



Operating Instructions

Dental Washer-Disinfector

PG 8581

Guide to the manual	7
Definition of terms	7
IMPORTANT SAFETY INSTRUCTIONS	8
Symbols on the machine.....	13
Intended use of the machine	14
Proper use	14
Fields of application	14
Incorrect use.....	14
General information for proper use	15
User profiles	16
Product description	17
Machine overview.....	17
Control panel	18
LEDs in the buttons	19
Operation	20
Display illustrations.....	20
Switching on.....	21
Switching off.....	21
Auto-off function	21
Ready for operation (standby)	21
Display interface	22
Menu operation	22
Settings in the menu	23
Symbols in the display	24
Opening and closing the door	25
Electronic door lock	25
Opening the door	25
Closing the door.....	25
Opening the door using the emergency release	26
Water softener	27
Water hardness	27
Setting the water hardness level	28
Filling the salt container	30
Salt refill reminder.....	32
Application technology	33
Mobile units, baskets, modules and inserts.....	33
Adjusting the height of the upper basket	34
Wash pressure measurement.....	36
Test point for measuring wash pressure	36
Preparing the load	37
Verification testing	39
Recontamination	39
Instruments.....	40
Mouth specula.....	40
Mouth rinse cups.....	40

Contents


Chemical processes and technology	41
Adding and dispensing process chemicals	44
Dispensing systems	44
Labeling of the suction wands	44
Rinse aid	45
Adding rinse aid	45
Refill indicator	46
Dispensing rinsing agent	46
Neutralizing agent	47
Replenishing neutralizing agent	47
Refill indicator	48
Dispensing neutralizing agent	48
Instrument care products	48
Process chemicals	49
Refilling liquid cleaning agent	49
Refill indicator	50
Dispensing liquid process chemicals	50
Dispensing powder cleaning agents	51
Operation	53
Selecting a program	53
Starting a program	53
Starting a program using delay start	53
Drying assistance	55
Program cycle display	56
Program end	56
Canceling a program	57
Program canceled due to a fault	57
Canceling a program manually	57
System messages	58
Cleaning the filter combination and tubular filter	58
Low fill levels	59
Wash pressure and spray arm monitoring	59
Settings 	60
Delay Start	61
Drying (drying assistance)	62
DOS priming	63
Language 	64
Time of day	65
Volume	68
Additional settings	69
Code	71
Entering the PIN code	71
Date	73
Log book	75
Report	76
Temperature unit	76
Program settings	76
Program release	77
Moving a program: allocating program selection buttons	78

Test program	79
Filter maintenance	79
Cleaning the filters in the wash cabinet	79
Activating and setting the interval	79
Interface	81
Water hardness	84
Display: Temperature	84
Display: Brightness and contrast	85
Switch off after	86
Ready for operation (standby)	86
Auto-Off function	86
Switching off after activating	87
Software version	87
Program settings	88
Adjusting program settings	88
Program structure	88
Program header	88
Program blocks	89
Opening the menu	90
Resetting a program	91
Altering a program	92
Allocating wash blocks	92
Changing water quantity	93
Increasing drainage time	94
Drying assistance	95
Process documentation	96
Outputting batch protocols retrospectively	99
External software	99
Protocol printer	99
Maintenance measures	100
Maintenance	100
Routine checks	101
Cleaning the filters in the wash cabinet	101
Checking and cleaning the spray arms	103
Cleaning the machine	105
Cleaning the control panel	105
Cleaning the door and the door seal	105
Cleaning the wash cabinet	105
Cleaning the door front	105
Preventing resoiling	105
Checking mobile units, baskets, modules and inserts	106
Process validation	107
Frequently asked questions	110
Technical faults and messages	110
Dispensing/dispensing systems	111
Insufficient salt/water softener	112
Cancel with fault code	113
Process-related faults and messages	118
Door	119

Contents

Unsatisfactory cleaning and corrosion	119
Spray arm monitoring/wash pressure	122
Water inlet and drainage	123
Noises.....	123
Printer/serial interface	124
Frequently asked questions	125
Cleaning the drain pump and non-return valve.....	125
Cleaning the filters in the water inlet	126
Retrofitting the large-surface filter.....	126
After sales service	127
Contacting Customer Service	127
Notification of serious incidents	127
Software version.....	128
Installation	129
Installation and alignment	129
Built-under a continuous countertop	130
Removing the lid.....	130
Electromagnetic compatibility (EMC)	131
Electrical connection	132
Additional equipotential bonding	132
Peak-load negotiation	133
Plumbing	134
Connecting the water supply	134
Retrofitting the large-surface filter.....	135
Connecting the water drain	136
Quality and safety checks	137
Program chart	138
Technical details	140
Caring for the environment	141
Disposal of packaging material	141

Warnings

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

Notes

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

Additional information and comments

Additional information and comments are contained in a simple frame.

Operating steps

Operating steps are indicated by a black square bullet point.

Example:

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

Display

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

Example:

Menu Settings .

Definition of terms

Machine

In these operating instructions, this device 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.

IMPORTANT SAFETY INSTRUCTIONS

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

Read these instructions carefully before using the machine for the first time to avoid the risk of accidents and damage to the machine. Keep these instructions in a safe place where they are accessible to users at all times.

Proper use

► 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 the manufacturers of wash items and instruments 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 should only be installed, commissioned, repaired, and maintained by a Miele authorized 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 a countertop, it must only be installed under a continuous countertop run which is firmly secured to adjacent units to improve stability.

► The electrical safety of this machine can only be guaranteed if it is grounded properly. It is essential that this standard safety requirement is met. If in any doubt, please have the on-site wiring system tested by a qualified electrician. Miele cannot be held liable for the consequences of an inadequate grounding system (e.g. electric shock).

IMPORTANT SAFETY INSTRUCTIONS

- ▶ As standard, the drain water of the machine will reach temperatures greater than 160 °F (70 °C). At this temperature, drain water can potentially damage the drain system. In order to reduce damage to the drain system, Miele offers an optional drain water cool-down kit.
- ▶ A damaged or leaking machine can pose a threat to your safety. Always switch off a damaged or leaking machine immediately and contact 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 an authorized technician.
- ▶ Personnel operating the machine should be trained regularly. 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 wash items and the machine.
- ▶ Use caution when handling process chemicals. These may contain irritant, corrosive or toxic ingredients.
Please observe the process chemical manufacturer's safety instructions and safety data sheets.
Wear protective gloves and goggles.
- ▶ The machine is designed for operation with water and recommended additive process chemicals only. Organic solvents and flammable liquid agents must not be used as this could cause an explosion, damage rubber or plastic components in the machine and cause liquids to leak out of it.
- ▶ The water in the wash cabinet is NOT safe to drink!
- ▶ 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 and get damaged or cause injury.
- ▶ Be careful when sorting wash 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 during loading or unloading. Broken glass items must not be processed in the machine.
- ▶ When operating the washer-disinfector, bear in mind the possibility of high temperatures. If the door is opened while bypassing the safety lock, there is a danger of burning, scalding and chemical burns.

IMPORTANT SAFETY INSTRUCTIONS

- ▶ Should personnel accidentally come into contact with toxic vapors or process chemicals, follow the emergency instructions given in the manufacturer's safety data sheets.
- ▶ Mobile units, baskets, modules, inserts and the load must be allowed to cool down before they are unloaded. Any water remaining in containers could still be very hot. Empty them into the wash cabinet before taking them out.
- ▶ Never clean the machine with a water hose or a pressure washer.
- ▶ The machine must be disconnected from the electrical 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 processing medical instruments and devices, in order to protect patients, and to avoid damage to the loads being cleaned.

- ▶ If it is necessary to interrupt a program, as an exception only, this may only be done by authorized personnel.
- ▶ The standard of cleaning and disinfection in the disinfection programs must be routinely confirmed by the user.
- ▶ For thermal disinfection, use temperatures and temperature holding times to achieve the required infection prophylaxis in accordance with current health and safety regulations.
- ▶ Make sure items being washed are suitable for machine reprocessing and are in good condition. Plastic items must be thermally stable. Nickel plated items and 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.
- ▶ Under certain circumstances, process chemicals can result in 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 the elastomers and plastics of the washer-disinfector. Such care products may not be dispensed as chemical agents in these washer-disinfectors even if they are recommended for machine use by the instrument care product manufacturer.

IMPORTANT SAFETY INSTRUCTIONS

- ▶ Abrasive substances must not be placed in the machine as they could cause damage to the mechanical components of the water supply. Any residues of abrasive substances on items to be washed must be removed without trace before reprocessing in the machine.
- ▶ Pre-treatments with cleaning or disinfecting agents can create foam, as can certain types of soiling and chemical agents. Foam can have an adverse effect on the cleaning and disinfection result.
- ▶ Processes must be set up such that foam cannot escape from the wash cabinet. It would hinder the correct functioning of the machine.
- ▶ The process used must be monitored on a regular basis by the supervisor to check foaming levels.
- ▶ To avoid the risk of damage to the machine and 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 process chemical is recommended on technical application grounds, it does not imply that the manufacturer of the machine accepts liability for the effect of the chemical on the items being cleaned.

Please be aware that changes in formulation, storage conditions etc. which may not be publicized by the chemical manufacturer, can have a negative effect on the cleaning result.
- ▶ When using process chemicals, always consult the instructions issued by individual manufacturers. Process chemicals must only be used for the purpose they are designed for by the manufacturer to avoid any material damage or the occurrence of very strong chemical reactions, such as an oxyhydrogen explosion.
- ▶ Always follow the manufacturer's instructions on storage and disposal of process chemicals.
- ▶ Particles $\geq 1/16"$ (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, such as cleaning agents, water quality, etc., are discussed with Miele.
- ▶ The mobile units, 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 any containers or utensils before loading them.

IMPORTANT SAFETY INSTRUCTIONS

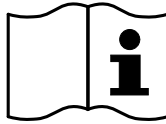
- ▶ The amount of residual solvents and acids on items going into the cabinet should be minimal.
There should be no more than a trace of any solvents with a flash point of below 70°F (21°C).
- ▶ Chloride solutions, in particular hydrochloric acid, must not be placed in the cabinet.
- ▶ Ensure that solutions or steam containing chlorides or hydrochloric acid do not come into contact with the stainless steel outer casing of the machine in order to avoid any damage through corrosion.
- ▶ After any plumbing work, the water pipework to the machine will need to be primed. 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 to the circulation pump.
- ▶ Follow the installation instructions in the operating and installation instructions.

Using components and accessories

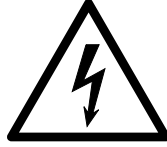
- ▶ Only use original spare parts and accessories from the manufacturer, which are suitable for the application they are required for. Model designations are available from Miele.
- ▶ Only use Miele mobile units, baskets, modules and inserts with this machine. Using mobile units, baskets, modules and inserts made by other manufacturers, or making modifications to Miele accessories can cause unsatisfactory cleaning results, for which Miele cannot be held liable. Any resulting damage will not be covered by the warranty.

IMPORTANT SAFETY INSTRUCTIONS

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!

Disposal of your old machine

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

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

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

SAVE THESE INSTRUCTIONS

Intended use of the machine

Proper use

Together with the use of the proper accessories and baskets, the Miele washer-disinfector provides an automated process for the cleaning and thermal, intermediate-level disinfection of re-usable dental instruments prior to sterilization.

Fields of application

The Miele washer-disinfector has been designed for installation and operation in the following fields of application:

- dental offices
- clinics for dental applications
- oral and maxillofacial surgery

Incorrect use

Do not use the Miele washer-disinfector as a machine for reprocessing

- instruments for single use only
- hand pieces and dental turbines

When processing instruments in the Miele washer-disinfector you shall

- follow the instrument manufacturer's instructions for cleaning and disinfection. Instruments must be disassembled according to the manufacturer's instructions.
- follow Miele instructions for proper loading (included with specific accessories of the machine and in the section "Applications" of this manual) and instructions of the manufacturer of the instruments. Proper instrument loading and connection of lumened instruments to injection ports is required.

Any instruments that contact blood or compromised tissues shall be sterilized prior to reuse following best practices such as AAMI ST79.

Processing instruments in the machine facilitates repeatable results with less opportunity for human error compared to manual cleaning. Thermal disinfection can be carried out using the Vario TD programs which meet the parameters to achieve intermediate-level, thermal disinfection.


The cleaning program as well as chemical agents must be chosen according to the type of soiling and load being processed. The final result will be instruments that are clean, intermediate-level, thermally disinfected, free of residue, and ready for subsequent sterilization. Only then can the instruments be safely used.

Dental instruments are best processed using the Vario TD Dental program. The use of a suitable load carriers (basket, module, insert etc.) is important to ensure the adequate cleaning of the load. Examples are given in the section "Applications". The washer-disinfector can be programmed to perform the final rinse with tap water (for utensils like trays), or with purified water of a quality to suit the application (de-ionized, de-mineralized, reverse osmosis (RO), distilled).

All instruments cleaned and thermally intermediate-level disinfected in the washer-disinfector (with the exception of non-critical items, in accordance to the Guideline for Disinfection and Sterilization in Healthcare Facilities, 2008 of the Centers for Disease Control and Prevention, USA) must be sterilized before use.

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 canceling a program, require more detailed knowledge about the machine reprocessing of medical devices.

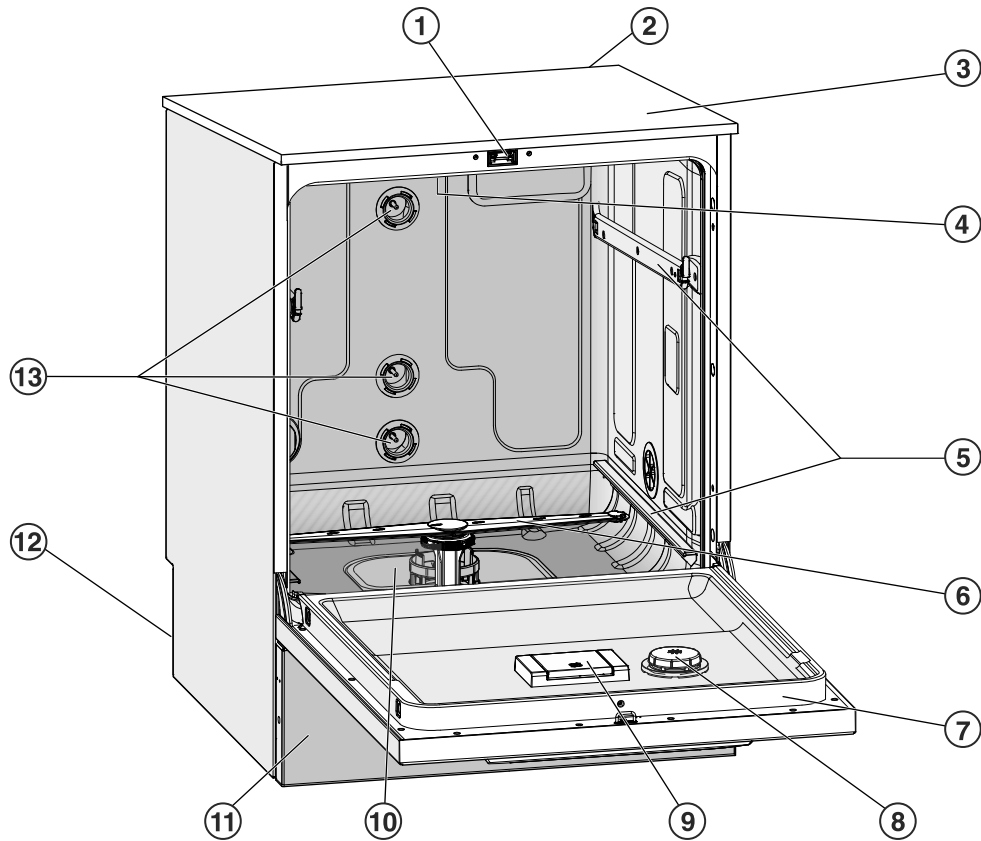
Alterations to the reprocessing process or adaptations to the machine, e.g., to accessories used or on-site conditions, require additional specific knowledge of the machine.

