

Operating and Installation  
Instructions

Medium capacity  
Glassware Washer  
G 7825 / G 7826

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To prevent accidents  
and machine damage  
read these instructions

**before**  
installation or use.

en - US, CA

M.-Nr. 07 776 870

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# IMPORTANT SAFETY INSTRUCTIONS

This machine conforms to current safety requirements. However, inappropriate use can lead to personal injury and property damage. Read the operating instructions carefully before using this machine.

The manufacturer cannot be held responsible for damage caused by non-observance of these Important Safety Instructions.

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

### **Use**

▶ This machine 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. Follow the product manufacturer's instructions. Miele will not be held liable for damage caused by incorrect use of any kind.

▶ The installation of this unit in non stationary locations (e.g. ships) must be performed by a qualified installer or service agency in strict accordance with national and local safety regulations and standards.

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

- ▶ The machine should be commissioned and maintained only by a Miele Service Technician. Repairs by unqualified persons could be dangerous.
- ▶ Do not install the machine in an area where a danger of explosion or freezing may be present.
- ▶ Be certain this labwasher 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. The manufacturer cannot be held responsible for damage or injury caused by the lack, or inadequacy, of an effective grounding system (e.g. electric shock).
- ▶ A damaged machine is dangerous. Turn off the machine immediately at the power switch and call the Miele Service Department.
- ▶ Personnel operating the machine should be trained regularly. Children and untrained personnel must not be allowed access to the machine or its controls.



Mount on non-combustible floors only!

# IMPORTANT SAFETY INSTRUCTIONS

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- ▶ 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.
- ▶ 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.
- ▶ Do not stand, sit or lean on the opened machine door.
- ▶ Do not touch the heating elements during or directly after the end of a program, burns could result. The elements remain hot for some time after the end of the program.
- ▶ The water in the machine must not be used as drinking water.
- ▶ Be careful when sorting items with sharp, pointed ends. Carefully position these items in the machine, so that you will not hurt yourself or create a danger for other operators.
- ▶ When using this machine regard the high temperatures and be especially careful not to scald or burn yourself. When opening the door bypassing the electrical lock, a danger of burning, scalding and corrosion exist. Let mobile units, inserts and cleaned items cool before touching them. Any water which may remain in containers will be very hot and must be emptied into the wash cabinet.
- ▶ If toxic chemical substances can form in the wash water during processing (e.g. aldehydes in the disinfection agent), the door seal and, if applicable, the function of the steam condenser must be checked regularly. In that case, opening the lab washer door during a program interruption can be dangerous.
- ▶ If you are exposed to toxic vapors or processing chemicals, consult the manufacturer's material safety data sheets for emergency procedures.
- ▶ Always allow mobile units, modules, inserts, and loads to cool before removing. Be sure to empty any water from concave items into the wash cabinet before removing.
- ▶ After drying with the TA drying unit open the door to allow the items and inserts to cool.

# IMPORTANT SAFETY INSTRUCTIONS

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▶ If the boiler has been programmed to "BOILER READY", be particularly careful of hot water and steam when opening the door. Danger of burning or scalding. The water inlet pipe to the wash cabinet is located, as viewed from the unclean side, underneath the basket runner on the left hand side.

▶ Steam heating is permissible up to a pressure of 145 psi. This corresponds to a water steam temperature of 354°F (179 °C).

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

▶ Avoid inhaling powder products. They can cause burning in the mouth and throat if swallowed, and can inhibit breathing.

▶ Before servicing, disconnect the power supply by either removing the fuse, unplugging the unit or manually "tripping" the circuit breaker.

▶ Whenever work is conducted on the tap water network, the water supply line to the washer must be cleared of air. Failure to do so can result in damage to the water softener.

**The following points should be observed to assist in maintaining quality standards for critical labware and to avoid damage to the loads being cleaned.**

▶ For this type of cleaning, the program must not be interrupted until completion. In other words, the On/Off Button must not be used. Interruptions should also be avoided for all other programs, such as during performance testing, because this can negatively affect the cleaning and rinsing results. After any interruption, the program should be restarted from the beginning.

▶ Only use cleaning agents formulated for special processes and approved by Miele for use with this machine. Use of unsuitable cleaning agents could adversely affect the components of the machine.

▶ Use only Miele approved cleaning agents with this machine. Use of unsuitable cleaning agents could adversely affect the components of the machine. Damages resulting from using unsuitable cleaning agents are not covered by the warranty.

▶ Pre-treatments with cleaning agents 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.

▶ In critical applications where very high requirements have to be met, it is strongly recommended that all the relevant factors for the process, such as cleaning agent, quality of water, etc. are discussed with the Miele Applications Specialists.

# IMPORTANT SAFETY INSTRUCTIONS

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- ▶ It is the responsibility of the operator to routinely check that the required cleaning standards are being met. Therefore, results need to be regularly tested and documented, both thermo electrically and through inspection. For thermo chemical processes, additional testing is required using chemical or biological indicators.
- ▶ The performance of the cycles was tested using Neodisher products. The use of other products is not discouraged but may not yield identical results. Please be aware that changes in formulation, storage conditions, etc. which may not be publicized by the chemical manufacturer can have a negative effect on cleaning results. and are not the responsibility of the machine manufacturer.
- ▶ The process must be set so that no foam escapes the wash compartment. Escaping foam jeopardizes the safe operation of the lab washer.
- ▶ The process must be checked regularly in order to detect any foaming.
- ▶ In order to prevent damage to the lab washer and any accessories through processing chemicals or dirt as well as any interaction between them, see "Effects of Processing Chemicals".
- ▶ When a chemical additive is recommended, the manufacturer of the machine takes no responsibility for the effect of the chemical on the items being cleaned.
- ▶ The mobile units, baskets and special inserts should only be used for their specific applications. Instruments with hollow parts must be flushed through with wash water.
- ▶ Empty any containers or utensils before arranging them in the machine.
- ▶ Do not allow any remains of acids, solvents or corroding ferrous material, and in particular hydrochloric acid or chloride solutions to get into the wash cabinet. Similarly avoid any materials with a corrosive effect. The presence in compounds of any solvents should be minimal, (especially those in hazard class A1).
- ▶ To avoid any corrosion damage ensure that solutions or steam containing hydrochloric acid do not come in contact with the stainless steel casing of the machine.
- ▶ Please follow the installation advice in these instructions and the separate Installation Instructions.

