



Operating instructions Washer-disinfector

teon +

RID-200

To avoid the risk of accidents or damage to the machine, it is **essential** to read these instructions before it is installed and used for the first time.

en - GB

M.-Nr. 11 309 710

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Important warnings

 Information which is important for safety is highlighted in a thick framed box with a warning symbol. This alerts you to the potential danger of injury to people or damage to property.

Read these warning notes carefully and observe the procedural instructions and codes of practice they describe.

Notes

Information of particular importance that must be observed is highlighted in a thick framed box.

Additional information and comments

Additional information and comments are contained in a simple frame.

Operating steps

Operating steps are indicated by a black square bullet point.

Example:

■ Select an option using the arrow buttons and save your choice with *OK*.

Display

Certain functions are shown in display messages using the same font as that used for the function itself in the display.

Example:

Settings  menu.

Intended use

This W&H washer-disinfector is a Class IIb medical device (Directive 93/42/EEC).

This W&H washer-disinfector can be used to clean, rinse and thermally disinfect a wide range of reprocessable medical devices for dental use. Information issued by the manufacturers of medical devices (EN ISO 17664) must be heeded.

Instruments such as dental instruments, suction instruments, transmission instruments etc. can be reprocessed in this washer-disinfector.

UK only: This washer-disinfector is NOT intended for reprocessing transmission instruments such as turbines, hand-pieces and contra-angles.

The washer-disinfector is generally referred to as “the machine” in these operating instructions. Reprocessable medical devices are referred to as “items” if they are not more closely defined.

Reprocessing items by machine achieves reproducible results and should be used in preference to processing them by hand. Where disinfection is required for the protection of staff and/or patients, a thermal disinfection programme, e.g. the Vario TD programme should be selected.

According to the A_0 concept described in EN ISO 15883-1, thermal disinfection occurs at 90°C (+ 5 °C, - 0 °C) with 5 min holding time (A_0 3000), depending on the disinfection result required. The efficacy standard A_0 3000 is suitable for deactivating the HBV virus.

Regional and/or other official directives may apply (CFPP, HTM or relevant technical memorandums in the UK). Refer to your country's local and national health and safety regulations and guidelines.

The cleaning programme must be chosen according to the type of soiling and load being processed.

The agents used for reprocessing the products should be selected to suit the level of cleaning required.

The cleaning result must ensure that items can be disinfected correctly, that subsequent sterilisation can be carried out and that the items can be used again safely.

Medical devices are best processed using the Vario TD programme where applicable.

The use of a suitable carrier (mobile unit, module, insert, etc.) is important to ensure the adequate cleaning of the load. Examples are given in the section “Areas of application”.

This machine is programmed to carry out the final rinse with mains water or with processed water of a quality to suit the application (e.g. purified water, fully demineralised water or demineralised water).

This machine complies with EN ISO 15883 for validation purposes.

This device is designed to wash and disinfect surgical instruments before endpoint sterilisation.

Wash pressure and spray arm monitoring

The washer-disinfector is equipped with a sensor for monitoring the wash pressure during the active cleaning process stages.

Spray pressure monitoring is carried out according to the general validation guideline and routine monitoring of machine cleaning and disinfection processes for thermostable medical devices of the Deutsche Gesellschaft fuer Krankenhaushygiene e.V. (German Society for Hospital Hygiene) (DHKG), the Deutsche Gesellschaft fuer Sterilgutversorgung e.V. (German society for sterile supplies) (DGSV) and the Arbeitskreis Instrumentenaufbereitung (Instrument Reprocessing Working Group) (AKI) in accordance with EN ISO 15883.

The result of the spray pressure monitoring is recorded via the process documentation.

Spray arm speed can also be monitored, e.g. for prompt detection of blockages due to misloading or foam in the water circulation system. Spray arm monitoring can be activated or deactivated by the W&H Customer Service Department.

Intended use

User profiles

Daily operators

Daily operators must be instructed in operating and loading the washer-disinfector and trained regularly to guarantee safe daily use. They require knowledge of machine reprocessing of medical devices.

Tasks for daily routine operation are located in the Settings  menu. This menu is freely accessible to all users.

Administration

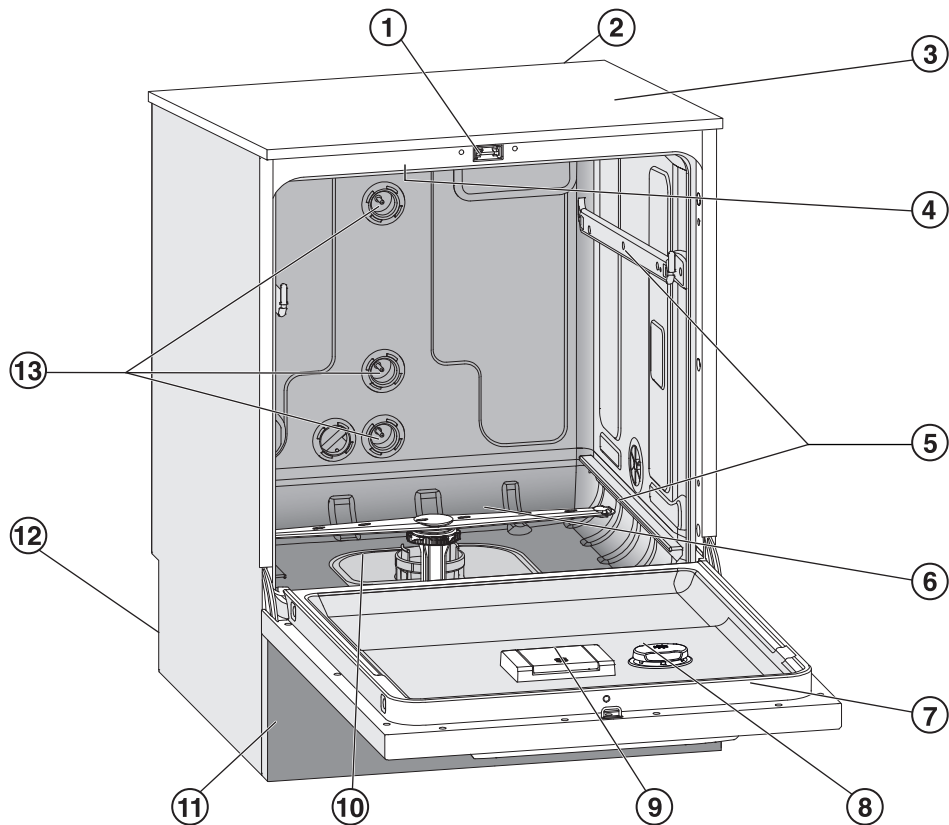
More advanced tasks, e.g. interrupting or cancelling a programme, require more detailed knowledge about the machine reprocessing of medical devices.

Alterations or adaptations of the washer-disinfector, e.g. accessories used or on-site conditions require additional specific knowledge of the washer-disinfector.

Validation processes assume specialised knowledge about machine reprocessing of medical devices, the processes involved and applicable standards and legislation.

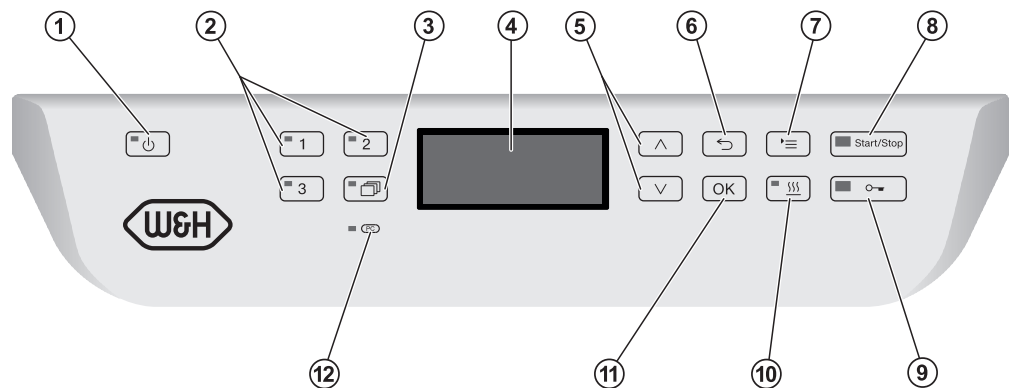
Administrative processes and settings are allocated to the Further settings menu. This is protected from unauthorised access by a code.

Overview



- ① Comfort door locking mechanism
- ② Module slot for a communication module (Back, top right)
- ③ Test point for validation (Top, front right; only visible with lid removed)
- ④ Upper machine spray arm
- ⑤ Rails for baskets and mobile units
- ⑥ Lower machine spray arm
- ⑦ Data plate
- ⑧ Rinsing agent reservoir
- ⑨ Salt reservoir
- ⑩ Filter combination
- ⑪ Plinth panel with service flap
- ⑫ On the back:
 - Second data plate
 - Electrical and plumbing connections
 - Siphon(s) for external supply containers
 - Connections for external dispensing modules (DOS modules)
- ⑬ Plumbing connections for mobile units and baskets

Control panel



- ① **⏻ button (on/off)**
For switching the machine on and off.
- ② **[1], [2] and [3] buttons**
Programme selection buttons.
The button assignment can be configured.
- ③ **📄 Programme list button**
For accessing the list of all additional programmes.
- ④ **Display**
User interface and programme sequence display.
- ⑤ **^ and v arrow buttons**
For navigating in the user interface.
- ⑥ **↩ Cancel button**
For cancelling a process in the user interface.
No programme interruption.
- ⑦ **⚙ Settings button**
For accessing the system settings menu.
- ⑧ **Start/Stop button**
For starting or cancelling a programme.
- ⑨ **🚪 Door release button**
For opening the door before or after a programme sequence.
- ⑩ **🌀 Drying button**
For switching drying on and off.
- ⑪ **OK button**
For selecting or confirming entries in the user interface
(acknowledge or save).
- ⑫ **🔧 Service interface**
Testing and transmission point for the Customer Service Department.

LEDs in buttons

The buttons on the control panel have LEDs (Light Emitting Diodes). They indicate the status of the machine.

Button	LED	Status
 button	ON	The machine is switched on.
	FLASHES	The machine is ready for use.
	OFF	The machine is switched off.
Programme selection buttons  ,  and 	ON	The respective programme has been selected. At the end of the programme the LED will remain lit until a different programme is selected.
	OFF	The programme is not selected or the programme settings are being selected.
 button	ON	A programme has been selected from the programme list. At the end of the programme the LED will remain lit until a different programme is selected.
	OFF	No programme has been selected from the list or the programme settings are being changed.
 button	ON	The additional “Drying” function has been activated for the selected programme (not available for all programmes, see “Programme chart”).
	OFF	The additional “Drying” function has been deactivated.
<i>Start/Stop</i> button	ON	A programme is running.
	FLASHES GREEN	A programme has been selected but not yet started.
	FLASHES RED	A fault has occurred (see “Problem solving guide”).
	OFF	A programme has finished.
 button	ON	The door is closed (locked) and there is no programme running.
	FLASHES	A programme has finished and the door is closed (locked).
	OFF	A programme is running or the door is open (unlocked).

Warning and Safety instructions

This machine complies with all statutory safety requirements. Inappropriate use can, however, lead to personal injury and material damage.

Read these instructions carefully before using it for the first time to avoid the risk of accidents and damage to the machine.

Keep these instructions in a safe place where they are accessible to users at all times.

Correct application

► Use of the machine is only permitted for the applications expressly approved in the operating instructions. Alterations or conversion of the machine, or using it for purposes other than those for which it was intended, are not permitted and could be dangerous. The cleaning and disinfection processes are only designed for medical devices which are designated reprocessable by the manufacturer. Instructions issued by load and instrument manufacturers must be heeded.

► This machine is intended for indoor use only.

Risk of injury

Please pay attention to the following notes to avoid injury

► The machine may only be commissioned, repaired and maintained by the W&H Customer Service Department or a service technician authorised by the manufacturer of the machine. A W&H service contract is recommended to ensure full compliance with medical device regulations (such as the German Medical Device Ordinance). Incorrect repairs can cause considerable danger to users.

► Do not install the machine in an area where there is any risk of explosion or of freezing conditions.

► In order to reduce the risk of water damage, the area around the machine should be limited to furniture and fittings that are designed for use in commercial environments.

► Some metal parts pose a risk of injury/being cut. Wear cut-resistant protective gloves when transporting and setting up the machine.

► If the machine is built under, it must only be installed under a continuous worktop run which is firmly secured to adjacent units to improve stability.

► The electrical safety of the machine can only be guaranteed when it is correctly earthed. It is essential that this standard safety requirement is observed and regularly tested. If in any doubt, please have the electrical installation inspected by a qualified electrician. W&H or the manufacturer cannot be held liable for the consequences of an inadequate earthing system (e.g. electric shock).

Warning and Safety instructions

- ▶ A damaged or leaking machine can pose a threat to your safety. Always switch off a damaged or leaking machine immediately and call the W&H Customer Service Department.
- ▶ Personnel operating the machine should be trained regularly. Untrained personnel must not be allowed access to the machine or its controls.
- ▶ Only use chemical agents which have been approved by their manufacturer for use in the application you are using. The chemical agent manufacturer is responsible for any negative influences on the material the load is made from and for any damage they may cause to the machine.
- ▶ Take care when handling chemical agents. These may contain irritant, corrosive or toxic ingredients.
Please observe the chemical agent manufacturer's safety instructions and safety data sheets.
Wear protective gloves and goggles.
- ▶ The machine is designed for operation with water and recommended additive chemical agents only. Organic solvents and flammable liquid agents must not be used in it.
This could cause an explosion, damage rubber or plastic components in the machine and cause liquids to leak out of it.
- ▶ The water in the cabinet must not be used as drinking water.
- ▶ Do not lift the machine by protruding parts such as the control panel or the opened service flap as these could be damaged or torn off.
- ▶ Do not sit or lean on the opened door. This could cause the machine to tip up and be damaged or cause an injury.
- ▶ Be careful when sorting items with sharp, pointed ends. Position them in the machine so that you will not hurt yourself or create a danger for others.
- ▶ Broken glass can result in serious injury when loading or unloading. Broken glass items must not be processed in the machine.
- ▶ When operating the washer-disinfector, bear in mind the possibility of high temperatures. If the door is opened bypassing the safety lock, there is a danger of burning, scalding and chemical burns.
- ▶ Should personnel accidentally come into contact with toxic vapours or chemical agents, follow the emergency instructions given in the manufacturer's safety data sheets.
- ▶ Mobile units, baskets, modules, inserts and the load must be allowed to cool down before they are unloaded. Any water remaining in containers could still be very hot. Empty them into the wash cabinet before taking them out.

Warning and Safety instructions

- ▶ Never clean the machine or near vicinity with a water hose or a pressure washer.
- ▶ The machine must be disconnected from the mains electricity supply before any maintenance or repair work is carried out.

Quality assurance

The following points should be observed to assist in maintaining quality standards when processing medical devices, in order to protect patients, and to avoid damage to the loads being cleaned.

- ▶ If it is necessary to interrupt a programme in exceptional circumstances, this may only be done by authorised personnel.
- ▶ The standard of cleaning and disinfection in the disinfection programmes must be routinely confirmed by the user. The process must be thermo-electrically validated on a regular basis, and checked against documented control results.
- ▶ For thermal disinfection, use temperatures and temperature holding times to achieve the required infection prophylaxis in accordance with current health and safety regulations.
- ▶ Make sure items being washed are suitable for machine reprocessing and are in good condition. Plastic items must be thermally stable. Nickel plated items and aluminium items can be machine processed using special procedures only. Items containing iron, and soiling containing residual rust must not be placed in the cabinet.
- ▶ Under certain circumstances, process chemicals may damage the machine. Users are urged to follow the recommendations issued by manufacturers of process chemicals. Contact the W&H Customer Service Department in the event of damage and any suspicion of material incompatibility.
- ▶ Instrument care products based on paraffin oils (white oils) can damage the elastomers and plastic in the machine. Such care products must not be dispensed as chemical agents in this machine even if they are recommended for machine use by the care product manufacturer.
- ▶ Abrasive substances must not be placed in the machine as they could cause damage to the mechanical components of the water supply. Any residues of abrasive substances on items to be washed must be removed without trace before reprocessing in the machine.
- ▶ Pre-treatments with cleaning or disinfecting agents can create foam, as can certain types of soiling and chemical agents. Foam can have an adverse effect on the disinfection and cleaning result.
- ▶ Processes must be set up such that foam cannot escape from the wash cabinet. It would hinder the correct functioning of the machine.

Warning and Safety instructions

► The process used must be monitored on a regular basis by the supervisor to check foaming levels.

► To avoid the risk of damage to the machine and any accessories used with it caused by chemical agents, soiling and any reaction between the two please read the notes in “Chemical processes and technology”.

► Even when a process chemical, e.g. cleaning agent, is recommended, W&H or the manufacturer takes no responsibility for the effect of such chemicals on the load items.

Please note that changes in product formulation, storage conditions, etc. which are not announced by manufacturers of process chemicals may impair the quality of cleaning results.

► When using process chemicals, always consult the instructions issued by individual manufacturers. Process chemicals must only be used for the purpose they are designed for by the manufacturer to avoid any material damage or the occurrence of very strong chemical reactions (e.g. oxyhydrogen explosion).

► Always follow the relevant manufacturer's instructions on storage and disposal of chemical agents.

► Particles ≥ 0.8 mm are removed by the filters in the wash cabinet. Smaller particles may find their way into the circulation system. For this reason, processing of loads with narrow openings requires additional filtering of the wash water.

► In critical applications where very stringent requirements have to be met, it is strongly recommended that all the relevant factors for the process, such as cleaning agents, water quality, etc., are discussed with W&H.

► The mobile units, baskets, modules and inserts that hold the load must be used only as intended.

Hollow items must be thoroughly cleaned, internally and externally.

► Secure small and light items with cover nets or place in a mesh tray for small items, so that they do not block the spray arms.

► Empty any containers or utensils before loading them.

► The amount of residual solvents and acids on items going into the cabinet should be minimal.

There should be no more than a trace of any solvents with a flash point of below 21 °C.

► Chlorous solutions, in particular hydrochloric acid, must not be placed in the cabinet.

► Ensure that solutions or steam containing chlorides or hydrochloric acid do not come into contact with the stainless steel outer casing of the machine in order to avoid any damage through corrosion.

Warning and Safety instructions

- ▶ After any plumbing work the water pipework to the machine will need to be vented. If this is not done, components can be damaged.
- ▶ The gaps between a built-in machine and adjacent cabinetry must not be filled e.g. with silicone sealant as this could compromise the ventilation to the circulation pump.
- ▶ Follow the installation instructions in the operating and installation instructions.

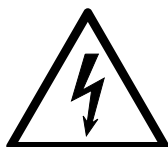
Using accessories

- ▶ Only use original spare parts and accessories from the manufacturer, which are suitable for the application they are required for. Model designations are available from W&H.
- ▶ Only use mobile units, baskets, modules and inserts from the machine manufacturer. Using mobile units, baskets and inserts made by other manufacturers or making modifications to original accessories can result in an unsatisfactory cleaning and disinfection result. Any resultant damage would not be covered by the warranty.

Symbols on the machine



Warning:
Observe the operating instructions!



Warning:
Danger of electric shock!



Warning: Hot surfaces:
It can be very hot inside the wash cabinet
when the door is opened!



Risk of being cut:
Wear cut-resistant protective gloves when
transporting and setting up the machine!

Disposing of your old machine

► Please note that the machine may contain contamination from blood and other bodily fluids, pathogens and facultative pathogens, and must be decontaminated before disposal.

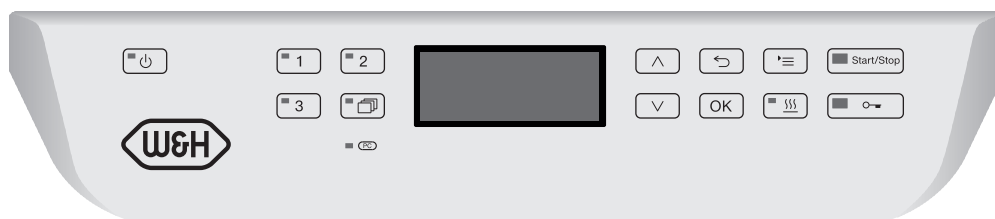
For environmental and safety reasons, dispose of all process chemical residues in accordance with safety regulations (wear safety goggles and gloves).

Remove or disable the door lock prior to disposal of the machine, so that children cannot become trapped inside. Then make appropriate arrangements for safe disposal of the machine.

Using the machine

Control panel

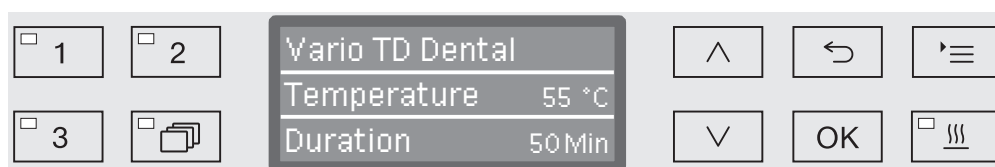
The washer-disinfector is operated exclusively by the buttons located on the stainless steel surfaces either side of the display. The display is not a touch screen.



A light touch on the relevant button is sufficient to operate the functions. The buttons can also be pressed and held for approx. 20 seconds.

Display illustrations

All display illustrations shown in these operating instructions are examples which may differ from the actual display screens shown on the machine.



The control buttons are shown next to the display. The , , and *Start/Stop* buttons are not shown.

Switching on

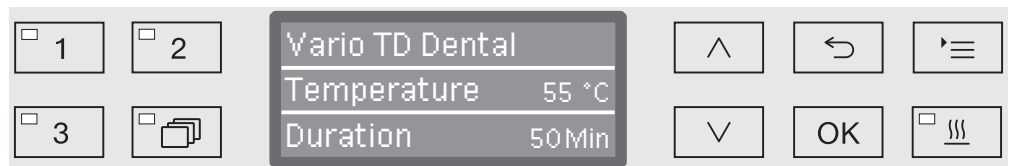
The machine must be connected to the electrical supply.

- Press the  button until the button's LED lights up.

After that, the display shows the following:



As soon as the machine is ready for operation, the display changes to show the last selected programme, e.g.:



If the machine is being used for the first time, or if the factory default settings have been reinstated, some basic parameters, e.g. language, date, time, etc., must first be set. To enable this, the display automatically changes to the relevant screen.

Switching off

- Press the  button.

Auto-off function

To save energy, the machine has an automatic switch-off function (Auto-off function). If the machine has not been used for a specific time period, it switches itself off automatically, see “Further settings/ Switch off after”.

- Use the  button to switch the machine on again.

Ready for use

When it is ready for use, the machine remains switched on, the  button flashes and the time is shown on the display. Pressing any button reactivates the machine. Standby can be switched on and off as required, see “Further settings/Switch off after”.

Using the machine

Display interface

The machine is controlled by menus. The menus are displayed in a 3-line display on the control panel.

The name of the menu (top line) and up to two options are shown. The currently selected option is highlighted, e.g.



Menu operation



Settings button

For accessing the system settings menus.



Arrow buttons

The arrow buttons are used to navigate up and down by row within a menu. Press and hold the button to automatically scroll through the list to the end of the menu. Press the button again to continue navigating.

Parameter values can also be altered in defined increments using the arrow buttons. Instructions for this can be found in the relevant sections.



OK button

The *OK* button is used for confirming (acknowledging) a selection or for saving input. The display then moves to the next menu or, when entering parameter values, to the next input position. Instructions for this can be found in the relevant sections.



Cancel button

Before the *OK* button has been pressed, a process can be cancelled at any time by pressing the  button. The menu is then ended early and the display changes to the next menu level up. Any setting changes made will not be saved.

Settings in the menu

All menu descriptions in these operating instructions are structured as follows:

Input procedure

The input procedure describes the complete sequence required to reach a particular menu level. The menu options shown must be selected individually using the arrow buttons and then confirmed with **OK**.

