Miele

Operating instructions
Laboratory washer and washer for industrial applications
PLW 8636 LAB
PLW 8636 LAB MON

Always read the operating instructions before setting up, installing and commissioning the machine. This prevents both personal injury and damage to the machine.

en-GB

M.-Nr. 12 751 780

Contents

Contents

Contents

Symbols and conventions used in this document

Warnings

⚠ Warnings contain information which is important for safety. This alerts you to the potential danger of injury to people or damage to property.
Read these warning notes carefully and observe the procedural instructions and codes of practice they describe.

Notes

Notes provide information of particular importance that must be observed.

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

■ Enter a value.

Display

Display text can be identified from the special font.

Example:

Settings

Definition of terms

Machine

In these operating instructions, the laboratory washer is referred to as “the machine”.

Load carrier

The term “load carrier” is generally used when mobile units, baskets, modules and inserts are not defined in more detail.

Load items

The term “load items” is used wherever the items to be processed are not defined in any further detail.

Wash water

The term “wash water” refers to water or to a mixture of water and process chemicals.

Process chemicals

All media dispensed during a programme sequence are generally referred to as process chemicals, e.g. cleaning agents.

Wash blocks

The term “wash block” is used for all programme blocks with the exception of Drain, Flush and Drying.

General description

The laboratory washer and washer for industrial applications is designed for use in laboratories (e.g. chemical and biological laboratories in universities, research institutes and industry) for reprocessing laboratory glassware and utensils.
The laboratory washer and washer for industrial applications is also designed for use in various areas of industry for cleaning parts during production under appropriate conditions.

The product can be operated as a stand-alone machine. The manufacturer of the entire system is responsible if the product is operated as part of a system.

How it works

The laboratory washer and washer for industrial applications is used for machine reprocessing including disinfection and drying of laboratory glassware and utensils as well as for cleaning including disinfection and drying of parts in laboratories and in industry.
The principle of machine reprocessing or cleaning of parts is based on a spraying process using water-based media. The process parameters are stored in programmes in which the water quality, temperature and activation time as well as the process chemicals and system components used are selected based on the nature of the soiling and the type of parts being reprocessed or cleaned.

Purpose

This laboratory washer and washer for industrial applications is specifically designed for use in laboratories and laboratory-like areas in the industrial sector and has the necessary reprocessing programmes.

The laboratory washer and washer for industrial applications is designed to reprocess reprocessable laboratory glassware, utensils and similarly categorised components using water-based media.

Reprocessing comprises cleaning, rinsing, disinfection (where required) and drying in combination with:

- The process chemicals selected based on the desired result
- The use of load carriers (mobile units, baskets, modules, inserts, etc.) tailored to specific load items

Information issued by the manufacturer of the load items should be observed at all times.

Exclusions

Only water-based media and water-based cleaning agents are permitted for the cleaning process. The laboratory washer and washer for industrial applications must not be used with solvents or inflammable media.

Load

Load items from laboratory applications, e.g.:

- Vessels such as beakers, flasks, cylinders and test tubes
- Measuring vessels such as measuring cylinders, volumetric flasks and pipettes
- Dishes such as petri dishes and watch glasses
- Plates such as slides and sequencing plates
- Small items such as lids, magnetic stirring rods, spatulas and stoppers
- Other items such as boxes, plastic flasks and containers, metal parts, pipe and hose pieces and funnels

Frequency of use

The laboratory washer and washer for industrial applications can run up to 20 standard programmes per day, 7 days a week.

It is intended for use in life tests of load items (continuous operation) up to a maximum of 999 cycles with corresponding pauses between the programme sequences.

Intended user group

This laboratory washer and washer for industrial applications is designed exclusively for professional use.

All persons who use the laboratory washer and washer for industrial applications must always:

- Have sufficient expertise in the reprocessing of load items
- Be instructed on how to use the laboratory washer and washer for industrial applications by:
  - Miele Customer Service
  - Customer Service specially trained and authorised by Miele
  - A person who has previously received such instruction

Use environment

Installation site

The laboratory washer and washer for industrial applications is designed for use in laboratories, clean rooms and various areas of industry and should be connected in combination with a residual current device.

The installation must be carried out in rooms in which ambient conditions meet the following requirements:

- Draught-free and dry
- Equipped with suitable room ventilation
- Solid and even surface, observe floor load-bearing capacity
- No direct sunlight

Appropriate use

Ambient conditions

The laboratory washer and washer for industrial applications should only be operated in locations in which the ambient conditions meet the following requirements:

Operation in accordance with IEC/EN 61010-1	
Ambient temperature	5–40 °C
Relative humidity	
Minimum	10 %
Maximum for temperatures up to 31 °C	80 %
Linear decrease for temperatures up to 40 °C	50 %
Altitude above sea level	Up to 2000 m
Background noise level	Not applicable
Degree of soiling	1 or 2

Transport and storage conditions

The following ambient conditions must be observed when transporting and storing the laboratory washer and washer for industrial applications:

Ambient temperature	-20 – +60 °C
Relative humidity	10–85 %
Air pressure	500–1060 hPa

Foreseeable misuse

Improper use can be caused by incorrect loading, unsuitable load items, incorrect programme selection or unsuitable media, e.g. process chemicals or water quality.

User profiles

Day-to-day use

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 a basic knowledge of machine reprocessing of load items.
Day-to-day work is carried out using the following levels:

- Level 1 – without logging in
- Level 2 - Operation

Service work

Adaptations of the machine, e.g. to on-site conditions, require additional specific knowledge of the machine.
Service work is carried out using the following user level:

- Level 3 - Technician
- Level 4 - Administration

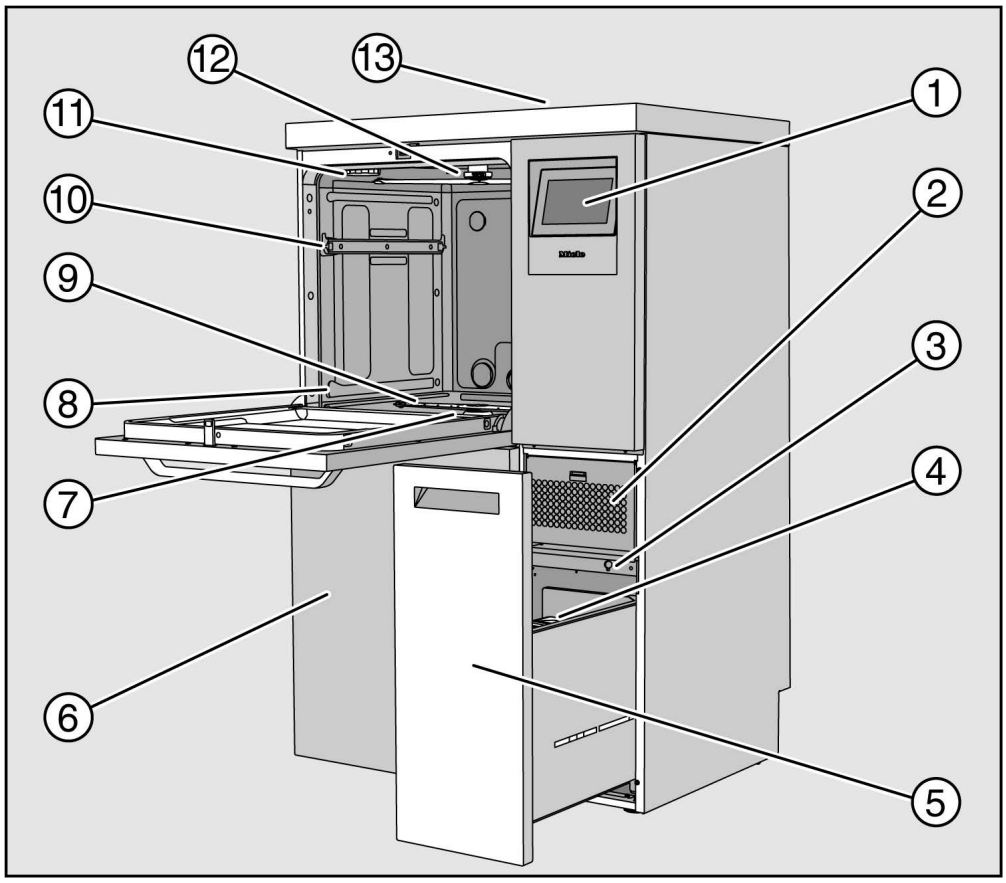
Administration

Changes to the reprocessing process and performance testing also require specialist knowledge about machine reprocessing of load items and about process technology.
Administrative work is carried out using the following user level:

- Level 4 - Administration

Appliance overview

Front



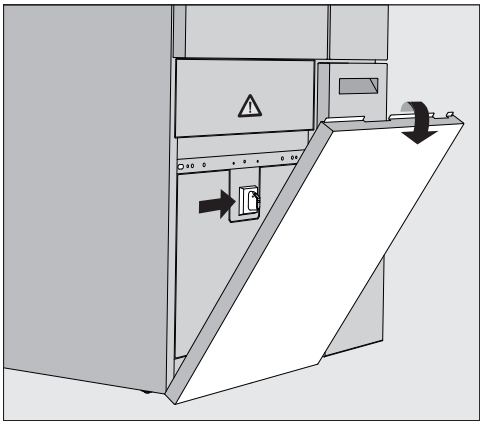
① Display
② Drying unit
③ Connection for Customer Service
④ Dispenser canister for process chemicals
⑤ Drawer with containers and connections for process chemicals (DOS drawer)
⑥ Service flap
⑦ Filter combination
⑧ Rails for baskets and mobile units
⑨ Lower machine spray arm
⑩ Upper basket runners
⑪ Holder for reactivation salt container
⑫ Upper machine spray arm
⑬ Test point for performance qualification for Customer Service, only visible with lid removed

Rear

On the rear of the machine, see installation plan:

- Water connections
- Electrical connection
- Network connection
- Equipotential bonding
- Passage for connecting external containers for process chemicals
- Potential-free contacts (optional)

Power switch



The power switch for disconnecting the machine from the electricity supply is located behind the service flap.

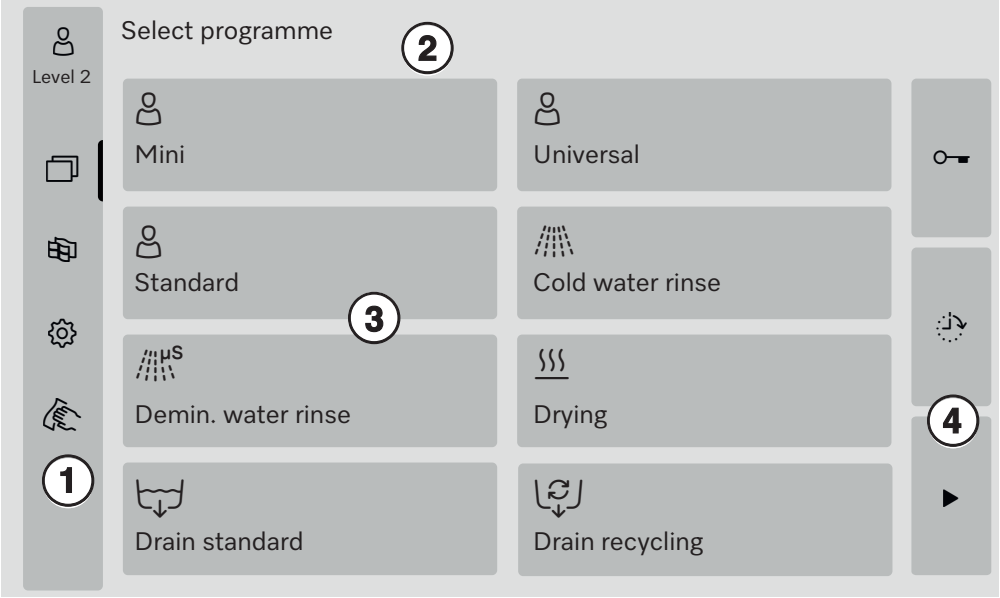
Data plate

The data plate can be found behind the service flap and on the rear of the machine.

Control elements on the display

The machine display shows the control elements light on a black background. In these operating instructions, the display is shown as black on a light background in order to improve legibility.

Main menu



① Selection area
② Header
③ Programme overview
④ Buttons

Symbols in the main menu

Symbol	Description
	Level 1 – without logging in
	Level 2 - Operation
	Level 3 - Technician
	Level 4 - Administration
	Select programme
	Opens the menu for selecting the display language
	Opens the menu overview of the system functions
	Locks the display, e.g. for surface disinfection
	Opens the list with current messages, if available
	“Open door” button
	“Delay start” and “Programme test” button
▶	“Start” button
■	“Stop” button while a function is active

Display of active elements

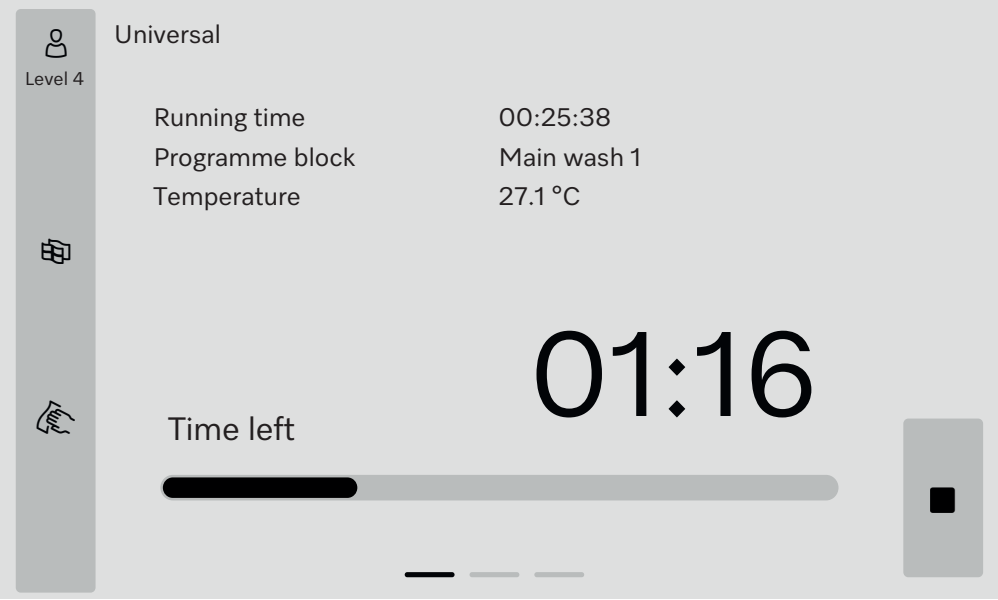
The selected or activated elements are displayed in yellow. How the elements are presented is adapted to the respective content of the display.

Elements	Display in yellow
Selection area on the left in the main menu	Bar next to the symbol
Menu and menu option under ⚙ System functions	Name of the menu or menu option
Selection area on the left and right under ⚙ System functions	Name of the menu
Button in the programme overview and language selection	Button labels
Function active	Bar at the top left in the button
List entry in Release programmes and Reprint wash protocols	☑

Programme sequence display

The Programme sequence display contains 3 pages.

Page 1

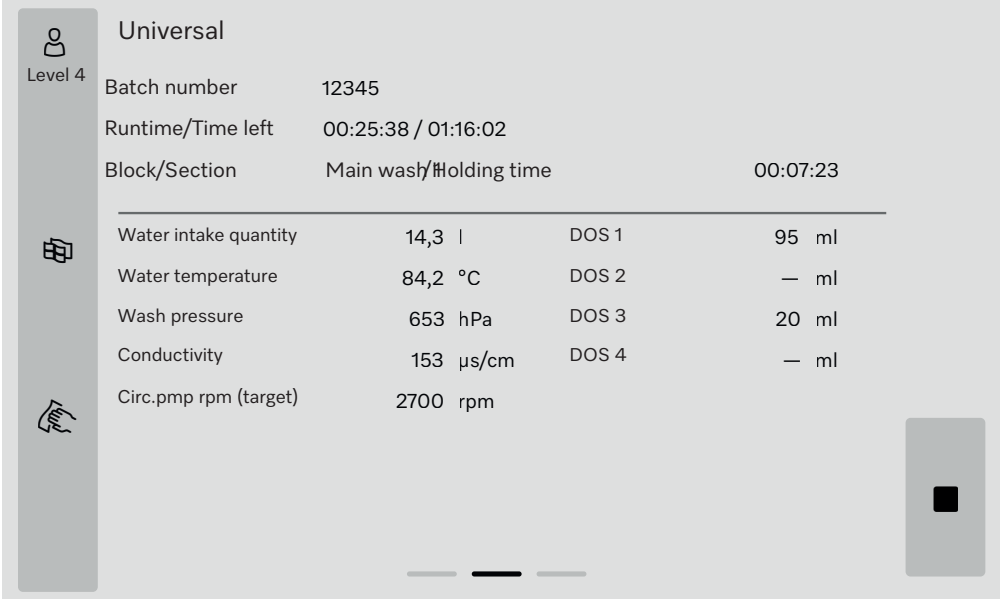


Once the programme has started, the display shows the programme name, the programme running time, the current programme block and the temperature reached.
The progress bar indicates the ratio between the programme running time and the time left.
The colour of the progress bar corresponds to the current status of the machine:

- Grey for ready for use
- Yellow for a programme that is currently running
- Green for a programme that has ended successfully
- Red for faults

Page 2

More parameters are listed in table format on the second page:



- Programme name
- Batch number
- Runtime/Time left
- Block/Section
- Selected programme parameters with the actual values achieved*

* The setpoint value is displayed differently for the speed of the circulation pump.

Page 3
(from level 3)

Information is displayed in the form of an in/out table on the third page. The overview of input signals and output signals is used by Customer Service or authorised technicians.
Other parameter values can be read on the right-hand side:

Parameter	Description
TWC	Water temperature, control
TWS	Water temperature, monitoring
TAC	Air temperature, control
TEC	Temperature management, control
CPT	Wash pressure
LF	Conductivity
SD1	Speed of spray arm 1/top machine spray arm
SD2	Speed of spray arm 2/load carrier spray arm 1, if present
SD3	Speed of spray arm 3/load carrier spray arm 2, if present
SD4	Speed of spray arm 4/bottom machine spray arm
FCW	Flow rate sensing for cold water and hot water
FAD	Flow rate sensing for demineralised water
FRC	Flow rate sensing for recycling water
FD1	Flow rate sensing for DOS 1
FD2	Flow rate sensing for DOS 2
FD3	Flow rate sensing for DOS 3
FD4	Flow rate sensing for DOS 4

⚠ Risk to health and risk of damage if the operating instructions are not followed.
Failure to follow the operating instructions – and in particular the safety instructions and warnings they contain – may result in persons being seriously injured or property being seriously damaged.
Read these operating instructions carefully before using the machine. This will prevent both personal injury and damage to the machine.
Keep the operating instructions in a safe place.

Correct application

▶ Use of the machine is only permitted for the applications expressly approved 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 laboratory glassware and utensils which are designated as reprocessable by the manufacturer. The information provided by the manufacturer of the load items must be observed.

▶ This machine is intended for indoor use only.

Risk of injury

Please pay attention to the following notes to avoid injury

▶ The machine may only be commissioned, repaired and maintained by Miele Customer Service or a qualified service technician authorised by the manufacturer of the machine. 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.

▶ The electrical safety of the machine can only be guaranteed when it is correctly earthed. It is essential that this standard safety requirement is observed and regularly tested. If in any doubt, please have the electrical installation inspected by a qualified electrician.

▶ A damaged or leaking machine could be dangerous and compromise your safety. Disconnect the machine from the mains immediately and call the Miele Service Department.

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

▶ 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 load and the machine.

▶ Take care when handling chemical agents. These may contain irritant, corrosive or toxic ingredients.
Please observe the chemical agent manufacturer's safety instructions and safety data sheets.
Wear protective gloves and goggles.

▶ Take care not to inhale powder agents. Chemical agents can cause chemical burns in the mouth and throat or lead to asphyxiation.

▶ The machine is designed for operation with water and recommended additive chemical agents only. Organic solvents and flammable liquid agents must not be used in it.
This could cause an explosion, damage rubber or plastic components in the machine and cause liquids to leak out of it.

▶ The water in the cabinet must not be used as drinking water.

▶ Do not sit or lean on the opened door. This could cause the machine to tip up and be damaged or cause an injury.

▶ Be careful when sorting items with pointed ends. Position them in the machine so that you will not hurt yourself or create a danger for others.

▶ Broken glass and ceramics can result in serious injury when loading or unloading. Damaged glass or ceramic load items must not be reprocessed in the machine.

▶ When using this machine in the higher temperature ranges, be especially careful not to scald or burn yourself or come into contact with irritant substances when opening the door. Where disinfecting agents are used there is a danger of inhaling toxic fumes.

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

▶ Should personnel accidentally come into contact with toxic vapours or chemical agents, follow the emergency instructions given in the manufacturer's safety data sheets.

▶ After using the hot air drying unit, open the door to allow the everything in the cabinet from the load itself to the mobile units, modules and inserts to cool down.

