Miele

Operating instructions
Washer-disinfector
PG 8592

To prevent accidents and machine damage, read these instructions **before** installation or use.

en - CA

M.-Nr. 12 068 000

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Warnings

⚠ Information which is important for safety is highlighted in a thick framed box with a warning symbol. This alerts to a potential danger of injury to people or damage to property.
Read these warning notes carefully and follow instructions and codes of practice as described.

Notes

Notes contain information that is particularly important to follow. They are highlighted in a thick framed box.

Additional information and comments

Additional information and comments are contained in a box with 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

Information given via the display are shown in display messages using the same font as used in the display.

Example:

Menu Settings ⚑.

Definition of terms

Machine In these operating instructions, the washer-disinfector PG 8592 is referred to as “the machine”.

Wash items The term “wash items” is used wherever the items to be reprocessed are not defined in any further detail.

Wash water The term “wash water” is used for the mixture of water and process chemicals.

General description

This Miele washer-disinfector is a medical device as defined in the Medical Device Regulation MDR (EU) 2017/745 and a Class II medical device in accordance with Health Canada.

Washer-disinfectors are used to wash and thermally disinfect reprocessable medical devices.

Mode of operation

Medical devices are cleaned and disinfected using programs validated by the user in which the water quality and temperature as well as the process chemicals and system components used are selected based on the nature of the soiling and the type of devices being reprocessed.

Thermal disinfection usually takes place during the final rinse. Thermolabile OR shoes are an exception in this case and undergo chemo-thermal disinfection.

According to the A_0 concept described in EN ISO 15883-1 (CAN/CSA-Z15883), thermal disinfection occurs at 80°C (+ 5°C, - 0°C) with 10 min holding time (A_0 600), or at 90°C (+ 5°C, - 0°C) with 5 min holding time (A_0 3000), depending on the disinfection result required.

The use of suitable load carriers (wash carts, modules, inserts, etc.) is important to ensure adequate reprocessing of the medical devices.

Medical use

The cleaning result, achieved by means of the Vario TD procedure, for example, must ensure that reprocessable medical devices can be disinfected correctly, that subsequent sterilization can be carried out, and that items can be used again safely.

To ensure standardization, medical devices should ideally be reprocessed using machine-based cleaning processes.

Intended use

This Miele Washer-disinfector can be used to clean, rinse, disinfect, and, depending on the type of device, dry reprocessable medical devices in healthcare institutions such as medical practices, hospitals, outpatient surgical centers, or veterinary practices. It is also essential to heed the information issued by the manufacturers of the medical devices (EN ISO 17664, CAN/CSA-Z17664), as well as the information issued by the process chemical manufacturers.

Contraindications

Flexible endoscopes or products with reprocessing recommendations stating that they are not suitable for reprocessing in washer-disinfectors should not be reprocessed.

The washer-disinfector is not intended for reprocessing disposable items that cannot be reprocessed in line with Regulation (EU) 2017/745.

The washer-disinfector should not be operated in locations in which ambient conditions do not meet the following requirements.

Operation (according to IEC/EN 61010-1, CAN/ CSA-C22.2 No. 61010-1):		
Ambient temperature	40 °F to 104 °F	5°C to 40°C
Relative humidity maximum	80 % for temperatures up to 88°F	80% for temperatures up to 31°C
linear decrease to	50 % for temperatures up to 104°F	50% for temperatures up to 40°C
Relative humidity minimum	10%	10%
Altitude above sea level (according to IEC/EN 61010-1, CAN/CSA-C22.2 No. 61010-1)	up to 4,921 ft	Up to 2,000 m

Intended Application

This washer-disinfector is specifically equipped for use by resident doctors and hospitals and has the necessary reprocessing programmes to meet their requirements, with the exception of applications in dentistry.

Intended user group

The washer-disinfector may only be used by trained medical professionals, such as medical assistants, who have the necessary level of specialist knowledge to reprocess medical devices.

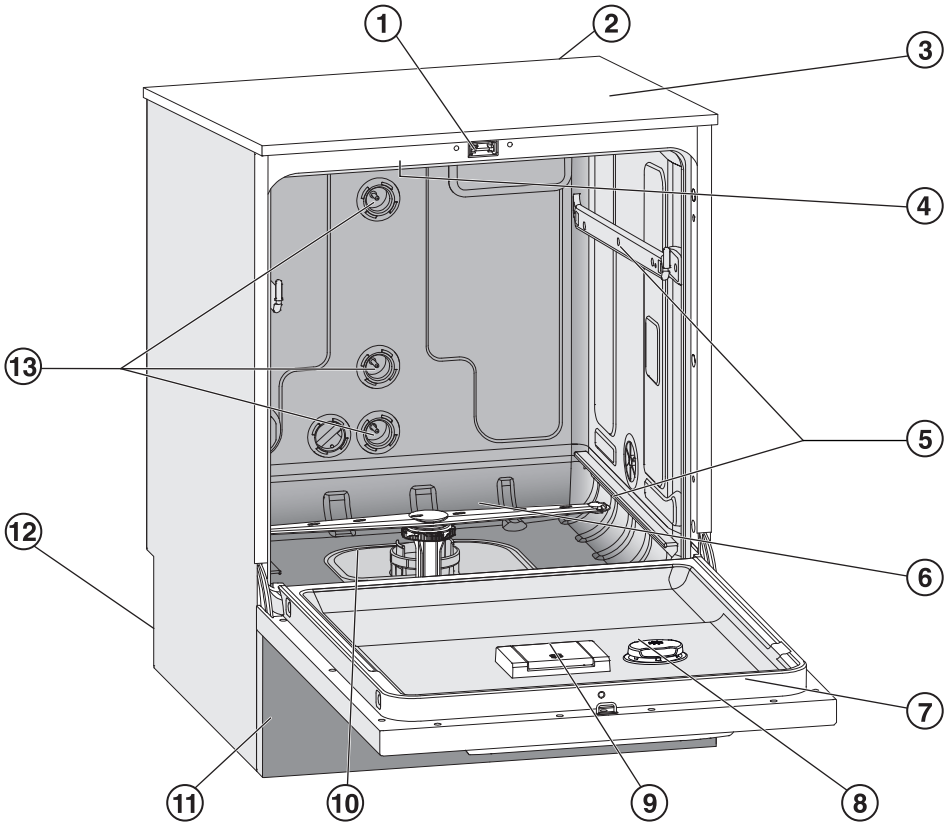
Foreseeable misuse

Flexible endoscopes and single-use items or products that are not intended to be reprocessed in washer-disinfectors must not be reprocessed.

Failure of the operator to comply with routine checks and regular service intervals.

Failure to observe the specified installation requirements.

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 wash carts

⑥ Lower machine spray arm

⑦ Data plate

⑧ Rinse aid reservoir

⑨ Salt reservoir

⑩ Filter combination

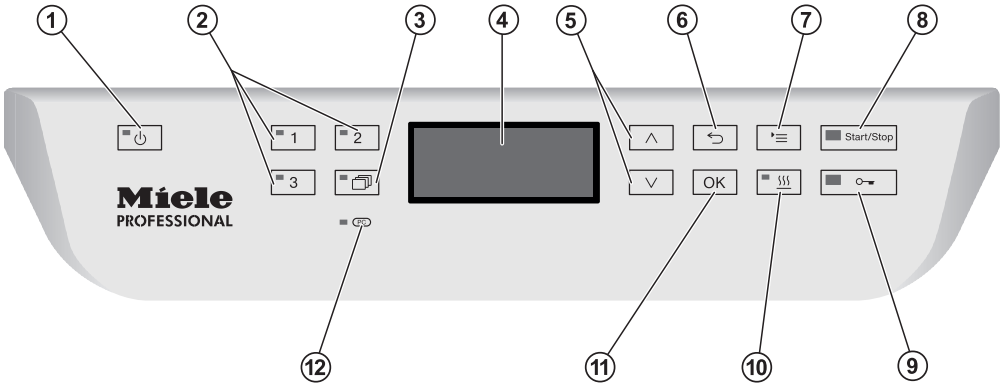
⑪ Toe kick panel with service flap

⑫ On the back:

- Second data plate
- Electrical and plumbing connections
- Suction lance(s) for external supply containers
- Connections for external dispensing modules (optional DOS modules)

⑬ Connection point for wash carts and baskets

Control panel



① ⏻ **On/off button**
For switching the machine on and off.

② 1, 2, **and** 3 **buttons**
Program selection buttons.
The button assignment can be configured.

③ **Program list button**
For accessing the list of all programs for program selection.

④ **Display**
User interface and program cycle display.

⑤ ∧ **and** ∨ **arrow buttons**
For navigating in the user interface.

⑥ ⮌ **Cancel button**
For cancelling a process in the user interface.
No program interruption.

⑦ ‣≡ **Settings button**
For accessing the system settings menu.

⑧ *Start*/*Stop* **button**
For starting or cancelling a program.

⑨ ⊶ **Door release button**
For opening the door before or after a program.

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 (PC) **Service interface**
Testing and transmission point for the Service department.

LEDs in the buttons

The buttons on the control panel have LEDs. These 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.
1, 2, **and** 3 **program selection buttons**	**ON**	The respective program has been selected. At the end of the program, the LED will remain lit until a different program is selected.
	OFF	The program is not selected or the program settings are being changed.
button	**ON**	A program has been selected from the program list. At the end of the program, the LED will remain lit until a different program is selected.
	OFF	No program has been selected from the list or the program settings are being changed.
button	**ON**	The additional “Drying” function has been activated for the selected program (not available for all programs, see “Program charts”).
	OFF	The additional “Drying” function has been deactivated.
Start/Stop **button**	**ON**	A program is running.
	FLASHES GREEN	A program has been selected, but not yet started.
	FLASHES RED	A fault has occurred (see “Problem solving guide”).
	OFF	A program has finished.
button	**ON**	The door is closed (locked) and there is no program running.
	FLASHES	A program has finished and the door is closed (locked).
	OFF	A program is running or the door is open (unlocked).

Daily operators

For day-to-day use, operators must be instructed on the basic functions and how to load the machine and must also be trained regularly. They must have knowledge of machine reprocessing of medical devices.

Day-to-day work is carried out using the user level and in the Settings menu. The menu is freely accessible to all users.

Administration

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

Alterations to the reprocessing process or adaptations to the machine, e.g., to accessories used or on-site conditions, require additional specific knowledge of the machine.

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

The Additional settings menu incorporates all administrative processes and settings. This is protected from unauthorized access by a PIN code.

This machine conforms to current safety requirements.
Inappropriate use can, however, lead to personal injury and material damage.
Read the operating instructions carefully before using this machine.
Pay attention in particular to the residual risks, which are described in the Warning and Safety Instructions. This will prevent both personal injury and damage to the machine.
Keep these operating instructions in a safe place.

Correct application

▶ Use of the machine is only approved for the applications stated in the operating instructions. Conversions, modifications, and any other use are not permitted and could be dangerous.
The cleaning and disinfection processes are only designed for medical devices which are designated as reprocessable by the instrument manufacturer. Instructions issued by load item and instrument manufacturers must be heeded.

▶ This machine is intended for indoor use in a stationary location only.

Risk of injury

Please pay attention to the following notes to avoid injury!

▶ The machine may only be installed, commissioned, repaired, and maintained by Miele Service or a suitably qualified service technician. A Miele service contract is recommended to ensure full compliance with the normative and regulatory provisions. 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 this machine can only be guaranteed when it is correctly grounded. It is essential that this standard safety requirement is met. If in any doubt, please have the electrical installation tested by a qualified electrician. Miele cannot be held liable for the consequences of an inadequate earthing system (e.g. electric shock).

▶ A damaged or leaking machine can pose a threat to your safety. Always switch off a damaged or leaking machine immediately and call Miele Service.

▶ Label machines which have been taken out of operation and lock them to prevent them being switched on again without authorization. The machine may only be put back into operation once it has been successfully repaired by Miele Service or by an appropriately qualified specialist.

▶ Personnel operating the machine should be trained on a regular basis. Untrained personnel must not be allowed access to the machine or its controls.

▶ Only use process chemicals which have been approved by their manufacturer for the relevant application. The manufacturer of the process chemicals is liable for any negative influences on the material of the load items and the machine.

▶ Always exercise caution when handling the process chemicals for this machine. These products may contain irritant, corrosive or toxic ingredients.
Always comply with safety requirements and the manufacturer's safety instructions (see safety data sheets)!
Use protective eyewear and gloves!

▶ The machine is designed to operate with water and the recommended process chemicals only. Organic solvents or flammable liquid agents must not be used in it!
This could cause an explosion, property damage due to the destruction of rubber and plastic components, and the resulting leakage of liquids.

▶ 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 or become damaged.

▶ Be careful when sorting load 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 machine, beware of the high temperatures involved. If you bypass the electrical lock to open the door, there is a danger of scalding and heat or chemical burns. If disinfectants have been used, there is also the danger of inhaling toxic vapour.

▶ Where there is a risk of toxic or chemical substances occurring in or leaking into the chamber wash water during cleaning (e.g., aldehyde in the disinfecting agent), it is essential to regularly check door seals and make sure that the steam condenser is functioning correctly.
Opening the machine door during a program interruption carries particular risks in such circumstances.

▶ Should personnel accidentally come into contact with toxic vapours or processing chemicals, consult the manufacturer's safety data sheets for emergency procedures.

▶ Always allow wash carts, baskets, modules, inserts, and loads to cool down before unloading. Any water remaining in concave items could still be very hot. Empty them into the wash cabinet before taking them out.

▶ Never clean the machine or surrounding area 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.

▶ Depending on the properties of the flooring and footwear worn on it, liquids can cause a slipping hazard. Keep the floor dry where possible and take care to clean up any liquid spills straight away. Take the necessary precautions when cleaning up hazardous substances and hot liquids.

Quality assurance

The following points should be observed, to assist in maintaining quality standards when reprocessing medical devices, in order to protect patients, and to avoid damage to property.

▶ If it is necessary to interrupt a program in exceptional circumstances, this may only be done by authorised personnel.

▶ The standard of cleaning and disinfection in the disinfection programs must be routinely confirmed by the operator. The process should be thermo-electrically tested on a regular basis, and checked against documented control results.
Additional checks with biological indicators are required for chemo-thermal programs.

▶ For thermal disinfection, use temperatures and 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 processing and are in good condition. Plastic items must be thermally stable. Nickel plated items and anodised aluminum items can be machine processed using special procedures only.
Items containing iron, and soiling containing residual rust must not be placed in the cabinet.

▶ Medical devices are reprocessed by means of thermal disinfection. Heat-sensitive items (e.g., OR shoes) can be disinfected using a chemical disinfecting agent. To do this, a special reprocessing program must be provided by Miele Service. Disinfection parameters are based on claims made by the disinfecting agent manufacturer. Please follow, in particular, their instructions on handling, conditions of use, and effectiveness.
Chemo-thermal processes of this type are not suitable for the reprocessing of medical devices.

▶ Under certain circumstances, process chemicals can cause damage to the machine. Users are urged to follow the recommendations issued by manufacturers of process chemicals. Contact Miele Service in the event of damage and any suspicion of material incompatibility.

▶ Instrument care products based on paraffin oils (white oils) can damage elastomers and plastics in the machine. Such care products may not be dispensed as chemical agents in these machines 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-treating (e.g. with cleaning agents or disinfectants), some types of soiling and the interaction of certain processing chemicals can cause foaming. Foam can have an adverse effect on the cleaning and disinfection results obtained.

▶ The process must be set so that no foam escapes the wash compartment. Escaping foam jeopardizes the safe operation of the machine.

▶ The process must be checked regularly in order to detect any foaming.

▶ To avoid the risk of damage to the machine and its accessories caused by process chemicals, soiling and any reaction between the two, please read the notes in “Chemical processes and technology”.

▶ Even when a chemical additive (e.g. cleaning chemical) is recommended on technical application grounds, the machine manufacturer takes no responsibility for the effect of such chemicals on the material of the items being cleaned.
Note that formulation changes, storage conditions, etc., that are not disclosed by the chemical manufacturer may adversely affect the cleaning results obtained.

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

▶ Always follow the relevant manufacturer's instructions on storage and disposal of process chemicals.

▶ Particles ≥ 0.8 mm are removed by the filters in the wash chamber. Smaller particles may find their way into the circulation system. For this reason, processing of wash 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 (detergent, water quality, etc.) are discussed with Miele.

▶ If the cleaning result is subject to particularly stringent requirements, e.g., in chemical analysis, regular quality control should be carried out by the operator to ensure that required standards of cleanliness are being achieved.

▶ The carts, baskets, modules and inserts that hold the wash 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 all containers and hollow utensils before loading them into the machine.

▶ 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 (70 °F).

▶ Chloride solutions, in particular hydrochloric acid, must not be placed in the cabinet.

▶ To avoid corrosive damage, make sure the stainless steel housing does not come into contact with solutions or steam containing hydrochloric acid.

▶ 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 with silicone sealant as this could compromise the ventilation of the circulation pump.

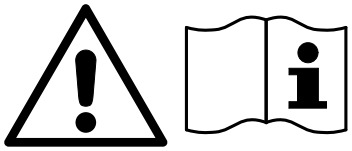
▶ Follow the installation instructions in the operating instructions and in the installation instructions.

Using components and accessories

▶ Only Miele accessories should be connected to this machine for the appropriate application. Consult Miele for details on the type of equipment to use.

▶ Only use Miele wash carts, baskets, modules and inserts with this machine. Using wash carts, baskets and inserts made by other manufacturers, or making modifications to Miele accessories can cause unsatisfactory cleaning results, for which Miele cannot be held liable. Any resultant damage would not be covered by the warranty.

Symbols on the machine



Attention:
Observe the operating instructions!

Attention:
Danger of electric shock!

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

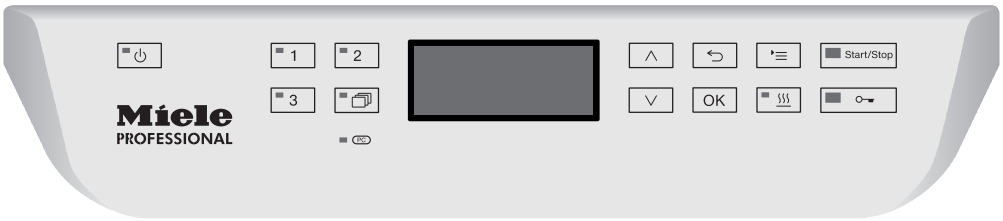
Risk of being cut:
Wear cut-resistant protective gloves when transporting and setting up the machine!