Example:

☰ button
 ▶ Settings 
 ▶ Time of day
 ▶ Clock display

If a menu level is already displayed, the path does not need to be input completely. If, for example, the Settings  menu is already displayed, you do not need to press the ☰ button again. In this case simply follow the sequence from Settings  onwards.

Display view

When selecting a menu, the last menu used is generally opened.

Example:



Options

All available menu options are listed together with a short description.

Example:

- 12 h
Time of day display in 12 hour format (am/pm).
- 24 h
Time of day in 24 hour format.

Method

Then further instructions are given.

Example:

- Select an option using the ^ and v arrow buttons.
- Press **OK** to save the setting.

Using the machine

Symbols on the display



Navigation arrows

If a menu consists of more than two options, two navigation arrows are shown at the side of the menu options.



Use the $\wedge$ and $\vee$ arrow buttons on the control panel to navigate through the menu.



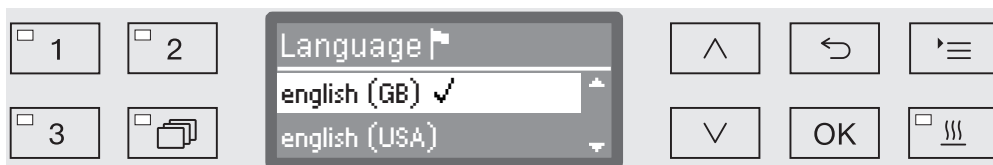
Dotted line

If a menu contains more than two options, the end of the option list is marked by a dotted line. The last entry appears above the line, the first entry below it.



Tick

If there are several options available, the current setting is marked with a tick ✓.



System messages

The **i** symbol denotes system messages. These give information, such as a notification of an excessively low level in the supply containers or a reminder for the next service.



System messages are displayed at the start and end of a programme and have to be confirmed (acknowledged) individually with **OK** or all together at the end of the programme by opening the door. If the **i** symbol is shown on the display, the system messages can be opened by pressing the **OK** button.



Fault messages

In the event of a fault a warning triangle is shown in place of the **i** symbol. See “Problem solving guide” and “After sales service” for more information.

Electronic door locking

The washer-disinfector is equipped with a Comfort door lock. When the door is closed, the Comfort door lock automatically pulls the door into the correct position and ensures that it is correctly sealed. The door is then electronically locked.

Opening the door

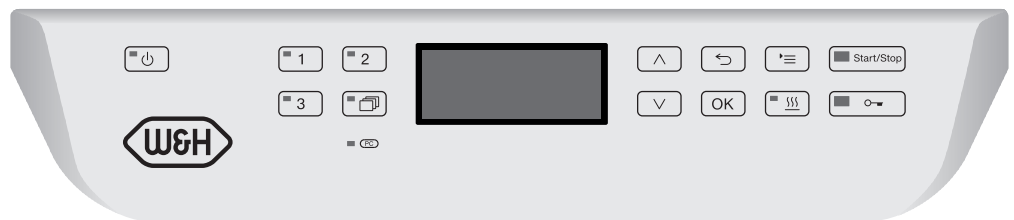
An electronically locked door can only be opened if:

- the washer-disinfector is connected to the electrical supply and is switched on (the  button's LED is lit up),
- there is no programme running,
- the temperature in the wash cabinet is less than 60 °C and
- the  LED is lit up.

- Press the  button to open the door.

The Comfort door lock opens the door slightly. The LED goes out as soon as the door is unlocked.

The control panel of the machine is also a door handle.



- Grasp the handle underneath the control panel and lower the door to open it.

Closing the door

- Ensure that there are no objects or items in the load obstructing the door.

 Do not put your hand inside the door as it is closing.
Danger of injury.

- Lift the door until it engages with the door lock. The door is automatically pulled into the correct position by the Comfort door lock.

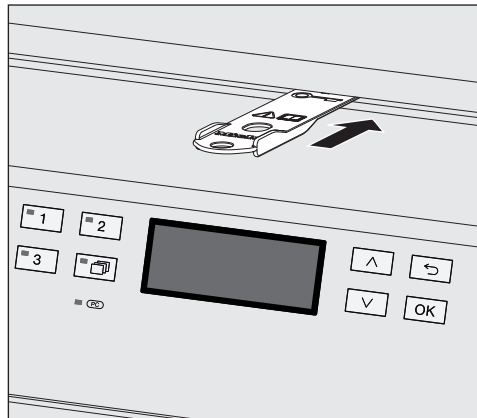
Opening and closing the door

Opening the door using the emergency release

The emergency release may only be used when it is no longer possible to open the door normally, e.g. in the event of a power cut.

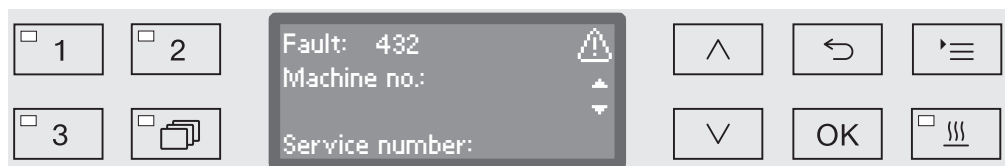
⚠ If the emergency release is operated during a programme cycle, hot water and cleaning agents can escape.
Risk of scalding, burning and chemical burns.

- Push against the door so that less force is needed to operate the emergency release.



- Push the tool supplied in the accessory pack horizontally into the gap between the door and the lid or worktop. The right hand edge of the tool must align with the outer right hand edge of the display.
- Press against the unlocking mechanism with the tool until you hear the door unlock. The door can now be opened.

If the washer-disinfector is switched on, activation of the emergency release will be recorded in the process documentation and the following message will appear in the display:



- Switch the washer-disinfector off and then back on again with the  button.
- Acknowledge the fault message by entering your lock code.

Water hardness

In order to achieve good cleaning results, the machine needs to operate with soft water. Hard water results in the build-up of calcium deposits on the load and in the machine.

Mains water with a water hardness of 0.7 mmol/l (4 °dH) must be softened. This occurs automatically in the built-in water softener. The water softener must be set to the exact hardness of the mains water (see “Water softener/Setting the water hardness”).

Your local water authority will be able to tell you the exact degree of hardness in the mains water supply.

For future servicing it is useful to make a note of your water hardness level. Enter your water hardness level here:

_____mmol/l or °dH

The water softener must be reactivated at regular intervals. This requires special reactivation salt (see “Water softener/Filling the salt reservoir”). Reactivation is carried out automatically during a programme sequence.

If the hardness level of your water is constantly less than 0.7 mmol/l (= 4 °dH), salt is not required for the water softener. The water hardness level must, however, still be set.

Setting the water hardness level

Water hardness can be set between 0 and 12.6 mmol/l (0 - 70 °dH).

- Open the menu as follows:

☰ button

▶ Further settings

▶ Water hardness



The bottom line of the display shows the possible input range.
Water hardness input values can be found in the chart on the next page.

Where the water hardness fluctuates, e.g. between 1.4 - 3.1 mmol/l (8 - 17 °dH), always programme the machine to the higher value, 3.1 mmol/l (17 °dH) in this example.

- Set the water hardness level using the arrow buttons
($\wedge$ = higher and $\vee$ = lower).
- Press *OK* to save the setting.

Settings

°dH	°f	mmol/l	Display
0	0	0	0
1	2	0.2	1
2	4	0.4	2
3	5	0.5	3
4	7	0.7	4
5	9	0.9	5
6	11	1.1	6
7	13	1.3	7
8	14	1.4	8
9	16	1.6	9
10	18	1.8	10
11	20	2.0	11
12	22	2.2	12
13	23	2.3	13
14	25	2.5	14
15	27	2.7	15
16	29	2.9	16
17	31	3.1	17
18	32	3.2	18
19	34	3.4	19 *)
20	36	3.6	20
21	38	3.8	21
22	40	4.0	22
23	41	4.1	23
24	43	4.3	24
25	45	4.5	25
26	47	4.7	26
27	49	4.9	27
28	50	5.0	28
29	52	5.2	29
30	54	5.4	30
31	56	5.6	31
32	58	5.8	32
33	59	5.9	33
34	61	6.1	34
35	63	6.3	35

°dH	°f	mmol/l	Display
36	65	6.5	36
37	67	6.7	37
38	68	6.8	38
39	70	7.0	39
40	72	7.2	40
41	74	7.4	41
42	76	7.6	42
43	77	7.7	43
44	79	7.9	44
45	81	8.1	45
46	83	8.3	46
47	85	8.5	47
48	86	8.6	48
49	88	8.8	49
50	90	9.0	50
51	92	9.2	51
52	94	9.4	52
53	95	9.5	53
54	97	9.7	54
55	99	9.9	55
56	100	10.0	56
57	102	10.2	57
58	104	10.4	58
59	106	10.6	59
60	107	10.7	60
61	109	10.9	61
62	111	11.1	62
63	113	11.3	63
64	115	11.5	64
65	116	11.6	65
66	118	11.8	66
67	120	12.0	67
68	122	12.2	68
69	124	12.4	69
70	125	12.5	70

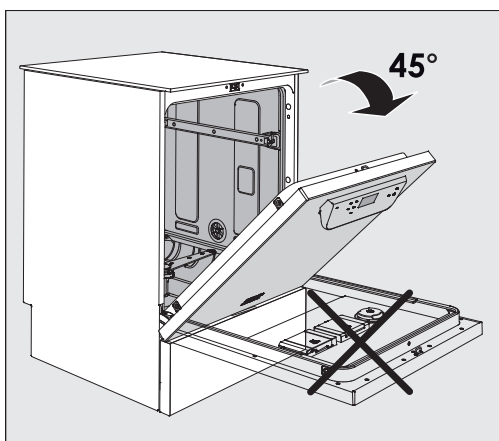
*) Factory default setting

Filling the salt reservoir

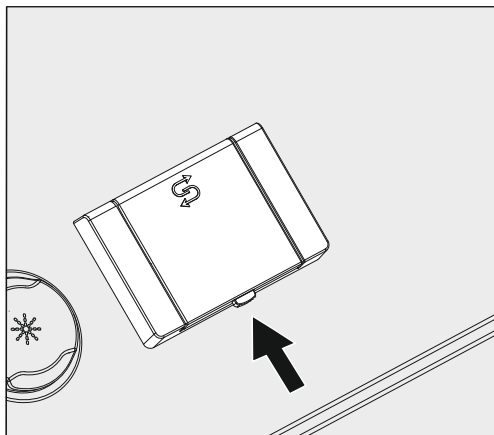
Use only special, coarse-grained reactivation salt with a granule size of approx. 1 - 4 mm.

Do not under any circumstances use other types of salt such as table salt, agricultural or gritting salt. These may contain insoluble additives which can impair the functioning of the water softener.

⚠ Inadvertently filling the salt reservoir with cleaning agent will cause serious damage to the water softener.
Before filling the salt container make sure that you have picked up the right packet of reactivation salt.

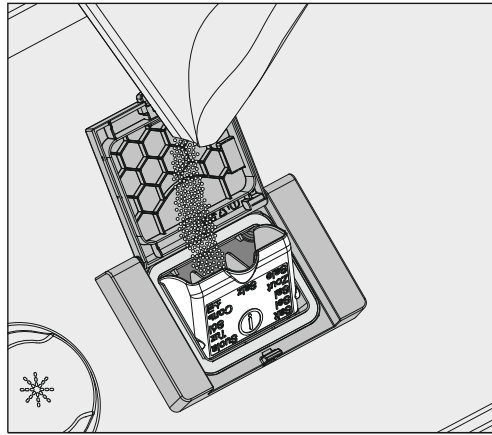


- Open the door to an angle of approx. 45°. This ensures that the salt flows into the reservoir more easily.



- Press the yellow button on the salt reservoir with the ⚡ symbol on it in the direction of the arrow. The flap will spring open.
- Lift up the funnel.

The reservoir takes approx. 1.4 - 2 kg of salt, depending on the type of salt and how much is left in it.



⚠ Do not fill the reservoir with water.
The reservoir could overflow when filled with salt.

- Add salt only until the funnel of the salt reservoir is full, so that it can close properly. Do not add more than 2 kg of salt.

As the salt reservoir is being filled, displaced water (saline solution) may run out.

- Clean any excess salt from the area around the salt reservoir and especially from the seal. **Do not** use running water as this can cause the salt reservoir to overflow.
- Close the funnel.
- Run the Rinsing programme after refilling salt.

This will ensure that any traces of salt and saline solution are dissolved and rinsed away.

Salt and saline solution which has overflowed can cause corrosion damage if they are not rinsed away.

Add salt reminder

If the salt level in the reservoir is low, the following reminder will appear:



- Confirm the message with the *OK* button and
- fill the reservoir as described.

When the message first appears, there may be sufficient salt for a further programme, depending on the water hardness level set.

If there is no saline solution left in the water softener, a relevant message will appear in the display and the machine will be locked for further use.

The machine can be used again a few seconds after the salt has been refilled.

Mobile units, baskets, modules and inserts

This machine can be equipped with an upper and lower basket or a mobile unit which can be fitted with different inserts and modules or exchanged for special accessories depending on the items to be washed.

Select accessories which are appropriate for the application.

Information on the individual areas of application can be found on the following pages, as well as in the operating instructions for the mobile units, baskets, modules and inserts (if available).

For all areas of application defined in “Intended use”, W&H offers suitable accessories such as mobile units, baskets, modules, inserts and special irrigation connectors. Contact W&H for more information.

Water supply

Mobile units and baskets with spray arms or other rinse fittings are equipped with one or more connection points to the water supply. When loading baskets, mobile units, etc into the machine, connect these to the water connection points in the back panel of the wash cabinet. The mobile units and baskets are held in place by the wash cabinet door when closed.

Any free connections in the back panel are closed mechanically.

Adjusting the upper basket

Height-adjustable upper baskets can be adjusted between three positions with 2 cm between each position to accommodate items of different heights.

To adjust the height, the brackets with rollers on the side of the upper basket and the water connector at the back of the basket have to be moved. The roller brackets are each secured to the upper basket by two screws. The water connector consists of the following components:

- A stainless steel plate with 2 apertures,
- a plastic connection piece and
- 6 screws.

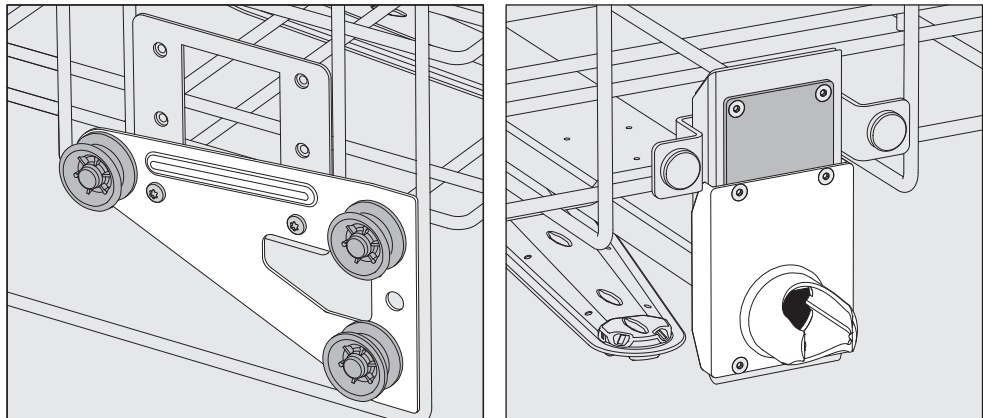
Only adjust the upper basket horizontally. The baskets are not designed to be positioned on a slant (one side up, one side down). Altering the height will alter loading heights for both the upper and lower baskets.

To adjust the upper basket:

- Remove the upper basket by pulling it out until a resistance is felt and lifting it off the runners.
- Unscrew the roller brackets and the water connector.

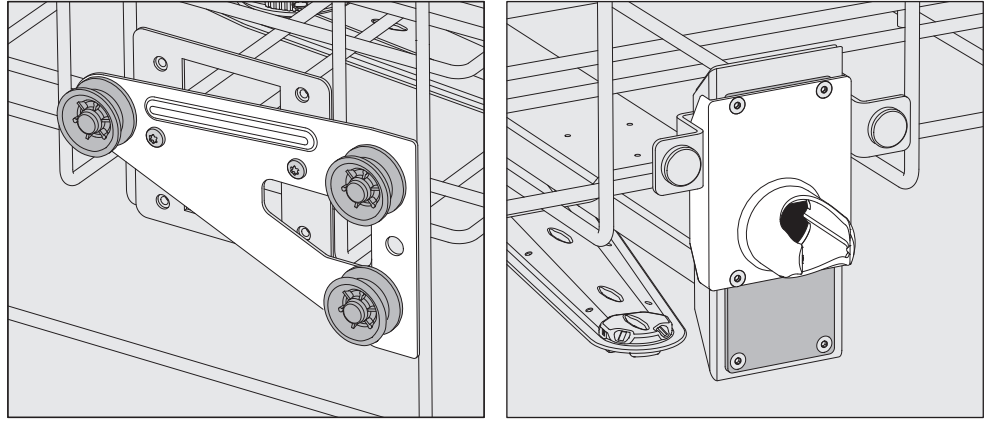
To adjust the upper basket to the ...

... Upper position:



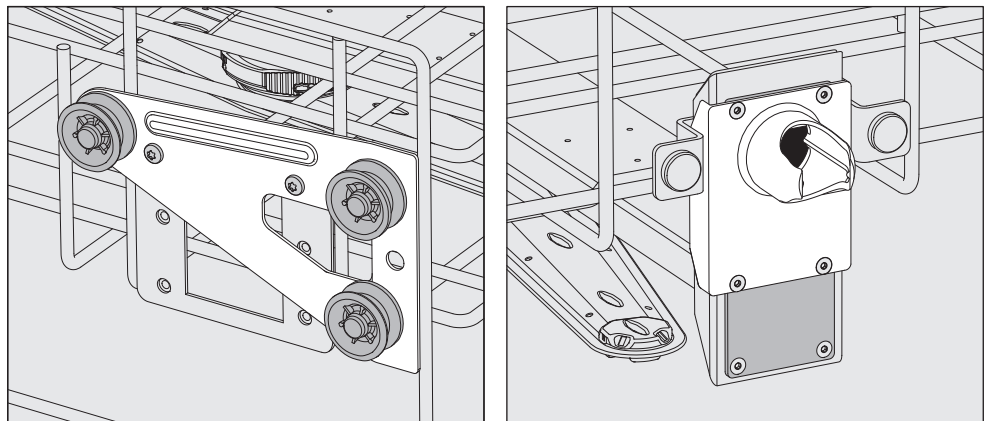
- Move the roller brackets on both sides to the lower position and secure them firmly.
- Position the stainless steel plate over the openings in the water supply pipe so that the upper aperture is covered. Secure the stainless steel plate at the top with 2 screws. Place the water connector in the lower aperture of the stainless steel plate so that the middle aperture is covered. Secure the water connector with 4 screws.

... Middle position:



- Move the roller brackets on both sides to the middle position and secure them firmly.
- Position the stainless steel plate over the openings in the water supply pipe so that one of the outer apertures is covered. Secure the stainless steel plate at the top or bottom with 2 screws. Place the water connector in the middle aperture of the stainless steel plate so that the outer aperture is covered. Secure the water connector with 4 screws.

... Lower position:



- Move the roller brackets on both sides to the top position and secure them firmly.
- Position the stainless steel plate over the openings in the water supply pipe so that the lower aperture is covered. Secure the stainless steel plate at the bottom with 2 screws. Place the water connector in the upper aperture of the stainless steel plate so that the middle aperture is covered. Secure the water connector with 4 screws.

Then check:

- Replace the upper basket on the rails and push it in carefully to check that the water connector is positioned correctly.

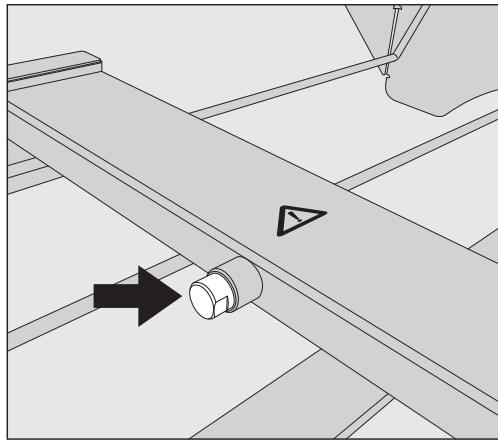
Wash pressure measurement

The water pressure can be measured on all mobile units and baskets with spray arms, injector bars or other wash connections, e.g. during performance tests and validations in accordance with EN ISO 15883.

Test point for measuring water pressure

On mobile units and baskets with spray arms and additional injector bars or other wash connections, there is a connection on the injector bar or a wash connection for water pressure measurement. The exact location is described in the respective operating instructions for the mobile units / baskets.

On mobile units and baskets with spray arms and no additional wash connections, access for the wash pressure measurement is provided on the side of the water supply pipe.



- To measure water pressure, replace the blind stopper with a Luer Lock adapter.

Under no circumstances may items to be washed, washing attachments etc. be connected to the test point. After the measurement, the test point must be closed again with the blind stopper.

Preparing the load

⚠ Only load items which have been declared by their manufacturer as suitable for machine reprocessing may be processed. The manufacturer's specific reprocessing instructions must be observed.

Disposable items may not be reprocessed.

Special nozzles, irrigation sleeves or adapters may be required for appropriate internal cleaning, depending on the load. These, together with other accessories, are available from W&H.

⚠ Protective measures for personal safety must be observed. Wear protective gloves when handling contaminated loads or use appropriate tools, e.g. tweezers.

- Arrange the load so that wash water can access all surfaces. This ensures thorough and proper cleaning.
- Do not place load items inside other items where they may be concealed. Do not place load items so close together that cleaning is hampered.
- Lumened items must be thoroughly cleaned, internally and externally, by the wash water.
- Ensure that load items with long, narrow, hollow sections can be flushed through properly before placing them in or attaching them to an irrigation connector.
- Hollow items should be inverted and placed in the correct mobile units, baskets, modules and inserts, to ensure that water can flow in and out of them unrestricted.
- Deep-sided load items, e.g. trays, should be placed at an angle to make sure water runs off them freely.
- Take apart any items which can be dismantled according to the manufacturer's instructions and process the individual parts separately from each other.
- Lightweight load items should be secured with a cover net (e.g. an A 6 or A 810) and small items placed in a mesh tray to prevent them from blocking the spray arms.
- The spray arms must not be blocked by load items which are too tall or which hang down in their path.
- Broken glass can result in serious injury when loading or unloading. Load items with broken glass must not be processed in the machine.
- Nickel and chrome-plated load items, and items made of aluminium, require special procedures and are not generally suitable for machine reprocessing. They require special processing conditions.

Areas of application

- It is advisable to use only instruments made of special application steel which are not susceptible to corrosion.
- Only reprocess small items and micro components in special inserts, mesh trays with lids or mesh inserts.
- Plastic items must be thermally stable.

For validation purposes it is essential to follow the loading instructions given on the template.

Observe the further information given in the following sections as necessary depending on area of application.

Preparing the load

- Empty the load before sorting.

 Risk of damage due to solvents.
The amount of residual solvents on load items going into the wash chamber should be minimal. Solvents with a flash point below 21 °C may only be present in traces.
Rinse the load items thoroughly with water and let them dry well before placing them in the wash chamber.

- Dismantle the load items where possible according to the manufacturer's instructions and open any valves or taps.
- Follow the instructions of the manufacturer regarding pre-cleaning and pre-treatment as necessary.
- Thoroughly rinse load items which have been pre-treated with chemicals, see "Wet loading".

Dry loading

Contaminated medical devices should be placed directly into baskets and inserts in the machine after use without pre-treatment.

Dry loading is preferable for contaminated medical devices.

Wet loading

Chemically pre-treated load items must be rinsed thoroughly by hand or using the Rinsing programme before reprocessing in the washer-disinfector to avoid a significant build-up of foam.