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

The

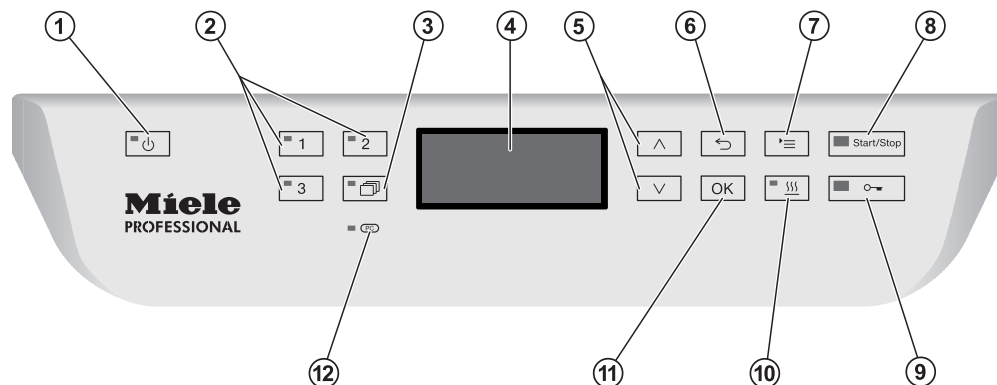
Additional settings menu incorporates all administrative processes and settings. This is protected from unauthorized access by a PIN code.

Machine overview



- | | |
|---|--|
| ① Comfort door lock | ⑧ Rinse aid reservoir |
| ② Module slot for a communication module
(back, top right) | ⑨ Reservoir for reactivation salt |
| ③ Test point for validation
(Top, front right; only visible with lid re-
moved) | ⑩ Filter combination |
| ④ Upper machine spray arm | ⑪ Toe kick cover |
| ⑤ Rails for baskets and mobile unit | ⑫ Rear of the machine: |
| ⑥ Lower machine spray arm | – Second data plate |
| ⑦ Data plate | – Electrical and water connections |
| | – Suction lance(s) for external supply con-
tainers |
| | ⑬ Water connections for mobile units 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 additional programs.
- ④ **Display**
User interface and program sequence display.
- ⑤ **^ and v arrow buttons**
For navigating in the user interface.
- ⑥ **↶ Cancel button**
For canceling 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 canceling a program.
- ⑨ **↻ Door release button**
For opening the door before or after a program sequence.
- ⑩ **☄ Drying assistance button**
For switching drying assistance 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 Miele Service.

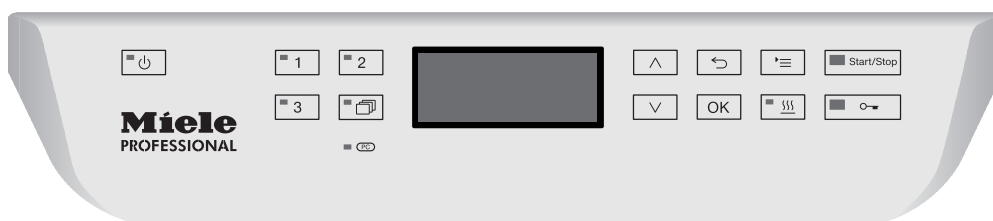
LEDs in the buttons

The buttons on the control panel have LEDs that 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.
Program selection buttons  ,  and 	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 selected.
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 selected.
Button 	ON	The additional “Drying Assistance” function has been activated for the selected program (not available for all programs; see “Program chart”).
	OFF	The additional “Drying Assistance” function has been deactivated.
Start/Stop button	ON	A program is running.
	FLASHES GREEN	A program has been selected, but has not yet started.
	FLASHES RED	A fault has occurred (see “Frequently asked questions”).
	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).

Control panel

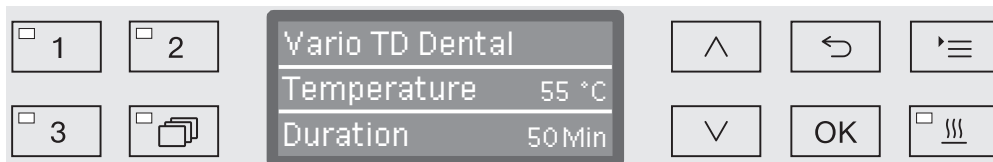
The machine is operated exclusively by the buttons located on the stainless steel surfaces on either side of the display. The display is not a touch screen.





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

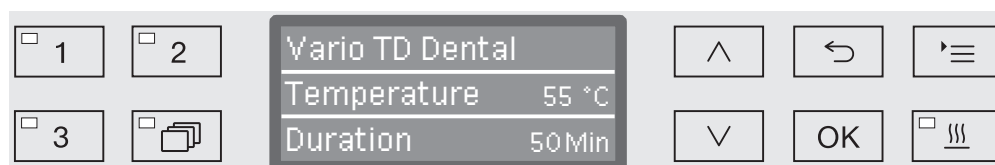
The machine must be connected to the electrical supply.

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

After that, the display shows 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 Auto-off function. If the machine has not been used for a specific time period, it switches itself off automatically; see “Additional settings/Switch off after”.

- Use the  button to switch the machine on again.

Ready for operation (standby)

When it is ready for use (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 “Additional settings/Switch off after”.

Display interface

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

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



Menu operation



Settings button

For accessing the system settings menus.



Arrow buttons

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

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




OK button

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



Cancel button

Before the *OK* button has been pressed, a process can be canceled at any time by pressing the  button. 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:



Options

All available setting options are listed 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

After that, further instructions are provided.

Example:

- Select an option using the ^ and v 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 \wedge and \vee arrow buttons on the control panel to navigate through the menu.



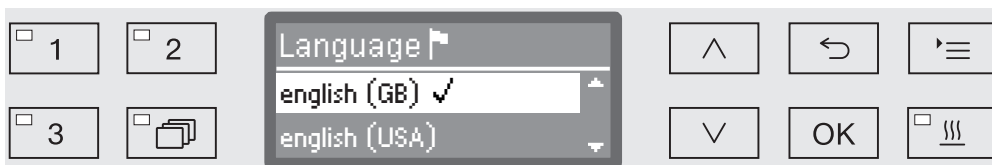
Dotted line

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



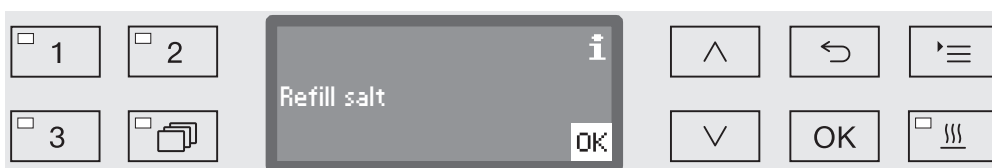
Check

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



System messages

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



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



Fault messages

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

Electronic door lock

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

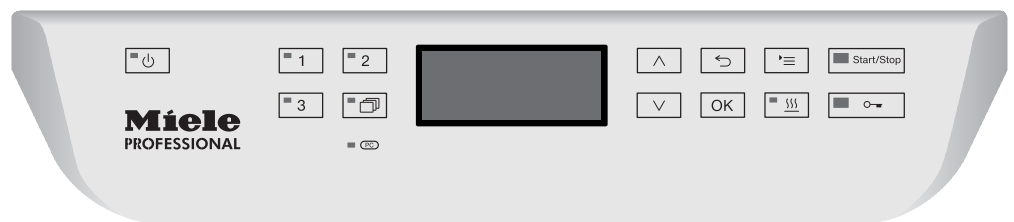
An electronically locked door can only be opened if:

- 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 140°F (60°C)
- 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 touch the door frame.
Risk of injury!

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

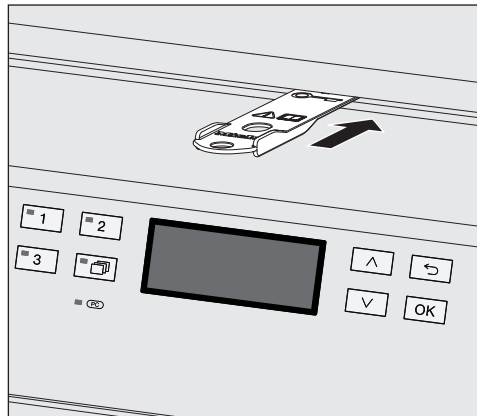
Opening and closing the door

Opening the door using the emergency release

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

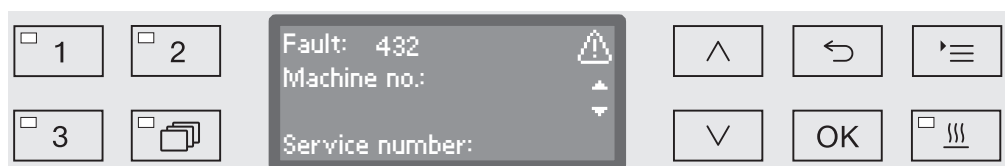
⚠ If the emergency release is operated during a program cycle, hot water and cleaning agents can escape.
Risk of scalding, burning and chemical burns.

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



- Push the tool supplied in the accessory pack horizontally into the gap between the door and the lid or countertop. 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 back on with the ⏻ button.
- Acknowledge the fault message by entering your lock code.

Water hardness

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

Mains water with a water hardness of 4 gr/gal (4 °dH) must be softened. This occurs automatically in the built-in water softener.

The water softener must be set to the exact hardness of the mains water (see “Water softener/Setting the water hardness”).

Your local water authority 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:

_____ gr/gal or °dH

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

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

Setting the water hardness level

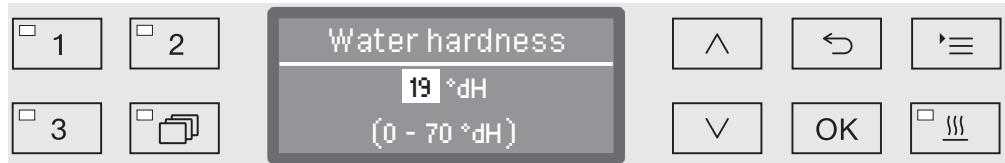
Water hardness can be set between 0 and 70 gr/gal (0 - 70 °dH).

- 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 - 18 gr/gal (8 - 18 °dH), always program the machine to the higher value, 18 gr/gal (18 °dH) in this example.

- Set the water hardness level using the arrow buttons (^ = higher and v = 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

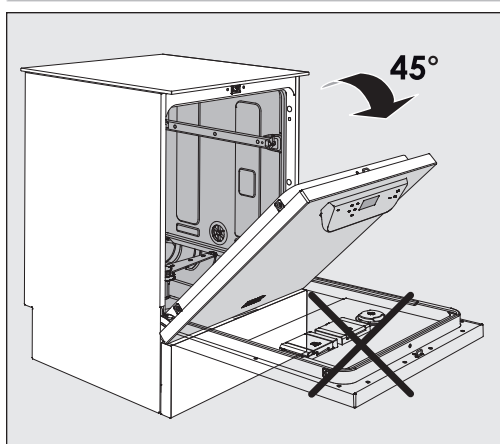
Filling the salt container

Use only special, coarse-grained reactivation salt with a granule size of approx. 1/16" - 3/16" (1 - 4 mm).

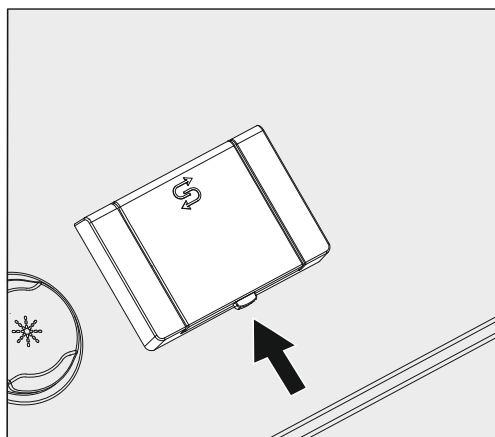
Do not under any circumstances use other types of salt such as table salt, agricultural or gritting salt. These may contain insoluble additives which can impair the functioning of the water softener.


Reactivation salt is available from Miele, please contact Miele for ordering. See last page for contact information.

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

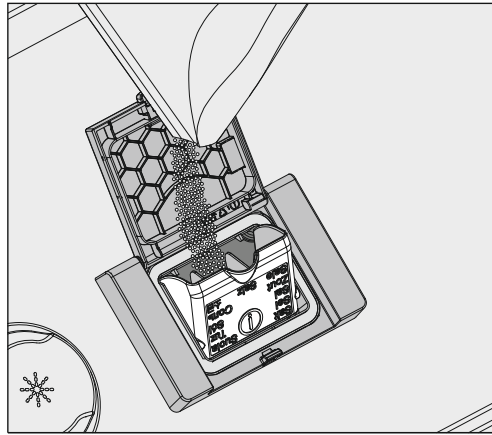


- Open the door to an angle of around 45°. This ensures that the salt flows into the container more easily.



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

The container takes approx. 3-4.5 lb (1.4-2 kg) of salt, depending on the type of salt and the remaining fill level.



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

- Add salt into the container until the funnel is full but still closes easily. Do not add any more than 2 kg of salt.

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

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

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

- 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.

Salt refill reminder

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



- Confirm the message with the *OK* button.
- 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.

Mobile units, baskets, modules and inserts

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

Select accessories which are appropriate for the application.

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

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

Water supply


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

Any free connections in the back panel are closed mechanically.

Older models of mobile units and baskets

Only use older models of mobile units and baskets in this machine in consultation with Miele. In particular mobile units 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 basket models.

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

Following conversion, mobile units and baskets can no longer be used in older models.

Adjusting the height of the upper basket

Height-adjustable upper baskets can be adjusted between three positions with 3/4" (2 cm) between each position to accommodate items of different heights.