▶ Load carriers and load items must be allowed to cool down before removal. Empty any remaining water into the wash cabinet or an on-site slops basin before removing items.

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

▶ There may be a risk of slipping if liquid is spilt on the floor depending on the type of flooring and footwear being worn. 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.

▶ The machine must be disconnected from the mains electricity supply before any maintenance or repair work is carried out.

Quality assurance

The following points should be observed to assist in maintaining quality standards when processing laboratory glassware and utensils to avoid damage to the loads being cleaned.

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

▶ It is the responsibility of the operator to demonstrably ensure reprocessing standards in routine operation. Process results should be inspected and documented on a regular basis.

▶ For thermal disinfection, use temperatures and temperature holding times to achieve the required infection prophylaxis in accordance with current health and safety regulations.

▶ Make sure items being washed are suitable for machine reprocessing and are in good condition. Plastic items must be thermally stable. Nickel plated items and aluminium items can be machine processed using special procedures only.
Items containing iron, and soiling containing residual rust must not be placed in the cabinet.

▶ Chemical agents can, in certain circumstances, cause damage to the machine. Always follow the recommendations of the chemical agent manufacturer.
In case of damage or doubt about compatibility, please contact Miele.

▶ Cleaning agents containing chlorine can damage the elastomers of the machine.
If the use of cleaning agents containing chlorine is required, a maximum temperature of 75 °C in the “Main wash” programme blocks is recommended.
Cleaning agents containing chlorine must not be used in machines supplied (ex works) with special oil-resistant elastomers for oil and grease applications.

▶ 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 any accessories used with it caused by chemical agents, soiling and any reaction between the two please read the notes in “Chemical processes and technology”.

▶ Where a chemical agent is recommended on technical application grounds (e.g. a cleaning agent), this 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 publicised 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 (e.g. oxyhydrogen explosion).

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

▶ 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 chemical agents, water quality etc. are discussed with the Miele Application Technology specialists.

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

▶ Load carriers which hold the load items must be used only as intended.
Lumened load items must be thoroughly cleaned, internally and externally, with the wash water.

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

▶ Empty any containers or utensils before loading them.

▶ The amount of residual solvents and acids on items going into the cabinet should be minimal.
There should be no more than a trace of any solvents with a flash point of below 21 °C.

▶ 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 vented. If this is not done, components can be damaged.

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

▶ Please follow the advice on installation in these operating instructions and the installation plan.

Safety with children

▶ Children must be supervised in the vicinity of the machine. Do not allow children to play with the machine. They could get locked inside it.

▶ Children must not use the machine.

▶ Keep children away from chemical agents. These can cause burning in the mouth, nose and throat if swallowed, or inhibit breathing. Keep children away from the machine when the door is open. There could still be residual chemical agent in the cabinet. Observe the safety data sheets for the chemical agent and seek medical advice immediately if a child has swallowed chemical agent or got it in the eyes.

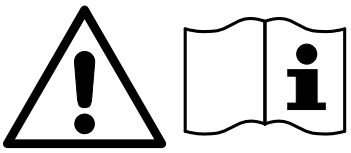
Use of components and accessories

▶ 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 original load carriers from the machine manufacturer. Using load carriers made by other manufacturers or making modifications to original accessories can result in an unsatisfactory cleaning and disinfection result.

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

Symbols on the machine



Warning:
Observe the operating instructions!

Warning:
Danger of electric shock!

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

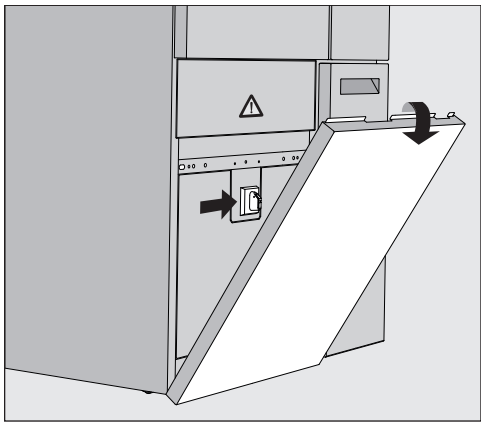
Risk of being cut:
Wear cut-resistant protective gloves when transporting and setting up the machine!

Disposing of your old machine

▶ Please note that the machine may have contamination from blood, bodily fluids, pathogenic germs, facultative pathogenic germs, genetically modified material, etc. in it and must be decontaminated before disposal.
For environmental and safety reasons ensure the machine is completely drained of any residual water, chemical residues and cleaning agent. Observe safety regulations and wear safety goggles and gloves. Make the door lock inoperable, so that children cannot accidentally shut themselves in. Then make appropriate arrangements for its safe disposal.

Power switch

The power switch for disconnecting the machine from the electricity supply is located behind the service flap.



Switching the machine on

- Open the DOS drawer.
- Hold the service flap on the right and left of the top end and pull it out of the holder.
- Set the power switch to **I ON** for operation.
- Press the service flap onto the machine until it clicks into place.
- Close the DOS drawer.

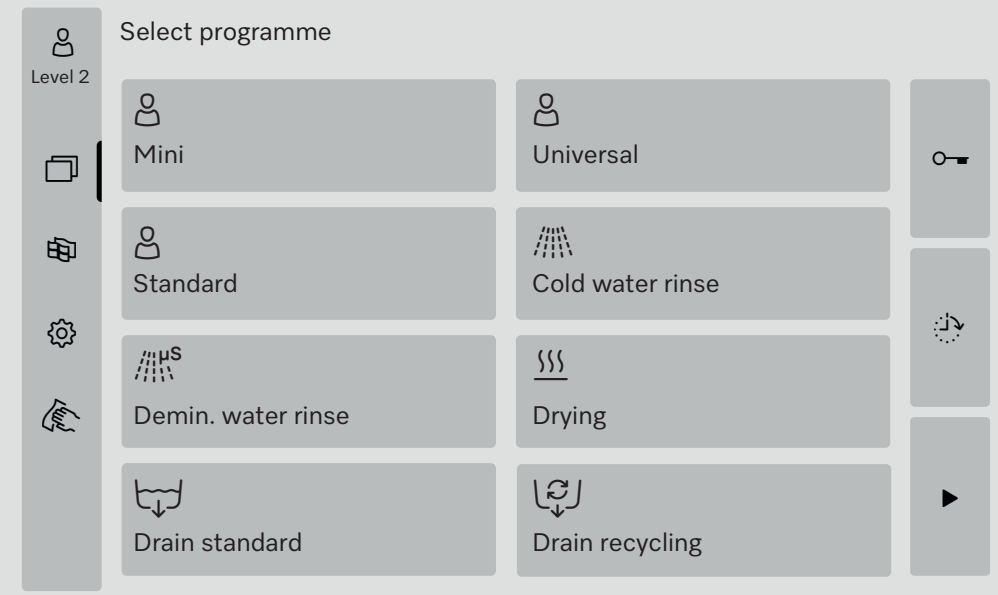
Once the start process has finished, the machine is ready for operation.

Switching the machine off

- Open the DOS drawer.
- Hold the service flap on the right and left of the top end and pull it out of the holder.
- Set the power switch to **0 OFF** for operation.
- Press the service flap onto the machine.
- Close the DOS drawer.

Main menu

The main menu of the machine is split into a header, selection area on the left, programme selection area in the middle and buttons on the right.



Actions in the main menu

The following actions can be performed using the symbols in the selection area:

- Log in and log out
- Select a programme, depending on the logged-in level (see section “Operation”)
- Change the display language
- Open the ⚙ System functions menu to adjust the machine settings, depending on the logged-in level (see section “⚙ System functions”)
- Lock the display, e.g. for surface disinfection (see section “Maintenance”, “Cleaning machines”, “Locking the display”)
- Close pop-ups with messages (see section “Fault messages and instructions”, “Representation of faults on the display”)
- Open the list of active messages (see section “Fault messages and instructions”, “List of active messages”)

The following actions can be performed using the buttons on the right-hand side:

- Open the door
- Set a delay start (see section “Operation”)
- Start a programme test for a programme (see section “Operation”)
- Start the selected programme, depending on the logged-in level (see section “Operation”)

Changing the level

Access to the various functions of the machine is split across 4 levels. The entries shown on the machine display depend on the logged-in level.

Symbol	Description
	Level 1 – without logging in
	Level 2 - Operation
	Level 3 - Technician
	Level 4 - Administration

Login

- Press the button in the selection bar to open the login input window.
- Enter the password for the desired level and confirm your entry with **OK**.

The logged-in level is displayed in the selection bar, e.g. Level 4. The machine display shows the enabled functions.

Logout

A logged-in level should be logged out if the user is absent for a long period of time, e.g. to protect the machine from unauthorised access.

- Press the button in the selection bar.

The logged-in level is logged out and the symbol for level 1 is displayed in the selection bar.
The enabled functions of higher levels are locked in the machine.

Auto-logout

The logged-in level is automatically logged out if no button has been pressed on the display within the specified time period.
The time period is set in the Settings | Code/Auto-logout menu (see section "System functions", "Settings/Codes (changing) menu").

Changing the display language

Changing the display language has no impact on the set system language. Reports and printouts are issued in the system language.

- Press the button in the selection bar of the display.

The Select display language menu is displayed.

Press the button to exit the language selection menu if you do not want to change the set language.

- Press the button for the language you want.

The header displays the heading Select display language in the selected language.

- Press the button.

The message Function active, please wait will appear on the display.
Once the function has finished, the original menu will appear again in the display.

Door lock

The machine is equipped with an electronic door lock.

The door can only be opened if:

- The machine is connected to the electrical supply
- The power switch on the machine is set to **I**
- No programmes are running
- The ⊶ button is enabled

Opening the door

After the programme sequence, the wash cabinet, the door, the load carriers and the load items may be hot. At a temperature of 60 °C or above, a message appears in the display:
ℹ Caution, risk of burns
Hot surfaces

- Press the ⊶ button on the display.
- Take hold of the handle on the door and fold the door down.

Closing the door

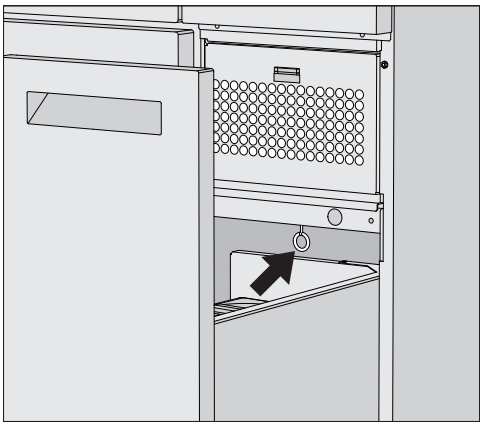
⚠ Risk of injury caused by crushing.
Do not put your hand inside the door as it is closing.

- Fold the door up until it engages in the door lock.

Opening the door using the emergency release

⚠ Danger of scalding, burning and chemical burns!
If the emergency release is operated during a programme sequence, hot water and process chemicals can escape. Where disinfectants are used, there is also a danger of inhaling toxic fumes.
Only open the door using the emergency release when strictly necessary.

- Disconnect the machine from the electricity supply.



- Open the DOS drawer.
- Pull the emergency release ring downwards.

The door will audibly unlock. You can now open the door.

Water hardness

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

Mains water with a water hardness of 0.71 mmol/l or more must be softened. This takes place in the built-in softener, in a range of 0.18–10.7 mmol/l.
The softener requires reactivation salt for this and the exact hardness of the mains water must be set.

The softener is set to a water hardness of 3.39 mmol/l at the factory.

If the water hardness is different, including below 0.71 mmol/l, the factory settings must be changed.

If the water hardness fluctuates, always set the highest value, e.g. 3.1 mmol/l for 1.4–3.1 mmol/l.

Your local water authority can give you information about the exact mains water hardness in your area.
In the event of a fault, it will help the service technician if you know the hardness of your local water supply. Record the hardness of the mains water here:

_____mmol/l

Setting the water hardness

The water hardness can be set within a range of 0.18–10.7 mmol/l (see section "⚙ System functions", "Maintenance and service, Softener menu").

Reactivation display

If the following display appears, the built-in softener is exhausted and can no longer supply softened water.
ℹ F845 Carry out reactivation.
The softener must be reprocessed using reactivation salt.

Reprocessing the water softener

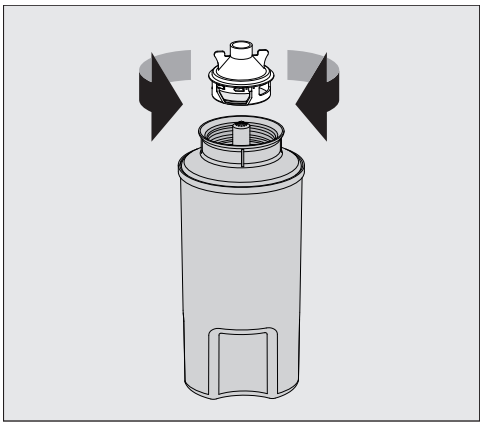
Only use special, coarse-grained reactivation salts or pure evaporated salts with a grain size of approx. 1–4 mm.
Never use other salts, e.g. table salt, cattle salt or de-icing salt. These other salts may contain insoluble additives which can impair the functioning of the water softener.

The container holds approx. 2 kg of salt.

If only evaporated salts in finer grain sizes are available, please contact Miele Customer Service.
Evaporated salts with a grain size larger than 4 mm cannot be used.

⚠ Risk of chemical burns
Inadvertently filling the salt container with cleaning agent will cause serious damage to the water softener and the filter cap can get clogged.
This builds up pressure in the salt container. When removing the salt container, there is a risk of chemical burns from the splashing, corrosive, alkaline solution and a risk of injury!
Before filling the salt container make sure that you have picked up the right packet of salt.

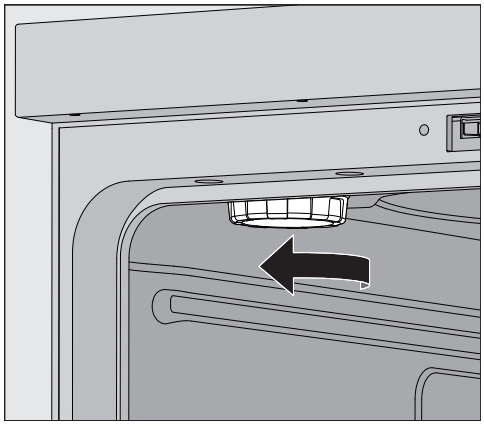
Filling the salt container



- Unscrew the filter cap from the salt container.
- Fill the salt container with reactivation salt.
- Screw the filter cap onto the salt container.

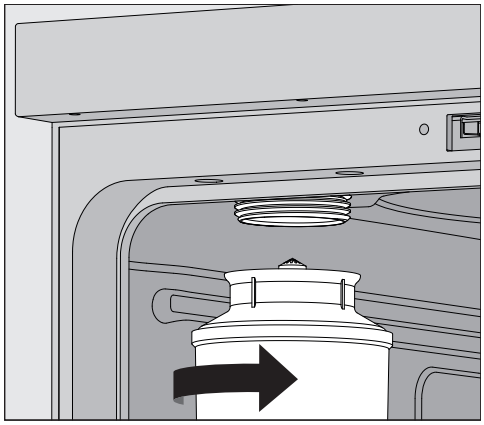
Softener

Fitting the salt container



- Remove the upper basket from the wash cabinet.
- Unscrew the plastic lid from the connection at the top left of the wash cabinet.

⚠ Risk of scalding
There is a small amount of residual water in the plastic lid, which may be very hot depending on the previous programme sequence.
Carefully unscrew the lid and empty the residual water into the wash cabinet.



- Fit the salt container on the connection and screw it tight.

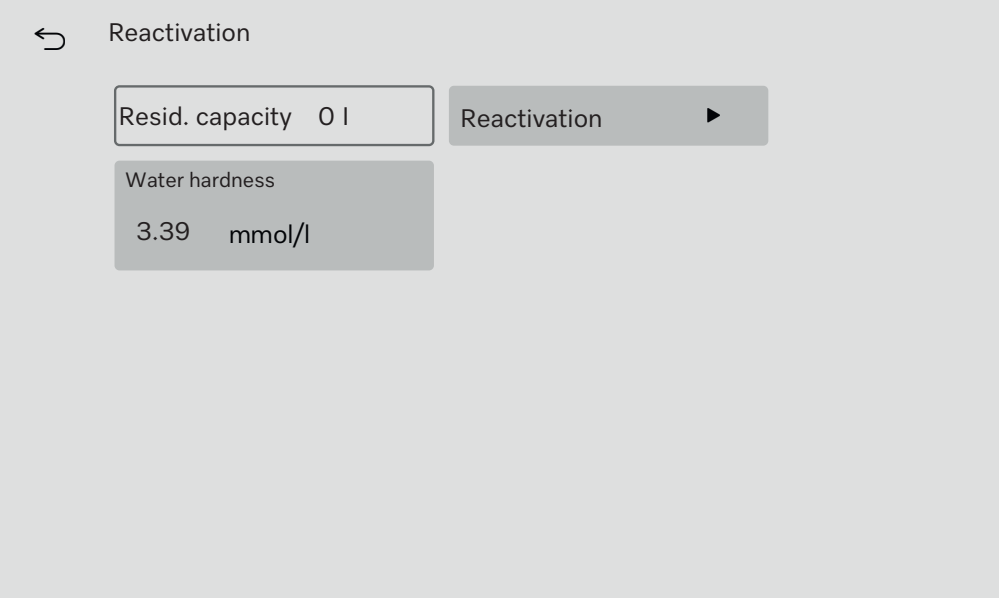
Performing reactivation

- Close the door.

At least Level 2 must be logged in on the machine.

- Go to the ⚙ System functions > Maintenance and service > Softener menu.

The following menu will appear on the display:



- Start the Reactivation ▶ function.

Reactivation will run automatically.

The flow pressure in the water inlet must be at least 200 kPa.
If the flow pressure is below 200 kPa or the flow pressure fluctuates greatly, the softener cannot be reprocessed properly. After reactivation is complete, there are still traces of salt in the salt container. To completely dissolve the salt and rinse out the softener, run the Reactivation function again.

After that:

- Open the machine door.
- Carefully unscrew the salt container so that any water pressure can be released.

If the water pressure in the water softener is too high, the salt container cannot be released by hand. Wait 10–30 minutes. If the water pressure has not reduced sufficiently during this time, contact Miele Customer Service.

- Make sure to empty the salt container outside the wash cabinet.
- Screw the plastic lid onto the connection in the wash cabinet.
- Refit the upper basket.
- Wash out the salt container and the filter cap with clean water.
- Rinse the wash cabinet, e.g. with the Cold water rinse programme, to remove salt residues and salt solution.

Saline solution and salt residues can lead to corrosion and must therefore be rinsed out immediately.

Mobile units, baskets, modules and inserts

This laboratory washer and washer for industrial applications 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 load items to be washed.

Select load carriers and other 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 load carriers (if available).

Miele offers suitable load carriers for all areas of application defined in “Appropriate use”, 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 or other irrigation connectors are equipped with one or several connectors for the water supply at the rear. When these are slid into the machine, the connections couple automatically with the water supply ports in the rear panel of the cabinet. The mobile units and baskets are held in position by the wash cabinet door when it is closed.
Unused couplings in the rear panel of the wash cabinet are closed mechanically.

Height-adjustable upper baskets

Height-adjustable upper baskets can be adjusted between 3 positions with 3 cm between each position to accommodate load items of different heights.

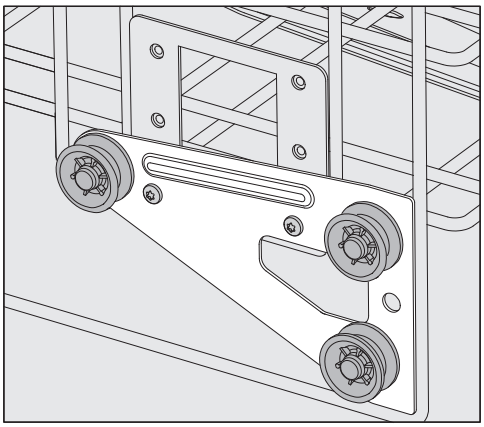
To adjust the height, the brackets with rollers on the side of the upper basket and the water connector at the back of the basket have to be moved. The roller brackets are each secured to the upper basket by 2 screws. The water connector consists of the following components:

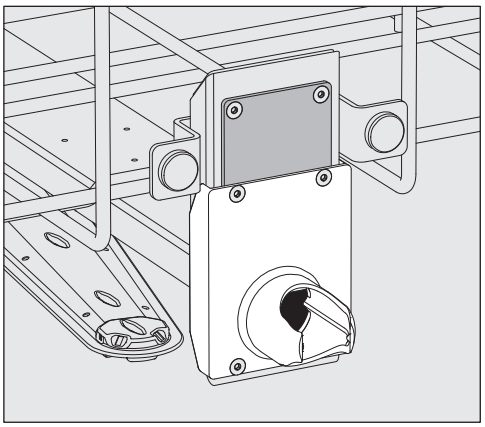
- A stainless steel plate with 2 openings
- A plastic connector
- 6 screws

Only adjust upper baskets horizontally. The baskets are not designed for tilting (one side up, one side down).
Adjusting the height alters the vertical clearance of the upper and lower baskets.