Carry out a visual check before starting every programme:

- Is everything correctly loaded/connected for cleaning?
- Was the recommended loading template followed?
- Can the lumen / narrow sections of hollow items be accessed by the wash fluid?
- Are the spray arms clean and do they rotate freely?
- Are the filters clean?
Remove any coarse soiling and clean them if necessary.
- Are the removable modules, injector nozzles, irrigation sleeves and other rinsing fittings securely connected?
- Are the baskets and modules or mobile units correctly connected to the water supply and are the water connectors undamaged?
- Are all chemical containers sufficiently filled?

The following must be checked at the end of every programme:

- Carry out a visual check of the load for cleanliness.
- Check that all hollow items are still securely located on their injector nozzles.

 Any hollow items that have become disconnected from their fittings during reprocessing must be reprocessed.

- Check that the lumen of hollow items are free of obstruction.
- Check that injector nozzles and connectors are securely held in position in the baskets or inserts.

Recontamination Take appropriate measures to prevent recontamination of processed items, e.g.:

- Wear clean gloves when removing the wash load.
- Remove the entire wash load from the carriers before reloading them.

Protein test Cleaning results should be subjected to periodic protein tests, e.g. weekly.

Areas of application

Instruments

Probes, tweezers etc.

Any deposits such as dental cement, composite, polishing paste or similar must be removed immediately after examination of the patient, e.g. with a swab, before it hardens.

Instruments with particularly complex functional ends or very stubborn deposits may require ultrasonic pre-treatment.

⚠ To avoid injury from double-ended instruments or upright instruments with upward-facing probes, the washer-disinfector should be loaded from rear to front, and unloaded from front to rear.

After thermal disinfection, manual secondary cleaning can be undertaken according to relevant bio-substance regulations without danger of infection, although the process must be monitored as necessary.

Transmission instruments

such as turbines, hand-pieces and contra-angles

Transmission instruments with **light guide rods** can be regarded as durable, whereas **fibre optic bundles** can be susceptible to more rapid wear.

Use a neutral to mildly alkaline liquid cleaning agent for cleaning. Where there is build-up of deposits, a citric acid-based neutralising agent should be dispensed.

The wash fluid must be filtered prior to internal cleaning so that the narrow channels in transmission instruments do not become blocked with treatment residues from the wash fluid. The injector basket A 105 should therefore be used for reprocessing transmission instruments, in conjunction with the re-usable tubular filter A 800 and the holder for transmission instruments

A 803 or the holder AUF 1.

The injector basket, tubular filter and the holder AUF 1 each come with their own operating instructions.

- After processing dry internal sections of transmission instruments with sterilised compressed air and then sterilise as required following manufacturer's instructions and national health and safety regulations.

Before using transmission instruments again following reprocessing, a function check must be carried out, e.g. by spraying into a basin, to ensure they are clear.

⚠ **UK only:** This washer-disinfector is **NOT** intended for reprocessing transmission instruments such as turbines, hand-pieces and contra-angles.

Mouth specula

⚠ Risk of damage due to machine reprocessing.
Not all glass mouth specula can be reprocessed by machine.
Always follow the manufacturer's instructions.

Rhodium-coated mouth specula, because of their delicate surface, must be loaded in such a way that the mirror surfaces cannot sustain mechanical damage during reprocessing, e.g. by knocking against other instruments.

Mouth rinsing cups

Mouth rinsing cups should preferably only be reprocessed in the upper basket. There is a greater risk of stress cracking and corrosion in the lower basket due to larger temperature fluctuations and risk of mechanical damage.

Opal glass is particularly suitable for reprocessing in a washer-disinfector.

Chemical processes and technology

In this section, you will find a description of the causes of common chemical reactions which can occur between different types of soiling, process chemicals and the components of the machine, along with their remedies as necessary.

This section is intended as a guide. If unforeseen interactions occur during reprocessing or if you have any queries on this subject, please seek advice from W&H.

General notes	
Problem	How to resolve it
If elastomers (hoses and seals) and plastics in the machine are damaged, for example by swelling, shrinking, hardening or brittleness of materials, tears and cracks, components will not function correctly and this generally leads to leaks.	– Establish the cause of the damage and rectify it. See information regarding “Chemical agents”, “Soiling” and “Reaction between chemical agents and soiling”.
Heavy foaming during a programme affects cleaning and rinsing results. Foam escaping from the wash cabinet can cause damage to the washer-disinfector. Cleaning processes cannot be regulated and validated where there has been a build-up of foam.	– Establish the cause of the foam and rectify it. – Check the process used regularly to monitor foaming levels. See information regarding “Chemical agents”, “Soiling” and “Reaction between chemical agents and soiling”.
Corrosion to stainless steel in the wash cabinet and to accessories can give them a different appearance: – rust (red marks / discolouration), – black marks / discolouration, – white marks / discolouration (etched surface). Corrosive pitting can lead to the washer-disinfector not being water-tight. Depending on application corrosion can influence cleaning and rinsing results or cause corrosion to stainless steel items in the cabinet.	– Establish the cause of the corrosion and rectify it. See information regarding “Chemical agents”, “Soiling” and “Reaction between chemical agents and soiling”.

Process chemicals	
Efficacy	Measures
The ingredients in process chemicals have a strong influence on the longevity and functionality (throughput) of the dispensing system.	– Follow the process chemical manufacturer's instructions and recommendations. – Carry out a regular visual check of the dispensing system (siphons, hoses, dispenser canisters, etc.) for any damage. – Regularly check the flow rate of the dispensing system. – Ensure that the regular cycle of maintenance is observed. – Please contact W&H for advice.
Process chemicals can damage elastomers and plastics in the machine and accessories.	– Follow the process chemical manufacturer's instructions and recommendations. – Carry out a regular visual check of any accessible elastomers and plastics for damage.
The following process chemicals can cause large amounts of foam to build up: – Cleaning and rinsing agents containing surfactants Foam can occur: – In the programme block in which the process chemical is dispensed – In the following programme block if it has been spilt – In the following programme with rinsing agent if it has been spilt	– The process parameters in the wash programme, such as dispensing temperature, dosage concentration, etc., must be set to ensure the whole process is foam-free or very low-foaming. – Please observe the process chemical manufacturer's instructions.
De-foaming agents, especially silicone-based ones, can cause the following: – Deposits to build up in the wash chamber – Deposits to build up on the load – Damage to elastomers and plastics in the washer-disinfector – Damage to certain plastics (e.g. polycarbonate and plexiglass) in the load being processed	– De-foaming agents should be used in exceptional cases only; for instance, when absolutely essential for the process. – The wash chamber and accessories should be periodically cleaned without a load and without de-foaming agent using the Special 93°C-10' programme. – Please contact W&H for advice.

Chemical processes and technology

Soiling	
Problem	How to resolve it
The following substances can lead to a heavy build-up of foam during washing and rinsing: – some disinfecting agents and dishwashing detergents, – active foaming agents such as tensides.	– Thoroughly rinse items in water beforehand. – Select a cleaning programme with at least one short pre-rinse in cold or hot water.
The following substances cause corrosion to stainless steel in the wash cabinet on accessories: – hydrochloric acid, – other substances containing chlorides such as sodium chloride etc., – concentrated sulphuric acid, – chromic acid, – particles of iron and swarf.	– Thoroughly rinse items in water beforehand. – Put the drip-dry items to be washed into the mobile units, baskets, modules and inserts and start a programme as soon as possible after placing in the washer-disinfector.
Reaction between chemical agents and soiling	
Problem	How to resolve it
Soiling containing high protein levels such as blood can cause a heavy build-up of foam when processed with alkaline chemical agents.	– Select a cleaning programme with at least one short pre-rinse in cold water.
Non-precious metals such as aluminium, magnesium and zinc can release hydrogen when processed with very acidic or alkaline chemical agents (oxyhydrogen reaction).	– Please observe chemical agent manufacturer's instructions.

⚠ Unsuitable process chemicals pose a health risk.

Using unsuitable process chemicals will generally cause an unsatisfactory reprocessing result and can pose a health risk or cause damage to property.

Only use process chemicals designed specifically for use in washer-disinfectors and follow the manufacturer's instructions on their use.

Please carefully observe any instructions relating to non-toxic residues.

⚠ Process chemicals pose a health risk.

Some process chemicals may be corrosive and irritant.

Observe the relevant safety regulations and safety data sheets issued by the process chemical manufacturers when handling process chemicals.

Take all protective measures required by the process chemical manufacturer, e.g. wear protective goggles and protective gloves.

Contact W&H for information about suitable process chemicals.

Dispensing systems

The machine is equipped with a number of internal dispensing systems for chemical agents:

- Rinsing agent
This is dispensed via a storage reservoir ☼ in the door.
- Liquid detergent
This is dispensed via a siphon.

Labelling of the siphons

Liquid process chemicals from external containers are dispensed by siphons. Colour coding the siphons can be helpful for correct dispensing.

W&H uses and recommends the following:

- Blue: for cleaning agent
- Red: for neutralising agent
- Green: for chemical disinfection agents or an additional second cleaning agent
- White: for acidic process chemical
- Yellow: for free choice

Adding and dispensing chemical agents

DOS modules

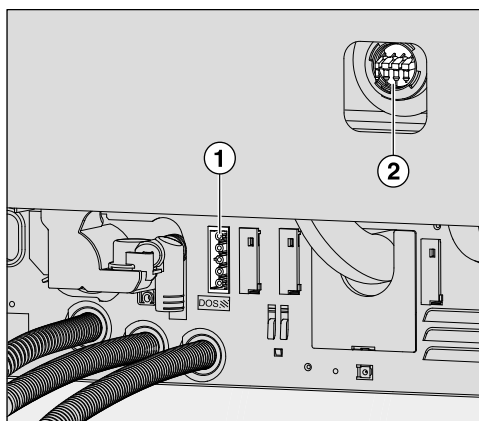
If required an additional external dispensing module (DOS module) can be fitted retrospectively for liquid chemical agents.

External dispensing modules are fitted by the W&H Customer Service Department. Internal dispensing systems cannot be retrospectively fitted.

Connecting a DOS module

The DOS module is supplied with its own installation instructions.

⚠ Before fitting the DOS module, compare the connection data (voltage and frequency) on the data plate with that on the data plate of your machine. If the data does not match, the module could sustain damage. If in any doubt, consult an electrician.



① Power supply for DOS 3 neutralising agent.

② Connection for dispensing hose.

- Connect the module to the electricity supply.
- To connect the dispensing hose, release the hose clip on a free connector and remove the safety cap.
- Push the dispensing hose onto the connector and secure it with a hose clip.

Unused connectors must be blanked off with safety caps to prevent the leakage of wash fluid.

Rinsing agent

Rinsing agent is necessary to ensure water does not cling to and leave marks on items, and to help items dry faster after they have been washed.

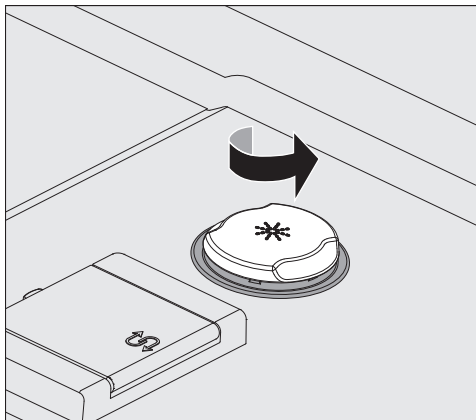
⚠ Residues of rinsing agent remain on the surface of items after they have dried.
It is important to check the suitability of the rinsing agent being used.

Rinsing agent is dispensed in the **Final rinse phase**. The reservoir must be filled for this to occur.

Adding rinsing agent

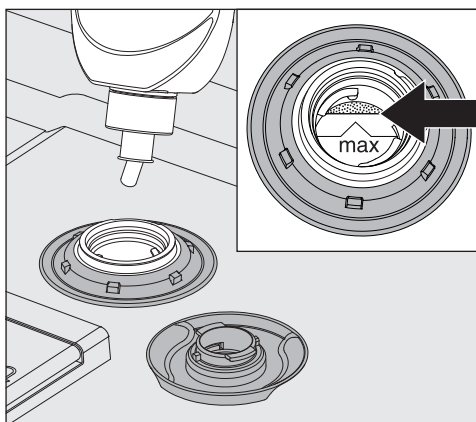
⚠ Do not fill with cleaning agent.
This would damage the reservoir.
Only fill the rinsing agent reservoir with rinsing agent for washer-disinfectors.

- Open the door fully.



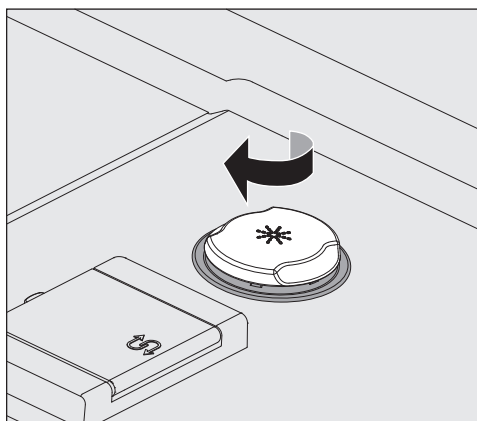
- Unscrew the yellow lid with the * symbol in the direction of the arrow.

The container holds approx. 300 ml.



- Add rinsing agent only until it is up to the “max.” mark on the edge of the funnel.

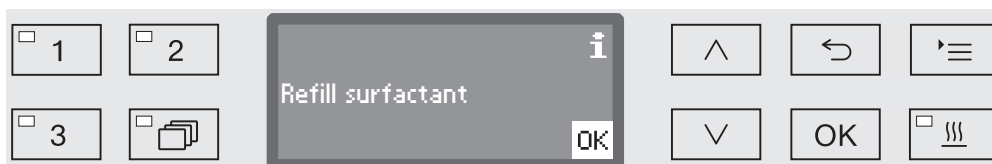
Adding and dispensing chemical agents



- Close the container.
- Wipe up any spilled rinsing agent. This prevents over-foaming occurring during the next programme.

Refill indicator

When the fill level is low in the (DOS 2) supply container for rinsing agent you are reminded to refill it.



- Confirm the message shown with *OK* and
- refill the rinsing agent as described.

Dispensing rinsing agent

The dispensing concentration is set by the W&H Customer Service Department.

- If there are spots of water left on load items after reprocessing, then the dispensing concentration is set too low.
- If clouding or smearing appears on load items, the dispensing concentration is set too high.
- In either case contact the W&H Customer Service Department and have the dispensing concentration reset.

Neutralising agent

For certain programmes, neutralising agent is dispensed in the interim rinse phase after washing, to help prevent discolouration and corrosion spots on the instruments (especially around jointed areas).

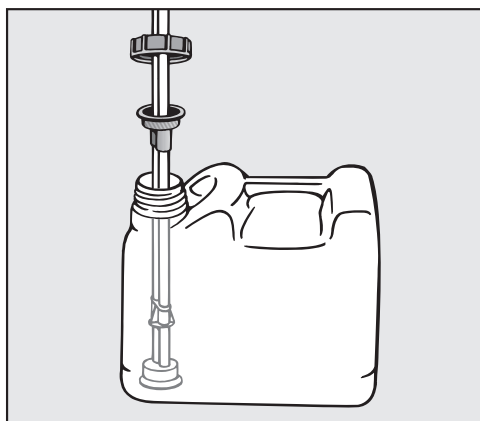
Neutralising agent (pH setting: acidic) neutralises any residues of alkaline cleaning agents on the surface of the load.

Where there is build-up of deposits on the load, a citric acid based neutralising agent must be used.

Neutralising agent is dispensed automatically in the Interim rinse phase after the main wash (see Programme charts). The reservoir must be filled and the dispensing system vented for this to occur.

Refilling neutralising agent

- Place the neutralising agent container (red marking) on the open cabinet door or on a surface which is robust and easy to clean.
- Unscrew and remove the siphon. Place the siphon on the open cabinet door.
- Replace the empty container with a full one.



- Push the siphon into the opening of the container and screw it back on tightly. Observe the colour coding.
- Wipe up any spilled chemical agent thoroughly.
- Place the container on the floor next to the machine or in an adjacent cupboard. The container must not be placed on top of or above the machine. Make sure that the dispensing hose is not kinked or trapped.
- The dispensing system must then be vented (see “Settings ▮/DOS venting”).

Adding and dispensing chemical agents

Checking consumption

Check consumption regularly by checking the fill levels in the supply containers and replace containers in good time to avoid the dispensing system being sucked completely dry.

Refill indicator

When the fill level is low in the DOS 3 supply container for neutralising agent you are reminded to refill it.



- Confirm the message shown with **OK** and
- Refill the neutralising agent as described.

If it has run out, the machine will be locked for further use. It will be ready for use again when the supply container has been replaced.

Dispensing neutralising agent

The dispensing concentration is set by the W&H Customer Service Department.

Instrument care products

⚠ Instrument care products based on paraffin oils (white oils) can damage elastomers and plastic in the machine. Such care products must not be dispensed as chemical agents in this machine even if they are recommended for machine use by the care product manufacturer.

If required, paraffin oil based instrument care products can be used after machine reprocessing within the scope of instrument care. Observe the specifications of the manufacturers of the instruments and care products.

It is acceptable however to reprocess instruments which have been treated with such care products in this machine.

Cleaning agent

⚠ Use only cleaning agent which is suitable for washer-disinfectors.
Do not use cleaning agents for domestic dishwashers.

The washer-disinfector is designed exclusively for use with liquid cleaning agent. The liquid cleaning agent is dispensed from an external supply container via a siphon.

For environmental reasons it is important to always consider the following factors when selecting a cleaning agent:

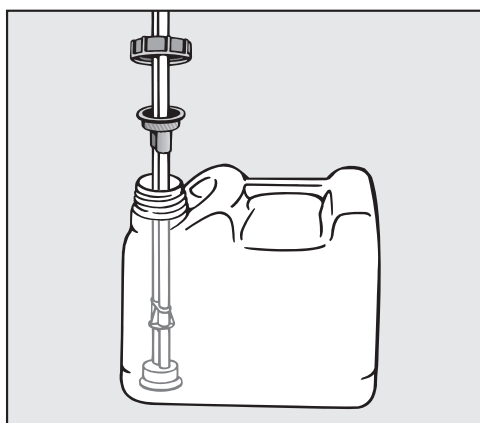
- How alkaline does the cleaning agent need to be for the cleaning application involved?
- Are protein-removing enzymes required and is the programme sequence suitable for this?
- Are tensides required for proper dispersal and emulsification?
- A suitable, mildly alkaline, active chlorine-free cleaning agent should be used for thermal disinfection programmes.

For cleaning specific types of soiling, and for information on the optimum cleaning agents and additives to use for liquid dispensing, please contact the W&H Customer Service Department.

Replenishing liquid cleaning agent

Liquid cleaning agent is dispensed from an external container, e.g. a canister.

- Place the liquid cleaning agent container (blue marking) on the open chamber door or on a surface which is robust and easy to clean.
- Unscrew and remove the siphon. Place the siphon on the open cabinet door.
- Replace the empty container with a full one.



- Push the siphon into the opening of the container and screw it back on tightly. Observe the colour coding.
- Wipe up any spilled chemical agent thoroughly.

Adding and dispensing chemical agents

- Place the container on the floor next to the machine or in an adjacent cupboard. The container must not be placed on top of or above the machine. Make sure that the dispensing hose is not kinked or trapped.
- The dispensing system must then be vented (see “Settings ▸/DOS venting”).

Checking consumption

Check consumption regularly by checking the fill levels in the supply containers and replace containers in good time to avoid the dispensing system being sucked completely dry.

Refill indicator

When the fill level is low in the DOS 1 supply container for liquid cleaning agent you are reminded to replenish it.



- Confirm the message shown with *OK* and
- replenish the liquid cleaning agent as described.

If the liquid cleaning agent has run out, the machine will be locked for further use.

It will be ready for use again when the supply container has been replaced.

Dispensing liquid cleaning agent

The dispensing concentration is set by W&H Service.

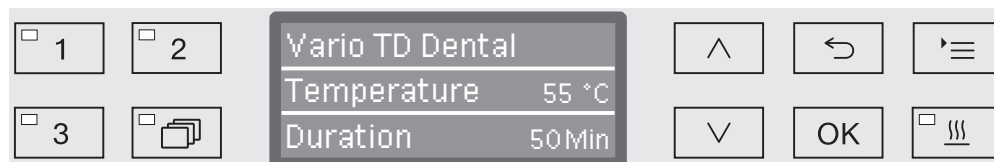
Selecting a programme

Programme selection buttons

- Select a programme using programme selection buttons ,  or .

Programme list

- Press the  button and
- use the $\wedge$ and $\vee$ arrow buttons to highlight a programme and confirm your selection with **OK**.



The LED in the button selected lights up and the relevant programme appears in the display. The LED in the *Start/Stop* button also starts to flash.

Another programme can be selected at any time before a programme has started. Once it has started, programme selection is locked.

The different programmes and their uses are described in “Programme chart” at the end of these operating instructions.

Always select the programme depending on the type of load and degree and type of soiling, or on infection prevention issues.

Starting a programme

- Close the door.
When the door is closed, the LED in the  button will light up.
- Press the *Start/Stop* button.
The LED in the *Start/Stop* button will light up constantly and the LED in the  button will go out.

Starting a programme using delay start

The start of a programme can be delayed, for example, to benefit from economy rates of electricity at night. Starting from the programmed time, a delay start time between 1 minute and 24 hours can be selected in one minute increments (see “Settings /Time of day”).

Delay start must be switched on (see “Settings /Delay start”).

If soiling is left to dry on the load for longer, the reprocessing result can be adversely affected. There is also a risk of corrosion for stainless steel items.

Operation

Setting the start time

- Select a programme.
- Press the *OK* button before starting the programme.



- Use the arrow buttons $\wedge$ (higher) and $\vee$ (lower) to set the hours, and confirm your selection with the *OK* button.

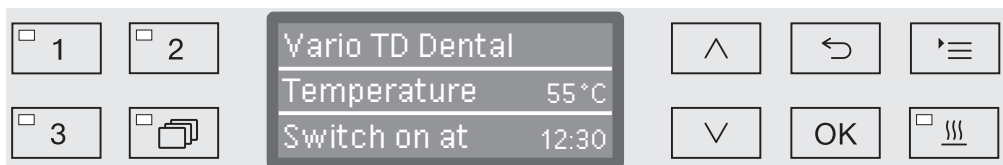
When the *OK* button is pressed, the display jumps automatically to the next input position. You cannot go back to the previous entry. If a mistake is made, the process must be cancelled using the $\hookleftarrow$ button and repeated.

- Set the minutes using the arrow buttons $\wedge$ (higher) and $\vee$ (lower), and save your entry with *OK*.

The start time is now saved and can be changed as described at any time up to activation of delay start.

Activating delay start

- Delay start is activated with the *Start/Stop* button.



The selected programme with the set start time is then shown on the display. If automatic deactivation has been selected (see “Further settings/Switch off after”), the machine will switch itself off after the set time until the programme start time is reached.

Deactivating delay start

- Press the $\hookleftarrow$ button or switch the machine off using the ⏻ button.

Drying

The additional “Drying” function accelerates the drying process at the end of the programme.

When the drying function is activated and the door is closed, the drying system feeds heated and HEPA-filtered air into the wash cabinet for active drying of the load. The heated air is discharged through the steam condenser and can be cooled down if necessary (see “Further settings/Air cooling”).

The drying function can be pre-selected for all programmes with a drying phase or can be retrospectively switched on or off every time a programme is selected (see “Settings  / Drying”).

Drying is activated or deactivated prior to programme start by pressing the  button. The LED in the  button indicates whether the additional function is on or off. The drying time of the programme can also be changed.

When the drying function is activated, the programme runs longer.

Activating and deactivating drying

- Select a programme.
- Press the  button before the programme start.

If W&H Service has set the drying duration so that it can be changed, you can set a new drying duration. Otherwise the pre-set drying duration cannot be changed.

If drying is deactivated

If the drying function has been previously deactivated, it can be activated by pressing a button.



If the time is set as changeable, the preset drying time for this programme is shown in minutes (min) in the display and the possible setting range is displayed in the bottom line.