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

- A stainless steel plate with 2 openings
- A plastic connection piece
- 6 screws.

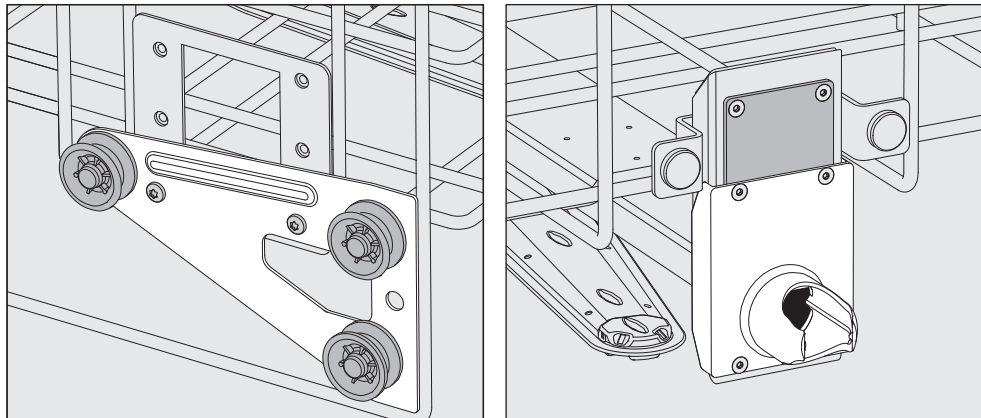
Only adjust the upper basket horizontally. The baskets are not designed to be positioned on a slant (one side up, one side down). Altering the height will alter loading heights for both the upper and lower baskets.

To adjust the upper basket:

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

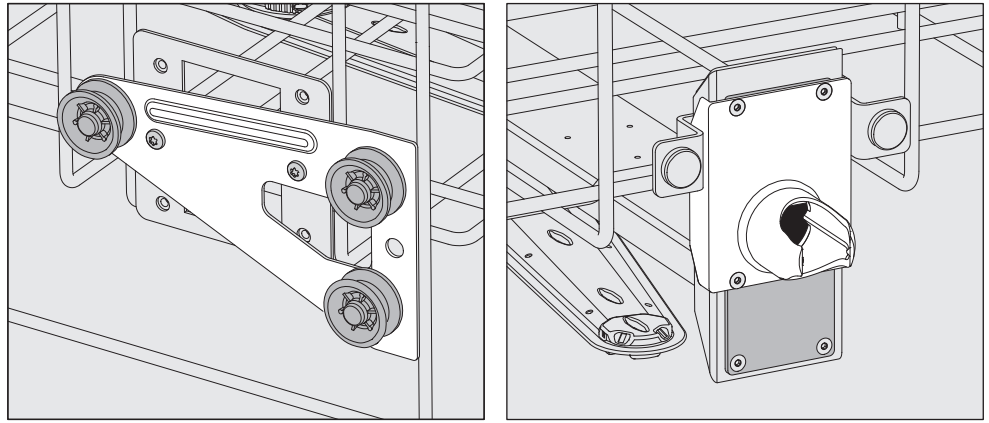
To adjust the upper basket to the ...

... upper position:



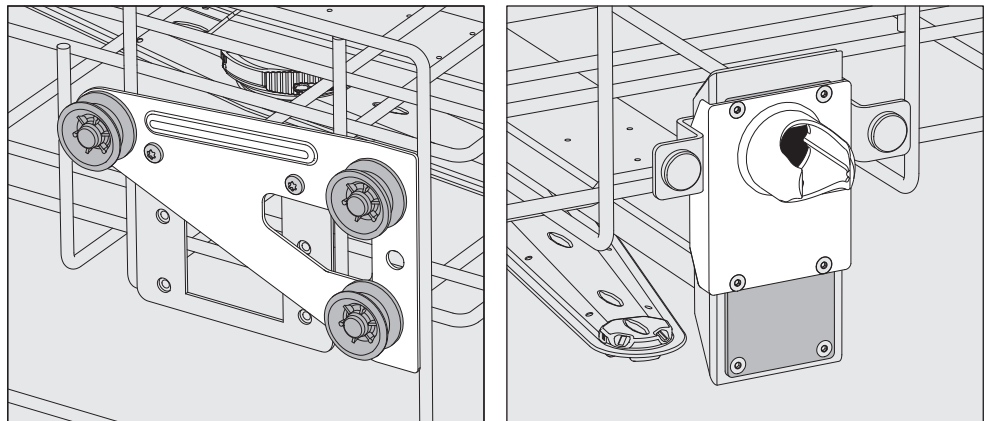
- Move the roller brackets on both sides to the lower position and secure them firmly.
- Position the stainless steel plate over the openings in the water supply pipe so that the upper opening is covered. Secure the stainless steel plate at the top with 2 screws. Place the water connector in the lower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

- Put the upper basket back on the rails and push it in carefully to check that the water connection is positioned correctly.

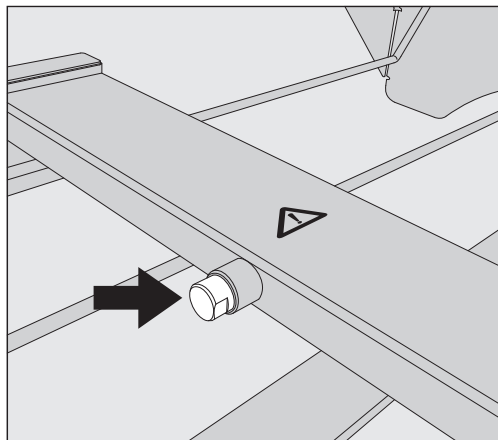
Wash pressure measurement

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

Test point for measuring wash pressure

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

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



Under no circumstances may wash items, irrigation connectors, 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.

Preparing the load

⚠ 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 wash items to be cleaned inside other pieces where they may be concealed. Do not place wash items so close together that cleaning is hampered.
- The interior of lumened wash 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.
- Lumened instruments 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 wash 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.

Application technology

- Only reprocess small items and micro components in special inserts, mesh trays with lids or mesh inserts.
- Plastic items must be thermally stable.

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

Observe the further information given in the following sections as necessary depending on the 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 instructions of the manufacturer 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 every 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 do they rotate freely?
- Are the filters clean?
Remove any coarse soiling and clean them if necessary.
- Are the removable modules, injector nozzles, irrigation sleeves and other rinsing fittings securely connected?
- Are the baskets and modules or mobile units correctly connected to the water supply and are the water connectors undamaged?
- Are all process 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 fittings 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.

Verification testing

For verification of the cleaning process, periodic testing as outlined in current best practices documents such as AAMI ST79 is highly recommended. While Miele washers automatically monitor critical parameters such as time, temperature and dispensing, periodic verification to ensure proper soil removal should be part of your quality and safety program.

Miele also offers process documentation to support your periodic verification.

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.

Probes, tweezers etc.

Instruments

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

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

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

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

Mouth specula

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

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

Mouth rinse cups

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

Opal glass is particularly suitable for reprocessing in the machine.

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	Solution
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.	<ul style="list-style-type: none"> - Determine and remedy the causes of the damage. <p>See information regarding “Associated process chemicals”, “Soiling”, and “Reaction between process chemicals and soiling” in this section.</p>
<p>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.</p> <p>When foam develops, the cleaning process is not standardized or validated in principle.</p>	<ul style="list-style-type: none"> - Determine and remedy the causes of the foam. - Check the process used regularly to monitor foaming levels. <p>See information regarding “Associated process chemicals”, “Soiling”, and “Reaction between process chemicals and soiling” in this section.</p>
<p>Corrosion to stainless steel in the wash cabinet and to accessories can give them a different appearance:</p> <ul style="list-style-type: none"> - rust (red stains/discoloration) - black stains/discoloration - white stains/discoloration (etched surface) <p>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.</p>	<ul style="list-style-type: none"> - Determine and remedy the causes of corrosion. <p>See information regarding “Associated process chemicals”, “Soiling”, and “Reaction between process chemicals and soiling” in this section.</p>

Chemical processes and technology

Associated process chemicals	
Problem	Solution
The ingredients in process chemicals have a significant impact on the longevity and functionality (throughput) of dispensing systems.	<ul style="list-style-type: none"> - Follow the process chemical manufacturer's instructions and recommendations. - Carry out a regular visual check of the dispensing system (suction wands, 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.	<ul style="list-style-type: none"> - Follow the process chemical manufacturer's instructions and recommendations. - Carry out a regular visual check of any accessible elastomers and plastics for damage.
<p>The following process chemicals can cause large amounts of foam to build up:</p> <ul style="list-style-type: none"> - cleaning agents and rinsing agents containing surfactants <p>Foam can occur:</p> <ul style="list-style-type: none"> - in the program phase in which the process chemical is dispensed - in the following program block if it has been spilt - in the following program with rinsing agent if it has been spilt 	<ul style="list-style-type: none"> - 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.
<p>De-foaming agents, especially silicone-based ones, can cause the following:</p> <ul style="list-style-type: none"> - a build-up of deposits in the wash cabinet - a build-up of 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 	<ul style="list-style-type: none"> - 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	Solution
<p>The following substances can lead to a heavy build-up of foam during washing and rinsing:</p> <ul style="list-style-type: none"> - some disinfection agents, dishwashing cleaning agents, etc. - active foaming agents such as surfactants 	<ul style="list-style-type: none"> - Thoroughly rinse wash items in water beforehand. - Select a cleaning program with at least one short pre-wash in cold or hot water.
<p>The following substances may cause corrosion to stainless steel in the wash cabinet and on accessories:</p> <ul style="list-style-type: none"> - hydrochloric acid - other substances containing chlorides, such as sodium chloride - concentrated sulphuric acid - chromic acid - particles of iron and shavings 	<ul style="list-style-type: none"> - Thoroughly rinse wash 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	Solution
<p>Soiling containing high protein levels, such as blood, can cause a heavy build-up of foam when processed with alkaline process chemicals.</p>	<ul style="list-style-type: none"> - Select a cleaning program with at least one short pre-wash in cold water.
<p>Non-precious metals such as aluminum, magnesium, and zinc can release hydrogen when processed with very acidic or alkaline process chemicals (oxyhydrogen reaction).</p>	<ul style="list-style-type: none"> - Please observe the process chemical manufacturer's instructions.

Adding and dispensing process chemicals

⚠ Unsuitable process chemicals pose a health risk.

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

Only use process chemicals designed specifically for use in laboratory glassware washers 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 codes 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 an internal dispensing systems for process chemicals:

- Rinsing agent
This is dispensed via a storage reservoir ☼ in the door.
- Neutralization agent
This is dispensed using a siphon.
- Liquid process chemicals
This is dispensed via a siphon.

Dispensing systems in the door are exempt from monitoring.

Labeling of the suction wands

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

Miele uses and recommends the following:

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

Rinse aid

Rinsing agent is necessary to ensure water does not cling and leave marks on wash items, and to help wash items dry faster after reprocessing.

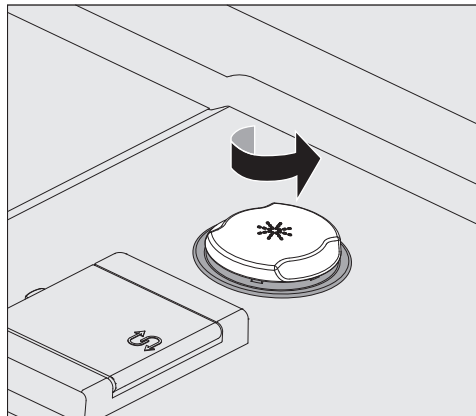
The rinsing agent in the Final rinse program stage is dispensed automatically. For this, the container must be filled.

⚠ Rinsing agent poses a health risk.
Residues of rinsing agent remain on the surface of wash items after they have dried.
It is important to check the suitability of the rinsing agent being used on the wash items.

Adding rinse aid

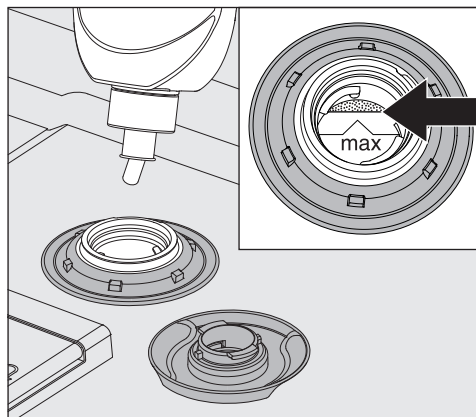
⚠ Do not fill with process chemicals.
This would damage the reservoir.
Only fill the rinse aid reservoir with special rinse aid for washer-disinfectors.

- Open the door fully.



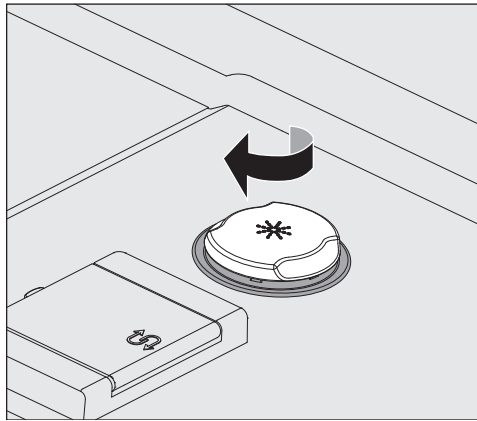
- Unscrew the yellow lid with the * symbol in the direction of the arrow.

The container holds approx. 300 ml.



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

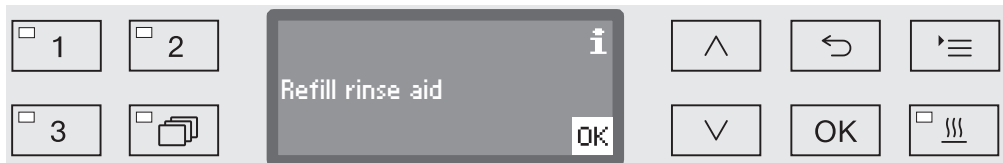
Adding and dispensing process chemicals



- Close the container.
- Wipe up any spilled rinsing agent. 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 rinsing agent

The dispensing concentration is set by Miele Service.

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

Neutralizing agent

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

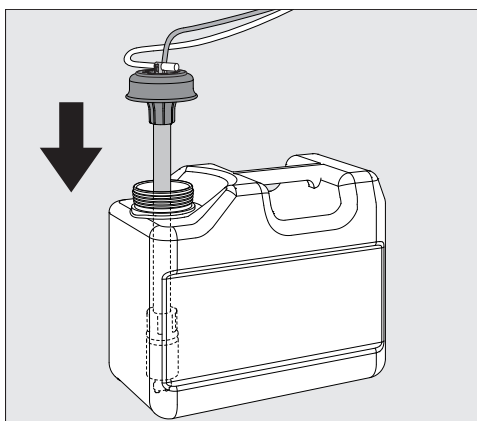
Neutralizing agent (pH setting: acidic) neutralizes any residues of alkaline process chemicals on the surface of the load.

