

Operating and Installation
Instructions


Laboratory Glassware
Washer
G 7804

To prevent accidents
and machine damage
read these instructions

before
installation or use.

en - US

M.-Nr. 09 234 570

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|---|----|
| IMPORTANT SAFETY INSTRUCTIONS | 5 |
| Function of the glassware washer | 9 |
| Guide to the glassware washer | 10 |
| Opening and closing the door | 12 |
| Water softener | 13 |
| Setting the water softener | 13 |
| Filling the salt reservoir | 15 |
| Salt indicator | 16 |
| Areas of application | 17 |
| Spring adapter for the water connection | 19 |
| Adjusting the upper basket | 19 |
| Effects of Processing Chemicals | 22 |
| Dispensing chemical agents | 27 |
| Operation | 31 |
| Turning on the lab washer | 31 |
| Starting a program | 31 |
| Select the Drying  function if desired | 31 |
| Changing a program | 31 |
| Starting the program | 32 |
| Program sequence display | 32 |
| End of a program | 32 |
| Turning off | 32 |
| Canceling a program | 33 |
| Program guide | 34 |
| Programming functions | 36 |
| The following instructions apply to all programming functions: | 36 |
| To access the programming mode | 36 |
| Saving to memory and exiting the programming mode | 36 |
| Exiting the programming mode without saving | 36 |
| Buzzer | 37 |
| Changing program parameters | 38 |
| Changing the temperature | 38 |
| Changing the holding time | 38 |
| Activating Rinse 2 | 39 |
| Delay start | 40 |
| Restoring the factory settings | 41 |

Contents

| | |
|---|----|
| Maintenance | 42 |
| Routine checks | 42 |
| Cleaning and Care | 43 |
| Frequently asked questions | 50 |
| Thermo switch | 58 |
| After Sales Service | 59 |
| INSTALLATION INSTRUCTIONS | 61 |
| Installation | 62 |
| Plumbing | 64 |
| Water inlet | 64 |
| Drainage | 66 |
| Electrical connection | 67 |
| Technical data | 68 |
| Caring for the environment | 69 |

IMPORTANT SAFETY INSTRUCTIONS

This machine conforms to current safety requirements. However, inappropriate use can lead to personal injury and property damage.

To avoid the risk of accidents and machine damage read the operating instructions carefully before using this machine.

Keep these instructions in a safe place and pass them on to any future user.

WARNING - To reduce the risk of fire, electric shock or injury:

Use

▶ This lab washer is not intended for any purpose that is not indicated in the operating instructions. Conversions, modifications, and other unintended uses are considered to be dangerous. The cleaning processes described here apply only to those medical products that are specifically designed by the manufacturer to be re-used. Follow the product manufacturer's instructions.

▶ This lab washer is intended for indoor stationary use only.

Please pay attention to the following notes to maintain safe procedures.

▶ Installation and repair work should be performed by a Miele authorized service technician. Work by unqualified persons could be dangerous and may void the warranty.

▶ Do not use the labwasher until properly installed.

▶ Do not install the machine in an area where a danger of explosion or of freezing temperatures may be present.

▶ Before installation, make sure that the voltage and frequency listed on the data plate correspond with the household electrical supply. This data must correspond to prevent injury and machine damage. Consult a qualified electrician if in doubt.

▶ Be certain this machine is properly installed and grounded by an authorized technician. To guarantee the electrical safety of this machine, continuity must exist between the machine and an effective grounding system. It is imperative that this basic safety requirement be met. If there is any doubt, have the electrical system checked by a qualified technician.

▶ Do not install or use a damaged machine. A damaged machine is dangerous. Unplug the machine and call your Miele dealer or the Miele Technical Service Department.

▶ If the power cord is damaged it must only be replaced by a Miele Service technician with a genuine Miele power cord.

IMPORTANT SAFETY INSTRUCTIONS

- ▶ Do not use an extension cord to connect this machine to electricity. Extension cords do not guarantee the required safety of the machine (e.g. danger of overheating).
- ▶ Defective components should be replaced by Miele original parts only.
- ▶ Before installation or service, disconnect the power supply to the work area by unplugging the unit, "tripping" the circuit breaker or removing the fuse.
- ▶ When work has been performed on the supply plumbing, air must be bled from the supply line to the labwasher. Otherwise, the water softening system may be damaged.

Use

- ▶ Please follow the advice on installation in this manual and in the separate Installation Instructions.
- ▶ Personnel operating the lab washer should be trained regularly. Children and untrained personnel must not be allowed access to the machine or its controls.
- ▶ Persons who lack physical, sensory or mental abilities, or experience with the machine should not use it without supervision or instruction by a responsible person.
- ▶ Do not allow children to play in or around the machine, or to operate it.
- ▶ **BURN AND SCALD HAZARD**
This machine reaches very high temperatures. Take care when unloading the unit. Let baskets and inserts cool before touching them. Any water which may remain in containers will be very hot and should be emptied into the wash cabinet.
- ▶ **BURN HAZARD**
The heating elements become extremely hot during use. Do not touch the heating elements during or directly after the end of a program.
- ▶ Take care when handling processing chemicals (detergents, softeners, neutralizers, etc.). These may contain irritant or corrosive ingredients. Wear protective gloves and goggles. With all chemical agents the manufacturer's safety conditions must be observed.

IMPORTANT SAFETY INSTRUCTIONS

- ▶ The lab washer is only designed to operate with water and the recommended processing chemicals. The machine must NOT be operated with organic solvents or flammable liquids. This may cause an explosion or damage to rubber and plastic components, which in turn allows liquid substances to leak out.
- ▶ Avoid inhaling detergent. If swallowed, it can cause burning in the mouth and throat or inhibit breathing.
- ▶ Be careful when sorting and loading items to be washed: locate sharp items so that they are not likely to damage the door seal; and load sharp knives with the handles up to reduce the risk of injuries.
- ▶ The water in the machine must not be used as drinking water.
- ▶ Do not sit or lean on the open door. This could cause the machine to tip or be damaged.
- ▶ Never clean the machine or near its vicinity with a water or high pressure hose.
- ▶ Only use cleaning agents formulated for special processes and approved by Miele for use with this labwasher. Use of unsuitable cleaning agents could adversely affect the components of the machine.
- ▶ Pre-treatments with detergents can create suds, as can certain rinsing agents. For pre-treatment and / or cleaning only, use low-sudsing detergents which have been approved by Miele. Suds can have an adverse effect on the cleaning process.
- ▶ When a chemical additive is recommended on technical application grounds (e.g. with a detergent), this does not imply that the manufacturer of the labwasher takes responsibility for the effect of the chemical on the material of the items being cleaned. Please be aware that changes in formulation, storage conditions, etc., which may not be publicized by the chemical producer, can have a negative effect on the cleaning result.
- ▶ Always follow the instructions of the chemical manufacturer when using detergents and special application chemicals. Only use such chemicals for the purpose and in the situation specified to avoid such dangers as chemical reactions and material damage.
- ▶ The labwasher is designed only for operation with water and additive cleaning agents. Organic solvents must not be used in the machine. An explosion or machine corrosion could occur with the use of organic solvents.
- ▶ In critical applications where very stringent requirements must be met, it is highly recommended that all relevant factors for the process, such as cleaning agent, quality of water, etc., be discussed with a Miele Application Specialist.
- ▶ For applications that demand especially stringent cleaning and rinsing results, the operator must ensure that quality control occurs on a regular basis.

IMPORTANT SAFETY INSTRUCTIONS

- ▶ The mobile units and special inserts should only be used for their specific application.
- ▶ Empty any containers or utensils before arranging them in the machine.
- ▶ Do not allow any remains of acids or solvents, particularly hydrochloric acid or chloride solutions, to get into the wash cabinet. The presence of any solvents should be minimized (especially those in hazard class A1).
- ▶ To avoid corrosion damage ensure that solutions or steam containing hydrochloric acid do not come into contact with the steel outer casing of the labwasher.

Please note the following symbols on the machine:



Caution : See Operating Instructions!



Caution : Danger of electric shock!

Accessories

- ▶ Only genuine, Miele parts and accessories should be used with this lab washer, including Miele mobile units, baskets and inserts.
- ▶ Adequate cleaning results cannot be guaranteed when non-Miele accessories are used, or when Miele accessories are altered. Damages resulting from the use of unsuitable accessories are not covered by the warranty.

Disposal of an old appliance

Obsolete appliances should be made unusable. To do this, first disconnect the appliance from the power supply, then cut off the power cord. It is important to note that the old appliance may be contaminated from exposure to pathogens, genetically modified material, blood, etc., and therefore must be decontaminated before disposal.

For safety and environmental protection, be sure to remove all chemical residue, in compliance with safety regulations (wear protective eyewear and gloves!).

Remove or destroy the door latch, to prevent children from locking themselves inside. The appliance can now be sent for disposal through the proper resource recovery facilities.

SAVE THESE INSTRUCTIONS

Function of the glassware washer

This Miele dishwasher is designed for cleaning and rinsing laboratory glassware which is suitable for machine reprocessing. Always follow the labware manufacturer's instructions.

Examples of application areas:

- laboratory glassware used in research and development,
- laboratory glassware used in areas of analysis and specimen taking,
- laboratory glassware used in micro-biology and biotechnology.

The type of laboratory glassware which can be reprocessed ranges from Petri dishes to centrifugal test tubes.

Reprocessing glassware by machine achieves reproducible results and should be used in preference to processing them by hand.

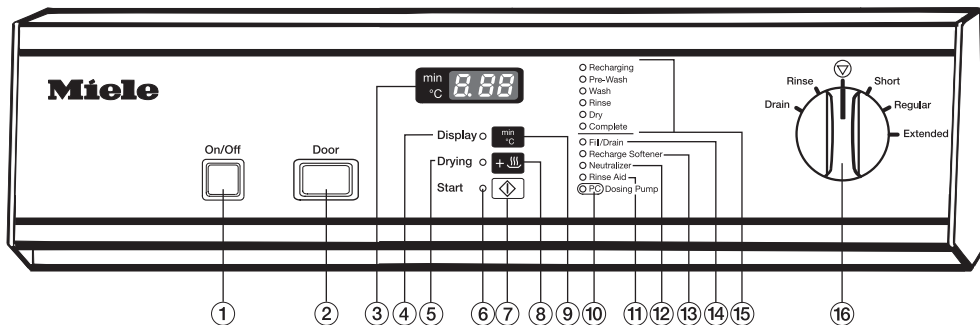
The cleaning program as well as the agents used must be chosen according to the type of soiling and load being processed.

The agents used in the machine for reprocessing should be selected according to the level of cleaning required as well as the method the product will be used.