# IMPORTANT SAFETY INSTRUCTIONS

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## Using accessories

▶ Only genuine, Miele parts and accessories should be used with this machine, 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.

## Please note the following symbols on the machine:



Caution : See the Operating Instructions!



Caution : Danger of electric shock!

## Disposal of an old machine

▶ When discarding a lab washer, disconnect it from the power supply and cut off the power cord. The old machine may be contaminated by blood or other body fluids and must be disinfected before disposal. For environmental and safety reasons ensure the machine is completely drained of any residual water and cleaning agent. (Observe safety regulations and wear safety goggles and gloves). Make the door lock inoperative or remove the door completely, so that children cannot accidentally shut themselves in. Make appropriate arrangements for the safe disposal of the machine. Machines with a tank system: remove the water from the tank before disposing the machine.

# SAVE THESE INSTRUCTIONS



# Function of the laboratory glassware washer

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The Miele G 7825 / G 7826 Glassware Washing System is designed to provide high-throughput glassware cleaning in areas where space is at a premium. This unit is ideal for cleaning both large volumes of small items and difficult to clean large items.

This high tech system has been proven in hundreds of laboratories worldwide. It features the user-friendly Profitronic programming system for easy programming, a fully modular basket system for washload flexibility and an automatic basket recognition system to help eliminate user error.

## **Standard model**

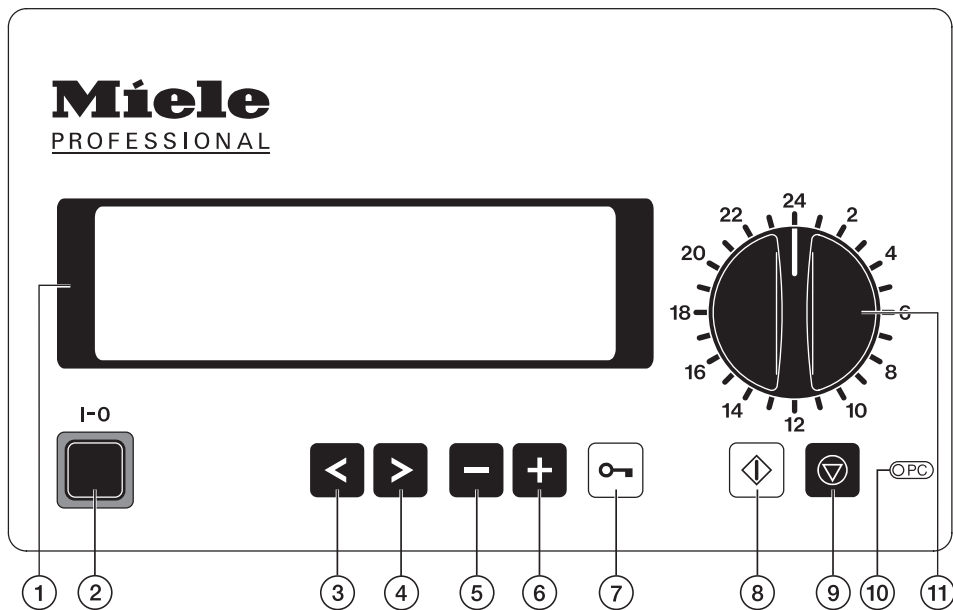
- Serial interface
- On-board liquid detergent dispensing
- Basket recognition

## **Available options**

- HEPA-filtered forced - air drying
- Steam condenser (DK)
- Report printer (PRT)
- Dispensing systems DOS 2 and DOS 4

# Guide to the laboratory glassware washer

## Electronic controls



# Guide to the laboratory glassware washer

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## ① Display

with screen saver

The background light turns off automatically after 15 minutes.

- Press any key to turn the background light on again.

If an fault occurs during operation it will be indicated in the display. See "Messages" in the Programming manual for more information.

## ② On/Off button (I-0)

### ③ Cursor left

moves the cursor to the left:

- to the previous menu
- to the previous parameter
- to the previous input position

### ④ Cursor right

moves the cursor to the right:

- to the next menu
- to the next parameter
- to the next input position

### ⑤ Minus button

- program selection for programs over 24
- scrolling back page-wise in menus
- entering numbers and letters
- changing default settings, e.g. service parameter

### ⑥ Plus button

- program selection for programs over 24
- scrolling forward page-wise in menus
- entering numbers and letters
- changing default settings, e.g. service parameter

### ⑦ Door button

### ⑧ Start button

- Starting a program
- Activating insert mode
- Confirming settings
- Confirming menu points, to get to the respective submenu

### ⑨ Stop button

- Canceling a program
- Leaving the input screen without saving
- Leaving a menu

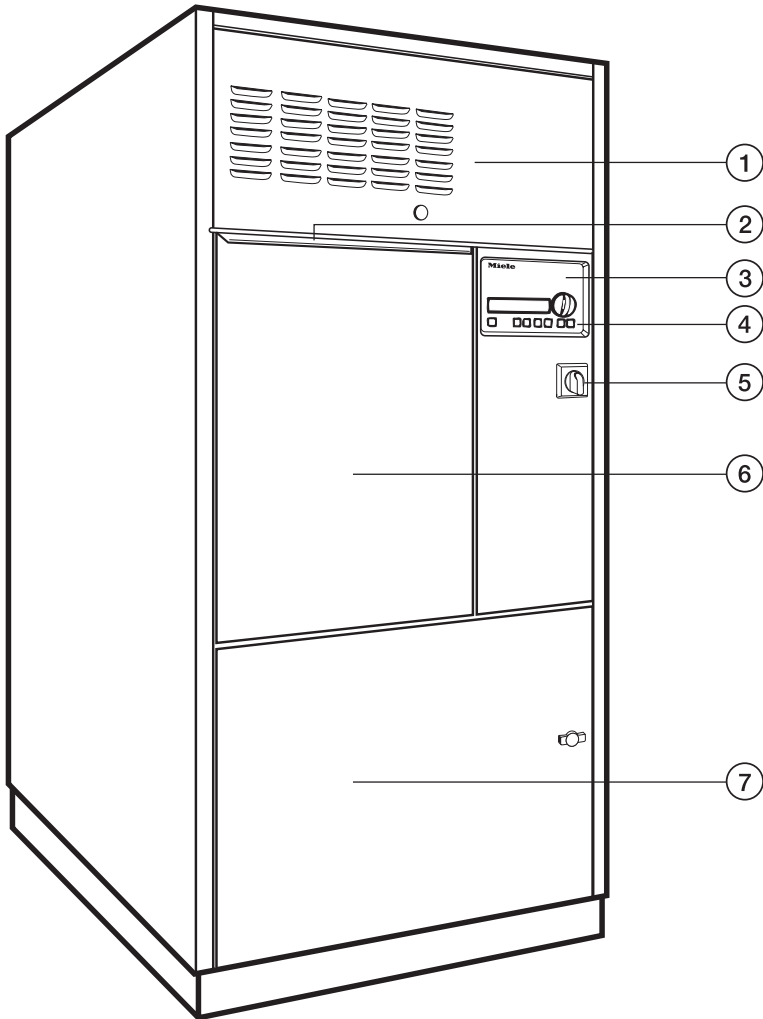
### ⑩ Optical interface (for service technician)