In case of a film build-up on the load, a neutralizing agent based on citric acid must be used.

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

Replenishing 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 wand. Place the suction wand on the open wash cabinet door.
- Replace the empty container with a full one.



- Push the suction wand into the opening of the container and secure the lid. Observe the color coding.
- Feed the suction wand 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 cabinet. The container must not be placed on top of or above the machine. Make sure that the dispensing hose is not kinked or trapped.
- After that, the dispensing system must be primed (see “Settings ▶ / Priming DOS”).

Adding and dispensing process chemicals

Checking consumption

Check consumption regularly by checking the fill levels in the supply containers and replace containers in time.

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 neutralizing agent as described.

If the container is empty, the machine will be locked against 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 washer-disinfector. Such care products may not be dispensed as chemical agents in these washer-disinfectors even if they are recommended for machine use by the instrument care product manufacturer.

If required, you can use instrument care products on a paraffin oil basis after machine processing within the scope of instrument care. In the process, please observe the specifications of the instrument and care product manufacturers.

However the processing of instruments treated with such care products is possible in this machine.

Process chemicals

⚠ Risk of infection due to unsuitable cleaning agents.
Using unsuitable cleaning agents, such as a cleaning agent for a domestic dishwasher, will mean that the reprocessing result is not as expected.
Only use cleaning agents that are suitable for cleaning machines.

The machine is only designed for use with liquid cleaning agents. Liquid cleaning agent is dispensed from an external container via a suction wand.

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

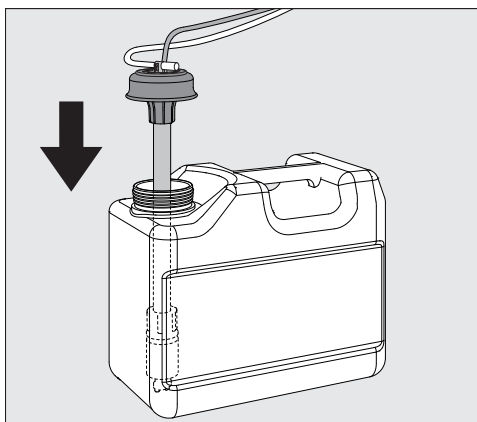
- How alkaline does the cleaning agent need to be for the cleaning application involved?
- Are protein-removing enzymes required and is the program sequence suitable for this?
- Are surfactants required for proper dispersion and emulsification?
- A suitable, mildly alkaline, active chlorine-free cleaning 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.

Refilling liquid cleaning agent


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

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



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

Adding and dispensing process chemicals

- Wipe up any spilled process chemical thoroughly.
- Place the container on the floor next to the machine or in an adjacent cabinet. The container must not be placed on top of or above the machine. Make sure that the dispensing hose is not kinked or trapped.
- After that, the dispensing system must be primed (see “Settings  / Priming DOS”).

Checking consumption

Check consumption regularly by checking the fill levels in the supply containers and replace containers in time.

Refill indicator

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



- Confirm the message shown with *OK* and
- Refill the liquid process chemicals as described.


If the container is empty, the machine will be locked against further use.
It will be ready for use again when the supply container has been replaced.


Dispensing liquid process chemicals

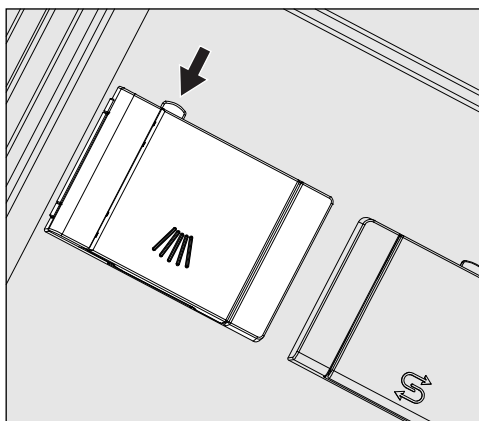
The dispensing concentration is set by Miele Service.


Dispensing powder cleaning agents

⚠ Take care not to inhale powder cleaning agents. Swallowing process chemicals can cause chemical burns in the mouth and throat or lead to asphyxiation.

Powder cleaning agents can only be dispensed if the correct type of dispensing canister, marked with a  symbol, is present on the inside of the door.

- Add powder cleaning agent to the dispensing canister with the  symbol before starting the program. Do not dispense powder cleaning agent in the Rinse and Drain programs.



- Press the yellow button on the dispensing canister with the  symbol.

The flap will spring open. The flap is always open at the end of a program cycle.

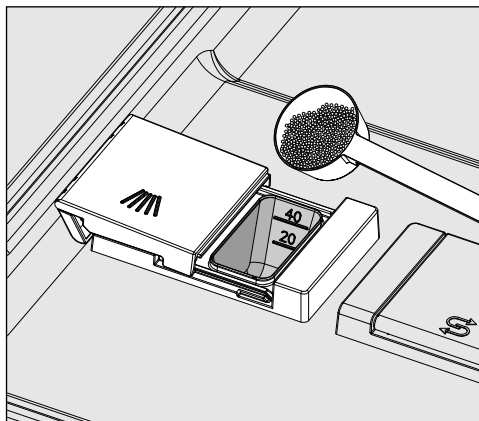
The level markers in the powder dispensing canister with the door in the horizontal position equate to the amount dispensed in milliliters (ml). The max. capacity is approx. 60 ml of cleaning agent.

The amount in ml equates to approx. the amount normally recommended in grams (g) for proprietary powder cleaning agents. Powder density can affect this amount.

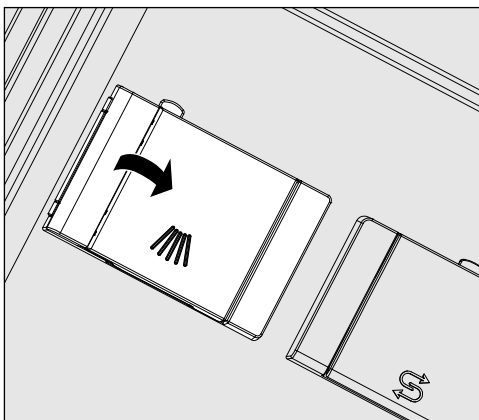
Dispensing example:

Approx. 10.5 l of water are taken into the machine for the main wash. With a cleaning agent concentration of approx. 3 g/l, you will need approx. 30 g of cleaning agent. Please observe the manufacturer's recommendations, which may vary!

Adding and dispensing process chemicals






- Add powder cleaning agent to the dispensing canister.




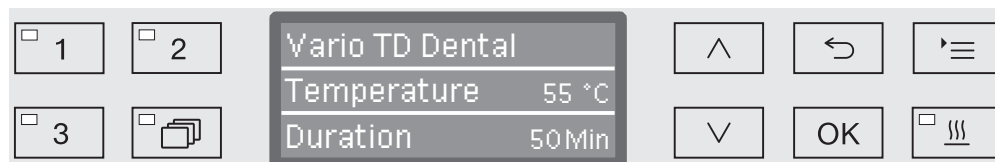
- Close the flap.

⚠ Make sure that all of the cleaning agent has dissolved at the end of the program sequence.
Repeat the program if residual cleaning agent is present.
Check whether any wash items have prevented the flushing out of the dispensing canister and rearrange the wash items if necessary.

Selecting a program

Program selection buttons ■ Select a programme using program selection buttons , , or .

Program list ■ Press the  button and
■ use the \wedge and \vee 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 in 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 programs and their uses are described in “Program charts” at the end of these operating instructions.

Always select the program depending on the type of wash 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 wash items for a long time, the reprocessing result can be adversely affected. There is also a risk of corrosion for stainless steel wash items.

Operation

Setting the start time

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



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

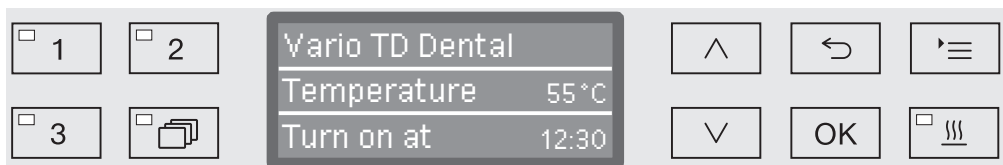
When the *OK* button is pressed, the display jumps automatically to the next input position. You cannot go back to the previous entry. If a mistake is made, the process must be canceled using the \hookleftarrow button and repeated.

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

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

Activating Delay Start

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



The selected program with the set start time set is then shown on the display. If automatic deactivation has been selected (see “Additional 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 \hookleftarrow button or switch the machine off using the ⏻ button.

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

When the drying assistance function is activated, the Comfort door lock opens the door a little at the end of the program, allowing steam to escape from the wash cabinet. The wash items dry passively from the residual warmth in the wash cabinet.


Drying results should be checked at the end of the program. Instruments with visible residual moisture must be dried again separately, e.g., with sterile compressed air.

The drying assistance function can be pre-selected 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 assistance is activated or deactivated before the program starts 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 assistance function is activated, the program running time is extended by approx. 2 minutes.

Selecting and deselecting the drying assistance function

- Select a program.
- Press the  button before the program starts. The LED in the button indicates whether the drying assistance function is on or off.

Program cycle display

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 \wedge and \vee :

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

Bottom line

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

Program end

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,
- Cycle number,

Bottom line

- Program finished.

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

Canceling a program

⚠ If a program is canceled, the items in the machine must be re-processed again.

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

Program canceled due to a fault

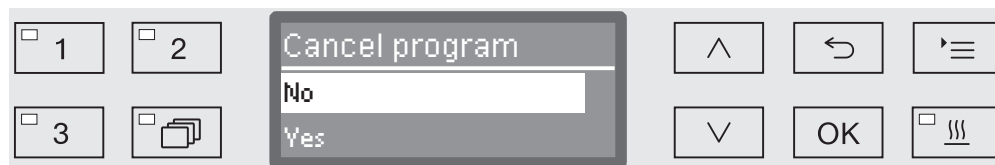
The program stops prematurely and an error message appears in the display.

Take appropriate steps to resolve the fault, depending on its cause (see “Frequently asked questions”).

Canceling a program manually

A program which is already running should only be canceled if necessary, e.g. if the wash load is moving in the chamber.

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



- Use the ^ and v arrow buttons to select Yes.
- Pressing the OK button interrupts the program. Entry of a code may also be required (see “Additional settings/Code”).

If no button is pressed for several seconds, or if the process is canceled 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

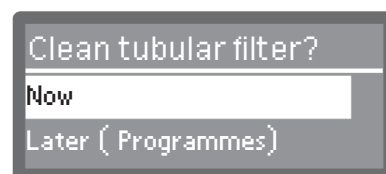
After the machine is switched on or a program sequence is completed, a series of system messages may be shown on the display. These indicate e.g., low fill levels in the containers or required maintenance.

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 bars on various mobile units and baskets and must be cleaned regularly. Follow the cleaning instructions in the operating instructions for the tubular filter.

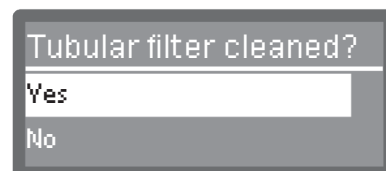
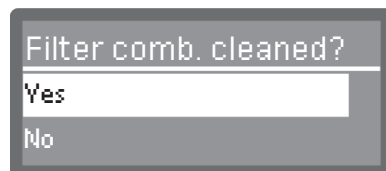
A counter in the controls can be activated to remind you of the required cleaning at regular intervals.



- 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.

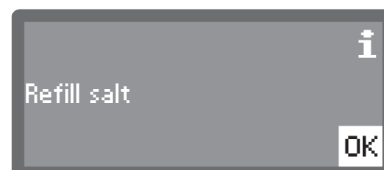
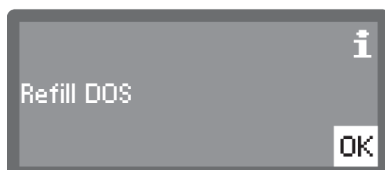
- No

The counter will not be reset.

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

Low fill levels

When the fill level is low in one of the containers, e.g., for process chemicals or the salt container, 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 “Filling process chemicals and dispensing” and “Water softener”.

Wash pressure and spray arm monitoring

The machine 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 check ☒. You will find an explanation of how to change settings after the overview.

Settings

- ▶ Delay start
 - ▶ No ☒
 - ▶ Yes ☐
- ▶ Drying
 - ▶ No ☐
 - ▶ Yes ☒
- ▶ DOS priming
 - ▶ 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 v arrow buttons.
- Press OK to save the setting.

Drying (drying assistance)

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

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

When the drying assistance function is activated, the Comfort door lock opens the door a little at the end of the program, allowing steam to escape from the wash cabinet. The wash items dry passively from the residual warmth in the wash cabinet.

Drying results should be checked at the end of the program. Instruments with visible residual moisture must be dried again separately, e.g., with sterile compressed air.

- 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 v arrow buttons.

- Press OK to save the setting.

DOS priming

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

The DOS system must be primed only if:

- It is being used for the first time.
- The reservoir was exchanged.
- The dispensing system has been emptied completely.

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

■ Open the menu as follows:

'≡ button

▶ Settings 

▶ DOS priming

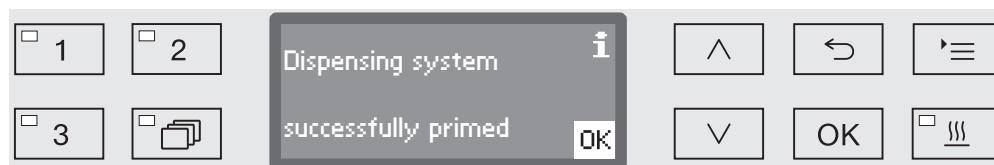
▶ DOS... (name of dispensing system)



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

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

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




Language




The language set will be used in the display.

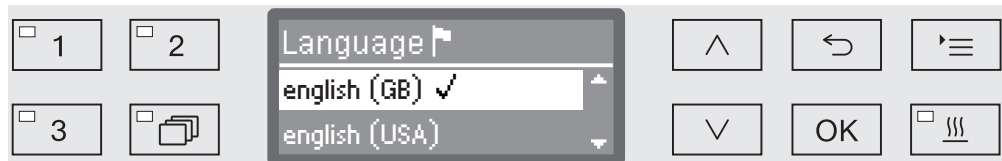
- Open the menu as follows:

☰ 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 check ✓.

The factory default language is set as German.

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

The display will change immediately to the language selected.

Time of day

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

There is no automatic adjustment between daylight savings time and standard time.

You need to make this adjustment yourself as necessary.