Disposing of your old appliance

▶ Please note that the machine may have contamination from blood, bodily fluids, pathogenic germs, facultative pathogenic germs, genetically modified material etc. in it and must be decontaminated before disposal.
For environmental and safety reasons ensure the machine is completely drained of any residual water, chemical residues and cleaning chemicals. Observe safety regulations and wear protective eyewear and gloves.
Remove or destroy the door latch to prevent children from locking themselves in. Then make appropriate arrangements for its safe disposal.

Control panel

The machine 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 can be different from the actual display screens shown.

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 will show the following:

As soon as the machine is ready for operation, the display changes to show the last selected program, 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.

Standby

When it is on standby, 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".

User interface in the display

The user interface of 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.

∧ **and** ∨ **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 **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
▸Time format

If a menu level is already displayed, the path does not need to be followed 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 pre-selected.

Example:

Extras

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 display in 24-hour format.

Method

Then further instructions are given.

Example:

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

Symbols in 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.

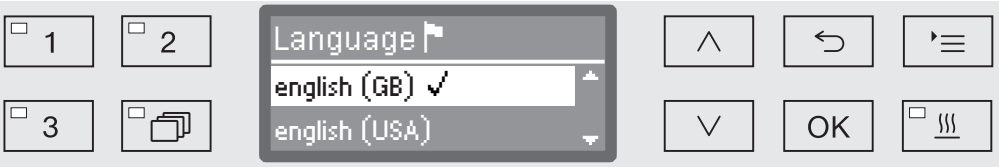
Use the ∧ and ∨ arrow buttons on the control panel to navigate through the menu.

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.

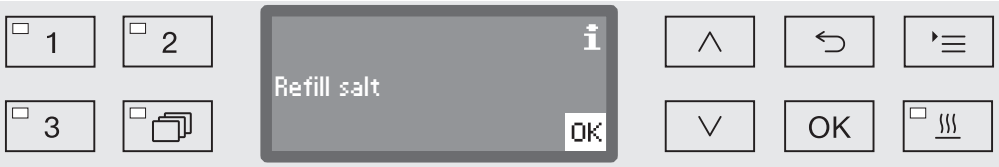
Check

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



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 program and have to be confirmed (acknowledged) individually with *OK* or all together at the end of the program 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 machine is equipped with a Comfort door lock. When the door is closed, the Comfort door lock automatically pulls the door into the correct position, electronically locking the door.

Opening the door

An electronically locked door can only be opened if:

- the machine is connected to the electrical supply and is switched on (the LED for the ⏻ button is lit up),
- there is no program 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.

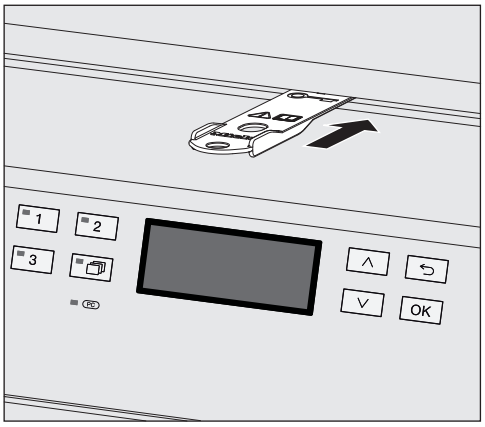
■ Lift the door until it engages with the door lock. The door is automatically pulled into the correct position by the Comfort door lock.

Opening 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 failure.

⚠ If the emergency release is operated during a program sequence, hot water and process chemicals can escape.
Danger of scalding, burning, and chemical burns. Where disinfecting agents are used, there is also a danger of inhaling toxic fumes.

- 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, the 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 on again with the ⏻ button.
- Acknowledge the fault message by entering your PIN code. The standard PIN code is “8000”.

Water hardness

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

Mains water with a water hardness of .7 mmol/l (4 gr/gal) 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 can give you information about the exact water hardness in your area.
It is useful to know your water hardness so that you can provide the service technician with this information in the event of any subsequent service calls. For this reason, record the hardness of the mains water here:

_____mmol/l or gr/gal

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 program sequence.

If the hardness level of your water is constantly less than .7 mmol/l (= 4 gr/gal), 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 - 70 gr/gal.

- Open the menu as follows:

Button ☰

▸ Additional 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 8 - 17 gr/gal, always program the machine to the higher value, 17 gr/gal in this example.

- Set the water hardness level using the arrow buttons (∧ = higher and ∨ = lower).
- Press OK to save the setting.

Settings table

gr/gal	ppm $CaCO_3$	mmol/l	**Display**
0	0	0	**0**
1	20	0.2	**1**
2	40	0.4	**2**
3	50	0.5	**3**
4	70	0.7	**4**
5	90	0.9	**5**
6	110	1.1	**6**
7	130	1.3	**7**
8	140	1.4	**8**
9	160	1.6	**9**
10	180	1.8	**10**
11	200	2.0	**11**
12	220	2.2	**12**
13	230	2.3	**13**
14	250	2.5	**14**
15	270	2.7	**15**
16	290	2.9	**16**
17	310	3.1	**17**
18	320	3.2	**18**
19	340	**3.4**	**19 *)**
20	360	3.6	**20**
21	380	3.8	**21**
22	400	4.0	**22**
23	410	4.1	**23**
24	430	4.3	**24**
25	450	4.5	**25**
26	470	4.7	**26**
27	490	4.9	**27**
28	500	5.0	**28**
29	520	5.2	**29**
30	540	5.4	**30**
31	560	5.6	**31**
32	580	5.8	**32**
33	590	5.9	**33**
34	610	6.1	**34**
35	630	6.3	**35**

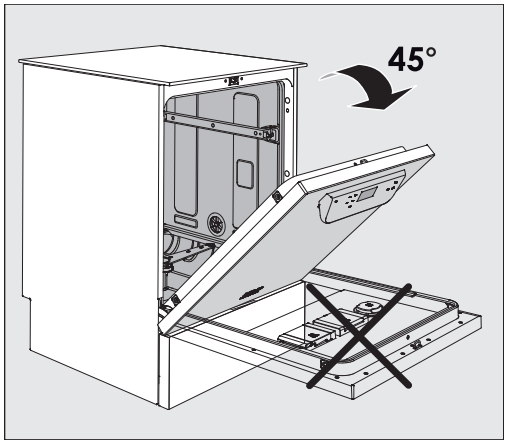
gr/gal	ppm $CaCO_3$	mmol/l	**Display**
36	650	6.5	**36**
37	670	6.7	**37**
38	680	6.8	**38**
39	700	7.0	**39**
40	720	7.2	**40**
41	740	7.4	**41**
42	760	7.6	**42**
43	770	7.7	**43**
44	790	7.9	**44**
45	810	8.1	**45**
46	830	8.3	**46**
47	850	8.5	**47**
48	860	8.6	**48**
49	880	8.8	**49**
50	900	9.0	**50**
51	920	9.2	**51**
52	940	9.4	**52**
53	950	9.5	**53**
54	970	9.7	**54**
55	990	9.9	**55**
56	1000	10.0	**56**
57	1020	10.2	**57**
58	1040	10.4	**58**
59	1060	10.6	**59**
60	1070	10.7	**60**
61	1090	10.9	**61**
62	1110	11.1	**62**
63	1130	11.3	**63**
64	1150	11.5	**64**
65	1160	11.6	**65**
66	1180	11.8	**66**
67	1200	12.0	**67**
68	1220	12.2	**68**
69	1240	12.4	**69**
70	1250	12.5	**70**

*) Factory default setting

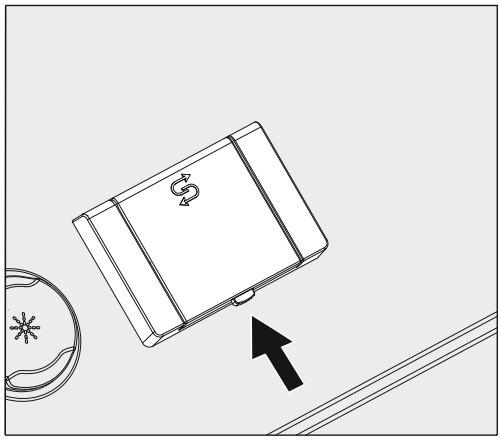
Filling the salt reservoir

Use only special, coarse-grained reactivation salt with a granule size of approx. 1 - 4 mm. Suitable water softener salt is available from Miele.
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 detergent will cause serious damage to the water softener.
Before filling the salt reservoir make sure that you have picked up the right package of reactivation salt.

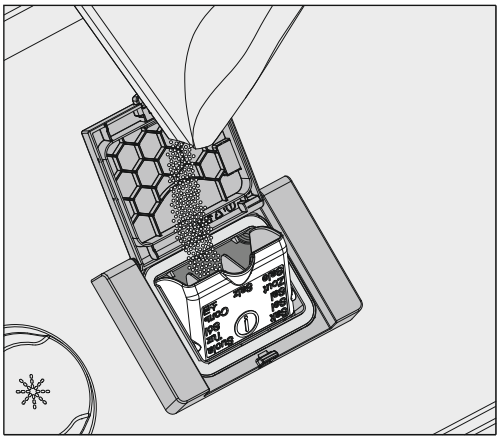


- Open the door to an angle of around 45°. This ensures that the salt flows into the salt reservoir more easily.



- Press the yellow button with the ⟳ symbol on the salt reservoir in the direction of the arrow. The flap will spring open.
- Open the funnel.

The reservoir takes approx. 1.4–2 kg of salt, depending on the type of salt and the remaining fill level.



⚠ Never fill the reservoir with water.
The reservoir could overflow when filled with salt.

- Add salt until the reservoir is full, making sure that the funnel still closes easily. Do not add any more than 2 kg of salt.

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

- Clean any excess salt from around the opening of the reservoir, focusing especially on the reservoir's seal. **Do not use** running water as this can cause the salt reservoir to overflow.
- Close the reservoir.

⚠ Do not force the reservoir shut if it has been overfilled.
If an overfilled salt reservoir is forced shut, this may damage the reservoir.
Remove excess salt before closing the reservoir.

- Run the Rinse program after refilling salt.

This will ensure that any traces of salt and brine are dissolved, diluted, and rinsed away.

Excess salt and brine 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 program, 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.

Wash carts, baskets, modules and inserts

This machine can be equipped with an upper and lower basket or a wash cart 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 wash carts, baskets, modules, and inserts (if available).

For all areas of application defined in “Intended use”, Miele offers suitable accessories such as wash carts, baskets, modules, inserts, and special irrigation connectors. Contact Miele for more information.

Water supply

Wash carts and baskets with spray arms are equipped with one or more connection points to the water supply. When loading baskets, wash carts, etc. into the machine, connect these to the water connection points in the back panel of the wash cabinet. The wash carts and baskets are held in place by the wash cabinet door when closed.
Any free connections in the back panel are closed mechanically.

Older models of wash carts and baskets

Only use older models of wash carts and baskets in this machine in consultation with Miele. In particular wash carts and baskets with water supply pipes for spray arms and injector manifolds must be converted to the new type of water connector.
Conversion must be carried out by Miele Service and is only available for selected models.

⚠ The assembly of connectors for the water supply of wash carts and baskets must be carried out by Miele Service.
Fitting faults on wash carts and baskets can cause damage to the machine.

Following conversion, wash carts and baskets can no longer be used in older models of the machine.

Upper basket height adjustment

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 sides 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 openings,
- a plastic connection piece and
- 6 screws

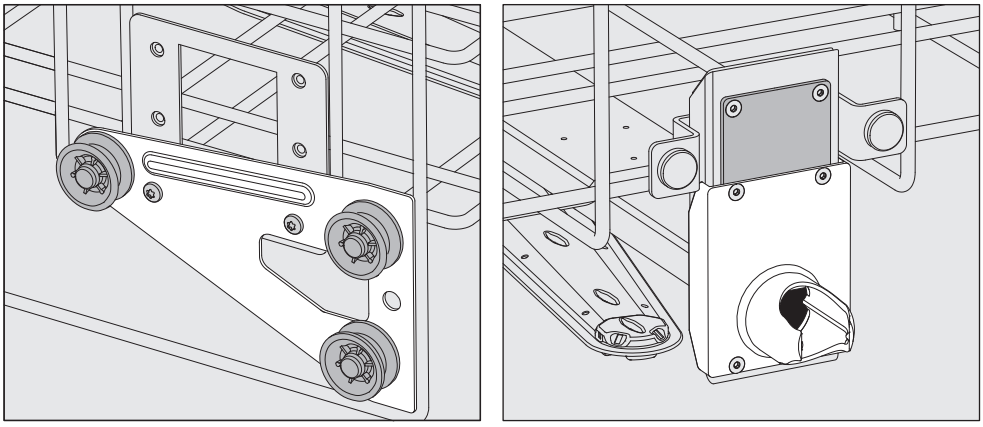
Only adjust the upper basket horizontally. The baskets are not designed to be positioned on a slant (one side up, one side down). Altering the height will alter loading heights for both the upper and lower baskets.

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.

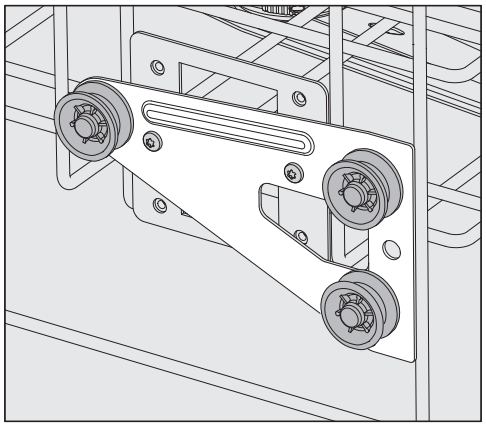
To adjust the upper basket to the ...

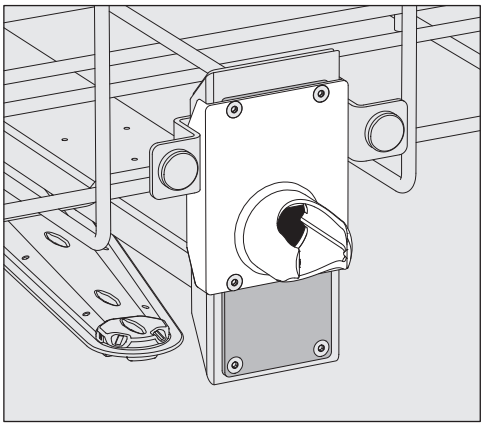
... upper position:



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

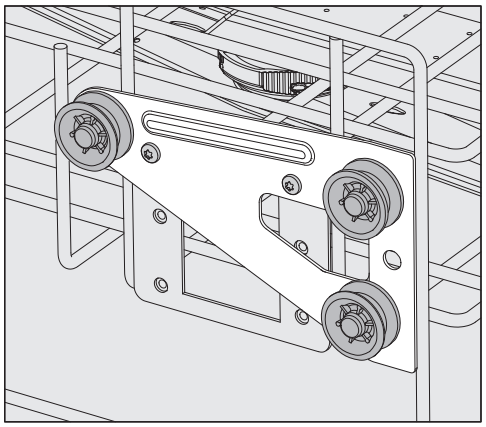
... middle position:

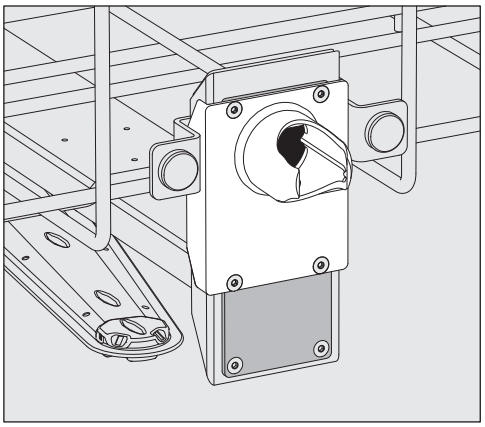




- Move the roller brackets on both sides to the middle position and secure them firmly.
- Position the stainless steel plate over the openings in the water supply pipe so that one of the outer openings is covered. Secure the stainless steel plate at the top or bottom with 2 screws. Place the water connector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

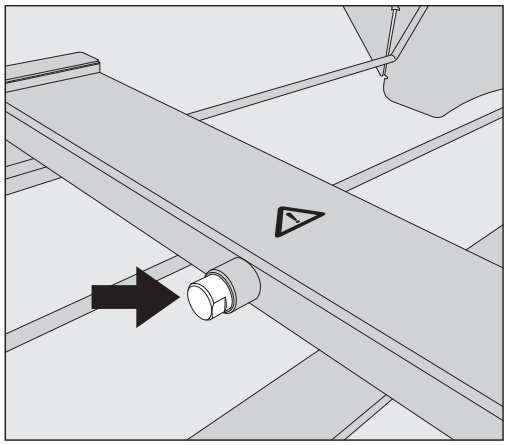
Wash pressure measurement

The wash pressure can be measured on all wash carts 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 wash pressure

On wash carts 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 wash pressure measurement. The exact location is described in the respective operating instructions for the wash carts and baskets.

On wash carts 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.



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.

- To measure the wash pressure, replace the blind stopper with a Luer Lock adapter, e.g., E 447.

Loading the machine

⚠ Only wash 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 wash items. These, together with other accessories, are available from Miele.

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

- Arrange the wash items so that wash water can access all surfaces. This ensures that they get properly cleaned.
- Do not place items to be cleaned inside other pieces where they may be concealed. Do not place items so close together that cleaning is hampered.
- The interior of lumened items must be thoroughly flushed through with wash water.
- Ensure that wash items with long, narrow, hollow sections can be flushed through properly before placing them in or attaching them to an irrigation connector.
- Hollow vessels 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 wash items, e.g., trays, should be placed at an angle to make sure water runs off them freely.
- Take apart any wash items which can be dismantled according to the manufacturer's instructions and reprocess the individual parts separately from each other.
- Lightweight wash 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 wash items which are too tall or which hang down in their path.
- Broken glass can result in serious injury when loading or unloading. Broken glass items must not be processed in the machine.
- Nickel and chrome-plated wash items and items made of aluminum are not generally suitable for machine reprocessing. They require special processing conditions.
- 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.
- Heat-sensitive items (e.g., OR shoes) must only be reprocessed using a chemo-thermal program.

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

Preparing the wash items

- Empty the wash items before sorting.

⚠ Risk of damage due to solvents.
The amount of residual solvents on wash items going into the wash cabinet should be minimal. Solvents with a flash point below 70°F (21°C) may only be present in trace amounts.
Rinse the wash items thoroughly with water and let them dry well before placing them in the wash cabinet.

- Dismantle the wash items where possible according to the manufacturer's instructions and open any valves or faucets.
- Follow the manufacturer's instructions regarding pre-cleaning and pre-treatment as necessary.
- Thoroughly rinse wash 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 wash items must be rinsed thoroughly by hand or using the Rinse program before reprocessing in the machine to avoid a significant build-up of foam.

