Renfert

making work easy

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POWER steamer 1 & 2

Made in Germany

21-6800 16092022

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Contents

1 Introduction

1.1 Symbols used

Symbols with the following meanings are used in these instructions or on the equipment:

Danger
Immediate danger of injury. Consult accompanying documents!

Electrical current
Danger due to electrical current.

Danger
Hot surfaces.

Risk of explosion
Opening under pressure could cause parts to be ejected explosively.

Danger
Pressurized hot steam!
Do not open while the unit is hot!

Danger
Danger of injury due to hot liquids or steam.

Caution
Risk of damage to the equipment if the instruction is not followed.

Notice
A general notice that improves and eases use.

The operating instructions are also available in electronic format on our website.
Visit www.renfert.com/p918, and enter the following item number: 18450000 or 18460000.

The product complies with the applicable EU regulations.

Within the EU, the equipment is subject to the provisions of the WEEE Directive.

► **List, particular attention should be paid**
- List
  - Subordinate list

⇒ Instructions / appropriate action / input / operational sequence:

You are asked to carry out the specified action in the order indicated.

♦ Result of an action / response by the equipment / response by the program:

The equipment or program responds as a result of your actions or when a specific incident occurs.

Other symbols are explained as they occur.

2 Safety

2.1 Intended use

This steam cleaning unit is intended exclusively for cleaning dental items.

Do not direct steam at living creatures under any circumstances!

Commercial use only!

2.2 Improper use

Only spare parts and accessories supplied or authorized by Renfert GmbH may be used with this product. If other spare parts or accessories are used, this could have a detrimental effect on the safety of the equipment, increase the risk of serious injury and lead to damage to the environment or the product itself.

Only Renfert descaling solution or descaling solution authorized by Renfert may be used for descaling!
Other descaling solutions could damage the pressure tank and mechanical components, quickly causing complete failure.

2.3 Ambient conditions

The unit may only be operated:

- Indoors,
- Up to an altitude of 2,000 m above sea level
- At an ambient temperature of between 5 - 35 ºC [41 - 95 ºF] *)
- At a maximum relative humidity of 80 % at 31 ºC [87.8 ºF], decreasing linearly to 50 % relative humidity at 35 ºC [95 ºF] *)
- With mains power where the voltage fluctuations do not exceed 10 % of the nominal value
- Under contamination level 2 conditions
- Under over-voltage category II conditions

*) At between 5 - 30 ºC [41 - 86 ºF], the unit can be operated at a humidity of up to 80 %. At temperatures between 31 - 35 ºC [87.8 - 95 ºF], the humidity must decrease proportionally in order to ensure operational readiness (e.g., at 32 ºC [90 ºF] = 65 % humidity, at 35 ºC [95 ºF] = 50 % humidity). The unit may not be operated at temperatures above 35 ºC [95 ºF].

The following ambient conditions must be observed during storage and transport:

- Ambient temperature of -20 – +60 ºC [-4 – +140 ºF]
- maximum relative humidity 80 %

2.4 Hazard and warning information

2.4.1 General information

- ► **If the unit is not used in accordance with the supplied operating instructions, the intended safety can no longer be guaranteed.**
- ► **The unit may only be operated using a power cord equipped with a plug appropriate to the local power supply. Any necessary modifications must be carried out by a qualified electrician.**
- ► **Only operate the unit if the information on the nameplate corresponds to the specifications of your local mains power supply.**
- ► **The unit may only be plugged into electrical sockets that are connected to the protective conductor system.**
- ► **The power plug must be easily accessible.**
- ► **Disconnect the unit from the mains power supply before carrying out work on the electrical parts.**
- ► **It is the responsibility of the operator to ensure that national regulations are complied with during operation and regarding recurring safety inspection of electrical equipment. In Germany, these are DGUV Regulation 3 in conjunction with VDE 0701-0702.**
- ► **Check connection cables (such as power cords), tubes and housing (such as the key pad) regularly for damage (such as kinks, cracks and porosity) or signs of ageing.**
  Do not operate equipment with damaged connection cables, tubes or housing parts or other defects!
- ► **Defective equipment must be taken out of service immediately. Disconnect the power plug and secure the equipment against further use. Send the equipment in for repair!**
- ► **Only operate the equipment under supervision.**
- ► **Please observe the national accident prevention regulations!**
- ► **Information on REACH and SVHC is available on our website at www.renfert.com, in the Support area.**

2.4.2 Specific information

- ► **Caution: Danger of burns!**
  During operation, high temperatures are present at the lid of the tank and the filler opening, at the upper cover of the unit, at the steam outlet nozzle, and at the service opening on the side.
- ► **If steam is used for extended periods, the handpiece and the steam hose can become extremely hot!**
- ► **In the case of improper use, there is a danger of scalding due to hot steam!**
- ► **Do not open the tank cap or the cap of the service opening while the pressure tank is still pressurized. Danger of scalding due to hot steam or hot water!**
- ► **Place the unit so that there is no risk if steam is discharged from the outlet opening of the overpressure valve (14, Fig. 1).**
- ► **When operating on a base (e.g., a sink), its edge may not be higher than 20 mm (approx. 3/4").**
- ► **The tank cap must be properly closed during operation.**
- ► **POWER steamer 2: Turn off the water supply after work has been completed.**
- ► **Check the sealing of the tank cap and the service cap regularly for damage. Replace damaged sealing.**
- ► **Do not direct the steam at people.**

- ► **Unauthorized persons are not permitted within range of the steam jet. To prevent injuries, be careful with the hot steam.**
- ► **To prevent electrical accidents as well as damage to the unit, steam must never be directed at the unit and liquid must never be allowed to enter the unit.**
- ► **Do not operate the unit with an empty pressure tank. This causes damage to the unit!**
- ► **Do not use chemical additives. Only use water to operate the unit.**
- ► **Steam cleaning units can cause unpleasant levels of noise during operation. Wear personal hearing protection when in the working area.**
- ► **The user is responsible for verifying the cleaning result.**
- ► **When descaling, observe the instructions for use of the descaling solution.**
- ► **Keep away from sources of ignition! Enrichment of hydrogen in the tank when operated with a water softening system with regeneration salt! Rinse weekly.**

2.5 Service life

The maximum service life strongly depends on the conditions of use, in particular on compliance with the prescribed cleaning and maintenance intervals.