- Alter the drying duration using the arrow buttons $\wedge$ (higher) and $\vee$ (lower), and save the setting with **OK**. Drying is now activated.

Operation

If drying is activated

If the drying function has been activated, you can choose either to deactivate the drying function or to reset the drying duration as described above.

- Deactivate

Drying is deactivated.

- Set the time (only if the time is set as changeable)

You can alter the drying duration with this option.

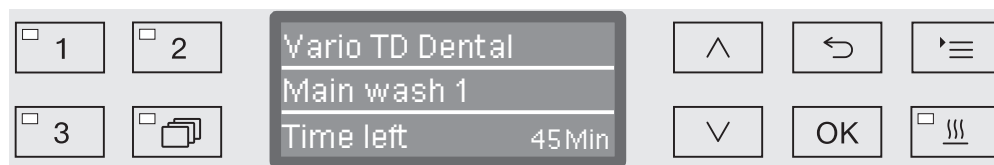
- Automatic door opening

Activates or deactivates automatic door opening at the end of the programme.

- Select an option using the arrow buttons $\wedge$ and $\vee$ and confirm this with *OK*.

Programme sequence indicator

After the programme has started, the programme sequence can be followed on the three-line display.



Top line

- Programme name.

Middle line

The following parameters can be checked using the $\wedge$ and $\vee$ arrow buttons:

- Current programme block, e.g. Main wash 1,
- Actual or required temperature (depending on the display set, see “Further settings/Display: Temperature”),
- A_0 value,
- Cycle number,

Bottom line

- Time left (in hours; under an hour, in minutes).

At the end of the programme

A programme is usually finished when the following parameters and messages are shown in the display:

Top line

- Programme name.

Middle line

Continuously alternating between:

- Parameter met/not met,
- A_0 value,
- Cycle number,

Bottom line

- Programme finished.

In addition, the LED in the *Start/Stop* button goes out and the LED in the $\odot \rightarrow$ button begins to flash. In the factory default state, an acoustic tone also sounds for approx. 10 seconds (see “Settings $\blacktriangleright$ /Volume”).

Cancelling a programme

⚠ If a programme is cancelled, the items in the washer-disinfector must be reprocessed again.

⚠ Be careful when opening the door.
The load could be hot. Danger of scalding, burning, and chemical burns.

Programme cancelled due to a fault

The programme stops and an error message appears on the display. Take appropriate steps to resolve the fault, depending on its cause (see “Problem solving guide”).

Cancelling a programme manually

A programme which is already running should only be cancelled if strictly necessary, e.g. if the load is moving about significantly.

- Press and hold the *Start/Stop* button until the display changes to the following view:



- Select Yes using the ^ and v arrow buttons.
- By pressing the OK button the programme is cancelled. Entry of a PIN code may also be required (see “Further settings/Code”).

If no button is pressed for several seconds, or if the process is cancelled using the ↶ button, the display will revert to the programme sequence display.

Restarting the programme

- Start the programme again or select a new programme.

The structure of the Settings  menu is shown below. The menu incorporates all relevant functions to support daily routine tasks.

In the structure overview all options which can be permanently selected have boxes ☐ beside them. Factory settings are indicated by a tick ☒. You will find an explanation of how to change settings after the overview.

Settings

- ▶ Delay start
 - ▶ No ☒
 - ▶ Yes ☐
- ▶ Drying
 - ▶ No ☐
 - ▶ Yes ☒
 - ▶ Automatic door opening
 - ▶ No ☒
 - ▶ Programme end ☐
- ▶ DOS venting
 - ▶ DOS_
- ▶ Filter maintenance
 - ▶ HEPA filter
 - ▶ Reset (Yes/No)
 - ▶ Filter combination/Tubular filter
 - ▶ Reset (Yes/No)
 - ▶ Interval ↻ 10
- ▶ Language 
 - ▶ deutsch ☐
 - ▶ english (GB) ☒
 - ▶ ... ☐
- ▶ Time of day
 - ▶ Set
 - ▶ Display
 - ▶ On ☐
 - ▶ On for 60 seconds ☐
 - ▶ Do not display ☒
 - ▶ Clock display
 - ▶ 12 h ☐
 - ▶ 24 h ☒
- ▶ Volume
 - ▶ Keypad tone
 - ▶ Buzzer tones
 - ▶ Programme end
 - ▶ Warning

Delay start

This setting must be activated for delay start to be available for use.

- Open the menu as follows:

☰ button

▸ Settings 

▸ Delay start



– No

Delay start is deactivated.

– Yes

Delay start is activated and can be used for all programmes.

- Select an option using the ^ and v arrow buttons.
- Press *OK* to save the setting.

Drying

The drying function can be preset or deactivated for all programmes with a drying phase (see Programme charts).

The additional “Drying” function accelerates the drying process at the end of the programme.

When the drying function is activated and the door is closed, the drying system feeds heated and HEPA-filtered air into the wash cabinet for active drying of the load. The heated air is discharged through the steam condenser and can be cooled down if necessary (see “Further settings/Air cooling”).

■ Open the menu as follows:

’≡ button

▸ Settings 

▸ Drying



– No

The drying function is automatically deactivated for all programmes.

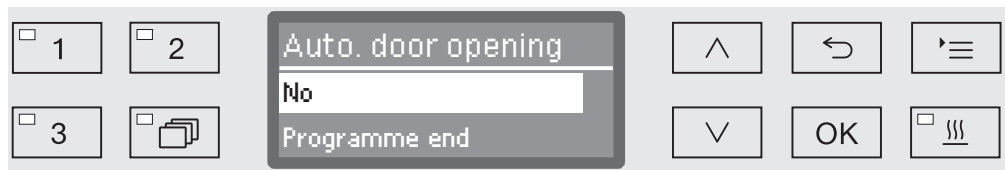
– Yes

The drying function is activated for all programmes. The programme duration is lengthened if the drying function is activated.

■ Select an option using the ^ and v arrow buttons.

■ Press OK to save the setting.

If the Yes option was selected, Automatic door opening can be activated for all programmes. This opens the door at the end of the programme, allowing any heat remaining in the wash cabinet to dissipate faster.



– No

The door remains closed at the end of the programme.

– Programme end

As soon as the temperature in the wash cabinet has dropped below 60 °C, the Comfort door closing aid opens the door slightly. Before the door is opened, an appropriate message is shown on the display and a signal tone sounds if the buzzer has been activated.

- Select an option using the $\wedge$ and $\vee$ arrow buttons.
- Press *OK* to save the setting.

DOS venting

The dispensing system for liquid chemical agents can only dispense reliably if the system has been purged of air.

The DOS system must only be vented:

- if the dispensing system is being used for the first time,
- if the liquid cleaning agent container has been replaced,
- if the dispensing system has been sucked completely dry.

Before venting, ensure that the liquid chemical agent container is sufficiently full and the siphons are securely screwed to the containers. Only one DOS system can be vented at a time.

■ Open the menu as follows:

'≡ button

▶ Settings 

▶ DOS venting

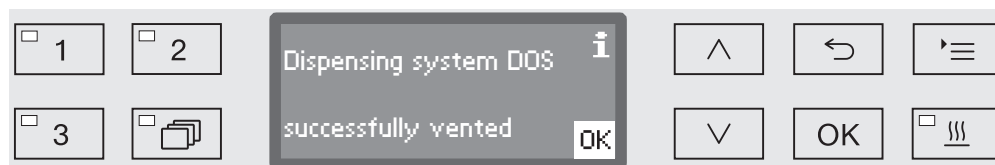
▶ DOS... (name of dispensing system)



Automatic venting will start when the dispensing system is selected. Once started, the automatic venting process can no longer be cancelled.

- Select a dispensing system using the ^ and v arrow buttons.
- Press OK to start the venting process.

Automatic venting is successfully completed when the following message appears in the display:



Filter maintenance

HEPA filter replacement

The air filter in the drying system must be replaced regularly with a new one. For more information on changing the filter, see “Maintenance / Changing the HEPA filter”.

Cleaning the filters in the wash cabinet

The filters in the wash cabinet must be checked and cleaned daily, see “Maintenance/Cleaning the filters in the wash cabinet”.
A counter in the controls can be activated to remind you of the required cleaning at regular intervals.

Cleaning the A 800 tubular filter

The A 800 tubular filter can be used in special injector bars on various mobile units and baskets and must be cleaned at least once a week. Follow the cleaning instructions in the operating instructions for the tubular filter.
For the weekly cleaning, a counter in the controls can be activated to remind you of the required cleaning at regular intervals.

Activating and setting the interval

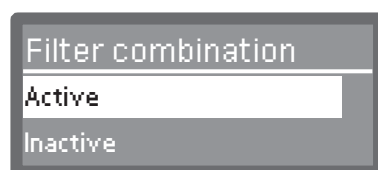
- Open the menu as follows:

▸  button

▸ Settings 

▸ Filter maintenance

▸ Filter combination or Tubular filter



- Active

The cleaning interval is activated.

The Active selection allows you to reset the counter or set the cleaning interval.

- Inactive

The cleaning interval is deactivated.

- Select an option using the $\wedge$ and $\vee$ arrow buttons and confirm your choice with *OK*.

Resetting the counter

The counter for the cleaning interval may be reset only after cleaning has been completed.



– Yes

The counter is reset.

– No

The counter will not be reset.

- Select an option using the $\wedge$ and $\vee$ arrow buttons and confirm your choice with **OK**.

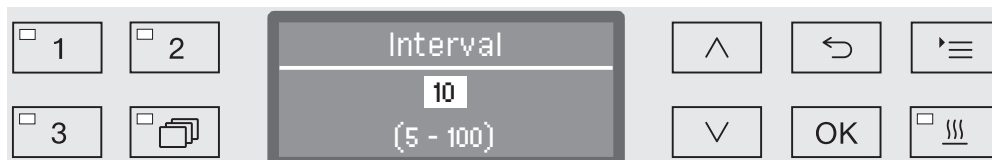
Setting the interval

The interval depends on the number of programme sequences and must be set on the basis of usage and the expected number of particles/solids in the soiling.

Example of tubular filter:

For weekly cleaning with 2 programme sequences per day and 5 working days in the week, this yields an interval of 10 ($2 \times 5 = 10$). With a higher incidence of particles, a shorter interval should be selected in order to clean the tubular filter several times weekly. With a lower incidence of particles, weekly cleaning is sufficient.

We recommend cleaning the tubular filter after every 10 programme sequences.



The setting value is entered in increments of 5. The possible range is shown in the bottom line of the display.

- Use the arrow buttons $\wedge$ (higher) and $\vee$ (lower) to set the interval.
- Press **OK** to save the setting.

Language

The language set will be used in the display.

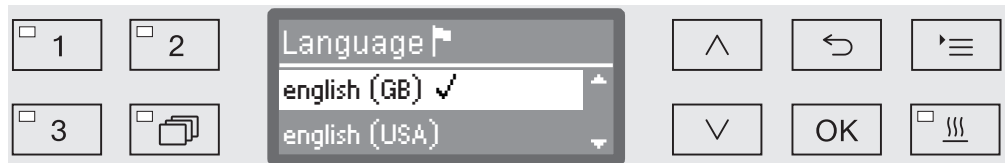
- Open the menu as follows:

☰ button

▶ Settings 

▶ Language 

The flag symbol  after the Settings  and Language  menu options acts as a guide if a language which you do not understand has already been set.



A list of all the available languages will be displayed. The language currently selected is marked with a tick ✓.

The factory default language is set as German.

- Use the ^ and v arrow buttons to select the language you want.
- Press *OK* to save the setting.

The display will change immediately to the language selected.

Time of day

The time of day is required for process documentation, delay start, the machine log book and the display. The date format and the current time of day have to be set.

There is no automatic adjustment between summer and winter time (daylight savings).
You need to make this adjustment yourself as necessary.

Selecting the time of day format

To set the format for the time of day in the display:

- Open the menu as follows:

'≡ button

▶ Settings 

▶ Time of day

▶ Clock display



– 12 h

Time of day in 12 hour format (am/pm).

– 24 h

Time of day in 24 hour format.

- Use the ^ and v arrow buttons to select the date format you want.
- Press OK to save the setting.

Set the time of day

To set the format for the time of day:

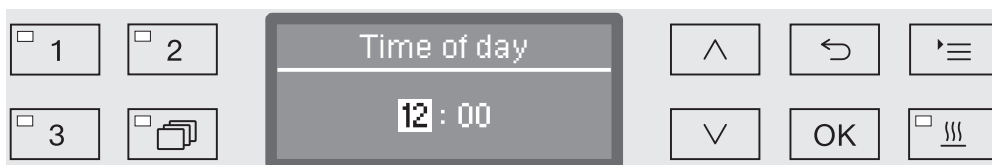
- Open the menu as follows:

☰ button

▶ Settings 

▶ Time of day

▶ Set



- Use the arrow buttons $\wedge$ (higher) $\vee$ (lower) to set the hours and confirm your entry with the *OK* button.

When the *OK* button is pressed, the display jumps automatically to the next input position. You cannot go back to the previous entry. If a mistake is made, the process must be cancelled using the $\curvearrowright$ button and repeated.

- Use the arrow buttons $\wedge$ (higher) and $\vee$ (lower) to set the minutes and press the *OK* button to save the time of day.

The time of day will be saved when the *OK* button is pressed for the last time.

Display

If necessary, the machine may be placed in standby mode during breaks in operation.

- An option to display the time of day must be selected for this purpose.
- Additionally, automatic shutdown must be activated and a wait time set in “Further settings/Switch off after”.

Once the set wait time has elapsed, the machine is in standby mode. During standby, the machine remains switched on and the time is shown on the display. Pressing any button reactivates the machine.

■ Open the menu as follows:

≡ button

- ▶ Settings 
- ▶ Time of day
- ▶ Display



- On

Once the set wait time has elapsed, the machine is permanently in standby, and the time appears on the display.

- On for 60 seconds

Once the wait time has elapsed, the machine can be reactivated for use for a period of 60 seconds, during which the time appears on the display. After 60 seconds, the machine switches itself off.

- Do not display

Once the set wait time has elapsed, the machine switches off, and no time appears on the display.

- Select an option using the ^ and v arrow buttons.
- Press OK to save the setting.

Volume

A buzzer which is integrated into the control panel can give an acoustic signal in the following situations:

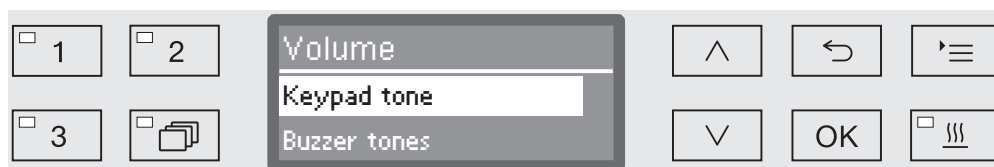
- When buttons are pressed (keypad tone)
- At the end of the programme
- System messages (information)

■ Open the menu as follows:

☰ button

▶ Settings 

▶ Volume



- Buzzer tones

Setting the buzzer volume for programme end and system messages (information)

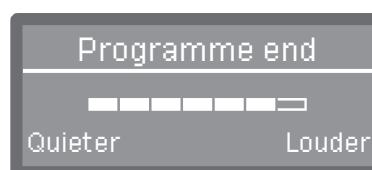
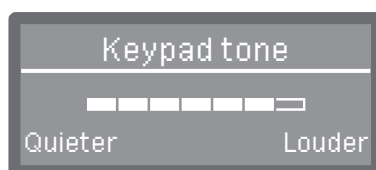
- Keypad tone

Setting the buzzer volume for keypad tone.

■ Select an option using the $\wedge$ and $\vee$ arrow buttons.

■ Confirm your selection with **OK**.

When Keypad tone has been selected you can adjust the volume immediately. When Buzzer tones has been selected you must first select which tone, Warning or Programme end, you would like to adjust the volume for.



The volume level is represented by a bar chart. On the lowest setting the buzzer tone is switched off.

- Use the arrow buttons $\wedge$ (Louder) and $\vee$ (Quieter) to set the volume.
- Press **OK** to save the setting.

The Further settings menu incorporates all administrative processes and settings.

The Further settings menu can only be accessed by using a code. If you do not have the code, contact a user with appropriate access rights or cancel the process using the ↩ button.

In the structure overview all options which can be permanently selected have boxes ☐ beside them. Factory settings are indicated by a tick ☒. You will find an explanation of how to change settings after the overview.

Further settings

- ▶ Code
 - ▶ Change code
- ▶ Date
 - ▶ Date format
 - ▶ DD:MM:YY ☒
 - ▶ MM:DD:YY ☐
 - ▶ Set
- ▶ Log book
 - ▶ Consumption: Water
 - ▶ Consumption: Detergent
 - ▶ Consumption: Surfactant
 - ▶ Consumption: Neut. agent
 - ▶ ...
 - ▶ Operating hours
 - ▶ Programme cycle counter
 - ▶ Service interval
- ▶ Report
 - ▶ Short ☒
 - ▶ Long ☐
- ▶ Temperature unit
 - ▶ °C ☒
 - ▶ °F ☐
- ▶ Programme settings
 - ▶ Change programme
 - ▶ ...
 - ▶ Reset programme
 - ▶ ...
- ▶ Air cooling
 - ▶ Yes ☐
 - ▶ No ☒
- ▶ Release programme
 - ▶ All ☒
 - ▶ Selection
 - ▶ ... ☐

Further settings

- ▶ Move programme
 - Vario TD Dental
 - Rinsing
 - Drain
- ▶ Test programme
 - ▶ No
 - ▶ Laboratory
 - ▶ Validation
- ▶ Interface
 - ▶ Ethernet
 - ▶ Module status
 - ▶ DHCP
 - ▶ RS232
 - ▶ Print reports
 - ▶ Language 
 - ▶ Mode
 - ▶ Baud rate: 9600 ☒
 - ▶ Parity: None ☒
- ▶ Water hardness ⇄ 19
- ▶ Display view
 - ▶ Actual temperature ☐
 - ▶ Required temperature ☒
- ▶ Display
 - ▶ Contrast
 - ▶ Brightness
- ▶ Switch off after
 - ▶ Yes ☒
 - ▶ No ☐
- ▶ Software version
 - ▶ EB ID XXXXX
 - ▶ EGL ID XXXXX
 - ▶ EZL ID XXXXX
 - ▶ EFU ID XXXXX
 - ▶ LNG ID XXXXX

Code

The Further settings menu incorporates relevant functions and system settings which require an enhanced knowledge of machine reprocessing. Access to the menu is therefore protected by a four digit PIN code.

⚠ If a PIN code is lost, a new code must be issued by the W&H Customer Service Department.

Entering the PIN code

When the Further settings menu is selected, you will be prompted to enter the PIN code.

If you do not have the code, contact a user with appropriate access rights or cancel the process using the ↶ button.

- Use the arrow buttons ^ (higher) and v (lower) to enter the relevant digits.
- Confirm each digit individually with the *OK* button.

When the *OK* button is pressed, the display jumps automatically to the next input position. You cannot go back to the previous entry. If a mistake is made, the process must be cancelled using the ↶ button and repeated. Entered digits are replaced by a * symbol.

If all digits are entered correctly the menu will be released.

If an incorrect entry is made, an error message will appear.

- Confirm the message with *OK*.

Access remains blocked and the display reverts to the menu selection.

Further settings

Change code

The PIN code consists of a four digit number and is set by the user. Each digit can be programmed freely between 0 and 9.

⚠ When a new PIN code is entered, the old PIN code is overwritten and is permanently deleted. Therefore it cannot be reinstated. If a PIN code is lost, a new code must be issued by the W&H Customer Service Department.

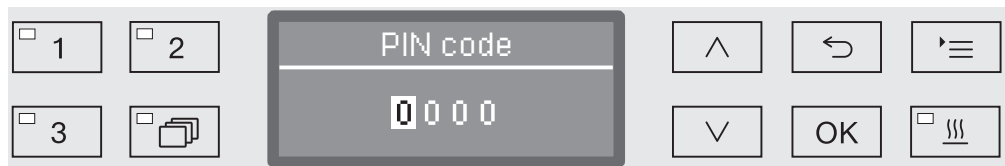
- Open the menu as follows:

☰ button

▶ Further settings

▶ Code

▶ Change code



- Use the arrow buttons $\wedge$ (higher) and $\vee$ (lower) to enter the relevant digits.
- Confirm each digit individually with the *OK* button.

When the *OK* button is pressed, the display jumps automatically to the next input position. You cannot go back to the previous entry. If a mistake is made, the process must be cancelled using the $\curvearrowright$ button and repeated. Entered digits are replaced by a * symbol.

The code is saved to memory once you have confirmed the last digit.

Date

The date is required e.g. for process documentation. The date format and the current date have to be set.

Select the date format

The selected date format appears in the display and in the process documentation.

- Open the menu as follows:

'≡ button

▶ Further settings

▶ Date

▶ Date format



– DD = Day

– MM = Month

– YY = Year

- Use the ^ and v arrow buttons to select the date format you want.

- Press OK to save the setting.

Further settings

Set the date

The current date will be set in the selected date format.

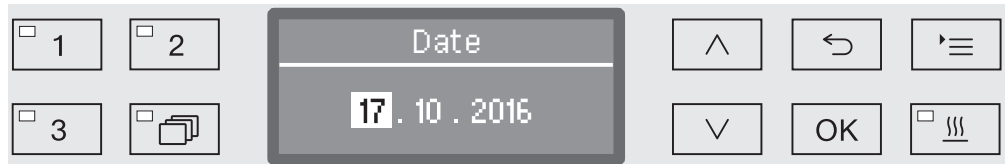
- Open the menu as follows:

☰ button

▶ Further settings

▶ Date

▶ Set



- Use the arrow buttons $\wedge$ (higher) and $\vee$ (lower) and confirm your entry using the *OK* button.

When the *OK* button is pressed, the display jumps automatically to the next input position. You cannot go back to the previous entry. If a mistake is made, the process must be cancelled using the $\curvearrowright$ button and repeated.

- Use the arrow buttons $\wedge$ (higher) and $\vee$ (lower) to set the month/day and confirm your entry using the *OK* button.
- Use the arrow buttons $\wedge$ (higher) and $\vee$ (lower) to set the year and press the *OK* button to save the date.

The date will be saved when the *OK* button is pressed for the last time.

Log book

The entire life cycle of the machine, including consumption data for water and chemical agents, as well as operating hours and programme cycles are recorded in the log book.

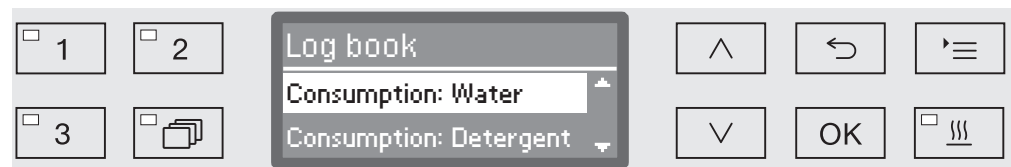
W&H Service can also use the log to calculate a recommendation for service intervals.

■ Open the menu as follows:

☰ button

▶ Further settings

▶ Log book



– Consumption: Water

Display the total amount of water used in litres (l).

– Consumption: Detergent

Display the total amount of liquid cleaning agent used in litres (l).

– Consumption: Surfactant

Display the total amount of rinsing agent used in litres (l).

– Consumption: Neut. agent

Display the total amount of neutralising agent used in litres (l).

– Operating hours

Display the total number of operating hours.

– Programme cycle counter

Total of all completed programme sequences. There is no breakdown of individual programmes. Cancelled programmes are not included.

– Service interval

Date of the next service (entered by the W&H Customer Service Department).

■ Select an option using the ^ and v arrow buttons and confirm your choice with OK.

Values in the machine log book cannot be altered.

■ Press the ↶ button to exit the menu.

Further settings

Report

You can choose between two different report formats of process reports for the purpose of archiving.

More information on selecting these can be found in “Process documentation”.