### ⑪ Program selector

Selecting programs 1-23

# Guide to the laboratory glassware washer

## Unclean side



① Drying unit (TA) (optional)

② Handle

③ Electronic control "Profitronic"  
(see "Programming manual")

④ Controls

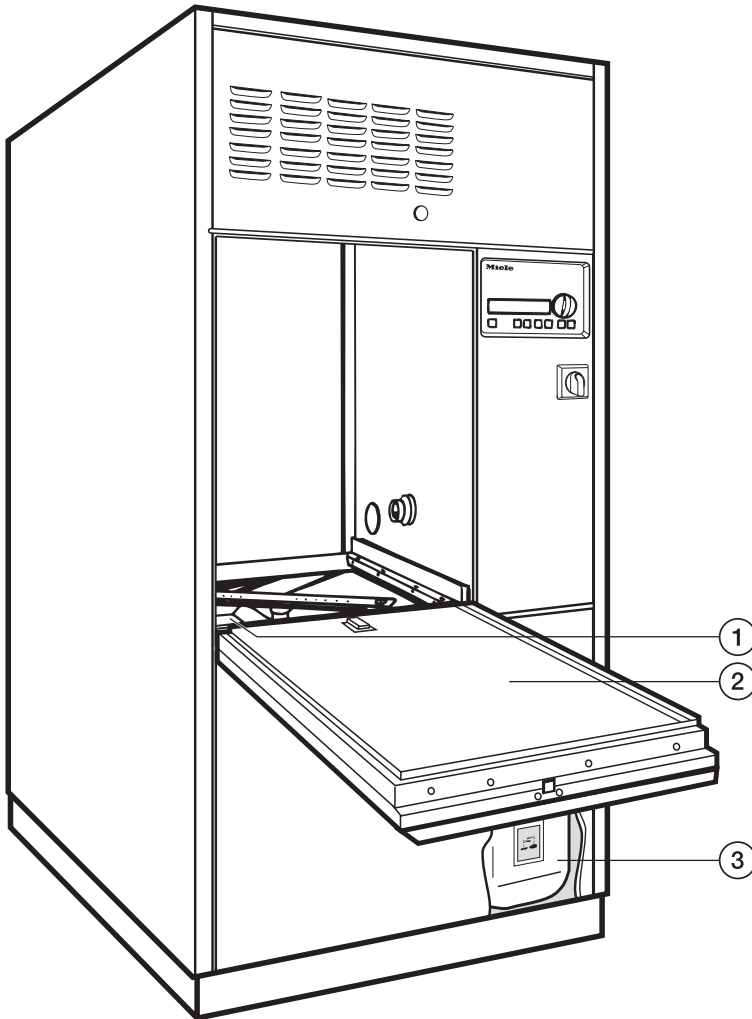
⑤ Power switch (with "Emergency  
cut-off" function for Service)

⑥ Drop-down door (closed)

⑦ Service panel

# Guide to the laboratory glassware washer

Unclean side

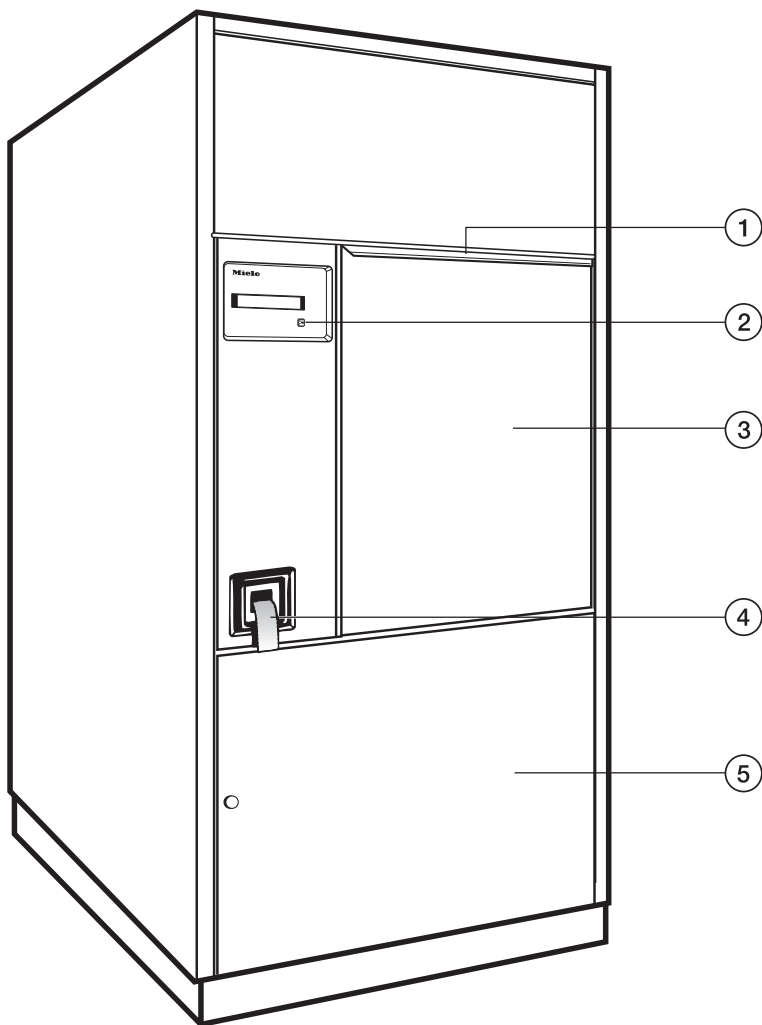


- ① Filter combination
- ② Drop-down door (open)
- ③ Containers for dispensing systems  
DOS 1 / DOS 3  
(optional DOS 2 / DOS 4)

# Guide to the laboratory glassware washer

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## Clean side (G 7826 only)



① Handle

② "Door" button

③ Drop-down door (closed)

④ Printer (optional)

G 7825 on the unclean side

⑤ Service panel

# Opening and closing the door

The door can only be opened when:

- the lab glassware washer is connected to the electrical supply,
- the red ("emergency cut-off") power switch is in the **I-ON** position,
- the **I-0** On-Off button is pressed in, and
- no program is running.