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

The dishwasher is programmed to carry out the final rinse with mains water or with processed water of a quality to suit the application (e.g. distilled, purified, de-ionized or demineralized water). The water quality is important for applications requiring analytically clean laboratory glassware.

Guide to the glassware washer



① On/Off button

② Door button

③ Display

④ Display indicator

⑤ Drying indicator

⑥ Start indicator

⑦ Start button

⑧ Drying button

⑨ Button to switch between the actual temperature and the elapsed time.

Check / Refill indicators:

⑩ Optical interface for service technician

⑪ Rinse Aid

⑫ Neutralizer

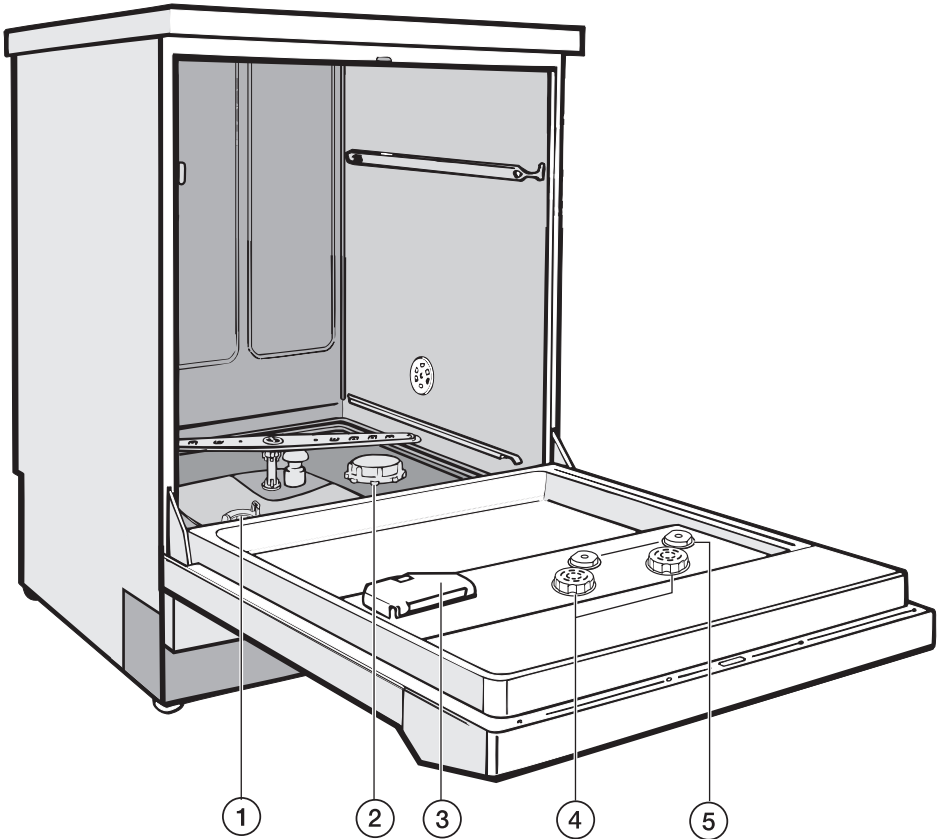
⑬ Recharge softener

⑭ Fill/Drain

⑮ Program sequence indicators

⑯ Program selector

Guide to the glassware washer



① Filter combination

② Salt reservoir (water softener)

③ Dispenser for powdered detergent

④ Dispenser for rinse aid or neutralizing agent (with dosage selector)

⑤ Level indicator for rinse aid or neutralizing agent

Opening and closing the door

Electric door lock

The machine is equipped with an electric door lock. The door can only be opened when the electrical supply to the machine is turned on, and the "On/Off" button is pressed.

To open the door

- Press the "Door" button in as far as it will go. At the same time, grip the handle and open the door.

After the first intake of water, the door remains locked and cannot be opened until the end of the program (except during the "Rinse" and "Drain" programs). The machine can be programmed to open during the "Drying" program, if desired.

Do not touch the heating elements. They remain hot for some time after the end of the program and can cause burns.

To close the door

- Lift the door upwards and push it until it clicks shut. Do not press the release catch while shutting the door.

To cancel a program

If a program has to be canceled in an emergency, e.g. the program has been interrupted due to a fault, the door will have to be opened manually.

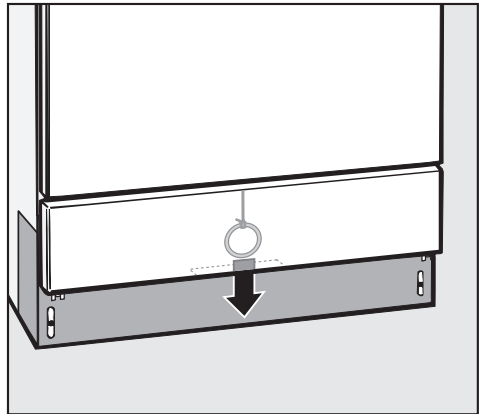
- Turn the program selector to the "Stop" (⏹) position. The program is canceled after approximately 2 seconds.

To open the door with the emergency release

The emergency release should only be used when the door cannot be opened normally, e.g. in the event of a power failure.

- Turn the program selector to "Stop" (⏹).
- Press the "On/Off" button to turn the machine off.

Take precaution against pressure wave release (rapid opening of the door).



- Pull the emergency release cable (located at the bottom of the machine behind the service panel) downwards to open the door.

The door latch will reset after the emergency cable has been activated.

Before using the lab washer for the first time, the water softener should be programmed. The water needs to be softened to avoid calcium deposits on the items being cleaned and in the machine itself.

If the water supply is harder or softer than the factory setting (including below 4 gr/gal or 70 ppm), the setting will need to be changed. See "Setting the water softener".

- In order to function properly, the water softener requires a supply of reactivation salt.
- The cleaner must be correctly programmed to match the hardness of the tap water supply.
- Your local water authority can provide information about the hardness of the tap water in your area.

If the water hardness is known to fluctuate, always program for the highest value.




The built-in water softener can be programmed at settings from 1 - 60 gr/gal or 20 - 1080 ppm.

It is useful to make a note of your water hardness so that you can provide the service technician with this information in the event of any service calls.

Please note the water hardness in the space provided here:

_____ gr/gal or ppm

Setting the water softener

- Use the **On/Off** button to switch off the machine.
- Turn the program selector to .
- **Simultaneously** press and hold the "Display"  and "Start"  buttons, while turning the machine on with the **On/Off** button.


The current program status *P*... will appear in the display, and the "Fill/Drain" indicator will come on.

- Press the "Drying"  button once.

E01 will appear in the display.


- Turn the program selector one switch position clockwise (to 1 o'clock).

The number *19* will appear in the display (this indicates the factory setting in gr/gal).

- Press and hold the "Display"  button until the required value appears in the display.

Please refer to the "Settings" table for detailed water hardness tables (water hardness in gr/gal and ppm).

Once the *50* setting has been reached, the counter begins again from *0*.

- Press "Start" .

5P will appear in the display.

- Press "Start"  again.

The setting you selected will now be stored in memory. The display light(s) will turn off.

The machine is now ready for use.

Water softener

Settings

| Settings 1 - 30 | gr/gal 1 - 30 | ppm CaCO ₃ |
|--------------------|------------------|--------------------------|
| | | 0 *) |
| 1 | 1 | 20 |
| 2 | 2 | 40 |
| 3 | 3 | 50 |
| 4 | 4 | 70 |
| 5 | 5 | 90 |
| 6 | 6 | 110 |
| 7 | 7 | 130 |
| 8 | 8 | 140 |
| 9 | 9 | 160 |
| 10 | 10 | 180 |
| 11 | 11 | 200 |
| 12 | 12 | 220 |
| 13 | 13 | 230 |
| 14 | 14 | 250 |
| 15 | 15 | 270 |
| 16 | 16 | 290 |
| 17 | 17 | 310 |
| 18 | 18 | 320 |
| 19 **) | 19 **) | 340 |
| 20 | 20 | 360 |
| 21 | 21 | 380 |
| 22 | 22 | 400 |
| 23 | 23 | 410 |
| 24 | 24 | 430 |
| 25 | 25 | 450 |
| 26 | 26 | 470 |
| 27 | 27 | 490 |
| 28 | 28 | 500 |
| 29 | 29 | 520 |
| 30 | 30 | 540 |

| Settings 31 - 60 | gr/gal 31 - 60 | ppm CaCO ₃ |
|---------------------|-------------------|--------------------------|
| 31 | 31 | 560 |
| 32 | 32 | 580 |
| 33 | 33 | 590 |
| 34 | 34 | 610 |
| 35 | 35 | 630 |
| 36 | 36 | 650 |
| 37 | 37 | 670 |
| 38 | 38 | 680 |
| 39 | 39 | 700 |
| 40 | 40 | 720 |
| 41 | 41 | 740 |
| 42 | 42 | 760 |
| 43 | 43 | 770 |
| 44 | 44 | 790 |
| 45 | 45 | 810 |
| 46 | 46 | 830 |
| 47 | 47 | 850 |
| 48 | 48 | 860 |
| 49 | 49 | 880 |
| 50 | 50 | 900 |
| 51 | 51 | 920 |
| 52 | 52 | 940 |
| 53 | 53 | 950 |
| 54 | 54 | 970 |
| 55 | 55 | 990 |
| 56 | 56 | 1010 |
| 57 | 57 | 1030 |
| 58 | 58 | 1040 |
| 59 | 59 | 1060 |
| 60 | 60 | 1080 |

**) The "0" setting is only for machines that do not have a water softener

*) Factory setting


Filling the salt reservoir

Only special, coarse-grained reactivation salt* should be used in this lab washer.

*Available from Miele. Please see back page for more information.

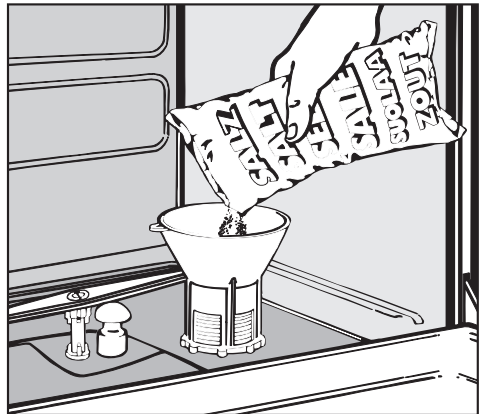
Do not use other types of salt, e.g. table salt, agricultural or gritting salt. These could contain components which are insoluble in water and could damage the water softener. If in doubt, consult Miele Technical Service.

The salt reservoir holds approximately 2.5 kg salt.

 Inadvertently filling the salt reservoir with detergent will damage the water softener. Before filling the reservoir, make sure that you are using **reactivation salt**.