Selecting the clock format

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

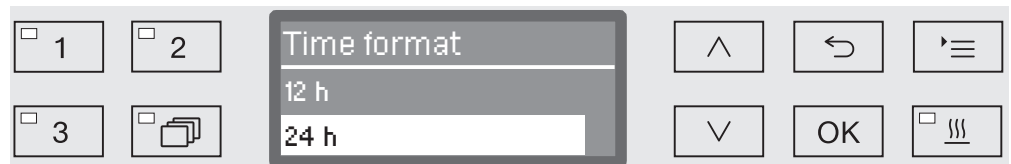
- Open the menu as follows:

'≡ 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 v arrow buttons to select the date format you want.
- Press OK to save the setting.

Setting the clock To set the format for the time of day:

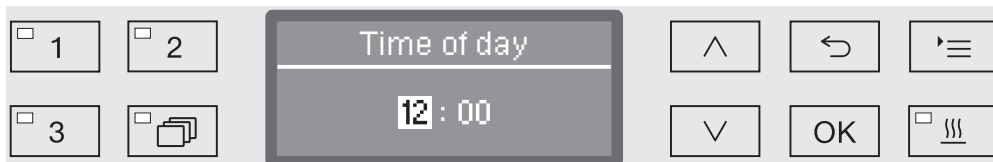
- Open the menu as follows:

☰ button

▶ Settings 

▶ Time of day

▶ Set



- Use the arrow buttons \wedge (higher) and \vee (lower) to set the time 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 canceled using the \hookleftarrow button and repeated.

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

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

Display

If necessary, the machine 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.

■ Use the ^ and v arrow buttons to select an option.

■ 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:

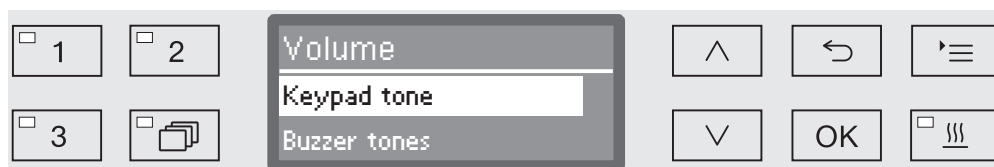
- When buttons are pressed (keypad tone)
- Program end
- System messages (information)

■ Open the menu as follows:

☰ button

▶ Settings 

▶ Volume



- Buzzer tones

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

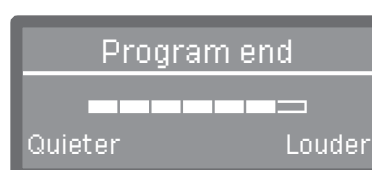
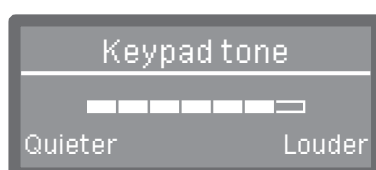
- Keypad tone

Setting the buzzer volume for keypad tone.

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

■ Confirm your selection with **OK**.

When Keypad tone has been selected, you can adjust the volume immediately. When Buzzer tones has been selected, you must first select 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 \wedge (Louder) and \vee (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.



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

In the structure overview all options which can be permanently selected have boxes ☐ beside them. Factory settings are indicated by a check ☒. 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.: Neutra. agent
 - ▶ ...
 - ▶ Operating hours
 - ▶ Program cycle counter
 - ▶ Service interval
- ▶ Report
 - ▶ Short ☒
 - ▶ Long ☐
- ▶ Temperature unit
 - ▶ °C ☒
 - ▶ °F ☐
- ▶ Program settings
 - ▶ Change program
 - ▶ ...
 - ▶ Reset program
 - ▶ ...
- ▶ Release program
 - ▶ All ☒
 - ▶ Selection
 - ▶ ... ☐

Additional settings

- ▶ Move program
 - Vario TD Dental
 - Rinse
 - Drain
- ▶ Test program
 - ▶ No
 - ▶ Laboratory
 - ▶ Validation
- ▶ 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

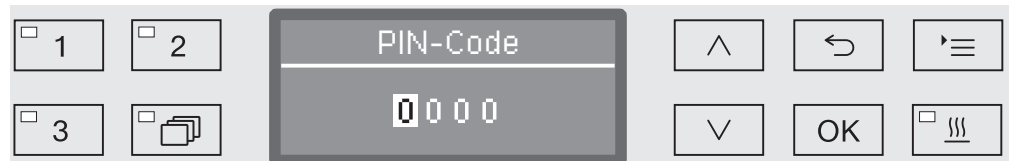
Code

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 code, contact a user with appropriate access rights or cancel the process using the ↶ button.

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

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

Additional settings

Changing 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.

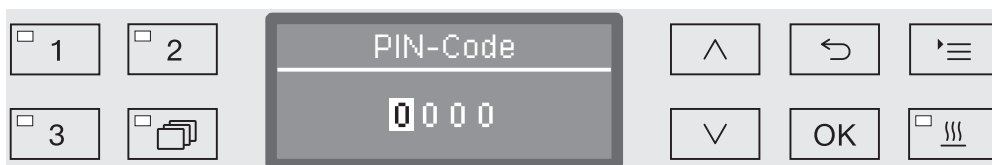
- Open the menu as follows:

☰ button

▶ Additional settings

▶ Code

▶ Change code



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

When the *OK* button is pressed, the display jumps automatically to the next input position. You cannot go back to the previous entry. If a mistake is made, the process must be canceled using the \curvearrowright 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 format and the current date have to be set.

Selecting the date format

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

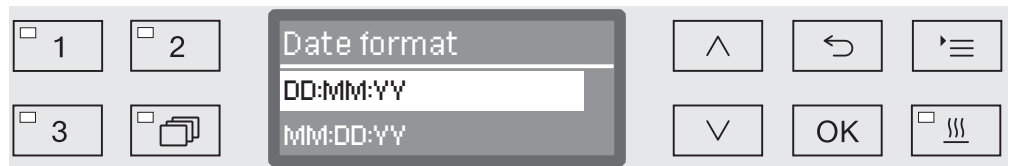
- Open the menu as follows:

'≡ button

▶ Additional settings

▶ Date

▶ Date format



- DD = day
- MM = month
- YY = year

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

Additional settings

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

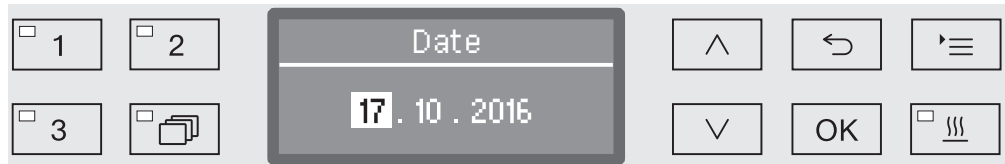
- Open the menu as follows:

▸ ≡ button

▸ Additional settings

▸ Date

▸ Set



- Use the arrow buttons \wedge (higher) and \vee (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 canceled using the \hookleftarrow button and repeated.

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

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

Log book

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

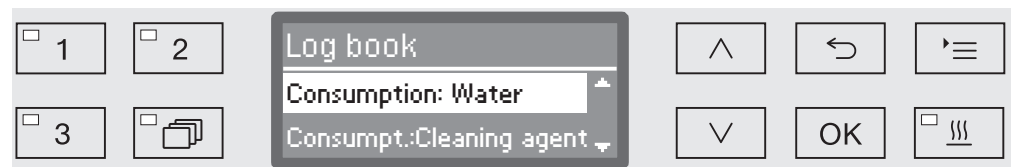
Miele Service can also use the log book to calculate a recommendation for service intervals.

■ Open the menu as follows:

☰ button

▶ Additional settings

▶ Log book



- Consumption: Water

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

- Consumpt.:Cleaning agent

Display the total amount of liquid process chemicals used in liters (l).

- Consumpt.: Rinse aid

Display the total amount of neutralizing agent used in liters (l).

- Consumpt.: Neutra. agent

Display the total amount of neutralizing agent used in liters (l).

- Operating hours

Display the total number of operating hours.

- Program cycle counter

Total of all completed program sequences. There is no breakdown of individual programs. Canceled programs are not included.

- Service interval

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

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

Values in the machine log book cannot be altered.

■ Press the ↶ button to exit the menu.

Additional settings

Report

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

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

Temperature unit

During a 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).

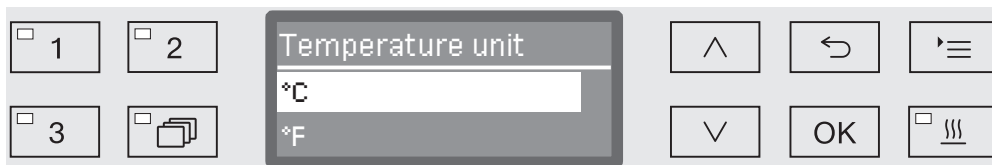
The temperature unit is set at the factory to °C.

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 v 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 wash items or to reset all additional functions 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”.

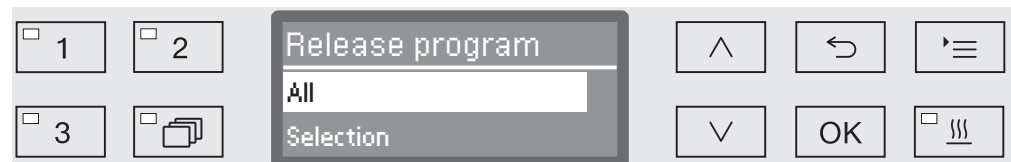
Program release

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

- Open the menu as follows:

'≡ button

- ▶ Additional settings
- ▶ Release program



- All

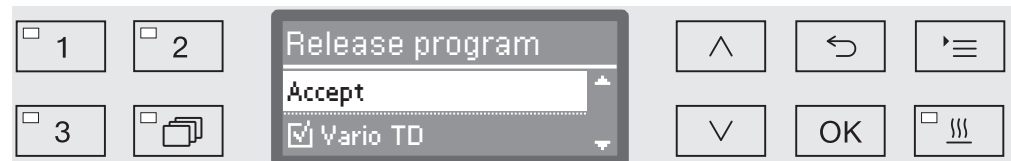
All programs are released for use.

- Selection

A selection of programs is available for use.

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

The Selection option displays a list of all 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 check ☒ in the box. An empty box indicates a blocked program.

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

Moving a program: allocating program selection buttons

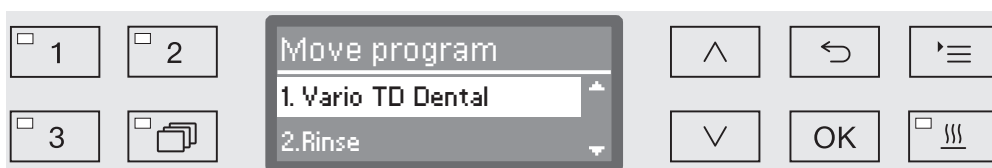
You can sort the program selection list to suit your requirements and therefore also allocate the program selection buttons ☐ 1, ☐ 2 and ☐ 3.

- Open the menu as follows:

'≡ button

▶ Additional settings

▶ Move program



All enabled programs are shown in the program list (see “Additional 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 Dental on program selection button ☐ 1
- 2. Rinse on program selection button ☐ 2
- 3. Drain on program selection button ☐ 3
- 4. Vario TD Intensive
- etc.

- Use the ^ and v 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 v 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

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 bars 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

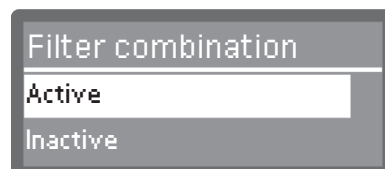
- Open the menu as follows:

☰ 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

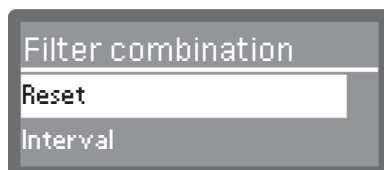
The cleaning interval is deactivated.

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

Additional settings

Resetting the counter

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



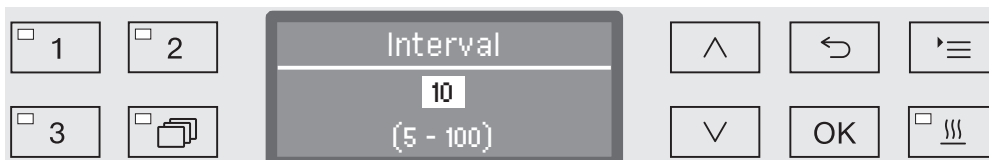
- Reset
The counter is reset.
- Interval
 - Select an option using the \wedge and \vee arrow buttons and confirm your choice with *OK*.

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

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



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

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

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 enables the establishment of an Ethernet interface for digital archiving of process data via external software.

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

RS232

A XKM RS232 10 Med Communication Module is required for direct connection to a report printer.

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

Additional settings

Configuring the interface

⚠ The interface must only be configured by qualified specialists.

- 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 press **OK** to confirm your selection.

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

- 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

Additional settings

Water hardness

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

For more information see “Water softener.”

Display: Temperature

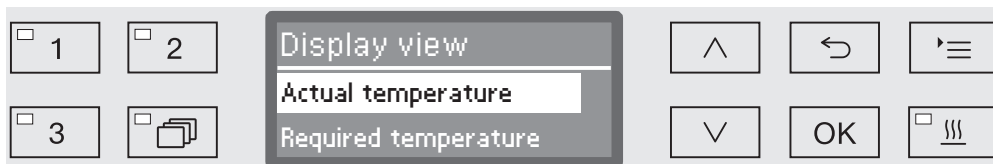
The wash cabinet temperature can be viewed during a program. Either the current actual temperature or the required temperature which has been preset for the current wash block is displayed.

- 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 together as Temperature. There is no breakdown of actual and required temperature.

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

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 v 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 v (Lower/Darker) to set the brightness and contrast you want.
- Press OK to save the setting.


Additional settings

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 Do not display option must be selected under Settings /Time of day/Display.

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

- Use the  button to switch the machine on again.

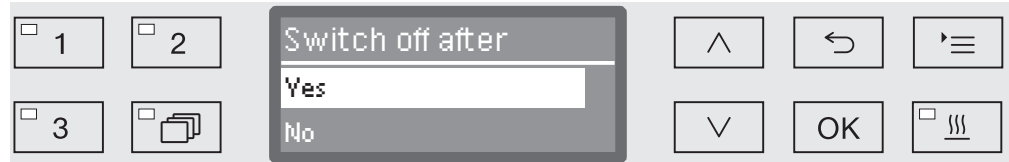
Switching off after activating

- 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 v 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 v (lower) arrow buttons to set the standby duration.

- Press OK to save the setting.

Software version

You can use this menu to view the software versions of individual elements, e.g. when contacting Miele Service.

For more information, see “Service.”

Program settings

Adjusting program settings

The program settings should be adjusted to suit technical requirements and the wash 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 for validated processes according to local regulations.
The processes must be validated again as necessary.

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

- Water volume change

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 chart (see "Program charts").

- Pre-rinse 1 to 3

Pre-washing removes coarse stains and foam-building substances.