2.6 Authorized persons

Operation and maintenance of the equipment may only be performed by trained personnel.

Unauthorized persons, in particular children, are not permitted to use this equipment.

Any repairs not described in these operating instructions may only be performed by a qualified electrician.

2.7 Disclaimer

Renfert GmbH shall be absolved from all claims for damages or warranty if:

- ► **The product is employed for any purposes other than those specified in the operating instructions.**
- ► **The product is altered in any way other than those alterations described in the operating instructions.**
- ► **The product is not repaired by an authorized dealer or if original Renfert spare parts are not used.**
- ► **The product continues to be used despite obvious safety defects or damage.**
- ► **The product is subjected to mechanical impact or is dropped.**
- ► **The prescribed cleaning and maintenance intervals are not observed, or a descaling solution is used that is not approved by Renfert.**

3 Product description

3.1 General description

Water is heated to approx. 155 °C in a pressure tank. This results in a relative vapor pressure of approx. 4.5 bar. The pressure tank is filled either manually or automatically.

The steam is provided via the nozzle through an electrically-activated solenoid valve.

Deposits can be easily removed through the service opening on the side.

Drinking water with water hardness typical for the area is used for operation.

The POWER steamer 2 is additionally equipped with:

- A manometer
- A water connection
- Fill level measurement with a pump and a solenoid valve to automatically fill the pressure tank

Plaster models or investment models can be left to dry on the model tray (2, Fig. 1).

3.2 Assemblies and functional elements

1 Tank cap
2 Model tray
3 ON / OFF button
4 "Tank empty" indicator (red)
5 "Heating / Ready for operation" indicator (orange / green)
6 "Calcification state" indicator (yellow)
7 Handpiece
8 Steam button
9 Handpiece holder
10 ---
11 Manometer (POWER steamer 2 only)
12 Service flap
13 Service cap
14 Overpressure valve - outlet opening
15 Power cord
16 Water connection (POWER steamer 2 only)
17 Service cap tool
18 Water hose (POWER steamer 2 only)

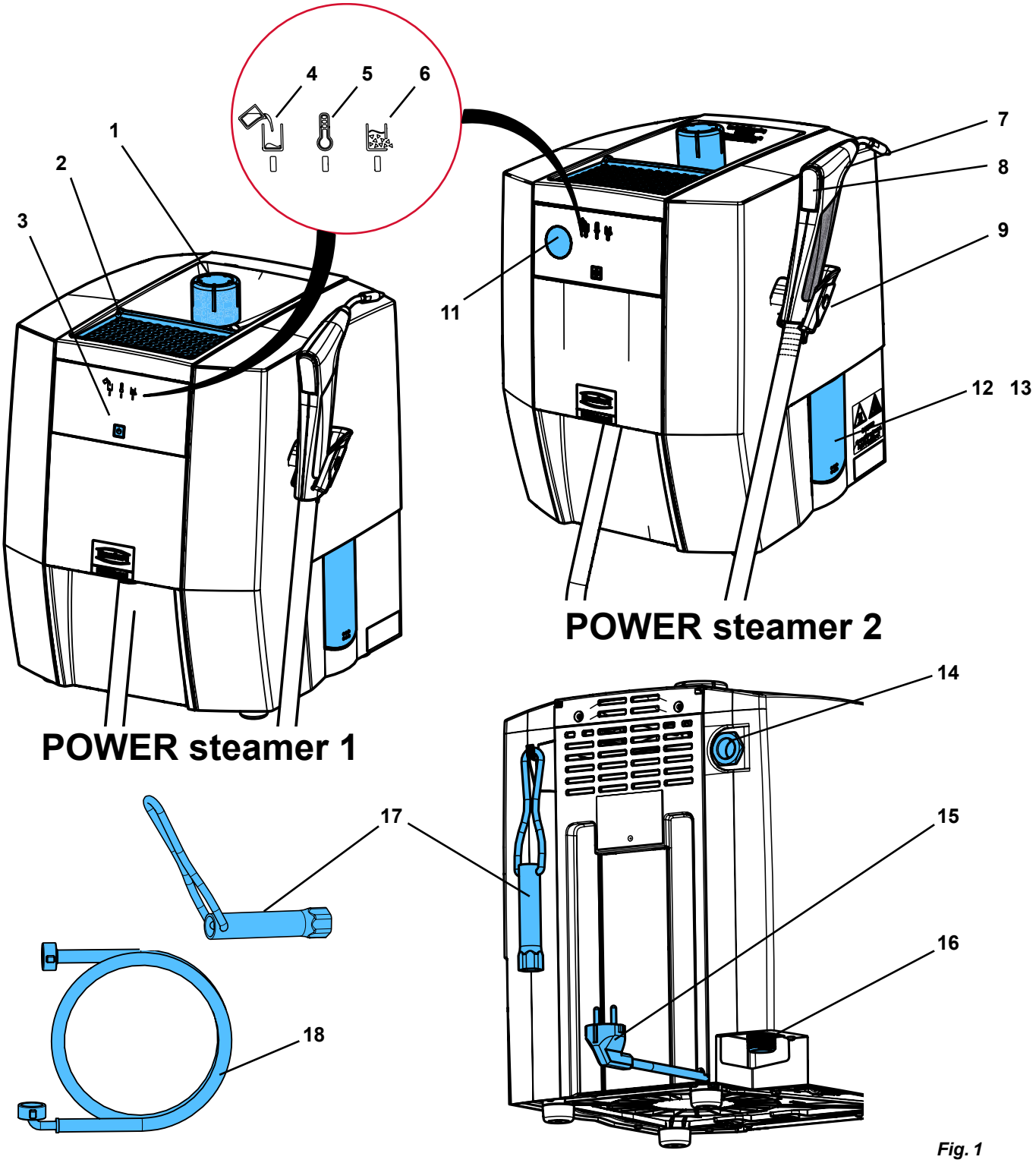

Fig. 1

3.3 Scope of delivery

1 Steam cleaning unit
1 Tank cap
1 Quick Start Guide
1 Service cap tool
1 Cleaning brush
1 Sealing set
1 Water hose (POWER steamer 2 only)
Test strips for determining the water hardness and rinsing intervals (see Chap. 4.5)

3.4 Delivery versions

1845 X000 POWER steamer 1
1846 X000 POWER steamer 2

3.5 Accessories

1845 0200 POWER steamer wall bracket
1845 0100 POWER steamer descaler
1846 0100 POWER steamer water softener

4 Startup

4.1 Unpacking

⇒ Remove the equipment and accessories from the package.