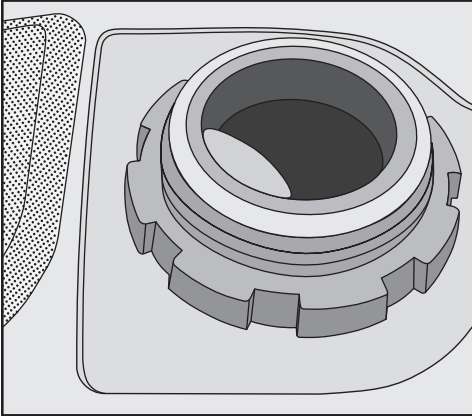
- Remove the bottom basket from the machine.
- Unscrew the salt reservoir cap.

Before filling the salt reservoir for the first time fill the reservoir with approximately 2.5 liters of water, so that the salt can dissolve properly. Once the lab washer has been operated, there will always be enough water in the reservoir.



- Place the funnel provided in place.
- Carefully fill the reservoir with the reactivation salt.

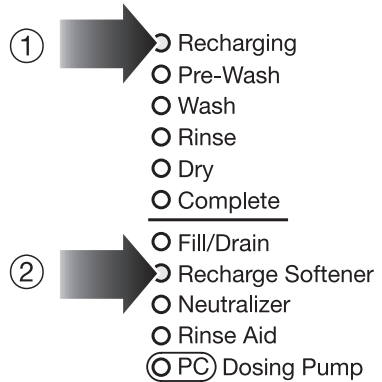
Water softener



- Wipe any residual salt off the screw threads and seal of the reservoir.
- Screw the cap on securely.
- **Immediately after this step**, start the "Rinse" program, to remove any traces of salt from the inside of the lab washer.

Note: There may be a delay of a few minutes before the "Rinse" program starts due to the reactivation of the water softener.

Salt indicator



When the salt reservoir is empty, the "Recharge Softener" indicator ② lights to remind you to fill the reservoir.

Reactivation takes place automatically as needed during a program. The "Recharging" indicator ① lights while this is occurring.

Depending on the type of labware you wish to clean, the lab washer can be used with an upper basket, lower basket, or injector wagon, as well as an assortment of inserts and special baskets to suit your needs.


Baskets and inserts should be properly selected to match the application desired.

Before every program start, conduct the following visual inspection:

- Is the labware properly loaded and secured in the lab washer?
- Are the hollow vessels properly loaded so that all cavities and channels will be flushed clean?
- Are the spray arms clean, and can they rotate freely?
- Is the filter combination free of coarse debris (clean if necessary)?
- Is the basket adapter properly connected to the water supply for the spray arms and nozzles?
- Are the chemical dispensers filled?

After every program completion, conduct the following visual inspection:

- Inspect the labware for cleanliness.
- Has any hollowware been dislodged from its proper position on the nozzles?

 Any items that were dislodged from the adapters during a program cycle must be washed again.

- Are the cavities and channels in any hollow vessels cleaned through?
- Are the nozzles and connections firmly attached to the baskets/inserts?

Areas of application

Loading the machine


Disposable items must not be processed in the machine.

- Always load items in a way that all surfaces are exposed. This ensures that the items will be properly cleaned.
- Do not nest any items inside other items. Keep each item separate.
- Hollow vessels must be arranged for complete inside exposure to the cleaning water.
- Prior to loading the machine or connecting to the machine ensure that vessels with long, narrow cavities they can be completely flushed.
- Hollow vessels should be inverted and placed in suitable baskets and inserts so that water will have unrestricted access and exit.
- Deep-based items should be arranged at an angle, so that water can run off easily.
- Tall, narrow pieces should be placed in the center of the basket for best water coverage.
- Secure light loads with netting and place small items in a mesh tray/basket so that they do not obstruct the spray arms.
- Baskets and inserts with an adapter must be properly connected.
- The spray arms must not be blocked by items that are too tall or hang through the baskets.

- To avoid corrosion, only load stainless steel instruments in good condition.
- Do not use this machine to wash nickel-plated items or discolored (oxidized) aluminum items.
- Do not load plastics unless they are heat-resistant.

Prepare items before loading

- Empty all glassware before loading into the machine. Comply with all applicable infection-control regulations.
- Remove all agar residue from petri dishes.
- Remove all stoppers, corks, labels, sealing wax residue, etc.

 Ensure that no acid or solvent residues, especially hydrochloric acid or chlorides, get inside the machine.

Special preparations before operating the machine

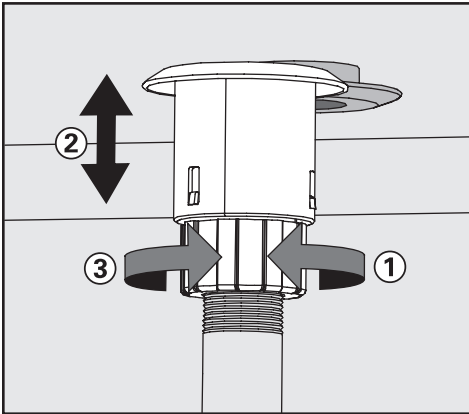
Items effected by heavy contamination that resists removal, such as vacuum grease, paper labels, etc., can affect the cleaning and rinsing of the whole load. Pre-treat these items before loading.

Lab equipment that is contaminated by microbiological material, pathogens, propathogens, genetically altered material, etc., should be sterilized before being washed in the lab washer

Spring adapter for the water connection

The spring adapter for the water connection must be properly engaged when a basket or the injector wagon is inserted into the machine. It must be 4 - 5 mm higher than the water inlet in the machine.

If this is not the case, the adapter needs to be adjusted as follows:



- Loosen the locking ring ①.
- Move the adapter up to the proper height ②.
- Tighten the locking ring ③.

Adjusting the upper basket

The upper basket can be adjusted above and below the middle position, by 2 cm.

Depending on the height selected and which inserts are used, labware of various heights can be arranged in the baskets.

To adjust the upper basket:

- Pull the upper basket out as far as it will go, lift it up off the runners and remove.

Use a wrench to unscrew the roller bearings on either side of the basket, then reposition as required.

Areas of application

Laboratory equipment

Wide-necked labware, e.g., beakers, wide-necked Erlenmeyer flasks and Petri dishes, or cylindrical items, e.g., test tubes, can be cleaned inside and out by the rotating spray arms. For proper cleaning, load these items in whole, half or quarter inserts, and place them in an empty lower basket or upper basket with spray arm.

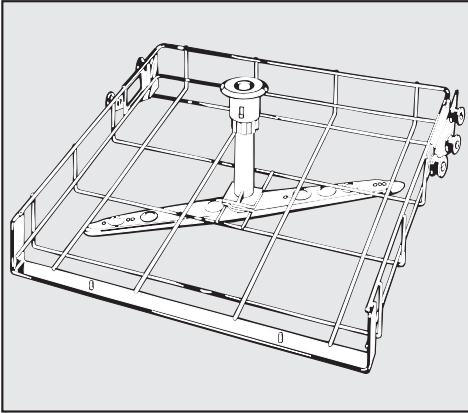
Narrow-necked items, e.g., narrow necked Erlenmeyer flasks, round flasks, volumetric flasks and pipettes, require the use of injector wagons or injector baskets.

Separate instructions are included for the use of injector baskets and inserts for narrow-necked labware.

This section only covers basic information on how to prepare and load labware.

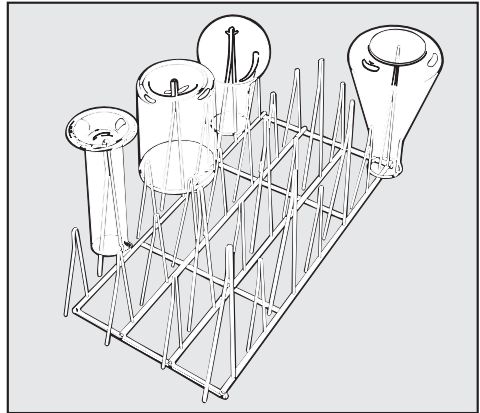
- Petri dishes and similar items should be loaded in a suitable insert with the soiled side facing center.
- Pipettes should be placed with the narrow end facing down.
- Protective netting can be used to avoid glass breakage.
- Quarter baskets should be loaded at least 3 cm away from the edge of the wagon.

Areas of application



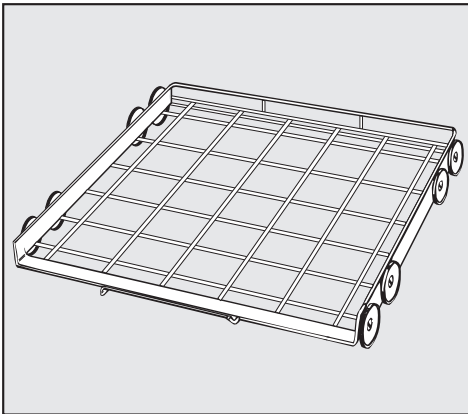
Upper basket O 188/1

For various inserts.



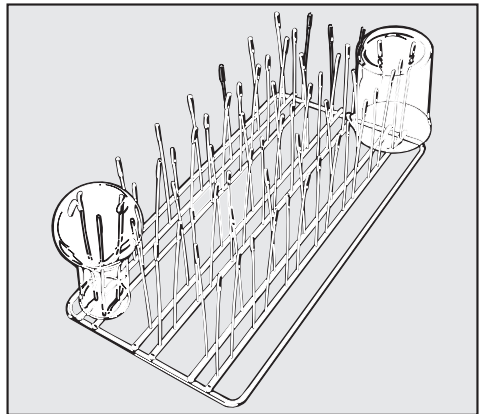
E 106/2

Stainless steel half insert with 26 spring hooks in 2 different heights for various glassware, e.g. narrow necked flasks, graduated cylinders, medicine bottles, etc.



Lower basket U 874/1

For various inserts.



E 109

Stainless steel half insert to accommodate 21 beakers up to 250 ml, Erlenmeyer flasks, round flasks, etc.