Temperature unit

During a programme the temperature display is refreshed every 2 to 5 seconds depending on the programme stage. The temperature can be displayed in degrees Celsius (°C) or Fahrenheit (°F).

The temperature unit is set at the factory to °C.

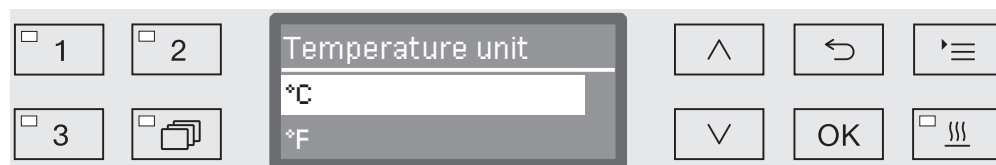
When the temperature unit is changed to °F, the temperature displayed is automatically recalculated.

■ Open the menu as follows:

☰ button

▶ Further settings

▶ Temperature unit



– °C

Display temperature in degrees Celsius.

– °F

Display temperature in degrees Fahrenheit.

■ Select an option using the ^ and v arrow buttons.

■ Press OK to save the setting.

Programme settings

You can use this menu to customise the current programme to suit technical requirements and the load or to reset all programmes to the factory default settings.

Additional specialist knowledge is required to alter programme settings and this should therefore be undertaken only by experienced users or by the W&H Customer Service Department.

More information can be found in “Programme settings”.

Air cooling

During the drying phase, the hot exhaust air from the wash cabinet is released into the room via the steam condenser. Depending on the size of the room, this can heat up the room to a greater or lesser degree.

To reduce this effect, the heated air can be cooled down during the drying phase using a fine spray in the steam condenser.

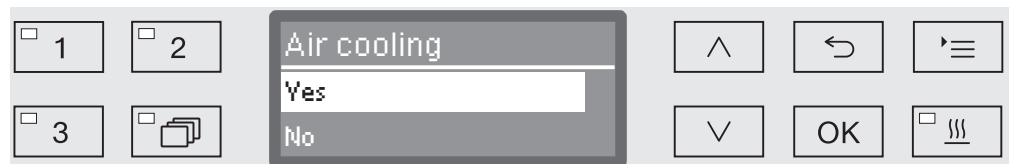
Cooling in the steam condenser will increase water consumption.

- Open the menu as follows:

☰ button

▶ Further settings

▶ Air cooling



– Yes

Hot air is cooled using the steam condenser.

– No

Hot air is released uncooled into the room.

- Select an option using the ^ and v arrow buttons.
- Press *OK* to save the setting.

Further settings

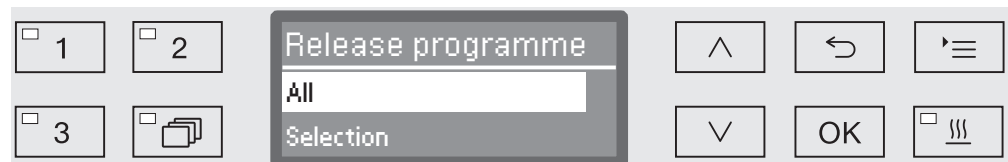
Release programme

It is possible to block access to individual programmes. Blocked programmes are not available for selection, so for example it can be ensured that only validated programmes are used.

- Open the menu as follows:

'≡ button

- ▶ Further settings
- ▶ Release programme



– All

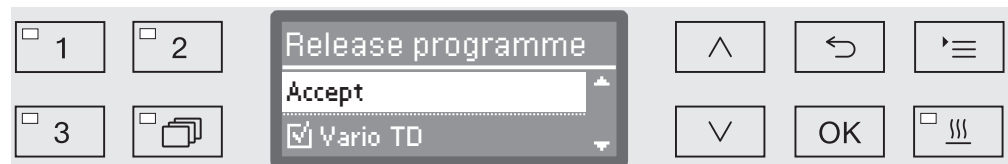
All programmes are released for use.

– Selection

A selection of programmes are available for use.

- Select an option using the ^ and v arrow buttons and confirm your selection with OK.

The Selection option displays a list of all programmes.



Programmes are selected by multiple choice. A box is shown next to all programmes in the list. If a programme is released, there is a tick ☒ in the box. An empty box indicates a blocked programme.

- Programmes can be released or blocked using the arrow buttons ^ and v and by confirming with OK.
- To save the selection select the Accept option at the end of the list and confirm with OK.

Moving a programme: allocating programme selection buttons

You can sort the programme selection list to suit your requirements and therefore also allocate the programme selection buttons , and .

- Open the menu as follows:

'≡ button

▶ Further settings

▶ Move programme



All released programmes are shown in the programme list (see “Further settings/Programme release”). A programme's position in the programme list is decisive for allocating the programme selection buttons. Programmes are numbered from 1 - n. The first three programmes in the list are allocated to the programme selection buttons; for example:

- 1. Vario TD Dental on programme selection button
- 2. Rinsing on programme selection button
- 3. Drain on programme selection button
- 4. Vario TD Intensive
- etc.

- Use the ^ and v arrow buttons to select the programme you would like to move.

- Confirm your selection with OK.

Now you can move this programme within the list.

- Use the ^ and v arrow buttons to move the programme to the position you want.

- Press OK to save the programme to the selected position.

The programme which was previously saved to this position and all subsequent programmes are moved down by one position.

The process can be repeated as often as you wish.

- Press the ↩ button to exit the menu.

Further settings

Test programme

Various programmes are available for monitoring cleaning performance in routine testing.

See “Maintenance” for more information on these programmes.

Interface

With W&H washer-disinfectors, cleaning processes can be documented. To enable this, these washer-disinfectors are equipped with a module slot on the back to take a W&H communication module. The communication module is available from W&H and comes with its own operating instructions.

Only use terminal devices (PC, printers, etc.) which comply with EN/IEC 60950.

Contact W&H for more information about communication modules, software and suitable printers.

Ethernet

The XKM 3000 L Med communication module enables the establishment of an Ethernet interface for digital archiving of process data via external software.

The module can be connected to a WiFi network via an existing wireless access point.

RS232

A XKM RS232 10 Med communication module is required for direct connection to a report printer.

The XKM RS232 10 Med can also be used for connection to a terminal or terminal emulator. The data are transmitted in ASCII code.

Configuring the interface

⚠ The interface must only be configured by suitably qualified and competent persons.

- Open the menu as follows:

☰ button

- Further settings
- Interface



- Ethernet

Configuration of an Ethernet interface

- RS232

Configuration of a serial RS-232 interface

- Select the type of interface and confirm your selection with **OK**.

Then the parameters for the interface must be configured.

Ethernet

- Module status

Connection status displayed (Active/Inactive).

- Address status

List of interface parameters, e.g. IP address, Subnet mask etc.

- DHCP

The Ethernet interface can either be implemented via a Dynamic Host Configuration Protocol (DHCP) or by setting the following parameters:

- IP address
- Subnet mask
- Standard gateway
- DNS server automatic
- DNS server 1
- DNS server 2
- Port type
- Port

Further settings

RS-232

- Print reports

Subsequent selection of cycle reports (see “Process documentation”).

- Language 

Any one of the following languages can be set for the RS-232 interface:

German, English (GB), French, Italian, Spanish, Portuguese, Swedish or Russian.

- Mode

- Terminal

Connection to a terminal or terminal emulator.

Cyrillic characters are not available as ASCII code. When Russian is selected as the language, the information appears in English (GB).

- Printer

Connection to log printer.

- Baud rate

Transfer speed of the interface.

- 2400, 9600, 19200, 38400, 57600, 115200.

- Parity

Ensuring data transmission. The parity of the sender and receiver must match.

- None, Even, Odd.

The following parameters are pre-configured:

Baud rate	9600
Bit	8
Parity	None
Stop bits	1

Water hardness

You can use this menu to set the water softener to the water hardness of the mains supply.

For more information see “Water softener”.

Display: Temperature

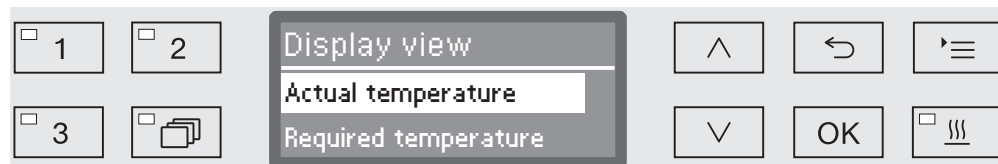
The wash cabinet temperature can be viewed during a programme. Either the current actual temperature or the required temperature which has been preset for the current wash block is displayed.

- Open the menu as follows:

≡ button

▶ Further settings

▶ Display view



- Actual temperature

Display the current actual temperature in the wash cabinet.

- Required temperature

Display the required temperature which has been preset for the current wash block. If a temperature has not been set, a dotted line --- is shown.

During a programme both settings are displayed together as Temperature. There is no breakdown of actual and required temperature.

- Select an option using the ^ and v arrow buttons.
- Press OK to save the setting.

Further settings

Display brightness and contrast

You can use this menu to adjust the brightness and contrast of the display.

- Open the menu as follows:

☰ button

▶ Further settings

▶ Display



– Contrast

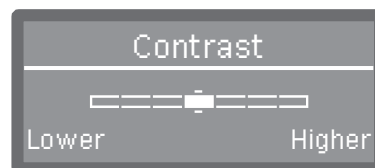
Set the contrast.

– Brightness

Set the brightness.

- Select an option using the $\wedge$ and $\vee$ arrow buttons.

- Confirm your selection with *OK*.



Contrast and brightness are shown as a bar chart in the display.

- Use the arrow buttons $\wedge$ (Higher/Brighter) and $\vee$ (Lower/Darker) to set the brightness and contrast you want.
- Press *OK* to save the setting.

Switch off after

If the machine has not been used for a specific time period, it can be set to standby or switched off automatically.

Ready for operation

When it is ready for use, the machine remains switched on and the time is shown on the display. Pressing any button reactivates the machine.

- To activate standby, the Auto-off function must be enabled under Further settings/Switch off after and a standby time set.
- An option to display the time of day must be selected in Settings /Time of day/Display.

Once the set standby time elapses, the machine is activated for use.

Auto-off function

To save energy, the Auto-off function can be activated. If the machine has not been used for a specific duration, it switches itself off automatically.

- To activate the Auto-off function, it must first be enabled under Further settings/Switch off after and a standby time set.
- Then, the Do not display option must be selected under Settings /Time of day/Display.

After the standby time has elapsed, the machine switches off automatically.

- Use the  button to switch the machine on again.

Further settings

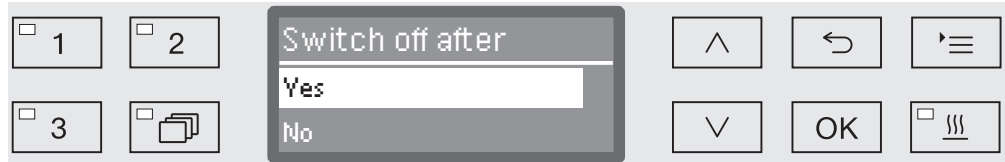
Switching off after activating

- Open the menu as follows:

▸ ≡ button

▸ Further settings

▸ Switch off after



– Yes

The Auto-Off function is activated. A duration must be set after which automatic switch-off should occur.

– No

The Auto-Off function is deactivated.

- Select an option using the $\wedge$ and $\vee$ arrow buttons.

- Press *OK* to save the setting.

Setting the wait time duration

If the *Yes* option is displayed, the wait time duration after which automatic switch-off should occur must be set next.



The wait time duration can be adjusted in 5 minute increments. The possible range is shown in the bottom line of the display.

- Use the $\wedge$ (higher) and $\vee$ (lower) arrow buttons to set the wait time duration.

- Press *OK* to save the setting.

Software version

You can use this menu to call up the software versions of individual elements, e.g. when contacting W&H Service.

For more information see “Service”.

Adjusting programme settings

The programme settings should be adjusted to suit technical requirements and the load.

Additional specialist knowledge is required to alter programme settings and this should therefore be undertaken only by experienced users or by the W&H Customer Service Department.

Programme and dispensing changes must be documented for validated processes. In Germany this is a requirement of the Medical Devices Operator ordinance (MPBetreibV).

The process must be validated again as necessary.

Programme structure

Each programme is subdivided into programme blocks which run one after another. A programme consists of at least one and a maximum of eleven programme blocks. Each block can occur only once in a programme.

The so-called programme header is placed above the programme blocks and contains general programme settings. Individual wash block parameters are also globally activated or deactivated here.

Programme header

- Change volume of water

Every programme block with water intake is allocated a nominal water quantity. The water quantity can be raised or lowered incrementally for all blocks to the base value in the programme chart.

- Drain time

If the on-site waste water system is insufficient to drain the waste water from the wash chamber within the time allocated, the drainage time can be lengthened by a set amount.

Parameters for measuring wash pressure and spray arm monitoring can only be accessed by the W&H Customer Service Department.

Programme settings

Programme blocks

The wash block sequence is pre-determined and is the same as the sequence in the programme chart (see “Programme chart”).

- Pre-wash 1 to 3

A pre-wash removes coarse soiling and foaming agents.

- Main wash 1 and 2

Depending on the load, cleaning generally takes place at temperatures between 45 °C and 65 °C with the addition of appropriate cleaning agent.

- Interim rinse 1 to 4

In the interim rinse stages, the process chemicals from the previous wash blocks are rinsed off and neutralised where necessary by adding appropriate neutralising agents.

- Final rinse 1 and 2

To avoid deposits and corrosion on the load, demineralised (DI) water should preferably be used if available for the final rinse.

Thermal disinfection is carried out in accordance with the A_0 concept of EN ISO 15883 at temperatures between 80 and 95 °C with relevant holding times.

- Drying

Adequate drying reduces the risk of corrosion caused by residual moisture on the load.

Programme block parameters are accessible only to the W&H Customer Service Department, with the exception of the dispensing of rinsing agent and drying parameters.

Opening the menu

The menu for programme settings is locked for machine users by factory default. If required, this function can be activated by the W&H Customer Service Department.

- Open the menu as follows:

'≡ button

- ▶ Further settings
- ▶ Programme settings



- Change programme

Programmes can be adapted to suit specific technical requirements.

- Reset programme

Reset a programme to factory default settings. Programmes newly installed by W&H Service will be deleted with this option.

Programme settings

Reset programme

Programmes can be individually reset to factory default.

⚠ Programmes stored on a free memory location are irretrievably deleted.

...

► Programme settings

► Reset programme

All programmes are then listed in the display.

- Use the $\wedge$ and $\vee$ arrow buttons to select the programme and confirm your selection with **OK**.



– Yes

The programme will be reset to factory default.

– No

Programme parameters will not be changed.

- Use the $\wedge$ and $\vee$ arrow buttons to select an option and confirm your selection with **OK**.

Altering a programme

A programme is altered in two steps:

- Altering the programme begins with a list of all wash blocks allocated to the programme. First this list must be confirmed.
- Then the programme parameters can be altered.

Use this option to document all changes to factory settings in case of a subsequent Service call requirement.

Programme and dispensing changes must be documented for validated processes. In Germany this is a requirement of the Medical Devices Operator ordinance (MPBetreibV).

The process must be validated again as necessary.

...

► Programme settings

► Change programme

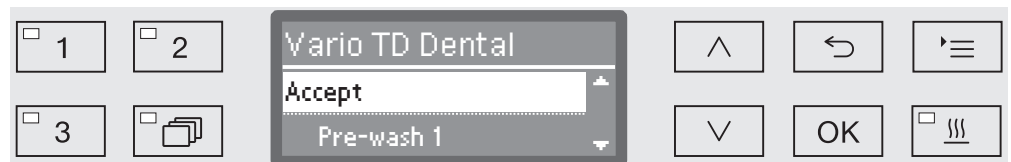


- Select the programme you want to alter.

For more information see “Allocating wash blocks”.

Allocating wash blocks

Every programme change begins with a list of the wash blocks.



All wash blocks which are allocated to the programme are listed in the display. The allocation can be adapted as necessary by W&H Service.

- Select the option *Accept* and confirm with *OK*.

Further setting options will then follow. You can edit these in any order you want.

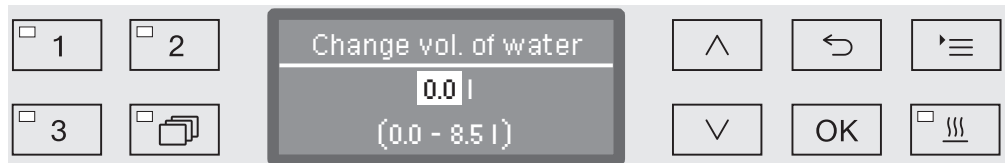
Programme settings

Change water quantity

Increasing the water level is advisable if a large amount of water clings to items due to the structure of the wash load or if a heavy build-up of foam might occur due to the type of soiling (e.g. blood) and the chemical agents used. The additional amount of water required depends on the type of basket or mobile unit used, the type of soiling and the load.

If a lightly soiled load is being reprocessed which does not hold much water, the amount of water can be reset to the factory default amount to save water and energy.

...
► Change volume of water

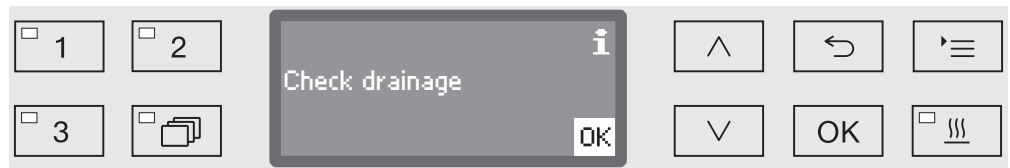


The water quantity can be increased in 0.5 l increments, or set back to the factory default amount. The possible range is shown in the bottom line. The setting “0 l” equates to the factory default setting.

- Use the arrow buttons $\wedge$ (higher) and $\vee$ (lower) to alter the water quantity.
- Press **OK** to save the setting.

Increasing drainage time

If there is still water remaining in the wash cabinet at the end of a wash block, because e.g. the on-site drainage system is inadequate, the following error message will be displayed to enable water to be drained out of the wash cabinet within the designated time:



In this case the drainage time can be increased.

...
► Drain time



– Standard

The standard drainage time setting applies.

– Increased

Drainage time is increased by a strictly preset increment.
Programme duration will increase with this setting.

- Select an option using the ^ and v arrow buttons.
- Press OK to save the setting.

Programme settings

Drying unit

The additional “Drying” function accelerates the drying process at the end of the programme.

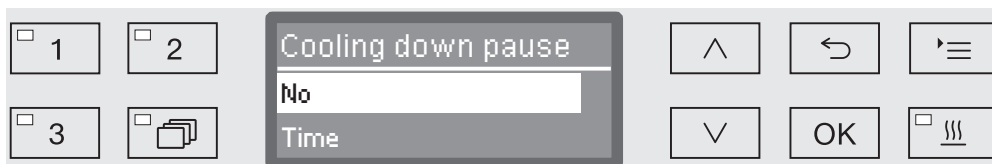
When the drying function is activated and the door is closed, the drying system feeds heated and HEPA-filtered air into the wash cabinet for active drying of the load. The heated air is discharged through the steam condenser and can be cooled down if necessary (see “Further settings/Air cooling”).

Cooling down pause

A cooling down pause can be inserted between the end of the final rinse phase and starting of the drying system. During this pause, water vapour is extracted from the wash cabinet and condensed by the steam condenser. This reduces the moisture level in the wash cabinet, which promotes drying.

...

► Cooling down pause



– No

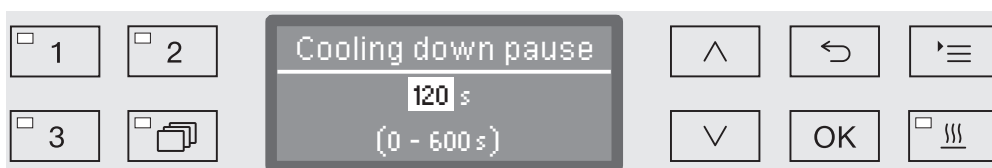
The drying unit starts immediately after the rinse phase without a cooling down pause.

– Time

The cooling down pause is activated for a duration which can be set.

- Select an option using the $\wedge$ and $\vee$ arrow buttons and confirm your selection with **OK**.

When **Time** has been selected, the duration of the cooling down pause must then be set.



The setting value is entered in increments of 10 seconds. The possible range is shown in the bottom line of the display.

- Use the arrow buttons $\wedge$ (higher) and $\vee$ (lower) to set the duration of the cooling down pause.
- Press **OK** to save the setting.

Setting the temperature and time

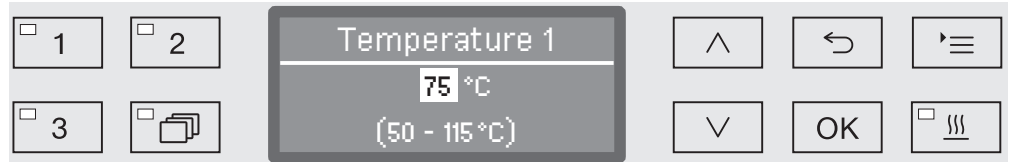
The drying phase consists of two blocks. The temperature and duration (holding time) must be set for each block.

The first block (temperature 1 and drying time 1) is not assigned in all programmes, but if necessary can be set up by the W&H Customer Service Department.

Setting temperature 1

...

► Temperature 1



The temperature is set in 5 ° increments. The possible range is shown in the bottom line of the display.

- Use the arrow buttons $\wedge$ (higher) and $\vee$ (lower) to set the temperature.
- Press **OK** to save the setting.

Setting drying time 1

...

► Drying time 1



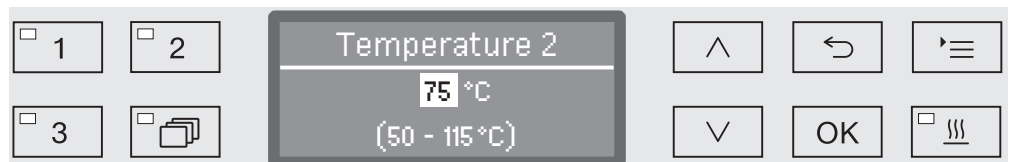
The holding time is set in 1 minute increments. The possible range is shown in the bottom line of the display.

- Use the arrow buttons $\wedge$ (higher) and $\vee$ (lower) to set the holding time.
- Press **OK** to save the setting.

Setting temperature 2

...

► Temperature 2



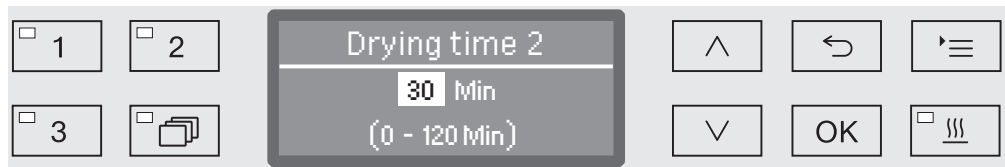
The temperature is set in 5 ° increments. The possible range is shown in the bottom line of the display.

- Use the arrow buttons $\wedge$ (higher) and $\vee$ (lower) to set the temperature.
- Press **OK** to save the setting.

Programme settings

Setting drying time ...
2

- ▶ Drying time 2
- ▶ Set

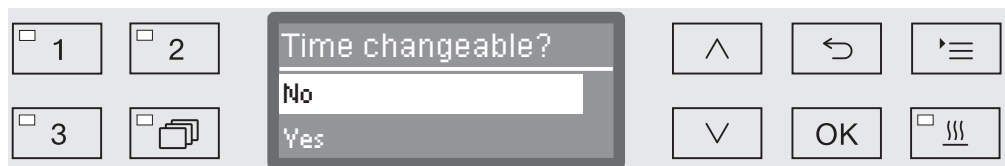


The holding time is set in 1 minute increments. The possible range is shown in the bottom line of the display.

- Use the arrow buttons $\wedge$ (higher) and $\vee$ (lower) to set the holding time.
- Press *OK* to save the setting.

Time changeable If required, the drying time can be set again and saved before the start of every programme.

