

# Water Softener **Wasi-Clean**

For the Steam Cleaner Wasi-Steam 2



USER MANUAL


**Dear customer,**

Thank you for choosing a product from the Wassermann range. Wassermann Dental-Maschinen incorporates the highest standards of quality and the latest technology. In order to enjoy maximum performance and years of trouble-free operation, please read this user manual carefully before you connect this device and start work, and operate the device according to the recommended guidelines. The operation safety and the functionality of this device can only be guaranteed if you follow both the general safety guidelines and the applying laws to prevent accidents as well as the precautions given in this user manual. We are not liable for any damages which occur due to inappropriate usage or faulty operation of this device.



Make sure that anyone using this device has read and understood this user manual.

Keep this user manual in a safe place where it can be referred to as required at any time.

 The unit complies with the relevant EC guidelines.

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## 1 Features

**Item no. 174995**

**Wasi-Clean** Water Softener for the Steam Cleaner Wasi-Steam 2

- Recommended for the Steam Cleaner Wasi-Steam 2.
- Water softener for descaling water by removing the calcium salts contained in it.



**The cation resins contained in the Wasi-Clean are required for the unit's principle of operation, so please do not remove them.**

**Regular regeneration is crucial for the life and performance of the cation resins. The regeneration process is described in more detail on page 10. It is recommended to replace the resins after seven years of use.**

## 2 Safety Symbols used in this Manual



### **Warning!**

This is a warning of risk situations and dangers.

Failure to observe this warning could be life-threatening. These warnings has to be observed.



### **Information!**

This symbol draws your attention to specific features that has to be observed.

### 3 Safety Guidelines

Configuring and operating this equipment requires **precise knowledge** and **observance** of the instructions in this **user manual**. The equipment is designed only for its intended application.



#### **WARNING:**

Service and repairs should be carried out only by authorised specialists.  
Disconnect the power plug before starting any maintenance work.

### 4 Responsibility for Operation or Damage

The responsibility for operating the device lies exclusively with the owner or user if said device is incorrectly serviced, maintained or altered by persons not employed by an authorised dealer or if the device is used in a manner contrary to its specified purpose.

The unit has to be maintained and operated in accordance with this user manual.

Wassermann Dental-Maschinen GmbH is not responsible for damage arising from the **nonobservance** of these instructions.

Warranty and responsibility provisions contained in the sales and supply conditions of Wassermann Dental-Maschinen GmbH are not extended by these instructions.

### 5 Application

The Wasi-Clean contains cation resin. The water passing through the cation resin deposits calcium salts there and is thereby descaled.

The length of time for which the resin releases sodium ions — indispensable for softening water — is determined by the water flow rate and the water consumption. Manual regeneration is therefore required as soon as the free sodium ions have been used up. When water and table salt flow through the exhausted resin, it is returned to its original active state.

Only use the device for this type of application.

## 6 Before Starting

### 6.1 Transport

Before transporting the unit, ensure that it has been unplugged from the power socket. Make sure that it is packed correctly in order to avoid accidental damage.



Be sure to check for any transport damage when unpacking the goods. Note down any damage if found.

### 6.2 Installation

Open the box, remove the packing materials, and carefully lift out the device and accessories. Check the included accessories.

The device has to stand horizontally on a steady and even surface.



Install the device in a place where it will not block the working area and the functionality (take the dimensions into account).

**Please position the water softener in such a way that salt can easily be added during the later regeneration process.**



Do not install the unit outdoors.

**The room temperature has to be between 0 - 49 °C.**

### 6.3 Storage

The unit location is very important when it comes to workplace safety, even if it is only to be set up there for a short period. The room should be dry, well ventilated and vibration-free. An even temperature and wooden supports also help. The unit should not be stored or set up outdoors. If the unit is to be stored for an extended period, protect it from moisture and dust.

## 7 Installation/ Start-up

The Wasi-Clean Water Softener is supplied ready to use.