Do not lift the unit using parts that extend outwards, such as the handpiece holder, for example.

⇒ Check the delivery for completeness (compare with the scope of delivery).
⇒ Remove the shipping restraint.
⇒ Screw in the tank cap (1, Fig. 1).

4.2 Setup

⇒ Place the unit on a stable, level work table.
⇒ Do not cover the ventilation slots on the back of the unit.
⇒ To the rear, ensure that there is at least 5 cm of space to the wall.
⇒ Place the unit so that the power plug can be accessed easily.
⇒ For safe storage, hang the tool for the service cap on the hook provided on the back of the housing.

Place the unit so that there is no risk if steam is discharged from the outlet opening of the overpressure valve (14, Fig. 1). For example, do not place the unit in front of an electrical socket.

The outlet opening of the overpressure valve (14, Fig. 1) must not be closed or blocked in any way.

When operating the unit on a base (e.g., a sink), its edge may not be higher than 20 mm (approx. 3/4") to prevent water entering the unit if water collects.

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4.3 Opening / closing the service opening

Opening

Observe the steps:
First loosen the nuts – do not remove them!

Danger due to pressurized steam! Before opening the revision cap, ensure that the pressure tank is no longer pressurized. To do so, open the tank cap (1, Fig. 1) and remove it.

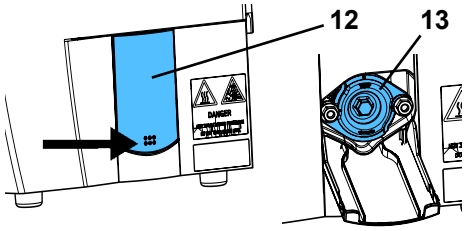

Fig. 2

Reduce the existing pressure if required using the steam outlet function (see Chap. 5.4).

Danger due to hot water!
The water in the pressure tank may still be hot.

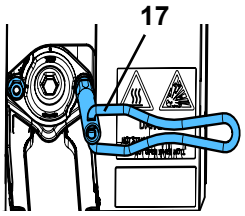

Fig. 3

⇒ Open the service flap (12) by applying pressure to the lower edge of the service flap.

⇒ Loosen both fastening nuts at the service cap (13) by two turns each using the tool provided (17).

⇒ Use the tool to turn the service cap approx. 20° to the left and allow water to drain out through the service flap.

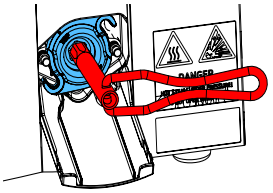
Fig. 4

Once the tank is empty:

⇒ Remove the fastening nuts.

⇒ Turn the service cap to the left until stop and remove it.

Closing

Do NOT lubricate threaded bolts!

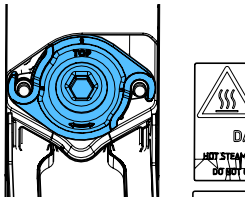
Fig. 5

⇒ Check and clean the sealing in the service cap. Replace if damaged.

⇒ Clean the sealing surface of the pressure tank.

⇒ Place the service cap into position rotated at approx. 45° and turn it to the right until stop.

Note the correct position: TOP = up!

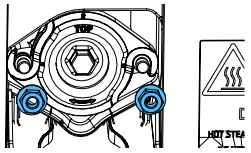
Fig. 6

⇒ Place the fastening nuts into position and turn them by hand until stop.

⇒ Tighten the fastening nuts using a tool until they are finger tight.

⇒ Wipe out the service flap.

⇒ Lift up the service flap and close by pressing the upper corners.

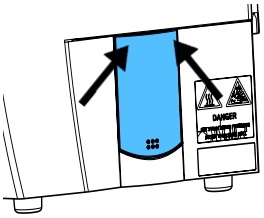
Fig. 7

4.4 Rinsing the unit

Due to the manufacturing process, release agents or other foreign substances may still be in the pressure tank.

These substances can initially cause odors during operation. This decreases over time.

It is also recommended to rinse the unit before operating it for the first time.

⇒ Place the unit so that water can flow from the service opening (12/13, Fig. 1) into a sink.

⇒ Open the service opening (see Chap. 4.3).

⇒ Pour 3 - 4 l of water into the tank cap opening and allow it to drain out through the service opening.

⇒ Close the service opening (see Chap. 4.3).

4.5 Water quality / rinsing intervals

The unit is only suitable for operation with drinking water. Water that does not comply with drinking water regulations is not permitted as it may contain substances that damage the unit.

The chlorine concentration must not exceed 4 mg/l.

Before startup, determine the water hardness and calculate the resulting rinsing intervals. Test strips for determining water hardness are part of the scope of delivery.

Weekly rinsing is mandatory if a salt-based softening system is used, regardless of the water hardness measured.
Water from a softening system results in water with a high pH value in the tank. This can corrode the tank and may result in total failure of the unit.

When using a softening system, ensure that no regeneration water with a high concentration of salt/brine or acid enters the unit.

The following rinsing intervals must be observed depending on the hardness of the water:

Test strips					
German degrees (°dH) / degree of General Hardness (dGH)	< 3	> 4	> 7	> 14	> 21
English degrees (Clark degrees) (°e)	< 3.75	> 5	> 8.75	> 17.5	> 26.25
French degrees (°fH)	< 5.4	> 7.2	> 12.6	> 25.2	> 37.8
Parts per million (ppm $CaCO_3$)	< 53.4	> 71.2	> 125	> 249	> 374
Rinsing interval	8 weeks	6 weeks	4 weeks	2 weeks	Weekly

In the case of continuous operation with drinking water, dirt collects in the pressure tank as well as calcium deposits as a result of the hardness of the water. These either form as a crust on the walls of the pressure tank or pieces of crust break off and settle at the bottom of the tank.

When a (salt-based) softening system is used, exchanging calcium and magnesium for sodium also forms a sort of sludge in the water in combination with other suspended solids that can contaminate the pressure tank.