- ...
- ▶ Drying time 2
- ▶ Time changeable?



– Yes

Drying time can be set again and saved before the start of every programme.

– No

Drying duration cannot be changed.

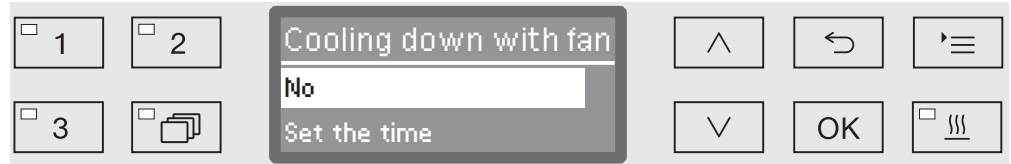
- Select an option using the $\wedge$ and $\vee$ arrow buttons.
- Press *OK* to save the setting.

Fan cooling

After drying, cooling of the wash load can be accelerated by the drying system. To do so, the drying system fan runs with the heating switched off, cooling the interior of the wash cabinet.

...

► Cooling down with fan



– No

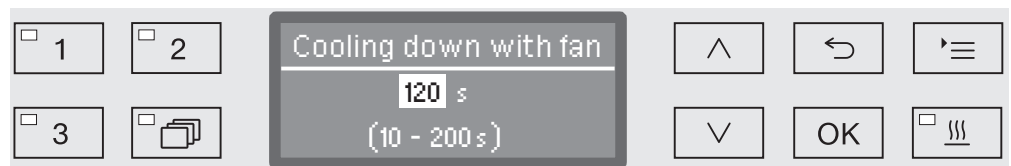
The drying system fan is not switched on.

– Set the time

The drying system fan will run for a specified duration.

- Select an option using the $\wedge$ and $\vee$ arrow buttons and confirm your selection with **OK**.

When Set the time has been selected, the duration of the cooling down pause must then be set.



The setting value is entered in increments of 10 seconds. The possible range is shown in the bottom line of the display.

- Use the arrow buttons $\wedge$ (higher) and $\vee$ (lower) to set the cooling down duration.
- Press **OK** to save the setting.

Documenting processes

Processes are documented per cycle. Required and actual values are always recorded.

During a programme sequence the following data is recorded, among other things:

- Machine model and serial number
- Date
- Programme start and programme name
- Cycle number
- Wash blocks used
- Dispensing system with dispensing temperature and target dispensing amount if necessary
- Target values for temperature and holding times
- Minimum and maximum temperatures during the holding time
- Wash pressure measuring results
- All fault messages
- End of programme
- System messages, e.g. salt refill

Further data can be incorporated into the report as required. Contact the W&H Customer Service Department for more information on this.

Memory

Depending on scale, between 10 and max. 20 cycle reports are stored in an internal power failure safe memory within the machine. In the event of network or printer problems, for example, these can be subsequently recalled. If the memory is full, the oldest report is overwritten.

In addition, raw data from the last programme sequence is stored to create a graphical display of the process data. This data can be transformed into graphical representations using external documentation software. Transferring raw data requires an Ethernet interface. It is not possible to create graphical representations in the display or on a directly connected printer. Power failure safe storage of graphical information is not available.

Adding cycle numbers

The W&H Customer Service Department can add subsequent cycle numbers, e.g. in the event of software updates or if the machine controls are replaced.

Communication module for external archiving

A module slot is integrated into the back of the machine for a W&H communication module to permanently archive cycle reports. The module enables the installation of an Ethernet interface for documentation using documentation software or an RS-232 interface for connection to a report printer.

Please contact W&H for further information on software and suitable printers.

Only use terminal devices (PC, printers etc.) which comply with EN/IEC 60950.

The communication modules are available from W&H as an accessory and can be retrofitted at any time. The modules are supplied with their own installation instructions.

The interface must only be configured by suitably qualified and competent persons. Follow the instructions in "Further settings/Interface".

Process documentation using external software

For digital archiving the process data is transmitted to external documentation software via an Ethernet interface. Transmission can optionally occur continuously during the process or as a single transaction at the end of the process. The settings for this are modified by W&H Service.

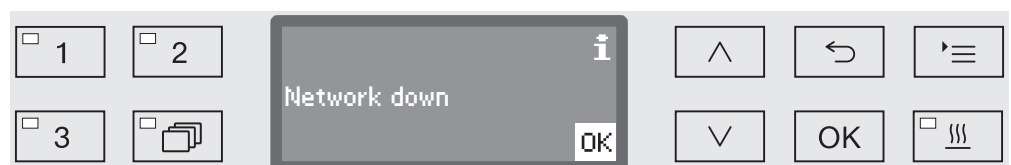
Information on wash pressure, A_0 value, conductivity and temperature in the wash cabinet can be archived graphically if required.

Installation of an Ethernet interface requires the retrospective fitting of an XKM 3000 L Med communication module.

For connection to a WLAN network the module can be connected via a cable to an existing wireless access point.

Problems with data transmission

If there is a network problem during a running process, e.g. due to a loose cable, a relevant fault message is displayed.



The process running will be continued without interruption and the process data will be saved in the meantime in the internal memory.

In the event of network or report software problems contact your system or network administrator.

Process documentation using a report printer

Process reports are printed via a directly connected report printer and archived on paper. Graphic representations are not included. An XKM RS232 10 Med communication module is required for direct connection.

Report formats

You can choose from two different report formats for paper archiving:

- In long format all recorded data is included.
- Short format includes only selected parameters.

The report format has no effect on the data stored in the washer-disinfector. All the data required for a long report is stored, so the report format can be changed for each new cycle.

■ Open the menu as follows:

'≡ button

▶ Further settings

▶ Report



- Short

Print in short format

- Long

Print in long format

- Select an option using the ^ and v arrow buttons.
- Press OK to save the setting.

Outputting cycle reports retrospectively

Internally stored reports can be output retrospectively from the machine.

External software If supported, data can be retrieved directly via the documentation software using an existing network connection. It is not necessary to input entries at the machine itself.

Report printer The following options are available for printing reports retrospectively.

■ Open the menu as follows:

'≡ button

▶ Further settings

▶ Interface

▶ RS232

▶ Print reports



– Last report

Output last cycle report

– Current work day

Output all cycle reports for the current working day

– Last working day

Output all cycle reports for the previous working day

– All

Output all saved reports.

■ Select an option using the ^ and v arrow buttons.

■ Data transmission is started by pressing the OK button.

Data transmission runs in the background so the machine can go on being used.

Periodic checks

Periodic checks must be carried out by the W&H Customer Service Department **after 1000 operating hours or every 24 months at the latest.**

This maintenance will cover the following:

- Electrical safety according to national regulations (VDE 0701/0702 in Germany)
- Door mechanism and door seal
- Any screw connections and connectors in the wash cabinet
- Water inlet and drainage
- Internal and external dispensing systems
- Spray arms
- Filter combination
- Sump including drain pump and non-return valve
- All mobile units, baskets, modules and inserts
- Steam condenser
- Wash pressure sensor
- Drying unit

If there is a communication module:

- Any printer connected to the machine
- Network connection

External documentation software and the computer network will not be tested by the W&H Customer Service Department.

The following operational tests will be carried out within the framework of the maintenance:

- A programme will be run as a test run
- Thermo-electrical measurements will be taken
- Seals will be tested for water tightness
- All relevant measuring systems will be safety tested including error message displays
- Safety features

Routine checks

Before the start of each working day, the user must carry out a number of routine checks. A checklist is supplied with the machine for this purpose.

The following need to be inspected:

- All filters in the wash chamber
- The spray arms in the machine and in any mobile units, modules and baskets
- The wash chamber and the door seal
- The dispensing systems
- The mobile units, baskets, modules and inserts
- The filters in the load carriers

Before the start of each working day, the user must carry out a number of routine checks. A checklist template for this purpose can be found in the appendix to these operating instructions.

The following need to be checked:

- All filters in the wash chamber
- The spray arms in the machine and in any mobile units, modules and baskets
- The wash chamber and the door seal
- The dispensing systems
- The mobile units, baskets, modules and inserts
- The filters in the load carriers

Cleaning the filters in the wash cabinet

The filters in the floor of the wash chamber prevent coarse soiling from coming into contact with the circulation system. Filters can become blocked by soiling. They therefore need to be checked every day and cleaned as necessary.

 Risk of damage due to blocked waterways.

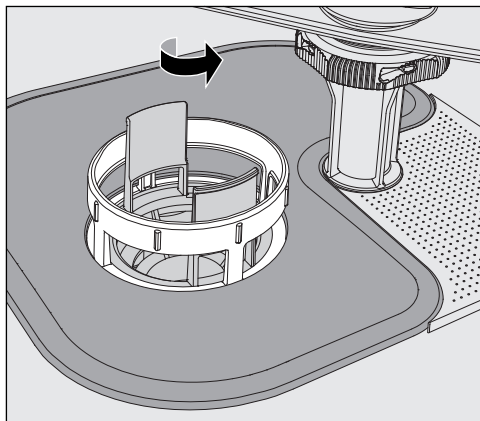
If the filters are not inserted, dirt particles will end up in the machine water circuit. The dirt particles may block the nozzles and valves.

Only start a programme if the filters are inserted.

Check that the filters are positioned correctly when you reinsert them after cleaning.

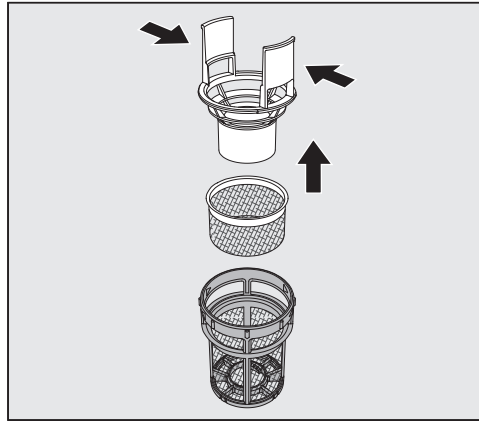
In the controls, it is possible to set a cleaning interval for the filters in the wash cabinet, see “Settings /Filter maintenance”.

The cleaning interval is not a substitute for the daily routine check of the filters in the wash cabinet!

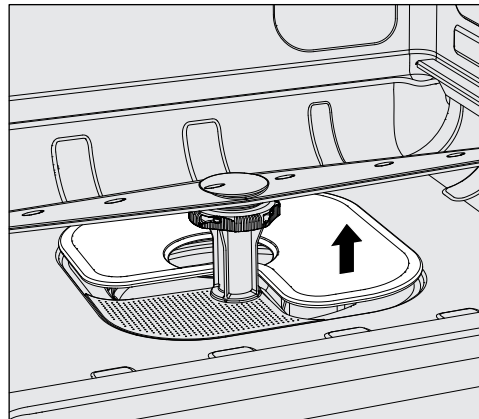


 Danger of injury from glass shards, needles, etc. retained in the filters.

- Turn the microfine filter in the direction of the arrow and remove it together with the coarse filter.



- Press the catches towards each other and pull the coarse filter upwards to remove it.
- Remove the fine filter which sits loosely between the coarse filter and the microfine filter.



- Remove the flat filter last.
- Clean the filters.
- Re-insert the filter combination in the reverse order. Ensure ...
 - ... that the flat filter sits flat in the base of the wash cabinet.
 - ... that the coarse filter has securely clicked into place in the microfine filter.
 - ... that the microfine filter is tightly screwed in as far as it will go.

If a cleaning interval was set for the filters in the wash cabinet, this interval must be reset after cleaning; see "Settings ▮/Filter maintenance."

Cleaning the spray arms

The spray arm nozzles can become blocked, especially if the filters are not inserted correctly in the wash chamber. This can cause coarse particles of soiling to get into the wash water circulation.

The spray arms must be visually checked daily for any soiling.

- To do this remove the mobile unit and the baskets.
- Visually check the spray arms for soiling and blocked nozzles.
- Also check that the spray arms can turn easily.

⚠ Immobile or blocked spray arms must not be used again.
In this case, contact the W&H Customer Service Department.

Cleaning the spray arms

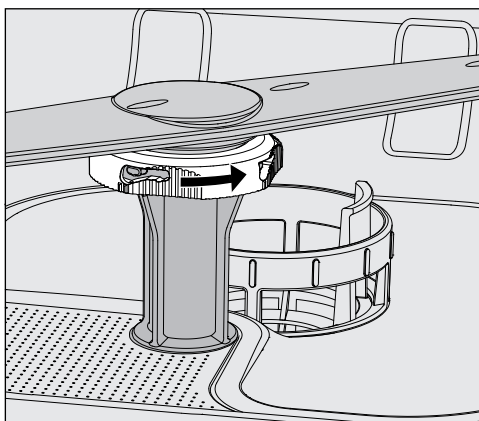
The spray arms in the machine as well as in the mobile units and baskets must be fully dismantled for cleaning:

- Remove the mobile unit or baskets from the machine.

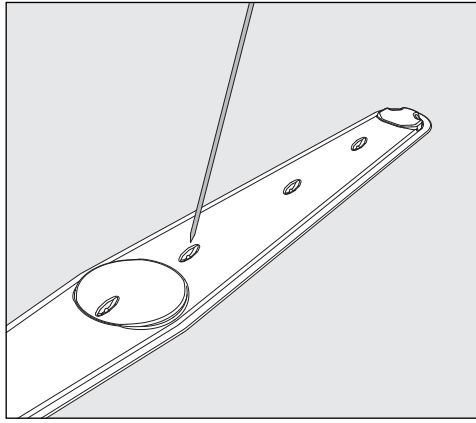
The machine upper spray arm is connected by a push-fit connector.

- Pull the machine upper spray arm downwards to remove it.

The machine lower spray arm and the spray arms in the mobile units and baskets are secured with bayonet fittings.



- To release the knurled bayonet fittings, turn them in the direction of the arrow as far as they will go.
- Then the spray arms can be removed by pulling them upwards or downwards.



- Use a pointed object to push particles into the spray arm.
- Rinse the spray arm thoroughly under running water.

⚠ Do not allow any magnetic objects or load items to attach to the magnets on the spray arms.

Any metallic objects on the magnets can cause a false reading of spray arm rotation.

Remove all metal objects from the magnets.

- Check the spray arm bearings for visible signs of wear.

Visible wear on the bearings can adversely affect the long-term functioning of the spray arms.

In this case, contact the W&H Customer Service Department.

- Replace the spray arms after cleaning.
- Make sure the spray arms can rotate easily after they have been fitted.

The spray arms and baskets each have a number e.g. 03, which is also embossed on the water supply pipes near the bayonet fittings. When refitting, ensure that the numbers on the spray arms correspond with the numbers on the water supply pipes.

Cleaning the machine

⚠ Never clean the machine or near vicinity with a water hose or a pressure washer.

⚠ Do not use cleaning agents containing ammonia or thinners on stainless steel surfaces!
These agents can damage the surface material.

Cleaning the control panel

⚠ Do not use any abrasive materials or general-purpose cleaners to clean the control panel.
These can cause considerable damage to the glass and plastic surfaces and to the onset control buttons.

- Clean the control panel with a damp cloth and a little washing-up liquid or with a non-abrasive stainless steel cleaner.
- Proprietary glass or plastic cleaning agents can also be used to clean the display.
- For surface disinfection use a listed agent recommended by the manufacturer.

Cleaning the door and the door seal

- Wipe the door seals regularly with a damp cloth to remove any soiling.
Seals which are no longer tight or which have suffered damage must be replaced with new ones by the W&H Customer Service Department.
- Remove any stains from the door sides and hinges.
- Regularly clean the groove in the plinth panel under the door with a damp cloth.

Cleaning the wash chamber

The wash chamber is generally self-cleaning. However, should a build-up of deposits occur in the chamber, please contact the W&H Customer Service Department for advice.

Cleaning the door front

- To clean the stainless steel front, use a damp cloth with a solution of washing-up liquid and hot water, or with a non-abrasive cleaning agent for use on stainless steel.

Preventing re-soiling

- To help prevent re-soiling of stainless steel surfaces (fingerprints, etc.), a suitable stainless steel conditioner can be used after cleaning.

Checking mobile units, baskets, modules and inserts

Mobile units, baskets, modules and inserts must be checked daily to make sure they are functioning correctly. A checklist for this purpose can be found in the appendix to these operating instructions.

The following points need to be checked:

- Are the mobile unit or basket rollers in good condition, and are they securely attached to their mobile units or baskets?
- Are the water connectors present and undamaged?
- Are height-adjustable water connectors adjusted to the correct height and securely fixed?
- Are all injector nozzles, irrigation sleeves and hose adaptors securely attached to mobile units, baskets and modules?
- Are all injector nozzles, irrigation sleeves and hose adapters clear so that wash water can flow through unhindered?
- Are all caps and fasteners securely attached to the irrigation sleeves?
- Are end caps present and securely located for all modules and injector manifolds?
- Are the locking caps in the water connectors of mobile units and baskets working properly?

Where applicable:

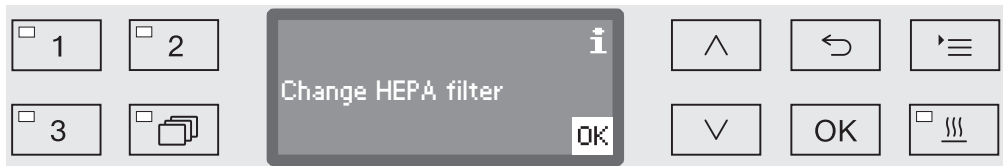
- Do the spray arms rotate freely?
- Are the spray arm nozzles free of any blockages? See “Cleaning the spray arms”.
- Are the magnets integrated into the spray arms free of any metallic objects sticking to them?
- Check whether the tubular filters need to be cleaned or filter plates, e.g. in an AUF 1 need to be replaced.

Maintenance of mobile units, baskets, modules and inserts

Periodic checks must be carried out by the W&H Customer Service Department **after 1000 operating hours or every 24 months at the latest.**

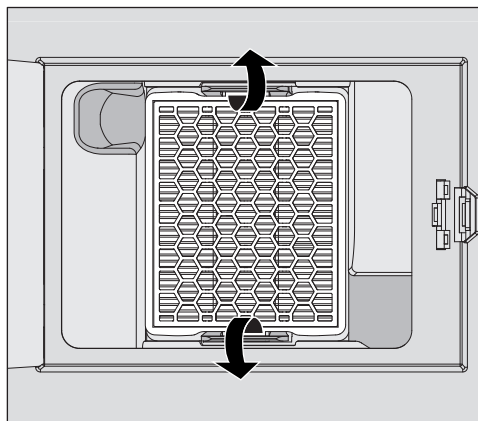
Changing the HEPA filter

The air filter for the internal drying unit has a limited lifespan and has to be replaced at regular intervals, e.g. when the following message appears:



Replace with an **Original Miele HEPA filter classification 13** for optimum performance.

- Open the service panel in the plinth.



- Push the retaining clips outwards to release the HEPA filter.
- Grasp the indentations on the sides and pull the filter forwards.
- Insert a new HEPA filter, making sure that it locates securely in the retaining clips.
- Close the service panel.

Whenever the HEPA filter is replaced the operating hours counter must be reset.

Resetting the operating hours counter for the HEPA filter

The maximum permissible number of operating hours is pre-set in the controls for all filters. After a filter has been changed the operating hours counter must be reset.

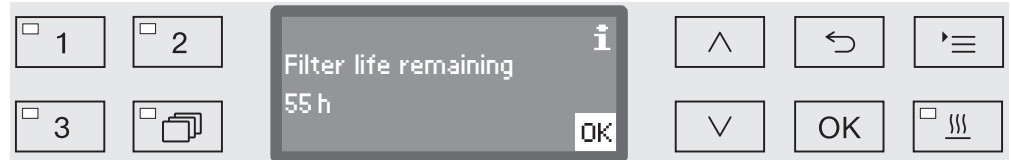
- Open the menu as follows:

☰ button

▶ Settings

▶ Filter maintenance

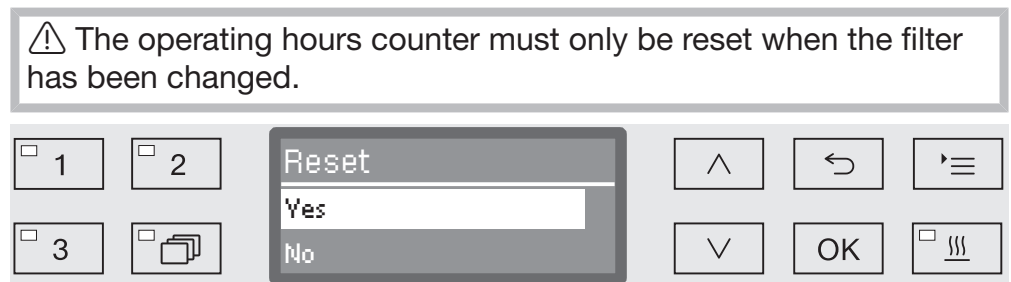
▶ HEPA filter



The remaining operating hours for this filter type are shown on the display.

- Confirm the message with **OK**.

Then you will be asked if you wish to reset the operating hours counter.



– Yes

The operating hours counter will be reset for the new filter.

– No

The counter will not be reset.

- Select an option using the ^ and v arrow buttons.
- Confirm your selection with **OK**.

Process validation

The standard of cleaning and disinfection in the disinfection programmes must be confirmed by the user as a routine matter.

Safety checks and performance validation must be carried out in accordance with the internationally recognised standard EN ISO 15883. In some countries, national regulations, guidelines and recommendations also apply.

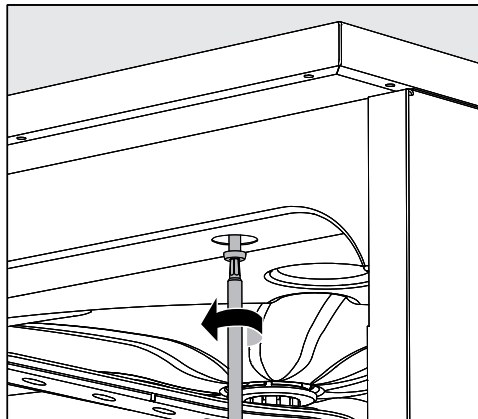
In Germany, these are:

- Transposition of the Medical Device Directive into national legislation (German Medical Devices Act in the UK)
- German Medical Device Ordinance
- The recommendations of the Commission for Hospital Hygiene and Infection Prevention (KRINKO) and the German Federal Institute for Drugs and Medical Devices (BfArM)
- The general guidelines of the German Society for Hospital Hygiene (DGKH), the German Society for Sterile Supplies (DGSV) and the Instrument Reprocessing Working Group (AKI)

Test point for measuring sensors

The sensor test point for validation is located at the front right on the top of the machine under the lid or the worktop. To reach the access point, the lid of the machine must be removed or the machine must be pulled out from under the worktop.

- Open the door.



- Unscrew the fixing screws.
- Then remove the safety screws on the back of the machine from the **lid** and lift the **lid** to remove it.

Or

- Pull the washer-disinfector out by approx. 15 cm from under the **worktop**.

Test programmes Various programmes are available for monitoring cleaning performance in routine testing. The test programmes are not separate processing programmes. Rather, they are additional functions that can be activated prior to starting any processing programme.

The test programmes interrupt the programme sequence automatically at specified points. The interruption is indicated by an audible signal tone and message on the display. The W&H Customer Service Department can set the duration of the interruption to between 10 seconds and approx. 42 minutes. During this time period, measurements can be made or the door can be opened to obtain a sample.

To prevent cooling of the wash chamber, do not keep the door open too long.

After the time period elapses, the programme sequence continues automatically. If the door has been opened, the programme cannot resume until the door has been closed again.

If a measurement or sample is not needed, you can resume the programme sooner by pressing the *Start/Stop* button.

In addition, the door can be opened at any time during the drying phase to check the dryness of the wash load. In this way, you can determine the optimal drying time.

The following test programmes can be selected:

- Laboratory

The programme sequence can be paused in each wash block immediately before the wash fluid is drained away.