Setting the upper position

- 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.

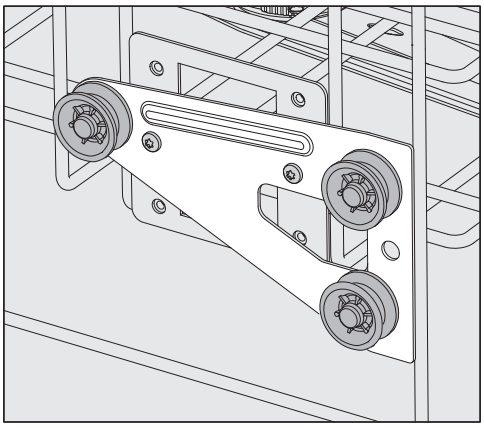


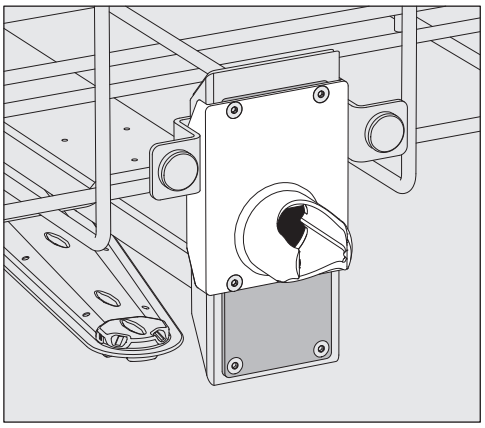


- Move the roller brackets on both sides to the lower position and screw them tight.
- Place the stainless steel plate over the openings in the water inlet pipe so that the top opening is covered. Screw the stainless steel plate to the top with 2 screws. Insert the connector into the lower opening of the stainless steel plate so that the centre opening is covered. Screw the connector on with 4 screws.

Setting the centre position

- 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.

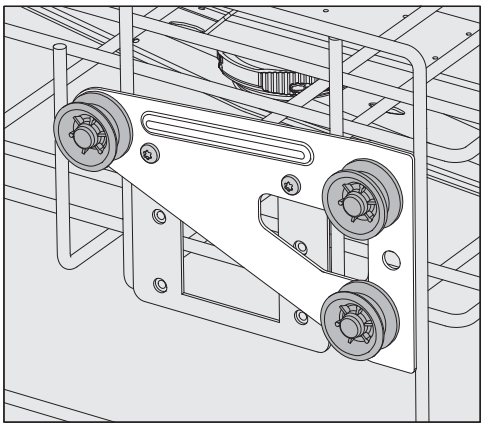


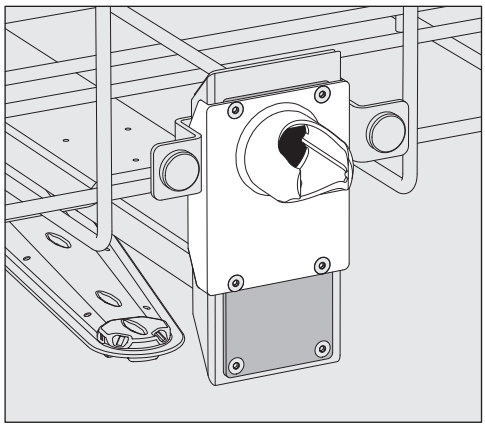


- Move the roller brackets on both sides to the centre position and screw them tight.
- Place the stainless steel plate over the openings in the water inlet pipe so that one of the outer openings is covered. Screw the stainless steel plate to the top or bottom with 2 screws. Insert the connector into the centre opening of the stainless steel plate so that the outer opening is covered. Screw the connector on with 4 screws.

Setting the lower position

- 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.





- Move the roller brackets on both sides to the upper position and screw them tight.
- Place the stainless steel plate over the openings in the water inlet pipe so that the lower opening is covered. Screw the stainless steel plate to the bottom with 2 screws. Insert the connector into the upper opening of the stainless steel plate so that the centre opening is covered. Screw the connector on with 4 screws.

Then check:

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

Wash pressure measurement

The wash pressure can be measured if required on all load carriers with spray arms, injector manifolds or other wash connections, e.g. during performance tests.

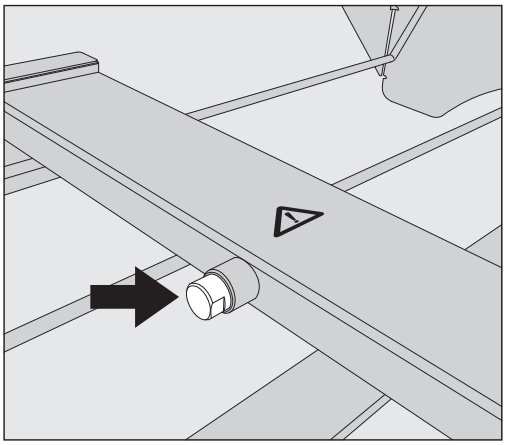
Test point for measuring wash pressure

On load carriers with spray arms and additional injector manifolds or other wash connections, there is a connection on the injector manifold or a wash connection for wash pressure measurement. The exact location is described in the respective operating instructions for the load carriers.

On load carriers with spray arms but without other wash connections, the test point for measuring the wash pressure can be found in the water inlet pipe for the spray arms. The test point is labelled with a ⚠ warning symbol and closed with a blind stopper.

Performing the measurement

⚠ Risk of infection due to insufficient cleaning and disinfection.
Test points labelled with a ⚠ warning symbol do not have sufficient cleaning and disinfection performance.
Do not connect load items or irrigation connectors to the test points under any circumstances.



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

Suitable Luer Lock adapters, such as the E 447, are available from Miele.

- Carry out the measurement.
- Close the test point again with the blind stopper after the measurement.

Load items

⚠ Contaminated load items pose a health risk.
Contaminated load items can result in various hazards to health, which can lead to infections, poisoning, injuries or more depending on the type of contamination.
When working with contaminated load items, ensure that all necessary measures are taken to protect personnel.
Wear protective gloves and use appropriate equipment.

⚠ Only load items which have been designated by their manufacturer as suitable for machine reprocessing may be processed. The manufacturer's specific reprocessing instructions must be observed.
Used disposable items must not be reprocessed.

Preparing the load items

- Arrange the load items so that the wash water can access all surfaces. This ensures thorough and proper cleaning.
- Do not place load items inside other items where they may be concealed, as this will hamper cleaning.
- Do not place load items so close together that cleaning is hampered.
- Lumened load items must be thoroughly cleaned, internally and externally with wash water. Special load carriers or irrigation connectors are required for this, depending on the load items.
- Ensure that load items with long, narrow lumens can be flushed through properly before placing them in or connecting them to an irrigation connector.
- Hollow vessels should be inverted and placed in the correct load carriers to ensure that wash water can flow in and out of them unrestricted.
- Deep-sided load items should be placed at an angle to make sure the wash water runs off them freely.
- Tall, narrow, hollow items should be placed in the centre of the baskets or mobile units. This ensures better water coverage.
- Take apart any load items which can be dismantled according to the manufacturer's instructions and process the individual parts separately from each other.
- Lightweight load items should be secured with cover nets to prevent them from spinning around in the wash cabinet and blocking the spray arms.
- Only reprocess small items and micro components in special inserts, mesh trays with lids or mesh inserts.
- The spray arms must not be blocked by load items which are too tall or which hang down in their path.
- Broken glass and ceramics can result in serious injury when loading or unloading. Damaged glass or ceramic load items must not be reprocessed in the machine.

- Nickel and chrome-plated load items and load items made of aluminium are not generally suitable for machine reprocessing. Special process conditions are required for these load items.
- For load items made entirely or partly of plastic, observe the maximum temperature resistance and select the programme accordingly or adjust the temperature of the programme.

Suitable load carriers and irrigation connectors as well as other accessories are available from Miele.

Preparing the load items

⚠ Danger of explosion due to flammable gases.
Flammable solvents with a flash point below 21 °C outgas and can generate a flammable mix of gases.
Only place load items into the wash cabinet that are wetted with traces of solvents at most.
Start a reprocessing programme immediately after loading.

⚠ Material damage due to solvents.
Solvents can damage the elastomers and plastics of the machine and lead to leaks.
Only place load items into the wash cabinet that are wetted with traces of solvents at most.
Start a reprocessing programme immediately after loading.

⚠ Material damage due to corrosion.
Chloride solutions, particularly hydrochloric acid, and ferrous materials that can rust or corrode cause corrosion on the stainless steel of the machine and the load carrier.
Do not introduce any chloride solutions into the wash cabinet.
Do not introduce any ferrous materials that can rust or corrode into the wash cabinet.

⚠ Risk of infection and risk of environmental damage.
Microbiological material, pathogens and facultative pathogens, and genetically modified material can cause infections or environmental damage.
Observe the laws, standards and guidelines for handling biohazardous substances.

- Follow the load item manufacturer's instructions regarding precleaning and pre-treatment.
- Empty all load items before loading into the machine and pay particular attention to relevant regulations.
- If necessary, rinse the load items briefly with water so that larger quantities of soiling are not introduced into the wash cabinet.
- Pour blood residues out of vessels and scoop out blood clots.
- Scoop nutrient media (agar) out of Petri dishes.
- Remove all stoppers, corks, labels, sealing wax residue, etc.
- Remove water-insoluble residues such as paint, adhesives and polymer compounds using appropriate solvents.

- Remove any aids which are difficult to get rid of and contaminate the load items in addition to the original soiling. These include grease, paper labels and other labels.
- Place small parts and micro components in suitable small parts baskets to secure them.
- Disassemble the load items according to the instructions of the load item manufacturer.
- Open available taps and valves or remove them according to the manufacturer's instructions and place the individual parts in suitable small parts baskets.
- Rinse load items which have been in contact with solvents, chloride solutions or hydrochloric acid thoroughly with water and drain well before placing them in the wash cabinet. Start a reprocessing programme immediately after placing in the wash cabinet.
- Assess whether the load items must be sterilised before reprocessing if they are contaminated with:

- Microbiological material
- Pathogens
- Facultative pathogens
- Genetically modified material

Before starting a programme

Carry out a visual check before starting every programme:

- Are the load items correctly loaded and connected for cleaning?
- Was the recommended loading template followed?
- Can the wash water consistently permeate load items with 2 openings, such as pipettes and viscometers?
- Are the spray arms clean and do they rotate freely?
- Is the filter combination clean?
  Remove any coarse soiling and clean the filter combination if necessary.
- Are the baskets or is the mobile unit correctly connected to the water supply?
- Are the removable modules, nozzles, irrigation sleeves and other irrigation connectors correctly connected?
- Are all process chemical containers sufficiently filled?

After the end of a programme

Check the following at the end of every programme:

- Are the nozzles and connectors securely held in position in the basket, mobile unit, module or insert?
- Are all lumened load items still attached to the appropriate nozzles?
- Have any of the load items on the load carriers moved during reprocessing?

If any of the load items move during reprocessing, this can have a negative effect on the reprocessing result.
Assess whether reprocessing needs to be repeated: for example, if Petri dishes have overturned or beakers have fallen over.

- Carry out a visual check of the load items for cleanliness.
- Can wash water access the insides of load items with 2 openings?
- Carry out a visual check of the load items for cleanliness and dryness.

Laboratory glassware and utensils

... wide-necked

Load items with wide necks, e.g. glass beakers, wide-necked Erlenmeyer flasks and petri dishes, or cylindrical items, e.g. test tubes, can be cleaned and rinsed inside and out using rotating spray arms.
To do this, the load is positioned in inserts and placed in an empty mobile unit with a spray arm.

...narrow-necked

Items with narrow necks, e.g.,bottles, narrow-necked Erlenmeyer flasks, round-bottomed flasks, measuring cylinders and pipettes, require special load carriers.

Load carriers are supplied with their own operating instructions.

Please note the following when loading:

- Place petri dishes or similar items in the appropriate insert with the dirty side facing downward.
- Place pipettes with the pointed end facing downwards.
- Arrange inserts at least 3 cm away from the edge of the load carrier.
- Position inserts for test tubes in the centre above the spray arm to leave the corners of the load carrier free.
- Use a cover net to avoid breakages if required.

Programme overview

The machine is supplied with programmes for different areas of application. The programming manual contains tables with the parameter settings for the standard reprocessing programmes included with delivery.

Power levels

Depending on the type and number of baskets and modules used, different volumes of water and pump speeds are required to achieve a similar wash pressure. This is why most programmes are delivered in 2 power levels. The water volume and pump speed are higher in programmes with the “Plus” suffix than in the standard versions of the programmes.
The programme structure and the following parameters, which are relevant to performance, are identical in the different power levels:

- The water quality
- The temperature
- The holding time
- The dispensed process chemicals in %
- The drying temperature

Power levels of the programmes/basket and module combinations

Programmes	Upper basket		Lower basket	
	with spray arm	with modules	carrier	with modules
Power level standard			X	
	X		X	
		2	X	
				2
Power level Plus	X			2
		2		2
Pipettes				1 x A 303 + 1 module, e.g. A 300/X
Vials		1 x A 304 + 1 module, e.g. A 300/X	X	
				1 x A 304 + 1 module, e.g. A 300/X
Vials Plus	X			1 x A 304 + 1 module, e.g. A 300/X
		1 x A 304 + 1 module, e.g. A 300/X		1 x A 304 + 1 module, e.g. A 300/X
Pasteurisation			X	
	X		X	

Areas of application

General programmes

Programme	Area of application
Mini	- Very short programme for barely soiled load items and very low final rinse requirements - For a wide range of soiling - Not suitable for denatured residues such as protein - Not suitable for inorganic, acid-soluble residues such as metallic salts - In 2 power levels
Standard	- Short programme for lightly soiled load items and low final rinse requirements - For a wide range of soiling - Not suitable for denatured residues such as protein - Not suitable for inorganic, acid-soluble residues such as metallic salts - In 2 power levels
Universal	- Programme for lightly soiled to moderately soiled load items and moderate final rinse requirements - For removing organic residues - Suitable to a limited extent for inorganic, acid-soluble residues such as metallic salts - In 2 power levels
Intensive	- Programme for moderately soiled to heavily soiled load items and moderate to high final rinse requirements - For removing organic residues - Suitable to a limited extent for inorganic, acid-soluble residues such as metallic salts - In 2 power levels

Programmes for specific soiling

Programme	Area of application
Inorganic	- Programme for lightly soiled to moderately soiled load items and moderate to high final rinse requirements - For removing inorganic, acid-soluble residues such as metallic salts - In 2 power levels
Organic	- Programme for moderately soiled to heavily soiled load items and moderate final rinse requirements - For removing concentrated organic residues, e.g. greases, waxes and stubborn dried-on or thermally adhered organic residues - Not suitable for inorganic, acid-soluble residues such as metallic salts - In 2 power levels
Oil	- Programme for heavily soiled load items and moderate final rinse requirements - For removing oils, greases and in some cases waxes - Not suitable for inorganic, acid-soluble residues such as metallic salts - In 2 power levels
Agar	- Programme for moderately soiled to heavily soiled load items and moderate final rinse requirements - For removing agar - In 2 power levels

Programmes for specific load items

Programme	Area of application
Plastics	- Programme for lightly soiled to moderately soiled plastics and moderate final rinse requirements - For temperature-sensitive laboratory equipment, e.g. plastic bottles that are resistant to temperatures of up to 55 °C - In 2 power levels
Vials	- Programme for lightly soiled to moderately soiled small load items and moderate to high final rinse requirements - For vials, centrifuge tubes and test tubes - In 2 power levels
Pipettes	- Programme for lightly soiled to moderately soiled pipettes and moderate to high final rinse requirements - For measuring and volumetric pipettes

Areas of application

Special processes

Programme	Area of application
Hygiene 93/10	- Programme for cleaning and thermal disinfection at 93 °C and 10 min holding time in the first programme block; wash water is only pumped out after the disinfection process - In 2 power levels
Pasteurisation	Programme for short-term heating to 60–90 °C to kill the vegetative phases of microorganisms, e.g. in food

Additional programmes

Programme	Area of application
Cold water rinse	- Programme for rinsing the wash cabinet or for rinsing the load items with cold water, e.g. to remove: – Salt residues and saline solution after reactivation – Heavy soiling – Disinfectant residue or - To prevent soiling from drying and becoming encrusted on the load items before the start of a reprocessing programme
Demin. water rinse	- Programme for rinsing the load items with demineralised water, e.g. to remove: – Heavy soiling – Disinfectant residue or - To prevent soiling from drying and becoming encrusted on the load items before the start of a reprocessing programme
Drying	- Programme for drying temperature-stable load items - Not suitable for temperature-sensitive load items

Service programmes

Programme	Area of application
Drain standard	Programme for draining wash water, e.g. after a programme cancellation
Drain recycling	Programme for draining wash water into an external recycling tank, e.g. after a programme cancellation
Fill recycling tank 20 l	Programme for filling the external recycling tank, capacity 20 l
Fill recycling tank 40 l	Programme for filling the external recycling tank, capacity 40 l
Fill recycling tank 60 l	Programme for filling the external recycling tank, capacity 60 l

In this section you will find a description of the causes of common chemical reactions which can occur between different types of soiling, chemical agents 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	**Measures**
If elastomers (seals and hoses) and plastic components in the machine are damaged, this can lead to, for example, swelling, shrinking, hardening or brittleness of materials, causing tears and cracks to develop. Components cannot function correctly and this generally leads to leaks.	- Determine and remedy the cause of the damage. See also the information on “Process chemicals”, “Soiling” and “Reaction between process chemicals and soiling” in this section.
A heavy build-up of foam during the programme sequence will impair the cleaning and rinsing effect on the load items. Foam escaping from the wash cabinet can cause damage to the machine. When foam develops, the cleaning process cannot be guaranteed to be standardised and validated.	- Determine and remedy the cause of the foam build-up - Check the process used regularly to monitor foaming levels See also the information on “Process chemicals”, “Soiling” and “Reaction between process chemicals and soiling” in this section.
Corrosion to stainless steel in the wash cabinet and to accessories can have various appearances: - Rust (red stains/discolouration) - Black stains/discolouration - White stains/discolouration (etched surface) Corrosive pitting can lead to the machine not being water-tight. Depending on the application, corrosion can affect cleaning and rinsing results (laboratory analysis) or cause corrosion to stainless steel load items.	- Determine and remedy the cause of corrosion See also the information on “Process chemicals”, “Soiling” and “Reaction between process chemicals and soiling” in this section.

Process chemicals	
Efficacy	**Measures**
The ingredients in process chemicals have a strong influence on the longevity and functionality (throughput) of the dispensing system.	- Follow the process chemical manufacturer's instructions and recommendations - Carry out regular visual inspections of the dispensing system to check for signs of damage - Check the throughput of the dispensing system regularly - Ensure that the regular cycle of maintenance is observed - Contact Miele for advice
Process chemicals can damage elastomers and plastics in the machine and accessories.	- Follow the process chemical manufacturer's instructions and recommendations - Carry out a regular visual check of any exposed elastomers and plastics for damage
Hydrogen peroxide can release large amounts of oxygen.	- Use only validated processes - The main wash temperature must be lower than 70 °C when using hydrogen peroxide - Contact Miele for advice
The following process chemicals can cause large amounts of foam to build up: - Cleaning agents and rinsing agents containing surfactants Foam can occur: - In the programme phase in which the process chemical is dispensed - In the following programme phase if it has been spilt - In the following programme when rinsing agent is dispensed if it has been spilt	- Process parameters in the wash programme, such as dispensing temperature, dosage concentration, etc. must be set to ensure the whole process is foam-free or very low-foaming - Please observe the process chemical manufacturer's instructions
De-foaming agents, especially silicone-based ones, can cause the following: - Deposits to build up in the wash chamber - Deposits to build up on the load items - Damage to elastomers and plastics in the machine - Damage to certain plastics in the load items, e.g. polycarbonate, plexiglass, etc.	- De-foaming agents should be used as an exception only; for instance, when they are essential for the process - Clean the wash chamber and accessories periodically without load items and without de-foaming agent using the Organic programme - Contact Miele for advice

Soiling	
Problem	**Measures**
The following substances can damage the elastomers in hoses and seals, as well as the plastics in the machine: - Oils, waxes, aromatic and unsaturated hydrocarbons - Emollients - Cosmetics, hygiene and skincare products such as creams	- Depending on usage, wipe the lower door seal on the machine periodically with a lint-free cloth or sponge. - Clean the wash chamber and accessories without a load using the Organic programme. - Use the Oil programme or a special programme that dispenses pH-neutral emulsifiers containing surfactants in the pre-rinse.
The following substances can lead to a heavy build-up of foam during washing and rinsing: - Some disinfection agents, dishwashing cleaning agents, etc. - Reagents for analysis, e.g. for microtiter plates - Cosmetics, hygiene and skincare products such as shampoos and creams - Active foaming agents such as surfactants	- Thoroughly rinse the load in water beforehand. - Select a cleaning programme with at least one short pre-rinse in cold or hot water. - Depending on the application, use de-foaming agents that do not contain silicone oils.
The following substances can cause corrosion to stainless steel in the wash chamber and the accessories: - Hydrochloric acid - Other substances containing chlorides such as sodium chloride, etc. - Concentrated sulphuric acid - Chromic acid - Iron particles and shavings	- Thoroughly rinse the load in water beforehand. - Place load items drip-dried into mobile units, modules and inserts and then place these in the wash chamber. - Start a programme as soon as possible after placing them in the wash chamber.