Both reduce the effectiveness of the heating and are detected by a calcification indicator.

Sludge and calcium deposits that have broken off must be removed by rinsing regularly. This can prevent or at least delay the formation of a hard calcium crust that can only be removed using chemical descaling.

With the POWER steamer 2, Renfert recommends using the POWER steamer water softener (see accessories) to reduce water hardness.

4.6 Water connection - POWER steamer 2

Risk of brackish water flowing back into the water supply! To protect drinking water against non-drinking water, a system separator must be installed between the building water connection and the steam cleaning unit. The operator is responsible for implementing these measures.

Observe the minimum and maximum connection pressure (see Chap. 8. Technical data).

Risk of water damage due to possible loosening of the water hose!
After operation, or when the unit is unattended, turn off the water supply at the water shut-off valve.

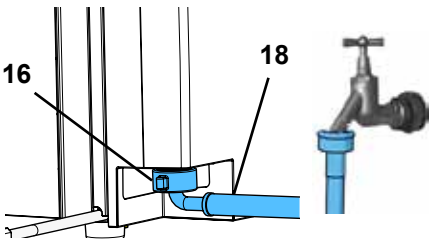

Fig. 8

⇒ Check that the connections are fitted with gaskets.

⇒ Connect the angled connection of the water hose (18) to the water connection (16).

⇒ Connect the straight connection of the water hose to the water supply with the water shut-off valve.

⇒ Carefully open the water shut-off valve and check the leak-tightness of the connections.

So that fill level measurement operates correctly, the water must support conductivity. This is generally the case with tap water and drinking water.

When operating with a water supply that uses distilled water, a coffee spoon of salt (table salt), approx. 10 g, must be added to the pressure tank on startup (once only!). To do so, dissolve the salt in a glass of water and pour into the filler opening.

The salt is only removed when rinsing or descaling the unit.
That is why it must be added every time after rinsing or descaling the unit.

4.7 Filling the pressure tank

⇒ Unscrew the tank cap (1).

⇒ Using a container, fill the pressure tank slowly with drinking water. The funnel-shaped upper housing makes filling with water easier.

⇒ Only fill with the required quantity in accordance with the recommended fill quantity.

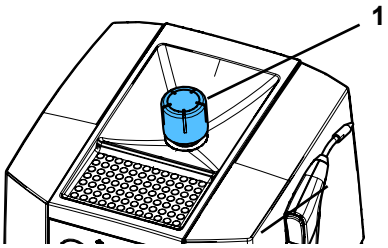

Fig. 9

Recommended fill quantity, see Chap. "8. Technical data". If the jet of steam pulsates, this indicates that the pressure tank has been overfilled.

Danger of scalding!
Excess water remains in the funnel-shaped upper housing.
This must be removed before operation.

⇒ Wipe off / remove excess water in the funnel-shaped upper housing.

⇒ Screw in the tank cap and tighten until it is finger tight.

The POWER steamer 1 can be operated using both drinking water and distilled or deionized water.

If the unit is a POWER steamer 2, and if it was connected to the water supply, it fills automatically after it is switched on (see Chap. 5.1.1).

4.8 Electrical connection

Before making the electrical connection, check that the voltage indicated on the nameplate matches the local voltage supply.

⇒ Insert the power plug into a building electrical socket.

♦ After plugging in, a system check is performed during which the unit cannot yet be switched on. Wait approx. 5 seconds before pressing the ON / OFF button.

5 Operation

5.1 Switching on / off

Switching on:

⇒ Check that the pressure tank is full. Refill with water if required or turn on the water supply in the case of POWER steamer 2.

⇒ Switch on the unit by pressing the ON / OFF button (3).

♦ The "Heating / Ready for operation" indicator (5) lights up in orange, the unit heats up.

♦ POWER steamer 2: The tank fills automatically (see 5.1.1)

♦ The water is heated using the integrated heating until the working pressure has been reached.

♦ Once the working pressure has been reached, the "Heating / Ready for operation" indicator (5) lights up in green.

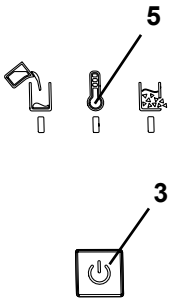

Fig. 10

As a result of filling, the thread of the tank cap contains water.
This audibly turns to steam during heating.

How long it takes for the unit to heat up also depends on the mains voltage applied. If the unit is cold and filled with 3 l of cold water, it could take between 20 and 40 minutes.

Switching off:

⇒ Briefly press the ON / OFF button

♦ The heating is switched off.

♦ All indicators are switched off.

⇒ POWER steamer 2: Turn off the water supply.

5.1.1 POWER steamer 2:

In the case of the POWER steamer 2, the pressure tank is automatically filled to the fill level probe if necessary, after the unit is switched on.

Depending on the available water pressure, filling is carried out in several stages.

The unit detects if the water supply is turned off (no water pressure or water pressure is insufficient) and the pump is not switched on.

After approx. 10 seconds, another check is performed to see if water pressure is available. If this is the case, the pressure tank is now filled automatically.

If there is still no water pressure, it is assumed that the unit is not connected to a water supply and the fill level measurement and automatic filling are deactivated.

This can be reactivated by switching on / off.

5.2 Steam cleaning

⇒ Wait until the working pressure has been reached, the "Heating / Ready for operation" indicator (5, Fig. 1) lights up in green.

⇒ Remove the handpiece from the handpiece holder.

⇒ Hold the steam nozzle in the sink and drain the condensate from the steam hose by briefly pressing the steam button (8).

⇒ Steam cleaning objects

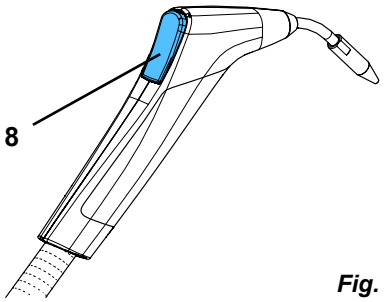

Fig. 11

Wear appropriate personal protective equipment when steam cleaning!