Carry out a visual check before starting a program:

- 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 can they rotate freely?
- Are the filters clean?
  Remove any coarse soiling and clean the filters if necessary.
- Are the removable modules, injector nozzles, irrigation sleeves and other rinsing fittings securely connected?
- Are the baskets and modules or wash carts 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 program:

- 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 adapters during reprocessing must be re-processed.

- 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.

Surgical instruments

The time between using surgical instruments and reprocessing them should be kept as short as possible and must not exceed 6 hours.

Surgical instruments including those used in minimally invasive surgery should be thermally disinfected. Fully demineralized water should be used for the final rinse whenever possible to ensure no marks are left on the load and to avoid corrosion. If the water used contains more than 100 mg chloride/liter there is a risk of corrosion.

Hinged instruments should be opened and placed in mesh trays. They must not cover each other.

⚠ To avoid injury from instruments with upward-facing probes, the machine should be loaded from rear to front, and unloaded from front to rear.

Instruments should be dismantled in accordance with the manufacturer's instructions and to ensure that chamber wash solution can access lumen and hollow sections.

Instruments with narrow lumen must be manually pre-rinsed where necessary. Follow the instrument manufacturer's instructions on how to handle them.

Optical instruments

⚠ Risk of damage due to mechanical influences.
Optical instruments may be damaged if the washing mechanics move them.
Always reprocess optical instruments in inserts made by the optical instrument manufacturer or in the special E 460 insert.
Only reprocess optical instruments which have been designated as suitable for machine reprocessing by their manufacturer.

Operating room shoes

⚠ Operating room shoes should be cleaned and disinfected **in a machine installed specifically for this purpose only**. This is to ensure, for example, that any fluff or soiling cannot settle inside the lumen of hollow instruments.
Operating room shoes can only be reprocessed together with other items if a risk assessment has been carried out by the user.

OR shoes made of heat-sensitive materials and insoles can be chemo-thermally cleaned and disinfected at 60°C. To do this, a special program must be installed by Miele Service and a special dispensing module for dispensing chemical disinfecting agents must be retrofitted.
For information on the efficacy of chemo-thermal disinfection, contact the disinfectant manufacturer directly.

Thermal disinfection (OR shoes program) can be used if the manufacturer of the OR shoes confirms that they are thermostable up to 80°C.

■ Remove insoles before reprocessing OR shoes.

Please equip the upper and lower basket carriers with the following inserts for reprocessing OR shoes:

- A 101 or A 102 with A 310 insert for OR shoes up to size 41 (8 in Canada).
- A 103 with A 308 insert for insoles up to size 45 (11 in Canada).
- A 151 with A 307 insert for OR shoes up to size 48 (13.5 in Canada).

A large amount of fluff can build up in the machine when cleaning operating shoes. The filters in the wash cabinet should therefore be checked regularly and cleaned when necessary (see “Cleaning and care”).

Ophthalmology

⚠ Ophthalmic instruments should only be reprocessed in a washer-disinfector **specifically dedicated for this application**. This way there is no risk of residues from other disciplines being deposited in narrow lumened hollow instruments.
Synthetic cover nets, e.g. Miele A 2 or A 3 cover nets, must not be used in this washer-disinfector.

⚠ When reprocessing ophthalmic instruments do not dispense rinse aid.

Ophthalmological instruments should only be reprocessed in injector wash carts designed for them.

Wash carts are supplied with their own operating instructions.

Water quality

For ophthalmic instruments, the fully demineralized water must also be low in endotoxins and pyrogens.

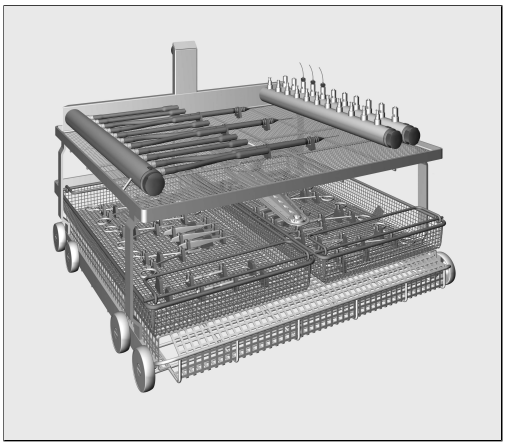
⚠ Risk of skin irritation due to pyrogens in the final rinse water.
Pyrogens in the final rinse water can cause irritation to the eyes, e.g., TASS.
Use fully demineralized water which is low in pyrogens for the final rinse. Check the water quality for pyrogens regularly if the fully demineralized water is generated with an ion exchanger.

Program selection

Special programs configured for the injector wash carts are stored for reprocessing ophthalmological instruments. Disinfection is carried out thermally.

A 204 injector wash cart

The A 204 injector cart is divided into 2 levels; it has a spray arm and may only be used with the Ophthalmology program.



The top level is fitted with various connections for reprocessing lumened instruments, such as rinsing and suction hand pieces, and cannulae.
The lower level of the injector cart is designed to take inserts and mesh trays for reprocessing instruments without lumen.

A 207 injector wash cart

The A 207 injector cart has 3 levels with 2 spray arms and may only be used with the OphthaTrays A207 program.

An injector manifold with silicone hoses with Luer Lock connectors is located on the upper level. Trays and mesh trays for ophthalmological OR sets with integrated injector manifolds can be connected to this manifold.
The 2 lower levels are designed to take inserts and mesh trays for reprocessing instruments without lumen.

Anesthetic instruments (AN)

The Vario TD AN program with thermal disinfection is intended for the reprocessing of anesthetic instruments.

⚠ Risk of heat damage.
The permissible reprocessing temperature is below 85°C for some elastomers used in breathing bags and breathing masks.
Observe the manufacturer's information on the permissible reprocessing temperature to prevent the material from aging prematurely.

Anesthetic instruments should only be reprocessed in mobile injector units designed for them.

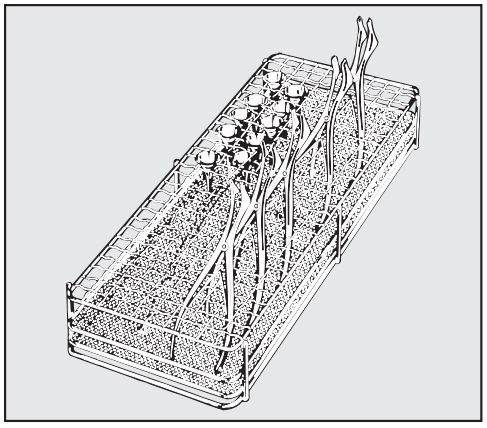
Mobile units are supplied with their own operating instructions.

⚠ If the process is not to be followed by sterilization, the load should be dried completely before storage to avoid the development of water-borne bacteria.
The drying result must therefore be checked at the end of a program.
Tube interiors in particular must be completely dry. The program drying time must be adjusted as necessary to achieve this.

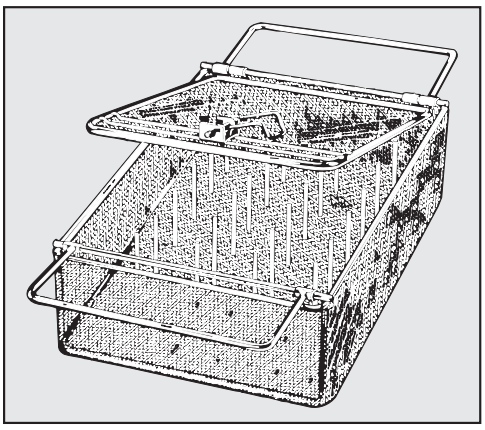
Ear, nose and throat instruments (ENT)

The Vario TD ENT program with thermal disinfection is intended for the reprocessing of ENT instruments.

Please use a special insert such as the E 417/1 for reprocessing ear and nasal specula.



- To ensure coverage of all surfaces by the wash fluid please open specula and place in the insert.



Lightweight ENT instruments e.g. ear specula can be reprocessed in a lockable E 374 insert

Please be aware that thin chrome plating can be very sensitive to neutralizing agent.

ENT fibre optics

For fast thermal disinfection without cleaning, the Vario TD ENT Optics program can be used. Manual cleaning of the ENT optical instruments is required.

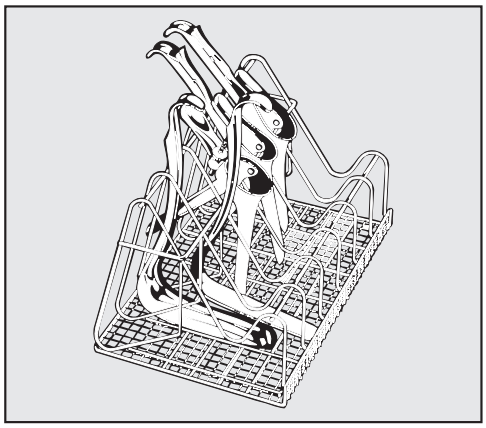
⚠ To avoid mechanical damage, only reprocess ENT optical instruments in inserts made by the instrument manufacturer or in special inserts such as the E 460.

- Pre-clean the instruments before machine reprocessing, e.g., with a non-fixative disinfecting agent or a swab soaked in ethanol.

Gynecology (GYN)

The Vario TD GYN program with thermal disinfection is intended for the reprocessing of gynecological instruments.

Please use a special insert, e.g. the E 416, for reprocessing gynecological specula.



Load the insert as illustrated.

Single piece specula:
- Open and place in between the supports in the insert.

Two piece specula:
- Place the lower parts in the narrow supports in the insert, shown on the left in the illustration.
- Place the upper parts in the wide supports, shown on the right in the illustration.

Arrange the specula between two rails in such a way that they do not touch each other or conceal each other.

Baby bottles

The Baby bottles program with thermal disinfection is intended for reprocessing baby bottles and nipples.

Baby bottles can be cleaned and thermal disinfected in containers, e.g. the E 135, and nipples in special inserts, e.g. the E 364 for wide neck nipples, and the E 458 for screw cap nipples.

- Highly alkaline process chemicals can etch and erase the graduated markings on baby bottles. Please only use baby bottles with dishwasher-proof level markings.
- If there is a delay of 4 hours or more before bottles can be washed, fill them with water to prevent residues from drying on.

If the process is not to be followed by sterilization, the load should be dried completely before storage to avoid the development of water-borne bacteria.
An adequate drying time must be selected to ensure this and the drying result must be checked at the end of every program.

Containers and inserts for baby bottles and nipples are supplied with their own operating instructions.

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 Miele.

General information	
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.	- Determine and remedy the causes of the damage. See also the information on “Associated process chemicals”, “Soiling”, and “Reaction between process chemicals and soiling” in this section.
A heavy build-up of foam during the program sequence will impair the cleaning and rinsing effect on the wash items. Foam escaping from the wash cabinet can cause damage to the machine. When foam develops, the cleaning process cannot be guaranteed to be standardized and validated.	- Determine and remedy the causes of the foam. - Check the process used regularly to monitor foaming levels. See also the information on “Associated process chemicals”, “Soiling”, and “Reaction between process chemicals and soiling” in this section.
Corrosion to stainless steel in the wash cabinet and to accessories has various appearances: - rust (red marks / discolouration) - black stains / discolouration - white stains / discolouration (etched surface) Corrosive pitting can lead to the machine not being water-tight. Depending on the application, corrosion can affect cleaning and rinsing results or cause corrosion to (stainless steel) wash items.	- Determine and remedy the causes of corrosion. See also the information on “Associated process chemicals”, “Soiling”, and “Reaction between process chemicals and soiling” in this section.

Associated process chemicals	
Problem	**How to resolve it**
The ingredients in process chemicals have a strong influence on the longevity and functionality (throughput) of the dispensing systems.	- Follow the process chemical manufacturer's instructions and recommendations. - Carry out a regular visual check of the dispensing system (suction lance, hoses, dispensing 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 Miele 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: - detergents and rinse aids containing surfactants Foam can occur: - in the program block in which the process chemical is dispensed - in the following program block if it has been spilt - in the following program with rinse aid if it has been spilt	- The process parameters in the wash program, 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 in the wash cabinet - deposits on the wash items - damage to elastomers and plastics in the machine - damage to certain plastics (e.g., polycarbonate and plexiglass) in the wash items	- De-foaming agents should be used in exceptional cases only; for instance, when absolutely essential for the process. - The wash cabinet and accessories should be periodically cleaned without wash items and without de-foaming agent using the Special 93°C-10' program. - Please contact Miele for advice.

Soiling	
Problem	**How to resolve it**
The following substances can lead to heavy build-up of foam during washing and rinsing: - some disinfection agents, cleaning detergents, etc. - active foaming agents such as surfactants	- Thoroughly rinse items in water beforehand. - Select a cleaning program with at least one short pre-rinse in cold or hot water.
The following substances can cause corrosion to stainless steel in the wash cabinet and the accessories: - hydrochloric acid - other substances containing chlorides, such as sodium chloride - concentrated sulfuric acid - chromic acid - particles of iron and shavings	- 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 reprocessing program as soon as possible after placing in the wash cabinet.

Reaction between process chemicals 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 process chemicals.	- Select a cleaning program with at least one short pre-rinse in cold water.
Non-precious metals such as aluminum, magnesium, and zinc can release hydrogen when processed with very acidic or alkaline process chemicals (oxyhydrogen reaction).	- Please observe the process chemical 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 this machine and follow the manufacturer's instructions on how to use them.
Please follow 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 Miele for information about suitable process chemicals.

Dispensing systems

The machine is equipped with a number of internal dispensing systems for process chemicals:

- Rinse aid
  This is dispensed via a storage reservoir ✳ in the door.
- Liquid cleaning detergent
  This is dispensed via a suction lance.

Labelling of the suction lances

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

Miele uses and recommends the following:

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

DOS modules

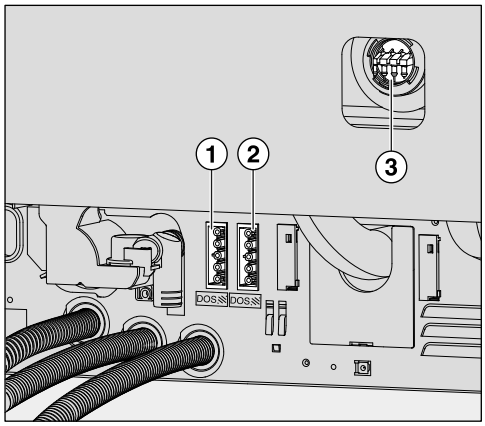
If required, up to two additional, external dispensing modules (DOS modules) for liquid process chemicals can be fitted retrospectively.

External dispenser modules are fitted by Miele Service. Internal dispensing systems cannot be fitted retrospectively.

Connecting DOS modules

DOS modules are supplied with their own installation instructions.

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



① Power supply connection for DOS 3 neutralizing agent.

② Power supply for DOS 5.

③ Connections for dispensing hoses.

- Connect the module to the machine's power 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.

Rinse aid

Rinse aid is necessary to ensure water does not cling and leave marks on load items, and to help load items dry faster after they have been reprocessed.

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

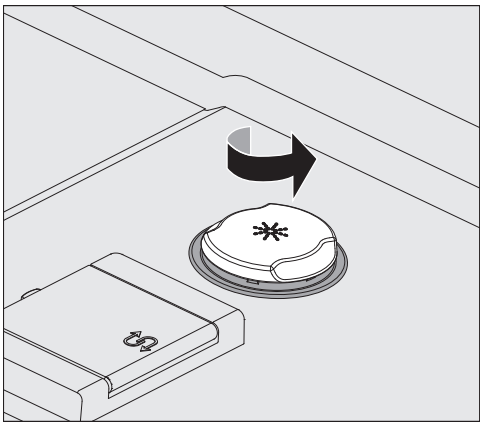
⚠ Do not dispense rinse aid when reprocessing ophthalmic instruments.

The rinse aid is dispensed automatically in the Final rinse program stage. The reservoir must be filled for this purpose.

Adding rinse aid

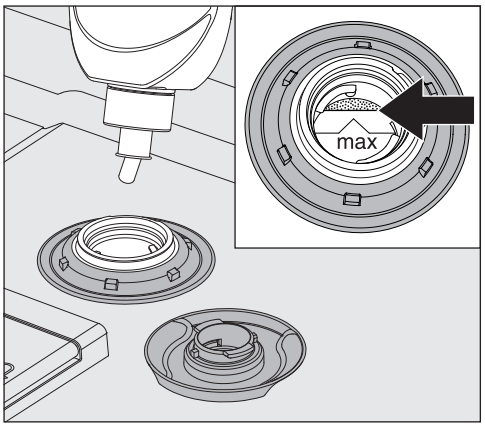
⚠ Do not fill with cleaning chemicals.
This would damage the reservoir.
Only fill the rinse aid reservoir with rinse aid for washer-disinfectors.

- Open the door fully.

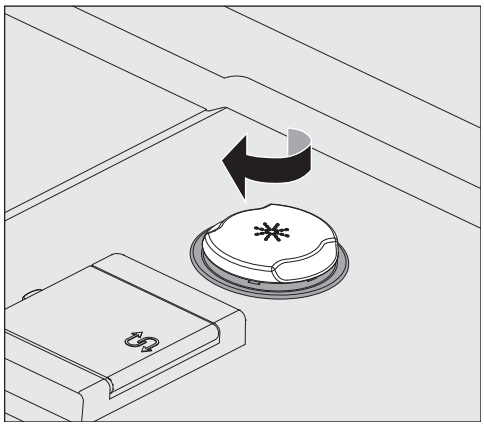


- Unscrew the yellow lid with the ✳ symbol in the direction of the arrow.

The container holds approx. 300 ml.



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



- Close the container.
- Wipe up any spilled rinse aid. This prevents over-foaming occurring during the next program.

Refill indicator

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

- Confirm the message shown with *OK* and
- refill the rinse aid as described.

Dispensing rinse aid

The dispensing concentration is set by Miele Service.

- 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 Miele Service and have the dispensing concentration reset.

Neutralizing agent

Neutralizing agent is dispensed via an external dispenser module. Dispenser modules are installed by Miele Service and can be retrofitted at any time.