Reaction between process chemicals and soiling	
Problem	**Measures**
Natural oils and fats can be emulsified with alkaline process chemicals. This can lead to a heavy build-up of foam.	- Use the Oil programme. - Use a special programme that dispenses pH-neutral emulsifiers containing surfactants in the pre-rinse. - Depending on the application, use de-foaming agents that do not contain silicone oils.
Stains containing high protein levels, such as blood, can cause a heavy build-up of foam when processed with alkaline process chemicals.	- Select a cleaning programme with at least one short pre-rinse in cold water.
Non-precious metals, such as aluminium, magnesium and zinc, can release hydrogen when processed with very acidic or alkaline process chemicals (oxyhydrogen reaction).	- Please observe the process chemical manufacturer’s instructions.

⚠ Unsuitable process chemicals pose a health risk.
Using unsuitable process chemicals will generally cause an unsatisfactory reprocessing result and can pose a health risk or cause damage to property.
Only use process chemicals designed specifically for use in this machine and follow the manufacturer‘s instructions on their use.
Please carefully observe any instructions relating to non-toxic residues.

⚠ Process chemicals pose a health risk.
Some process chemicals may be corrosive and irritant.
Observe the relevant safety regulations and safety data sheets issued by the process chemical manufacturers when handling process chemicals.
Take all protective measures required by the process chemical manufacturer, e.g. wear protective goggles and protective gloves.

The safety data sheets for the process chemicals must be easily accessible during operation of the machine.

Dispensing systems

The machine is fitted with 2 dispensing systems as standard. Up to 2 additional internal dispensing systems can be installed as an option.

The dispensing system with blue hose is intended for liquid cleaning agents. The dispensing system with red hose is intended for neutralising agents.

Programmes	DOS 1	DOS 3	DOS 4
General programmes	Alkaline cleaning agent	Acidic cleaning agent or neutralising agent	–
Programmes for specific soiling*			
Programmes for specific load items			
☼ Hygiene 93/10			
🔥 Oil	Alkaline cleaning agent	Acidic neutralising agent	Emulsifier
Pasteurisation	–	–	–

* With the exception of 🔥 Oil

Colour coding

The dispensing systems and the dosing lances should be colour-coded. Miele generally uses the following categorisations:

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

Enter the process chemicals used and the relevant colour in the table below if an additional dispensing system has been installed. When containers with process chemicals are connected, the colour makes it easier to assign the relevant suction lance.

Dispensing system	Colour	Process chemicals
1	Blue	
2		
3	Red	
4		

If different process chemicals are to be dosed with one dispensing system, the dispensing system must be flushed before changing the process chemicals, see the
⚙ System functions > Maintenance and service > Dispensing systems menu.

Containers for process chemicals

The DOS drawer has space for 2 containers with a capacity of 10 litres or 3 containers with a capacity of 5 litres.
Additional containers must be placed outside the machine.

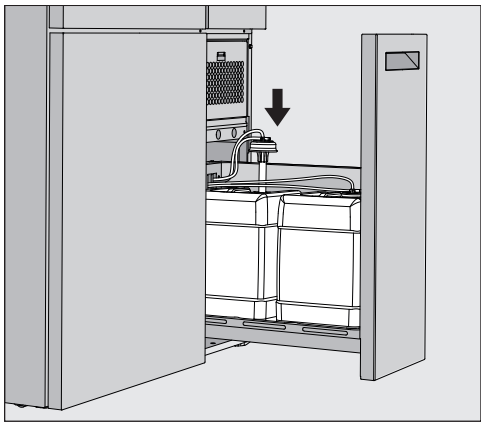
To connect containers placed outside the DOS drawer, a conversion kit can be installed by Miele Customer Service.

Place the container on the floor next to the machine or in an adjacent cabinet. The container must not be placed on top of the machine.

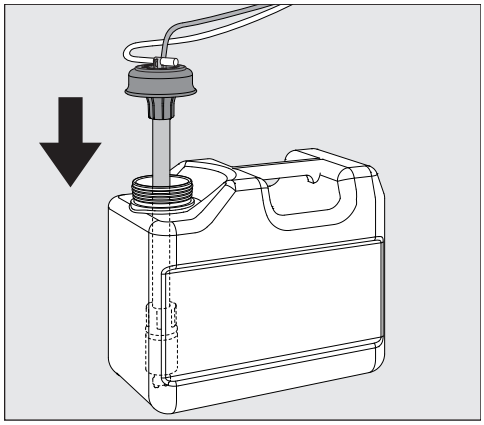
The base of the DOS drawer ensures that the containers can be easily tilted. To ensure that the containers are emptied as completely as possible, the suction lances should be on the right-hand side.

Replacing containers of process chemicals

Replace the containers for process chemicals with full containers if a corresponding message is displayed, e.g. Change DOS x container.



- Pull the DOS drawer out on the right-hand side of the machine.
- Take the corresponding container out of the DOS drawer.
- Place the container on a surface that is resilient and easy to clean.
- Place the filled container next to the empty container and unscrew the lid.
- Pull the lid off the empty container and remove the suction lance.



- Insert the suction lance into the opening of the filled container.

Observe the colour coding of the dispensing system and the suction lance to ensure that the process chemicals do not get mixed up.

- Press the lid down until it clicks into place.
- Adjust the length of the suction lance to the container size.

The suction lance should reach to the bottom of the container.

- Wipe off any dripped process chemicals from the outside of the container.
- Place the full container in the DOS drawer.
- Close the DOS drawer.

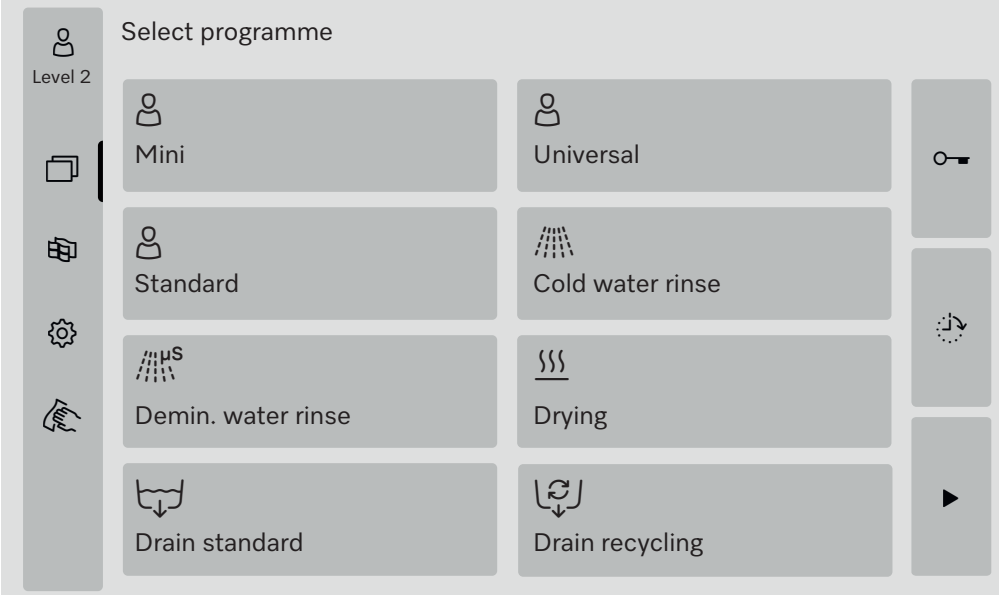
Ensure that the dispensing hoses and cables are not kinked or trapped.
Wipe off any dripped process chemicals from the surface.

- Close the Change DOS x container message with the **X** button at the top right.

Each time a container of process chemicals is replaced, the Fill dispensing path function must be carried out to remove any air from the dispensing system, see the ⚙ System functions > Maintenance and service > Dispensing systems menu.

Selecting a programme

The areas of application of the standard programmes are described in the programme overview (see section “Application technology”, “Programme overview”).



- Press the button for the programme you wish to run.

If more than 8 programmes are enabled, you can scroll down in the selection menu.

The colour of the selected programme changes to yellow.

Starting a programme

A programme can only be started when the machine door is closed. The colour of the ▶ button changes to green when the door is closed.

- Press the ▶ button.

The programme will start running.

If fault messages are present, no programme can be started.
If the ⚠ symbol is displayed in the selection area, you must work through the list of active messages first (see “Fault messages and instructions”).

Programme sequence

The programme will run automatically once it has been started. You can find detailed information about the programme sequence and the programme parameters on the machine display (see section “Machine description”, “Control elements on the display”).

End of programme

After the programme has ended, Programme finished is displayed

The colour of the progress bar changes from yellow to green.

Cancelling a programme

A running programme can be cancelled at any time. The wash water is drained, then the door is released.

⚠ Danger of scalding, burning and chemical burns due to hot load items, wash water or escaping vapours.
The load items and the wash cabinet may be very hot. Hot wash water or steam may also escape.
Be careful when opening the door. Open the door slowly and do not stand in the rising vapours.

- Press the ■ button.

A confirmation prompt is displayed:
Cancel programme?.

- Confirm the confirmation prompt with Yes.

Once the water has finished draining, the following message will appear on the display:
Programme cancelled.

The colour of the progress bar changes from yellow to red.
The ⊶ button is enabled.

For security reasons, a PIN may be assigned for Door release. In this case, the door can only be opened after entering the PIN (see section “System functions”, “Settings/Codes”).

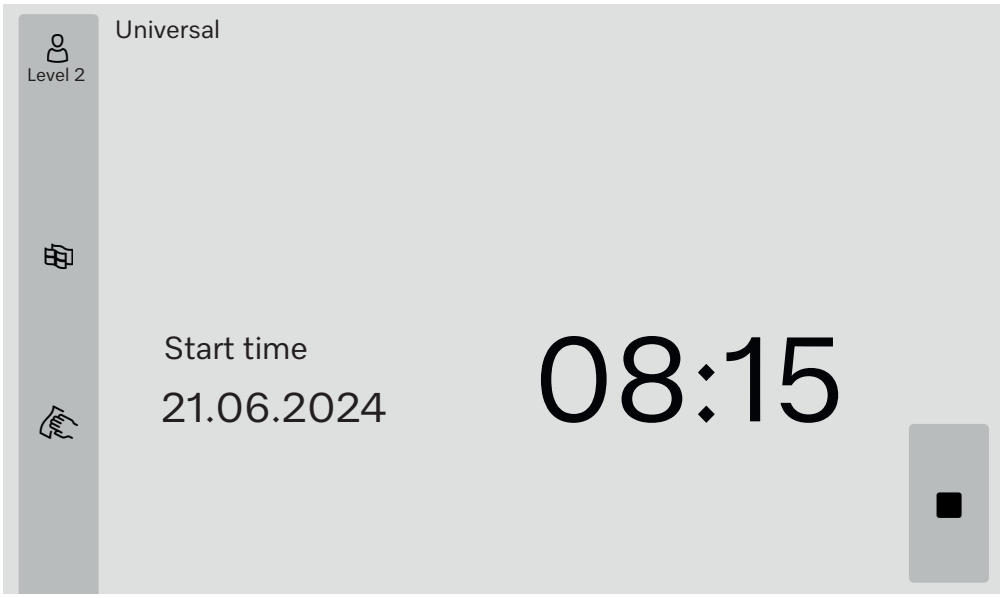
Delay start

The start of a programme can be delayed, for example, to benefit from economy rates of electricity at night. The delay start period can be set to the exact minute.

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

- Press the button on the right-hand side of the display to set the start time.
- Enter the date and time for the scheduled start time using the on-screen keyboard.
- Confirm each entry with Enter.
- Press the ▶ button.

The programme starts automatically at the set time.



The automatic programme start can be cancelled at any time. To do this, press the ■ button on the right-hand side of the display.

Carrying out a programme test

At Level 4 - Administration, newly created or modified programmes can be checked with the Programme test, e.g. the cleaning performance.
During the programme test, the programme sequence stops after each rinse block before the water drains and the door is released for sampling.

⚠ Danger of scalding, burning and chemical burns!
If you open the door during the programme test, be sure to observe the following sources of danger:
There is a risk of burning and scalding with high-temperature rinse blocks.
There is a risk of chemical burns and the inhalation of toxic fumes in rinse blocks that dispense process chemicals.
Steam that escapes from the machine during high-temperature rinse blocks can trigger a false alarm in smoke detectors.

Sampling example

The main menu appears in the display.

- Press the button for the programme you wish to run.
- Press the button on the right-hand side of the display to activate the programme test.
- Press the Programme test button.
- Press the ▶ button.

The programme starts and the Programme sequence display appears. The header of the display shows the term Sampling after the programme name.

After each programme block, a message will appear on the display before the wash water is drained, e.g.:

ℹSampling
- Block: Neutralisation
- Open door for sampling?

- Press the **OK** button.

The door is released.

- Open the door to take a sample.

The following message appears on the display:

ℹSampling
- Close door to continue

- Close the door.

The wash water is drained and the next programme block begins.

If a sample does not need to be taken after a programme block:

- Press the Cancel button.

The wash water is drained and the next programme block begins.

If you do not press either button within 5 minutes, the programme will continue automatically.

Network connection

The machine can be integrated into a customer's network via an Ethernet interface. An Ethernet cable of category 5 (CAT5) or higher is required for the connection.

The operator is responsible for the secure configuration and operation of the network. Creating a secure configuration reduces the scope for the machine to be attacked. Non-secure configurations can make it easier for potential attackers to gain unauthorised access.

⚠ Unauthorised access poses a risk.
Settings in the machine may be changed as a result of unauthorised access via the network.
Under no circumstances should it be possible to access the machine via public or unsecured networks, either directly or indirectly (e.g. using port forwarding).
The IP addresses from 192.168.10.1 to 192.168.10.255 are reserved for Customer Service. They must never be set in the internal network.

Please also note the following recommendations for the network configuration of the machine:

1. Configure the network in which the machine is located with as many restrictions as possible.
   - Only allow machines or persons access to the network if absolutely necessary
   - Use a VLAN for network segmentation, for example
2. Make sure to create a secure configuration for all machines connected to the network, e.g. with the help of:
   - The information on network security in the operating instructions for the connected machines
   - The recommendations of the German Federal Office for Information Security (https://www.bsi.bund.de)
3. Pay particular attention to the following areas:
   - User administration
   - Staff entering and exiting
   - Authorisation
   - Authentication
   - Update management, etc.

Process documentation

The rinsing reports from the machine can be output either via external software for process documentation or a network printer.

Please contact the manufacturer Miele for further information on suitable software solutions.

Only use terminal devices that are approved according to EN/IEC 62368.

CKM communication module

The machine is equipped with a CKM communication module for network connection. The CKM has a dedicated web interface via which the network settings can be configured, printers can be set up or the password can be changed.

The web interface can be accessed from any workstation on the local network. A configured interface in the machine controls, an up-to-date web browser and an existing network connection to the machine are required.

You will receive the information required for configuring the CKM from your network administrator.

The IP address of the machine is entered into the controls during commissioning by Miele Customer Service or by a qualified service technician authorised by the manufacturer of the machine.

Opening the web interface

- Enter the IP address of the machine with the suffix :7000 into your web browser's address bar:
  https://<IP address>:7000
- Confirm the entry with "Return".

The login dialogue appears in the browser window.

Login

The user name is "user" and cannot be changed.

- Enter User and Password and click on Login.

No password is assigned by factory default. A password must be assigned at the first Login. After entering the user, click on Login to open the Change password dialogue, see "Change password".

The CKM configuration is displayed in the web browser.

Logout

To protect the machine from unauthorised access, log out after completing the configuration.

- Click on the Logout button at the top right.

The logout is confirmed with a pop-up:
Logout successful

- Close the browser window.

Change password

You can change the password at any time using the Change password button.

The password for the user level user must contain at least 8 characters. The password consists of uppercase and lowercase letters, numbers and special characters and must fulfil 3 of the following 4 conditions. It must contain at least:

- 1 uppercase letter
- 1 lowercase letter
- 1 number
- 1 special character

Permitted special characters are !."#$%&'()*+,-./:;<=>?@[\]^_`{|}~.

The assigned password is retained after a software update.

- Click on the Change password button at the top right.

The Change password dialogue is displayed in the browser window.

- Enter the user name “user” next to User.
- Enter the current password next to Password.

On the first Login, leave the Password input field blank.

- Enter the new password next to Password new and repeat the new password in the next line.
- Confirm the entry with Save.

Saving is confirmed with a pop-up:
Saved successfully.

You can exit the dialogue with Cancel without changing the password.

CKM configuration

The CKM configuration contains the following sections:

- Date and time
- Network
- Printer
- CKM actions

Date and time

The date and time of the machine and the CKM can be set independently of each other. To ensure that the data is synchronised in both systems, it is advisable to set Time synchronisation in the machine. (See section “System functions”, “Settings/General/Date and time”.)

The current settings for the CKM can be found at CKM Date and time. In Settings you can select whether the date and time should be set manually or via a time server.

Manual

- Click on the option.

The selection field for date and time is displayed.

- Open the calendar and select the date and time.
- Confirm your selection with **OK**.

Saving is confirmed with a pop-up.

- Close the pop-up with **OK**.
- Save the settings using the Save button at the bottom of the page.

NTP

- Click on the option.

The input field for the NTP address and the selection field for the Time zone are displayed.

- Enter the IP address of the NTP time server.
- Click on ⌄ to open the list for selecting the time zone.
- Select the time zone.
- Save the settings using the Save button at the bottom of the page.

Reset

- Click on the Reset button.

The IP address of the NTP time server is deleted.

Check

- Click on the Check button.

The status of the connection is displayed.

Network

You can enter the network settings manually or retrieve them via DHCP. The following information is required:

- IP address
- Subnet Mask
- Gateway
- MAC address (permanently assigned)

If DHCP is set to On:

■ Enter the data in the corresponding input fields.

Alternatively, you can retrieve the data via DHCP.

■ Click On next to DHCP.

The data is retrieved and any existing entries are overwritten.

The Network status is displayed:

- Active
- Not active

■ To save the data, click on the Save button at the bottom of the page.

Printer

A network printer can be set up to print out rinsing reports.

IP address

■ Enter the IP address of the network printer.

System language

The System language set in the web browser has no influence on the language of the rinsing report.

The rinsing reports are printed in System language, which is set in the machine controls in ⚙ > Settings > General > System language.

Immediate printout

The Immediate printout parameter determines whether a rinsing report is to be printed out on the connected printer immediately at the end of the programme. In addition to being printed out directly, the rinsing reports are also saved in the machine controls. They can be printed out manually at a later date in ⚙ > Operational information > Wash protocols.

■ Click on ⌄ to open the list for the selection.

■ Select the option you want:

- Off = no direct printout
- On = printout at the end of the programme

■ To save the settings, click on the Save button at the bottom of the page.

Printer status

■ Click on the Printer status button.

Printer name and Printer status are displayed above the button.

Test page

■ Click on the Test page button.

A test page is printed on the connected printer.

CKM actions

You can perform the following actions:

- Restart CKM
- CKM IPPP password reset
- Export machine data
- Import machine data

Restart CKM

■ Click on the Restart CKM button.

The CKM module is restarted. This message is displayed during the restart:
Function active, please wait

CKM IPPP password reset

If process documentation software is connected during the initial installation, a password is assigned by the software.

If the process documentation software is changed at a later date, the existing password in the CKM module must be reset.

■ Click on the CKM IPPP password reset button to do this.

The process documentation software can send a new password to the CKM module.

Close the "Saved successfully" message with **OK**.

Export machine data

You can export the existing rinsing reports and customer programmes.

■ Click on the Export machine data button to do this.

The machine data is summarised in a ZIP file and saved in the download folder of your computer.

Import machine data

You can import customer programmes that have been exported from a PLW 8636 machine. The customer programmes must be saved in a ZIP file.

■ Click on the Import machine data button to do this.

A selection window is displayed in the web browser.

■ Confirm your selection with the **OK** button at the top.

Your computer's file manager opens, e.g. Explorer.

■ Select the corresponding ZIP file and confirm your choice in the file manager.

■ Click on the **OK** button at the bottom to start the import.

Legal information

■ Click on the Legal information button.

The information is displayed in the web browser. No settings are possible.

Level authorisations

After switching on, the machine is ready for operation. Day-to-day work can be carried out without logging in.
Service and administrative work requires additional knowledge, see section “User profiles”.

Level	Users
①	Without logging in
②	Operation
③	Technology
④	Administration

The ⚙ button in the selection area of the main menu is only displayed from level 2.

The menu overviews list the minimum user level required to read or change particular types of content.