Observe the following when steam cleaning:

- **Always check that the item to be cleaned is suitable for steam cleaning.**
- **Hold the item in the steam area at least 2 cm away from the nozzle. At frequent intervals, check the cleaning progress (visual check) as well as any adverse effects on the sensitive surfaces of the item being cleaned.**
- **The user is responsible for verifying the cleaning result.**

After work has been completed:

⇒ Place the handpiece back in the handpiece holder.

During reheating, the "Heating / Ready for operation" indicator (5, Fig. 1) lights up in orange. Steam can continue to be released.

The "Tank empty" indicator (4, Fig. 1) signals an empty pressure tank. To fill with water see Chap. 5.3.

Do not dip the handpiece in water!
Danger of scalding due to steam or hot water escaping
Water that has entered the handpiece from outside can become extremely hot or turn to steam.

If steam is used for extended periods, the handpiece and the steam hose can become extremely hot!

5.3 Tank is empty - refill with water

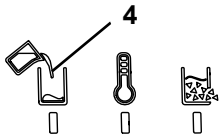

Fig. 12

If there is no longer any water in the pressure tank, this is detected.

- ♦ "Tank empty" indicator (4) lights up in red.
- ♦ A short warning signal sounds.
- ♦ The heating is switched off.

5.3.1 POWER steamer 1

Danger of scalding due to steam escaping when opening the tank cap and when filling! Only open the tank cap when there is no longer any pressure.
When filling, do not bend over the filler opening of the pressure tank!

If the tank cap cannot be easily opened, there is still pressure. Do not force open the tank cap. Release pressure by pressing the steam button.

⇒ Release all of the residual pressure by pressing the steam button or using the steam outlet function (see Chap. 5.4).

⇒ Do not switch off the unit.

⇒ Open the tank cap carefully (1, Fig. 1) and remove it.

⇒ Allow the unit to cool down for at least 45 minutes to prevent hot water spraying out when filling.

⇒ Using a container, fill the pressure tank slowly with water through the funnel-shaped upper housing. Very slowly to begin with!

⇒ Wipe off / remove excess water in the funnel-shaped upper housing.

Recommended fill quantity, see Chap. 8 Technical data.
If the jet of steam pulsates, this indicates that the pressure tank has been overfilled.

Danger of scalding!
Excess water remains in the funnel-shaped upper housing.
This must be removed before operation.

⇒ Screw in the tank cap and tighten until it is finger tight.

⇒ Confirm filling by pressing the ON / OFF button (3, Fig. 1).

- ♦ The "Heating / Ready for operation" indicator (5, Fig. 1) lights up in orange, the unit heats up.
- ♦ The water is heated using the integrated heating until the working pressure has been reached.
- ♦ Once the working pressure has been reached, the "Heating / Ready for operation" indicator (5) lights up in green.

The unit only reheats if it has cooled down sufficiently beforehand. If this is not the case, e.g., because too little water was refilled, the "Heating / Ready for operation" indicator flashes orange and heating is not yet activated.
Once the temperature has dropped sufficiently, the heating is automatically switched on and the "Heating / Ready for operation" indicator lights up permanently in orange.
If required, the unit can be switched off in this mode ("Heating / Ready for operation" indicator flashes orange) by pressing the ON / OFF button.

5.3.2 POWER steamer 2

If the POWER steamer 2 is connected to a water supply that is turned on, the loss of water as a result of the steam is automatically compensated for.

There are no waiting times as a result of the required cooling phases as is the case when filling manually.

If a POWER steamer 2 is not connected to a water supply, it operates like a POWER steamer 1 and must be handled in the same way.

5.4 Releasing pressure - steam outlet

In order to refill with water before the "Tank empty" indicator (4, Fig. 1) signals this, or in order to perform cleaning or maintenance work, the existing pressure must be released, before the tank cap or service cap may be opened.

This may take some time, depending on the amount of water still remaining in the tank.

With the steam outlet function, the heating is switched off and the pressure released via the handpiece without the need to keep the steam button held down.

5.4.1 Activating the steam outlet function:

⇒ Remove the handpiece from the handpiece holder.

⇒ Press the steam button (8) and hold down.

⇒ Briefly press the ON / OFF button (3).

- ♦ The "Heating / Ready for operation" indicator (5) flashes green.
- ♦ The solenoid valve is opened, and steam is released through the steam nozzle.
- ♦ The heating is switched off.

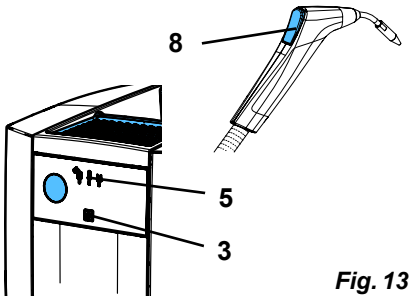

Fig. 13

⇒ The steam button can be released.

⇒ Hold the handpiece in your hand or place it aside in a safe place so that the steam can escape without any risk (e.g., in a sink).

⚠ **If steam is used for extended periods, the handpiece and the steam hose can become extremely hot!**

ℹ ***The unit's steam outlet function remains active until it is switched off by pressing the steam button or the ON / OFF button.***

5.4.2 Switching off the steam outlet function:

⚠ **Wait until the pressure has been fully released before switching off the steam outlet function.**

⇒ Briefly press the steam button or the ON / OFF button.

- ♦ The solenoid valve is closed.
- ♦ The "Heating / Ready for operation" indicator (5, Fig. 12) is off.
- ♦ The unit is OFF.

⇒ Open the tank cap.

⇒ Allow the unit to cool down before further cleaning or maintenance work.

⚠ **Once the steam outlet function has been switched off, open the tank cap to prevent pressure building again in the pressure tank due to residual heat.**

5.5 Calcification indicator

In the case of continuous operation with drinking water, dirt collects in the pressure tank as well as calcium deposits as a result of the hardness of the water. These either form as a crust on the walls of the pressure tank or pieces of crust break off and settle at the bottom of the tank.

This reduces the energy efficiency of the heating.

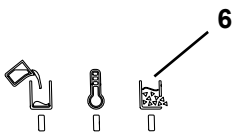

Fig. 14

ℹ ***In a salt-based softening system, calcium and magnesium are exchanged for sodium in an ion exchanger. The sodium bonds do not form on the walls of the pressure tank, however they do remain, for the most part, in the pressure tank.***
Here they form a sort of sludge in the water in combination with other suspended solids, which contaminates the pressure tank and is also detected by the calcification indicator.
That's why the calcification indicator is also activated when a softening system is used.
In this case, the pressure tank must be rinsed thoroughly, see Chap. 6.3.

