do not leave the device unattended during operation.
- Check accessories and connection parts for possible damage prior to every use of the device. Do not use any defective devices or device parts.
- Ensure that all electric cables outside of the device are protected from damage (e.g. caused by animals). Never use the device if electric cables or the power connection are damaged!
- The mains connection must correspond to the specifications in the Technical annex.
- Insert the mains plug into a properly fused mains socket.
- Observe the device's power input, cable length and intended use when selecting extensions to the power cable. Completely unroll extension cables. Avoid electrical overload.
- Before carrying out maintenance, care or repair work on the device, remove the mains plug from the mains socket. Hold onto the mains plug while doing so.
- Switch the device off and disconnect the power cable from the mains socket when the device is not in use.
- Do not under any circumstances use the device if you detect damages on the mains plug or power cable. If the power cable is damaged, it must be replaced by the manufacturer, its service agent or similarly qualified persons in order to avoid a hazard. Defective power cables pose a serious health risk!

- The power cable must not rest on the device or run in front of the air outlet, otherwise it may be damaged as a result of high temperatures.
- When installing the device, observe the minimum distances from walls and other objects as well as the storage and operating conditions according to the technical data (chapter Technical annex).
- Make sure that the air outlet is not obstructed.
- Do not place the device on combustible ground.
- Only use original spare parts, for otherwise safe and functional operation cannot be ensured.
- Allow the device to cool down before transport and/or maintenance work.
- The device must not be positioned directly beneath a wall socket.
- Do not use the device if it has been dropped or if it shows visible signs of damage.

Intended use

The device is only suitable for well insulated spaces or occasional use.

The device is only intended to be used as additional heating device in dry, closed rooms whilst adhering to the technical data. For intended use it must only be positioned on the ground.

Foreseeable misuse

- Do not place the device on wet or flooded ground.
- Do not place any objects, e.g. clothing, on the device.
- Do not use this device in the vicinity of fuel, solvents, varnishes or other easily inflammable vapours or in rooms where these substances are stored.
- Do not use the device out of doors.
- This heating device must not be used in wet rooms (e.g. bathrooms or laundry rooms).
- Never immerse the device in water.
- Do not use the device for heating vehicles.
- Never heat rooms with a cubature of less than 4 m³. Risk of overheating!
- Any use other than the intended use is regarded as a reasonably foreseeable misuse.
- Please bear in mind that our devices are not designed for the application in business, craft or industrial enterprises. We do not accept any liability if the device is used in business, craft or industrial enterprises as well as for similar applications.
- Do not make any unauthorised modifications, alterations or structural changes to the device.


Personnel qualifications

People who use this device must:

- be aware of the dangers that occur when working with electric devices in damp areas.
- have read and understood the operating manual, especially the Safety chapter.

Maintenance tasks which require the housing to be opened must only be carried out by specialist electrical companies or by Trotec.

Symbols on the device

Symbols	Meaning
	This symbol located on the device indicates that it is prohibited to place objects (such as towels, clothes etc.) above or directly in front of the device. In order to avoid overheating and fire hazards, the heater must not be covered.

Residual risks



Warning of electrical voltage

Work on the electrical components must only be carried out by an authorised specialist company!



Warning of electrical voltage

Before any work on the device, remove the mains plug from the mains socket!
Do not touch the mains plug with wet or damp hands.
Hold onto the mains plug while pulling the power cable out of the mains socket.



Warning of electrical voltage

Risk of electric shock!
The device must not come into contact with water, otherwise there is a risk of an electric shock!
Do not use this heating device in wet rooms!



Warning of hot surface

Parts of this appliance can become very hot and cause burns. Particular attention is to be paid when there are children or vulnerable persons present!



Warning

Dangers can occur at the device when it is used by untrained people in an unprofessional or improper way!
Observe the personnel qualifications!



Warning

The device is not a toy and does not belong in the hands of children.



Warning

Risk of suffocation!
Do not leave the packaging lying around. Children may use it as a dangerous toy.