System functions

Overview

Menu option	Parameter	From level
Maintenance and service		②
	Filter	②
	Dispensing systems	②
	Adjust conduct.meas.mod.	③
	Softener	②
	Service intervals	②
Operational information		②
	Wash protocols	②
	Notifications	③
	Log book	③
	Data plate	②
	Legal information	②
Settings		③
	General	③
	Network	③
	Codes (change)	④
	Machine settings	③
Programme options		④
	Copy	④
	Edit	④
	Release	④
	Delete	④

“Maintenance and service” menu

The Maintenance and service menu summarises functions for ongoing operation. The content that is displayed depends on the logged-in level. The overview lists the minimum user level required to read or change particular types of content.

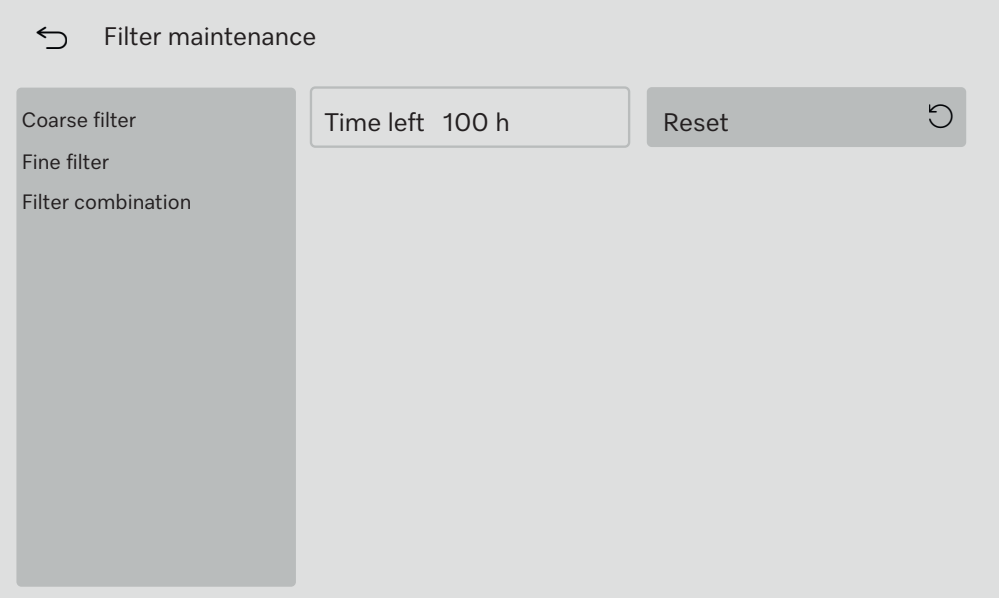
Overview

Menu option	Parameter	From level
Filter		
	Coarse filter, display	②
	Coarse filter, reset	②
	Fine filter, display	②
	Fine filter, reset	③
	Filter combination, activating	③
	Filter combination, display	②
	Filter combination, reset	②
	Filter combination, interval	③
Dispensing systems		
	Fill dispensing path	②
	Rinse dispens. path	②
	Adjust	③
Adjust conduct.meas.mod.		
	Meas. demin. water	③
	Measure cold water	③
	Adjust	③
Softener		
	Remaining capacity	②
	Reactivation	②
	Water hardness	②
Service intervals		
	Maintenance, display	②
	Qualification, display	②
	Qualification, setting	③

Filter

■ Select the Filter menu option from the Maintenance and service menu.

The following menu will appear on the display:



Coarse filter

After the coarse filter of the drying unit has been changed, the operating hours counter must be reset, see section “Maintenance”, “Changing the filter”.

■ Select the Coarse filter menu option on the left-hand side.

You can read off the remaining operating hours until the next filter change in the Time left field.

■ Press the Reset ↺ button.

A pop-up appears in the display:

ℹ Maintenance carried out?
- Counter is being reset

■ Confirm the message with **OK**.

You can cancel the function. Press the Cancel button to do this.

The time left for the coarse filter of the drying unit is reset.

Fine filter

After the fine filter of the drying unit has been changed, the operating hours counter must be reset, see section “Maintenance”, “Changing the filter”.

■ Select the Fine filter menu option on the left-hand side.

You can read off the remaining operating hours until the next filter change in the Time left field.

■ Press the Reset ↺ button.

A pop-up appears in the display:

ℹ Maintenance carried out?
• Counter is being reset

■ Confirm the message with **OK**.

You can cancel the function. Press the Cancel button to do this.

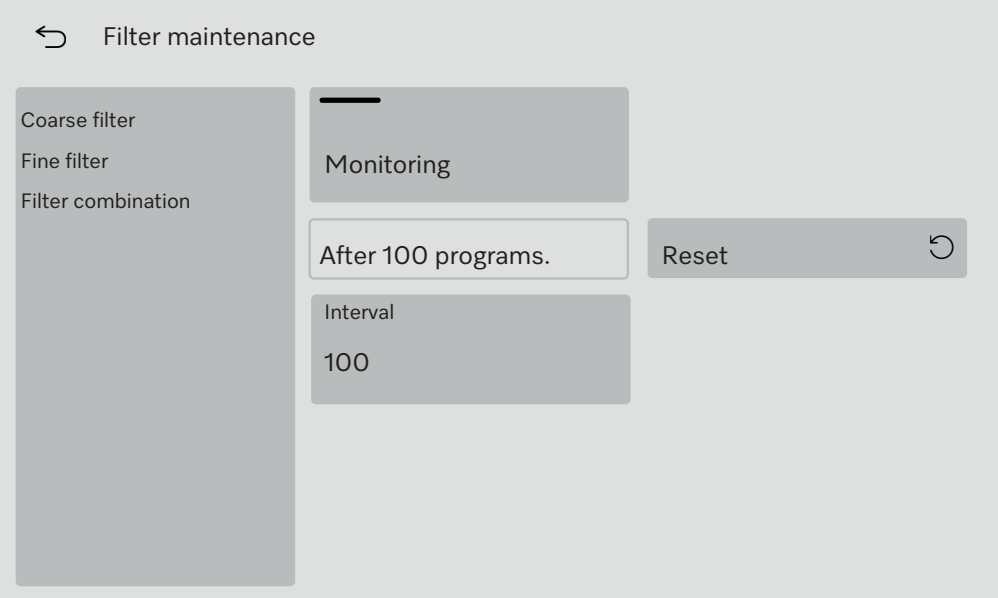
The time left for the fine filter of the drying unit is reset.

Filter combination

The filters in the wash cabinet must be checked daily and cleaned regularly, see section “Maintenance”, “Cleaning the filters in the wash cabinet”. A counter in the controls can be activated to remind you of the required maintenance at regular intervals.
The interval must be set according to the usage behaviour and the expected proportion of particles/solids in the soiling.

■ Select the Filter combination menu option on the left-hand side.

The following menu will appear on the display:



The function is activated by factory default. To deactivate, press the Monitoring button. If monitoring is deactivated, the display and buttons are hidden.

After X programmes

In the After X programmes field, you can read off the remaining number of programme starts until the next time the Filter combination must be maintained.

Resetting the counter

■ Press the Reset button.

A pop-up appears in the display:

Maintenance carried out?
• Counter is being reset

■ Confirm the message with **OK**.

You can cancel the function. Press the Cancel button to do this.

The number of programme starts still available until the next maintenance is reset.

Interval

The Interval parameter is used to define the number of programme sequences after which you will be reminded of the need to maintain the filter combination.

■ Press the Interval button.

The on-screen keyboard opens.

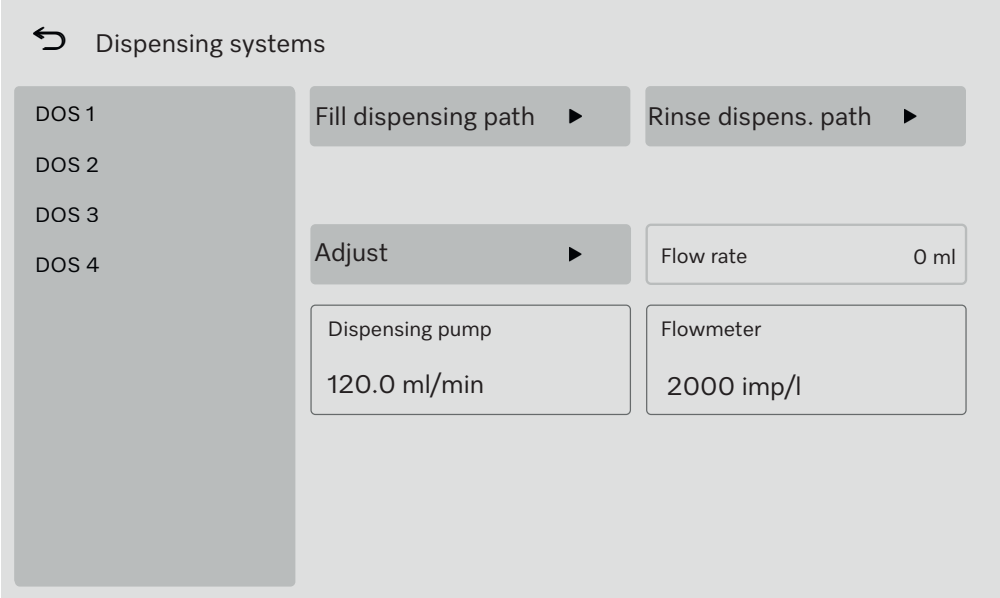
■ Enter the desired number of programmes using the on-screen keyboard.
■ Confirm your entry with **OK**.

The changed number of programmes is only transferred to the After X programmes field after the next Reset.

Dispensing systems

■ Select the Dispensing systems menu option from the Maintenance and service menu.

The following menu will appear on the display:



Fill dispensing path

If the container of a process chemical has been replaced with a new one, the Fill dispensing path function must be carried out for the corresponding dispensing system.

■ On the left-hand side, select the dispensing system whose container has been replaced.

■ Press the Fill dispensing path button.

A pop-up appears in the display:

ℹ Fill dispensing path
- Insert suction lance
- Close door

If both conditions are met:

■ Press the **OK** button.

You can cancel the function. Press the Cancel button to do this.

While the dispensing paths are being filled, the display shows the message:

ℹ Dispensing path is filled.

After the function is completed, this message appears:

ℹ Fill dispensing path finished.

■ Close the message with **OK**.

The dispensing system is ready for operation.

After the function is completed, residues of the process chemicals may remain in the wash cabinet.

If the process chemical is very foam-active, you can rinse off the residues of the process chemical on the rear wall of the wash cabinet before starting the programme. Use a measuring cup and 1 to 2 litres of water, for example.

■ Start the Cold water rinse programme to rinse out the wash cabinet.

Rinse dispens. path

Before the process chemical in a dispensing system is changed for another, the Rinse dispens. path function must be carried out.

- On the left-hand side, select the dispensing system in which the process chemicals are to be changed.
- Press the Rinse dispens. path button.

A pop-up appears in the display:

ℹ Rinse dispensing path
- Insert suction lance
- Close door

⚠ Damage to the dispensing system.
Small foreign objects in the water, such as sand, fluff or similar, can be sucked in by the dispensing system and may clog or damage it.
Make sure that there are no foreign objects in the water.

- Close the door.
- Place the suction lance in a container with at least 1 litre of demineralised water
- Press the **OK** button.

You can cancel the function. Press the Cancel button to do this.

While the dispensing paths are being rinsed, the display shows the message:
ℹ Dispensing path is rinsed.

After the function is completed, this message appears: ℹ Rinse dispensing path finished.

- Close the message with **OK**.
- Remove the suction lance from the container of demineralised water.

The dispensing system is prepared for a new process chemical.

After the function is completed, residues of the process chemicals may remain in the wash cabinet.

If the process chemical is very foam-active, you can rinse off the residues of the process chemical on the rear wall of the wash cabinet before starting the programme. Use a measuring cup and 1 to 2 litres of water, for example.

- Start the Cold water rinse programme to rinse out the wash cabinet.
- Connect the suction lance to the container of the new process chemical.
  (See section “Dispensing liquid process chemicals”, “Replacing containers of process chemicals”.)

Carrying out an Adjust process

An Adjust must be carried out for the corresponding dispensing system if:

- The connected process chemical has been changed (different viscosity)
- A new dispensing pump or flow sensor has been fitted
- The dispensing system needs to be checked, e.g. in the event of qualification, requalification or a periodic check

In order to determine the exact throughput for the dispensing pump and the pulse rate of the flow sensor, 2 measuring cylinders are required:

- 1 x 500–1000 ml
- 1 x 100 ml

■ Place the suction lance of the dispensing system into a 500–1000 ml measuring cylinder.

■ Fill up the 500–1000 ml measuring cylinder with the process chemical to be dispensed.

The float switch of the suction lance must be covered by the process chemical during the entire adjustment process so that no air is sucked in. Adjust the amount of process chemical in the 500–1000 ml measuring cylinder to the size of the suction lance.

■ Fill up the 100 ml measuring cylinder with the process chemical to be dispensed.

■ Select the dispensing system to be adjusted on the left-hand side of the display.

The dispensing system must be vented before the adjustment run is started.

To do this:

■ Close the door.

■ Press the Fill dispensing path button.

■ Press the **OK** button.

You can cancel the function. Press the Cancel button to do this.

Once the process has finished:

■ Fill up the 500–1000 ml measuring cylinder with the process chemical to be dispensed from the 100 ml measuring cylinder.

■ Mark or note the fill level of the 500–1000 ml measuring cylinder.

■ Fill the 100 ml measuring cylinder right up to 100 ml with the process chemical to be dispensed.

■ Press the Adjust button.

A pop-up appears in the display:

ℹ Start adjustment?
• Close door

You can cancel the adjustment of the dispensing system with the Cancel button.

■ Press the **OK** button.

A pop-up appears in the display:

ℹ Adjustment in progress...

A progress bar is displayed in the pop-up. When the process is complete, the display shows the query:

ℹ Enter determined quantity?

- Press the **OK** button.

The Dispensing systems menu will appear again in the display. The button for entering the delivery rate is enabled.

- Press the Flow rate button.

The on-screen keyboard opens.

- Fill the 500–1000 ml measuring cylinder up to the original, marked fill level with the process chemical from the 100 ml measuring cylinder.
- Take a reading of the volume needed to fill the cylinder up from the 100 ml measuring cylinder.
- Enter the read value using the on-screen keyboard.
- Confirm your entry with **OK**.

You can correct the delivery rate that has been entered. The button for entering the delivery rate remains enabled until you exit the menu.

The new values are displayed under:

- Dispensing pump, the delivery rate
- Flowmeter, the pulse rate

Adjusting the conductivity meter

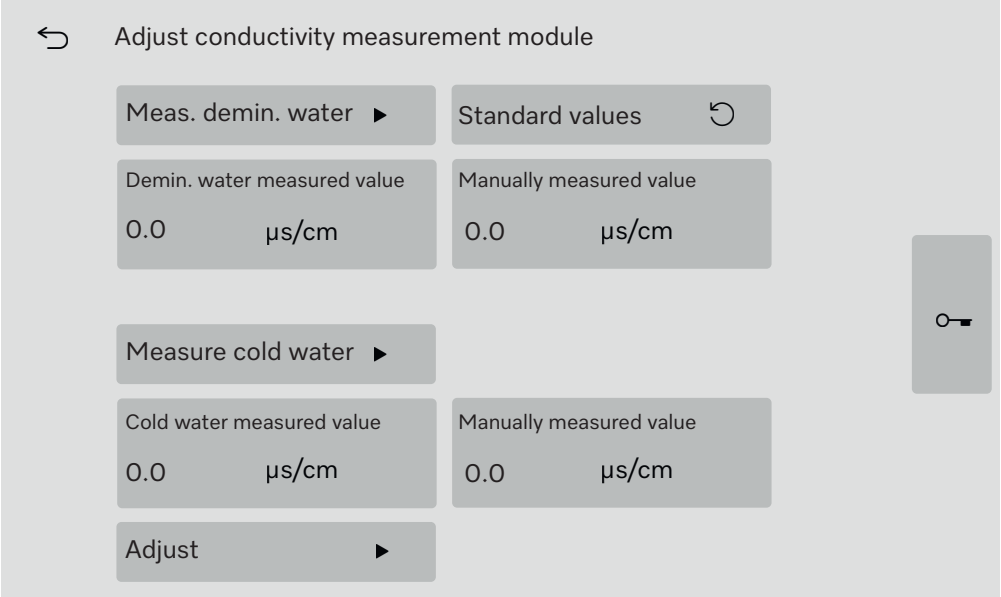
For particularly high cleaning and final rinse requirements, e.g. in chemical analysis or for coating surfaces, the measuring system can be adjusted for demineralised water and cold water within the measuring range.
The machine controls calculate the conductivity in relation to the reference temperature of 25 °C with a temperature coefficient of 2.14 %/°C.

The wash cabinet should be rinsed with demineralised water in order to avoid excessively high readings due to suds carryover.

Logging out during adjustment of the conductivity meter cancels the function. To be on the safe side, deactivate Auto-logout if it is active. In this case, reactivate Auto-logout after the adjustment of the conductivity meter has been completed.

- Select the Adjust conduct.meas.mod. menu option from the Maintenance and service menu.

The following menu will appear on the display:



You can perform the following functions in the menu:

- Measure the conductivity of the inflowing demineralised water
- Measure the conductivity of the inflowing cold water
- Adjust the conductivity meter with the manual readings that have been entered
- Reset the correction factors of the conductivity meter to the default values

Measuring the conductivity of demineralised water

- Press the Meas. demin. water ▶ button.

The measurement for demineralised water is performed.
The message Demin. water measurement active will appear on the display.
After the end of the measurement, the ⊶ and Manually measured value buttons are enabled.

- Press the ⊶ button and open the door.

- Carry out the manual measurement of conductivity using an external measuring device.
- Press the Manually measured value button to open the on-screen keyboard.
- Enter the measured value using the on-screen keyboard.
- Confirm your entry with **OK**

Readings with decimal places must be mathematically rounded.

- Close the door.

Measuring the conductivity of cold water

- Press the Measure cold water ▶ button.

The measurement for cold water is performed.
The message Cold water measurement active will appear on the display.
After the end of the measurement, the ⊶ and Manually measured value buttons are enabled.

- Press the ⊶ button and open the door.
- Carry out the manual measurement of conductivity using an external measuring device.
- Press the Manually measured value button to open the on-screen keyboard.
- Enter the measured value using the on-screen keyboard.
- Confirm your entry with **OK**

Readings with decimal places must be mathematically rounded.

- Close the door.

Perform the adjustment

- Press the Adjust ▶ button.

The adjustment of the conductivity meter is carried out.
The message Adjustment is being completed will appear on the display.
At the end of the adjustment, the message Adjustment completed is displayed.

- Close the message with **OK**.

The Adjust conductivity measurement module menu will appear again in the display.

The readings for demineralised water and cold water are reset to 0 in the display.

Selecting default values

- Press the Standard values ↺ button.

The query Reset to standard values? appears in the display.

- Confirm the message with **OK**.

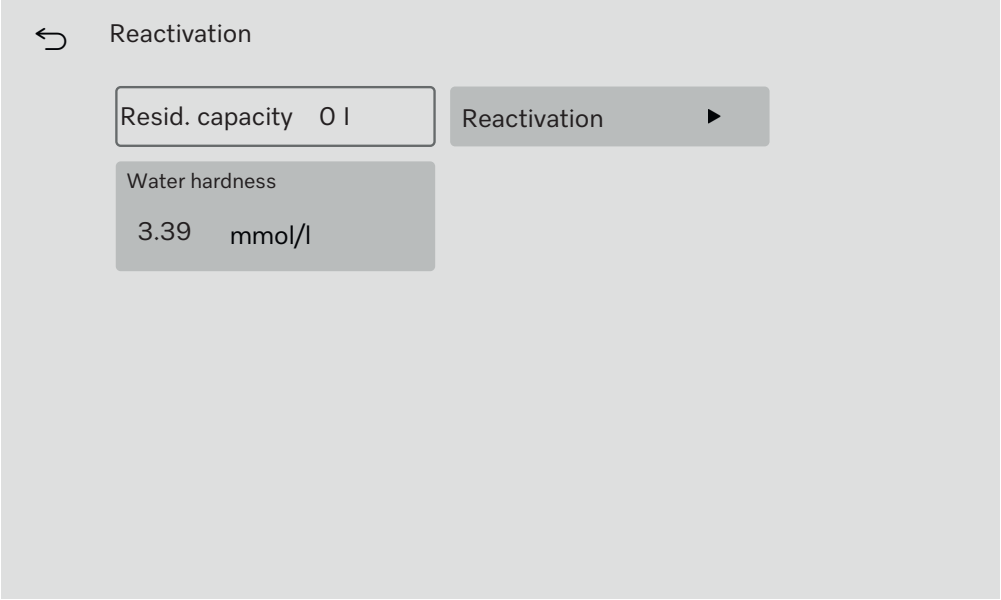
The Adjust conductivity measurement module menu will appear again in the display.

The Standard values button is hidden.

Softener

- Select the Softener menu option from the Maintenance and service menu.