The door on the **clean side** (G 7826) can only be opened when:


- DESIN (disinfection) programs have been correctly completed.

or

- the "Door locking" function is active (see "Machine function - Door locking" in the "Programming Manual").

## Opening the door

- Press the  door button, hold the door handle and open the door.

 Do not touch the heating elements (under the wide area filter) during or directly after the end of a program, you could burn yourself.

If the boiler has been programmed to "BOILER READY", be particularly careful of hot water and steam when opening the door. Danger of burning or scalding. The water inlet pipe to the wash cabinet is located, as viewed from the unclean side, underneath the basket runner on the left hand side.

## To close the door

- Lift the door upwards and push until it clicks shut.

# Automatic mobile unit recognition (AWK)

In operating level C the AWK attributes a fixed program place to a mobile unit with valid coding.


Program places 1-15 are reserved for the AWK automatic mobile unit recognition.

The unit coding (on the mobile unit) and the program place with the corresponding program (in the "Profitronic" electronic control unit) must match.

- Each mobile unit must be coded before being used for the first time. See "Mobile unit coding".
- The wash program through which the mobile unit is coded has to be assigned to the relevant program place.

Program place changes, see the "System function - Selector switch organization" section in the Programming Manual.

## Important!

Before starting the program with the "Start" button , check that the program needed for this mobile unit is displayed.

Otherwise insufficient wash results may occur!

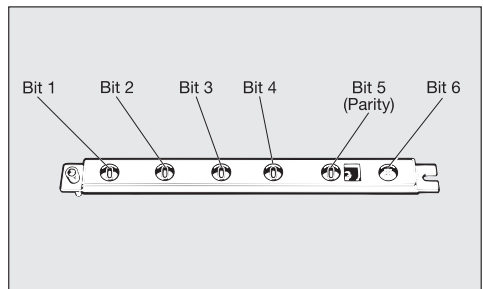
Always check that programs for mobile units with AWK (on fixed program places) are not exchanged.

## Mobile unit coding

The automatic mobile unit recognition feature assigns a program place to a mobile unit. The mobile units must be coded with a magnetic strip, via a bit combination. In operating level C the only program available for a coded mobile unit is the one assigned to the corresponding program place.

When a coded mobile unit is inserted in the machine and the door closes, the automatic mobile unit recognition selects the assigned program. Be sure no small items connect to the magnetic strip.

- Press  to start the program.



The coding is made up of 5 bits:

- Bits 1 to 4 define the mobile unit code,
- Bit 5 serves as a control (Parity-Bit).

Bit 6 controls the volume of water intake and the circulation pump for mobile units with side coupling. This setting cannot be changed!

Mobile units without side coupling are coded with tracks which do not contain Bit 6!



# Automatic mobile unit recognition (AWK)

## Mobile unit coding strip

15 different codes can be set. They are assigned to program places 1 to 15.

Under "System function - Selector switch organization" the matching programs have to be put into the first 15 program places.

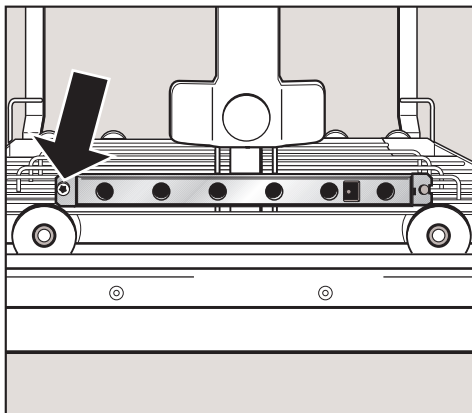
Prog.-place	Bit 1	Bit 2	Bit 3	Bit 4	Bit 5 Parity-Bit
-	0	0	0	0	0
1	1	0	0	0	1
2	0	1	0	0	1
3	1	1	0	0	0
4	0	0	1	0	1
5	1	0	1	0	0
6	0	1	1	0	0
7	1	1	1	0	1
8	0	0	0	1	1
9	1	0	0	1	0
10	0	1	0	1	0
11	1	1	0	1	1
12	0	0	1	1	0
13	1	0	1	1	1
14	0	1	1	1	1
15	1	1	1	1	0

The coded total must be an even number. Bit 6 is not included in this calculation.

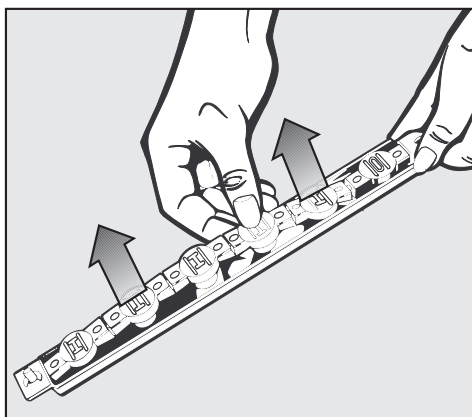
If the coded total equals an odd number the message CHECK MOBILE UNIT RECOGNITION will appear. If the mobile unit code equals 0, the message NO MOBILE UNIT RECOGNITION will appear. In both cases the program cannot be started. The mobile unit recognition must be reset.