Effects of Processing Chemicals

| General information | |
|---|---|
| Effects | Action |
| <p>Damage to elastomer (seals and hoses) or plastic components of the lab washer may cause the materials to swell, shrink, harden or become brittle, possibly causing cracks to form in the materials. This will impair their function, which will generally lead to leaks.</p> | <ul style="list-style-type: none"> – Find and correct the causes of the damage. <p>See "Connected processing chemicals", "Soiling" and "Reactions between processing chemicals and soils" for more information.</p> |
| <p>Strong foaming during the program prevents proper cleaning and rinsing of the load. Foam escaping from the wash compartment can result in damage to the lab washer.</p> <p>If foaming occurs, the cleaning process is not standardized and not validated.</p> | <ul style="list-style-type: none"> – Find and correct the cause of the foaming. – The process must be checked regularly in order to detect any foaming. <p>See "Connected processing chemicals", "Soiling" and "Reactions between processing chemicals and soils" for more information.</p> |
| <p>Stainless steel corrosion in the wash compartment and/or accessories may appear in various ways:</p> <ul style="list-style-type: none"> – rust formation (red spots / stains), – black spots / stains, – white spots / stains (smooth surface is slightly corroded). <p>Corrosion that forms holes can result in leaks in the lab washer. Depending on the application, the corrosion may impair the cleaning and rinsing results (laboratory analysis) or cause corrosion of the load (stainless steel).</p> | <ul style="list-style-type: none"> – Find and correct the cause of the corrosion. <p>See "Connected processing chemicals", "Soiling" and "Reactions between processing chemicals and soils" for more information.</p> |

Effects of Processing Chemicals

Connected processing chemicals

| Effects | Action |
|--|---|
| <p>The ingredients of the processing chemicals have a considerable effect on the durability and functionality (feed performance) of the metering systems. The metering systems (feed hoses and pump) are designed for a specific type of processing chemicals.</p> <p>General categories:</p> <ul style="list-style-type: none"> – alkaline to neutral pH products, – acid to neutral pH products, | <ul style="list-style-type: none"> – Use only those processing chemicals recommended by Miele. Consult a Miele Applications Specialist. – Perform regular visual inspections of the metering system. – Regularly check the feed performance of the metering system. |
| <p>The processing chemicals can damage the elastomer and plastic components of the lab washer and its accessories.</p> | <ul style="list-style-type: none"> – Use only those processing chemicals recommended by Miele. Consult a Miele Applications Specialist. – Perform regular visual inspections of all visible elastomer and plastic components. |
| <p>The following processing chemicals can result in excessive foaming:</p> <ul style="list-style-type: none"> – tenside cleaners containing detergent and rinse aid. <p>The foaming can occur:</p> <ul style="list-style-type: none"> – in the program block in which the processing chemical is added, – in the subsequent program block due to carry-over, – in the case of rinsing agents, in the subsequent program due to carry-over. | <ul style="list-style-type: none"> – The process parameters of the wash program, e.g. metering temperature, metering concentration, etc. must be set so that the overall process creates little or no foam. – Observe the instructions of the manufacturer of the processing chemicals. |

Effects of Processing Chemicals

| Connected processing chemicals | |
|--|--|
| Effects | Action |
| <p>Antifoaming agents, particularly silicone-based antifoaming agents, can cause the following:</p> <ul style="list-style-type: none">– deposits in the wash compartment,– deposits on the wash load,– damage to the elastomer and plastic components of the lab washer,– attack certain plastics (e.g. polycarbonates, plexiglass, etc.) in the wash load. | <ul style="list-style-type: none">– Use antifoaming agents only in exceptional cases or when they are absolutely necessary for the process.– Periodic cleaning of the wash compartment and accessories without a load and without an antifoaming agent using the "Regular" or "Extended" program. <p>Consult a Miele Applications Specialist.</p> |

Effects of Processing Chemicals

Soiling

Effects

The following substances can damage the elastomer components (hoses and seals) and, in some cases, the plastic components of the lab washer:

- oils, waxes, aromatic and unsaturated hydrocarbons,
- softeners,
- cosmetics, hygiene and skin care products such as creams (analysis and filling sections).

Action

- Retrofit the lab washer with more grease-resistant elastomers.
- Depending on usage, periodically wipe the lower door seal with a lint-free cloth or sponge.
Clean the wash compartment and accessories without a load using the "Regular" or "Extended" program.
- To process the load, use the program "Regular" or "Extended" and place additional powder cleaning agent on the door.

The following substances can cause excessive foaming during washing and rinsing:

- agents such as disinfection agents, dish detergents, etc.
- reagents for analysis, e.g. for microtitration plates,
- cosmetics, hygiene and skin care products such as creams (analysis and filling sections).
- foaming substances in general, for instance tensides.

- Thoroughly rinse the items in water beforehand.
- Select the "Extended" program (pre-wash with cold or hot water).
- Taking the specific application into account, add an antifoaming agent, one without silicone oils if possible.

The following substances can cause corrosion to the stainless steel in the wash compartment and accessories:

- hydrochloric acid,
- other substances that contain chloride, e.g. sodium chloride, etc.
- concentrated sulphuric acid,
- chromic acid,
- iron particles.

- First rinse the load with a sufficient quantity of water.
- Let the load drip dry before putting it on the carts, baskets and inserts and placing in the lab washer.

Effects of Processing Chemicals

Reactions between processing chemicals and soils

| Effects | Action |
|---|---|
| Natural oils and greases can be saponified with alkaline processing chemicals. This may cause a lot of foaming. | <ul style="list-style-type: none">- Use the "Regular" or "Extended" program.- Depending on the application add an antifoaming agent that does not contain silicone oils. |
| In combination with alkaline processing chemicals, loads with soiling that contains proteins, e.g. blood, can cause excessive foaming. | <ul style="list-style-type: none">- Select the "Extended" program (pre-wash with cold water) where a cold water connection is available. |
| In combination with very acidic or alkaline processing chemicals, base metals such as aluminum, magnesium and zinc can release hydrogen (detonating gas). | <ul style="list-style-type: none">- Observe the instructions of the manufacturer of the processing chemicals. |

Only use cleaning agents formulated for this machine. Do not use detergents formulated for domestic dishwashers. Observe the instructions of the manufacturer of the processing chemicals.

Dispensing neutralizing or rinsing agent

A duo-dispensing system for liquid agents which can be used to dispense either neutralizing agent or rinsing agent, is located in the door.

A change of agent, e.g. from neutralizer to rinsing aid, requires re-programming by Miele Service.

The machine is set to dispense neutralizer as factory default.

The duo-dispensing system consists of two reservoirs and two dosage selectors.

Neutralizing agent

Neutralizing agent (pH-level: acidic) neutralizes residues of alkaline cleaning agents on the surface of instruments and utensils.

The neutralizer is automatically dispensed in the program stage Rinse 1 following the main wash of a program. The dispensing system reservoir must be filled and the dishwasher programmed to dispense neutralizing agent.

Rinsing agent

Rinse aid is necessary to ensure water does not cling and leave marks on items, and to help items dry faster after they have been washed. The dispensing system reservoir must be filled and the dishwasher programmed to dispense rinsing agent.

The components of the rinsing agent remain on the surface of items after they have dried. Depending on what the utensils are being used for, it is therefore important to check that rinsing agent may be used.

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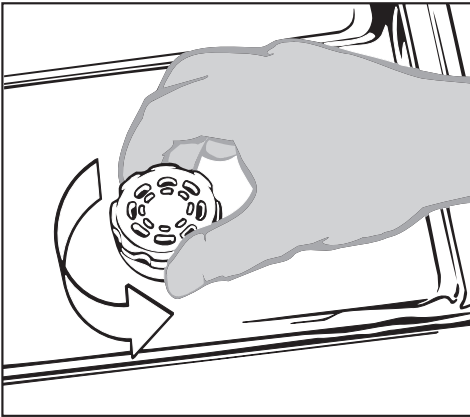
Dispensing chemical agents

Filling the reservoirs

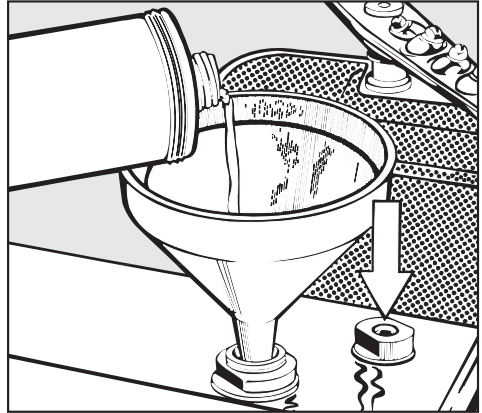
⚠ Important: Both reservoirs must always be filled with the same liquid agent.

⚠ Only fill the duo-dispensing system with neutralizing agent or rinsing agent formulated for dishwashers. Do not fill with cleaning agent. This would damage the reservoirs.

- Open the door fully.



- Unscrew the caps.



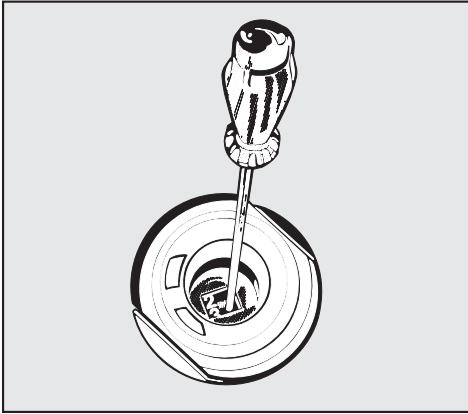
- Add liquid agent until the level indicator is dark (see arrow on illustration). Use a funnel if necessary.

Each reservoir holds approx. 6 oz. (180 ml).

- Screw the caps back on.
- Mop up any spilt liquid agent. This prevents over-foaming occurring during the next program.

Dispensing chemical agents

Adjusting dosage



The dosage adjuster in the opening has settings adjustable from 1 to 6 (1- 6 ml). It is preset to "5" (10 ml) as the recommended dosage for **neutralizer**.

- Use a flat headed screw driver to turn the dial to the correct setting.

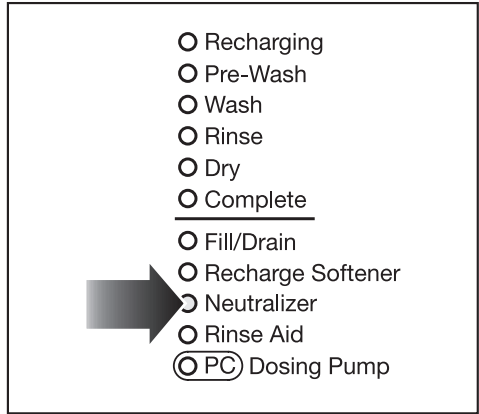
If spots appear on items:

- When using neutralizing agent select a lower dosage.
- When using rinsing agent select a higher dosage.

If clouding or smearing appears on items:

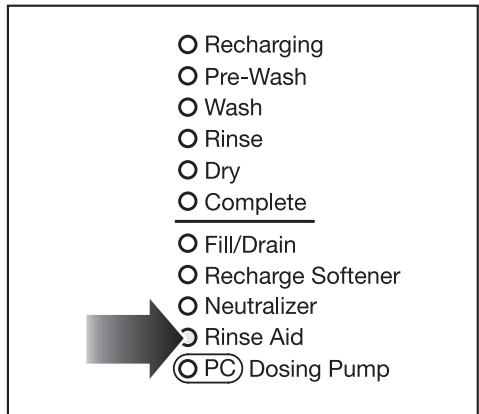
- When using neutralizing agent select a higher dosage.
- When using rinsing agent select a lower dosage.