The following menu will appear on the display:



Remaining capacity

The softener must be reactivated regularly to provide soft water. In the Remaining capacity field, you can see the remaining amount of water available until the next reactivation.

Reactivation

Reactivation is described in the section “Softener”, “Reprocessing the softener”.

Water hardness

The water hardness is set to 3.39 mmol/l ex works. If your mains water has a different hardness, the water hardness setting must be changed accordingly.

- Press the Water hardness button.

The on-screen keyboard opens. The value set previously is shown.

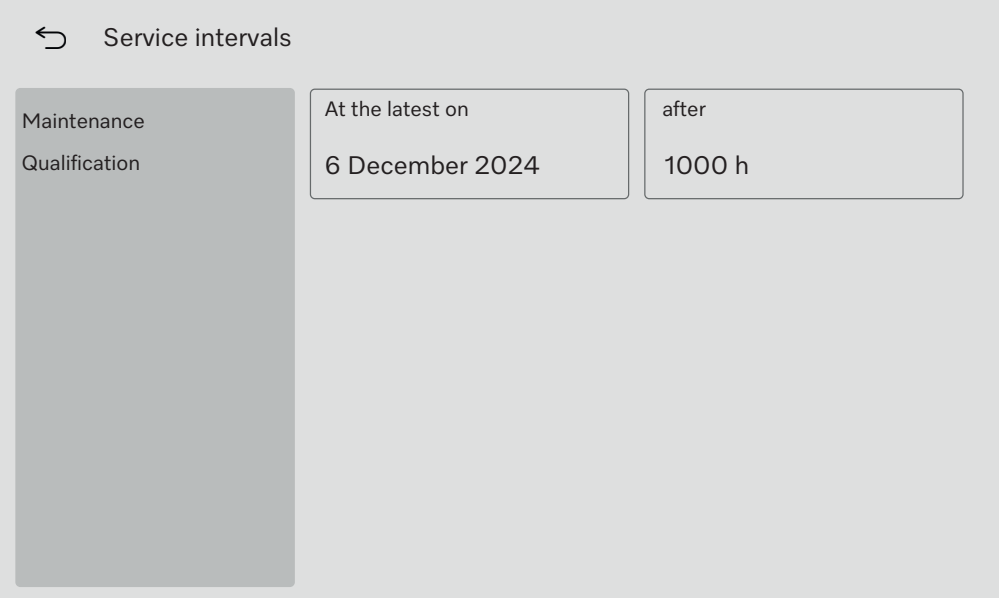
- Enter the water hardness of your mains water using the on-screen keyboard.
- Confirm your entry with **OK**.

The new value is displayed under Water hardness.

Service intervals

■ Select the Service intervals menu option from the Maintenance and service menu.

The following menu will appear on the display:



Maintenance

Maintenance of the machine must be carried out either after a certain number of operating hours or at the latest on a specific date.
In the Maintenance menu you can read the remaining operating hours and the latest date.

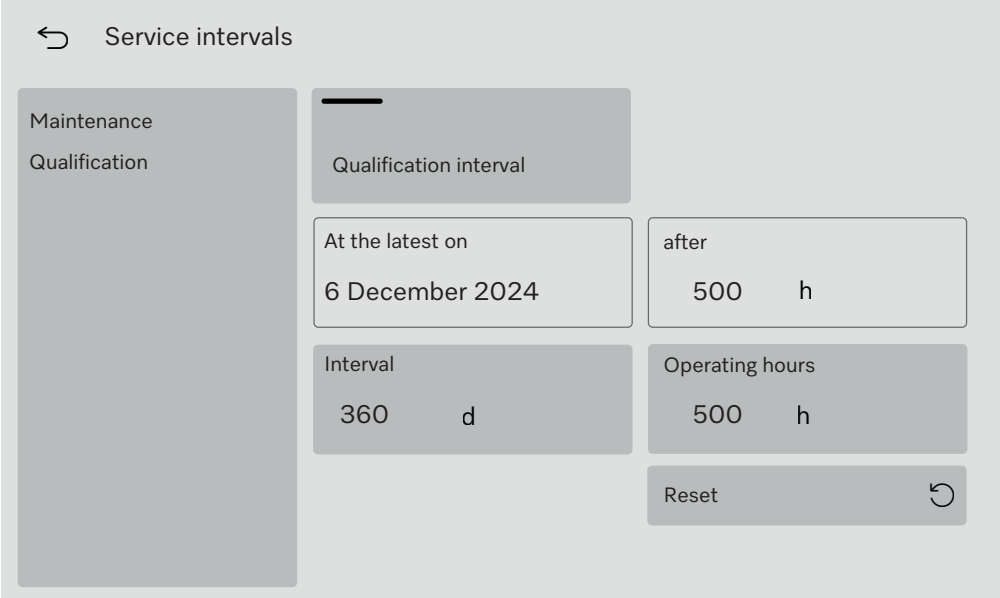
Miele Customer Service or a qualified specialist can adjust the service intervals.

Qualification

In addition to the service intervals, qualification intervals can be set, e.g. for repeated functional qualification. Qualification of the machine must be carried out either after a certain number of operating hours or at the latest on a specific date.

- Select the Qualification menu option on the left-hand side.
- Press the Qualification interval button to set a number of days and operating hours.

The following menu will appear on the display:



In the At the latest on and after fields you can read the date and the remaining operating hours until the next qualification.

Interval

The Interval parameter is used to specify after how many days the machine should be requalified.

- Press the Interval button.

The on-screen keyboard opens.

- Enter the desired number of days using the on-screen keyboard.
- Confirm your entry with **OK**.

The changed number of days is only transferred to the At the latest on field after the next Reset.

Operating hours

The Operating hours parameter is used to specify after how many operating hours the machine should be requalified.

- Press the Operating hours button.

The on-screen keyboard opens.

- Enter the desired number of operating hours using the on-screen keyboard.
- Confirm your entry with **OK**.

The changed number of operating hours is only transferred to the after field after the next Reset.

Resetting the counter

- Press the Reset ↺ button.

A pop-up appears in the display:

ℹ Maintenance carried out?
- Counter and date are being reset

- Confirm the message with **OK**.

You can cancel the function. Press the Cancel button to do this.

The number of operating hours and the date until the next qualification are reset.

“Operational information” menu

The Operational information menu summarises information about the machine and ongoing operation. The content that is displayed depends on the logged-in level. The overview lists the minimum user level required to read or change particular types of content.

Overview

Menu	Menu option	From level
Operational information		
	Wash protocols	②
	Notifications	③
	Log book	③
	Data plate	②
	Legal information	②

Reprint wash protocols

100 rinsing reports are displayed under the Wash protocols menu option. The most recent rinsing report is the first on the list. When the number of saved rinsing reports exceeds 100, the oldest rinsing report is deleted from the list.

The saved rinsing reports can be printed out on a network printer. To do this, the machine must be connected to the network.

- Select the Wash protocols menu option from the Operational information menu.

The rinsing reports appear in the display.

- The rinsing report is not selected = ☐
- The rinsing report is selected = ☑

- To select one or more rinsing reports for printout, press the corresponding empty squares ☐.
- Press the 🖶 button.

The rinsing reports are printed out on the connected network printer. The display shows:
Protocols are printed

Once the printout is complete, the message Protocol printout completed successfully is displayed and the selection of rinsing reports is reset.

If not all selected rinsing reports have been transferred to the network printer, the message Protocol printout failed is displayed. The selection remains the same for non-printed rinsing reports.

Notifications

The messages that have occurred are displayed with fault numbers under the Notifications menu option. The most recent message is at the top of the list. When the stored messages exceed the memory size, the oldest message is deleted from the list.

Log book

■ Select the Log book menu option from the Operational information menu

The display shows the log book with the following parameters:

Parameter	Unit	Description
Commissioning date	dd.mm.yyyy	Commissioning of the machine
Operating hours	h	Total programme operating hours
Last batch no.	No.	No. of the last reprocessed cycle
Consumptions		
Cold water	l	Total consumption of process water, excluding consumption for the steam condenser
Hot water	l	Total consumption
Demineralised water	l	Total consumption
Recycling water	l	Total consumption
DOS 1	ml	Total consumption
DOS 2	ml	Total consumption
DOS 3	ml	Total consumption
DOS 4	ml	Total consumption

Opening the data plate

The following information is listed in the Data plate menu:

- Machine type
- Serial number
- Serial number index
- Material number
- Software version
- CKM serial number
- CKM hardware type
- CKM software version

Legal information

This menu contains legal information such as the imprint, information on data protection and the terms of use.

The information appears on the display. No settings are possible.

■ Exit the menu with OK.

“Settings” menu

In the Settings menu, the machine can be customised to requirements at the place of use. The content that is displayed depends on the logged-in level. The overview lists the minimum user level required to read or change particular types of content.

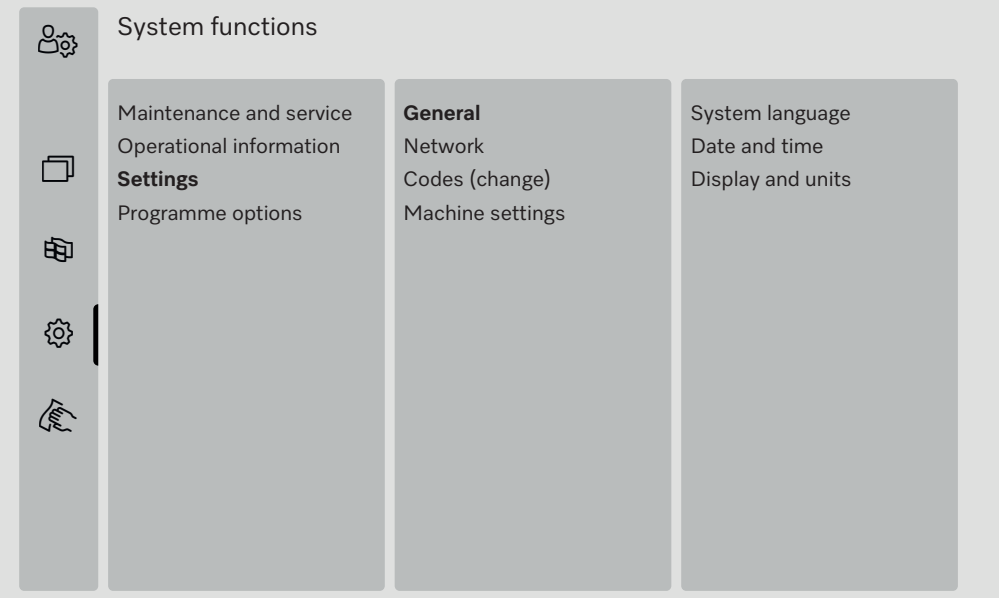
Overview

Menu option	Parameter	From level
General		
	System language	③
	Date and time	③
	Display and units	③
Network		③
Codes (change)		
	PIN Level 2 – Level 4	④
	Auto-logout	④
	Door release	④
Machine settings		
	Dispensing	③

General

■ Select the General menu option from the Settings menu.

The following menu will appear on the display:



System language

The System language parameter is used to set the default language in the machine controls. All reports are saved in the system language.

■ Open the System language menu in System functions > Settings > General.

■ Press the button for the language you want.

■ Press the ⮌ button to return to the previous menu.

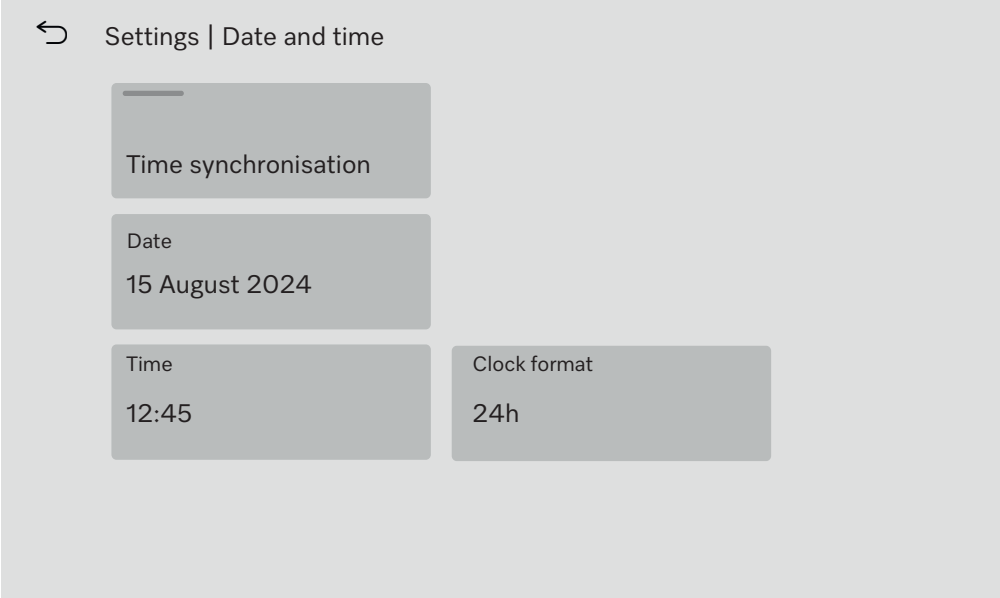
The display continues to show the text in the selected display language.
The display language can be changed at any time; see operating instructions, section “Main menu”, “Changing the display language”.

Date and time

The time display is set under Date and time in the machine controls.

- Open the Date and time menu in System functions > Settings > General.

The following menu will appear on the display:



Time synchronisation

The date and time can be set using time synchronisation via the internal CKM communication module. (See section “Network connection”, “CKM communication module”.)

- Press the Time synchronisation button.

The date and time are set automatically.
The Date and Time buttons are hidden.

If Time synchronisation is not activated, Date and Time can be set manually.

Date

A fixed format is specified for the display of the date.

- Press the Date button.

The screen for setting the date opens.

- Set the date and confirm the entry with “Enter”.

The screen closes and the date is set.

Time/Clock format

You can set the current time. You can choose between a 12-hour and 24-hour format to display the time.

- Press the Time button.

The screen for setting the time opens.

- Set the time and confirm the entry with “Enter”.

The screen closes and the time is set.

- Press the Clock format button.
- Select the format you want, e.g. 24 h.

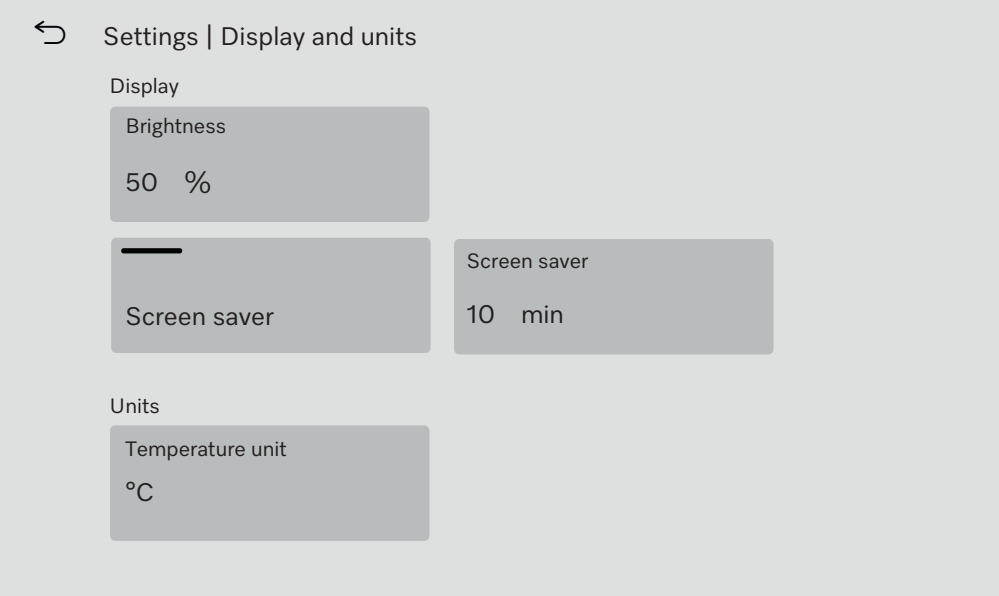
The new value is displayed under Clock format.

Display and units

The display can be customised at Display and units.

- Open the Display and units menu in System functions > Settings > General.

The following menu will appear on the display:



Brightness

The Brightness parameter can be used to adjust the brightness of the display to the lighting conditions at the machine's installation site.

- Press the Brightness button.

The on-screen keyboard opens.

- Enter the percentage for the brightness of the display using the on-screen keyboard.
- Confirm your entry with **OK**.

The new value is displayed under Brightness.

Screen saver

The Screen saver parameter is used to set how much time should elapse before the display is darkened.

- Press the Screen saver button.

The button for entering how much time should elapse before the display darkens is shown.

- Press the Screen saver button on the right.

The on-screen keyboard opens.

- Enter the time period in minutes using the on-screen keyboard.
- Confirm your entry with **OK**.

The Screen saver is activated.

To deactivate the screen saver, press the Screen saver button on the left.

Units

The Units parameter can be used to adjust the unit for temperature specifications.

- Press the Units button.
- Select the desired unit, e.g. °C.

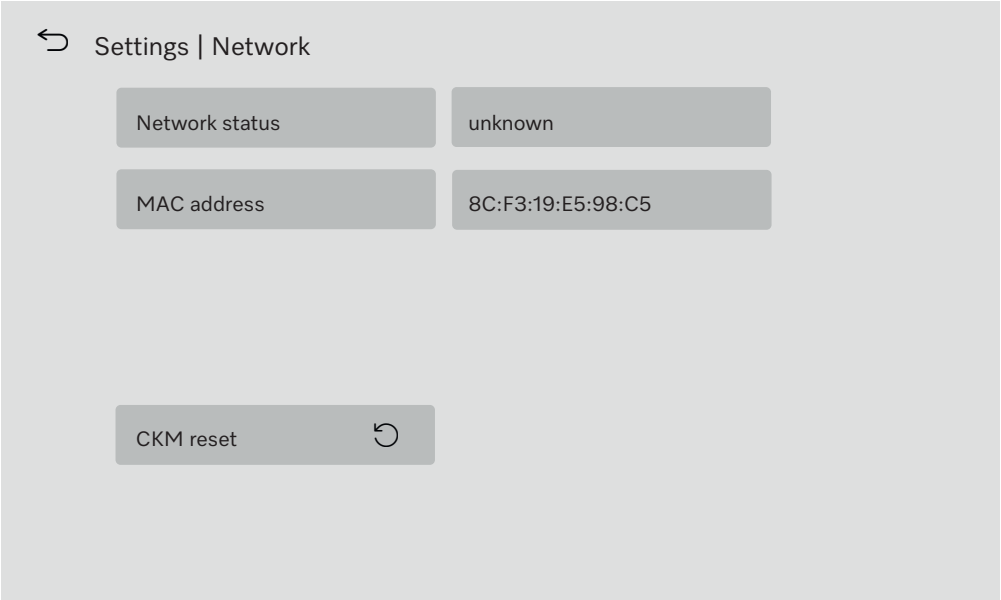
The new value is displayed under Units.

Network

The machine can be connected to the internal network at the installation site via an Ethernet interface. The network connection is configured via an internal CKM communication module.

- Select the Network menu option from the Settings menu.

The following menu will appear on the display:



This information is displayed:

- The Network status
- The MAC address

CKM reset

You can reset the configuration of the communication module using the CKM reset button.

- Press the CKM reset button.

The set parameters of the CKM are reset to the factory defaults.

Codes (change)

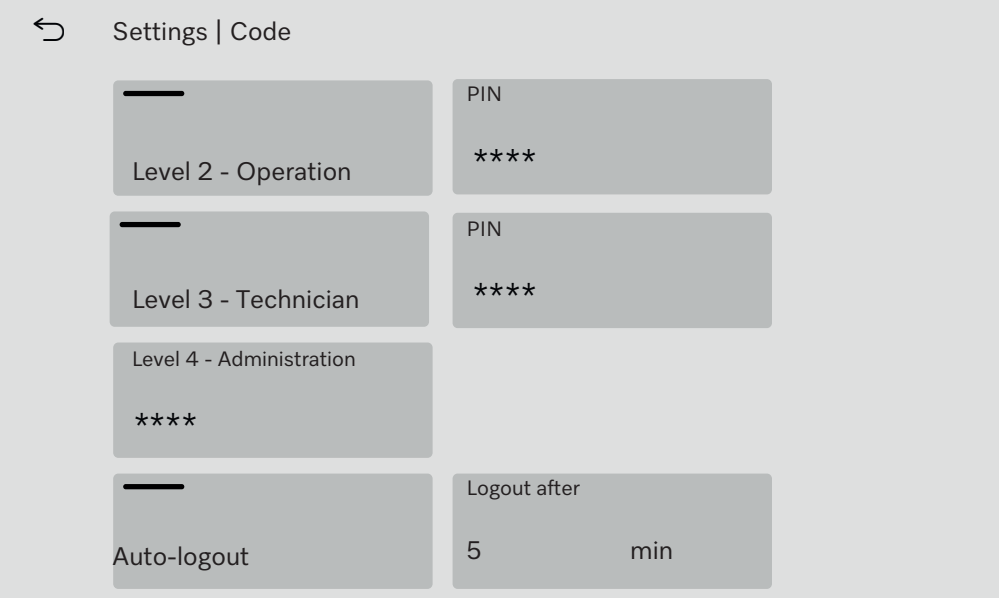
Access to the various functions of the machine is split across 4 levels.