## Setting mobile unit coding

To set or alter the coding of a mobile unit with automatic recognition (AWK) proceed as follows:

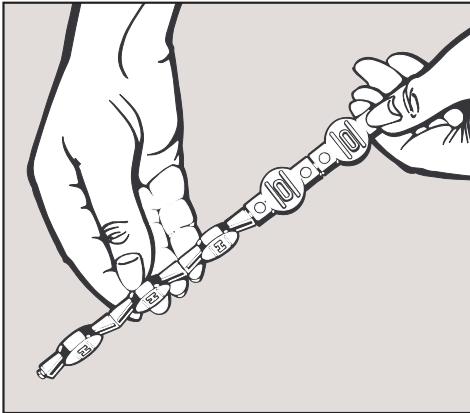


- Unscrew the track with an AWK (allen wrench) and remove it from the retainer.

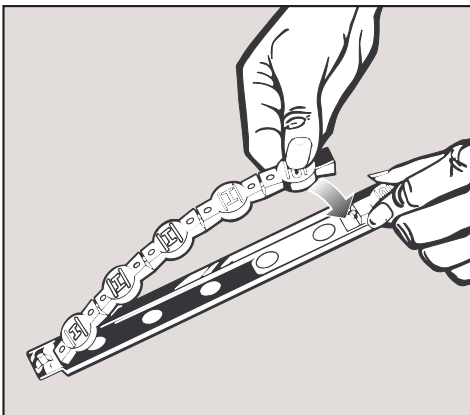


- Remove the magnetic strip from the track.

## Automatic mobile unit recognition (AWK)



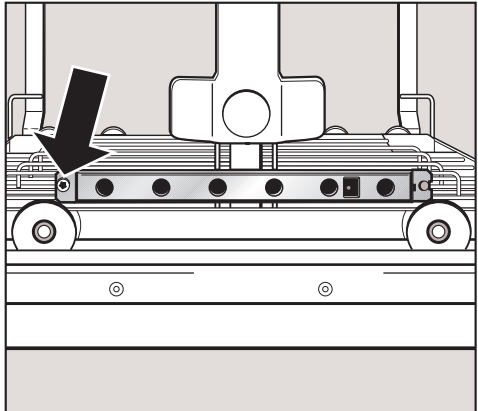
- Set the program place coding.



- Put the magnetic strip back in the track.

### Important:

The magnetic strip must be placed in the track so that the Bit coding, set according to the chart, is visible through the round windows of the track.



- Place the track in the holder of the mobile unit and screw firmly in place.

Bit 6 is not an integral part of the modifiable magnetic strip. Make sure that you code mobile units with side coupling to a track where Bit 6 is set to I. Mobile units without side coupling must be coded with a track that does not have Bit 6.

The magnetic strips on the G 7825 / G 7826 must have **gray** magnets. The magnetic strips on the G 7827 / G 7828 must have **black** magnets.

The labwasher can be fitted with a variety of mobile units, baskets and inserts, depending on the cleaning application desired.

## Check before cleaning

- Are the items to clean correctly sorted, loaded and connected?
- Are the spray arms clean and can they rotate freely?
- Is the filter combination free of coarse soiling? Clean if necessary.
- Is the adapter to the water inlet in place? The spray arms correctly connected?
- Are the detergent and neutralizer containers full?

## Check after cleaning

- Check the cleaning results visually.
- Are the jets and connections securely connected with the mobile unit / inserts?

## Process validation

As a rule, it is the responsibility of the user to ensure that items cleaned in the machine meet the required standards.

## Protein detection

The cleaning result should be checked randomly with an analytic protein inspection, e.g. use the Miele test kit.


# Application

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## Loading tips

Select mobile units, baskets and inserts appropriate for the application.

- 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 such as beakers, measuring cylinders, flasks, etc. should be inverted and placed in the correct inserts so that water can flow in and out unrestricted. A cover net can be used to reduce the risk of movement during the wash process.
- Use a cover net (e.g. an A 6) or mesh tray to secure small and/or lightweight items to prevent them from blocking the spray arms or being caught in the magnetic strip on the automatic mobile unit recognition system.
- Deep based items should be placed at an angle to allow water to run off easily.
- Tall, narrow pieces should be placed in the center of the baskets. This ensures good water coverage.
- Mobile units with an adapter must engage correctly.
- Engage inserts correctly into the module carts.
- The spray arms must not be blocked by tall items or items which hang down in their path. If necessary, manually rotate the arms to test.
- Petri dishes and the similar should be placed in the correct insert with the soiled side facing the center.
- Insert pipettes with the pointed end downwards.
- Quarter inserts should be placed as close to the middle of the unit as possible.
- Glassware should not stick out of the door area.

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

## Laboratory glassware (LG)

Wide-necked glassware, such as wide necked erlenmeyer flasks and petri dishes or glassware with a cylindrical form, e.g. test tubes, can be cleaned inside and out with the rotating spray arm. General glassware, such as beakers, conical flasks, petri dishes, test tubes, etc. can be arranged in full size, half or quarter inserts in the higher or lower levels.

Mobile injector units are available for direct injection spraying of narrow necked flasks, pipettes, etc.

The following instructions relate only to basic preparation and loading of glassware.

## Loading the machine

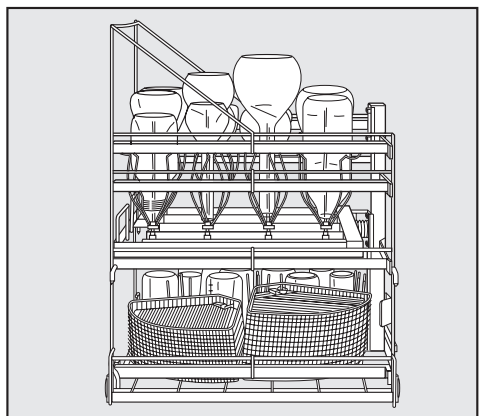
### Removing excess soils

- Empty all glassware before loading into the machine (paying particular attention to regulations regarding infectious diseases).

⚠ Ensure that no acid or solvent residues, especially hydrochloric acid or chlorides get into the wash cabinet.

- Remove all agar residues from petri dishes.
- Remove blood clots and residues from test tubes, etc.
- Remove all stoppers, corks, labels, sealing wax residues, etc.
- Small parts - such as stoppers and taps - should be secured in suitable basket inserts.


### E 741 Injector mobile unit



Respective modules clean wide necked and/or narrow necked glassware on 1 - 3 levels.