The control detects the increasing calcification in the pressure tank. If the calcification exceeds a predefined level, this is signaled as follows:

- ♦ An acoustic signal sounds.
- ♦ The "Calcification state" indicator (6) flashes.

⇒ Rinse / descale the pressure tank at the next opportunity, for example at the end of the week (see Chap. 6.3 / 6.4).

The calcification level is not saved. Instead, it is determined again every time the unit is switched on and heated up.

ℹ ***How quickly a pressure tank becomes calcified and how this affects the energy efficiency of the heating system depends on a variety of parameters, not all of which can be taken into consideration by the calcification indicator.***
For this reason, descaling must be carried out every three months at the latest regardless of the calcification indicator.

5.6 Replacing the handpiece holder

The handpiece holder (9, Fig. 1) is mounted on the right side of the housing on delivery.

It can be mounted to the left side of the housing if required.

To modify:

⇒ Carry out the modification on a unit that has cooled down and has been depressurized.

⇒ Disconnect the unit from the mains power supply, unplug the power cord.

⇒ Remove the handpiece from the handpiece holder and place to one side.

⇒ Squeeze the cradle (50) together slightly and pull forwards and outwards.

⇒ Loosen the screw in the base of the holder (51) and remove the holder base (TX20 screwdriver).

⇒ Remove the cover cap (52) on the left side of the housing.

⇒ Screw the holder base onto the left side of the housing.

⇒ Insert the cradle into the holder base (click into place).

⇒ Close the opening on the right side of the housing with the cover cap.

⇒ Place the handpiece in the handpiece holder

⇒ Start the unit again.

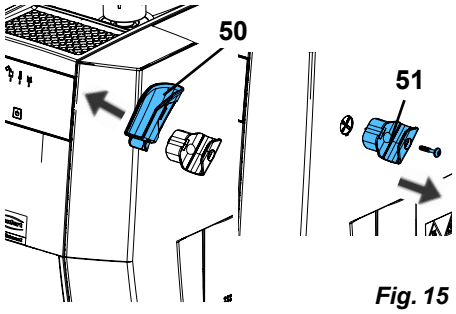

Fig. 15

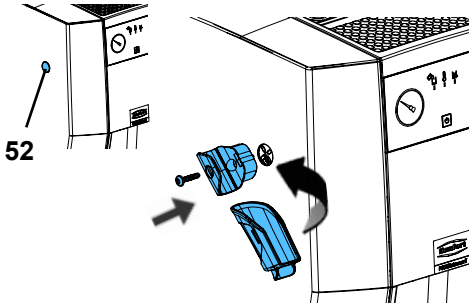

Fig. 16

6 Cleaning / Maintenance

The unit does not contain any internal parts that require maintenance.
Opening the unit is not permitted other than as described below!

Danger of burns!
Only carry out cleaning and maintenance work if the unit has cooled down and has been depressurized!

In the case of cleaning/maintenance work while the service cap is open (13, Fig. 1), always place the unit so that water that flows out is collected. For example, place next to a sink.

Document the maintenance work carried out in the maintenance plan provided separately. This will be requested in the case of a warranty claim and is part of the evaluation.
A maintenance plan is available online at www.renfert.com/p918.
Enter the following item number: 18450000 or 18460000 and select "Downloads".

6.1 Cleaning

Do not steam clean the unit under any circumstances.

To clean the unit, only wipe the outside with a damp cloth.

Do not use any solvent-based or abrasive cleaning agents.

6.2 Cleaning and maintenance intervals

The following cleaning and maintenance intervals must be observed:

► **Rinsing (see Chap. 6.3):**
- Weekly if using a salt-based softening system
- In all other cases: As specified in the table in chapter 4.5

► **Descaling (see Chap. 6.4):**
- Immediately when signaled by the calcification indicator
- Every 3 months at the latest

► **Overpressure valve (see Chap. 6.6):**
- Annually

6.3 Rinsing the pressure tank

The unit must be rinsed at least in accordance with the intervals determined in Chap. 4.5.

Danger of scalding due to hot water!
The water in the pressure tank may still be very hot. Be careful when draining the water through the service opening.

Caution: Danger of chemical burns!
The residual water can be strongly alkaline (brine).
Wear protective goggles and protective gloves during rinsing!

Proceed as follows to rinse the pressure tank:

⇒ Release pressure, see Chap. 5.4.

⇒ Disconnect the unit from the mains power supply.

⇒ Open the tank cap carefully (1, Fig. 1) and remove it.

⇒ Allow the unit to cool down.

⇒ Place the unit so that water can flow from the pressure tank through the service opening (12) into a sink.

⇒ Open the service opening (see Chap. 4.3).

⇒ Drain the water completely through the service flap.

⇒ Clean the bottom of the pressure tank as far as possible using the cleaning brush (see scope of delivery).

⇒ In doing so, fill with water using the tank cap opening and allow it to drain out through the service opening so that loose calcium residue is rinsed out.

⇒ Repeat the procedure until sufficient cleaning has been achieved.

⇒ If residual calcium deposits are still attached inside the pressure tank after cleaning by rinsing and using a brush (visual check by looking through the service opening; if required shine a flashlight in the tank cap opening in the pressure tank), de-scaling is recommended (see Chap. 6.4).

⇒ Close the service opening (see Chap. 4.3).

6.3.1 Rinsing program - POWER steamer 2 only

In the case of the POWER steamer 2, the integrated pump and the water supply can be used to automate rinsing.

To do this:

⇒ The unit is installed as described in Chap. 6.3 and the service opening is open.

⇒ The unit is connected to a water supply, which is on.

⇒ Insert the power plug into a building electrical socket.

⇒ Hold down the ON / OFF button (3, Fig. 1) for 5 seconds until the "Heating / Ready for operation" indicator flashes (flashing quickly).

⇒ Release the ON/ OFF button.

- ♦ Three rinsing cycles are now performed during which water is pumped for approx. 10 seconds in each case. The water drains again through the service opening with a pause of approx. 5 seconds between each rinsing cycle.
- ♦ The unit is switched off again after the last rinsing cycle.