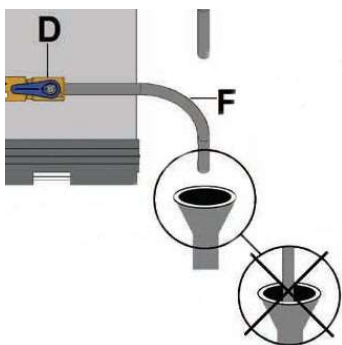
No regeneration is required on installation; the cation resin contained in the Wasi-Clean is supplied in its original active state.

The rinsing of the resin described in 8.4 has already been performed in the factory.

### 7.1 Water Connection

- A stopcock must be installed when connecting to the on-site water supply as the Wasi-Clean has to be disconnected from the mains when the cation resin is replaced (see Section 8.3 of this user manual).
- The Wasi-Clean must be installed using the connection material contained in the scope of delivery. The pre-assembled hoses and connecting pieces supplied with the unit guarantee that there will be a sufficient flow of water and that the unit connected will therefore work perfectly.

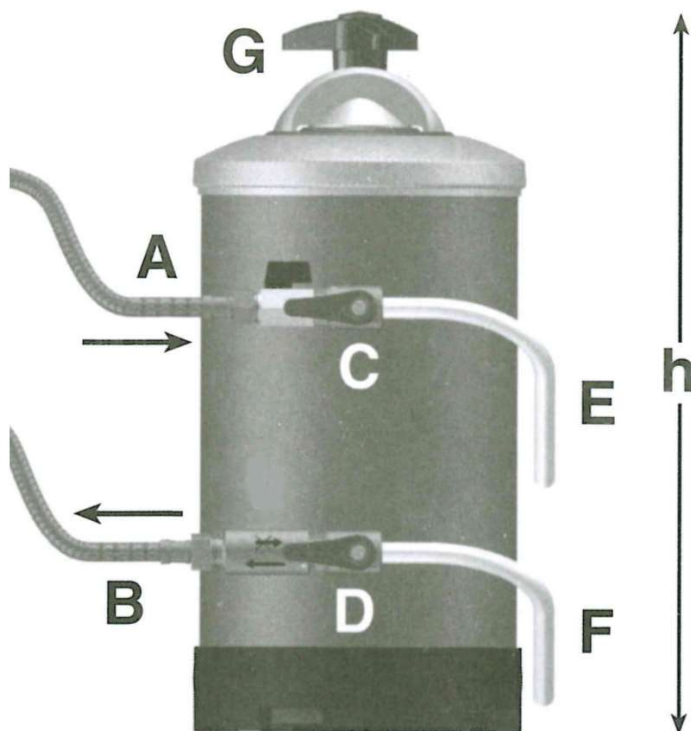
### 7.2 Connection to the Sewage System during Regeneration



- The outflowing water during regeneration must be directed to a drain.

**The drainage line (transparent water hose contained in scope of delivery) may not be immersed in the water!**

### 7.3 Installation Drawing



- A** Water inlet pipe
- B** Water outlet pipe
- C** Water inlet tap
- D** Water outlet tap
- E** Depressurisation pipe
- F** Regeneration pipe
- G** Tank lid

## 8 Operation

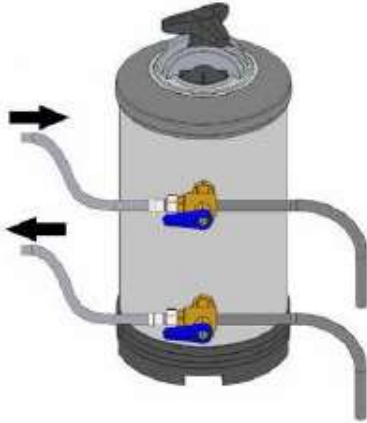
### 8.1 General Operating Instructions

All instructions for using the unit, whether in verbal or written form, are based on our own experience and experimentation and can only be regarded as guidelines.