Warning

Improper installation entails a risk of fire.
Do not place the device on combustible ground.
Do not place the device on high-pile carpets.



Warning

In order to avoid overheating and fire hazards, the device must not be covered!

Behaviour in the event of an emergency

1. Switch the device off.
2. In an emergency, disconnect the device from the mains feed-in: Hold onto the mains plug while pulling the power cable out of the mains socket.
3. Do not reconnect a defective device to the mains.

Overheating protection

The device is provided with a safety thermostat which is activated by overheating of the device (when exceeding the operating temperature).

Investigate the cause of overheating.

If the safety thermostat does not switch in the event of overheating, the overheating protection will be tripped. In that case the device switches off completely. If so, please contact the customer service to have the overheating protection replaced.

Tilt protection

The device comes equipped with a tilt protection. The tilt protection is a safety device intended to minimize the risk of fire in case the device is tipped over inadvertently. The device will be switched off when knocked over (or if its upright position is changed in any other manner).

The tilt protection switches the device off when it is inclined out of its vertical position. The device can again be used as usual only a few seconds after placing it back in vertical position and on solid ground.

Information about the device

Device description

The oil-filled radiator TRH 28 E is used to generate warm air for interior spaces.

The TRH 28 E comes with 3 power levels of up to 2,500 W.

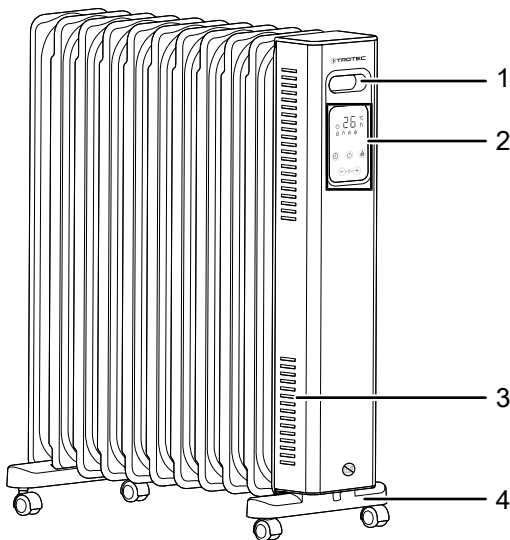
The heat electrically generated by the heating elements within the device is absorbed by the heating medium oil. The heating medium oil offers the advantages of quick heat-up and long-term heat storage capacity. On these grounds the heating medium oil can guarantee a continuous heat emission. The radiator's 11 fins increase the heat radiating surface and so enhance its effectiveness.

A target temperature can be set with the thermostat-controlled automatic operation. Once the target temperature is reached, the device switches off automatically.

A 24-hour timer function and a digital control panel with LED display ensure convenient use.

The device is further equipped with an overheating protection and a tilt protection.

Device depiction



No.	Designation
1	Transport handle
2	Control panel
3	Air outlet
4	Foot with castors

Transport and storage

Note

If you store or transport the device improperly, the device may be damaged.

Note the information regarding transport and storage of the device.

Transport

To make the device easier to transport, it is fitted with wheels.

To make the device easier to transport, it is fitted with a carry handle.

Before transporting the device, observe the following:

- Switch the device off.
- Hold onto the mains plug while pulling the power cable out of the mains socket.
- Do not use the power cable to drag the device.
- Allow the device to cool down sufficiently.

Storage

Before storing the device, proceed as follows:

- Hold onto the mains plug while pulling the power cable out of the mains socket.
- Allow the device to cool down sufficiently.

When the device is not being used, observe the following storage conditions:

- Store the device in a dry location and protected from frost and heat.
- Store the device in an upright position where it is protected from dust and direct sunlight.
- If required, use a cover to protect the device from invasive dust.
- Place no further devices or objects on top of the device to prevent it from being damaged.