The rinsing program can be canceled at any time by briefly pressing the ON / OFF button or the steam button.

⇒ Remove loose deposits during rinsing using a brush.

⇒ Repeat the rinsing cycle until sufficient cleaning has been achieved.

⇒ Close the service opening (see Chap. 4.3).

6.3.2 Restore conductivity - POWER steamer 2 only

When operating with a water supply that uses distilled water, the salt added on startup must be supplemented again. To do so, dissolve a coffee spoon of salt (table salt) in a glass of water and pour into the filler opening.

The salt is only removed when rinsing or descaling the unit.
That is why it must be added every time after rinsing or descaling the unit.

6.4 Descaling

Caution: The descaling solution is corrosive!
Wear protective goggles and protective gloves during descaling!
In the event of skin contact, rinse immediately with water. Observe the safety data sheet.

Caution: The descaling solution „Renfert POWER steamer descaler“ is a concentrate. Use only in diluted form as described below. Use without dilution will damage the device.

Remove cleaning liquid residue from work surfaces immediately with a damp cloth and rub dry with a dry cloth.

Only use the Renfert descaling solution "Renfert POWER steamer descale" for descaling as it provides corrosion protection for the pressure tank.

Do not use citric acid for descaling. If filling while warm (residual heat or residue when heating), citrate powder is formed that clogs the pipes and equipment, causing failure of the unit.

Descaling solutions that are not authorized could damage the pressure tank and mechanical components, quickly causing complete failure.
The warranty is voided if a descaling solution is used that is not approved.

Only perform descaling if the pressure tank has completely cooled down.
Do not operate the unit during descaling. This could cause dissolved particles of calcium deposit to enter the pipes and equipment, e.g., the solenoid valve, and lead to failure of the unit.

Regular removal of sludge and loose calcium deposits by rinsing reduces the need to use chemicals. However, it is not possible to entirely prevent a layer of calcium from forming.

If the unit detects calcification despite rinsing or shortly after rinsing (see Chap. 5.5), the pressure tank should be de-scaled as soon as possible.

⇒ Disconnect the unit from the mains power supply and allow it to cool down.

⇒ Rinse the pressure tank with water and using a cleaning brush until the water runs clear and/or no further large pieces of calcification crust are discharged from the service opening (see Chap. 6.3).

⇒ Close the service opening (see Chap. 4.3).

⇒ Fill the water tank with 1 l of water.

⇒ Then fill with 1 l of Renfert descaling solution.

Caution: Danger of chemical burns due to descaling solution spraying out.
Depending on the existing amount of calcium deposits, a strong chemical reaction can occur causing bubbles and foam to develop.
This can cause the descaling solution to spray out.
Do not refill more than the specified quantity of water.

⇒ After approx. 15 minutes, slowly fill the unit with a further 0.6 - 0.8 liters of water. If foam develops, only continue to fill after the foam has subsided.

⇒ Allow the descaling solution to soak in.

Recommended exposure time: 2 - 4 hours

⇒ After the exposure time has come to an end: carefully open the service opening and drain the descaling solution.

If the resulting descaling is not sufficient, repeat the procedure.

⇒ Rinse the pressure tank several times with water and brush out using the cleaning brush until the water runs clear and/or no further large pieces of calcification crust are discharged from the service opening (see Chap. 6.3).

If the resulting descaling is not sufficient, repeat the procedure.

⇒ Close the service opening again (see Chap. 4.3).
⇒ If required, restore conductivity (see Chap. 6.3.2.

6.5 Replacing the seal of the service cap

The seal of the service cap (13, Fig. 1) is a wear part and available as a spare part (see Chap. 6.9).

When replacing the seal, do not use any sharp or pointed objects and ensure that the new seal is seated correctly.

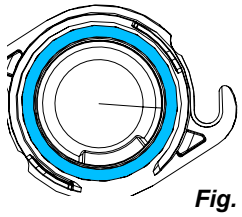

Fig. 17

6.6 Checking the overpressure valve

Calcification can cause the safety valve to fail. The correct function of the safety valve must be checked once a year by an approved specialist company.

Access to the safety valve:

⇒ Release pressure and switch off.

⇒ Allow it to cool down.

⇒ Disconnect the power plug.

⇒ Remove 4 screws on the back (Fig. 18), pull the back downwards and remove it.

Danger of burns! Hot steam!
When the unit is under pressure, hot steam escapes when the knob on the safety valve is turned.

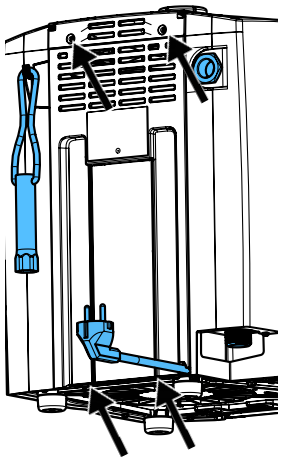

Fig. 18

6.7 Taking the unit out of service for longer periods

If the steam cleaning unit is not used for an extended period of time, e.g., during company vacation periods, the following measures should be taken:

⇒ Empty the tank and leave the unit with both the tank cap and the service opening open.

When restarting after a long pause, the unit should be rinsed (see Chap. 4.4).

6.8 Replacing the solenoid valve

The installation instructions for exchanging the solenoid valve are included with the spare part.

Before replacement:

- ► **Release pressure and switch off.**
- ► **Allow it to cool down.**
- ► **Disconnect the power plug.**

6.9 Spare parts

You can find components subject to wear and the spare parts on the spare part list in the internet at www.renfert.com/p918

Enter the following item number: 18450000 or 18460000.

The components excluded from the warranty (wear parts, consumables) are marked in the spare parts list.

The serial number, date of manufacturing and equipment version are shown on the nameplate of the equipment.