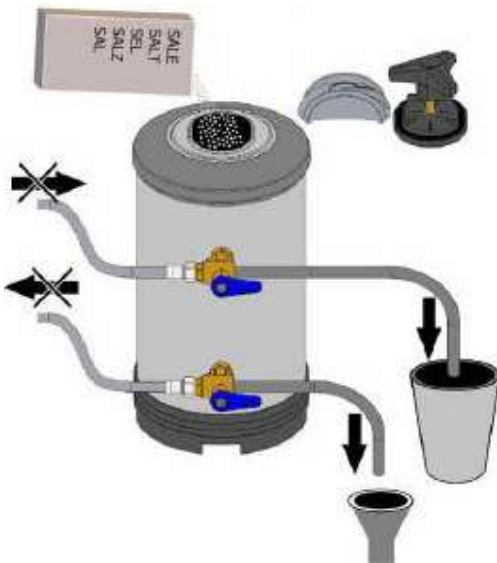


## 8.2 Diagram of Valve Positions

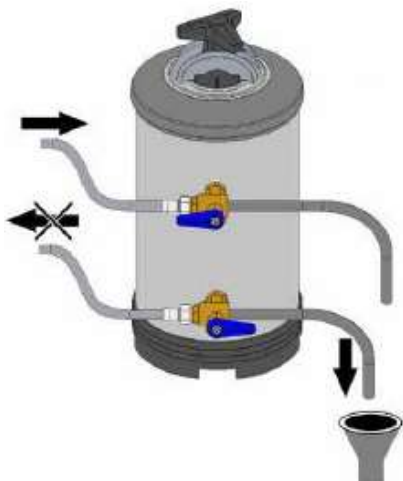
*Service mode (valve „C“ and „D“ to the left)*



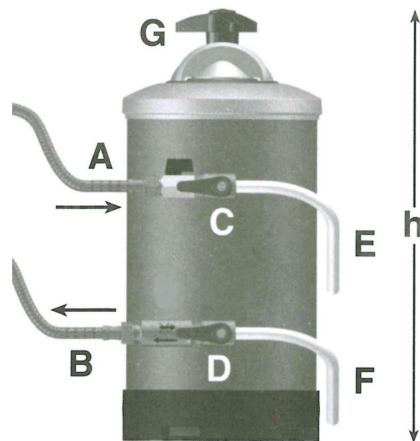
*Depressurisation and salt-refilling mode (valve „C“ and „D“ to the right)*



*Regeneration mode (valve „C“ to the left, valve „D“ to the right)*



### 8.3 Regeneration



- Place a 2-litre container under hose "E".
- Turn valves "C" and "D" to the right (thus allowing the pressure in the container to escape) and open and remove the lid by turning handle "G". Now pour the salt into the container (amount 1 kg, see also table on p. 11). In the process, some water will run out of the container.



- Check the seal on the lid and the top part of the Wasi-Clean for any residues of salt or resin, clean if necessary and then fit the lid and screw it tight.



**Wassermann accepts no liability whatever for any corrosion to the steel resulting from a failure to observe these instructions.**

- Place hose "F" in an appropriate drain (if there is no fixed connection or floor drainage has been installed). Turn valve "D" to the right and valve "C" to the left. Salty water will now come out of the end of hose "F". Let the water run until it no longer tastes salty (approx. 40 minutes). Only then can you turn both valves "C" and "D" to the left.
- The Wasi-Clean is now regenerated and ready to be used again. Please make sure to note the regeneration date (you can gladly use the table on p. 18 for this) and to regenerate again as soon as the specified volume of water has passed through the water softener. This is the only way to be sure that your Wasi-Clean is preparing the water for your system in the best possible way.

#### 8.4 Recommendation for Regeneration Interval

The amount of salt required for your regeneration process is 1 kg.

The flow rate, on the other hand, depends on the hardness of the water (dH = German degree of hardness).

The table shown below gives an indication.