Assembly and start-up

Scope of delivery

- 1 x Oil-filled radiator
- 2 x Foot with 2 castors each
- 1 x Cable holder
- 1 x Screw
- 1 x Manual

Unpacking the device

1. Open the cardboard box and take the device out.
2. Completely remove the packaging.
3. Fully unwind the power cable. Make sure that the power cable is not damaged and that you do not damage it during unwinding.

Assembly



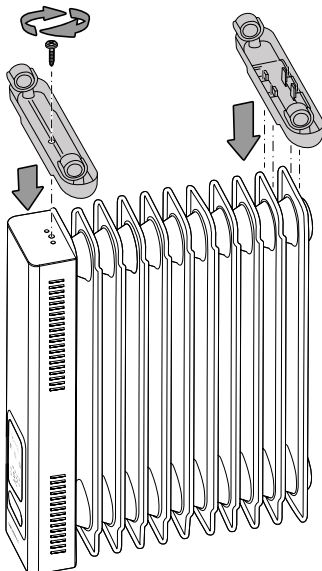
Warning

Risk of fire due to improper installation!
There is a risk of fire if the required minimum distances are not observed.
Observe the "Installation" section in the "Assembly and start-up" chapter and the technical data in the "Technical annex" chapter.

Mounting the feet

The castors on the feet are already preassembled.

1. Place the device upside down on a scratch-proof, even surface and in a stable position.
2. Place the left foot upside down on the left side of the device.
3. Fasten the left foot with a screw.
4. Place the right foot with the slots upside down on the last two fins on the right side of the device.
5. Close the four clips of the right foot.



6. Turn the device over and set it down on the castors.
 - ⇒ Check the feet and castors for tight fit. The feet should rest evenly on the fins to ensure the upright position of the device.

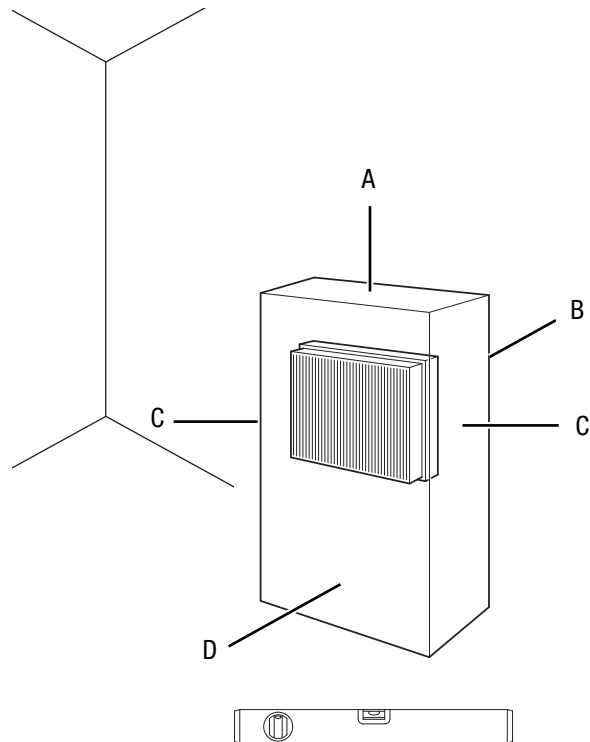
Start-up



Info

Odours might arise upon initial start-up or after a longer period of non-use.

When positioning the device, observe the minimum distance from walls or other objects as described in the chapter Technical annex.



- Before starting the device, check the condition of the power cable. If there are doubts as to their sound condition, contact the customer service.
- The device may only be operated when fully assembled and set up in a vertical position on a stable surface. Operation on instable ground is prohibited.
- Do not create tripping hazards when laying the power cable or other electric cables, especially when positioning the device in the middle of the room. Use cable bridges.
- Make sure that extension cables are completely unrolled.
- Make sure that no curtains or other objects interfere with the air flow.
- Do not position the device directly below a wall socket.
- Make sure that the device cannot come into contact with moisture or water.