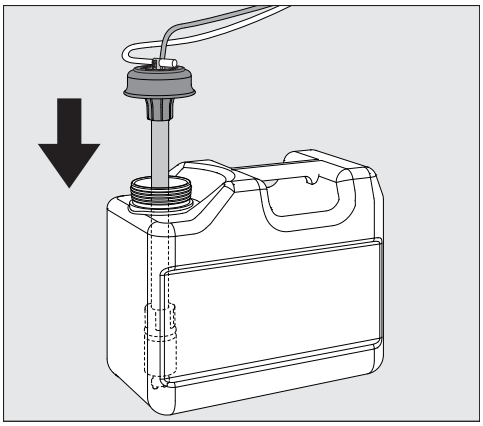
For certain programs, neutralizing agent is dispensed in the interim rinse phase after washing, to help prevent discolouration and corrosion spots on the instruments (especially around jointed areas).

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

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

Refilling neutralizing agent

- Place the neutralizing agent container (red marking) on the open cabinet door or on a surface which is robust and easy to clean.
- Take the lid off the canister and remove the suction lance. Place the suction lance on the open wash cabinet door.
- Replace the empty container with a full one.



- Push the suction lance into the opening of the container and secure the lid. Observe the colour coding.
- Feed the suction lance into the container until it reaches the bottom.
- Wipe up any spilled process chemical 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 ⚑ / Venting DOS”).

Adding and dispensing process chemicals

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 neutralizing 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 neutralizing agent

The dispensing concentration is set by Miele Service.

Instrument care products

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

If necessary, you can use instrument care products based on paraffin oil for instrument care following the machine reprocessing. Observe the instructions of the manufacturers of the instrument and the care products.
It is safe to reprocess instruments, which have been treated with this type of care products, in this washer-disinfector.

Chemical disinfectant

Heat-sensitive items (e.g., OR shoes) can be disinfected by adding a chemical disinfecting agent.
The disinfecting agent must be suitable for machine use and must be low-foaming.

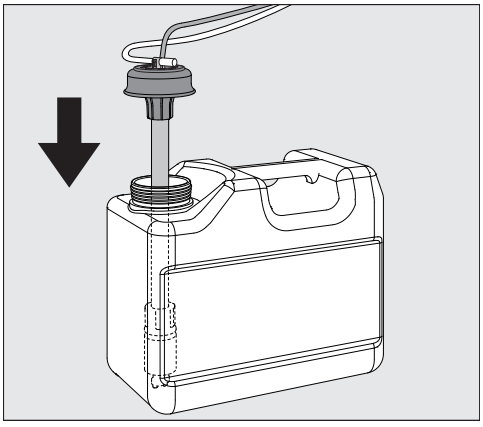
Disinfection parameters are based on claims made by the disinfecting agent manufacturer. Please follow, in particular, their instructions on handling, conditions of use, and effectiveness.

⚠ Chemo-thermal processes of this type are not suitable for the reprocessing of medical devices.

For this application, the washer-disinfector must be provided with a special reprocessing program and a suitable dispenser module by Miele Service. The dispenser module is connected externally.

Filling with chemical disinfectant

- Place the chemical disinfectant container (green marker) on the open wash cabinet door or on a surface which is robust and easy to clean.
- Take the lid off the canister and remove the suction lance. Place the suction lance on the open wash cabinet door.
- Replace the empty container with a full one.



- Push the suction lance into the opening of the container and secure the lid. Observe the colour coding.
- Feed the suction lance into the container until it reaches the bottom.
- Wipe up any spilled process chemical 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 ⚑ / Venting DOS”).

Adding and dispensing process chemicals

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 in the container for chemical disinfectant is low you are prompted to refill the DOS5 container.

- Confirm the prompt with *OK* and
- refill the container with chemical disinfectant 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 chemical disinfectant

The dispensing concentration is set by Miele Service.

Detergent

⚠ Risk of infection due to unsuitable cleaning detergents.
Using unsuitable cleaning detergents, such as a detergent for a domestic dishwasher, will mean that the reprocessing result is not as expected.
Only use detergents that are suitable for this type of machine.

The machine is only designed for use with liquid cleaning detergents. Liquid cleaning detergent is dispensed from an external container via a suction lance.

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

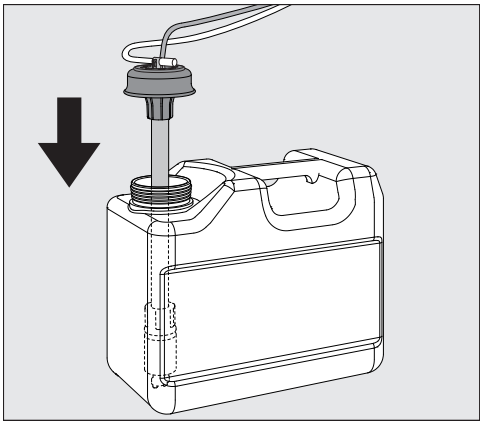
- How alkaline does the cleaning agent need to be for the cleaning application involved?
- Are protein-removing enzymes required and is the program cycle suitable for this?
- Are surfactants required for proper dispersal and emulsification?
- A suitable, mildly alkaline, active chlorine-free cleaning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

For cleaning specific types of soiling, and for information on the optimum cleaning agents and additives to use for liquid dispensing, please contact Miele Service.

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 cabinet door or on a surface which is robust and easy to clean.
- Take the lid off the canister and remove the suction lance. Place the suction lance on the open wash cabinet door.
- Replace the empty container with a full one.



- Push the suction lance into the opening of the container and secure the lid. Observe the colour coding.
- Feed the suction lance into the container until it reaches the bottom.

- Wipe up any spilled process chemical 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 ⚑ / Venting DOS”).

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 detergent you are reminded to replenish it.

- Confirm the message shown with *OK* and
- refill the liquid cleaning detergent as described.

If the liquid cleaning detergent 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 process chemicals

The dispensing concentration is set by Miele Service.

Selecting a program

Program selection buttons

- Select a program using program selection buttons 1, 2 or 3.

Program list

- Press the button,
- use the ∧ and ∨ arrow buttons to highlight a program, and confirm your selection with *OK*.

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

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

The different program and their uses are described in “Program charts” at the end of these operating instructions.

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

Starting a program

- 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 program using delay start

The start of a program 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 items for a long time, the reprocessing result can be adversely affected. There is also a risk of corrosion for stainless steel load items.

Setting the start time

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

- Use the ∧ (higher) and ∨ (lower) arrow buttons to set the hours, and confirm your selection with the *OK* button.

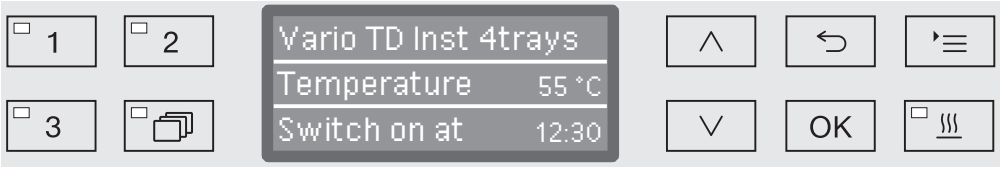
When the *OK* button is pressed, the display jumps automatically to the next input position. You cannot go back to the previous entry. If a mistake is made, the process must be cancelled using the ⮌ button and repeated.

- Set the minutes using the ∧ (higher) and ∨ (lower) arrow buttons, 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 program 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 program start time is reached.

Deactivating delay start

- Press the ⮌ button or switch the machine off using the ⏻ button.

Drying

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

When the drying function is activated and the door is closed, the drying system feeds heated and HEPA-filtered air into the wash chamber 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 preselected for all programs with a drying phase or can be retrospectively switched on or off every time a program is selected (see “Settings ⚑/Drying”).

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

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

Activating and deactivating drying

- Select a program.
- Press the ♨ button before the program start.

If Miele 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 the drying button.

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

- Use the arrow buttons ∧ (higher) and ∨ (lower) to change the drying time and press *OK* to save the setting. Drying is now activated.

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 program.

- Select an option using the arrow buttons ∧ and ∨ and confirm this with *OK*.

Program sequence indicator

After the program has started, the program sequence can be followed in the three-line display.

Top line

- Program name.

Middle line

The following parameters can be checked using the arrow buttons ∧ and ∨:

- Current program block, e.g. Main wash 1,
- Actual or required temperature
  (depending on the display set, see “Further settings/Display: Temperature”),
- A_0 value,
- Conductivity
  (only for machine version with conductivity meter),
- Cycle number,

Bottom line

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

End of program

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

Top line

- Program name.

Middle line

Continuously alternating between:

- Parameter met/not met,
- A_0 value,
- Conductivity in final wash block
  (only for machine version with conductivity meter).
- Cycle number,

Bottom line

- Program finished.

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

Cancelling a program

⚠ If a program is cancelled, the items in the machine must be reprocessed again.

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

Program cancelled due to a fault

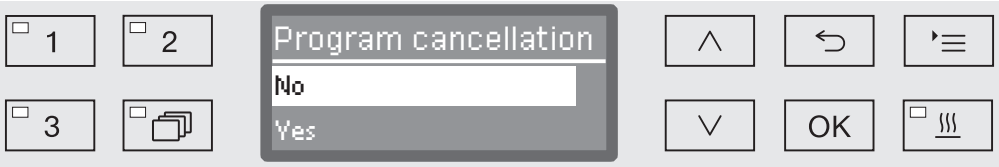
The program stops prematurely and an error message appears in the display.

Take appropriate steps to resolve the fault, depending on its cause (see “Problem-solving guide”).

Cancelling a program manually

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

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



- Use the ∧ and ∨ arrow buttons to select Yes.
- Pressing the *OK* button interrupts the program. Entry of a 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 program sequence display.

Restarting the program

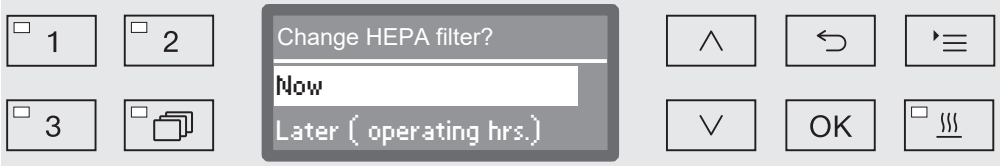
- Start the program again or select a new program.

System messages

After the machine is switched on or a program sequence is completed, a series of system messages may be shown on the display. These indicate e.g., low fill levels in the containers or required maintenance.

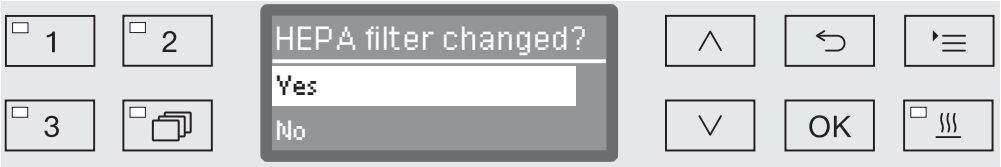
Changing the filter

Several hours before reaching the maximum permitted operation hours, you will be prompted to change the air filters.



- Confirm the message with *OK* and change the filter according to the instructions in the section “Maintenance”.

⚠ The operating hours counter must only be reset when the filter has been changed.



- 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 ∨ arrow buttons.
- Confirm your selection with *OK*.

Cleaning the filter combination and tubular filter

The filters in the wash cabinet must be checked daily and cleaned regularly; see “Maintenance / Cleaning the filters in the wash cabinet”.

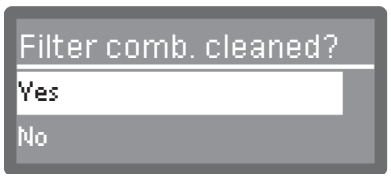
The A 800 tubular filter can be used in special injector manifolds on various mobile units and baskets and must be cleaned regularly. Follow the cleaning instructions in the operating instructions for the tubular filter.

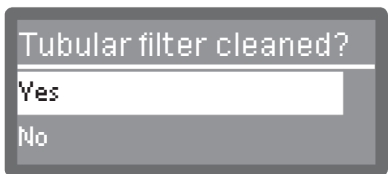
A counter in the controls can be activated to remind you of the required cleaning at regular intervals.

- Follow the instructions in the “Maintenance” section for cleaning the filters. For the tubular filter, follow the instructions in the operating instructions for the tubular filter.

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 ∧ and ∨ arrow buttons and confirm your selection with *OK*.

Low fill levels

When the fill level is low in one of the containers, e.g., for process chemicals or the salt reservoir, you are prompted to refill the container.

- Acknowledge the messages with *OK* and refill the relevant containers. To do this, follow the instructions in the sections “Adding and dispensing process chemicals” and “Water softener”.

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 Association 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 Miele Service.

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 ☑
        - Program end ☐
  - Priming DOS system
    - DOS_
  - Language
    - deutsch ☐
    - english (GB) ☑
    - ... ☐
  - Time of day
    - Set
    - Display
      - On ☐
      - "On" for 60 seconds ☐
      - Do not display ☑
    - Time format
      - 12 h ☐
      - 24 h ☑
  - Volume
    - Keypad tone
    - Buzzer tones
      - Program 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 programs.

■ Select an option using the ∧ and ∨ arrow buttons.

■ Press *OK* to save the setting.

Drying

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

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

When the drying function is activated and the door is closed, the drying system feeds heated and HEPA-filtered air into the wash chamber 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 programs.

- Yes

  The drying function is activated for all programs. The program duration is lengthened if the drying function is activated.

■ Select an option using the ∧ and ∨ arrow buttons.

■ Press *OK* to save the setting.

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

- No

  The door remains closed at the end of the program.

- Program end

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

■ Select an option using the ∧ and ∨ arrow buttons.

■ Press *OK* to save the setting.

DOS venting

The dispensing system for liquid process chemicals 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 process chemical container has been replaced,
- the dispensing system has been sucked completely dry.

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

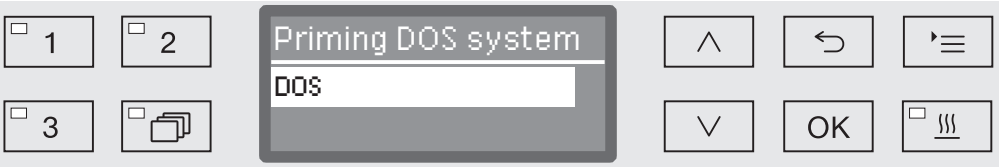
■ Open the menu as follows:

Button ☰

▸ Settings

▸ Priming DOS system

▸ DOS... (name of dispensing system)

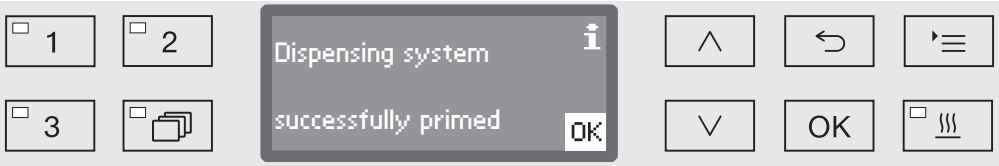


Automatic venting will start when the dispensing system is selected. Once started, the automatic venting process can no longer be cancelled.

■ Select a dispensing system using the ∧ and ∨ arrow buttons.

■ Press *OK* to start the venting process.

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



Language

The language set will be used in the display.

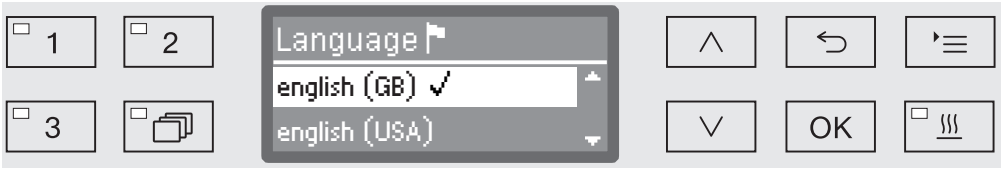
■ Open the menu as follows:

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 ∨ 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 time (daylight savings) and winter time.
You need to make this adjustment yourself as necessary.

Select Clock display

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

- Open the menu as follows:

Button ☰

▸ Settings

▸ Time of day

▸ Time format

- 12 h

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

- 24 h

  Time of day display in 24-hour format.

- Use the ∧ and ∨ arrow buttons to select the date format you want.
- Press *OK* to save the setting.

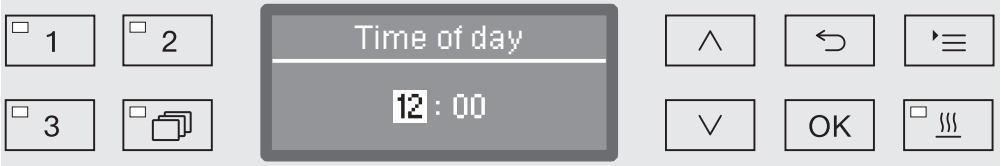
Set the time of day

To set the format for the time of day:

- Open the menu as follows:

Button

- Settings
  - Time of day
    - Set



- Use the arrow buttons ∧ (higher) and ∨ (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 ⮌ button and repeated.

- Use the arrow buttons ∧ (higher) and ∨ (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 can set to standby for use 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 standby duration set in “Additional settings/Switch off after”.

Once the set standby time elapses, the machine is activated for use. 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 standby time elapses, the machine is permanently activated for use and the time appears on the display.

- "On" for 60 seconds

  Once the set standby time elapses, the machine is activated for use for 60 seconds. After the 60 seconds have elapsed, the machine switches off. The time appears on the display while the machine is in standby.

- Do not display

  After the standby time has elapsed, the machine switches off. The time no longer appears on the display.

■ Select an option using the ∧ and ∨ 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)
- End of program
- System messages (information)

■ Open the menu as follows:

Button

▸ Settings

▸ Volume

- Buzzer tones

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

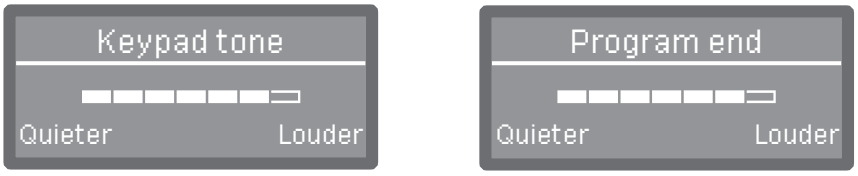
- Keypad tone

  Setting the buzzer volume for keypad tone.

■ Select an option using the ∧ and ∨ 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 for which tone, Warning or Program end, you would like to adjust the volume.



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

■ Use the arrow buttons ∧ (Louder and ∨ (Quieter) to set the volume.

■ Press *OK* to save the setting.

The Additional settings menu incorporates all administrative processes and settings.

The Additional settings menu can only be accessed by using a PIN code. The standard PIN code is “8000” and can be changed to a custom 4-digit code.
If you do not have the PIN 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.