**Please note that only NaCl (cooking salt) should be used for regeneration.**

#### 8.5 Table Water Hardness and Flow Rate

**Item no. 174995 Wasi-Clean**

**Volume: 8 l**

**Portion demand of salt for the regeneration: 1,0 kg**

Flow rate 11°dH 200 ppm CaCO <sub>3</sub>	Flow rate 16°dH 300 ppm CaCO <sub>3</sub>	Flow rate 22°dH 400 ppm CaCO <sub>3</sub>	Flow rate 28°dH 500 ppm CaCO <sub>3</sub>	Flow rate 33°dH 600 ppm CaCO <sub>3</sub>
~ 1680 liter	~ 1120 liter	~ 840 liter	~ 672 liter	~ 560 liter

## 9 Care and Maintenance

### 9.1 Wassermann Service Hotline 0049 (0)40 730 926 -20/ -24

### 9.2 Cleaning



Disconnect the power plug before starting any maintenance work.

The identification plate has always to be kept in easily legible condition and has not to be removed.



Remove external dirt from time to time with some form of cold cleaner.

Use only cold cleaners to avoid damaging the paintwork or removing the lettering.

The equipment should be cleaned at regular intervals to ensure trouble-free operation. It requires only normal cleaning (sponge, damp cloth, mild detergent) and no further chemical additives.



**The cation resins contained in the Wasi-Clean are required for the unit's principle of operation, so please do not remove them.**

### 9.3 Spare Parts

If necessary please contact our service hotline phone: 0049 (0)40 730 92 6-0



**The softening capability of the resin ends after approx. 5-7 years.**

**This period varies according to the characteristics of the input water and the volume of water softened.**

- To replace the resin, the softening unit must be disconnected from the water supply and the Wasi-Clean brought to a location suitable for replacing the resin and for internal cleaning.
- Close the stopcock for the on-site water supply.
- Place a 2-litre container under hose "E".
- Turn valves "C" and "D" to the right and wait a few seconds for the pressure to reduce.
- As soon as there is no more water flowing through the pressure relief line "E", the water inlet hose "A" and water outlet hose "B" can be unscrewed from their connections.
- Open lid "G" and replace the resin. Also clean the insides before pouring the new resin into the container.
- Do not dispose of the exhausted resin in the sewage system. The resin is not biodegradable (see 10.2 Disposal of cation resin).



- Check the seal on the lid and the top part of the Wasi-Clean for any residues of salt or resin, clean if necessary and then fit the lid and screw it tight.



**Wassermann accepts no liability whatever for any corrosion to the steel resulting from a failure to observe these instructions.**

- Close the lid again and return the Wasi-Clean to its operational site.
- Reconnect water inlet hose "A" and water outlet hose "B" with their Wasi-Clean connections and make sure they are tightly fastened.

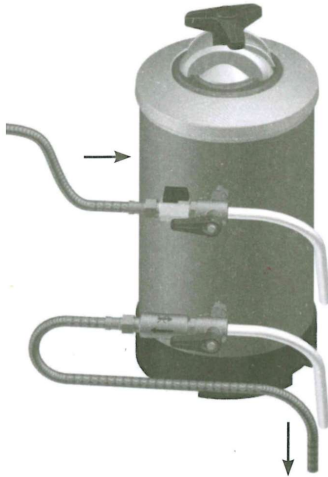


Rinsing the resin in accordance with Section 8.4 of this user manual.

## 9.4 Rinsing the Resins



After replacing the cation resin (see 8.3), the resin must be washed once:



- Place water outlet "B" in a drain.
- Turn valves "C" and "D" to the left and open the water inlet.
- Let the water run until it is clear.
- Then stop the inflow of water and connect water outlet "B" with the water feed of the Wasi-Steam 2 Steam Cleaner.

## 9.5 Repairs



Servicing or repairs to the unit has only to be carried out by qualified technicians. Only original spare parts are to be used. Responsibility for the product is voided if unauthorised persons alter it or if inappropriate components are installed.