- Main wash 1 and 2

Depending on the wash items, cleaning generally occurs at temperatures between 113°F/45°C and 149°F/65°C with the addition of an 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 wash items, demineralized (DI) water should preferably be used if available for the final rinse.

According to the A_0 concept of EN ISO 15883, disinfection occurs thermally at temperatures of 176°F to 203°F/80°C to 95°C and with relevant holding times.

- Drying

Adequate drying reduces the risk of corrosion by residual moisture on the wash items.

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

Program settings

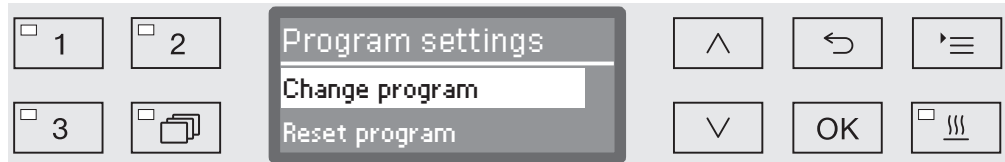
Opening the menu

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.

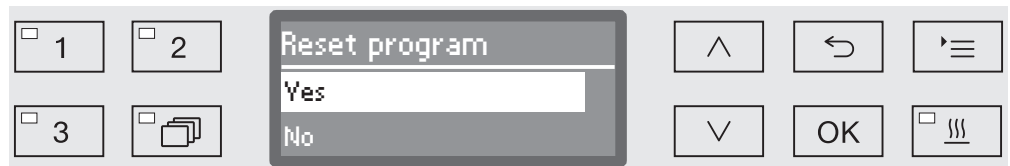
⚠ Programs stored on a free memory location are irretrievably deleted.

...

- ▶ Program settings
- ▶ Reset program

All programs are then listed in the display.

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

Program settings

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. This list must be confirmed first.
- Then individual program parameters can be changed.

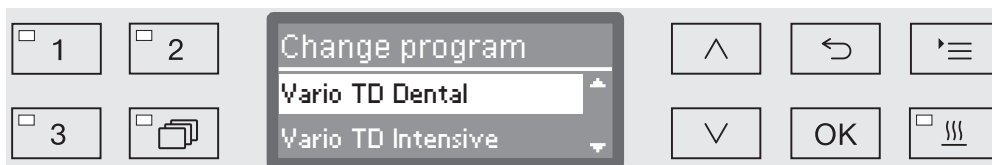
Use this option to document all changes to factory settings in case of a subsequent Miele Service call requirement.

Program and dispensing changes must be documented for validated processes according to local regulations.
The processes must be validated again as necessary.

...

► 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 allocated to the program are listed in the display. The allocation can be adapted as necessary by Miele Service.

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

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

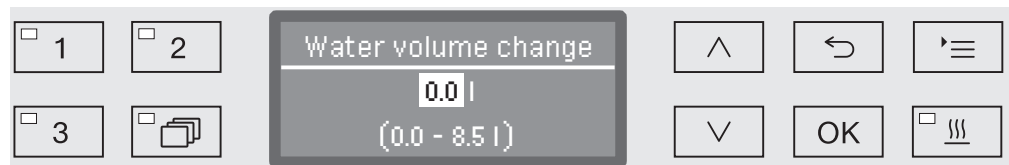
Changing water quantity

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 mobile unit used, the type of soiling and the load.

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

...

► Water volume change



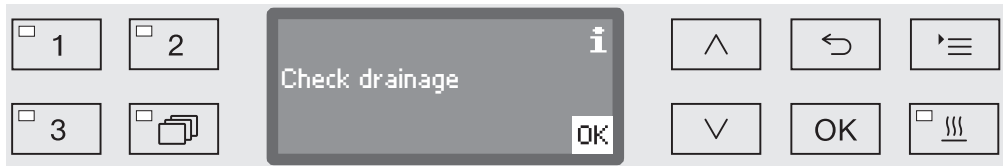
The water quantity can be increased in 17 oz. (0.5 l) increments, or set back to the factory default amount. The possible range is shown in the bottom line. The setting “0 l” equates to the factory default setting.

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

Program settings

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 pre-set increment.
Program duration will increase with this setting.

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

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

When the drying assistance function is activated, the Comfort door lock opens the door a little at the end of the program, allowing steam to escape from the wash cabinet. The wash items dry passively from the residual warmth in the wash cabinet.

Wash chamber
cooldown phase

A cooldown pause follows the wash phase. 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. In addition, this cools the wash chamber slightly.

...

► Cabinet cooling down time



The setting value is entered in increments of 1 minute. The possible range is shown in the bottom line of the display.

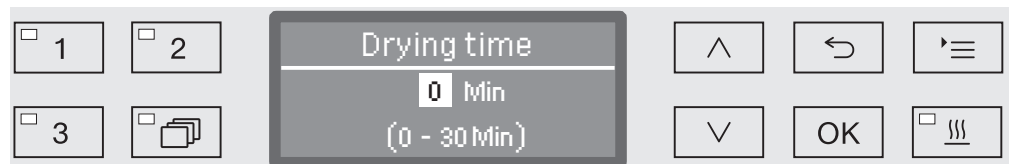
- Use the arrow buttons \wedge (higher) and \vee (lower) to set the cooling down duration.
- Press **OK** to save the setting.

Drying time

After the cooldown time, the comfort door closing aid opens the door slightly to allow the moisture and heat remaining in the wash chamber to dissipate. At this point, the door is unlocked and can be opened at any time. After the drying time elapses, the message **Program finished** appears on the display. Opening the door before the drying time elapses ends the program prematurely.

...

► Drying time



The setting value is entered in increments of 1 minute. The possible range is shown in the bottom line of the display.

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

Documenting processes

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

During a program sequence, 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., refill salt

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 protocol is overwritten.

In addition, raw data from the last program sequence is stored to create a graphical display of the process data. This data can be transformed into graphical representations using external documentation software. Transferring raw data requires an Ethernet interface. It is not possible to create graphical representations 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 RS232 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 qualified specialists. Follow the instructions in “Additional settings/Interface”.

Process documentation using external software

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

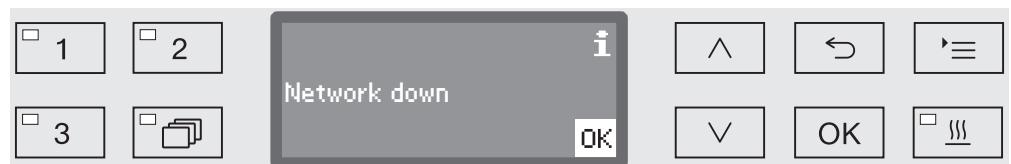
Information on wash pressure, conductivity and temperature in the wash cabinet can be archived graphically if required.

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 power cord 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 to report software problems, contact your system or network administrator.

Process documentation

Process documentation using a report printer

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

Report formats

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

- Long format: includes all recorded data.
- Short format: includes only selected parameters.

The report format has no effect on the data stored in the machine. All 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 v 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.

Protocol printer The following options are available for printing protocols 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 v arrow buttons.

■ Data transmission is started by pressing the OK button.

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

Maintenance measures

Maintenance

Periodic checks must be carried out by Miele Service **after 1,000 operating hours or every 24 months at the latest.**

Maintenance covers the following points and functional checks:

- replacement of wear parts
- electrical safety check compliant with national rules and regulations (e.g., VDE 0701, VDE 0702)
- 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
- visual inspection and functional check of components
- a thermo-electric check
- leak test on seals
- safety testing of all relevant measuring systems
- safety features

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

Cleaning the filters in the wash cabinet


The filters in the floor of the wash 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.

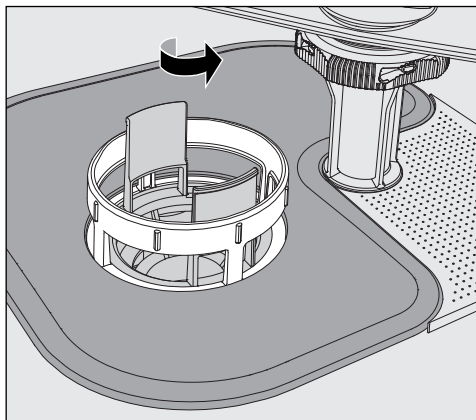
If the filters are not inserted, dirt particles will end up in the machine water circuit. The dirt particles may block the nozzles and valves.

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”.

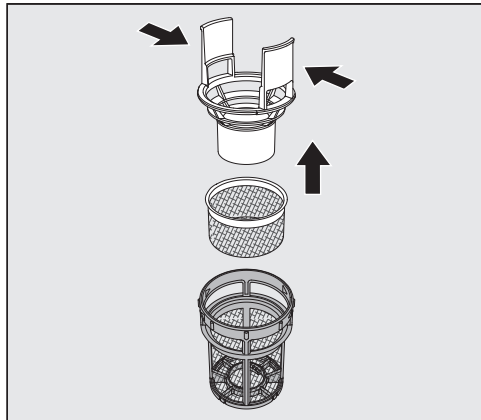
The cleaning interval is not a substitute for the daily routine check of the filters in the wash chamber!



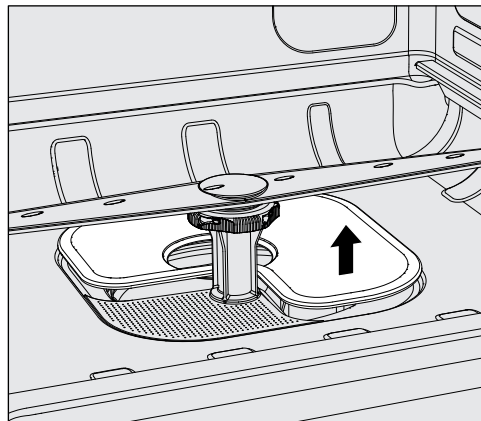
⚠ Danger of injury from glass shards, needles etc. which are retained in the filter.

Maintenance measures

- 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."

Checking and 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 circulation.

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

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

⚠ Immobile or blocked spray arms must not be used again.
In this case, contact Miele Service.

Cleaning the spray arms

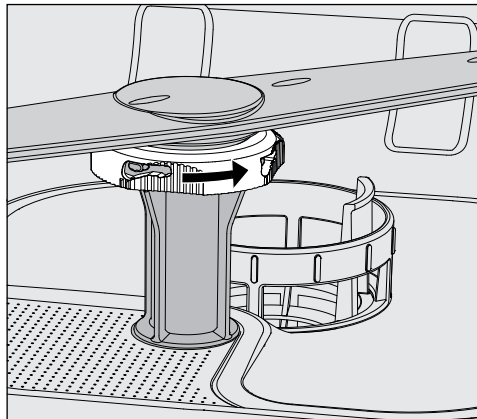
The spray arms in the machine as well as in the mobile units and baskets must be fully dismantled for cleaning:

- Remove the mobile unit or baskets from the machine.

The upper spray arm of the machine is connected through a plug-in 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 mobile units and baskets are secured with bayonet fittings.



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

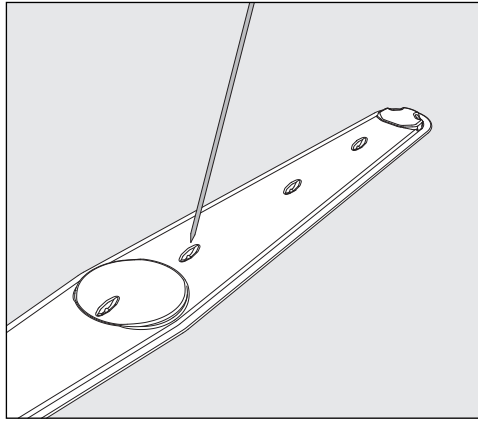
Mobile unit and basket spray arms with knurled nuts:

The spray arms of older types of mobile units 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.

Maintenance measures



- 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 wash 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 installed.

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 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 small amount of dishwashing solution or with a non-abrasive stainless steel cleaner.
- Proprietary glass or plastic process chemicals can also be used to clean the display.
- For surface disinfection, use a listed agent recommended by the manufacturer.

Cleaning the door and the door seal

- Wipe the door seals regularly with a damp cloth to remove any soiling and stains.
Seals which are no longer tight or which have suffered damage must be replaced with new ones by Miele Service.
- Remove any stains from the door sides and hinges.
- Regularly clean the groove in the base 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 chamber, please contact Miele Service for advice.

Cleaning the door front

- To clean the stainless steel front, use a damp cloth with a small amount of dishwashing solution and hot water, or with a non-abrasive process chemicals for use on stainless steel.

Preventing resoiling

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

Checking mobile units, baskets, modules and inserts

Mobile units, baskets, modules, and inserts must be checked daily to make sure they are functioning correctly. A checklist 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 injector nozzles, irrigation sleeves, and hose adaptors securely attached to mobile units, baskets, or modules?
- Are all injector nozzles, irrigation sleeves, and hose adapters clear so that wash water can flow through unhindered?
- Are all caps and fasteners securely attached to the irrigation sleeves?
- Are end caps present and securely located for all modules and injector bars?
- 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?

Maintenance of mobile units, baskets, modules and inserts

Periodic checks must be carried out by Miele Service **after 1,000 operating hours or every 24 months at the latest.**

Process validation

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

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

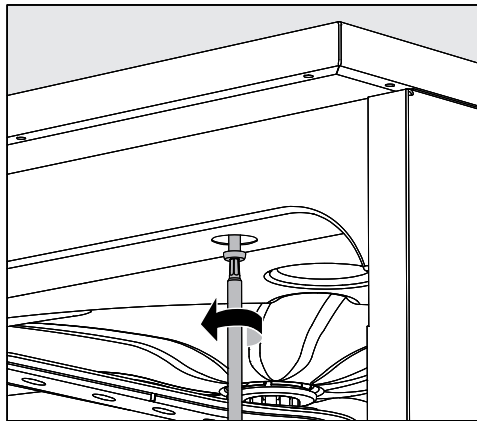
For the reprocessing of medical devices in Germany, these are:

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

Test point for measuring sensors

The sensor test point for validation is located at the front right on the top of the machine under the lid or the 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**.

Maintenance measures

Test programs

Various programs are available for monitoring the cleaning performance in the course of routine checks. 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 sequence 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 cooling of the wash cabinet, do not keep the door open too long.

After the time period elapses, the program sequence continues automatically. If the door has been opened, the program cannot start 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.

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

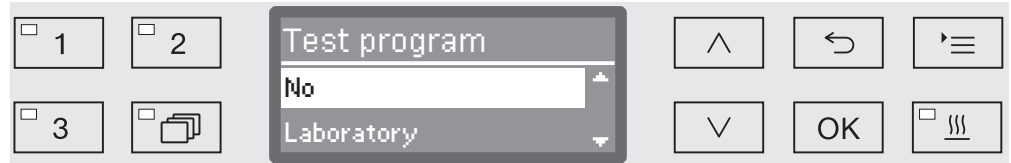
Test programs are valid for only one program sequence each time. A test program must be selected again for further tests.

- 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 v 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.