# Application

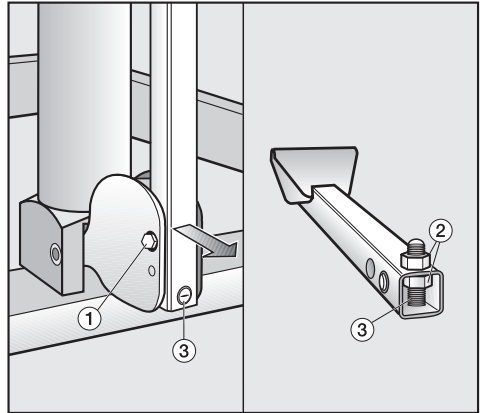
## Transfer cart for loading and unloading the machine

 When a disinfection process is being carried out according to national standards, the contaminated surfaces of the cart must be disinfected with a spray in accordance with national health and safety regulations, after the machine has been loaded.

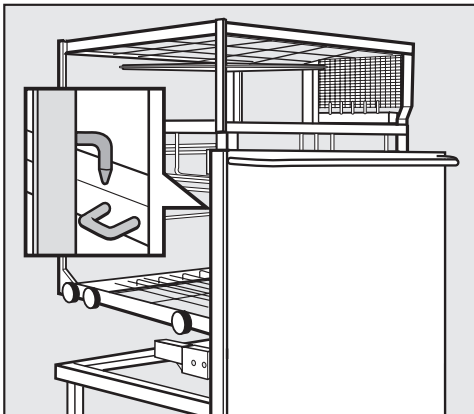
The transfer cart legs are height adjustable.

Adjust the height so that the opened door of the lab glassware washer is held under the sidewise latches of the transfer cart.

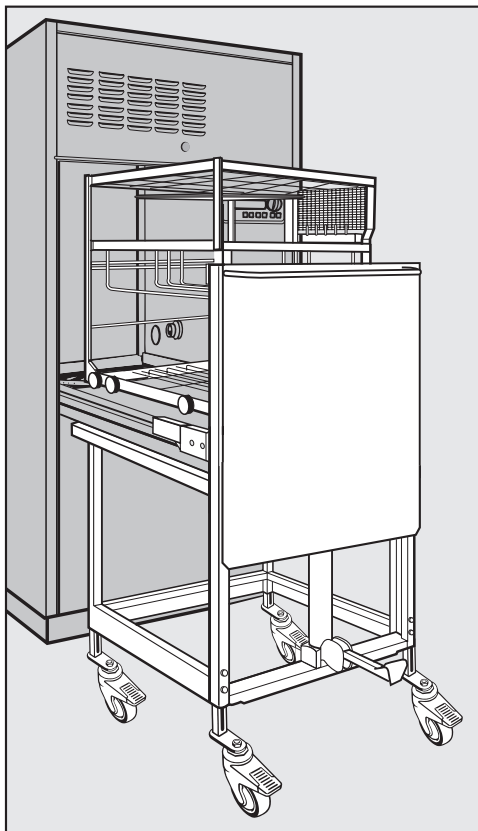
If using the transfer cart with a lab glassware washer without a base, the foot pedal position of the transfer cart needs to be changed.



- Unscrew the foot pedal, ①.
- Loosen the nuts, ②, at the adjusting screw, ③.
- Screw the adjustment screw, ③, further through the foot pedal to reach the suspension point earlier.
- Tighten the nuts.
- Screw in the foot pedal.




- Push the transfer cart, as far as it will go, under the open door of the lab glassware washer.
- Direct the mobile unit into the latches on the transfer cart using both hooks.
- Lock the wheels.
- To lift the mobile unit onto the door, step on the foot pedal of the transfer cart.



- To lower the mobile unit, step all the way down on the foot pedal.
- When the program is finished, back the transfer cart against the lab washer. The lab washer door must hook under the sideways latches.
- Pull the mobile unit onto the open door as far as it will go. It can then be lifted and transported with the transfer cart.

# Adding of liquid detergents and neutralizers

 Use only cleaning agents specially designed for lab washers and regard the application recommendations of the manufacturer!

This machine is fitted with 2 dispensers as standard:

- Dispensing system DOS 1 (blue) to dispense liquid cleaning detergents. The dosing rate is 120 ml/min.
- Dispensing system DOS 3 (white) to dispense neutralizing agent (acid). The dosing rate is 20 ml/min.

## Additional DOS modules (optional):

- Dispensing system DOS 2 (white). The dosing rate is 20 ml/min.
- Dispensing system DOS 4 (green). The dosing rate is 120 ml/min.


The amounts of detergent and neutralizers required, depending on the application chosen for this machine, are dispensed through these dispensing systems.

## Priming the DOS dispensers

The liquids can be filled into 10 l plastic containers, which are color coded for the corresponding dispensing system.

When first commissioning, or when the message "FILL DOS 1 CONTAINER" and/or DOS 2, 3, 4 flashes in the display after turning on or at the end of a program, fill the storage container with the correct agent. If the message "CHECK DISPENSING SYSTEM 1" and/or "DISPENSING SYSTEM 2, 3, 4" flashes in the display, (the program has been automatically put on hold), check the storage container and the dispensing hoses and refill if necessary.

When first commissioning or when the message "CHECK DISPENSING SYSTEM..." appears start the DOS-FILL program to prime the dispensing system (see "Priming the liquid dispensing systems").

 Use caution when handling detergents!

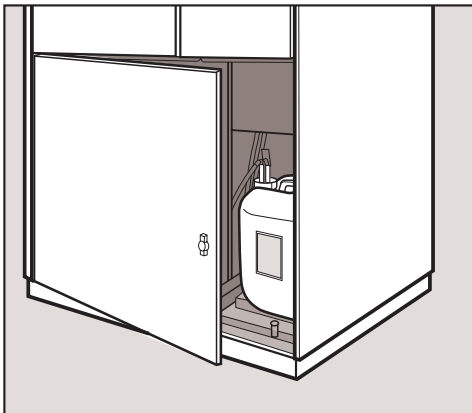
Follow the instructions and relevant safety procedures carefully. Wear protective gloves and goggles.