Additional settings

- Code
  - Change code
- Date
  - Date format
    - DD:MM:YY ☑
    - MM:DD:YY ☐
  - Set
- Log book
  - Consumption: Water
  - Consumpt.:Cleaning agent
  - Consumpt.: Rinse aid
  - Consumpt.: Neutralizer
  - Consumption: Chem.disinf.
  - Consumption: DOS 5
  - Operating hours
  - Wash cycles
  - Service interval
- Report
  - Short ☑
  - Long ☐
- Temperature unit
  - °C ☑
  - °F ☐
- Program settings
  - Change program
    - ...
  - Reset program
    - ...
- Air cooling
  - Yes ☐
  - No ☑

- Release program
  - All ☑
  - Selection
    - ... ☐
- Move program
  - 1 Vario TD Inst 4trays
  - 2 Vario TD Inst 6trays
  - 3 Vario TD MIS
- Test program
  - No
  - Laboratory
  - Validation
- Filter maintenance
  - HEPA filter
    - Reset (Yes/No)
  - Filter combination/Tubular filter
    - Reset (Yes/No)
    - Interval ⇨ 10
- Interface
  - Ethernet
    - Module status
    - DHCP
  - RS232
    - Print reports
    - Language ⚑
    - Mode
    - Baud rate: 9600 ☑
    - Parity: none ☑
    - Reset (Yes / No)
- 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

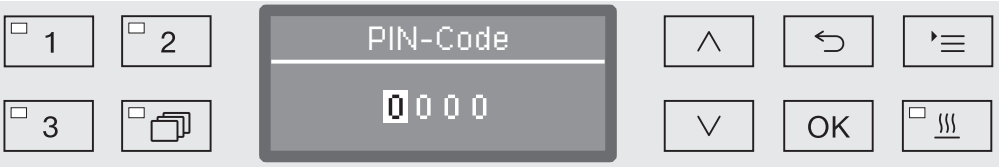
PIN code

The Additional 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 Miele Service.

Entering the PIN code

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



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

- Use the arrow buttons ∧ (higher) and ∨ (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.

Change the PIN 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 Miele Service.

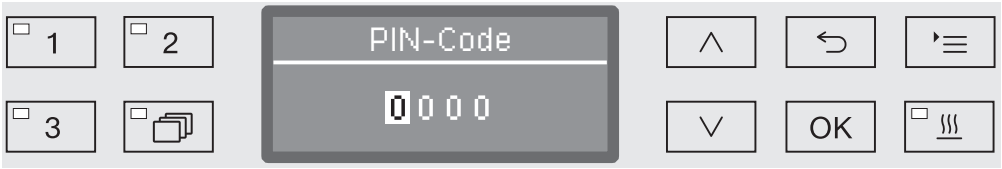
- Open the menu as follows:

Button ☰

▸ Additional settings

▸ Code

▸ Change code



- Use the arrow buttons ∧ (higher) and ∨ (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.

The PIN 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.

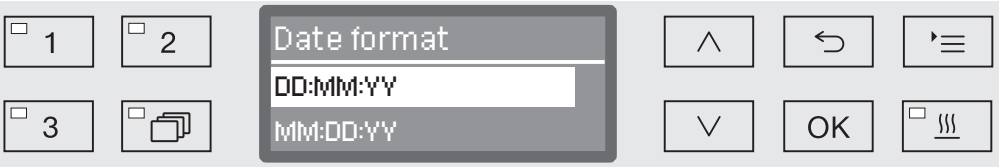
■ Open the menu as follows:

Button ☰

▸ Additional settings

▸ Date

▸ Date format



- DD = Day
- MM = Month, and
- YY = Year.

■ Use the ∧ and ∨ arrow buttons to select the date format you want.

■ Press *OK* to save the setting.

Setting the date

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

- Open the menu as follows:

Button ☰

▸ Additional settings

▸ Date

▸ Set

- Use the arrow buttons ∧ (higher) and ∨ (lower) to set the day/month 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 ⮌ button and repeated.

- Use the arrow buttons ∧ (higher) and ∨ (lower) to set the day/month and confirm your entry using the *OK* button.
- Use the arrow buttons ∧ (higher) and ∨ (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 process chemicals, as well as operating hours and program cycles are recorded in the log book.

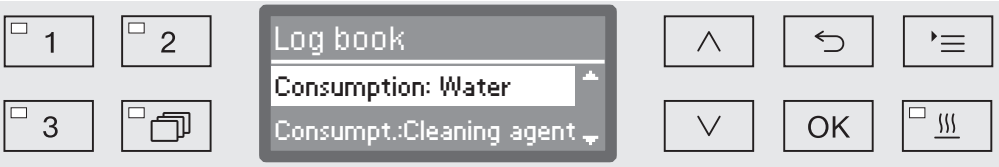
Miele Service can also use the log to calculate a recommendation for service intervals.

■ Open the menu as follows:

Button ☰

▸ Additional settings

▸ Log book



- Consumption: Water

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

- Consumpt.:Cleaning agent

  Display the total amount of liquid cleaning detergent used in litres (L).

- Consumpt.: Rinse aid

  Display the total amount of rinse aid used in litres (L).

- Consumpt.: Neutralizer

  Display the total amount of neutralizing agent used in litres (L).

- Consumption: DOS 5

  Display of total consumption of liquid cleaning agent dispensed via dispenser module connection DOS 5, in litres (L).

- Operating hours

  Display of the total number of operating hours.

- Program cycle counter

  Total of all completed program cycles. There is no breakdown of individual programs. Cancelled programs are not included.

- Service interval

  Date of the next service (entered by Miele Service).

■ Select an option using the ∧ and ∨ arrow buttons and confirm your selection with *OK*.

Values in the machine log book cannot be altered.

■ Press the ⮌ button to exit the menu.

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

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

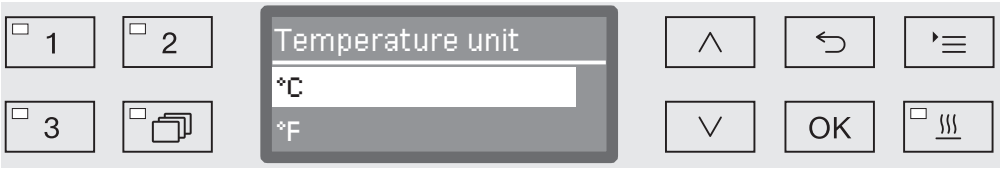
If the temperature unit is changed to °F, the temperature displayed is automatically recalculated.

■ Open the menu as follows:

Button ☰

▸ Additional settings

▸ Temperature unit



- °C

  Display temperature in degrees Celsius.

- °F

  Display temperature in degrees Fahrenheit.

■ Select an option using the ∧ and ∨ arrow buttons.

■ Press *OK* to save the setting.

Program settings

You can use this menu to customize the current program to suit technical requirements and the load items or to reset all programs to the factory default settings.

Additional specialist knowledge is required to alter program settings and this should therefore be undertaken only by experienced users or by Miele Service.

More information can be found in “Program 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.

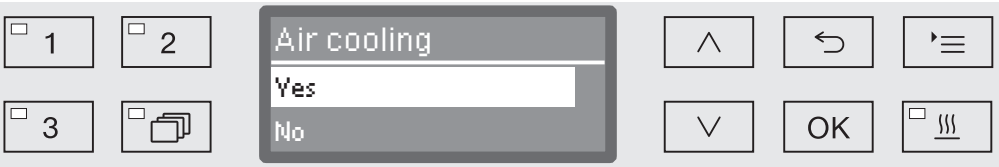
Cooling in the steam condenser will increase water consumption.

■ Open the menu as follows:

Button ☰

▸ Additional 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 ∨ arrow buttons.

■ Press *OK* to save the setting.

Program release

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

■ Open the menu as follows:

Button ☰

▸ Additional settings

▸ Release program

- All

  All programs are released for use.

- Selection

  A selection of programs are available for use.

■ Select an option using the ∧ and ∨ arrow buttons and confirm your selection with *OK*.

The Selection option displays a list of all programs.

Programs are selected by multiple choice. A box ☐ is shown next to all programs in the list. If a program is released, there is a tick ☑ in the box. An empty box indicates a blocked program.

■ Programs can be released or blocked using the arrow buttons ∧ and ∨ 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 program: allocating program selection buttons

You can sort the program selection list to suit your requirements and therefore also allocate the program selection buttons 1, 2 and 3.

- Open the menu as follows:

Button ☰

▸ Additional settings

▸ Move program

All enabled programs are shown in the program list (see “Further settings/Enabling programs”). A program's position in the program list is the determining factor for assigning the program selection buttons. Programs are numbered from 1 - n. The first three programs in the list are assigned to the program selection buttons; for example:

- 1. Vario TD Inst 4trays on program selection button 1
- 2. Vario TD Inst 6trays on program selection button 2
- 3. Vario TD MIS on program selection button 3
- 4. Vario TD Instr. 8 mesh trays
- 5. Vario TD AN
- etc.

- Use the ∧ and ∨ arrow buttons to select the program you would like to move.
- Confirm your selection with *OK*.

Now you can move this program within the list.

- Use the ∧ and ∨ arrow buttons to move the program to the position you want.
- Press *OK* to save the program to the selected position.

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

The process can be repeated as often as you wish.

- Press the ⮌ button to exit the menu.

Test program

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

See “Maintenance” for more information on these programs.

Filter maintenance

HEPA filter replacement

The air filter in the drying unit 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 daily and cleaned regularly; 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 manifolds on various mobile units and baskets and must be cleaned regularly. Follow the cleaning instructions in the operating instructions for the tubular filter.

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 ‣≡

‣ Additional settings

‣ Filter maintenance

‣ Filter combination and/or Tubular filter

- Active

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

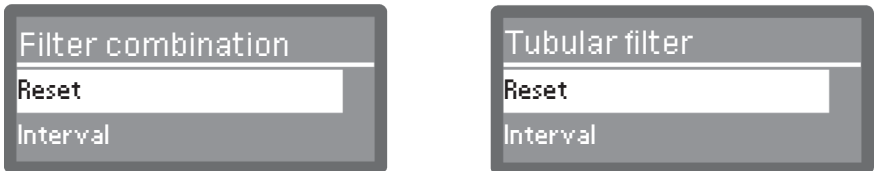
- Inactive

  The cleaning interval is deactivated.

■ Select an option using the ∧ and ∨ arrow buttons and confirm your selection with *OK*.

Resetting the counter

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



- Reset

  The counter is reset.

- Interval

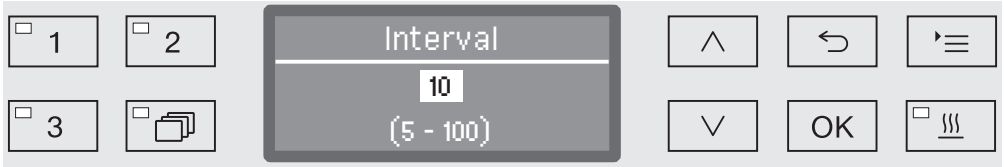
■ Select an option using the ∧ and ∨ arrow buttons and confirm your selection with *OK*.

Setting the interval

The interval depends on the number of programs 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 program cycle per day and 5 working days in the week, this yields an interval of 10 (2 x 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 program cycles.



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 ∧ (higher) and ∨ (lower) to set the Interval.

■ Press *OK* to save the setting.

Interface

With Miele machines, cleaning processes can be documented. To enable this, these machines are equipped with a module slot on the back to take a Miele Communication Module. The communication module is available from Miele and comes with its own operating instructions.

⚠ Unauthorized access poses a health risk.
Settings in the machine, e.g., parameters for disinfection or dispensing process chemicals, may be changed as a result of unauthorized access via the network.
The machine should be operated in a separate network segment that is physically disconnected from other network segments, or access to the network should be restricted using a firewall or a router configured to provide protection against unauthorized access.
Use strong passwords to protect access to the network.
Limit access to the network to persons requiring access in the course of their work.

Only use terminal devices (PC, printers, etc.) which comply with EN/IEC 62368.

Contact Miele for more information about communication modules, software, and suitable printers.

Ethernet

The XKM 3000 L Med communication module makes it possible to establish 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

An XKM RS232 10 Med communication module is required for direct connection to a report printer.
The XKM RS232 10 Med module can also be used for connection to a terminal or terminal emulator. The data is 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 ☰

▸ Additional settings

▸ Interface

- Ethernet

  Configuration of an Ethernet interface.

- RS232

  Configuration of a serial RS232 interface

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

The parameters for the interface must be configured next.

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

RS-232

- Print reports

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

- Language

  Any one of the following languages can be set for the RS232 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 protocol 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.

- Reset

  The interface configuration is reset to the factory defaults.

Following parameters are preconfigured:

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

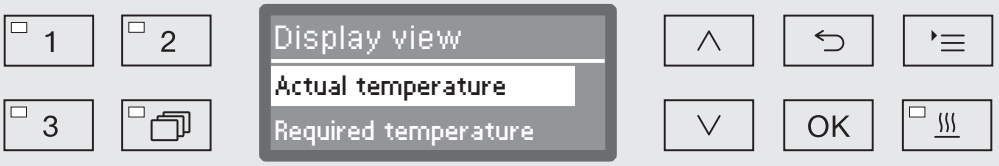
The wash cabinet temperature can be viewed during a program. Either the current actual temperature or the required temperature which has been preset for the current wash block is displayed.

■ Open the menu as follows:

Button ☰

▸ Additional 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 program both settings are displayed as Temperature. There is no breakdown of actual and required temperature.

■ Select an option using the ∧ and ∨ arrow buttons.

■ Press *OK* to save the setting.

Display: brightness and contrast

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

■ Open the menu as follows:

Button ☰

▸ Additional settings

▸ Display

- Contrast

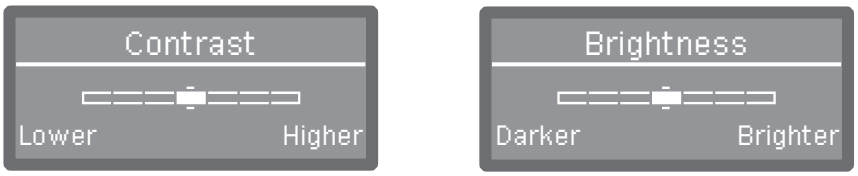
  Set the contrast.

- Brightness

  Set the brightness.

■ Select an option using the ∧ and ∨ arrow buttons.

■ Confirm your selection with *OK*.



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

■ Use the arrow buttons ∧ (Higher/Brighter) and ∨ (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 (standby)

During standby, 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 Additional settings/Switch off after and a standby time set.
- In addition, 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 time period, it switches itself off automatically.

- To activate the Auto-Off function, it must first be enabled under Additional settings/Switch off after and a standby time set.
- Then, the option Do not displaymust 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.

Switching off after activating

■ Open the menu as follows:

Button ‣≡

‣ Additional 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 ∧ and ∨ arrow buttons.

■ Press *OK* to save the setting.

Setting the standby duration

If the Yes option has been selected, the standby duration after which automatic switch-off should occur must be set next.

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

■ Use the ∧ (higher) and ∨ (lower) arrow buttons to set the standby 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 Miele Service.

For more information see “Service”.

Adjusting program settings

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

Additional specialist knowledge is required to alter program settings and this should therefore be undertaken only by experienced users or by Miele Service.

Program and dispensing changes must be documented.

Program structure

Each program is subdivided into program blocks which run one after another. A program consists of at least one and a maximum of 11 program blocks. Each block can occur only once in a program.

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

Program header

- Change water volume

  Every program 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 program chart.

- Drainage time

  If the on-site waste water system is insufficient to drain the waste water from the wash cabinet 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 Miele Service.

Program blocks

The wash block sequence is pre-determined and is the same as the sequence in the program charts (see “Program charts”).

- Pre-rinse 1 to 3

  A pre-rinse removes coarse soiling and foaming agents.

- Main wash 1 and 2

  Depending on the load items, 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 neutralized where necessary by adding appropriate neutralizing agents.

- Final rinse 1 and 2

  To avoid deposits and corrosion on the load items, fully demineralized water (DI) 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 items.

Program block parameters are accessible only to Miele Service, with the exception of the dispensing of rinse aid and drying parameters.

Opening the menu

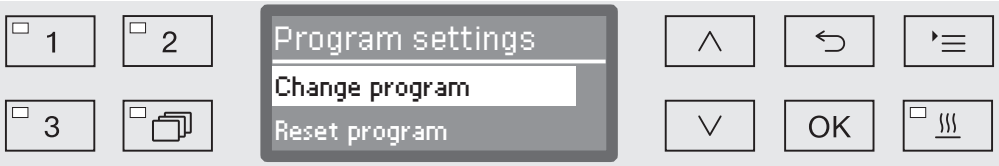
The menu for program settings is locked for machine users by factory default. If required, this function can be activated by Miele Service.

■ Open the menu as follows:

Button ‣≡

‣ Additional settings

‣ Program settings



- Change program

  Programs can be adapted to suit specific technical requirements.

- Reset program

  Reset a program to factory default settings. Programs newly installed by Miele Service will be deleted with this option.

Resetting a program

Programs can be individually reset to factory default.

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

...

‣ Program settings

‣ Reset program

All programs are then listed in the display.

■ Use the ∧ and ∨ arrow buttons to select the program and confirm your selection with *OK*.

- Yes

  The program will be reset to factory default.

- No

  Program parameters will not be changed.

■ Use the ∧ and ∨ arrow buttons to select an option and confirm your selection with *OK*.

Altering a program

A program is changed in two steps:

- The program change begins with a list of all wash blocks assigned to the program. First this list must be confirmed.
- Then individual program parameters can be changed.

Document all changes of factory settings in case of a subsequent Service call.

Program and dispensing changes must be documented.

...

▸ Program settings

▸ Change program

■ Select the program you want to alter.

For more information see “Allocating wash blocks”.

Allocating wash blocks

Every program change starts with a list of the wash blocks.

All wash blocks, which are assigned to the program, are listed in the display. The assignment can be adjusted by Miele service if necessary.

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

Further settings follow. You can edit these in any order.

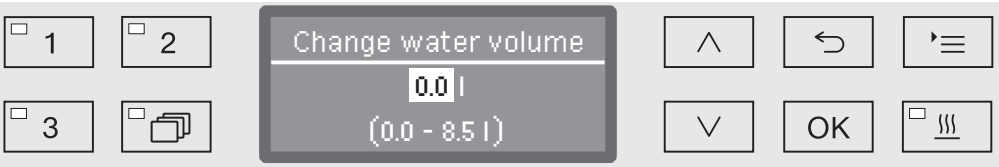
Changing water quantity

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 process chemicals used. The additional amount of water required depends on the type of basket or wash cart 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 water volume



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 ∧ (higher) and ∨ (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.

...

▸ Drainage time

- Standard

  The standard drainage time setting applies.

- Extended

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

■ Select an option using the ∧ and ∨ arrow buttons.