Frequently asked questions

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 Customer 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 breaker is defective or has tripped. ■ Refer to the minimum breaker rating on the data plate. ■ Reset the breaker switch. ■ If the breaker trips again, contact 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 preset duration to save energy. ■ Switch the machine on again using the  button.
The time appears in the display.	This is not a fault! The machine is ready for use. ■ Press any button to reactivate the machine.
Power outage during operation	If a temporary power outage occurs during a program sequence, no measures are required. The program which was running continues without interruption. If the temperature in the wash cabinet drops below the minimum value required for the program block during the power outage, the program block is repeated. In case of a power outage of ≥ 20 hours, the entire program is repeated. Each power outage is logged within the scope of the cycle 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.

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 chemical agent 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 completely emptied. ■ Check the level in the reservoir and refill or replace it with a full container as necessary. ■ Vent the dispensing system.
Dispensing system DOS priming	This is not a fault. The dispensing system is automatically being vented. Wait until the venting process is finished.
Priming DOS canceled. Priming must be repeated	Priming of the dispensing system was canceled because an insufficient flow rate was identified. A dispensing hose may be kinked or the suction wand blocked. ■ Check the dispensing hose for kinks and leaks. Position it so that it cannot become kinked. ■ Check the suction opening of the suction wand for blockages and remove them as necessary. ■ Start the priming process again. Contact Miele Service if there are leaks in the dispensing hose or a fault with the suction wand.
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 opening of the siphon 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 siphon.

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

Frequently asked questions



Insufficient salt/water softener

Problem	Possible cause and solution
Refill salt	<p>Salt is running low in the water softener.</p> <ul style="list-style-type: none"> ■ Refill the reactivation salt before starting the next program.
Machine locking Insufficient salt	<p>Salt in the water softener is completely used up and reactivation is no longer possible. The machine is locked for further use.</p> <ul style="list-style-type: none"> ■ Refill with reactivation salt.
Salt container empty, Program locked	<p>The water softener cannot reactivate because there is insufficient salt. The machine is locked for further use.</p> <ul style="list-style-type: none"> ■ Refill with reactivation salt. <p>The machine is unlocked a few seconds after the salt reservoir is refilled. Reactivation will occur automatically during the next program sequence.</p>
Salt container lid not closed correctly	<p>The salt container is not closed properly.</p> <ul style="list-style-type: none"> ■ Close the container properly.
	<p>Salt residues are preventing it from closing.</p> <ul style="list-style-type: none"> ■ 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.
	<p>The salt container flap has sprung open during a program.</p> <div style="border: 1px solid black; padding: 5px; margin: 5px 0;"> <p>⚠ When the door is opened, hot steam and process chemicals can escape!</p> </div> <ul style="list-style-type: none"> ■ Open the door and close the container flap.


Cancel with fault code

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

In the event of a program being canceled and a fault code being shown:

- Use the  button to switch the machine off.
- Wait approximately 10 seconds before switching the machine on again with the  button.
- Acknowledge the fault code by entering your PIN code.
- Start the previously selected program again.

If the same message appears again:

- Make a note of the fault message.
- Use the  button to switch the machine off.
- Contact Miele Service.



Please also read the notes regarding the following fault codes.

Problem	Possible cause and solution
Fault 403-405	<p>A program has been canceled because water intake by the machine was insufficient or severely restricted.</p> <ul style="list-style-type: none"> ■ Turn on the faucets fully. ■ Follow the further information provided in the Check water intake message.
Fault 406-408	<p>A program was canceled because the water flow rate is insufficient.</p> <ul style="list-style-type: none"> ■ Check whether the faucets are fully turned on. ■ Refer to the information regarding minimum flow pressure in “Connection to the water supply” and “Technical data”. ■ Check the filters in the water supply. ■ In this instance, please contact Miele Service for advice.
Fault 412-414	<p>A program was canceled because the water flow rate is too high.</p> <ul style="list-style-type: none"> ■ Refer to the information regarding recommended maximum flow pressure and maximum permissible static water pressure in “Connection to the water supply” and “Technical data”. ■ In this instance, please contact Miele Service for advice.
Fault 422	<p>A program was canceled because the conductivity of the supplied DI water is too high.</p> <ul style="list-style-type: none"> ■ Check your system for DI water.

Frequently asked questions

Problem	Possible cause and solution
Fault 426, 526	<p>Wash pressure is too low.</p> <ul style="list-style-type: none"> – Wash pressure is too low due to a heavy build-up of foam. Spilled rinsing agent may not have been cleaned up after being added. ■ Follow the instructions regarding foam build-up in “Chemical processes and technology”. ■ Start the Rinse program to clean the wash cabinet. – The load carriers were loaded incorrectly or overloaded. ■ Use only mobile units, baskets, modules, and inserts suitable for the particular application. ■ Arrange hollow or deep-sided wash items so that water runs off them freely. – The water lines are clogged or leaking. ■ Check and clean the filters in the wash cabinet and spray arms. ■ Check the injector bars for possible leaks, e.g.,: <ul style="list-style-type: none"> – Are all caps and end caps in place? – Are all connections installed with nozzles, irrigation sleeves, hose adapters, or other irrigation connectors? – Are installed silicone hoses undamaged? ■ Check the washer’s water connectors in the back panel of the wash cabinet to ensure that they are attached tightly, and remove any blockages. – The amount of water is insufficient for the application. ■ Increase the amount of water (see “Program settings”). If necessary, consult Miele Customer Service.
Fault 432	<p>The door was opened using the emergency release.</p> <ul style="list-style-type: none"> ■ See “Opening the door using the emergency release.”
Fault 433	<p>Protruding wash items or other objects, e.g., towels, are preventing the door from being closed properly by the Comfort lock.</p> <ul style="list-style-type: none"> ■ Remove all objects and sort the wash items so that they do not obstruct the door. ■ Close the door.

Frequently asked questions

Problem	Possible cause and solution
Fault 438	<p>The door seal sticks.</p> <ul style="list-style-type: none"> ■ Clean the door seal. <p>Heavy objects in front of the machine can impede the automatic opening of the door by the Comfort lock.</p> <ul style="list-style-type: none"> ■ Do not place (heavy) objects in front of the door of the machine. <p>The Comfort door lock is blocked.</p> <ul style="list-style-type: none"> ■ Try to open the door carefully (without using force) by pulling on the door handle. <p>If the door is still blocked:</p> <ul style="list-style-type: none"> ■ Open the door using the emergency release. ■ Close the door and try to open it again using the  button. <p>If it is still blocked:</p> <ul style="list-style-type: none"> ■ Contact Miele Customer Service.
Fault 440	<p>The float switch in the sump of the wash cabinet has not been activated. The switch might be blocked.</p> <ul style="list-style-type: none"> ■ Remove the filter combination. ■ Check the float switch to make sure it moves freely. The float switch is located in the sump of the wash cabinet behind the spray arm.
Fault 460–462	<p>A program was interrupted due to the spray arm speed dropping below the set value.</p> <ul style="list-style-type: none"> – 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 rinsing agent was not wiped away after filling or rinsed away by the program Rinse, 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	<p>A program was canceled because there is not enough spray pressure. The filters in the wash chamber may be blocked.</p> <div style="border: 1px solid black; padding: 5px; margin: 10px 0;"> <p> Danger of injury from glass shards, needles etc. which are retained in the filter.</p> </div> <ul style="list-style-type: none"> ■ Check and clean the filters in the wash chamber (see “Maintenance/Cleaning the filters in the wash chamber”).

Frequently asked questions


Problem	Possible cause and solution
Fault 518–521	<p>No flow was detected when dispensing from an external container.</p> <div style="border: 1px solid black; padding: 5px; margin: 5px 0;"> <p>⚠ 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.</p> </div> <ul style="list-style-type: none"> ■ Check the level in the containers and replace empty ones with filled ones. ■ Check the suction openings of the suction wands and remove any deposits. ■ Check the hose connections on the suction wands, 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. <p>If you identify any leaks in the dispensing hoses or defects on the suction wands, contact Miele Service.</p>
Fault 542	<p>A program was canceled because the water in the wash chamber is only being pumped away slowly or not at all.</p> <ul style="list-style-type: none"> - The drain hose is blocked. ■ Remove any kinks or large loops in the drain hose. - The filters in the wash chamber are blocked. <div style="border: 1px solid black; padding: 5px; margin: 5px 0;"> <p>⚠ Danger of injury from glass shards, needles etc. which are retained in the filter.</p> </div> <ul style="list-style-type: none"> ■ 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	<p>The waterproof system has been activated. One of the water supply hoses might have a leak.</p> <ul style="list-style-type: none"> ■ Close the faucets. ■ Contact Miele Service.

Frequently asked questions





Problem	Possible cause and solution
Fault 555	<p>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.</p> <ul style="list-style-type: none"> ■ When installing angled injector nozzles and sorting wash items, ensure that the wash water outlets point towards the center of the wash cabinet. ■ Restart the machine. Excess water is pumped out automatically.
Fault 559	<p>There is a problem with the process documentation interface. The machine has detected a module for and Ethernet interface, but only a serial interface is activated in the controls (RS232).</p> <p>Deactivate the RS232 interface:</p> <ul style="list-style-type: none"> ■ Open the menu for configuring the interface <i>Additional settings/Interface</i> and then select <i>Ethernet</i>. ■ Wait approx. 90 seconds. The Ethernet module XKM 3000 L Med needs this time for initialization. It may be necessary to reconfigure the interface. <p>Or</p> <ul style="list-style-type: none"> ■ Replace the Ethernet module XKM 3000 L Med with a XKM RS232 10 Med module to set up a serial interface.
Fault 578	<p>The peak-load cut-out has lasted longer than 3 hours.</p> <ul style="list-style-type: none"> ■ Have your electrical system and your energy management system tested by a suitably qualified person.

Frequently asked questions

Process-related faults and messages

Problem	Possible cause and solution
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.
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 <i>Start/Stop</i> button.
Program cancelled	This is not a fault. A program which was running was canceled by the user. <div> 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.</div>
Program continued	This is not a fault. The process of canceling 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 <i>OK</i> .
All program settings reset	This is not a fault! A user has restored the factory default setting for the program. ■ Confirm the message with <i>OK</i> .

Door

Problem	Possible cause and solution
The door is open a fraction and cannot be closed using the  button.	<p>This is not a fault. The Comfort door lock has opened the door slightly at the end of the program.</p> <ul style="list-style-type: none"> ■ Open the door. The door can now be closed completely again using the  button.
Door not closed properly	<p>Slamming the door can result in problems with the Comfort door lock.</p> <ul style="list-style-type: none"> ■ Open and close the door. <p>If the same message appears again:</p> <ul style="list-style-type: none"> ■ Contact Miele Service.
Warning! Cabinet hot. Open anyway?	<p>When the  button is pressed, the temperature in the wash cabinet is over 158°F (60°C).</p> <div style="border: 1px solid black; padding: 5px; margin: 5px 0;"> <p> When the door is opened, hot steam and process chemicals can escape!</p> </div> <ul style="list-style-type: none"> ■ Open the door only when necessary.
Obstruction sensor	<p>The door was closed before the door lock rail was fully retracted.</p> <ul style="list-style-type: none"> ■ 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.	<p>The water softener is set too low.</p> <ul style="list-style-type: none"> ■ Set the water softener to the correct water hardness. <p>There is no salt in the salt reservoir.</p> <ul style="list-style-type: none"> ■ Refill with reactivation salt. <p>The quality of the water for the final rinse was insufficient.</p> <ul style="list-style-type: none"> ■ Use water with a low conductivity value ■ If the machine is connected to a water softening cartridge, check it and replace as necessary. <p>The water from the DI water connection is not sufficiently demineralized.</p> <ul style="list-style-type: none"> ■ Check the external demineralization system. If necessary, replace the demineralization cartridge with a new one.

Frequently asked questions

Problem	Possible cause and solution
The wash items are flecked.	The rinsing agent container is empty. ■ Refill the container.
	The rinsing agent concentration is set too low. ■ Contact Miele Service and have the dispensing concentration reset.
The cleaning result is unsatisfactory.	Mobile units, baskets, modules and inserts were not suitable for the load. ■ Select mobile units, baskets, modules and inserts which are suitable for the task.
	Mobile units, baskets, inserts and modules were incorrectly loaded or overloaded. ■ Arrange the wash load correctly according to the information in the operating instructions. ■ Avoid overloading the mobile units, baskets, modules and inserts.
	The 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 wash load for too long. ■ Soiling should not be left on the load for more than 6 hours before machine reprocessing.
	A spray arm is blocked. ■ Ensure the spray arms are not obstructed when arranging the wash load.
	Injector nozzles on the mobile units, baskets, modules or inserts are blocked. ■ Check the nozzles and clean them as necessary.
	The filters in the wash cabinet are dirty. ■ Check the filters and clean them if necessary.
	Mobile units, baskets or modules were not correctly mounted on the water connection. ■ Check the adapter.

Frequently asked questions

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 reservoir and vent the dispensing system if necessary.
	The wash temperature was too high. ■ Select a different program. or ■ Reduce the wash temperature.
	The process chemicals used were too alkaline. ■ Use a milder process chemical. or ■ Reduce the concentration of process chemicals.
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.

Frequently asked questions

Spray arm monitoring/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	<p>The set spin speed has not been reached.</p> <ul style="list-style-type: none"> – Wash items are obstructing the machine or basket spray arms. <ul style="list-style-type: none"> ■ Arrange the wash items so that the spray arms can turn easily and start the program again. – The relevant spray arm is blocked. <ul style="list-style-type: none"> ■ 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. <ul style="list-style-type: none"> ■ 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.
Spray pressure exceeds tolerance	<p>The wash pressure differs from the reference value. Possible causes of fluctuations in the wash pressure include:</p> <ul style="list-style-type: none"> - defective water connections, - open adapters, - foam build-up. ■ Identify and resolve the cause of this. ■ The program is not interrupted. Nevertheless, you must reprocess the load.
Spray pressure fluctuating too much	<p>A program was interrupted because of severe fluctuations in the wash pressure. Possible causes of fluctuations in the wash pressure include:</p> <ul style="list-style-type: none"> - 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.
	Flow pressure at the water connection is less than 4.35 psi (0.3 bar/30 kPa). ■ Contact a qualified plumber.

Noises

Problem	Possible cause and solution
There is a 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 “Canceling a program.” ■ Arrange the wash load so it cannot obstruct the spray arms. ■ Make sure the spray arms are not obstructed. ■ Start the program again.
There is a rattling noise in the wash cabinet.	Items are not properly secured in the wash cabinet. ■ Cancel the program. To do this, follow the instructions in “Canceling a program.” ■ Rearrange the load so that items are secure. ■ Start the program again.
Knocking noise in the water pipes.	This may be caused by the on-site installation or the cross-section of the piping. It has no affect on the function of the machine. ■ Contact a qualified plumber.