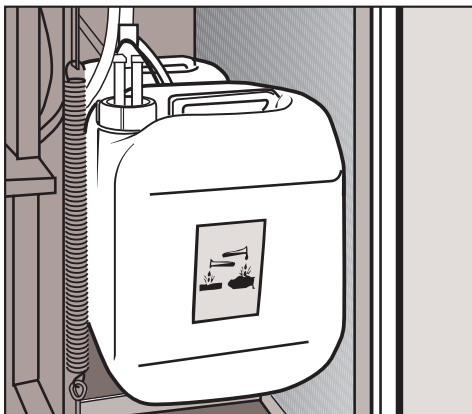
## Adding of liquid detergents and neutralizers

### Filling the containers with the relevant detergent or neutralizer

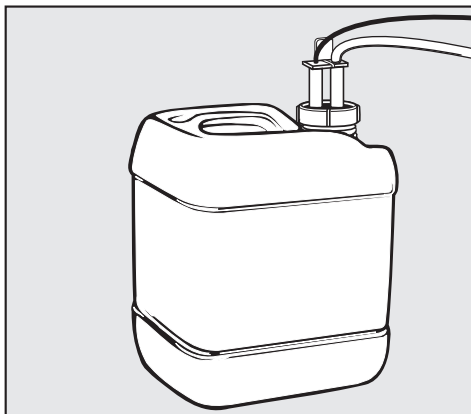
- Turn the lab washer off using the power switch.



- Open the service panel on the bottom right of the machine.



- Take the storage container out of the unit, open it and fill with the agent required. Observe the color code.



- Insert and secure the siphon tube into the container. Observe the color code.

The message clears once the storage containers have been filled.

Please remember to refill the containers in a timely manner, they should not be emptied completely.


If the container is not in use, the refill function for the dosage system not used can be shut off and the respective display message be avoided (see "Machine function / Dispensing - Query container" in the Programming Manual).

# Adding of liquid detergents and neutralizers

---

## Priming the liquid dispensing systems

Before the machine is first used, and later if one or more containers have been allowed to empty, the dispensing system(s) for liquid agents must be vented.

- Press the ON/OFF **I-0** button.
- Select operating level "B".
- Select as required:
  - Program DOS1-FILL
  - Program DOS2-FILL
  - Program DOS3-FILL
  - Program DOS4-FILL.(See "Use - B. Free program selection").
- Press the "Start"  button.

The DOS-FILL Service Programs are allocated by default to program places 58-61, but they can be allocated to different ones.

## Dispensing system maintenance

To ensure safe function the following maintenance should be carried out by a Miele Service Technician at specified intervals.

### Every 12-18 months:

- Inspect the hoses of the dispensing system(s). Replace if necessary.

## External Dispensing systems

If external pumps are to be used for dispensing liquid detergent, please contact the Miele Technical Service Department. The instructions given in the Programming Manual under "Machine functions" must be observed.

# 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"> <li>– Find and correct the causes of the damage.</li> </ul> <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 <b>not</b> standardized and <b>not</b> validated.</p>	<ul style="list-style-type: none"> <li>– Find and correct the cause of the foaming.</li> <li>– The process must be checked regularly in order to detect any foaming.</li> </ul> <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"> <li>– rust formation (red spots / stains),</li> <li>– black spots / stains,</li> <li>– white spots / stains (smooth surface is slightly corroded).</li> </ul> <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"> <li>– Find and correct the cause of the corrosion.</li> </ul> <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"> <li>– alkaline to neutral pH products,</li> <li>– acid to neutral pH products,</li> <li>– hydrogen peroxide.</li> </ul>	<ul style="list-style-type: none"> <li>– Use only those processing chemicals recommended by Miele.</li> <li>– Perform regular visual inspections of the metering system.</li> <li>– Regularly check the feed performance of the metering system.</li> </ul>
<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"> <li>– Use only those processing chemicals recommended by Miele.</li> <li>– Perform regular visual inspections of all visible elastomer and plastic components.</li> </ul>
<p>The following oxidizing processing chemicals can damage the elastomer components (hoses and seals) and, in some cases, the plastic components of the lab washer:</p> <ul style="list-style-type: none"> <li>– nitric acid,</li> <li>– peracetic acid,</li> <li>– products containing active chlorine.</li> </ul>	<p>The washing temperature should not exceed</p> <ul style="list-style-type: none"> <li>– 122 °F (50 °C) for nitric acid,</li> <li>– 95 °F (35 °C) for peracetic acid,</li> <li>– 176 °F (80 °C) for products containing active chlorine.</li> </ul>
<p>The following processing chemicals can release large quantities of oxygen:</p> <ul style="list-style-type: none"> <li>– hydrogen peroxide,</li> <li>– peracetic acid.</li> </ul>	<ul style="list-style-type: none"> <li>– Use only tested processes such as OXIVARIO or OXIVARIO PLUS (if available).</li> <li>– In the case of hydrogen peroxide, the washing temperature should be below 158 °F (70 °C).</li> <li>– Consult Miele.</li> </ul>

# Effects of Processing Chemicals

## Connected processing chemicals

Effects	Action
<p>The following processing chemicals can result in excessive foaming:</p> <ul style="list-style-type: none"><li>– cleaning and rinsing agents that contain tensides,</li><li>– emulsifiers.</li></ul> <p>The foaming can occur:</p> <ul style="list-style-type: none"><li>– in the program block in which the processing chemical is added,</li><li>– in the subsequent program block due to carry-over,</li><li>– in the case of rinsing agents, in the subsequent program due to carry-over.</li></ul>	<ul style="list-style-type: none"><li>– 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.</li><li>– Observe the instructions of the manufacturer of the processing chemicals.</li></ul>
<p>Antifoaming agents, particularly silicone-based antifoaming agents, can cause the following:</p> <ul style="list-style-type: none"><li>– deposits in the wash compartment,</li><li>– deposits on the wash load,</li><li>– damage to the elastomer and plastic components of the lab washer,</li><li>– attack certain plastics (e.g. polycarbonates, plexiglass, etc.) in the wash load.</li></ul>	<ul style="list-style-type: none"><li>– Use antifoaming agents only in exceptional cases or when they are absolutely necessary for the process.</li><li>– Periodic cleaning of the wash compartment and accessories without a load and without an antifoaming agent using the ORGANICA program (if available).</li><li>– Consult Miele.</li></ul>