Connecting the power cable

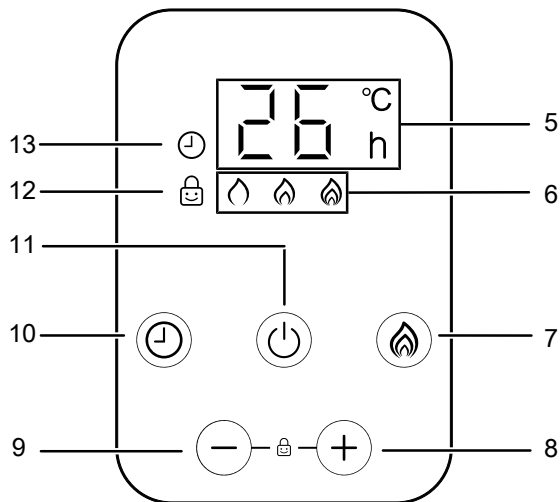
- Insert the mains plug into a properly fused mains socket.
- Make sure that the mains cable does not touch any hot parts of the housing.

Operation

Note

Avoid open doors and windows.

Control panel



No.	Designation	Meaning
5	Segment display	<ul style="list-style-type: none"> • Indication of the desired room temperature • Indication the number of hours during timer programming
6	Power stage symbols	Indication of the selected power stage
	power stage 1	Is illuminated if the low power stage is activated (1200 W)
	power stage 2	Is illuminated if the medium power stage is activated (1300 W)
	power stage 3	Is illuminated if the high power stage is activated (2500 W)
7	Power stage button	Selecting the power stage
8	Increase value button	<ul style="list-style-type: none"> • Set the desired room temperature (16 °C to 30 °C)
9	Decrease value button	<ul style="list-style-type: none"> • Set number of hours (1 h to 24 h) for the timer function • Enable/disable key lock
10	Timer button	Switching the timer on/off
11	Power button	Switch the device on and off
12	Key lock symbol	Is illuminated when key lock is activated.
13	Timer symbol	<ul style="list-style-type: none"> • Illuminated when the timer is activated. • Flashes during timer programming

Switching the device on

1. Plug the device into a sufficiently fused socket.
 - ⇒ The display lights up for 2 seconds and then switches to standby mode.
2. Press the Power button (11) to start the heating operation.



Info

The device will be switched on when the room temperature falls below the temperature set at the room thermostat.

In standby mode, the device memorizes the room temperature setting.

Setting the power stage

1. Press the *Power stage* button (7) to set the desired stage.
 - ⇒ The corresponding symbol (6) is illuminated.

Info

It is recommended to switch on the highest power stage at the beginning of the heating operation in order to reach the target temperature quickly.

Setting the desired room temperature

You can set the desired room temperature at any time during operation.

1. Repeatedly press the *Increase value* (8) or *Decrease value* button (9) until the desired room temperature is indicated on the segment display (5).
 - ⇒ The desired room temperature is displayed.



Info

The desired room temperature should be higher than the current room temperature.

⇒ If a room temperature exceeding or equal to the desired target temperature is measured over a period of approx. 3 minutes, the heating mode will stop automatically.

⇒ If a room temperature is measured that falls below the target temperature by approx. 2 °C or more, heating operation is automatically resumed.

Automatic temperature control via the room thermostat

- Upon reaching the maximum operating temperature of the heating medium in performance level 3 the device reduces its performance to level 2.
- When falling below the maximum operating temperature of the heating medium in power level 2, the heating will automatically switch back over to power level 3.
- When the device is set to power stage 1 or power stage 2, the operating temperature of the heating medium will not be controlled automatically. Upon reaching the preselected room temperature, the device switches off completely.

Setting the timer

The timer works according to the following operating principle:

- Automatic switch-off upon expiry of a preset number of hours

The number of hours to be set can be between 1 and 24 and is adjustable in increments of 1 hour.

Note

The device must not be left unattended in a freely accessible room with an activated timer.