Frequently asked questions

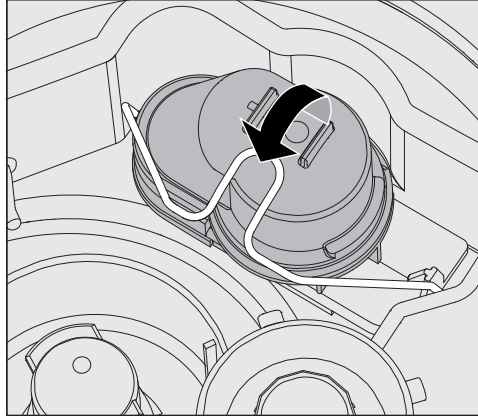
Printer/serial interface

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.

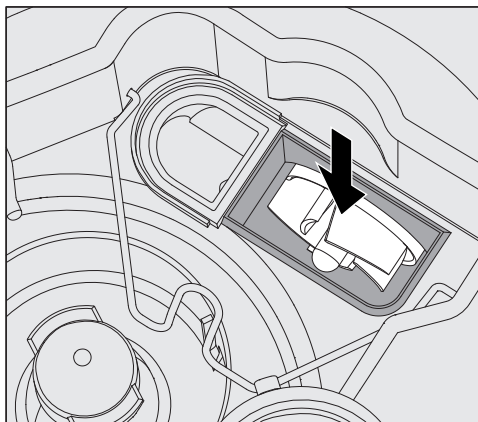
Cleaning the drain pump and non-return valve

If water was 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.
- Carefully replace the non-return valve and secure it with the clamp.

Frequently asked questions

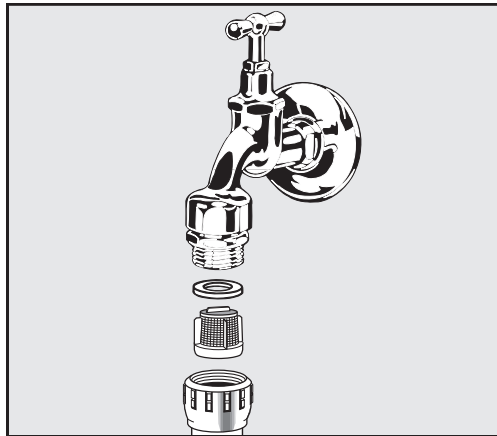
Cleaning the filters in the water inlet

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

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

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 seal ring 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 thread 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 Customer Service.

Contacting Customer Service

 Repairs may only be carried out by a Miele 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 “Frequently asked questions”.

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

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

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

Please tell Customer Service the fault message or code shown on the display.

Notification of serious incidents

If serious incidents occur that are related to the machine – 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, you may need to supply the different software version numbers. This information can be found in the menu “Additional settings.”

■ Open the menu as follows:

☰ button

▶ Additional settings

▶ Software version



The software units are listed in 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 alignment

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 2 3/8" (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 machines or furniture or in a suitable niche. The niche must be at least 23 5/8" (600 mm) wide and 23 5/8" (600 mm) deep.

- Building under:

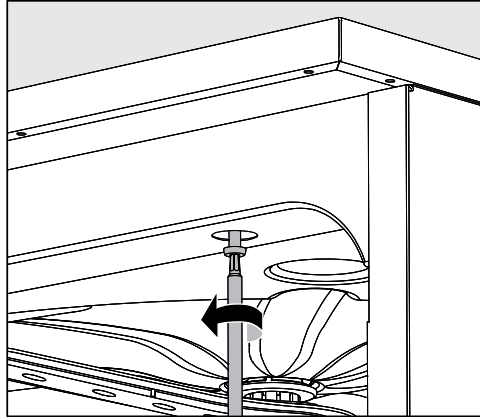
The machine can be built under a continuous countertop or the draining board of a sink. The space provided must be at least 23 5/8" (600 mm) wide, 23 5/8" (600 mm) deep and 32 5/16" (820 mm) high.

Removing the lid

Built-under a continuous countertop

To build the machine under a continuous countertop, 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.

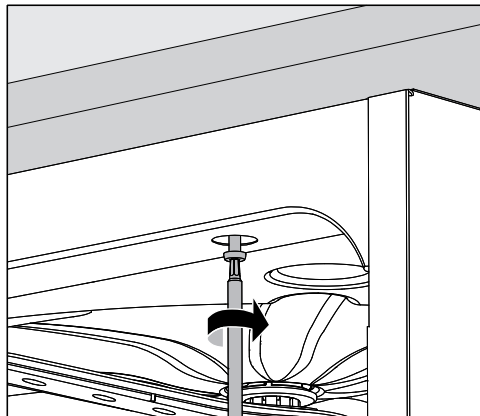
Steam condenser

To avoid steam damage to the countertop, the protective foil supplied (self adhesive 10 x 23" / 25 x 58 cm) must be applied underneath the countertop in the area of the steam condenser.

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.

Priming 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 the priming 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 (EMC) in accordance with EN 61326-1 and is suitable for operation in commercial environments, such as hospitals, medical practices, and laboratories plus other similar environments which are connected to the domestic electrical supply.

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

Flooring in the installation area must be wood, concrete, or tiled. Synthetic flooring must be able 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.

Electrical connection

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

- The electrical installation must be in compliance with current local and national safety regulations (DIN VDE 0100 in Germany).
- The connection to the power supply must comply with national regulations. The power outlet must be accessible after the machine has been installed. An electrical safety test must be carried out after installation and after any servicing work.
- If the machine is hard-wired to the power supply, a power switch 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 1" (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 circuit diagram supplied with the machine.
- For increased safety, it is highly recommended to protect the machine with a 30 mA residual current device (RCD).
- If replacing the power cord, use only original replacement parts from the manufacturer or a suitable wire with core wire ends.

Further notes on electrical connection are given in 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 machine can be converted to a different type of power supply. Please contact Miele for further details.

A data plate can be found on the inside of the door or on the back of the machine.

The wiring diagram is supplied with the machine.

Additional equipotential bonding

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

Peak-load negotiation

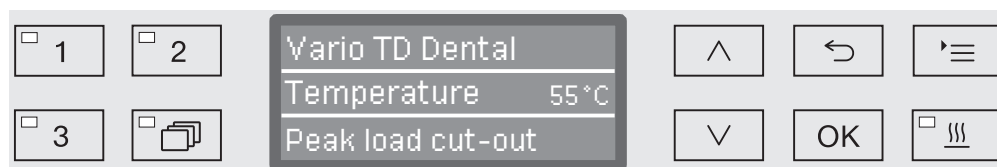
The machine is suitable for use in an energy management system. For this purpose, it must be technically adapted and the controls reset by Miele Service.

Please contact Miele Service for further information.

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 cut-out.

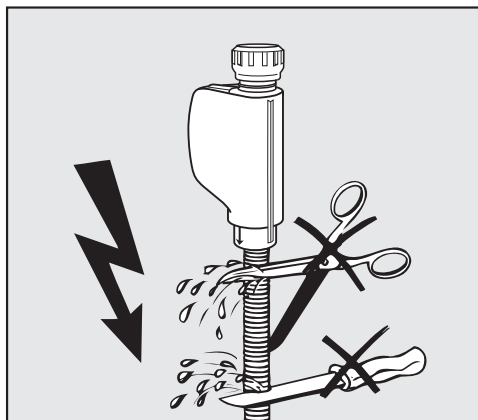
The third line of the display will alert you to the load cut-out, for example:



Connecting the water supply

 Water from the chamber 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 comply with local and national codes for drinking water quality. If the water supply has a high iron content, there is a danger of corrosion occurring on wash items made of stainless steel and on the machine itself. If the chloride content of the water exceeds 100 mg/l, the risk of corrosion to wash items made of stainless steel in the machine will be further increased.
- In certain regions (e.g., mountainous areas), the water composition may cause precipitates to form, requiring the use of softened water in the steam condenser.
- The machine complies with the applicable standards for the protection of drinking water.
- In the standard version, the washer-disinfector is equipped for connection to cold water (blue coded hose) and **optionally** hot water up to max. 150°F (65°C). Connect the inlet hoses to the cold and hot water faucets.
- If there is no hot water supply available, the inlet hose coded **red** must also be connected to the cold water supply.
- The intake hose without water protection device for the steam condenser is connected to the cold water faucet.
- The **minimum flow pressure** for the cold water is 14.5 psi (100 kPa) gage pressure, for the hot water 5.8 psi (40 kPa) gage pressure and for the DI water connection it is 4.4 psi (30 kPa) gage pressure.
- **Recommended flow pressure** for cold and hot water connections is ≥ 29 psi (200 kPa) gage pressure and for the DI water connection ≥ 29 psi (200 kPa) gage pressure, to avoid excessively long water intake times.
- The **maximum permissible static water pressure** is 145 psi (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.
- Shut-off valves with a $\frac{3}{4}$ inch screw thread must be provided on site for the connection. The valves must be easily accessible to allow the water inlet to be turned off when not in use.
- The water inlet hoses are approximately 5' 7" (1.7 m) long pressure hoses, DN 10, with $\frac{3}{4}$ 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 Customer Service.

DI water connection for a pressurized system with 4.4 - 145 psi (30-1,000 kPa) gage pressure

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

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

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

DI water connection for a non-pressurized system below 4.4 psi (30 kPa) gage pressure DI water ring line

DI water connections below 4.4 psi (30 kPa) gage pressure require the installation of an external booster pump, which can be requested through Miele Service. Installation of the pump must be carried out by Miele Service.

The machine can be connected to a ring line system for DI water. For this purpose, it must be technically adapted and the controls reset by 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, Miele recommends connecting it to a dual-chamber siphon.

⚠ As standard, the drain water of the machine will reach temperatures greater than 158°F (70°C).

At this temperature, drain water can damage the drain system.

In order to reduce the drainage temperature Miele offers an optional drain water cool-down kit.

- The on-site connection point, measured from the lower edge of the machine, should be positioned at a height between 11 3/4" (0.3 m) and 3' 3" (1.0 m). If it is lower than 11 3/4" (0.3 m), the drain hose must be laid in a coil at a height of at least 11 3/4" (0.3 m).
- The drainage system must be able to accommodate a minimum drainage flow of 4 gpm (16 l/min).
- The drainage hose is approx. 4' 7" (1.4 m) long and flexible with an internal diameter of 7/8" (22 mm). Hose clips for the connection are supplied.
- The drain hose must not be shortened.
- The drain hose can be extended using a connection piece to attach a further length of hose. The drainage length must not be longer than 13' (4.0 m), and the delivery head must not exceed 13' (4.0 m).
- Drainage noise can be considerably reduced if the drainage hose is positioned in an arc at a minimum height of 2' (0.6 m) and a max. height of 3' 3" (1.0 m) measured from the bottom edge of the machine.

Also refer to the supplied installation diagram!

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 compliant with 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 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 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.

Program chart

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 Dental	Cleaning and disinfection program according to EN ISO 15883 for processing wash loads with normal soiling.	(x)	CW 1 Min	
Vario TD Dental +	Washing and disinfection program with increased wash pressure and increased water levels according to the Vario TD Dental program. Program for the combination of the upper basket A 105/1 and the module A 315.	CW 1 Min		
Vario TD Intensive	Cleaning and disinfection program according to EN ISO 15883 for processing wash loads with heavy soiling.	CW 1 Min		
Special 93°C-10'	For cleaning and thermal disinfection at 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 pre-rinsing soiling, residual disinfecting agent, to prevent items drying out, and to prevent incrustation before running a full load.			
Drain	To drain away wash water, e.g., after a program has been canceled (see "Operation/Canceling a program").			

Program chart

Program sequence								
Clean		Interim rinse				Final rinse		Drying
1	2	1	2	3	4	1	2	
CW70 131°F/ 55°C DOS 1 5 Min		WW DOS 3 1 Min	WW 1 Min			DI 199°F/ 93°C 5 Min		X
CW70 55°C DOS 1 10 Min		HW DOS 3 1 Min	HW 1 Min			DI 199°F/ 93°C 5 Min		X
DI 113°F/ 45°C DOS 1 20 Min	DI 113°F/ 45°C DOS 1 20 Min	DI 149°F/ 65°C DOS 1 5 Min	DI DOS 3 1 Min	DI		DI 199°F/ 93°C 5 Min		X
CW70 199°F/ 93°C DOS 1 10 Min		WW DOS 3 1 Min	WW 1 Min			DI 167°F/ 75°C 3 Min		X
		CW 1 Min						

CW = cold water

HW = hot water;

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

DI = fully demineralized water

Min = Holding time in minutes

(x) = Optional program block; activation on request through Miele Technical Service.

DOS 1 = Cleaning agent

DOS 2 = Rinsing agent (door dispensing)

DOS 3 = Neutralizing agent

Technical details

	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 9/16"	520 mm 530 mm 474 mm/520 mm
Weight (net)	163 lbs	74 kg
Max. load capacity of open door	81.6 lbs	37 kg
Voltage, rated load, fuse rating	See data plate	See data plate
Power cord	Approx. 5' 9" ft.	Approx. 1.8 m
Water connection temperature: Cold water/steam condenser Hot water (optional)/DI water (optional)	Max. 68°F Max. 150°F	Max. 20°C Max. 65°C
Static water pressure	max. 145 psi	Max. 1,000 kPa pressure
Minimum water connection flow pressure: Cold water/steam condenser Hot water (optional) DI water (optional)	14.5 psi 5.8 psi 4.4 psi	100 kPa pressure 40 kPa pressure 30 kPa pressure
Recommended water connection flow pressure: Cold water/hot water (optional) DI water (optional) 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): 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)	up to 4,921 ft*	Up to 2,000 ft (m)*
Type of 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 dry- ing 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	
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 Customer Service.

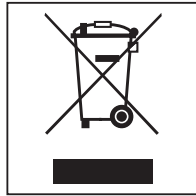
Disposal of packaging material

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.

Ensure that any plastic wrappings, bags, etc. are disposed of safely and kept out of the reach of children. Danger of suffocation!

Disposal of your old appliance

Electrical and electronic appliances contain valuable materials. They also contain certain substances, compounds and components which were essential for the proper functioning and safe use of the equipment. Handling these materials improperly by disposing of them in your household waste can be harmful to your health and the environment. Therefore, please do not dispose of your old appliance with regular household waste and follow local regulations on proper disposal.



Consult with local authorities, dealers or Miele in order to dispose of and recycle electrical and electronic appliances. Miele assumes no responsibility for deleting any personal data left on the appliance being disposed. Please ensure that your old appliance is kept away from children until removal. Observe safety requirements for appliances that may tip over or pose an entrapment hazard.

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

U.S.A.

Miele, Inc.

National Headquarters

9 Independence Way
Princeton, NJ 08540
Phone: 800-991-9380
www.mieleusa.com/professional
prosales@mieleusa.com

Technical Service & Support

Phone: 800-991-9380
proservice@mieleusa.com



Miele & Cie. KG
Carl-Miele-Straße 29, 33332 Gütersloh, Germany