■ Press *OK* to save the setting.

Drying unit

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

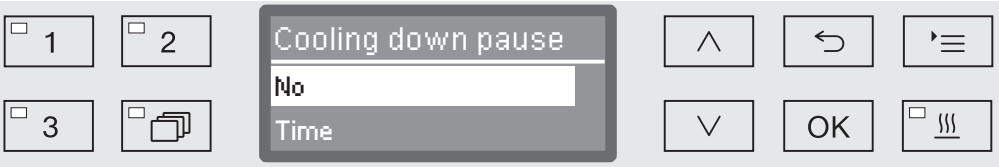
When the drying function is activated and the door is closed, the drying system feeds heated and HEPA-filtered air into the wash chamber for active drying of the load. The heated air is discharged through the steam condenser and can be cooled down if necessary (see “Further settings/Air cooling”).

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 vapor is extracted from the wash chamber and condensed by the steam condenser. This reduces the moisture level in the wash chamber, which promotes drying.

...

▸ Cooling down pause



- No

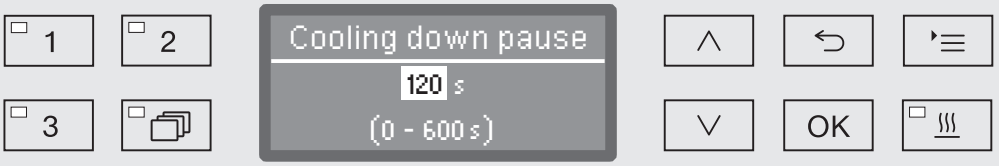
  The drying unit starts immediately after the rinse phase without a cooling down pause.

- Time

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

■ Use the arrow buttons ∧ and ∨ to select an option and press *OK* to confirm your selection.

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. The possible range is shown in the bottom line of the display.

■ Use the arrow buttons ∧ (higher) and ∨ (lower) to set the duration of the cooling down pause.

■ Press OK to save the setting.

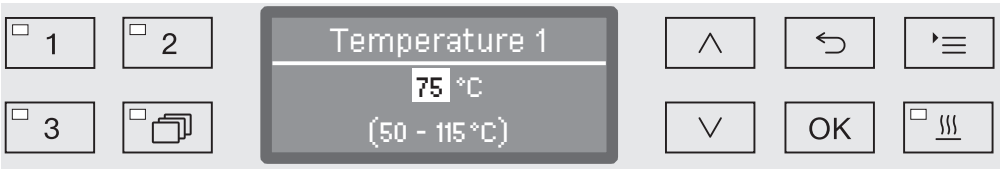
Setting the temperature and time

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 programs, but if necessary can be set up by Miele Service.

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 ∧ (higher) and ∨ (lower) arrow buttons to set the temperature.
- Press *OK* to save the setting.

Setting drying time 1

...

▸ Drying time 1

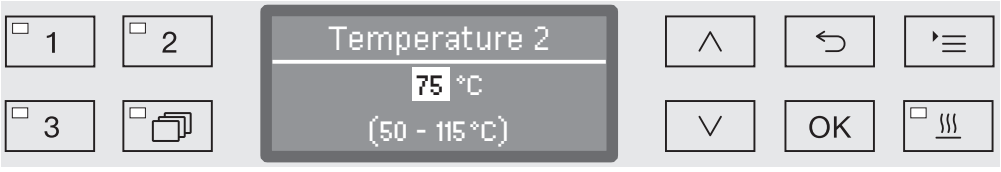
The holding time is set in 1 minute increments. The possible range is shown in the bottom line of the display.

- Use the ∧ (higher) and ∨ (lower) arrow buttons 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.

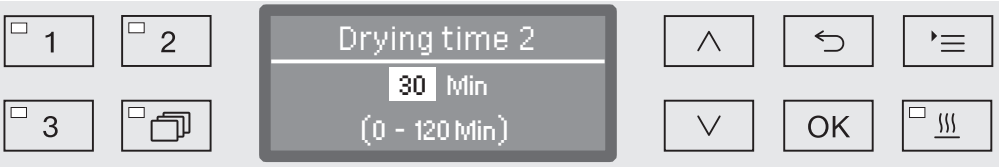
- Use the ∧ (higher) and ∨ (lower) arrow buttons to set the temperature.
- Press *OK* to save the setting.

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 ∧ (higher) and ∨ (lower) arrow buttons to set the holding time.
- Press *OK* to save the setting.

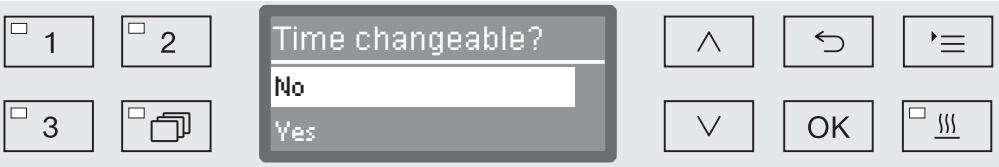
Time changeable

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

...

▸ Drying time 2

▸ Time changeable?



- Yes

  The drying time can be set again and saved before the start of every program.

- No

  The drying time cannot be changed.

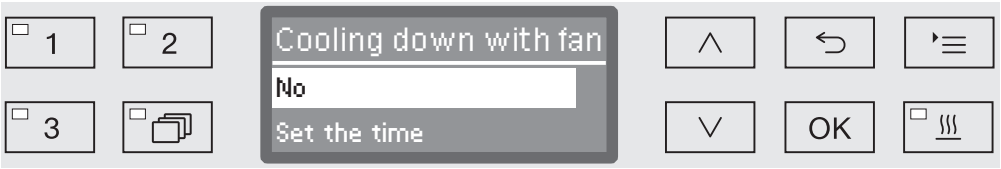
- Select an option using the ∧ and ∨ arrow buttons.
- Press *OK* to save the setting.

Fan cooling

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

...

▸ Cooling down with fan



- No

  The drying unit fan is not switched on.

- Set the time

  The drying unit fan will run for a specified duration.

■ Use the arrow buttons ∧ and ∨ to select an option and press *OK* to confirm your selection.

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. The possible range is shown in the bottom line of the display.

■ Use the arrow buttons ∧ (higher) and ∨ (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 program cycle, the following data is recorded, among other things:

- Machine model and serial number
- Date
- Program start and program 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 program
- System messages, e.g. salt refill

Further data can be incorporated into the report as required. Contact Miele Service for more information on this.

Memory

Depending on scale, between 10 and max. 20 batch protocols 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 program cycle 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 on the display or on a directly connected printer. Power-failure-safe storage of graphical information is not available.

Adding cycle numbers

Miele Service 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 Miele communication module for permanent archiving of batch protocols. 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 Miele for further information on software and suitable printers.

Only use terminal devices (PC, printers, etc.) which comply with EN/IEC 62368.

The communication modules are available from Miele 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 “Additional settings/ Interface”.

Process documentation using external software (option)

For digital archiving the process data is transmitted to external process documentation software via an Ethernet interface. Transmission can optionally occur continuously during the process or as a single data packet at the end of the process. The settings for this are modified by Miele 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 (option)

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 machine. 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 ☰

▸ Additional settings

▸ Report

- Short

  Print in short format

- Long

  Print in long format

■ Select an option using the ∧ and ∨ arrow buttons.

■ Press *OK* to save the setting.

Outputting batch protocols retrospectively

Internally stored protocols 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 ☰

▸ Additional settings

▸ Interface

▸ RS232

▸ Print reports

- Last report

  Output of the last cycle report.

- Current work day

  Output of all cycle reports for the current working day.

- Last working day

  Output of all cycle reports for the previous working day.

- All

  Output of all saved reports.

■ Select an option using the ∧ and ∨ 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.

Service

The machine should be serviced **every 1,000 hours of operation, or at least once a year,** by Miele Service or a suitably qualified specialist.

Maintenance covers the following points and functional checks:

- replacement of wear parts
- electrical safety check compliant with national rules and regulations
- door mechanism and door seal
- any screw connections and connectors inside 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 mechanism / wash pressure
- Drying unit
- visual inspection and functional check of components
- a thermo-electric check
- leak test on seals
- safety testing of all relevant measuring systems
- safety features

Where applicable:

- Conductivity meter

External documentation software and computer networks are not tested by Miele Service.

Routine checks

Before the start of each working day, the operator must conduct a series of routine checks. A routine checklist is supplied with the machine.

The following items must be checked:

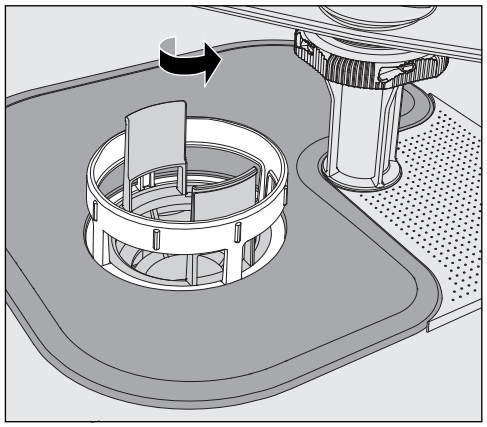
- All filters in the wash cabinet
- The spray arms in the machine and on any wash carts or baskets
- The wash cabinet and the door seal
- The dispensing systems
- The wash carts, baskets, modules, and inserts
- The filters in the load carriers

Cleaning the filters in the wash cabinet

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

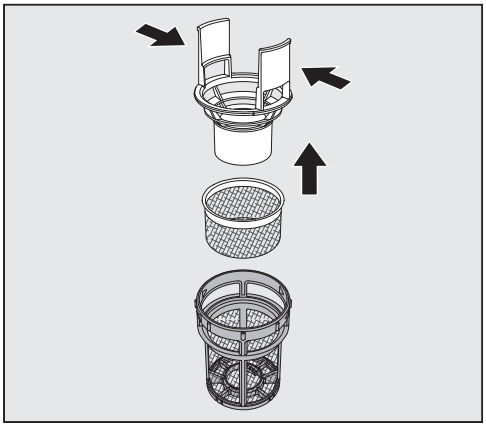
⚠ Risk of damage due to blocked waterways.
If the filters are not inserted, dirt particles will end up in the machine water circuit. The dirt particles may block the nozzles and valves.
Only start a program if the filters are inserted.
Check that the filters are positioned correctly when you reinsert them after cleaning.

In the controls, it is possible to set a cleaning interval for the filters in the wash chamber, see “Settings ⚑/Filter maintenance”.
The cleaning interval is not a substitute for the daily routine check of the filters in the wash chamber!

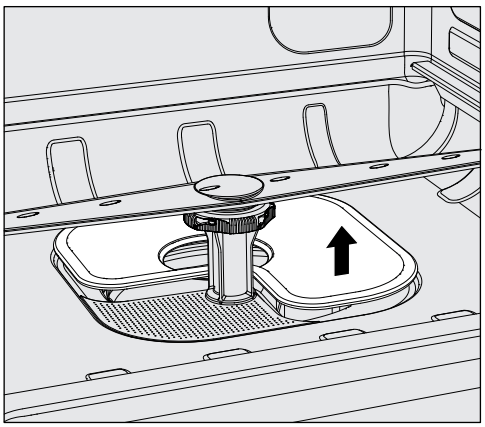


⚠ Danger of injury from glass shards, needles etc. which are retained in the filters.

■ 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 chamber.
- ... 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 chamber, 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 cabinet. This can cause coarse particles of soiling to get into the wash water circuit.

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

- To do this, remove the wash cart 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 Miele Service.

Cleaning the spray arms

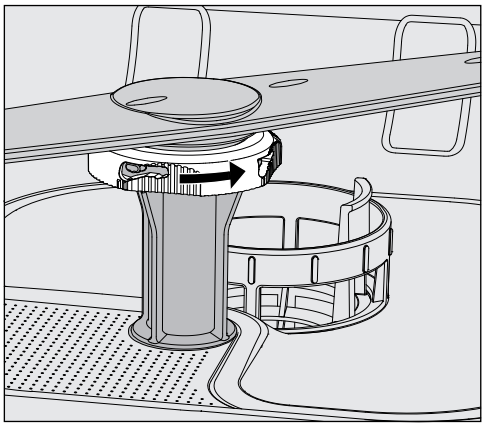
The spray arms in the machine as well as in the wash carts and baskets must be fully dismantled for cleaning:

- Remove the wash cart or baskets from the machine.

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

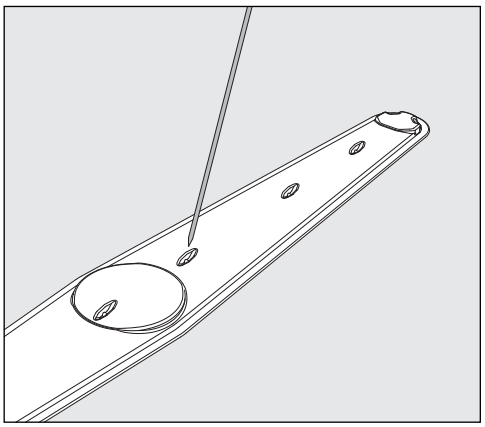
- Pull the upper spray arm of the machine downwards to remove it.

The lower spray arm of the machine and the spray arms in the wash carts 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.

Wash cart and basket spray arms with knurled nuts:
The spray arms of older types of wash carts and baskets are secured with knurled nuts. These must be unscrewed and the spray arms pulled downwards to remove them.
Metal knurled nuts have a left-hand thread.
Ceramic knurled nuts have a right-hand thread.



- 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 Miele Service.

- 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 surrounding area 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 solution of dishwashing 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 only use low-level surface disinfectants. Do not use high-level disinfectants such as Hydrogen Peroxide and Paracetic Acid.

Cleaning the door and the door seal

- Wipe the door seal 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 Miele Service.
- Remove any soiling from the door sides and hinges.
- Regularly clean the groove in the plinth panel under the door with a damp cloth.

Cleaning the wash cabinet

The wash cabinet is generally self-cleaning. However, should a build-up of deposits occur in the cabinet, please contact Miele Service for advice.

Cleaning the front

- To clean the stainless steel front, use a damp cloth with a solution of dishwashing liquid and hot water, or with a non-abrasive cleaning agent for use on stainless steel. For surface disinfection only use low-level disinfectants. Do not use high-level disinfectants such as Hydrogen Peroxide and Paracetic Acid.

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 wash carts, baskets, modules and inserts

Mobile units, baskets, modules, and inserts must be checked daily to make sure they are functioning correctly. A checklist is supplied with the machine.

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 nozzles, irrigation sleeves, and hose adapters securely attached to mobile units, baskets, or modules?
- Are all 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 positioned 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”.
- Do the magnets integrated into the spray arms have any metallic objects sticking to them?
- Do the tubular filters need to be cleaned or filter plates, e.g., in an E 478/1, need to be replaced?

Maintenance of wash carts, baskets, modules and inserts

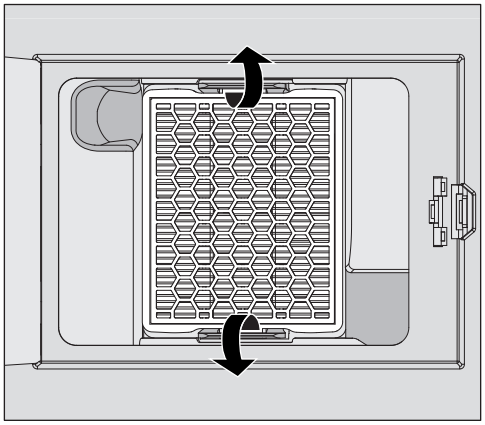
The machine should be serviced **every 1,000 hours of operation, or at least once a year,** by Miele Service or a suitably qualified specialist.

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 base.



- 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.

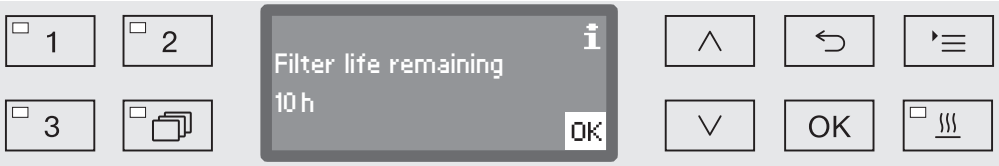
■ Open the menu as follows:

Button ☰

▸ Additional settings

▸ Filter maintenance

▸ HEPA filter



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

■ Confirm the message with *OK*.

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

⚠ The operating hours counter must only be reset when the filter has been changed.

- 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 ∨ arrow buttons.

■ Confirm your selection with *OK*.

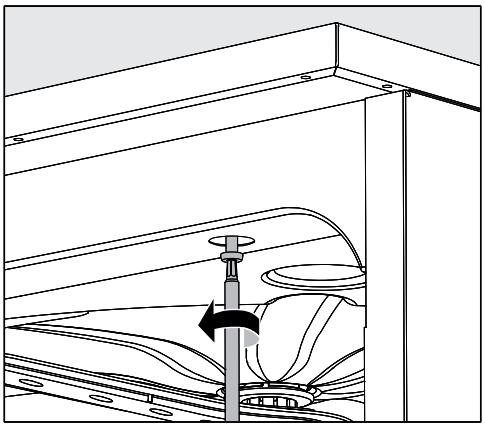
Performance check

Adequate processing performance must be regularly confirmed by the user.

Test point for measuring sensors

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

- Open the door.



- Unscrew the retaining 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 machine out by approx. 6" (15 cm) from under the **countertop**.

Test programs

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

The test programs interrupt the program cycle automatically at specified points. The interruption is indicated by an audible signal tone and message on the display. Miele Service 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 the wash cabinet from cooling, do not keep the door open too long.

After the time period elapses, the program cycle continues automatically. If the door has been opened, the program cannot resume until the door has been closed again.
If a measurement or sample is not needed, you can resume the program 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 programs can be selected:

- Laboratory

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

- Validation

  The program sequence is interrupted at the following points:

  – before the chamber washer solution is drained away in the final wash block,

  – after the interim rinse before the chamber washer solution is drained away, and

  – after water intake and before draining in the final rinse block.

Activating a test program

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

■ Open the menu as follows:

Button ☰

▸ Additional settings

▸ Test program

- No

  The menu is exited without selecting a program.

- Laboratory

  Activates the Laboratory test program.

- Validation

  Activates the Validation test program.

■ Select an option using the ∧ and ∨ arrow buttons.

■ Press *OK* to activate the test program for the next program start.

You can now start the performance test.

■ Select and start a program using the program selection buttons or via the program list.

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

If you want to deactivate the test program 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 note the following:

⚠ Repairs may only be carried out by Miele Service.
Unauthorized 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 a fault message first appears.