- ✓ The device is switched on.
 - ✓ The device runs at the set power level.
1. Press the *Timer* button (10).
 - ⇒ The *Timer* symbol (13) flashes.
 - ⇒ The number of hours 00 flashes on the segment display (5).
 2. Press the *Increase value* (8) or *Decrease value* button (9) to select the desired number of hours until automatic switch-off.
 - ⇒ The desired number of hours flashes on the segment display (5) for approx. 5 s.
 - ⇒ The *Timer* symbol (13) is illuminated.
 - ⇒ The symbol for the power level set (6) is illuminated.
 - ⇒ The temperature set is indicated on the segment display (5).



Info

If you press the *Timer* button again after switching on the timer, the remaining number of hours until automatic switch-off is displayed.

Notes regarding automatic switch-off:

- Manually switching the device off disables the automatic switch-off function.
- Switching on the frost monitor function deactivates the automatic switch-off.
- If you select 00 hours, the timer will be off.

Setting the key lock

1. Press and hold the *Increase value* button (8) and the *Decrease value* button (9) simultaneously for 2 seconds to activate the key lock.
 - ⇒ The *key lock* symbol (12) is illuminated and the control panel is locked.
2. Press and hold the *Increase value* button (8) and the *Decrease value* button (9) simultaneously for 2 seconds if you would like to deactivate the key lock again.

Frost monitor function

The device is equipped with a frost monitor function that prevents the room temperature from falling below the frost protection temperature. Please proceed as follows to activate the frost monitor function:

1. Press and hold the *Power stage* button (7) during heating operation.
 - ⇒ The temperature is now set to 5 °C and the heating mode operates at stage 3.
2. Press and hold the *Power level* button (7) again if you want to switch back from the frost monitor function to regular heating operation.

Shutdown



Warning of electrical voltage

Do not touch the mains plug with wet or damp hands.

1. Switch the device off.
2. Hold onto the mains plug while pulling the power cable out of the mains socket.
3. Allow the device to cool down sufficiently.
4. Clean the device according to the Maintenance chapter.
5. Store the device according to the Storage chapter.

Errors and faults



Warning of electrical voltage

Tasks which require the device to be opened must only be carried out by authorised specialist companies or by Trotec.

The device has been checked for proper functioning several times during production. If malfunctions occur nonetheless, check the device according to the following list.

The device makes noises after switch-on:

- The heating medium oil expands due to heating. This is what causes the noise. It is a perfectly normal process. No measures are required.

The device does not start:

- Check the power connection.
- Check the power cable and mains plug for damage. If you notice damages, do not try to take the device back into operation.
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.
- Check the on-site fusing.
- Check the room temperature. The room thermostat may have switched off, because the desired room temperature has been reached.
- Check whether the device is standing upright and on level ground. The tilt protection may have been tripped owing to the fact that the device was knocked over. Always put up the device in an upright position on a suitable, sufficiently dimensioned surface.
- The room thermostat might be defective. Have a defective room thermostat replaced by a specialist electrical company.
- Check whether the overheating protection has tripped (see chapter Safety).
- Wait for 10 minutes before restarting the device. If the device is not starting, have the electrics checked by a specialist company or by Trotec.

The device is switched on, but the heating is not operating:

- Check the room temperature. The room thermostat may have switched off, because the desired room temperature has been reached.
- Check whether the overheating protection has tripped (see chapter Safety).
- The heating resistor might have blown. Have a defective heating resistor replaced by a specialist electrical company.
- The room thermostat might be defective. Have a defective room thermostat replaced by a specialist electrical company.

Note

Wait for at least 3 minutes after maintenance and repair work. Only then switch the device back on.

The device still does not operate correctly after these checks:

Please contact the customer service. If necessary, bring the device to an authorised specialist electrical company or to Trotec for repair.

Maintenance

Activities required before starting maintenance



Warning of electrical voltage

Do not touch the mains plug with wet or damp hands.

- Switch the device off.
- Hold onto the mains plug while pulling the power cable out of the mains socket.
- Allow the device to cool down completely.