Add neutralizing agent indicator



- The container for neutralizing agent should be refilled when the indicator lights up.


Add rinsing agent indicator




- Add rinsing agent to the rinsing agent reservoirs when the indicator lights up.

Dispensing chemical agents

Adding detergent

 Use only cleaning agents formulated for this machine. Do not use detergents formulated for household dishwashers.

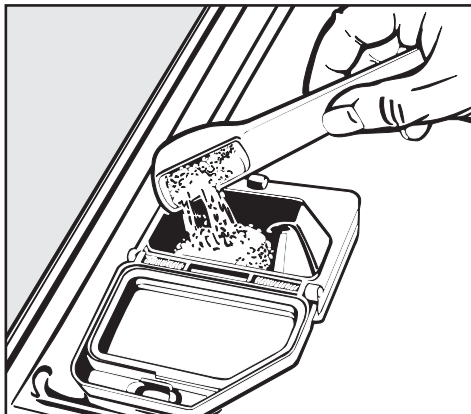
 Avoid inhaling cleaning agents in powder form. If processing chemicals are ingested, they can cause chemical burns in the mouth and throat or suffocation.

Before starting the program, load the powdered detergent into the compartment (except for the programs "Rinse" and "Drain").


Dosage: To achieve a detergent concentration of approximately 3 g/l, use 30 g of detergent.

Always follow the detergent manufacturer's recommendations for dosage concentration.

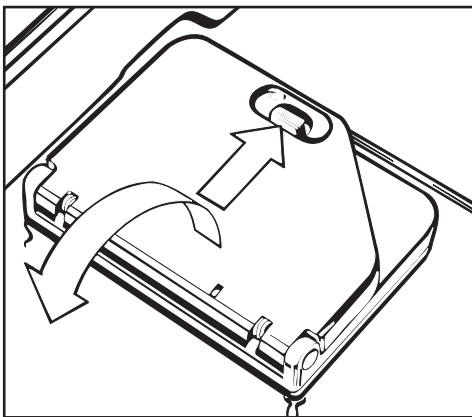
The flap is always open at the end of a program.



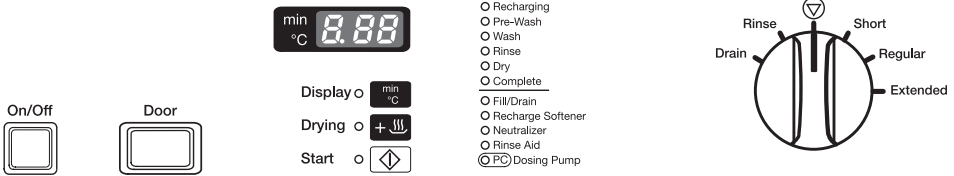
- Add powder cleaning agent to the compartment.
- Close the dispenser flap.

 At the end of the program, check that there are no cleaning agent residues remaining in the dispenser. If there are, you will need to repeat the program.

Some types of soiling may require different combinations of cleaning agents and other additives. Contact a Miele Applications Specialist if in doubt.



- Press the button on the powder cleaning agent dispenser. The flap will spring open.



Turning on the lab washer

- Make sure the spray arms are not blocked.
- Close the door.
- Press the "On/Off" button to turn the machine on.

Starting a program

Choose a program based on the type of glassware being cleaned and the degree of soiling.

Refer to the "Program Guide" for more details.

- Turn the program selector clockwise or counterclockwise to the desired program.

The wash temperature of the selected program is shown in the display (except for "Rinse" and "Drain").

The "Start" indicator will flash.

Select the Drying function if desired

"Drying" may be selected as an additional feature once a program has been selected (except in the "Rinse" and "Drain" programs).

- Select the "Drying" button.

Drying is phased over 10 minutes. The total running time of the program lengthens accordingly.

Changing a program

The program can only be changed if the Start button has not been pressed.

- Turn the program selector to the desired program.
- Select the "Drying" feature, if desired.
- Press the "Start" button.

Operation


Starting the program

- Press the "Start"  button.

The display shows the current temperature.

The "Start" indicator comes on.

Once the program has started, all other programs are blocked. If the program selector is turned to another program during the running program, the values shown in the display disappear. The values appear again if the program selector is turned back to the running program.


During a program, the "Display"  button can be used to toggle between the:

- actual temperature
- elapsed program time, and

Program sequence display


The current step of a wash program is indicated by a program sequence display.

End of a program

Once the "Start" indicator goes out, and the "Complete" indicator comes on, the program has ended. You will see a  in the middle of the display, and all other indicators will turn on then go out in sequence.

A buzzer sounds for a maximum of 30 seconds by default.

To change the buzzer function, see "Programming functions".

- Use the "Display"  button to view the total running time or temperature of the program.


Immediately after the program is finished open the door (about 4 inches) for 10 - 15 minutes, then unload the dishwasher. This will help ensure a good drying result and prevent corroding.

Turning off

- Press and release the **On/Off** button.

Because of the electric door lock, the door can only be opened if the **On/Off** button is pressed (see "Opening and closing the door").

Canceling a program

 If a program is canceled it must be run again to be complete.

Canceling a program because of an interruption

The program is stopped prematurely and a Fault message appears in the display.

Depending on the cause the appropriate measures must be taken to correct the fault. See "Frequently asked questions".


Manually canceling a program

Avoid canceling a running program unless absolutely necessary, for example if the glassware is moving around excessively or the wrong program has been selected.

- Turn the program selector to .

The program is canceled after 2 seconds.

- Open the door.

 Caution! Water and items in the machine may be hot. There is a danger of burning or scalding.

- Rearrange the items securely. Wear protective gloves as needed, and comply with all applicable health and safety regulations for infectious disease control.
- Replenish powder detergent if necessary.
- Close the door.
- Start the "Drain" program.

The water will be drained away.

- Select and start the program.

Program guide

| Program | Application | Powder cleaning agent (follow manufacturers instructions) |
|-----------------|--|--|
| SHORT | For laboratory glassware with light water-soluble contamination, not suitable for denaturing and acid-soluble residues such as proteins, metallic salts and amines, for low level soiling and low rinse requirements. | Approx. 20 g in the powder cleaning agent dispenser. |
| REGULAR | For laboratory glassware with light water-soluble contamination, not suitable for denaturing and acid-soluble residues such as proteins, metallic salts and amines, for low level soiling and medium rinse requirements. | Approx. 30 g in the powder cleaning agent dispenser. |
| EXTENDED | For removal of organic residues (e.g. specific oils and fats) and specific inorganic residues, for low to medium level soiling and medium rinse requirements. | Approx. 30 g in the powder cleaning agent dispenser with an additional 10 - 20 g cleaning agent on the left hand side of the door, if necessary. |
| DRAIN | To drain water out of the machine, e.g. after a program has been canceled, see "Canceling a program". | |
| RINSE | For rinsing heavily soiled items (e.g. for removing soiling or disinfectant residue, or to prevent soiling drying on to dishes when a complete program does not need to be run yet). | |

Organic residues such as oils and fats may require conversion to oil-resistant elastomers.


| Program cycle | | | | | |
|---------------|-----------------------|-----------------|----------------------|-------------------------------------|--------|
| Pre-wash | Main wash | Interim rinse 1 | Interim rinse 2 | Final rinse | Drying |
| | X DOS 1 70°C/5' | | (X) (DI) DOS 3 | X DI (DOS 2) 70°C/3 min | (X) |
| | X DOS 1 70°C/5' | X DOS 3 | (X) (DI) | X DI (DOS 2) 70°C/3' DI | (X) |
| X | X DOS 1 70°C/5' | X DOS 3 | (X) (DI) | X DI (DOS 2) 70°C/3' DI | (X) |
| | | | | | |
| | | X | | | |

- X = Sections included in a program (with temperature/temperature holding time)
- *1 To change a temperature or temperature holding time see "Programmable functions"
- *2 To activate "Rinse 2" see "Programmable functions". (To use AD water in the program section "Rinse 2", the machine has to be programmed by a Miele service technician)
- DI (Aqua destillata) = distilled water
- DOS 1 = For dispensing cleaning agent
- DOS 2 = For dispensing rinsing agent (must be activated by a Miele service technician)
- DOS 3 = For dispensing neutralizing agent

Programming functions


For future servicing, be sure to document any changes made to the factory settings in the fields provided.

General information:



- Program selector positions that have no assigned function are represented by a bar (-) in the middle of the display.
- To call up the programming level, use the  position. The status *E.* will appear in the display.
- For validated processes, any changes made to programs or dispensing systems must be documented in a log book kept with the machine. The machine's processes must be re-validated.

The following instructions apply to all programming functions:

To access the programming mode

■ Turn the program selector to .

■ Turn off the machine.

■ **Simultaneously** press and hold the "Display"  and "Start"  buttons, while turning on the machine by pressing the **On/Off** button.

The current program status *P.* appears in the display. The Fill/Drain indicator lights.

Saving to memory and exiting the programming mode

■ Press the "Start"  button.

SP appears in the display.

■ Press the "Start"  button again.

The change will now be stored in the memory.

Exiting the programming mode without saving

■ Press the **On/Off** button to turn off the machine.

The change is canceled.



Buzzer

The buzzer can be programmed for the following functions:

- a continuous tone at the end of a program, and/or
- an error signal that beeps in 1-second intervals.

The numbers shown in the display correspond to the following settings:



| | |
|------------|----------------------------------|
| <i>100</i> | Buzzer off |
| <i>101</i> | End of program (factory setting) |
| <i>102</i> | Fault |
| <i>103</i> | End of program + Fault |

| Step | Display / Result |
|---|--------------------------|
| ■ Press the "Drying"  button until E01 appears in the display. | <i>E01</i> |
| ■ Turn the program selector to "Drain". | <i>100</i> to <i>103</i> |
| ■ Press and hold the "Display"  button until the required value appears in the display, e.g., 103. | <i>103</i> |

Value selected: _____

The buzzer will sound for 30 sec during the selected setting.

To switch it off earlier:

- Turn the program selector to .
- Press the "Display"  button.
- Interrupt the power supply, e.g., open the door.

Programming functions

Changing program parameters



The parameters for the Short, Regular and Extended programs can be changed to suit particular requirements. To do this the temperature and the temperature holding time in the Main wash and Final rinse program blocks can be changed.

Program parameters cannot be changed unless they are activated within a given program (see "Program Guide").

It is important to document any changes e.g., by recording them in the corresponding column in the program guide.