- Level 1 – without logging in
- Level 2 - Operation
- Level 3 - Technician
- Level 4 - Administration

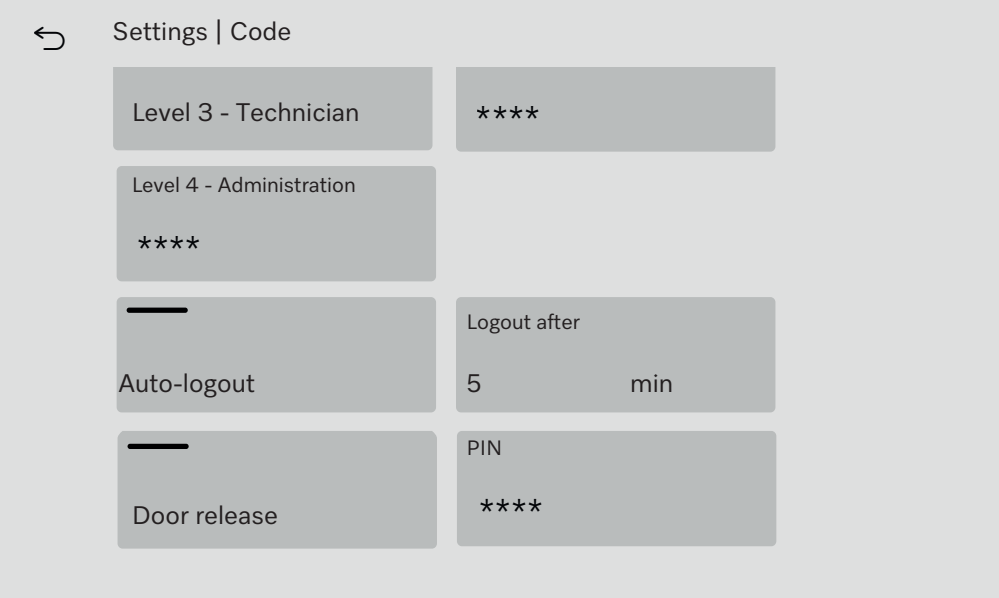
A PIN must be assigned for levels 2 to 4.
The PIN for Level 4 - Administration must be entered by Customer Service during commissioning. The PIN for levels 2 and 3 can be entered when level 4 is logged in.

■ Select the Codes (change) menu option from the Settings menu.

The following menu will appear on the display:



Upper area



Lower area

Activating the level/Entering the PIN

The PIN must contain 4 to 8 digits.

It is not permitted to use:

- The same digit 4 to 8 times, e.g. 9999
- Sequences of digits in which the following digit is increased or decreased by one, e.g. 12345 or 98765
- Letters and special characters

■ Press the button for the desired level to activate the level.

The button for entering the PIN is displayed.

■ Press the PIN button next to the corresponding level.

The on-screen keyboard opens.

■ Enter the PIN using the on-screen keyboard.

■ Confirm your entry with **OK**.

You can change the PIN for each level by pressing the PIN button for level 2 or 3 or the Level 4 - Administration button.

If you deactivate level 2 or 3, the PIN for the level is deleted.

Automatic logout

The Auto-logout parameter defines how much time should elapse before a logged-in level is logged out automatically. After the automatic logout, the machine remains ready for operation in “Level 1 – without logging in”.

■ Press the Auto-logout button.

The button for entering how much time should elapse before the automatic logout is shown.

■ Press the Logout after button.

The on-screen keyboard opens.

■ Enter the time period in minutes using the on-screen keyboard.

■ Confirm your entry with **OK**.

The automatic logout is activated.

Door release

The Door release parameter is used to specify whether the door of the machine can be opened immediately after a programme cancellation.

- Press the Door release button.

The button for entering the PIN is displayed.

- Press the PIN button.

The on-screen keyboard opens.

- Enter the PIN using the on-screen keyboard.
- Confirm your entry with **OK**.

After cancelling a programme, the door of the machine can only be opened after entering the PIN.

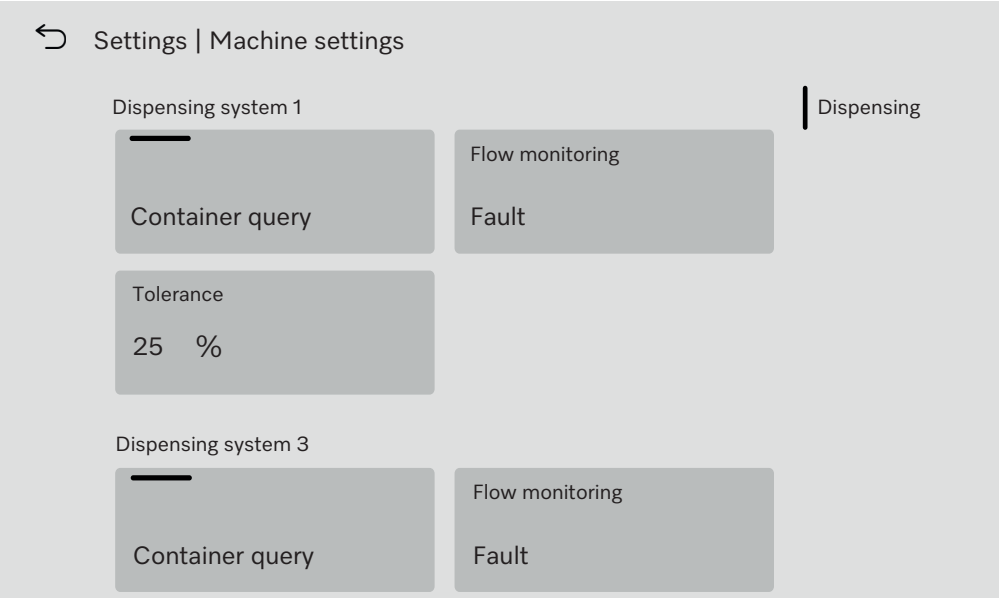
Machine settings

Dispensing

The machine is fitted with 2 to 4 dispensing systems. Some monitoring functions for the dispensing systems can be set in Dispensing.

- Select the Machine settings menu option from the Settings menu.

The following menu will appear on the display:



The Flow monitoring and Tolerance parameters are only visible in machines with Dispensing monitoring.

Container query

If the Container query parameter is activated, the fill level in the corresponding process chemical container is checked.
If the fill level in the container is too low to continue the programme sequence, a fault message appears on the display at the end of the programme. You cannot start a programme.
The parameter is activated by factory default.

- Press the Container query button to deactivate or reactivate the parameter.

Flow monitoring (optional)

The Flow monitoring parameter is used to define what follows an impermissible deviation in dispensing. The following values can be set:

- Off
  Dispensing monitoring is switched off for the corresponding dispensing system. The corresponding Tolerance button is hidden.
- Warning
  The programme runs until the end of the programme despite incorrect dispensing. At the end of the programme, the fault message is shown on the display and output in the rinsing report.
- Fault
  The programme is cancelled if dispensing is incorrect. The fault message is shown on the display and output in the rinsing report.

Cancelling the programme using the Fault setting can result in process chemicals acting on the load items for a long time and in an uncontrolled manner. This can damage the load items. If long activation times are to be avoided, select the value Warning.

- Press the Flow monitoring button.

The screen for selecting the value opens.

- Press the desired value.

The screen closes and the new value is displayed.

Tolerance (optional)

The Tolerance parameter is used to define the maximum permissible deviation from the amount of process chemical to be dispensed.

- Press the Tolerance button.

The on-screen keyboard opens.

- Enter the percentage for the permitted deviation using the on-screen keyboard.
- Confirm your entry with OK.

The new value is displayed under Tolerance.

Periodic checks

The machine should be serviced **every 1000 hours of operation, or at least once every 12 months**, by Miele Customer Service or a suitably qualified specialist.

Maintenance covers the following points and functional checks:

- Replacement of wear parts
- Electrical safety check compliant with national rules and regulations (e.g. VDE 0701, VDE 0702 in Germany)
- Door mechanism and door seal
- Any screw connections and connectors inside the wash cabinet
- Water inlet and drainage
- Internal and external dispensing systems
- Spray arms
- Filter combination
- Sump including drain pump and non-return valve
- All mobile units, baskets, modules and inserts
- Steam condenser
- Wash mechanism/wash pressure
- Drying unit
- Conductivity meter
- Visual inspection and functional check of components
- A thermo-electric check (optional on request)
- Seals will be tested for water tightness
- Safety testing of all relevant measuring systems
- Safety features

External documentation software and the computer network will not be tested by Miele Customer Service.

Routine checks

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

The following need to be inspected:

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

Cleaning the filters in the wash cabinet

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

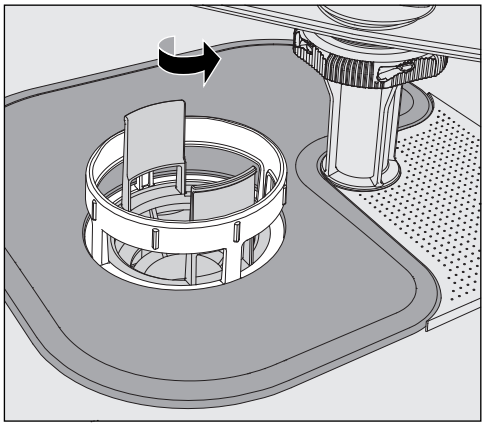
The filters in the floor of the wash cabinet prevent coarse soiling from coming into contact with the circulation system. Filters can become blocked by soiling. They therefore need to be checked every day and cleaned as necessary.

It is possible to set a cleaning interval for the filters in the wash cabinet in the controls, see the ⚙ System functions > Maintenance and service > Filter menu.
The cleaning interval is not a substitute for the daily routine check of the filters in the wash cabinet!

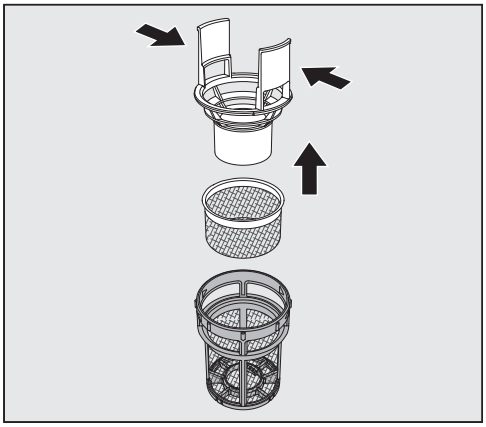
If a cleaning interval has been set for the filters in the wash cabinet, this must be reset after cleaning, see the ⚙ System functions > Maintenance and service > Filter menu.

Removing and cleaning filters

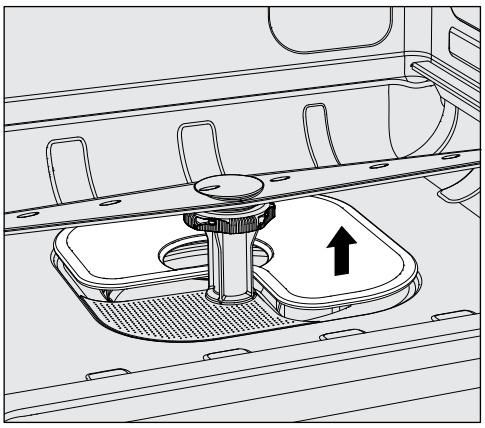
⚠ Danger of injury from sharp and pointed objects.
There is a danger of injury from sharp or pointed objects (e.g. glass shards or needles) retained in the filters. Small glass shards in particular are not always immediately visible in the filter.
Therefore, take extra care when removing and cleaning the filters.



- Loosen the microfine filter by turning it in the direction of the arrow and remove it together with the coarse filter.



- Press the catches together and pull the coarse filter up and out to remove it.
- Remove the fine filter which sits loosely between the coarse filter and the microfine filter.



- Remove the surface filter last.
- Clean the filters.
- Refit the filter combination in reverse order.

- Ensure that the surface filter sits flat in the base of the wash cabinet.
- The coarse filter must securely click into place in the microfine filter.
- The microfine filter is screwed in tight as far as it will go.

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 or 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 Customer Service.

Cleaning the spray arms

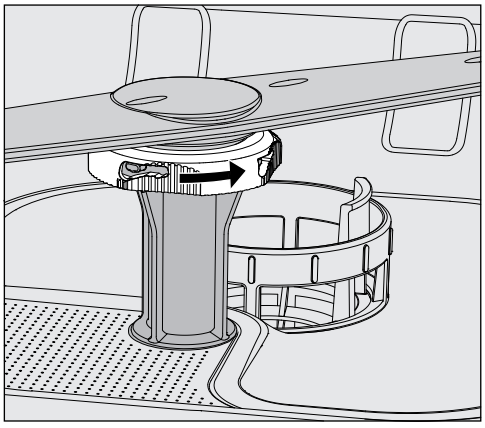
To clean the machine, the spray arms of the machine, mobile units and baskets must be dismantled as follows:

- Remove the mobile unit or the baskets from the machine.

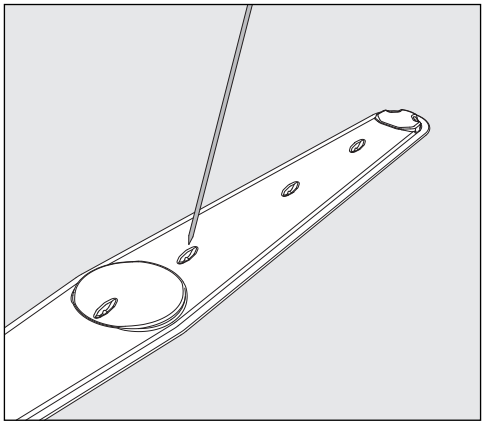
The upper machine spray arm is attached with a plug connection.

- Pull the upper machine spray arm downwards.

The lower machine spray arm and the spray arms of the load carriers are fastened with bayonet catches.



- Loosen the knurled bayonet catches by turning them as far as they will go in the direction of the arrow.
- You can then pull the spray arms up or down.



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

⚠ Do not allow any magnetic objects or load items to attach to the magnets on the spray arms.
Any metallic objects on the magnets can cause a false reading of spray arm rotation.
Remove all metal objects from the magnets.

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

Visible wear on the bearings can adversely affect the long-term functioning of the spray arms.
In this case, contact Miele Customer Service.

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

The spray arms of the load carriers are each labelled with a number that is also embossed on the water inlet pipes in the bayonet catch area, e.g. 03. When installing, make sure that the numbers on the spray arms match the numbers on the water inlet pipes.

Cleaning the machine

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

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

Locking the display

The machine display can be locked for cleaning and surface disinfection.

- Press the button in the selection area.

The following will appear on the display:

- To unlock the machine display, hold the Unlock button for around 6 s.

Cleaning the display

- The display should only be cleaned with a damp cleaning cloth or a suitable cleaning agent designed for use on glass.

Use a tested and listed agent for surface disinfection.

⚠ Do not use abrasives or all-purpose cleaners!
These can cause considerable damage to the glass due to their chemical composition.

Cleaning the door and the door seal

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

Cleaning the wash cabinet

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

Cleaning the machine front

- Clean the stainless steel surface with a damp cleaning cloth and washing-up liquid or a non-abrasive stainless steel cleaning agent.

Preventing re-soiling

- To help prevent re-soiling of stainless steel surfaces (fingerprints, etc.), a suitable stainless steel care product 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 cleaning machine.

Check the following points:

- Are the mobile unit rollers 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 adapters securely attached to mobile units, baskets and modules?
- Are all injector nozzles, irrigation sleeves and hose adapters clear so that wash water can flow through unhindered?
- Are all caps and fasteners securely attached to the irrigation sleeves?
- Are end caps present and securely positioned for all modules and injector manifolds?
- Are the caps in the water connectors of mobile units and baskets working properly?

Where applicable:

- Do the spray arms rotate freely?
- Are the spray arm nozzles free of any blockages? See “Cleaning the spray arms”.
- Are the magnets integrated into the spray arms free of any metallic objects sticking to them?
- Check whether the tubular filters need to be cleaned or filter plates, e.g. in an E 478/1 need to be replaced.

Maintenance of mobile units, baskets, modules and inserts

The machine should be serviced **every 1000 hours of operation, or at least once a year,** by the Miele Customer Service Department or a suitably qualified specialist.

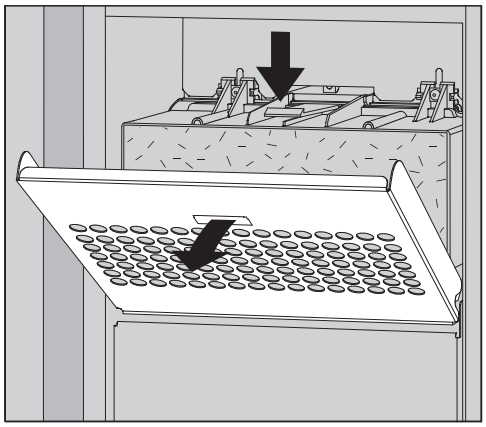
Filter change

The air filters for the machine's internal drying unit have a limited service life. For this reason, the filters must be replaced regularly.

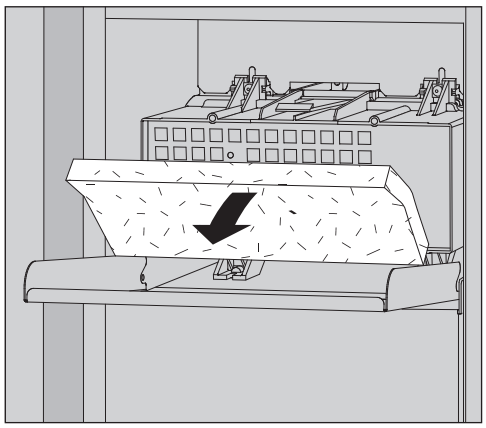
Replacing the coarse filter

Replace the coarse filter when the following message appears on the machine display:
F807 Change coarse filter.

- Open the DOS drawer.



- Loosen the filter grille and fold it downwards.



- Replace the coarse filter. The soft filter side must face forwards.
- Fold up the filter grille until it clicks into place.
- Close the DOS drawer.

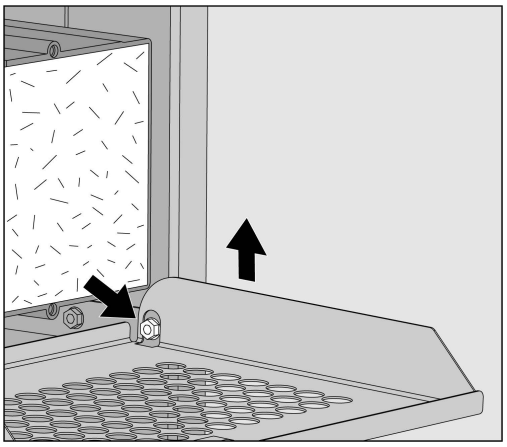
Whenever the filter is replaced, the operating hours counter for the coarse filter must be reset, see the ⚙ System functions > Maintenance and service > Filter menu.

Replacing the fine filter

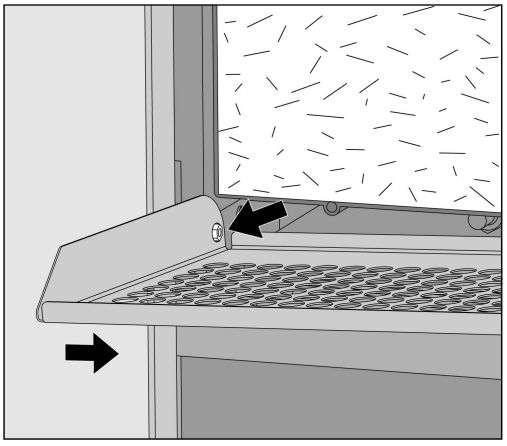
Replace with an **Original Miele HEPA filter classification 14** for optimum performance.

Replace the fine filter when the following message appears on the machine display:
F836 Change fine filter.

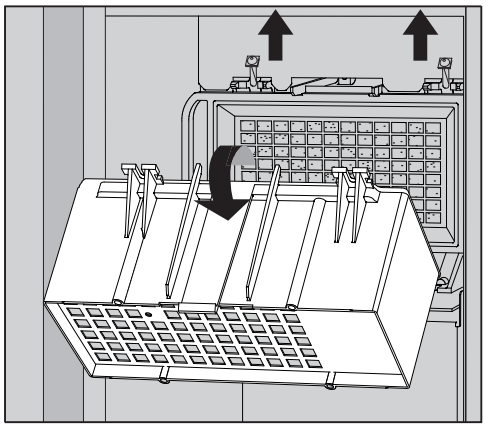
- Remove the filter grille as follows:
- Open the DOS drawer.
- Open the filter grille.