- Validation

The programme sequence is interrupted at the following points:

- before the wash fluid is drained away in the final wash block,
- after the interim rinse before the wash fluid is drained away, and
- after water intake and before draining in the final rinse block.

Maintenance

Activating a test programme

Test programmes are valid for only one programme sequence each time. A test programme must be selected again for further tests.

- Open the menu as follows:

▸ ≡ button

▸ Further settings

▸ Test programme



– No

The menu is exited without selecting a programme.

– Laboratory

Activates the Laboratory test programme

– Validation

Activates the Validation test programme

- Select an option using the ^ and v arrow buttons.

- Press OK to activate the test programme for the next programme start.

You can now start the performance test.

- Select and start a programme using the programme selection buttons or via the programme list.

The programme will be identified in the bottom line as Test programme during the programme sequence.

If you want to deactivate the test programme before the performance test you need to go to the next menu level up and select the No option.

The following guide should help you to find the reason for a fault and to correct it. However, please observe the following:

⚠ Repairs may only be carried out by the W&H Customer Service Department.
Unauthorised repairs can expose the user to considerable risk.

To avoid unnecessary service visits, check that the fault has not been caused by incorrect operation when an error message first appears.

Technical faults and messages

Problem	Cause and remedy
The display is dark and all LEDs are out.	The machine is not switched on. ■ Switch the washer-disinfector on using the ⏻ button. A fuse is defective or has tripped. ■ Refer to the minimum fuse rating on the data plate. ■ Reset the trip switch. ■ If the fuse trips again, call the W&H Customer Service Department. The machine is not plugged in, or connected to the power supply. ■ Insert the plug and switch on at the socket.
The machine has switched itself off.	This is not a fault. The Auto-Off function switches the machine off automatically after a pre-set duration to save energy. ■ Switch the machine on using the ⏻ button.
The time appears on the display.	This is not a fault. The machine is ready for use. ■ Press any button to reactivate the machine.
Interruption to the power supply during operation	If a temporary interruption to the power supply occurs during a programme sequence, no action is required. The programme will continue after the interruption. If the temperature in the wash cabinet drops below the minimum value required for the programme block during the interruption to the power supply, the programme block will be repeated. In the case of an interruption to the power supply of ≥ 20 hours, the entire programme will be repeated. Each interruption to the power supply is reported in the process documentation.
Next service due on:	This is not a fault. The W&H Customer Service Department has recommended a date for the next service visit. ■ Please contact the W&H Customer Service Department to arrange a service visit.

Problem solving guide

Dispensing/Dispensing systems

⚠ Caution when handling chemical agents.

For all chemical agents, the chemical agent manufacturer's safety instructions as given on their safety data sheets must be observed.

Problem	Cause and remedy
DOS Refill	During a programme sequence a low level of liquid chemical agent in a container has been identified. ■ Replace the empty container with a full one.
Programme could not be started. Vent DOS	A programme cannot be started because there is air in the dispensing system. ... the dispensing system has been sucked completely dry. ■ Check the level in the supply container. Replace an empty container with a full one, if necessary. ■ Vent the dispensing system.
Dispensing system DOS venting	This is not a fault. The dispensing system will now be automatically vented. Wait until the venting process is finished.
Venting DOS cancelled. Venting must be repeated	Venting of the dispensing system was cancelled because an insufficient flow rate was identified. A dispensing hose may be kinked or the siphon blocked. ■ Check the dispensing hose for kinks and leaks. Position it so that it cannot become kinked. ■ Check the suction aperture of the siphon for blockages and remove these as necessary. ■ Start the venting process again. Contact the W&H Customer Service Department if there are leaks in the dispensing hose or a fault with the siphon.
Check container/lance DOS	Little or no flow has been identified. ■ Check the level in the supply container. Replace an empty container with a full one, if necessary. ■ Check the suction aperture of the siphon for deposits. ■ Vent the dispensing system. The dispensing hose is blocked. ■ Remove any kinks from the dispensing hose. Position it so that it cannot become kinked. ■ Check the dispensing hose for leaks. ■ Vent the dispensing system. Contact W&H Service if there are leaks in the dispensing hose or a fault with the siphon.

Highly viscous (thick) process chemicals can affect the dispenser monitoring and lead to inaccurate data. In this instance, please contact the W&H Customer Service Department for advice.

Insufficient salt/Water softener

Problem	Cause and remedy
Refill salt	Salt is running low in the water softener. ■ Refill the reactivation salt before starting the next programme.
Machine locking out Insufficient salt	Salt in the water softener is completely depleted and reactivation is no longer possible. The machine is locked for further use. ■ Refill the reactivation salt.
Salt container empty, Programme locked	The water softener cannot reactivate because there is insufficient salt. The machine is locked for further use. ■ Refill the reactivation salt. The lock is lifted a couple of seconds after refilling the salt reservoir. Reactivation will occur automatically during the next programme sequence.
Salt container lid not properly closed	The salt container is not closed properly. ■ Close the container properly.
	Salt residues are preventing it from closing. ■ Remove all residues from the funnel, the lid, and the seal. Do not use running water as this can cause the salt container to overflow. ■ Close the container properly.
	The salt container flap has sprung open during a programme. ⚠ When the door is opened, hot steam and chemical agents can escape! ■ Open the door and close the container flap.

Problem solving guide

Cancel with fault code

If a programme is cancelled and a fault code appears, e.g. Fault XXX (where XXX represents a number), there could be a serious technical fault.

In the event of a programme being cancelled and a fault code being shown:

- Switch the washer-disinfector off using the  button.
- Wait approximately 10 seconds before switching the machine on again with the  button.
- Acknowledge the fault code by entering your PIN code.
- Start the previously selected programme again.

If the same message appears again:

- Make a note of the error message.
- Switch the washer-disinfector off using the  button.
- Contact the W&H Customer Service Department.

Please also read the notes regarding the following fault codes.

Problem	Cause and remedy
Fault 403-405	A programme has been cancelled because water intake by the machine was insufficient or severely restricted. ■ Open the stopcocks fully. ■ Follow the additional information given in the Check water inlet message.
Fault 406-408	A programme was cancelled because the water flow rate is insufficient. ■ Check whether the stopcocks are fully opened. ■ Please refer to the information regarding minimum flow pressure in “Connection to the water supply” and “Technical data”. ■ Check the filters in the water supply. ■ In this instance, please contact the W&H Customer Service Department for advice.
Fault 412-414	A programme was cancelled because the water flow rate is too high. ■ Refer to the information regarding recommended maximum flow pressure and maximum permissible static water pressure in “Connection to the water supply” and “Technical data”. ■ In this instance, please contact the W&H Customer Service Department for advice.
Fault 432	The door was opened using the emergency release. ■ See “Opening the door using the emergency release”.

Problem	Cause and remedy
Fault 433	Protruding wash load items or other objects, e.g. towels, are preventing the door from being closed properly by the Comfort lock. ■ Remove all objects and sort the wash load so that it does not obstruct the door. ■ Close the door.
Fault 440	The float switch in the base of the machine has not been activated. The switch might be blocked. ■ Remove the filter combination. ■ Check the float switch to make sure it moves freely. The float switch is located in the base of the machine behind the spray arm.
Fault 460-462	A programme was interrupted due to the spray arm speed dropping below the set value. - Items are obstructing the machine or basket spray arms. ■ Arrange the load so that the spray arms can turn easily and start the programme again. - Wash pressure is too low due to a heavy build-up of foam. ■ Follow the instructions regarding foam build-up in “Chemical processes and technology”. - Spilled rinsing agent was not wiped away after filling or rinsed away by the programme Rinsing, which led to a strong foam build-up during the next programme sequence. ■ Start the Rinsing programme in order to clean the wash cabinet. ■ Then reprocess the items again.
Fault 492, 504	A programme has been cancelled because there is not enough spray pressure. The filters in the wash cabinet may be blocked.  Danger of injury from glass shards, needles, etc. retained in the filters. ■ Check and clean the filters in the wash cabinet (see “Maintenance/Cleaning the filters in the wash cabinet”).

Problem solving guide

Problem	Cause and remedy
Fault 518–521	No flow was detected when dispensing from an external container.  Take care when using process chemicals. For all process chemicals, the manufacturer's safety instructions as given on their safety data sheets must be observed. ■ Check the level in the containers and replace empty ones with filled ones. ■ Check the suction apertures of the siphons and remove any deposits. ■ Check the hose connections on the siphons, the washer-disinfector and any dispensing modules. ■ Remove any kinks from the dispensing hoses and check the hoses for leaks. Position the dispensing hoses so that they cannot kink. ■ Vent the dispensing systems. If you identify any leaks in the dispensing hoses or defects on the siphons, contact the W&H Customer Service Department.

Problem	Cause and remedy
Fault 526	The supply pressure has dropped below the minimum value. - The water pressure is too low due to a heavy build-up of foam. Spilled rinsing agent may not have been cleaned up after being added. ■ Follow the instructions regarding foam build-up in “Chemical processes and technology”. ■ Start the Rinsing programme in order to clean the wash cabinet. - The carriers were loaded incorrectly or overloaded. ■ Use only mobile units, baskets, modules and inserts suitable for the particular application. ■ Arrange hollow or deep-sided wash load items so that water runs off them freely. - The water lines are clogged or leaking. ■ Check and clean the filters in the wash cabinet and spray arms. ■ Check the injector bars for possible leaks, e.g.: - Are all caps and end caps in place? - Are all connections fitted with nozzles, irrigation sleeves, hose adapters or other washing attachments? - Are installed silicone hoses undamaged? ■ Check the washer's water connectors in the back panel of the wash cabinet to ensure that they are attached tightly, and remove any blockages. - The amount of water may be insufficient for the application. ■ Increase the amount of water (see “Programme settings”). If necessary, consult W&H Service.
Fault 542	A programme was cancelled because the water in the wash cabinet is only being pumped away slowly or not at all. - The drain hose is blocked. ■ Remove any kinks or large loops in the drain hose. - The filters in the wash cabinet are blocked.  Danger of injury from glass shards, needles, etc. retained in the filters. ■ Clean the filters in the wash cabinet. - The drain pump or the non-return valve is blocked. ■ Clean the access to the drain pump and the non-return valve. - The drainage system cannot take in enough water because it is blocked. ■ Contact a suitably qualified installer.

Problem solving guide

Problem	Cause and remedy
Fault 550	The waterproof system has been activated. One of the water supply hoses might have a leak. ■ Close the stopcocks. ■ Contact the W&H Customer Service Department.
Fault 555	Too much water has accumulated in the steam condenser. ■ Restart the machine. Excess water is pumped out automatically.
Fault 559	There is a problem with the process documentation interface. The machine has detected a module for an Ethernet interface, but only a serial interface (RS232) is activated in the controls. Deactivate the RS232 interface: ■ Open the menu for configuring the interface Further settings/Interface and then select Ethernet. ■ Wait approx. 90 seconds. The Ethernet module XKM 3000 L Med needs this time for initialisation. It may be necessary to reconfigure the interface. Or ■ Replace the Ethernet module XKM 3000 L Med with a XKM RS232 10 Med module to set up a serial interface.
Fault 578	The peak load cut-out has lasted longer than 3 hours. ■ Have your electrical system and your energy management system tested by a suitably qualified person.

Process-related faults and messages

Problem	Cause and remedy
Change HEPA filter	The maximum permissible operating hours for the HEPA filter have been reached. ■ Replace the HEPA filter with a new one. ■ Reset the operating hours counter for the HEPA filter.
Drying during programme deactivated	Drying cannot be selected at the start of a programme because drying is not available for the selected programme. ■ Start the programme without drying. Or: ■ Have the drying parameters for this programme adjusted by the W&H Customer Service Department.
Wrong code entered	The PIN code entered is not the same as the code saved. ■ Enter the PIN code again. ■ Report the loss of the PIN code to the W&H Customer Service Department.
Test programme: test object can now be removed	This is not a fault. A test programme is running to check performance. At certain points in the programme the sequence is interrupted so that samples can be taken. ■ Take a sample. or ■ Wait. The programme will continue automatically in approx. 30 seconds. or ■ Continue the programme without delay by pressing the <i>Start/Stop</i> button.
Programme cancelled	This is not a fault. A programme which was running was cancelled by the user. ⚠ The wash cabinet interior can be very hot. When the door is opened, hot steam and chemical agents can escape. Protective measures for personal safety must be observed.
Programme continued	This is not a fault. The process of cancelling a programme was not completed. The programme which was running continued without interruption.
Peak load cut-out	This is not a fault. Individual components of the machine are paused while there is a peak load signal from your energy management system.

Problem solving guide

Problem	Cause and remedy
All settings reset	This is not a fault. A user has restored factory default settings. ■ Confirm the message with <i>OK</i> .
All programme settings reset	This is not a fault. A user has restored the factory setting for the programme. ■ Confirm the message with <i>OK</i> .

Door

Problem	Cause and remedy
The door is open a fraction and cannot be closed using the  button.	This is not a fault. The Comfort door lock has opened the door slightly at the end of the programme. ■ Open the door. The door can now be closed completely again using the  button.
Door not closed properly	Slamming the door can result in problems with the Comfort door lock. ■ Open and close the door.
	If the same message appears again: ■ Contact the W&H Customer Service Department.
Warning. Cabinet hot! Open anyway?	When pressing the  button, be aware that the temperature in the wash cabinet is over 70 °C.  When the door is opened, hot steam and chemical agents can escape! ■ Open the door only when strictly necessary.

Problem	Cause and remedy
Door blocked	Protruding load items or objects are blocking the door, e.g. towels. ■ Remove all objects and sort the load so that it does not obstruct the door.
	The door seal sticks. ■ Clean the door seal.
	Heavy objects in front of the washer-disinfector can impede the automatic opening of the door by the Comfort door lock. ■ Do not place (heavy) objects in front of the door of the washer-disinfector.
	The Comfort door lock is blocked. ■ Try to open the door carefully (without using force) by pulling on the door handle. If the door is still blocked: ■ Open the door using the emergency release. ■ Close the door and try to open it again using the  button. If it is still blocked: ■ Contact the W&H Customer Service Department.
Obstruction sensor	Protruding wash load items or objects are blocking the door, e.g. towels. The door was closed before the door lock rail was fully retracted. ■ Open the door. ■ Remove all objects and sort the wash load so that it does not obstruct the door. ■ The door lock rail must be fully retracted before you close the door again.

Problem solving guide

Unsatisfactory cleaning and corrosion

Problem	Cause and remedy
There are white deposits on the wash load.	The water softener is set too low. ■ Set the water softener to the correct water hardness.
	There is no salt in the salt reservoir. ■ Refill the reactivation salt.
	The quality of the water for the final rinse was insufficient. ■ Use water with a low conductance value. ■ If the machine is connected to a water softening cartridge, check it and replace as necessary.
	The water from the AD water connection is not sufficiently softened. ■ Check the pre-selected water softening units. If necessary, replace the water softening cartridge with a new one.
The load is flecked.	The rinsing agent container is empty. ■ Refill the container.
	The rinsing agent concentration is set too low. ■ Contact the W&H Customer Service Department and have the dispensing concentration reset.

Problem	Cause and remedy
The cleaning result is unsatisfactory.	Mobile units, baskets, modules and inserts were not suitable for the load. ■ Select mobile units, baskets, modules and inserts which are suitable for the task.
	Mobile units, baskets, inserts and modules were incorrectly loaded or overloaded. ■ Arrange the wash load correctly according to the information in the Operating instructions. ■ Avoid overloading the mobile units, baskets, modules and inserts.
	The programme was not suitable for the soiling. ■ Select a suitable programme. or ■ Adjust the parameters to suit the task.
	Soiling has been left to dry on the wash load for too long. ■ Soiling should not be left on the load for more than 6 hours before machine reprocessing.
	A spray arm is blocked. ■ Ensure the spray arms are not obstructed when arranging the wash load.
	Injector nozzles on the mobile units, baskets, modules or inserts are blocked. ■ Check the nozzles and clean them as necessary.
	The filters in the wash cabinet are dirty. ■ Check the filters and clean them if necessary.
	Mobile units, baskets or modules were not correctly mounted on the water connection. ■ Check the adapter.
Items made of glass are showing signs of corrosion.	The items are not suitable for machine reprocessing. ■ Only use items which are declared by their manufacturer as suitable for machine reprocessing.
	Neutralisation has not taken place during the programme. ■ Check the level in the supply container and vent the dispensing system if necessary.
	The wash temperature was too high. ■ Select a different programme. or ■ Reduce the wash temperature.
	Cleaning agents used were too alkaline. ■ Use a milder cleaning agent. or ■ Reduce the concentration of the cleaning agent.

Problem solving guide

Problem	Cause and remedy
Stainless steel items are showing signs of corrosion.	The stainless steel is of insufficient quality for machine re-processing. ■ Only use stainless steel items made of high quality stainless steel and follow the instructions of the manufacturer regarding machine reprocessing.
	The chloride content in the water is too high. ■ Have a water analysis check carried out. Connection to an external water processing unit and the use of demineralised water may be necessary.
	Neutralisation has not taken place during the programme. ■ Check the level in the supply container and vent the dispensing system if necessary.
	Rust or superficial rust has built up in the wash cabinet, e.g. due to an excessively high iron content in the water or rust on other wash load items. ■ Check the installation. ■ Discard any rusty items.

Spray arm monitoring/wash pressure

Problem	Cause and remedy
Spray arm monitoring - upper spray arm: Spray arm blocked or excessive foaming or Spray arm monitoring - lower spray arm: Spray arm blocked or excessive foaming or Spray arm monitoring - mobile unit spray arm 1 - : spray arm blocked or excessive foaming	The rotation speed set has not been reached. - Items are obstructing the machine or basket spray arms. ■ Arrange the load so that the spray arms can turn easily and start the programme again. - The relevant spray arm is blocked. ■ Clean the spray arm. ■ Check whether the filters in the wash cabinet are clean and correctly inserted. ■ Start the programme again. - Wash pressure is too low due to a heavy build-up of foam. ■ Follow the instructions regarding foam build-up in "Chemical processes and technology". ■ Start the Rinsing programme in order to clean the wash cabinet. ■ Then reprocess the load again.
Spray pressure exceeds tolerance	The wash pressure differs from the reference value. Possible causes of fluctuations in the wash pressure include: - Defective water connections, - Open adapters, - Foam build-up. ■ Identify and resolve the cause of this. ■ The programme is not interrupted. Nevertheless, you must reprocess the load.
Excessive spray pressure fluctuation	A programme was interrupted because of severe fluctuations in the wash pressure. Possible causes of fluctuations in the wash pressure include: - Defective water connections, - Open adapters, - Foam build-up. ■ Identify and resolve the cause of this. ■ Reprocess the load again.

Problem solving guide

Water inlet and drainage

Problem	Cause and remedy
Check water inlet	One or more stopcocks are closed. ■ Open the stopcocks.
	There was insufficient water in the machine. ■ Clean the water intake filters. ■ Open the stopcocks fully.
	The supply pressure at the water connection is too low. ■ Refer to the specifications for supply pressure in the “Technical data”. ■ Contact a suitably qualified installer.

Noises

Problem	Cause and remedy
Knocking noise in the wash cabinet.	One or more spray arms are knocking against the wash load. ■ Cancel the programme. To do this follow the instructions in “Cancelling a programme”. ■ Arrange the wash load so it cannot obstruct the spray arms. ■ Make sure the spray arms can rotate freely. ■ Start the programme again.
Rattling noise in the wash cabinet.	Items are insecure in the wash cabinet. ■ Cancel the programme. To do this follow the instructions in “Cancelling a programme”. ■ Rearrange the load so that items are secure. ■ Start the programme again.
Knocking noise in the water pipes.	This may be caused by the on-site installation or the cross-section of the piping. It has no influence on the function of the machine. ■ Contact a suitably qualified plumber.

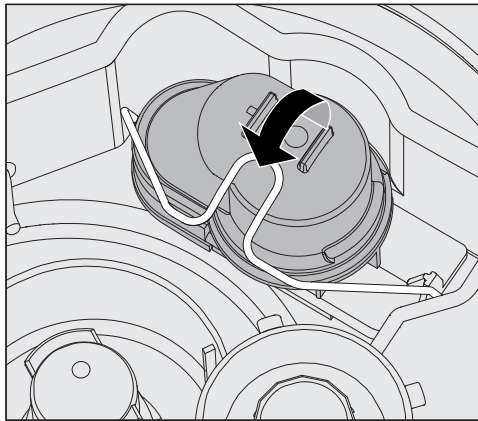
Printer/interface

Problem	Cause and remedy
Serial printer fault: no paper	The printer has run out of paper. ■ Replenish the paper.
Serial printer fault: offline	The washer-disinfector cannot connect to the printer. ■ Switch the printer on. ■ Check the connection between the washer-disinfector and the printer. ■ If in doubt, have the configuration of the interface checked by a suitably qualified person. If the printer has been replaced, the printer type must be adjusted in the interface configuration.
Serial printer fault: general fault	The printer is not ready for operation. ■ Check the printer for fault messages. ■ Change the printer cartridge if necessary.
Network down	The communication module has identified a network interruption or cannot establish a connection. ■ Consult your network administrator. If the problem cannot be resolved: ■ Contact the W&H Customer Service Department.

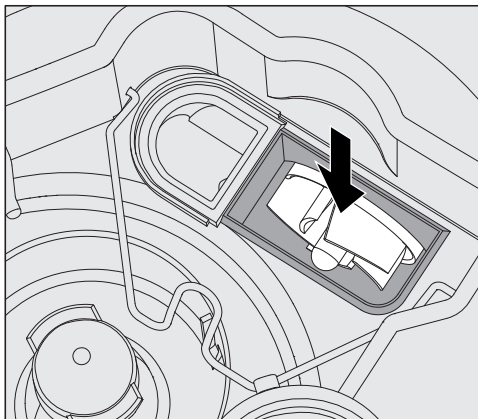
Cleaning the drain pump and non-return valve

If water has not been pumped away at the end of a programme there may be a foreign object in the drain pump or blocking the non-return valve.

- Take the filter combination out of the wash cabinet (see “Maintenance/Cleaning the filters in the wash cabinet”).



- Lift the locking clamp.
- Lift out the non-return valve and rinse well under running water.
- Make sure that the vent on the external part of the non-return valve is not blocked. (This vent is only visible when the non-return valve has been taken out.) If it is blocked, use a pointed object to release the blockage.



The drain pump impeller is situated under the non-return valve (see arrow).

- Check the impeller for blockages and remove them if necessary.
- Carefully replace the non-return valve and secure it with the clamp.

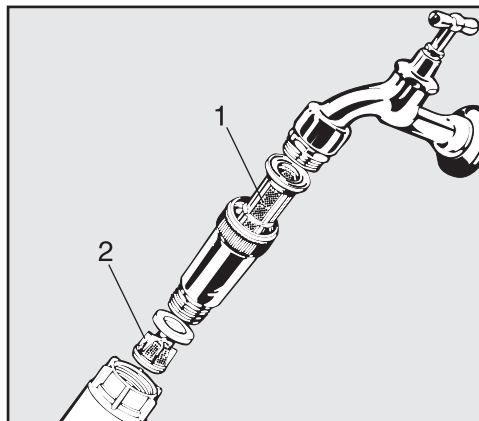
Cleaning the water intake filters

Filters are incorporated into the water inlet connection on the hose to protect the water inlet valve. If these filters get dirty they must be cleaned as otherwise too little water will flow into the wash cabinet.

⚠ The plastic housing on the water inlet valve contains an electrical component. It must not be dipped in water.

Cleaning the filters

- Disconnect the machine from the mains (switch the machine off, unplug it or disconnect or disable the fuse).
- Close the stopcock.
- Unscrew the inlet hose.



- Carefully pull the large surface area filter 1 out.
- Carefully remove the seal from the threaded union.
- Withdraw the fine filter 2 using pointed pliers.
- Clean the filters or replace them with new ones if necessary.
- Replace the filters and seals, making sure they are sitting correctly.
- Reconnect the hose to the stopcock, making sure the union goes on straight and not cross-threaded.
- Turn on the stopcock gradually to test for leaks. If there is a leak, the inlet hose might not be on securely, or it may have been screwed on at an angle. Unscrew and reconnect the water inlet hose correctly before tightening it.