Changing the temperature

Values can be set from 86° - 158°F (30° - 70°C)

| Step | Display / Result |
|---|--|
| ■ Press and hold the "Drying"  button until the setting of the desired program block appears in the display. | <i>E03</i> for Main Wash <i>E05</i> for Final rinse |
| ■ Set the program selector to the program you wish to change, e. g., "Extended". | °C _ <i>65</i> |
| ■ Press and hold the "Display"  button until the desired value appears in the display, e.g., 70 °C. | °C _ <i>70</i> |



Changing the holding time

Values can be set from 1 - 10 minutes

| Step | Display / Result |
|---|--|
| ■ Press and hold the "Drying"  button until the setting of the desired program block appears in the display. | <i>E03</i> for Main Wash <i>E05</i> for Final rinse |
| ■ Set the program selector to the program you wish to change, e. g., "Short". | min ⁻ <i>1</i> |
| ■ Press and hold the "Display"  button until the desired value appears in the display, e.g., 10. | min ⁻ <i>10</i> |

Activating Rinse 2

A second interim rinse can be programmed in to improve interim rinsing in all programs except for Rinse.

| Step | Display / Result |
|--|--|
| ■ Press and hold the "Drying"  button until E01 appears in the display. | <i>E01</i> |
| ■ Turn the program selector to the 5 o'clock position. | <i>50</i> Rinse 2 not activated <i>51</i> Rinse 2 activated |
| ■ Press and hold the "Display"  button until the required number appears in the display, e.g. 51. | <i>51</i> |

Value set: _____

To use DI water in the program section "Rinse 2" the machine has to be programmed by a Miele Service Technician.



Programming functions

Delay start

The start of a wash program can be delayed by up to 24 hours in 30 minute stages.

Important: If a very long delay start is set there is a danger of items in the machine drying out, impairing cleaning results.

Activating delay start

| Step | Display / Result |
|--|--|
| ■ Press and hold the "Drying"  button until E01 appears in the display. | <i>E01</i> |
| ■ Turn the program selector to the 8 o'clock position. | <i>80</i> Delay start not activated <i>81</i> Delay start activated |
| ■ Press and hold the "Display"  button until the required number appears in the display, e.g. 81. | <i>81</i> |


Value set: _____

Setting the start time



The delay start time must be reset before the start of every program.

– Values which can be set: 30 mins - 24 hours

- After selecting the program press  until the required value appears in the display. The "Delay start" indicator light next to the  button will light up.

When the  button is pressed, the delay time in the display starts counting down to the automatic program start time.

Restoring the factory settings

| Step | Display / Result |
|--|--|
| ■ Press and hold the "Drying"  button until E07 appears in the display. | <i>E07</i> |
| ■ Turn the program selector to a program. | |
| Default factory setting(s): | <i>00</i> |
| Re-programmed setting(s): | <i>PP</i> |
| ■ When <i>PP</i> appears in the display, press the "Display"  button. | <i>00</i> , the factory settings have been restored. |

The water softener has been restored to the factory settings. Reprogramming is required (see "Setting the water softener").

Maintenance


Periodic maintenance for the lab washer is recommended annually.

Routine checks


The routine checks must be done daily by the user before using the machine. For the routine checks a checklist is supplied with the machine.

Check the following points:

- the filters in the base of the wash cabinet must be empty,
- the spray arms in the machine and at the baskets should be clear,
- the wash cabinet and the door gasket should be clear,
- the dispensing systems, and
- the baskets and inserts.

 Wear protective gloves and goggles when cleaning this machine.

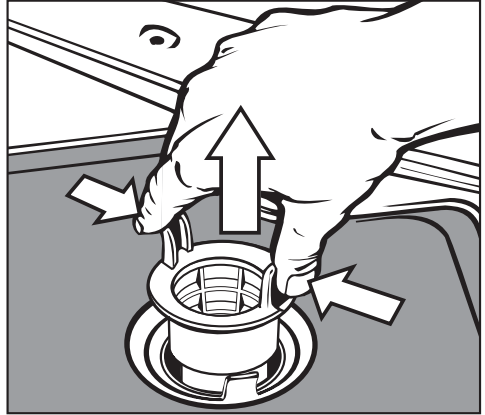
Cleaning the filters in the wash cabinet

 The lab washer must not be used without all filters in place. The filters protect the circulation pump from damage caused by foreign objects.

The filter combination in the base of the wash cabinet should be inspected regularly and cleaned if necessary.

Watch out for sharp objects which could cause injury e.g. glass splinters.

Cleaning the coarse filter

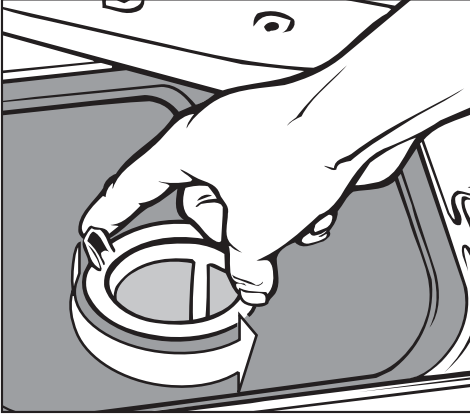


- Press the two tabs together, remove and clean the coarse filter.
- Put the clean filter back in position and press until it clicks into place.

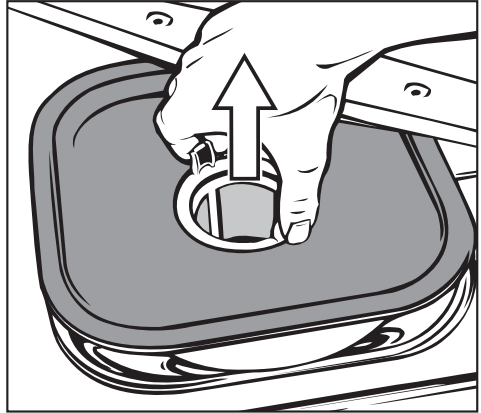
Cleaning and Care

Cleaning the fine, flat and micro-fine filters

- Remove the coarse filter.
- Remove the fine filter from between the flat and micro-fine filters.



- To unscrew the micro-fine filter, grasp the two tabs and turn twice counterclockwise.



- Then remove together with the flat filter.
- Clean the filters.
- Replace the filter combination in reverse order. The flat filter must lie flat in the base of the wash cabinet.

Cleaning the spray arms

The spray arms can get clogged. Check daily and clean if necessary.

Removing the spray arms

- Remove the baskets.

Spray arm at the upper basket or mobile unit (if available):

- Loosen the knurled nut and remove the spray arm.

Metal knurled nuts have a left-hand thread. Ceramic knurled nuts have a right-hand thread.

- Unscrew the upper spray arm.
- Loosen the knurled nut of the lower spray arm and remove.
- Use a sharp pointed object to push particles into the spray arm jets and rinse thoroughly under running water.
- Refit the spray arms in reverse order after cleaning.

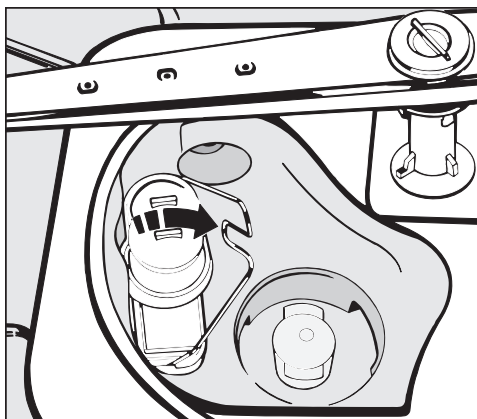
After replacing the spray arms check that they can rotate freely.

Cleaning and Care

Cleaning the drain pump and non-return valve

If water has not been pumped away at the end of a program the drain pump or the non-return valve may be blocked.

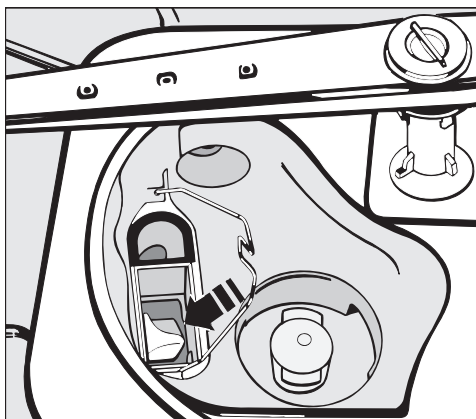
- Turn off the machine.
- Remove the filter combination out of the wash cabinet.



- Tilt the locking clamp to the side.
- Pull out the non-return valve and rinse well under running water.

 Use proper eye protection when removing the non-return valve.

The drain pump is beneath the non-return valve (see arrow).




- Before refitting the non-return valve, check that the drain pump is not blocked. Spin the propeller several times in both directions to check for obstructions.
- Carefully refit the non-return valve and secure it with the locking clamp. Refit and lock the filter in place.

For safety the load should be washed again.

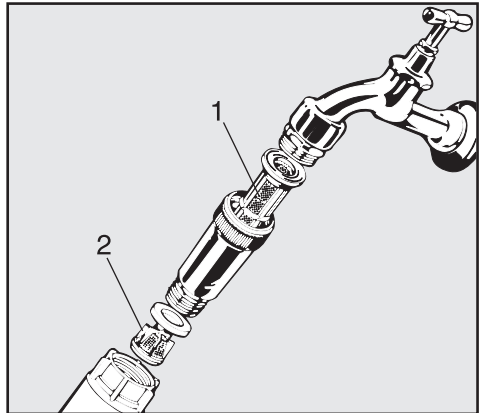
Cleaning the water inlet filters

To protect the water inlet faucet, filters are incorporated in the intake hose attached to the water supply. If the filters are soiled they must be cleaned to ensure sufficient water intake to the wash cabinet.

 The plastic housing of the water connection contains electrical components and should not be submerged or run through water.

Cleaning the filters

- Disconnect the lab washer from electricity (unplug it or "trip" the circuit breaker).
- Close the water supply and unscrew the water inlet faucet.
- Carefully remove the rubber seal.
- Take out the filters with needle nose pliers.




- Rinse the large area filter **1** and fine filter **2** under running water, and replace if necessary.
- Return filters and seal. Make sure they are seated correctly.
- Reconnect the hose to the water faucet, checking that it is not cross-threaded.
- Open the water supply.
- Check for leaks.

Cleaning and Care


Cleaning the control panel


- The control panel should only be cleaned with a damp cloth or a suitable cleaner for use on plastic materials.

 Do not use abrasive cleaners, glass cleaners or all-purpose cleaners! They **will** damage the control panel.

Cleaning the exterior

- Stainless steel surfaces can be cleaned using a non-abrasive stainless steel cleaner or dishwashing detergent and warm water.
- To help prevent resoiling, a conditioner for stainless steel can also be used. Apply sparingly with even pressure.

 Do not use cleaners containing thinner or ammonia. They will damage the surface.