7 Troubleshooting

Errors	Cause	Corrective action
No response when the ON / OFF button is pressed	• The unit is not connected to the power supply.	• Insert the power plug into a building electrical socket.
POWER steamer 2: No automatic filling. Red indicator flashes 2 x.	• Unit not connected to the water supply, or the water supply is not on.	• Connect the unit to the water supply and turn on the water supply before switching on the unit.
	• Water pressure too low.	• Minimum required water pressure, see tech. data.
	• Water supply turned on too late after switching on.	• Turn on the water supply. • Switch the unit off then on again.
	• Sieve in the water connection (16, Fig. 1) blocked.	• Unscrew the water hose, remove and clean the sieve.
	• The water supply provides distilled or deionized water, the conductivity of which is too low.	• Add a coffee spoon of salt, approx. 10 g, to the pressure tank to increase the level of conductivity.
	• Automatic filling is faulty.	• Contact the repair service or send the unit in for repair.

Errors	Cause	Corrective action
"Tank empty" indicator (4, Fig. 1) lights up in red although water is still in the tank.	• Calcium deposits have collected in the pressure tank or too much sludge has collected. • The calcification indicator was ignored.	• Rinse / de-scale the pressure tank (see Chap. 6.3 and 6.4).
Steam is discharged even after the steam button has been released.	• The solenoid valve is jammed due to particles of dirt.	• Remove the cover in the middle and tap the solenoid valve, for example using the handle of a screwdriver.
Tank cap cannot be opened.	• The pressure tank is still pressurized.	• Do not force open the tank cap! • Release all the pressure, e.g., using the steam outlet function (see Chap. 5.4), or if the tank is empty (red indicator is on) by pressing the steam button.
POWER steamer 2: When a unit is cold, the manometer indicates vacuum pressure.	• The vapor pressure of the water at room temperature is lower than that of air.	• No action required. • Switch on the unit and briefly press the steam button. Pressure compensation is achieved by opening the solenoid valve.
Calcium deposits in the funnel-shaped upper housing.	• Excess water was not removed after filling.	• Wipe off calcium deposits. • Always remove excess water after filling.
POWER steamer 2: After switching on, the pump runs several times to fill the pressure tank.	• The inlet pressure is so low that the container cannot be filled in the permitted maximum pump run time.	• No action required.
Pulsating steam jet.	• Simmering water is drawn into the steam outlet opening because the pressure tank has been filled to the maximum.	• This behavior resolves itself after working for a short time. • Only fill the unit with the recommended quantity of water.

7.1 Flashing sequences

The indicators
- "Tank empty" indicator (red) (4)
- "Heating / Ready for operation" indicator (orange / green) (5)
- "Calcification state" indicator (yellow) (6)

show different operating and error states.

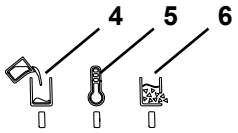

Fig. 19

Color (indicator)	Behavior	Meaning
Red (4)	On	Tank empty
Red (4)	Flashing	If the unit is switched off: The temperature of the pressure tank is still above 80°C.
Orange (5)	On	Heating / reheating
Orange (5)	Flashing	Waiting for cooling with new water before reheating.
Green (5)	On	Working pressure reached.
Green (5)	Flashing slowly	Steam outlet function activated.
Green (5)	Flashing quickly	Rinsing in progress (POWER steamer 2 only).
Yellow (6)	Flashing	Calcification limit reached.
Red (4)	Flashing 2x (*)	POWER steamer 2 only: During operation, the mains water connection no longer has any water pressure.

(*): Flashing is repeated for the specified number of times after approx. 3 seconds.

Additional flashing of the red LED indicates error states that the user cannot resolve.

8 Technical data

	POWER steamer 1			POWER steamer 2		
Item no.	**1845 0000**	**1845 1000**	**1845 2000**	**1846 0000**	**1846 1000**	**1846 2000**
Nominal voltage / V	**230**	**120**	**100**	**230**	**120**	**100**
Permissible mains voltage / V:	220 - 240	120	100	220 - 240	120	100
Mains frequency / Hz:	50 / 60					
Power consumption / W:	2000	1550	1280	2000	1550	1280
Pressure tank volume / l [US gal.]:	4 [1.06]					
Recommended fill quantity / l [US gal.]:	2.8 [0.74]					
Maximum fill quantity / l [US gal.]:	3 [0.79]					
Working pressure / kPa / bar [psi]:	450 / 4.5 [65.3]					
Sound pressure level (Lpa) / dB(A):	80,9					
Sound power level (LWA) / dB(A):	93,5					
Water connection:	n.a.			¾"		
Water connection pressure: min. / kPa / bar [psi]: max. / kPa / bar [psi]:	 n.a. n.a.			 100 / 1 [14.5] 500 / 5 [72.5]		
Dimensions: (width x height x depth) / mm [inch]:	370 x 422 x 350 [14.6 x 16.6 x 13.8]					
Weight (empty) / kg [lbs]:	9.5 [20.9]			10.1 [22.3]		

9 Guarantee

Renfert offers a **3-year guarantee** on all parts of the equipment, provided that the equipment is properly used. Warranty claims may only be made upon presentation of the original sales receipt from the authorized dealer.

Parts which are subject to natural wear and tear (wear parts) and consumables are excluded from the warranty. These parts are marked in the spare parts list.

The warranty is voided in the case of improper use; failure to observe the operating, cleaning, maintenance, and connection instructions; in the case of independent repairs or repairs that are not carried out by an authorized dealer; if spare parts from other manufacturers are used, or in the case of unusual influences or influences not in compliance with the utilization instructions.

Guarantee services do not extend the guarantee period.

Special conditions for POWER steamer 1 & 2:

The warranty is voided if the cleaning and maintenance intervals are not observed and if descaling solutions are used that are not approved.

Warranty claims may only be made upon presentation of the original sales receipt for the descaling solution used.

Document the maintenance work carried out in the maintenance plan provided separately. This will be requested in the case of a warranty claim and is part of the evaluation.

10 Disposal information

10.1 Disposing of consumables

10.2 Disposing of the equipment

The equipment must be disposed of by a specialist facility. The specialist facility must be informed of any residue in the equipment that is harmful to health.

10.2.1 Disposal information for countries in the EU

To conserve and protect the environment, prevent environmental pollution, and improve the recycling of raw materials, the European Commission has adopted a directive that requires the manufacturer to accept the return of electrical and electronic equipment for proper disposal or recycling.

For this reason, equipment with this symbol may not be disposed of in unsorted domestic waste within the European Union.

Please contact your local authorities for more information on proper disposal.