Technical faults and messages

Problem	Possible cause and solution
The display is dark and all LEDs are out.	The machine is not switched on. ■ Switch the machine 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 Miele Service.
	The machine is not plugged in. ■ Insert the plug.
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 again 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.
Power failure during operation	If a temporary power failure occurs during a program cycle, no action is required. The program which was running continues from the point of interruption. If the temperature in the wash cabinets falls below a minimum valie required for the program block at the time of the power failure, the program block is repeated. When a power failure lasts ≥ 20 hours, the entire program will be repeated. Each power failure is being documented in the process documentation.
Next service due on:	This is not a fault. Miele Service has recommended a date for the next service visit. ■ Please contact Miele Service to arrange a service visit.

Problem solving guide

Dispensing/dispensing systems

⚠ Caution when handling process chemicals.
For all process chemicals, the process chemical manufacturer's safety instructions as given on their safety data sheets must be observed.

Problem	Possible cause and solution
Refill DOS	During a program sequence a low level of liquid process chemical in a container has been identified. ■ Replace the empty container with a full one.
Prog. start not possible. Prime dispenser pump DOS	A program cannot be started because ... ... there is air in the dispensing system. ... the dispensing system has been sucked completely dry. ■ Check the fill level in the supply container. Replace the empty container with a full one if needed. ■ Vent the dispensing system.
Dispensing system DOS priming	This is not a fault. The dispensing system will now be automatically vented. Wait until the venting process is finished.
Priming DOS canceled. Priming 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 suction lance blocked. ■ Check the dispensing hose for kinks and leaks. Position it so that it cannot become kinked. ■ Check the suction aperture of the suction lance for blockages and remove these as necessary. ■ Start the venting process again.
	Contact Miele Service if there are leaks in the dispensing hose or a fault with the suction lance.
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 suction lance for deposits. ■ Prime the dispensing system.
	The dispensing hose is kinked. ■ Remove any kinks from the dispensing hose. Position it so that it cannot become kinked. ■ Check the dispensing hose for leaks. ■ Prime the dispensing system.
	Contact Miele Service if there are leaks in the dispensing hose or a fault with the suction lance.

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

Insufficient salt/water softener

Problem	Possible cause and solution
Refill salt	Salt is running low in the water softener. ■ Refill the reactivation salt before starting the next program.
Machine locking soon. Insufficient salt	Salt in the water softener is completely used up and reactivation is no longer possible. The machine is locked for further use. ■ Refill with reactivation salt.
Salt container empty, Program locked	The water softener cannot reactivate because there is insufficient salt. The machine is locked for further use. ■ Refill with reactivation salt. The machine is unlocked a few seconds after the salt reservoir is refilled. Reactivation will occur automatically during the next program sequence.
Salt container lid not closed correctly	The salt container is not closed properly. ■ Close the container properly.
	Salt residues are preventing it from closing. ■ Remove the residues from the refilling 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 program. ⚠ When the door is opened, hot steam and process chemicals can escape! ■ Open the door and close the container flap.

Cancel with fault number

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

In the event of a program being cancelled and a fault number being shown:

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

If the same error message appears again:

- Make a note of the error message.
- Switch the machine off using the ⏻ button.
- Contact Miele Service.

Please also read the notes regarding the following fault numbers.

Problem	Possible cause and solution
Fault 403-405	A program has been canceled because water intake by the machine was insufficient or severely restricted. ■ Turn on the faucets fully. ■ Follow the further information provided in the Check water intake message.
Fault 406–408	A program was cancelled because the water flow rate is insufficient. ■ Check whether the faucets are fully open. ■ Refer to the information regarding minimum flow pressure in “Connection to the water supply” and “Technical data”. ■ Check the filter in the water inlet. ■ Contact Miele Service for advice.
Fault 412–414	A program 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”. ■ Contact Miele Service for advice.
Fault 422	A program was canceled because the conductivity of the supplied DI water is too high. ■ Check your system for DI water.

Problem	Possible cause and solution
Fault 426, 526	Wash pressure is too low. – Wash pressure is too low due to a heavy build-up of foam. Spilled rinse aid may not have been cleaned up after being added. ■ Follow the instructions regarding foam build-up in “Chemical processes and technology”. ■ Start the Rinse program to clean the wash cabinet. – The load carriers were loaded incorrectly or overloaded. ■ Use only wash carts, baskets, modules, and inserts suitable for the particular application. ■ Arrange hollow or deep-sided wash 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 the spray arms. ■ Check the injector manifolds 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 irrigation connectors? – Are installed silicone hoses undamaged? ■ Check the washers in the water connectors in the back panel of the wash cabinet to ensure they are flush and remove any blockages. – The amount of water is insufficient for the application. ■ Increase the amount of water (see “Program settings”). If necessary, consult Miele Service.
Fault 432	The door was opened using the emergency release. ■ See “Opening the door using the emergency release”.
Fault 433	Protruding wash 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 items so that they do not obstruct the door. ■ Close the door.

Problem solving guide

Problem	Possible cause and solution
Fault 438	The door seal sticks. ■ Clean the door seal.
	Heavy objects in front of the machine can impede the automatic opening of the door by the Comfort lock. ■ Do not place (heavy) objects in front of the door of the machine.
	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 Miele Service.
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 program was interrupted due to the spray arm speed dropping below the set value. – Wash items are obstructing the machine or basket spray arms. ■ Arrange the wash items so that the spray arms can turn easily and start the program 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 rinse aid was not wiped away after filling or rinsed away by the Rinse program, which led to a heavy build-up of foam during the next program sequence. ■ Start the Rinse program to clean the wash cabinet. ■ Then reprocess the wash items again.
Fault 492, 504	A program has been cancelled because there is not enough water pressure. The filters in the wash chamber may be blocked. ⚠ Danger of injury from glass shards, needles etc. which are retained in the filters. ■ Check and clean the filters in the wash chamber (see “Maintenance/Cleaning the filters in the wash chamber”).

Problem	Possible cause and solution
Fault 518 – 521	No flow was detected when dispensing from an external container. ⚠ Exercise caution when handling 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 openings of the suction lances and remove any deposits. ■ Check the hose connections on the suction lances, the machine, and any dispenser 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 suction lances, contact Miele Service.
Fault 542	A program was canceled because the water in the wash chamber 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 chamber are blocked. ⚠ Danger of injury from glass shards, needles etc. which are retained in the filters. ■ Clean the filters in the wash chamber. - The drain pump or non-return valve is blocked. ■ Clean the supply line to the drain pump and the non-return valve. - The drainage system cannot accommodate the water because it is blocked. ■ Contact a qualified plumber.
Fault 550	The waterproof system has been activated. There might be a leak in one of the water inlet hoses. ■ Close the faucets. ■ Contact Miele Service.

Problem solving guide

Problem	Possible cause and solution
Fault 555	Too much water has accumulated in the steam condenser. Wash water may have been diverted behind the protective panel of the steam condenser on the back wall of the wash cabinet because of angled wash items or injector nozzles. ■ When installing angled injector nozzles and sorting wash items, ensure that the wash water outlets point towards the centre of the wash cabinet. ■ 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 is activated in the controls (RS232). Deactivate the RS232 interface: ■ Open the menu for configuring the interface Additional settings/Interface and then select Ethernet. ■ Wait approx. 90 seconds. The Ethernet module XKM 3000 L Med needs this time for initialization. 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	Possible cause and solution
Change the 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 program deactivated	Drying cannot be selected at the start of a program because drying is not available for the selected program. ■ Start the program without drying. Or ■ Have the drying parameters for this program adjusted by Miele Service.
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 Miele Service.

Problem	Possible cause and solution
Test program: Test object can now be removed	This is not a fault. A test program is running to check performance. At certain points in the program the sequence is interrupted so that samples can be taken. ■ Take a sample. or ■ Wait. The program will continue automatically in approx. 30 seconds. or ■ Continue the program without delay by pressing the *Start*/*Stop* button.
Program cancelled	This is not a fault. A program which was running was cancelled by the user. ⚠ The wash cabinet interior can be very hot. When the door is opened, hot steam and process chemicals can escape. Protective measures for personal safety must be observed.
Program continued	This is not a fault. The process of cancelling a program was not completed. The program 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.
All settings reset	This is not a fault. A user has restored factory default settings. ■ Confirm the message with *OK*.
All program settings reset	This is not a fault. A user has restored the factory default setting for the program. ■ Confirm the message with *OK*.

Problem solving guide

Door

Problem	Possible cause and solution
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 program. ■ 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 error message appears again: ■ Contact Miele Service.
Warning! Cabinet hot. Open anyway?	When the ⊶ button is pressed, the temperature in the wash cabinet is over 60°C (160°F). ⚠ When the door is opened, hot steam and process chemicals can escape! ■ Open the door only when necessary.
Obstruction sensor	The door was closed before the door lock rail was fully retracted. ■ Open the door. ■ The door lock rail must be fully retracted before you close the door again.

Unsatisfactory cleaning and corrosion

Problem	Possible cause and solution
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 with reactivation salt.
	The quality of the water for the final rinse was insufficient. ■ Use demineralized water (DI) with a low conductivity. ■ If the machine is connected to a water demineralization cartridge, check the conductivity level and replace resins as necessary. If the machine is connected to a DI water purification system, consult the manufacturer of the purification system.
	The water from the DI water connection is not sufficiently demineralized. ■ Check the external demineralization system. If necessary, replace the demineralization cartridge with a new one.

Problem	Possible cause and solution
The load items are flecked.	The rinse aid container is empty. ■ Refill the container.
	The rinse aid concentration is set too low. ■ Contact Miele Service and have the dispensing concentration reset.
The cleaning result is unsatisfactory.	Wash carts, baskets, modules, and inserts were not suitable for the load items. ■ Select transfer units, baskets, modules, and inserts which are suitable for the task.
	Transfer units, baskets, inserts, and modules were incorrectly loaded or overloaded. ■ Arrange the load items correctly according to the information in the operating instructions. ■ Avoid overloading the transfer units, baskets, modules, and inserts.
	The program was not suitable for the soiling. ■ Select a suitable program. Or ■ Adjust the parameters to suit the task.
	Soiling has been left to dry on the load items for too long. ■ Soiling should not be left on the load items for more than 6 hours before machine reprocessing.
	A spray arm is blocked. ■ Ensure the spray arms are not obstructed when arranging the load items.
	Injector nozzles on the transfer 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.
	Wash carts, baskets, or modules were not correctly mounted on the water connection. ■ Check the adapter.

Problem solving guide

Problem	Possible cause and solution
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.
	Neutralization has not taken place during the program. ■ Check the level in the supply container and vent the dispensing system if necessary.
	The wash temperature was too high. ■ Select a different program. or ■ Reduce the wash temperature.
	Cleaning detergents used were too alkaline. ■ Use a milder cleaning detergent. or ■ Reduce the concentration of the cleaning detergent.
Stainless steel items are showing signs of corrosion.	The stainless steel is of insufficient quality for machine reprocessing. ■ 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 demineralized water may be necessary.
	Neutralization has not taken place during the program. ■ 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 / conductivity / wash pressure

Problem	Possible cause and solution
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. – Wash items are obstructing the machine or basket spray arms. ■ Arrange the wash items so that the spray arms can turn easily and start the program 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 program 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 Rinse program to clean the wash cabinet. ■ Then reprocess the wash items again.
Conductivity level too high: Actual value: µS/cm Max value: µS/cm	Carry-over of conductive substances during reprocessing. ■ Check the process.
	Empty or faulty water softener or demineralization system. ■ Check external water softener or demineralization systems. ■ Reactivate the systems if necessary.
	Work on the on-site water supply. ■ Contact a suitably qualified plumber.
	Plumbing connections transposed. ■ Observe the markings on the plumbing connections (see “Connection to the water supply”).
Conductivity level exceeds limit	If the level drops below the measuring range, the conductivity cannot be determined. ■ Contact Miele Service.
Conductivity module requires calibration	The conductivity meter must be recalibrated. ■ Contact Miele Service.
Conductivity module communication error	The connection to the conductivity meter has been interrupted. ■ Contact Miele Service.

Problem solving guide

Problem	Possible cause and solution
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 program is not interrupted. Nevertheless, the wash load must be reprocessed.
Spray pressure fluctuating too much	A program 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.

Water inlet and drainage

Problem	Possible cause and solution
Check water intake	One or more faucets are turned off. ■ Turn on the faucets.
	There was insufficient water in the machine. ■ Clean the water intake filters. ■ Turn on the faucets fully.
	Water flow pressure is too low. Refer to the technical data. ■ Contact a qualified plumber.

Noises

Problem	Possible cause and solution
Knocking noise in the wash cabinet.	One or more spray arms are knocking against the wash load. ■ Cancel the program. To do this follow the instructions in “Cancelling a program”. ■ Arrange the wash load so it cannot obstruct the spray arms. ■ Make sure the spray arms can rotate freely. ■ Re-start the program.
Rattling noise in the wash cabinet.	Items are insecure in the wash cabinet. ■ Cancel the program. To do this follow the instructions in “Cancelling a program”. ■ Rearrange the load so that items are secure. ■ Re-start the program.
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.

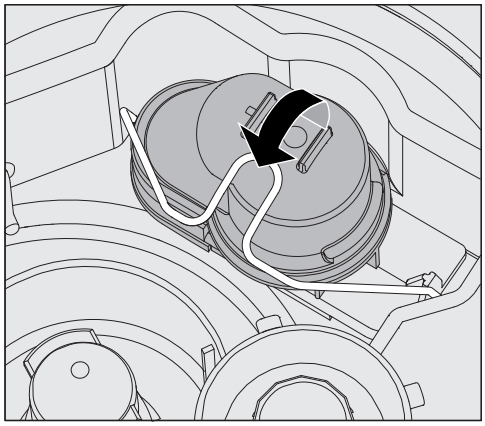
Printer/serial interface

Problem	Possible cause and solution
Serial printer fault: no paper	The printer has run out of paper. ■ Replenish the paper.
Serial printer fault: offline	The machine cannot connect to the printer. ■ Switch the printer on. ■ Check the connection between the machine and the printer. ■ If in doubt, have the configuration of the interface checked by a 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 Miele Service.

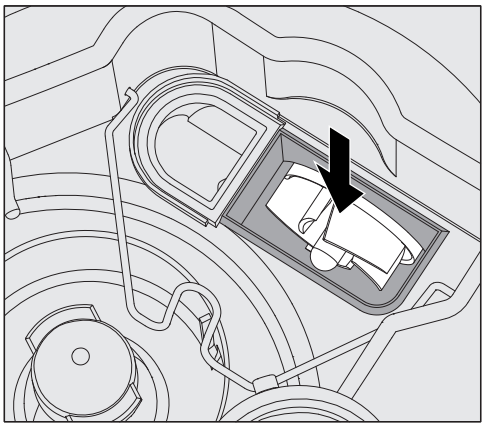
Cleaning the drain pump and non-return valve

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

- Take the filter combination out of the wash chamber (see "Maintenance/Cleaning the filters in the wash chamber").



- Open the locking clamp.
- Lift out the non-return valve and rinse well under running water.
- Make sure that the vent on the outside of the non-return valve is not blocked (this vent is only visible after 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 before refitting the non-return valve.
- Carefully replace the non-return valve and secure it with the clamp.

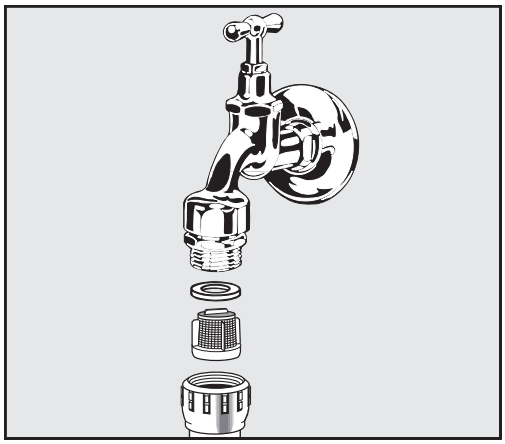
Clean the water intake filters

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 immersed in water.

To clean the filter

- Disconnect the machine from the power supply (switch the machine off, unplug it, or disconnect or disable the breaker).
- Close the faucet.
- Unscrew the water intake valve.



- Take the sealing washer out of the screw connection.
- Pull the filter out using combination or pointed pliers.
- Clean the filter or replace it if necessary.
- Replace the filter and seal, making sure they are sitting correctly.
- Screw the water intake valve onto the faucet. Ensure that the screw connection goes on straight and not cross-threaded.
- Open the faucet. If water leaks out, the screw connection may not be connected securely or it may have been screwed on at an angle. Unscrew and reconnect the water intake valve correctly.

Retrofitting the large-surface filter

If the water contains a high level of insoluble components, a large-surface filter can be installed between the faucet and the water inlet hose.
The large-surface filter is available from Miele Service.

Contacting Miele Service

⚠ Repairs may only be carried out by Miele Service or an authorized technician.
Unauthorized 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 a fault message first appears. Please refer to the relevant instructions in the “Problem solving guide”.

If, having followed the advice in the operating instructions, you are still unable to resolve a problem, please contact Miele Service.

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

When contacting Miele Service, please quote the model and serial number of your machine. 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 Miele Service the fault message or code shown on the display.

Notification of serious incidents

If serious incidents occur that are related to the washer-disinfector– that is, if death or a significant deterioration in the health of a patient, user, or third party results or could have resulted, this must be reported to the manufacturer and the responsible authorities in the relevant country. This also applies in the event of a serious risk to public health.

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

Software version

When contacting Miele Service 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 ☰

▸ Additional 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 Miele Service.

■ 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 horizontal.

You can compensate for any unevenness in the floor level and height of the machine 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 machine is suitable for the following types of installation:

- Freestanding.
- Slot-in:

  The machine 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:

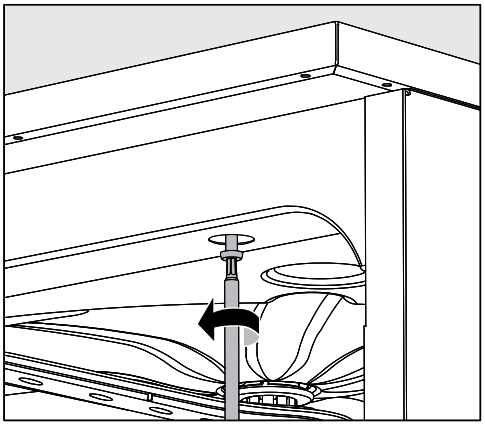
  The machine can be built under a continuous worktop. The space provided must be at least 600 mm wide, 600 mm deep and 820 mm high.

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.