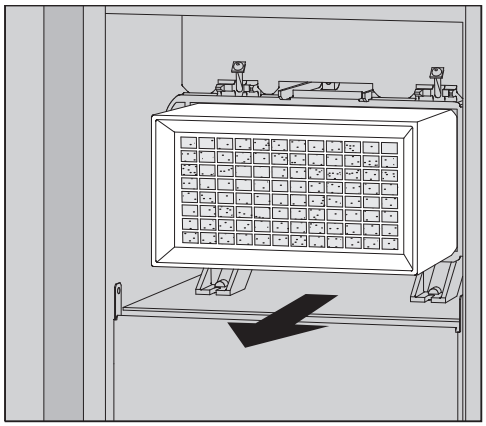
- Lift the filter grille on the right-hand side above the screw.
- Pull the filter grille slightly out of the machine on the right.



- Pull the filter grille off the screw on the left-hand side.
- Remove the coarse filter.



- Detach the coarse filter housing by unscrewing the fixing screws and pushing them upwards.
- Remove the coarse filter housing.



- Remove the fine filter from its holder and insert a new one.
- Reinsert the coarse filter housing and tighten the fixing screws.
- Reinsert the filter grille.
- Reinsert the coarse filter and close the filter grille.
- Close the DOS drawer.

Whenever the filter is replaced, the operating hours counter for the fine filter must be reset, see the ⚙ System functions > Maintenance and service > Filter menu.

The fault messages on the machine display are designed to help you to find the cause of a fault and to resolve it. However, please observe the following:

⚠ Repairs may only be performed by Miele Customer Service or an authorised technician.
Unauthorised repairs can expose the user to considerable risk.

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

Representation of faults on the display

Faults ⚠ and messages **i** are shown in a pop-up on the machine display together with instructions on how to rectify the fault:

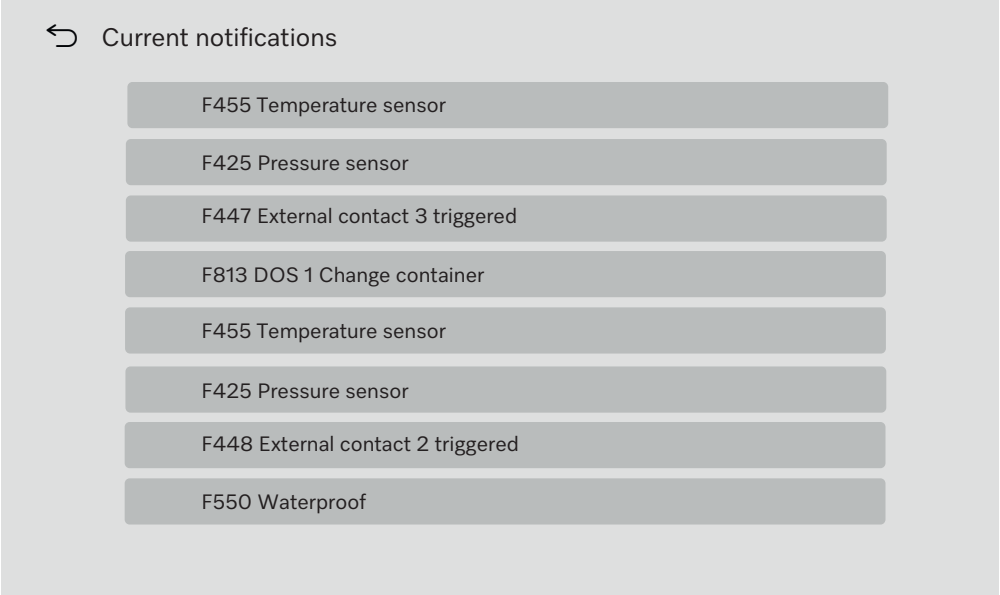
If there are several faults and messages, a pop-up is displayed in each case.
The pop-ups are closed with the **X** button.

The faults and messages are saved. They can be viewed in ⚙ System functions > Operational information > Notifications (from Level 3).

List with active messages

As long as there are active messages, no programme can be started.

If there are active messages, the ⚠ button is displayed in the selection bar in the main menu. Select the ⚠ button to open the list with all active messages. If there are more than 8 entries in the list, you can scroll down the list.



Once the cause of the fault has been remedied, the messages are automatically deleted from the list.

To open the description of the fault with information on rectifying it, press the corresponding button.

Faults without fault number

Unsatisfactory cleaning and corrosion

Problem	Cause and remedy
White deposits remain on the load items.	The water softener settings are too low. ■ Programme the water softener to the appropriate water hardness.
	The quality of the water for the final rinse was not sufficient. ■ Use water with a low conductivity value. ■ If the machine is connected to a full demineralisation cartridge, check its condition and replace it if necessary.
	The water entering via the DI water connection is not sufficiently demineralised. ■ Check the upstream demineralisation systems. If necessary, the demineralisation cartridge of the water purifier must be replaced.
The cleaning result is unsatisfactory.	Mobile units, baskets, modules and inserts were not suitable for the load. ■ Select mobile units, baskets, modules and inserts which are suitable for the task.
	Mobile units, baskets, inserts and modules were incorrectly loaded or overloaded. ■ Arrange the wash load correctly according to the information in the Operating instructions. ■ Avoid overloading the mobile units, baskets, modules and inserts.
	The programme was not suitable for the soiling. ■ Select a suitable programme. or ■ Adjust the parameters to suit the task.
	A spray arm is blocked. ■ Ensure the spray arms are not obstructed when arranging the wash load.
	Injector nozzles in the mobile units, baskets, modules or spray arms 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 fitted to the water connection. ■ Check the adapter.

Problem	Cause and remedy
Load items made of glass are showing signs of corrosion.	The load items are not suitable for machine reprocessing. ■ Only use load items which have been designated by their manufacturer as suitable for machine reprocessing.
	Neutralisation has not taken place during the programme sequence. ■ Check the fill level in the neutralising agent container and vent the dispensing system.
	The wash temperature was too high. ■ Select a different programme. Or ■ Reduce the wash temperature.
	Cleaning agents used were too alkaline. ■ Use a milder cleaning agent. Or ■ Reduce the concentration of the cleaning agent.
Stainless steel load items are showing signs of corrosion.	The stainless steel is of insufficient quality for machine reprocessing. ■ Only use stainless steel load items made of high-quality stainless steel and follow the load item manufacturer's instructions regarding machine reprocessing.
	The chloride content in the water is too high. ■ Have a water analysis check carried out. If necessary, connect the machine to an external water processing unit and use demineralised water.
	Neutralisation has not taken place during the programme sequence. ■ Check the fill level in the neutralising agent container and vent the dispensing system.
	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 load items. ■ Check the installation. ■ Discard any rusty load items.

Noises

Problem	Cause and remedy
Knocking noise in the wash cabinet.	One or more spray arms are hitting the load items. ■ Cancel the programme. Observe the instructions in the section “Operation”, “Cancelling a programme”. ■ Arrange the load items so that they cannot be hit by the spray arms. ■ Make sure the spray arms can rotate freely. ■ Start the programme again.
Rattling noise in the wash cabinet.	Load items are moving in the wash cabinet. ■ Cancel the programme. Observe the instructions in the section “Operation”, “Cancelling a programme”. ■ Rearrange the load so that items are secure. ■ Start the programme again.
Knocking noises in the water supply pipe.	This may be caused by the on-site installation or the cross-section of the water supply pipe being too small. This does not affect the function of the machine. ■ Contact a qualified installer.

Unexpected behaviour

Problem	Cause and remedy
The display does not respond correctly to operation.	After an input on the display, the display does not update as expected. ■ Switch the machine off and on again at the power switch.
	Deposits on the display distort the input. ■ Clean the display, see section “Maintenance”, “Cleaning the display”.

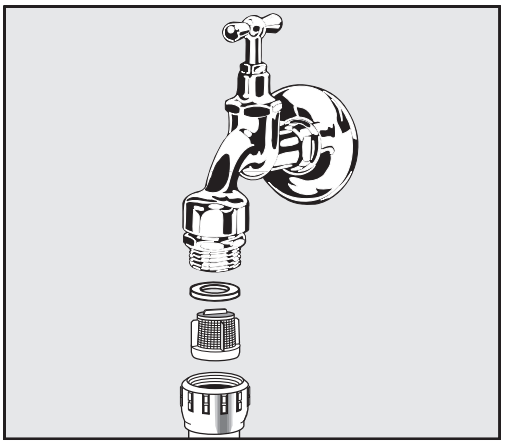
Cleaning the water intake filters

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

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

To clean the filter

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



- Remove the seal from the screw thread.
- 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 stopcock. Ensure that the screw thread goes on straight and not cross-threaded.
- Open the stopcock. If water leaks out, the screw connection may not be connected securely or it may have been screwed on at an angle. Fit the water intake valve straight and screw it in place.

⚠ Repairs may only be carried out by Miele Customer Service or an authorised technician.
Unauthorised repairs can expose the user to considerable risk.

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

Fault messages appear on the machine display.

Notify Miele Customer Service if you are still not able to resolve the fault after following the advice on the machine display.

Customer Service will need to know the model and serial number of the machine. Both details can be found on the data plate (see section “Machine description”).

Electromagnetic compatibility (EMC)

The machine has been tested for EMC (electromagnetic compatibility) in accordance with EN 61326-1 and is suitable for use in commercial facilities, e.g. in laboratories and laboratory-like areas in the industrial sector.
The machine is a Class A appliance suitable for use in all areas other than domestic areas and areas directly connected to a low-voltage supply network that supplies residential buildings.

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

Check that the supply voltage is within a range of +/10 % of its nominal value.

⚠ Warning note
The machine is not intended for use in residential areas and cannot ensure adequate contactor protection for radio signal reception in such environments.

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

- The electrical installation must be carried out in accordance with IEC 60364-4-41 or the local regulations.
- The connection to the power supply must be via a suitably rated plug and socket and must comply with national regulations. The socket must be accessible after the machine has been installed. An electrical safety test must be carried out after installation and after any maintenance work.
- If the machine is hard-wired to the power supply or connected via a socket, a power switch with all-pole isolation must be installed. The power switch must be designed to operate at the rated current for the machine, must ensure a 3 mm gap between all open contacts and must be able to be locked in the off position. The power switch must be accessible after the machine has been installed.
- Equipotential bonding should be carried out if required.
- The rated loads are specified on the data plate and in the wiring diagram supplied with the machine.
- For added safety, a residual current device must be connected upstream of the machine in accordance with the installation plan. The installation must be carried out on site by the operator.
- The mains connection cable may only be replaced by an original spare part from the manufacturer.

Further notes on electrical connection are given on the installation plan.

The machine may only be operated with the voltage, frequency and fuse rating shown on the **data plate**.

The **data plates** are attached to the machine. The positions are described in the machine overview.

The **wiring diagram** is supplied with the machine.

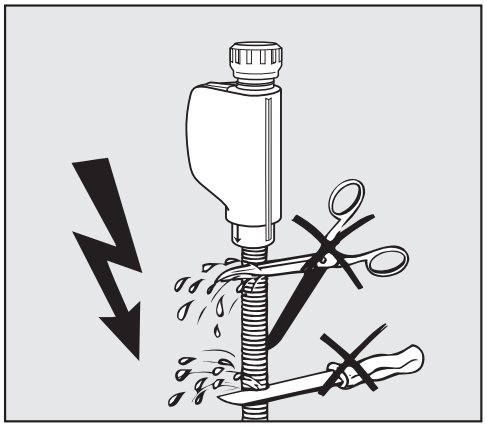
Equipotential bonding connection

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

Connection to the water supply

⚠ The water inside the cleaning machine is not suitable for drinking!

- The cleaning machine must be connected to the water supply in strict accordance with local regulations.
- The water used must at least comply with European or national regulations for drinking water quality. If the water supply has a high iron content, there is a danger of corrosion occurring on load items made of stainless steel and on the cleaning machine itself. If the chloride content of the water exceeds 100 mg/l, the risk of corrosion to load 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 cleaning machine complies with the applicable European standards for the protection of drinking water.
  UK, Australia and New Zealand only: To comply with water regulation requirements, this machine must be connected to the potable water supply via the non-return check valve supplied with the machine.
- The machine is equipped with 3 water connections as standard:
  - Cold water 5–20 °C, blue marking
  - Hot water 5–65 °C, red marking
  - Demineralised water 5–65 °C, green marking
- The water inlet hoses must be connected to stopcocks for cold and hot water. If hot water is not available, the inlet hose for hot water must be connected to the cold water supply.
  To be able to use the programmes supplied by the factory, a DI water connection is also required.
- The steam condenser is supplied with water via the cold water connection.
- The water connection pressure must be 200–1000 kPa.
- If the water connection pressure does not lie in this range, contact Miele Customer Service for advice.
- Stopcocks with a ¾ 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 approx. 1.3 m long with ¾ inch screw thread. The filters in the screw threads must not be removed.



⚠ Risk of electric shock from mains voltage.
There are electrical components in the water inlet hoses.
Do not shorten or otherwise damage the water inlet hoses supplied with the machine.

Non-return valve

UK installation requirements:
The double non-return valve supplied with this product must be installed between the stopcock and the water inlet hose.
Screw the double non-return valve onto the stopcock. Then screw the water inlet hose with the water protection system onto the thread of the double non-return valve.

Retrofitting the large-surface filter

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

Demineralised water ring line

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

Please contact Miele Customer Service for further information.

Feed pump (optional)

The water inlet of the machine can be connected to an external tank, e.g. for demineralised water or recycling water. For this purpose, the machine must be retrofitted with a feed pump. The feed pump may only be installed by Miele Customer Service or an authorised technician.

The outlet nozzle of the water container must be at a height of at least 300 mm, see installation plan.

Further information can be found in the installation plan. The installation plan is available online.

Connecting the drain hose

- The machine drainage system is fitted with a non-return valve, which prevents dirty water from flowing back into the machine via the drain hose.
- The machine drain hose should be connected to a separate on-site drainage system for the machine only. If a separate connection is not available, we recommend connecting the hose to a dual-chamber siphon.
- The on-site connection for the water drain may be located at a maximum height of 1,7 m, measured from the lower edge of the machine.
- The drainage system must be able to accommodate a minimum drainage flow of 50 l/min.
- The drain hose is approx. 1.3 m long and flexible with an internal diameter of 22 mm. Hose clips for the connection are included.
- The drain hose must not be shortened.
- The drain hose can be extended using a connecting piece to attach a further length of hose up to 3.8 m.
- The drainage length must not be longer than 3.8 m.

Recycling water drain

The machine can be fitted with a second water drain by Miele Customer Service or an authorised technician. The second water drain can be used to, for example:

- Separate wash water with hazardous substances, e.g.
  - Organic and inorganic pollutants in laboratories
  - Cytostatics in the pharmaceutical industry
  - Oils and greases in industry
- Collect wash water for reuse
- Reduce the volume of waste water

Further information can be found in the installation plan. The installation plan is available online.

Height	1430 mm
Width	900 mm
Depth + 100 mm wall clearance	800 mm
Depth including handle + 100 mm wall clearance	840 mm
Depth with open door + 100 mm wall clearance	1395 mm
Useable cabinet dimensions:	
Height	520 mm
Width	530 mm
Depth	520 mm
Net weight	200 kg
Operating weight	310 kg
Maximum load capacity of open door	50 kg
Maximum load capacity of machine lid	25 kg
Max. individual load (5 cm^2 foot)	608 N
Distributed load (maximum load-bearing capacity)	5 kN/m^2
Voltage, rated load, fuse rating	See data plate
Mains connection cable	2.7 m
Water temperature of water connection:	
Cold water/steam condenser	5–20 °C
Hot water/demineralised water	5–65 °C
Water connection pressure	200–1000 kPa
Water inlet flow rate	
UK	3 l/min
Europe	7.5 l/min
Connection hose length	1.3 m
Water hardness	0–10.7 mmol/l
Demineralised water	
- Recommended conductivity	<15 µS/cm
- Chloride content	<100 mg/l
- pH value	5–8
Drain hose length	1.3 m
Maximum drain hose length	3.8 m
Maximum delivery head	1.7 m
Max. waste water temperature	93 °C
Max. transient water drain flow rate	50 l/min

Technical data

Operating conditions:	
Ambient temperature	5–40 °C
Relative humidity	
Minimum	10 %
Maximum for temperatures up to 31 °C	80 %
Linear decrease for temperatures up to 40 °C	50 %
Storage and transportation conditions:	
Ambient temperature	-20 – +60 °C
Relative humidity	10–85 %
Air pressure	500–1060 hPa
Maximum altitude above sea level	2000 m*
Protection category (according to IEC 60529)	IP 21
Degree of soiling (according to IEC/EN 61010-1)	2
Overvoltage category (according to IEC 60664)	II
Sound pressure level LpA during cleaning and drying	<65 dB(A) re 20 µPa
VDE radio suppression, EMC equipment class (according to DIN EN IEC 55011)	A
VDE electrical safety	IEC 61010-1, IEC 61010-2-040
CE marking	2006/42/EC Machinery Directive
Manufacturer's address	Miele & Cie. KG, Carl-Miele-Str. 29, 33332 Gütersloh, Germany

* If installed above 1500 m, the boiling point of the wash water will be lower. In this case, the disinfection temperature and the holding time might need to be adjusted

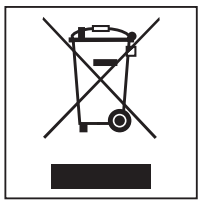
Disposal of the packing material

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

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

Disposing of your old appliance

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



Instead, please make use of officially designated collection and disposal points to dispose of and recycle electrical and electronic appliances in your local community, with your dealer or with Miele, free of charge. By law, you are solely responsible for deleting any personal data from the old appliance prior to disposal. You are legally obliged to remove any old batteries which are not securely enclosed by the appliance and to remove any lamps without destroying them, where this is possible. These must be taken to a suitable collection point where they can be handed in free of charge. Please ensure that your old appliance poses no risk to children while being stored for disposal.

Australia and New Zealand:
Please dispose of it at your local community waste collection / recycling centre for electrical and electronic appliances. You are also responsible for deleting any personal data that may be stored on the appliance prior to disposal. Please ensure that your old appliance poses no risk to children while being stored prior to disposal.

United Kingdom
Miele Co. Ltd., Fairacres, Marcham Road
Abingdon, Oxon, OX14 1TW
Professional Sales, Tel: 0845 365 6608
E-mail: professional@miele.co.uk
Internet: www.miele.co.uk/professional

Australia
Miele Australia Pty. Ltd.
ACN 005 635 398, ABN 96 005 635 398
Level 4, 141 Camberwell Road, Hawthorn East, VIC 3123
Tel: 1300 731 411
Internet: www.miele.com.au/professional
E-mail: professional.sales@miele.com.au

China Mainland
Miele Electrical Appliances Co. Ltd.
No. 82, Shimenyi Road, JingAn District,
Shanghai, China, P.R.C, Post Code: 200040
Phone: +86 21 6157 3500, Fax: +86 21 6157 3511
E-mail: info@miele.cn, Internet: www.miele.cn

Hong Kong, China
Miele (Hong Kong) Ltd.
41/F - 4101, Manhattan Place
23 Wang Tai Road, Kowloon Bay, Hong Kong
Tel: (852) 2610 1025, Fax: (852) 3579 1404
Email: customerservices@miele.com.hk
Website: www.miele.hk

India
Miele India Pvt. Ltd.
1st Floor, Copia Corporate Suites,
Commercial Plot 9, Mathura Road, Jasola,
New Delhi - 110025
E-mail: customercare@miele.in, Website: www.miele.in

Ireland
Miele Ireland Ltd.
2024 Bianconi Ave., Citywest Business Campus,
Dublin 24
Tel: (01) 461 07 10, Fax: (01) 461 07 97
E-Mail: info@miele.ie, Internet: www.miele.ie

Malaysia
Miele Sdn Bhd
Suite 12-2, Level 12
Menara Sapura Kencana Petroleum
Solaris Dutamas No. 1, Jalan Dutamas 1
50480 Kuala Lumpur, Malaysia
Phone: +603-6209-0288
Fax: +603-6205-3768

New Zealand
Miele New Zealand Limited
IRD 98 463 631
8 College Hill
Freemans Bay, Auckland 1011, NZ
Tel: 0800 464 353
Internet: www.miele.com.au/professional
E-mail: professional.sales@miele.com.au

Singapore
Miele Pte. Ltd.
29 Media Circle, #11-04 ALICE@Mediapolis
Singapore 138565
Tel: +65 6735 1191, Fax: +65 6735 1161
E-Mail: info@miele.com.sg
Internet: www.miele.sg

South Africa
Miele (Pty) Ltd
63 Peter Place, Bryanston 2194
P.O. Box 69434, Bryanston 2021
Tel: (011) 875 9000, Fax: (011) 875 9035
E-mail: info@miele.co.za
Internet: www.miele.co.za

United Arab Emirates
Miele Appliances Ltd.
Showroom 1, Eiffel 1 Building
Sheikh Zayed Road, Umm Al Sheif
P.O. Box 114782 - Dubai
Tel. +971 4 3044 999, Fax. +971 4 3418 852
800-MIELE (64353)
E-Mail: info@miele.ae
Website: www.miele.ae

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

 M.-Nr. 12 751 780 / 00

CE