IMPORTANT

UK, Australia and New Zealand

For the UK, Australia and New Zealand a non-return check valve is required between the tap and filter.

Contacting the Customer Service Department

 Repairs may only be carried out by the W&H Customer Service Department or a service technician approved by the manufacturer. Unauthorised repairs can expose the user to considerable risk.

To avoid unnecessary service visits, check that the fault has not been caused by incorrect operation when an error message first appears. Please refer to the relevant instructions in the “Problem solving guide”.

If, having followed the advice in the operating instruction manual, you are still unable to resolve a problem, please call the Customer Service Department.

Contact details can be found at the end of these operating instructions.

When contacting the Customer Service Department, please quote the model and serial number of your appliance. This information can be found on the data plate. There is one data plate on the side of the door and another on the back of the machine.

Please tell the Customer Service Department the error message or code shown in the display.

Software version

When contacting the Service department you may need the version number of individual components of control software. These can be called up as follows:

■ Open the menu as follows:

☰ button

▶ Further settings

▶ Software version



The software units are listed on the display. XXXXX stands for the relevant version number:

– EB ID: XXXXX

Software version of the control and display units in the control panel.

– EGL ID: XXXXX

Software version of the control board.

– EZL ID: XXXXX

Software version of the relay board.

– EFU ID: XXXXX

Software version of the frequency converter.

– LNG ID: XXXXX

Language package version.

You cannot change any settings in this menu.

Software updates and upgrades may only be undertaken by the W&H Customer Service Department.

■ Exit the menu with the *OK* or ↶ buttons.

Installation and levelling

Please refer to the installation diagram provided.

⚠ In order to reduce the risk of water damage, the area around the machine should be limited to furniture and fittings that are designed for use in commercial environments.

The machine must be stable and level.

Any unevenness in the floor level and height of the machine can be compensated for by adjusting the four feet. The feet can be screwed out to a maximum of 60 mm.

⚠ Do not lift the machine by protruding parts such as the control panel.
They could be damaged or torn off.

⚠ Some metal parts pose a risk of injury/being cut.
Wear cut-resistant protective gloves when transporting and setting up the machine.

⚠ For transport by means of a hand truck, the machine must be in its original packaging or placed on a stable, continuous support. Otherwise, components in the base of the machine can be damaged.

The washer-disinfector is suitable for the following types of installation:

- Freestanding.
- Slot-in:

The washer-disinfector can be installed beside other appliances or furniture or in a suitable niche. The niche must be at least 600 mm wide and 600 mm deep.

- Built-under:

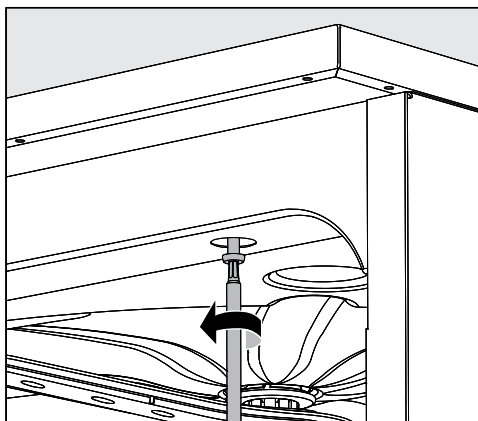
The washer-disinfector can be built under a continuous worktop or the draining board of a sink. The space provided must be at least 600 mm wide, 600 mm deep and 820 mm high.

Building under a continuous worktop

Removing the lid

To build the machine under a continuous worktop the lid must be removed as follows:

- Unscrew both securing screws from the lid at the back of the machine.
- Open the door.



- Unscrew the left and right fixing screws.
- Lift the lid off.

Steam condenser

To avoid steam damage to the worktop the protective foil supplied (25 x 58 cm, self-adhesive) must be applied underneath the worktop in the area of the steam condenser.

Preventing heat build-up

During the drying phase, the hot exhaust air from the wash cabinet is released into the surrounding environment through the steam condenser at the rear of the machine. Sufficient ventilation must be ensured to prevent heat build-up and excessive condensation.

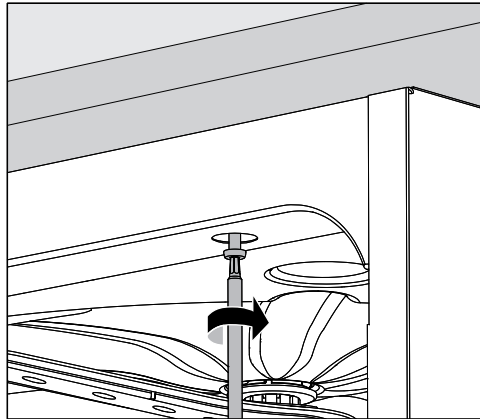
- Leave a minimum distance of 10 mm for air exchange between the machine and the worktop.
- If necessary ventilation grilles should be fitted in the side units.

Installation

Securing to the worktop

To improve stability the washer-disinfector must be secured to the worktop after it has been aligned.

- Open the door.



- Screw the washer-disinfector to the continuous worktop through the holes in the front trim on the left and right.

Please contact the W&H Customer Service Department to secure it at the sides to adjacent cabinetry.

Venting the circulation pump

⚠ The gaps between a built-in machine and adjacent cabinetry must not be sealed, e.g. with silicone sealant, as this could compromise ventilation of the circulation pump.

Protective foil/ Worktop protector

The protective foil supplied protects the worktop from damage caused by steam when the door is opened. It should be positioned underneath the worktop above the machine door.

Electromagnetic compatibility (EMC)

The machine has been tested for electromagnetic compatibility (EMC) in accordance with EN 61326-1 and is suitable for operation in commercial environments, such as hospitals, medical practices and laboratories and other similar environments which are connected to the mains power supply.

The machine's high frequency (HF) energy emissions are very low and are therefore unlikely to interfere with other electronic machines in the vicinity.

Flooring in the installation area must be wood, concrete or tiled. Synthetic flooring must be able withstand a relative humidity level of 30 % to minimise the risk of electrostatic discharges.

The quality of the power supply should comply with that found in a typical commercial or hospital environment. Check that the power supply voltage is within a range of ± 10 % of its nominal value.

Electrical connection

⚠ All electrical work must be carried out by a suitably qualified electrician in accordance with local and national safety regulations.

- The electrical installation must comply with current local and national safety regulations (DIN VDE 0100 in Germany/BS 7671 in the UK).
- The connection to the power supply must comply with national regulations. The socket must be accessible after the machine has been installed. An electrical safety test must be carried out after installation and after any servicing work.
- If the machine is hard-wired to the power supply, a power switch with all-pole isolation must be installed. The power switch must be designed to operate at the rated current, must ensure a 3 mm gap between all open contacts, and must be able to be locked in the off position.
- Equipotential bonding must be performed.
- The rated loads are specified on the data plate and in the circuit diagram supplied with the machine.
- For increased safety, it is recommended to protect the machine with a suitable residual current device (RCD) with a trip current of 30 mA.
- If replacing the power cable, use only original replacement parts from the manufacturer or a suitable cable with core cable ends.

Further notes on electrical connection are given on the Installation diagram supplied with the machine.

The machine must only be operated with the voltage, frequency and fusing shown on the **data plate**.

Depending on country this machine **can be converted to a different type of power supply** in accordance with the conversion diagram and wiring diagram supplied.

A **data plate** can be found on the inside of the door and another on the back of the machine.

The wiring diagram is supplied with the machine.

Equipotential bonding connection

There is a screw connection point marked ∇ at the back of the machine, to which additional equipotential bonding can be connected if required.

Peak-load negotiation

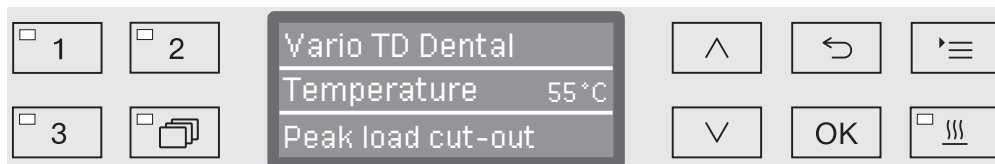
The machine is suitable for use in an energy management system. For this purpose, it must be technically adapted and the controls reset by the W&H Customer Service Department.

Please contact the W&H Customer Service Department for further information.

Peak load management

In the event of a peak-load negotiation, some machine components such as the heater element will be switched off for a while. The machine will remain on during this period and the current programme will not be interrupted. If one of the components that is switched off is needed during the current programme stage, the programme duration will simply increase for the duration of the load negotiation.

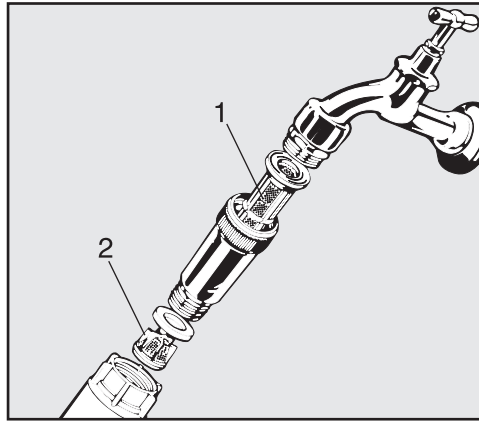
The third line of the display will alert you to the peak-load negotiation, for example:



Connection to the water supply

⚠ Water from the wash cabinet must not be consumed.

- The washer-disinfector must be connected to the water supply in strict accordance with current local and national water authority regulations.
- The water used must at least comply with European regulations for drinking water quality. If the water supply has a high iron content there is a danger of corrosion occurring on items being cleaned in the washer-disinfector, as well as the appliance itself. If the chloride content of the water exceeds 100 mg/l the risk of corrosion to items being cleaned in the washer-disinfector will be further increased.
- In certain regions (e.g. mountainous areas) the water composition may cause precipitates to form, requiring the use of softened water in the steam condenser.
- UK, Australia and New Zealand only: To comply with water regulation requirements, this machine must be connected to the potable water supply via the non-return check valve supplied with the machine.
- The washer-disinfector is supplied as standard for connection to cold water (blue coded hose) and hot water up to max. 65 °C (UK: max. 60 °C) (red coded hose). Connect the inlet hoses to the stopcock valves for cold and hot water.
- If there is no hot water supply available, the inlet hose coded **red** must also be connected to the cold water supply.
- The intake hose without water protection device for the steam condenser is connected to the cold water stopcock.
- The **minimum flow pressure** for the cold water connection is 100 kPa pressure, for the hot water connection 40 kPa pressure and for the DI water connection 30 kPa pressure.
- The **recommended flow pressure** is ≥ 200 kPa for the cold and hot water connections and ≥ 200 kPa for the DI water connection in order to avoid excessively long water intake times.
- The **maximum permissible static water pressure** is 1,000 kPa.
- If water pressure is not within the specified range, please contact the W&H Customer Service Department for advice.
- More information on AD water connection can be found at the end of this section.
- A stopcock valve with a $\frac{3}{4}$ " threaded union must be provided on site. It should be easily accessible so that the water supply can be turned off when the machine is not in use.
- The inlet hose is approx. 1.7 m long terminating in a $\frac{3}{4}$ " female thread. On no account may the inlet filter be removed.

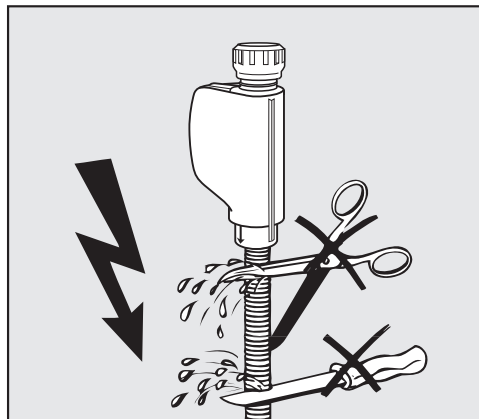


- Install the filter (supplied in accessory pack) between the stopcock valve and the inlet hose. The filter for AD water is made of chromium-nickel steel and can be recognised by its dull surface.

IMPORTANT

UK, Australia and New Zealand

For the UK, Australia and New Zealand a non-return check valve is required between the tap and filter.



⚠ Do **NOT** shorten or otherwise damage the inlet hoses (see diagram).

See installation diagram supplied.

Plumbing

AD water connection for 30-1,000 kPa (UK: 100-1,000 kPa) pressure - pressure-resistant

This washer-disinfector is supplied as standard for a pressurised system operating between 30-1,000 kPa (UK: 100-1,000 kPa). If the water pressure is below 200 kPa the water intake duration will be automatically increased.

- The pressure tested hose for AD water, coded green, has a $\frac{3}{4}$ inch threaded union for connection to the onsite stopcock for AD water.

⚠ If the washer-disinfector is not going to be connected to demineralised (DI) water, the DI water connection has to be deactivated by the W&H Customer Service Department. The intake hose remains on the back of the machine.

DI water ring line

The machine can be connected to a ring line system for DI water. For this purpose, it must be technically adapted and the controls reset by the W&H Customer Service Department.

Please contact the W&H Customer Service Department for further information.

IMPORTANT

UK, Australia and New Zealand.

This appliance must be installed according to AS/NZS 3500.1 (Australia and New Zealand) or in accordance with WRAS regulations (UK). This appliance has been supplied with a separate backflow prevention device.

This machine must be connected to the potable water supply via the non-return valve (check valve) supplied with the machine.

Before making plumbing connections, ensure the appliance is disconnected from the mains power supply (switch off or unplug from the power supply).

- Turn off the mains water tap.
- Place the seals on both sides of the non-return valve.
- Connect the female end of the non-return valve to the mains water tap ($\frac{3}{4}$ " thread).
- Connect the filter to the male end of the non-return valve ($\frac{3}{4}$ " thread).
- Connect the inlet hose to the filter.

Ensure that all connections are screwed into position correctly. The connection point is subject to mains water pressure.

- Turn on the tap slowly and check for leaks.

Correct the position of the seal and union if necessary.

Connecting the drain hose

- A non-return valve is incorporated into the drain system in the machine to prevent drainage water flowing back into the machine via the drain hose.
- The machine drainage hose should be connected to a **separate** drain for the machine only. If no separate drain is available, we recommend connecting it to a dual-chamber siphon.
- The on-site connection point, **measured from the lower edge of the machine**, should be positioned at a height between 0.3 m and 1.0 m. If it is lower than 0.3 m, the drain hose must be laid in a coil at a height of at least 0.3 m.
- The drainage system must be able to accommodate a minimum drainage flow of 16 l/min.
- The drainage hose is approx. 1.4 m (Australia and New Zealand: 2.25 m) long and flexible with an internal diameter of 22 mm. Hose clips for the connection are supplied.
- The drain hose must not be shortened.
- The drain hose can be extended using a connection piece to attach a further length of hose up to 4.0 m long. The drainage length must not exceed 4.0 m.
- Drainage noise can be considerably reduced if the drainage hose is positioned in an arc at a minimum height of 0.6 m and a max. height of 1.0 m measured from the bottom edge of the washer-disinfector.

See installation diagram supplied.

Programme chart

Programme	Use	Pre-wash		
		1	2	3
(Free memory)	Programmable programme for special applications; programming by arrangement with the W&H Customer Service Department.			
(Free memory)	Programmable programme for special applications; programming by arrangement with the W&H Customer Service Department.			
Vario TD Dental	Cleaning and disinfection programme according to EN ISO 15883 for processing wash loads with normal soiling.	(x)	CW 1 Min	
Vario TD Intensive	Cleaning and disinfection programme according to EN ISO 15883 for processing wash loads with heavy soiling.	CW 1 Min		
Special 93°C-10'	For cleaning and thermal disinfection at 93 °C with 10 minutes temperature holding time (exposure time).			
Rinsing	For flushing out saline solution (see "Water softener/ Adding salt") and rinsing heavily soiled loads, e.g. for pre-rinsing soiling, residual disinfecting agent, or to prevent items drying out and to prevent incrustation before running a full load.			
Drain	For draining wash water, e.g. after a programme cancellation (see "Operation/Cancelling a programme").			

Programme chart

Programme sequence									
Cleaning		Interim rinse				Final rinse		Drying	
1	2	1	2	3	4	1	2	1	2
CW70 55 °C DOS 1 5 Min		HW DOS 3 1 Min	HW 1 Min			AD 93 °C 5 Min			100 °C 40 Min
AD 45 °C DOS 1 20 Min	AD 45 °C DOS 1 20 Min	AD 65 °C DOS 1 5 Min	AD DOS 3 1 Min	AD		AD 93 °C 5 Min			100 °C 40 Min
CW70 93 °C DOS 1 10 Min		HW DOS 3 1 Min	HW 1 Min			AD 75 °C 3 Min		100 °C 20 Min	95 °C 50 Min
		CW 1 Min							

CW = cold water

HW = hot water

CWxx = CW proportion in mixed water as percentage (CW70 = 70 % CW + 30 % HW)

AD = aqua destillata, fully demineralised water (VE), demineralised water

Min = Holding time in minutes

(x) = Optional programme block;

Activation on request through the W&H Customer Service Department.

DOS 1 = Cleaning agent

DOS 2 = Rinsing agent (door dispensing)

DOS 3 = Neutralising agent

Technical data

Height with machine lid	835 mm
Height without machine lid	820 mm
Width	598 mm
Depth	598 mm
Depth with door open	1,200 mm
Wash chamber dimensions:	
Height	520 mm
Width	530 mm
Depth of upper basket/lower basket	474 mm/520 mm
Weight (net)	78 kg
Max. load capacity of open door	37 kg
Voltage, rated load, fuse rating	See data plate
Connection cable	Approx. 1.8 m
Water connection temperature:	
Cold water/steam condenser	Max. 20 °C
Hot water/DI water	Max. 65 °C
Static water pressure	Max. 1,000 kPa pressure
Minimum water connection flow pressure:	
Cold water/steam condenser	100 kPa pressure
Hot water	40 kPa pressure
DI water	30 kPa pressure
Recommended water connection flow pressure:	
Cold water/hot water	≥ 200 kPa pressure
DI water	≥ 200 kPa pressure
Steam condenser	≥ 100 kPa pressure
Delivery head	Min. 0.3 m, max. 1.0 m
Drainage length	Max. 4.0 m
Operation:	
Ambient temperature	5 °C to 40 °C
Relative humidity maximum	80 % for temperatures up to 31 °C
linear decreasing to	50 % for temperatures up to 40 °C
Storage and transportation conditions:	
Ambient temperature	- 20 °C to 60 °C
Relative humidity	10 % to 85 %
Air pressure	500 hPa to 1060 hPa
Altitude above sea level	Up to 1,500 m *
Protection category (according to IEC 60529)	IP21
Soiling level (according to IEC/EN 61010-1)	2
Overvoltage category (according to IEC 60664)	II
Noise level in dB (A), sound pressure LpA during cleaning and drying phases	< 70
Test certification	VDE, EMC radio suppressed
CE marking	MDD guidelines 93/42/EEC, Class IIb
Manufacturer address	Miele & Cie. KG, Carl-Miele-Straße 29, 33332 Gütersloh, Germany

* If installed above 1,500 m, the boiling point of the wash water will be lower. In this case, the disinfecting temperature and the holding time will need to be reset by the W&H Customer Service Department.

W&H grants the buyer – in addition to statutory warranty rights and without restricting the same – the following warranty rights on new machines:

I. Duration and commencement of warranty period

1. A warranty of 12 months is granted. The warranty period commences with the invoice date.
2. Warranty services and spare parts to meet warranty claims do not result in an extension of the warranty period.
3. The supply of consumables and accessories is not included in the scope of this contract.

II. Warranty conditions

1. Products must be sold and installed by W&H or a dealer authorised by W&H.
2. Proof of warranty (e.g. purchase invoice) must be produced at the request of W&H or the authorised service partner.
3. The product must be properly installed and put to its intended use.

III. Content and scope of warranty

1. Machine deficiencies will be remedied within a reasonable period of time at no charge either through repair or replacement of the offending parts. Costs incurred in this process including transportation, call-out costs, labour and the cost of spare parts are to be borne by W&H or an authorised service partner. Replaced parts or machines are the property of W&H.
2. The warranty does not cover any further claims for damage against W&H, unless a service agent commissioned by W&H acts with intent or gross negligence.
3. The supply of consumables and accessories is not included in the scope of this contract.

IV. Warranty restrictions

Defects or faults resulting from the following are not covered by warranty:

1. Improper installation, e.g. non-compliance with relevant safety regulations and written operating and installation instructions
2. Improper use and operation such as the use of unsuitable process chemicals
3. Products purchased in another country (cross-border trade) cannot be used or may only be used conditionally on account of variant technical specifications (e.g. electrical supply)

Terms of warranty

4. External factors such as damage caused through transportation, impact and jolting, inclement environmental conditions or natural phenomena
5. Repairs or modifications not performed by service agents trained and authorised by W&H
6. Failure to use genuine spare parts or accessories authorised by W&H
7. Glass breakage and defective lamps
8. Current or voltage fluctuations which exceed or drop below the tolerances stipulated by the manufacturer
9. Failure to heed maintenance and cleaning instructions as per the relevant operating instructions
10. Common and natural wear and tear, such as the replacement of a HEPA filter, which must be replaced at regular intervals during the product life cycle in accordance with the relevant operating instructions

V. Data protection

Personal data shall be used for the sole purpose of fulfilling commitments pursuant to processing warranty claims and in full compliance with data protection legislation.

VI. Addresses of service partners

In the event of the need for work under warranty or servicing, please contact the service partner in your country. Contact details can be found at the end of these operating instructions.

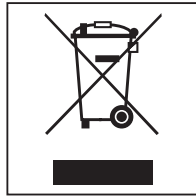
Disposal of the packing material

The packaging is designed to protect the machine against transportation damage. The packaging materials used are selected from materials which are environmentally friendly for disposal and should be recycled.

Recycling the packaging reduces the use of raw materials in the manufacturing process and also reduces the amount of waste in landfill sites.

Disposing of your old appliance

Electronic and electrical appliances contain many valuable materials. They also contain certain materials, compounds and components which were essential for their correct functioning and safety. These could be hazardous to your health and to the environment if disposed of with general waste or if handled incorrectly. Please do not, therefore, dispose of your old appliance with general waste.



Instead, please make use of officially designated collection and disposal points to dispose of and recycle electrical and electronic appliances in your local community, with your dealer, with W&H or with the manufacturer. By law, you are solely responsible for deleting any personal data from the appliance prior to disposal. Please ensure that your old appliance poses no risk to children while being stored prior to disposal.

Enclosure

Washer-disinfector

Checklist for the daily routine check by the user



Type/model: _____ Serial number: _____

Check	Findings */Result #	Measure
Visual condition		
Cleanliness		
Damage		
Seal		
Door closing		
Notes		
Wash chamber		
Overall visual impression (e.g. discolouration)		
Cleanliness		
Odours (vapours)		
Filter combination		
Sump		
Notes		
Dispensing system		
Container fill level		
Leak tightness		
Cleanliness		
Notes		
Spray arms		
Freely rotatable		
Nozzles		
Screw connections		
Notes		
DI water system		
Conductivity		

* OK/not OK

Present/not present

Town/city

Date

Signature of user

Function

Baskets and inserts



Checklist for the daily routine check by the user

Type/model: _____ Material number (Mat. no.): _____

Check	Findings */Result #	Measure
Visual condition		
Cleanliness		
Damage		
Notes		
Rollers		
Free movement		
Damage		
Notes		
Water coupling (mobile units, baskets, modules)		
Alignment of the couplings		
Height adjustment/screw connection		
Damage		
Notes		
Spray arms		
Freely rotatable		
Nozzles		
Screw connections		
Notes		
Accessories		
Nozzles/irrigation connectors		
Irrigation sleeves/end caps		
Hose adapters		
Sealing screws		
Tubular filter/filter inserts		
Notes		

* OK/not OK

Present/not present

Town/city

Date

Signature of user

Function

**Great Britain, Ireland**

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