 Never clean the lab washer or near its vicinity with a water or high pressure hose.

Cleaning the wash cabinet

The wash cabinet is mostly self cleaning.

If deposits have built, contact Miele for info.

Cleaning the door seal

Clean the door seal regularly with a damp cloth to remove soiling.

To replace damaged or leaking door seals please contact Miele's Technical Service Dept.

Dispensing systems

Check the consumption of the used chemicals regularly to notice any irregularities of the dispensing.

Baskets and inserts

To ensure the function of baskets and inserts, they must be checked daily. A checklist is supplied with the lab washer.

Check the following points:


- Are the rollers in the proper condition and are they securely fixed in the mobile unit/insert?
- Is the basket connection set to the correct height and tightened?
- Are all spray jets, spray sleeves and hose adapters tightly connected to the basket/insert?
- Are all spray jets, spray sleeves and hose adapters, unclogged so that the wash water can flow through?
- Are covers and fasteners tightly screwed on the spray sleeves?

If available:

- do the spray arms rotate freely?
- Are the spray jets clogged? See "Cleaning and Care - Cleaning the spray arms"?


Frequently asked questions

The following guide can be used to help address minor problems without a service call.

 Repairs should only be performed by Miele Technical Service. Work performed by unqualified persons can place the user at considerable risk of harm.

To help avoid unnecessary service calls, please be sure to check first whether an error message is due to operator error.


To do so:

- Turn the program selector to . The error message is erased.
- Press the **On/Off** button to switch off the machine.
- Turn the machine back on and re-start the program.
- If the error occurs again and cannot be corrected, contact Miele Technical Service for assistance.


You will need to provide the error code ("F...").

| What if... | Possible fault | Solution |
|------------------------------------|---|--|
| The machine will not start. | The door is not properly closed. | Close the door firmly. |
| | The machine is not plugged in. | Plug in the power cord. |
| | The fuses are defective or the circuit breaker has tripped. | Make sure the breaker has not tripped. |
| | The machine is not turned on. | Press the On/Off button and select a program. |
| The program does not work. | Fault message: <i>F04 - F10, F24 - F26, F - -</i> | Contact Miele Technical Service. |

Frequently asked questions

| What if... | Possible fault | Solution |
|---|--|--|
| The "Recharge" indicator flashes. | The water softener has run out of salt. | Refill the salt reservoir. |
| The "Neutralizer" indicator flashes. | The neutralizing agent container is empty. | – Fill the container with neutralizing agent |
| The Rinse Aid indicator flashes. | The rinsing agent container is empty. | – Fill the reservoir with rinse aid. |
| A few minutes after the start of a program, the "Fill/Drain" indicator flashes, and the program stops. | | Before addressing the error: <ul style="list-style-type: none"> – Turn the program selector to . The error message is erased. – Press the On/Off button to switch off the machine. |
| | Error message: F..E: There is a problem with the water intake. | <ul style="list-style-type: none"> – Open the water valve completely. – Clean the water inlet filters. – The flow pressure at the water connection is too low. Contact a qualified plumber for advice. |
| | | Then: <ul style="list-style-type: none"> – Turn the machine on. – Restart the program. |

Frequently asked questions

| What if... | Possible fault | Solution |
|--|--|---|
| <p>The rinse program is interrupted and the "Fill/Drain" indicator light is flashing.</p> | | <p>Before addressing the error:</p> <ul style="list-style-type: none"> – Turn the program selector to . The error message is erased. – Press the On/Off button to switch off the machine. |
| | <p>Error message: F..A: There is a problem with the water out take.</p> | <ul style="list-style-type: none"> – Clean the filter combination in the wash cabinet. – Clean the drain pump. – Clean the non-return valve. – Remove any kinks in the drain hose. |
| | | <p>Then:</p> <ul style="list-style-type: none"> – Turn the machine on. – Drain the water. – Restart the program. |
| <p>The water in the wash cabinet does not get hot; the program sequence lasts too long.</p> | <p>Error message: <i>F01 - F02</i> The machine is equipped with a temperature sensor that switches off the heater when it begins to overheat. Overheating can occur when, e.g., large items cover the heating elements, or when the filters in the wash cabinet are blocked.</p> | <ul style="list-style-type: none"> – Clean the filter combination in the wash cabinet. – Rearrange the glassware. – Reset the Thermo switch. See "Frequently asked questions - Thermo switch". |

Frequently asked questions

| What if... | Possible fault | Solution |
|--|--|--|
| After a program, there is powdered detergent residue left behind in the door dispenser. | | <ul style="list-style-type: none"> – Remove any detergent residue. – Prepare items again. |
| | The dispenser was wet when it was loaded. | Make sure the dispenser is dry before loading it. |
| | The powdered detergent dispenser cover was blocked by glassware. | Always arrange glassware so the dispenser cover can open. |
| The powdered detergent dispenser cover will not close. | Detergent residue is blocking the latch. | Wipe away any detergent residue. |
| A banging noise can be heard in the wash cabinet. | A spray arm is hitting the glassware. | Interrupt the program and re-arrange any glassware that is blocking the wash arm, (see "interrupting a program"). |
| A rattling noise can be heard in the wash cabinet. | Glassware is moving around in the wash cabinet. | Interrupt the program and re-arrange any glassware that is loose, (see "interrupting a program"). |
| A banging noise is coming from the water pipes. | This may be caused by the installation or the diameter of the pipes. | Consult a qualified plumber for advice. |

Frequently asked questions

| What if... | Possible fault | Solution |
|---|--|---|
| Items made of glass show signs of corrosion. | The items are not lab washer-safe. | Only use lab washer-safe glassware. |
| | No neutralization took place in the program sequence. | Fill the neutralizer container. |
| | Excessively high temperatures are causing glass corrosion. | Select an appropriate program or lower the wash temperature. |
| | Too alkaline detergent is causing glass corrosion. | Choose a milder detergent. |
| Items made of stainless steel show signs of corrosion. | The chloride content of the water is too high. | Test your water composition. If needed, condition the water externally and use DI water. |
| | The screw cap on the reactivation salt reservoir is not tightened. | Properly thread the cap and screw it tightly. |
| | No neutralization took place in the program sequence. | Fill the neutralizer container. |
| | Rust articles or a rust film appears in the wash cabinet, due to: <ul style="list-style-type: none"> – excessive iron content in the water, or – rusty items in the machine. | <ul style="list-style-type: none"> – Check the piping. – Remove all rusty items from use. |
| | The grade of stainless steel is not lab washer-safe. | Only use high grade stainless steel. |

Frequently asked questions

| What if... | Possible fault | Solution |
|--|--|---|
| There are white deposits and/or spots on the labware. | The water softener setting is too low. | Test the tap water hardness and program the water softener according. |
| | Too much powder detergent is being used. | Be sure you are using the correct amount of detergent. |
| | The neutralizer is not dispensing properly. | Check the neutralizer dispenser. |
| | There is no reactivation salt in the reservoir. | Carefully fill the reservoir with the reactivation salt. |
| | The screw cap on the reactivation salt reservoir is not tightened. | Properly thread the cap and screw it tightly. |
| | The rinse aid dosage was set too low. | Increase the rinse aid dosage setting. |
| | The rinse water quality was insufficient. | <ul style="list-style-type: none"> – Use water with a lower conductivity. – If the machine is connected to a demineralizing cartridge, check the status and change as needed. |

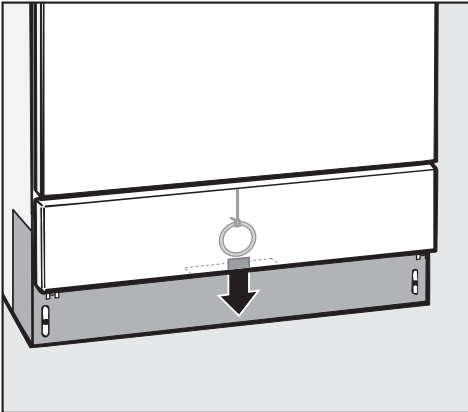
Frequently asked questions

| What if... | Possible fault | Solution |
|---|---|---|
| The wash result is unacceptable. | The baskets and inserts were incorrectly loaded or overcrowded. | Properly arrange the glassware. Do not overload baskets and inserts. |
| | The program used was not suited to the type/amount of soiling. | Select an appropriate program or modify the program. |
| | The detergent used was not suited to the type/amount of soiling. | Use a suitable detergent for machine washing. |
| | The labware was left soiled for too long. | Do not leave soiled labware unwashed for more than 6 hours. |
| | A spray arm is blocked. | Arrange the items do not block the spray arms. |
| | Jets are blocked in the spray arms or inserts. | Check the spray jets and clean as needed. |
| | The filters in the wash cabinet are soiled. | Check the filters and clean them if necessary. |
| | The basket or insert is not properly connected to the water supply. | Use the adapter to properly connect the water supply to the basket or insert. |

Opening the machine during a power failure

The emergency release should only be used when the door cannot be opened normally, e.g. in the case of a power failure.

- Turn the program selector to "Stop"
⏏.
- Press the "On/Off" button to turn the machine off.



- Reach behind the service panel and pull the ring of the emergency release downwards.

Frequently asked questions


Thermo switch

This lab washer has a resettable heater limiter which will shut off the elements in the event of over-heating. This could be caused for example, if large articles cover the heating elements or if the filters in the wash cabinet are blocked.


If the following fault shows: *F01 - F02* (Water in the wash cabinet is not heated, the program cycle takes too long). Please proceed as follows.

- Remove the cause of the problem.
- Remove the service plinth.
- Press the reset button on the temperature sensor on the right side.

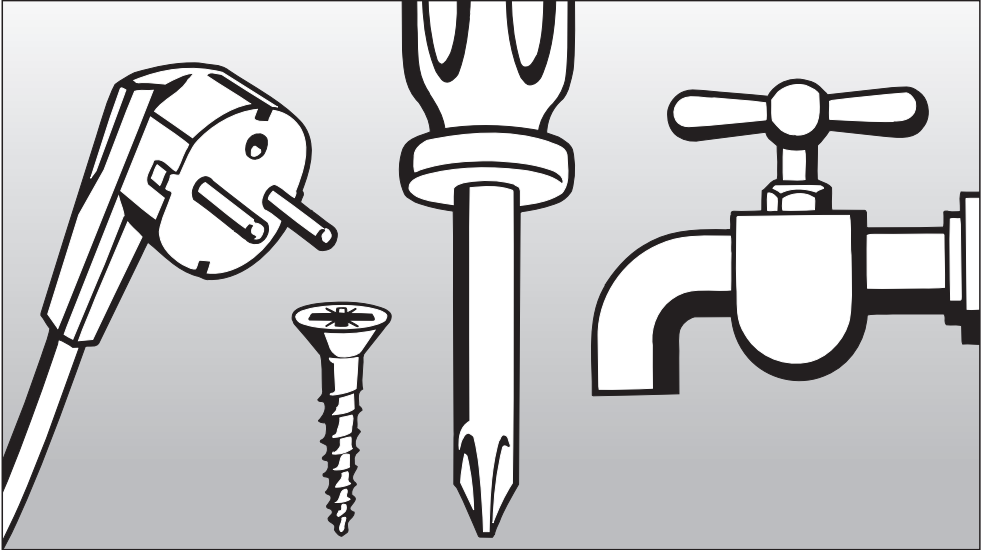
If this switch trips repeatedly, contact the Miele Technical Service Department.