Warning of electrical voltage

Tasks which require the device to be opened must only be carried out by authorised specialist companies or by Trotec.

Note

The device is filled with the heating medium oil. Tasks which require the oil tank to be opened must only be carried out by Trotec. In case of oil leakage please contact the customer service.

Cleaning the housing



Warning of electrical voltage


Never immerse the device in water!

Clean the housing with a soft, damp and lint-free cloth. Make sure that no moisture enters the housing. Protect electrical components from moisture. Do not use any aggressive cleaning agents such as cleaning sprays, solvents, alcohol-based or abrasive cleaners to dampen the cloth.

Wipe the housing dry after cleaning.

Technical annex

Technical data

Parameter	Value
Model	TRH 28 E
Power	level 1: 1200 W level 2: 1300 W level 3: 2500 W
Mains connection	220 – 240 V / ~ 50 Hz
Number of heating fins	11
Nominal current consumption	10.9 A
Recommended mains fuse	16 A
Type of protection	IP20
Protection class	I / 
Plug type	VDE plug CEE 7/7
Cable length	1.8 m
Suitable ambient temperature	- 20 °C to +40 °C
Dimensions (length x width x height)	446 x 240 x 635 mm
Minimum distance to walls and other objects	top (A): 100 cm rear (B): 100 cm sides (C): 100 cm front (D): 100 cm
Weight	10 kg

Information requirements for electrical local space heaters

Parameter	Value / item
Model	TRH 28 E
Heat output	
Nominal heat output P_{nom}	2.0 kW
Minimum heat output (indicative) P_{min}	1.2 kW
Maximum continuous heat output $P_{max,c}$	2.0 kW
Auxiliary electricity consumption	
At nominal heat output el_{max}	0.0 kW
At minimum heat output el_{min}	0.0 kW
In standby mode el_{sb}	0.0002 kW
Only for electric storage local space heaters: Type of heat input (please select one option)	
Manual heat charge control, with integrated thermostat	NA
Manual heat charge control with room and/or outdoor temperature feedback	NA
Electronic heat charge control with room and/or outdoor temperature feedback	NA
Fan assisted heat output	NA
Type of heat output/room temperature control (please select one option)	
Single-stage heat output, no room temperature control	NO
Two or more manually adjustable stages, no room temperature control	NO
With mechanic thermostat room temperature control	NO
With electronic room temperature control	YES
With electronic room temperature control plus day timer	NO
With electronic room temperature control plus week timer	NO
Other control options (multiple answers possible)	
Room temperature control, with presence detection	NO
Room temperature control, with open window detection	NO
With remote control option	NO
With adaptive start control	NO
With working time limitation	YES
With black bulb sensor	NO
Contact details	Trotec GmbH Grebbener Straße 7 D-52525 Heinsberg

NA: not applicable

Disposal

Always dispose of packing materials in an environmentally friendly manner and in accordance with the applicable local disposal regulations.



The icon with the crossed-out waste bin on waste electrical or electronic equipment stipulates that this equipment must not be disposed of with the household waste at the end of its life. You will find collection points for free return of waste electrical and electronic equipment in your vicinity. The addresses can be obtained from your municipality or local administration. You can also find out about other return options that apply for many EU countries on the website <https://hub.trotec.com/?id=45090>. Otherwise, please contact an official recycling centre for electronic and electrical equipment authorised for your country.

The separate collection of waste electrical and electronic equipment aims to enable the re-use, recycling and other forms of recovery of waste equipment as well as to prevent negative effects for the environment and human health caused by the disposal of hazardous substances potentially contained in the equipment.

Heating medium oil

The heating medium oil must be drained from the device and collected.

The heating medium oil is to be disposed of according to the national regulations.

Only for United Kingdom

According to Waste Electrical and Electronic Equipment Regulations 2013 (SI 2013/3113) (as amended) devices that are no longer usable must be collected separately and disposed of in an environmentally friendly manner.

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