Prevent heat build-up

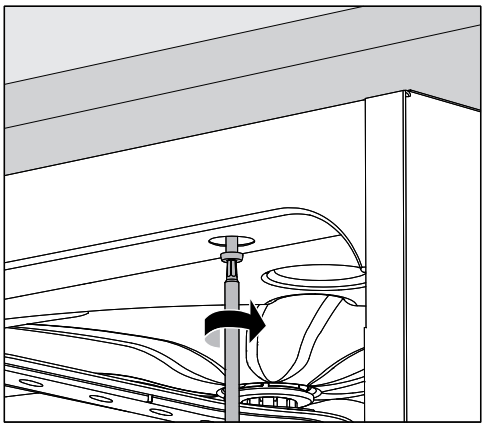
During the drying phase hot exhaust air is discharged from the wash cabinet through the steam condenser on the back of the machine. To avoid heat build-up and excessive condensation, sufficient air circulation must be ensured.

- Leave at least 10 mm (0.39 in) space between machine and worktop for air circulation.
- Install ventilation grills in the side cabinets if necessary.

Securing to the countertop

To improve stability, the machine must be secured to the countertop after it has been aligned.

- Open the door.



- Screw the machine to the continuous countertop through the holes in the front trim on the left and right.

Please contact Miele Service 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/ countertop protector

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

Electromagnetic compatibility (EMC)

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

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

Flooring in the installation area must be wood, concrete, or tiled. Synthetic flooring must be able to withstand a relative humidity level of at least 30% to minimize 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.

⚠ All electrical work must be carried out by a suitably qualified electrician.

- The electrical installation must be in compliance with current local and national safety regulations.
- 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 can then easily be carried out, e.g., after any service or maintenance work.
- If the machine is hard-wired to the power supply, a power switch capable of disconnecting the machine at all poles must be installed. This power switch must be designed to operate at the rated current, have a contact gap of at least 3 mm, and also be lockable in the off position.
- If necessary, equipotential bonding must be carried out.
- The rated loads are specified on the data plate and in the wiring diagram supplied with the machine.
- For increased safety, it is recommended to protect the machine with a 30 mA residual current device (RDC).
- 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**.

This appliance **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.

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 Miele Service.

Please contact Miele Service for further information.

Peak-load management

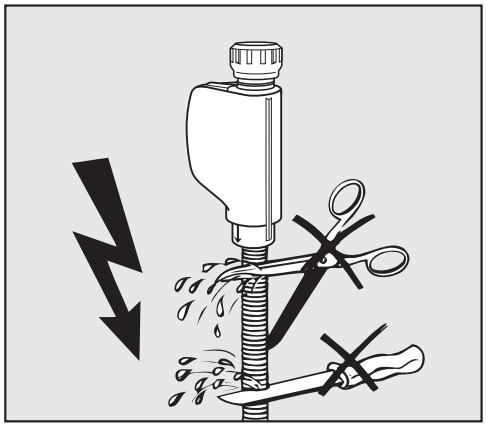
In the event of a peak-load negotiation, some machine components, such as the heater element, will be switched off for a while. The machine will remain on during this period and the current program will not be interrupted. If one of the components that is switched off is needed during the current program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

Connecting the water supply

⚠ Water from the machine is not suitable for drinking!

- The machine must be connected to the water supply in strict accordance with local regulations.
- The water used must at least meet the standards for drinking water. If the water supply has a high iron content there is a danger of corrosion occurring on items being cleaned in the washerdisinfector, 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. With **ophthalmic instruments** ensure that the demineralized water has low levels of endotoxins/pyrogens.
- 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.
- The machine complies with the applicable standards for the protection of drinking water.
- The machine is supplied as standard for connection to cold water (blue coded hose) and optionally to hot water up to max. 65°C (149°F) (red coded hose). Connect the inlet hoses to the water shut off valves for cold and hot water.
- If there is no hot water supply available, the inlet hose coded **red** must be connected to the cold water supply or alternatively has to be deactivated by a Miele Service technician.
- The intake hose without water protection device for the steam condenser is connected to the cold water tap.
- 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 Miele Service for advice.
- More information on DI water connection can be found at the end of this section.
- Faucets with a ¾ inch screw thread must be provided on site. The faucets must be easily accessible to allow the water inlet to be turned off when not in use.
- The water inlet hoses are approximately 1.7 m long pressure hoses, DN 10, with ¾ inch screw thread. The filters in the screw threads must not be removed.



⚠ Do **not** shorten or otherwise damage the inlet hoses supplied with the machine.

See the installation diagram supplied.

Retrofitting the large-surface filter

If the water contains a high level of insoluble components, a large-surface filter can be installed between the faucet and the water inlet hose.
The large-surface filter is available from Miele Service.

Pressurized DI water connection (30-1,000 kPa / 4.4-145 psi)

This machine can be connected to pressurized DI water with a pressure between 30-1,000 kPa (4.4-145 psi). If the water pressure is below 200 kPa (29 psi) the water intake duration will be automatically increased.

- The pressure tested hose for DI water, coded green, has a ¾ inch female connection with garden hose thread and is connected to the onsite DI water tap.

⚠ If the machine is not going to be connected to fully demineralized water, the DI water connection has to be deactivated by Miele Service. The inlet hose remains on the back of the machine.

Fully demineralized water ring line

The machine can be connected to a ring line system for fully demineralized water. For this purpose, it must be technically adapted and the controls reset by Miele Service.

Please contact Miele Service for further information.

Connecting the water drain

- 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.

⚠ Typically, the drain water of the machine will reach temperatures greater than 60°C (140°F).
Some on-site drain material may not be compatible with the discharge temperature.
The operator is responsible to verify the compatibility of all utility services including drainage, however Miele offers as an optional effluent cool down kit to reduce the drain temperature to 60°C (140°F).

- 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 (1-3.2 ft). 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 (4.6 ft) long and flexible with an internal diameter of 22 mm (7/8"). 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 (13 ft) 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 (2-3.2 ft) measured from the bottom edge of the machine.

See installation diagram supplied.

Factory tests

Every Miele machine undergoes extensive quality and safety checks during the production process. They include the following specific safety checks.

Thermo-electric temperature checks

Thermo-electric temperature checks according to EN ISO 15883 incl. disinfection parameters are carried out at the production plant.
Thermo-electric temperature checks do not have to be carried out again during the initial commissioning of new machines.
Thermo-electric temperature checks are a mandatory requirement if disinfection parameters (e.g., temperature, holding time, A0 value) are changed during initial commissioning.
Thermo-electric temperature checks must be carried out in the context of Operation Qualification (OQ) as part of performance qualification according to EN ISO 15883.
Thermo-electric temperature checks must be carried out when a machine is put back into operation after a period of downtime or having been relocated, for example.
Regional and national rules and regulations must be complied with.

Calibration of dispensing systems

Calibration of dispensing systems according to EN ISO 15883 is carried out at the production plant. Calibration of dispensing systems can be omitted during the initial commissioning of new cleaning machines.
Calibration of dispensing systems must be carried out in the context of Operation Qualification (OQ) as part of performance qualification according to EN ISO 15883.
Calibration of dispensing systems must be carried out when a cleaning machine is put back into operation after a period of downtime or having been relocated, for example.
Regional and national rules and regulations must be complied with.

Electrical safety

Grounding and high-voltage testing according to IEC 61010-2-40 is carried out at the factory.
If electrical installation and / or repair work proves necessary during commissioning, an electrical safety check compliant with national rules and regulations must be carried out.

	Imperial	Metric
Height with machine lid Height without machine lid	32 7/8" 32 5/16"	835 mm 820 mm
Width	23 9/16"	598 mm
Depth Depth with door open	23 9/16" 47 1/4"	598 mm 1,200 mm
Wash cabinet dimensions: Height Width Depth of upper basket / lower basket	 20 9/16" 21 1/8" 20 3/8" / 20 9/16"	 520 mm 530 mm 474 mm / 520 mm
Weight (net)	172 lbs	78 kg
Max. load capacity of open door	81.6 lbs	37 kg
Voltage, rated load, fuse rating	See data plate	See data plate
Power cable	Approx. 5' 9" ft.	Approx. 1.8 m
Water intake temperature: Cold water / steam condenser Hot water / DI water	 Max. 68°F Max. 149°F	 Max. 20°C Max. 65°C
Static water pressure	max. 145 psi	Max. 1,000 kPa pressure
Minimum water intake flow pressure: Cold water / steam condenser Hot water DI water	 14.5 psi 5.8 psi 4.4 psi	 100 kPa pressure 40 kPa pressure 30 kPa pressure
Recommended water intake flow pressure: Cold water / hot water DI water Steam condenser	 29 psi 29 psi 14.5 psi	 ≥ 200 kPa pressure ≥ 200 kPa pressure ≥ 100 kPa pressure
Drain height	min. 11 3/4" ft, max. 3' 3" ft	Min. 0.3 m, max. 1.0 m
Drain hose length	max. 13' 1" ft	Max. 4.0 m
Operation (according to IEC/EN 61010-1, CAN/CSA-C22.2 No. 61010-1): Ambient temperature Relative humidity maximum linear decrease to Relative humidity minimum	 40 °F to 104 °F 80 % for temperatures up to 88°F 50 % for temperatures up to 104°F 10%	 5°C to 40°C 80% for temperatures up to 31°C 50% for temperatures up to 40°C 10%
Storage and transportation conditions: Ambient temperature Relative humidity Air pressure	 - 4 °F to 140 °F 10 % to 85 % 7.25 psi to 15.37 psi	 - 20°C to 60°C 10% to 85% 500 hPa to 1060 hPa
Altitude above sea level (according to IEC/EN 61010-1, CAN/CSA-C22.2 No. 61010-1)	up to 4,921 ft*	Up to 2,000 m*
Ingress protection (according to IEC 60529)	IP21	
Soiling level (according to IEC/EN 61010-1)	2	
Overvoltage category (according to IEC 60664)	II	
Sound emission values in dB (A), sound pressure level LpA during cleaning and drying phases	< 70	
Certifications	CAN/CSA-C22.2 No. 61010-1-04, CAN/CSA-C22.2 No. 61010-2-040, UL Std. No. 61010-1 (2nd Edition), IEC 61010-2-040:2006	
Health Canada reg.	Medical device Class II	
Manufacturer's address	Miele & Cie. KG, Carl-Miele-Straße 29, 33332 Gütersloh, Germany	

* If installed above 4,921 ft (2,000 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 Miele Service.

Program guide

Program	Application	Pre-rinse		
		1	2	3
(Free memory)	Programmable program for special applications; programming by arrangement with Miele Service.			
(Free memory)	Programmable program for special applications; programming by arrangement with Miele Service.			
Vario TD Inst 4trays	Cleaning and disinfection program, compliant with EN ISO 15883, for reprocessing instruments in the A 202 wash cart for 4 DIN mesh trays.	CW 1 Min		
Vario TD Inst 6trays	Cleaning and disinfection program, compliant with EN ISO 15883, for reprocessing instruments in wash cart/basket combinations for 6 A 202 and A 103 mesh trays.	CW 1 Min		
Vario TD MIS	Special cleaning and disinfection program, compliant with EN ISO 15883, for reprocessing instruments from minimal invasive surgery (MIS).	CW 1 Min		
Vario TD Inst 8trays	Cleaning and disinfection program, compliant with EN ISO 15883, for reprocessing instruments in A 208 for 8 mesh trays.	CW 1 Min		
Vario TD AN	Cleaning and disinfection program with a higher water level, designed for reprocessing anesthesia instruments. Program compliant with EN ISO 15883 80°C (+5°C, -0°C) with a 10-minute holding time for medical devices which come into contact with intact skin.	CW 1 Min		
Vario TD GYN	Special cleaning and disinfection program, compliant with EN ISO 15883, for reprocessing gynaecological instruments (GYN).	CW 1 Min		

Program sequence									
Main wash		Interim rinse				Final rinse		Drying	
1	2	1	2	3	4	1	2	1	2
CW70 131°F/ 55°C DOS 1 5 Min		HW DOS 3 1 Min	HW 1 Min			DI 199°F/ 93°C 5 Min			230°F/ 110°C 35 Min
CW70 131°F/ 55°C DOS 1 5 Min		HW DOS 3 1 Min	HW 1 Min			DI 199°F/ 93°C 5 Min			230°F/ 110°C 43 Min
CW70 131°F/ 55°C DOS 1 5 Min		HW DOS 3 1 Min	DI 1 Min			DI 199°F/ 93°C 5 Min		230°F/ 110°C 25 Min	212°F/ 100°C 5 Min
CW70 131°F/ 55°C DOS 1 5 Min		HW DOS 3 1 Min	HW 1 Min			DI 199°F/ 93°C 5 Min			230°F/ 110°C 55 Min
CW70 131°F/ 55°C DOS 1 5 Min		HW DOS 3 1 Min	HW 1 Min			DI 181°F/ 83°C 10 Min		212°F/ 100°C 30 Min	203°F/ 95°C 55 Min
HW 113°F/ 45°C DOS 1 3 Min	CW70 131°F/ 55°C DOS 1 10 Min	HW DOS 3 1 Min	HW 1 Min			DI 199°F/ 93°C 5 Min		230°F/ 110°C 20 Min	212°F/ 100°C 5 Min

Program guide

Program	Application	Pre-rinse		
		1	2	3
OphthaTrays A207	Special cleaning and disinfection program, compliant with EN ISO 15883, for reprocessing ophthalmological wash items. **Program for A 207 injector wash cart (3 levels, 2 spray arms)** with increased water levels and increased wash pressure.	CW 5 Min		
Ophthalmology	Special cleaning and disinfection program, compliant with EN ISO 15883, for reprocessing ophthalmological wash items. **Program for the A 204 injector wash cart with 2 levels and 1 spray arm.**	CW 1 Min		
Vario TD ENT	Special cleaning and disinfection program, compliant with EN ISO 15883, for reprocessing ear, nose, and throat instruments (ENT).	CW 1 Min		
Vario TD ENT Optics	Program for thermal disinfection, compliant with EN ISO 15883, exclusively for reprocessing ear, nose, and throat (ENT) optical instruments. **Manual cleaning of the instruments is a mandatory requirement.** Not suitable for any other ENT instruments or other medical devices.	CW 1 Min		
Vario TD ENT +	Special cleaning and disinfection program with increased wash pressure and increased water levels according to the Vario TD ENT program. **Program for the combination of the A 105/1 upper basket and the A 315 module.**	CW 1 Min		
Baby bottles	Special cleaning and disinfection program, compliant with EN ISO 15883, for reprocessing baby bottles and teats.	CW 1 Min		
Ward utensils	Cleaning and disinfection program, compliant with EN ISO 15883, for reprocessing ward utensils (e.g., kidney dishes, bowls, etc.).	CW 1 Min		
OR shoes	Cleaning and disinfection program, compliant with EN ISO 15883, for reprocessing **thermally stable** OR shoes **(temperature resistant: > 60°C)**. Not suitable for thermally unstable OR shoes (up to max. 60°C).	CW50 1 Min		

Program sequence									
Main wash		Interim rinse				Final rinse		Drying	
1	2	1	2	3	4	1	2	1	2
DI 131°F/ 55°C DOS 1 15 Min		DI DOS 3 2 Min	DI 2 Min	DI 2 Min		DI 199°F/ 93°C 5 Min			212°F/ 100°C 80 Min
HW 131°F/ 55°C DOS 1 5 Min		CW30 DOS 3 1 Min	CW30 1 Min	DI 1 Min		DI 199°F/ 93°C 5 Min			212°F/ 100°C 45 Min
CW70 149°F/ 65°C DOS 1 5 Min		HW DOS 3 1 Min	HW 1 Min			DI 199°F/ 93°C 5 Min			212°F/ 100°C 40 Min
						DI 199°F/ 93°C 5 Min			212°F/ 100°C 20 Min
CW70 131°F/ 55°C DOS 1 10 Min		HW DOS 3 1 Min	HW 1 Min			DI 199°F/ 93°C 5 Min			212°F/ 100°C 40 Min
CW70 149°F/ 65°C DOS 1 5 Min		HW DOS 3 1 Min	HW 1 Min			DI 199°F/ 93°C 1 Min			230°F/ 110°C 50 Min
CW70 131°F/ 55°C DOS 1 5 Min			HW 1 Min			DI 181°F/ 83°C 1 Min		194°F/ 90°C 5 Min	167°F/ 75°C 25 Min
CW70 113°F/ 45°C DOS 1 3 Min			CW30 1 Min			DI 181°F/ 83°C 1 Min		199°F/ 90°C 10 Min	167°F/ 75°C 25 Min

Program guide

Program	Application	Pre-rinse		
		1	2	3
Universal	For laboratory glassware and utensils. For removing organic residues and some inorganic residues. For low to medium levels of soiling and medium rinsing requirements. Spray arm monitoring activated by default for the 2 machine spray arms only.	CW70 1 Min		
Special 93°C-10'	For cleaning and thermal disinfection at 199°F/93°C with 10 minutes temperature holding time (exposure time).			
Rinse	Program for rinsing the wash cabinet, for flushing out brine (see “Water softener / Adding reactivation salt”), or for rinsing heavily soiled wash items, e.g., for preliminary removal of soiling, residual disinfecting agent, or to prevent residues from drying on and forming incrustations before running a full load.			
Drain	To drain away wash water, e.g., after a program has been cancelled (see “Operation / Cancelling a program”).			

Program sequence									
Main wash		Interim rinse				Final rinse		Drying	
1	2	1	2	3	4	1	2	1	2
HW 167°F/ 75°C DOS 1 3 Min		HW 149°F/ 65°C DOS 3 2 Min	HW 1 Min	DI		DI 167°F/ 75°C 1 Min			230°F/ 110°C 30 Min
CW70 199°F/ 93°C DOS 1 10 Min		HW DOS 3 1 Min	HW 1 Min			DI 167°F/ 75°C 3 Min		212°F/ 100°C 20 Min	203°F/ 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) | DI = aqua destillata, fully demineralised water, demineralized water

Min = Holding time in minutes

DOS 1 = Cleaning agent
DOS 2 = Rinse aid (door dispensing)
DOS 3 = Neutralizing agent
DOS 5 = Dispenser module

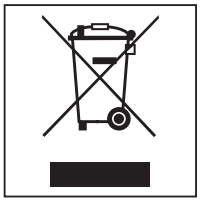
Disposal of the packing material

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..

Disposal 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, dealer, or with Miele. By law, you are solely responsible for deleting any personal data from the appliance prior to disposal. Ensure that it presents no danger to children while being stored for disposal.

Miele

Please have the model and serial number of your machine available when contacting Technical Service.

Canada

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Vaughan, ON L4K 4V8
Phone: 1-888-325-3957
www.mieleprofessional.ca
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