 This lab washer must be installed, maintained and repaired by an authorized Miele service technician. Maintenance and repair work performed by unqualified persons can place the user at risk.

In the event of a fault which you cannot correct yourself please contact the Miele Technical Service Department

 1-800-991-9380
techserv@mieleusa.com

- Please quote the model of your lab washer. This information can be found on the lab washer's front panel.



INSTALLATION INSTRUCTIONS

Information is subject to change. Please refer to our website to obtain the most current product specification, technical & warranty information.

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

Installation

Please refer to the installation diagram supplied with the machine.

⚠ Furniture and fittings installed near the machine must be of a commercial standard (able to withstand the effects of steam).

Installation options

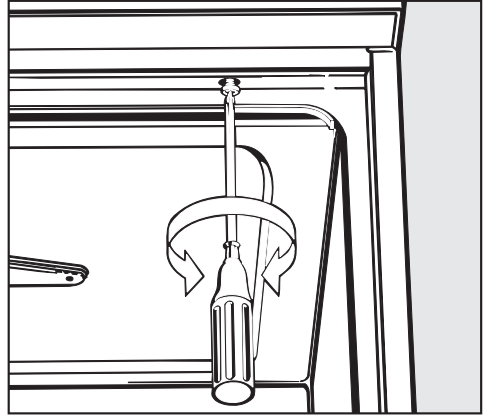
- **Free-standing**
- **Slot-in**, next to other machines or furniture or in a suitable space. The space must be at least $23 \frac{5}{8}$ " (60 cm) wide and $23 \frac{5}{8}$ " (60 cm) deep
- **Undercounter**

The machine can be installed under a continuous counter top or sink drain. The niche must be at least:
Width $23 \frac{5}{8}$ " (60 cm)
Depth $23 \frac{5}{8}$ " (60 cm)
Height $32 \frac{5}{16}$ " (82 cm).

Removing the lid (if necessary)

If necessary, remove the lid from the machine to make installation possible.

- Open the door.

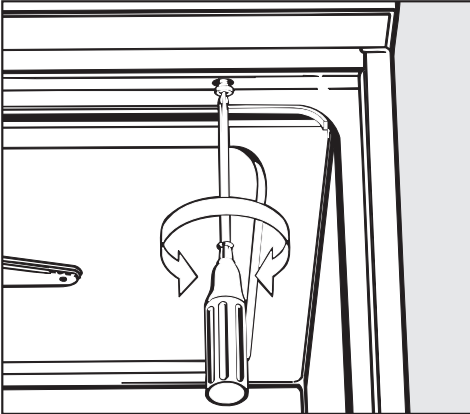


- Remove the fixing screws on the left and right sides using a Phillips head screwdriver.
- Pull the machine lid approx. 5 mm forwards, lift it upwards and remove.

Positioning and securing the machine

To ensure stability, the machine must be aligned and screwed to the counter.

- Open the door.



- Secure the machine to the front edge of the worktop using screws to the left and right of the front trim.

Do not use silicone sealant to seal the gaps between the machine and any neighboring units. This will hinder ventilation to the circulation pump.

Steam Deflector (protects the countertop)

Depending on the requirements for an undercounter installation, a steam deflector can be ordered from the Miele Technical Service Department.

The underside of the countertop is protected from steam damage by this stainless steel plate.

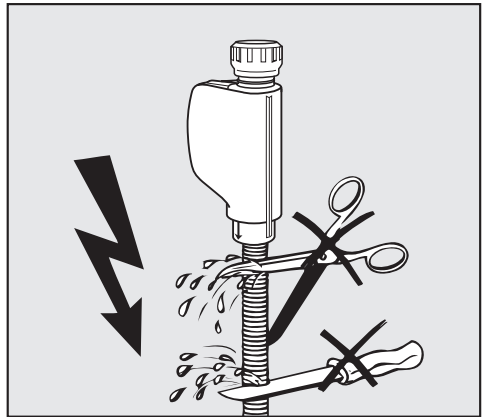
Plumbing


Water inlet

- The machine must be connected to the water supply in accordance with local and national regulations.
- The washer is constructed so it may be connected to a supply without an extra non-return valve, unless required by code.
- An acceptable water pressure (flow rate) is 10 - 147 psi. However, the recommended pressure is 25 - 60 psi.
If the water pressure is below 30 psi, the fill time will take longer.
If the "Fill/Drain" fault code "F..E" is displayed, contact the Technical Service Department.
- The machine is supplied to be connected to a standard cold (coded blue) **or** hot (coded red) water supply to a maximum temperature of 158 °F (70 °C).
Connect the water intake hoses to the cold and hot water faucets.
If no hot water supply is available, the hot water intake hose with the **red** marking needs to be connected to cold water by a y-adapter.

For a DI water connection (H₂O pure), see the next page.

- Water valves with $\frac{3}{4}$ " male hose thread are to be provided on site. They should be easily accessible so the water supply can be turned off if necessary.
- The inlet hoses are 5 $\frac{1}{2}$ feet (1.7 m) long, terminating in a $\frac{3}{4}$ " female hose thread. **The water inlet filters in the threads must not be removed.**
- Large surface area filters are enclosed in the kit supplied with the machine.
Install these filters between the water valve and the water inlet hose (see illustration in "Machine Care/Cleaning the filters in the water inlet"). The large surface area filter for DI water is made from stainless steel and can be recognized by its matte surface.



 Do not cut the inlet hose or damaged it in any way.

- See the supplied installation diagram.

DI-Water connection

The machine comes with a standard connection for a pressure-resistant system. The recommended water pressure (flow rate) is 25 - 60 psi however, water pressure of 10 - 147 psi is acceptable.

- The DI pressure-tested hose (marked "H₂O pure") with a $\frac{3}{4}$ " hose thread must be connected to the on-site water valve for DI purified water.

If the DI water connection is not used, the electronics needs to be reprogrammed by a Miele technician. The water intake hose remains at the rear side of the machine.

Plumbing

Drainage

Connection to the drainage system and disposal of waste water must comply with local and national regulations.

- The drainage system is fitted with a non-return valve which prevents waste water from flowing back into the machine via the drain hose.
- The machine should preferably be connected to a separate drainage system onsite.

If **separate** drainage is not available, contact your Miele application specialist for advice.


The on-site connection needs to be between 2 ft. (0.6 m) and 3 ft 3" (1 m) high **measured from the lower edge of the machine.**

If the connection is deeper than 1 ft. (0.3 m), lay the drain hose ensure the hose runs at least 1 ft. (0.3 m) high.

The drainage system must accommodate a minimum flow rate of 16 l/min.

- The flexible drain hose is 4 ft 7 $\frac{1}{8}$ " (1.4 m) long. The clearance is 7 $\frac{7}{8}$ " (22 mm). **Do not cut the drain hose.** Hose clamps for installation are enclosed.
- A longer drain hose (up to 13 ft [4 m] long) is available to order from the Miele Technical Service Department.
- The drainage system must not exceed 13 ft [4 m] .

See also the installation diagram supplied.

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

- Connection should be made via a suitable isolator, with an on-off switch that is easily accessible for servicing work.
- If the machine is hard wired to a main switch, the switch must have a contact gap of more than 3 mm and the ability to be locked in a neutral position. Only then is the switch valid as a separator. All components must be CSA or UL approved.
- The electrical connection is made through a receptacle according to national requirements. The receptacle has to be easily accessible after installation.
- To increase the security it is recommended to install a protective switch (30 mA).
- For technical data see the data plate or wiring diagram supplied.

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

The machine can be converted according to the supplied converting diagram and wiring diagram.

The data plate is located at the rear of the machine and behind the plinth on the plastic cover.

The wiring diagram is supplied with the machine.

See also the supplied installation diagram.

A damaged power cord must only be replaced with a genuine Miele cord by a Miele service technician.

WARNING **THIS APPLIANCE MUST BE GROUNDED**

Grounding connection

- The ground lead must be connected to the screw connection point (marked with the ground symbol 8) at the back of the machine.

The machine must only be operated with the voltage, frequency and fusing shown on the data plate located on the rear of the machine, and on the plinth (behind the service panel).

The conversion diagram and the wiring diagram is secured to the inner side of the service panel.

Technical data

| | | |
|---|--|-------------------------|
| Height with lid: | 33 ½" | 85 cm |
| Height without lid: | 32 ½" | 82 cm |
| Width: | 23 ½ " | 60 cm |
| Depth: | 23 ½ " | 60 cm |
| Depth with door open | 47 1/4" | 120 cm |
| Weight (net) | 154 lbs | 70 kg |
| Voltage / Fuse: | see data plate | |
| Power cord | approx. 5' 11" | ca. 1,8 m |
| Water temperature | | |
| Hot, Cold and DI water | max. 158 °F | max. 70 °C |
| Static water pressure | max. 145 psi | 10 bar |
| Hot, Cold and DI Water Connection: | | |
| Acceptable water pressure (flow rate) | 10 - 147 psi | .7 - 10 bar |
| Recommended water pressure (flow rate) | 25 - 60 psi | 1.72 - 4.13 bar |
| DI Water Connection (pressureless) optional | 1.23 - 8.70 psi | .09 - .6 bar |
| Delivery head: | min. 12" max. 39 ³/₈" | min. 0,3 m, max. 1 m |
| Noise level in dB (A): Sound pressure level LpA during washing and drying | < 70 | |
| Test marks: | CSA | |
| Manufacturer's address: | Miele & Cie. KG, Carl-Miele-Straße 29, 33332 Gütersloh, Germany | |

Disposal of the packing materials

The cardboard box and packing materials protect the appliance during shipping. They have been designed to be biodegradable and recyclable.

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

Danger of suffocation! Please recycle.

Disposal of an old appliance

Old appliances may contain materials that can be recycled. Please contact your local authorities about recycling in your area.

Ensure that the appliance presents no danger to children while being stored for disposal. See "Important Safety Instructions".

**Please have the model and serial number
of your appliance available before
contacting Technical Service.**

Miele
PROFESSIONAL

U.S.A.

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