## 9.6 Warranty



The warranty period for our equipment is 12 months. If faults occur within the warranty period, contact your dental depot or get in touch directly with our service department.

Your equipment should only be operated in perfect condition. If faults occur which could harm operators or third parties, the unit should not be used until it has been fixed.

This warranty does not cover damage caused by improper use, external mechanical causes, transport damage or interference with the unit by unauthorized persons.

## 9.7 Scope of Delivery/ Accessories

### Item no. 174995

#### Wasi-Clean Water Softener for the Steam Cleaner Wasi-Steam 2

Included in delivery:	Quantity	Item no.
Water hose, transparent, for regeneration	1 piece	---

**The Wasi-Clean Water Softener is supplied ready to use.**

#### Pre-assembled items supplied with the unit:

	Quantita	Item no.
Water inlet hose, grey, cpl.	2 pieces	320060
Hose connector Wasi-Clean	2 pieces	174401
Hose clamp Ø 10-16 x 9	4 pieces	322010

## 10 Technical Data

### Item no. 174995

#### Wasi-Clean Water Softener for the Steam Cleaner Wasi-Steam 2

Volume:	8 l
Dimensions (W x H x D):	190 x 405 x 260 mm
Weight:	7.5 kg
Cationic resin:	5.6 l
Salt/Regeneration:	1 kg
Flow rate at 17°dH	~ 800 l
Max. flow rate:	1000 l/h
Pressure of feed water*:	1-8 bar
Min./Max. temperatur of feed water:	4°C - 25°C

The noise level of the unit amounts to ≤ 70 dB (A).



\* If the pressure of feed water is > 8 bar: pressure adaptor is recommended.



Technical changes reserved.

## **11 Disposing**

### **11.1 Disposing of the Unit**

The water softener is manufactured from non-hazardous materials. It is necessary to dispose of it in accordance with current guidelines. The unit has to be disposed by an authorized recycling operation. The selected company has to be informed of all possibly health-hazardous residues in the unit.

### **11.2 Disposing of the Cationic Resins**

Any waste must also be disposed of in accordance with current guidelines. Do not dispose of the resin in the sewage system. The resin is not bio-degradable and must be disposed of as non-hazardous special waste (EWC Code 190905).



**12 EU Declaration of Conformity**

in accordance with guidelines 2001/95/EC, 1992/59/CE and 1999/34/EC

Manufacturer: **WASSERMANN** Product description: Water Softener for  
Dental-Maschinen GmbH dental applications  
Rudorffweg 15-17  
21031 Hamburg  
Germany

Model: Wasi-Clean Item no. 174995

Applicable standards: DIN EN 61010-1  
DIN EN 61000-6-3  
DIN EN 61000-6-1  
DIN 45635-1  
DIN EN 60335-1

Hiermit wird bestätigt, dass die oben bezeichnete Maschine den genannten EU-Richtlinien entspricht. Diese Erklärung wird ungültig, falls die Maschine ohne unsere Zustimmung verändert wird.

This is to confirm that the above mentioned machine complies with the described EU guidelines. This declaration becomes invalid if the machine is modified without our approval.

Cette machine est conforme aux normes en vigueur d'Union européenne. Cet avis est nul et non avenant si cette machine est modifiée sans notre accord.

Esta máquina, anteriormente mencionada, cumple con los límites requeridos por el reglamento UE. Ahora bien, esta declaración quedará invalidada en caso de realizar modificaciones al aparato sin nuestra aprobación.

Hiermee wordt bevestigd dat bovengenoemde machine voldoet aan de voorgeschreven EU normen. Deze verklaring verliest geldigheid als er zonder onze uitdrukkelijke toestemming wijzigen aan de machine worden aangebracht.

Place, date: Hamburg, 2020-02-28

Company stamp :



Signature: \_\_\_\_\_  
Sven Wassermann  
(Managing Director)





**Notes:**



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