# Effects of Processing Chemicals

<b>Soiling</b>	
<b>Effects</b>	<b>Action</b>
<p>The following substances can damage the elastomer components (hoses and seals) and, in some cases, the plastic components of the lab washer:</p> <ul style="list-style-type: none"> <li>– oils, waxes, aromatic and unsaturated hydrocarbons,</li> <li>– softeners,</li> <li>– cosmetics, hygiene and skin care products such as creams (analysis and filling sections).</li> </ul>	<ul style="list-style-type: none"> <li>– Retrofit the lab washer with more grease-resistant elastomers.</li> <li>– Depending on what the lab washer is used for, periodically wipe the lower door seal with a lint-free cloth or sponge. Clean the wash compartment and accessories without a load using the ORGANICA program.</li> <li>– To process the load, use the program "OIL" (if available) or use the special program with emulsifier metering.</li> </ul>
<p>The following substances can cause excessive foaming during washing and rinsing:</p> <ul style="list-style-type: none"> <li>– agents such as disinfection agents, dish detergents, etc.</li> <li>– reagents for analysis, e.g. for microtitration plates,</li> <li>– cosmetics, hygiene and skin care products such as creams (analysis and filling sections).</li> <li>– foaming substances in general, for instance tensides.</li> </ul>	<ul style="list-style-type: none"> <li>– First rinse the load with a sufficient quantity of water.</li> <li>– Select a wash program with one or more short pre-rinses with cold or warm water.</li> <li>– Taking the specific application into account, add an antifoaming agent, one without silicone oils if possible.</li> </ul>
<p>The following substances can cause corrosion of the stainless steel in the wash compartment and accessories:</p> <ul style="list-style-type: none"> <li>– hydrochloric acid,</li> <li>– other substances that contain chloride, e.g. sodium chloride, etc.</li> <li>– conc. sulphuric acid,</li> <li>– chromic acid,</li> <li>– iron particles.</li> </ul>	<ul style="list-style-type: none"> <li>– First rinse the load with a sufficient quantity of water.</li> <li>– Let the load drip dry before putting it on the carts, baskets and inserts and placing in the lab washer.</li> </ul>

# 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"><li>- Use the program OIL (if available).</li><li>- Use the special program with emulsifier (neutral pH) metering for pre-rinsing.</li><li>- Taking the specific application into account, add an antifoaming agent, one without silicone oils if possible.</li></ul>
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"><li>- Select a wash program with one or more short pre-rinses with cold water.</li></ul>
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"><li>- Observe the instructions of the manufacturer of the processing chemicals.</li></ul>

# Operation

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## Turning on

- Open the water supply (if turned off).
- Turn the power switch (Emergency cut-off switch) to I-On.
- Press the ON/OFF I-0 button in.


In operating levels A, B and D the most recently selected PROGRAM NAME appears and in operating level C "AUTOMATIC MOBILE UNIT RECOGNITION" is displayed.

## Door lock

The door can only be opened when:


- the washer is connected to an electrical power supply,
  - the red power switch (with emergency cut-off function) is set to I-On,
  - the ON/OFF button I-0 is pressed in,
- and
- no wash program is running.

## Opening the door

- Press the door button , grip the door handle and open the door.

In order to open the door on the clean side (push-through model), the following conditions must be in place:

- wash programs must be finished and have functioned without errors,
- or
- the "Interlock" function is activated (see "Machine functions / Interlock" in the Programming Manual).

 Do not touch the heating elements under the large-area filter when you open the door during or at the end of the washing program. They may still cause burns even several minutes after the program has ended.

If the boiler has been programmed to "Boiler ready", always beware of hot water and steam when the door is open! Viewed from the unclean side, the water inlet pipe is located beneath the basket runner on the left side.

## Closing the door

- Lift the door and push it until it clicks shut.



The four operating levels are:

A = Fixed program / Programs with free access

B = Free program selection

C = AWK – Automatic Mobile Unit recognition (program selection via mobile unit coding)

D = Programming / free program selection / change code (see the Programming manual)

## Selecting or changing your own code

The factory set code can be changed (see "System function" in the Programming Manual).

Code 1 for levels ABC

Code 2 for levels ABCD

## Changing the operating level

- Press **<** and **>** at the same time. Operating levels A B C D will appear in the display.
- Select the operating level you want using the **<** or **>** keys.
- Press **⏏** to confirm selection.
- Enter code when requested in the display.

The code is set by default to >0000<.

- Press the "Start" button **⏏**.

[0000] appears.

- Enter numbers using the **+** and **-** keys.
- Select number positions with the **<** or **>** keys.
- To confirm code press **⏏**.

If it was entered incorrectly: FALSE CODE, ENTER AGAIN will appear in the display.

- Close the door.

# Operation


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## Starting a program

You can find detailed and important information regarding the Miele default programs in the program chart of the supplied Programming Manual.

### A. Fixed program

To utilize access level "A", fixed programs must be assigned for access. See the Programming Manual section on "System Functions" for details on assigning programs. Once programs are assigned to access level "A" they can be operated in the following manner.

- Select operating level "A".
- Check in the display that the program shown is the one required. If several fixed programs have been made freely accessible, select the one required using the program selector.
- Press the "Start"  button.

### B. Free program selection



- Select operating level "B".

With operating level "B" there are three possibilities for program selection.






1. Program places 1 - 23 can be selected using the Program selector.

- Turn the program selector to the required program.  
The program name appears in the display.

2. Programs above place 24 can be selected using the  and  keys.


- Turn the program selector to 24.
- Press  (scrolls upwards) or  (scrolls down), until the required program is shown.

3. The PROGRAM SURVEY menu lists all stored programs. A program can be selected from this menu.

- Select Program Survey with  and confirm with .
- Select a program using  or .
- Press  to confirm the selection.

This exits the Program Survey, and the selected program is shown in the display.

After selecting one of the three options above:

- Press the "Start"  button, the program proceeds.

For further information on program selection see "Operating Level B" in the Programming Manual.

## C. Automatic mobile unit recognition (AWK)

- Select operating level "C".
- Push the coded mobile unit into place.

Make sure that no small metallic items (e.g. keys) stick to the magnetic strip or its underside. The coding might be not readable.

- Close the door.

### Important:

It is absolutely essential to check that the program required for this mobile unit is the one shown in the display, before starting the program by pressing the "Start" button. Otherwise inadequate cleaning could result.

Please make sure, that the places assigned for programs using the AWK (Automatic mobile unit recognition) are not changed at random.

- Press the "Start"  button.

Document any program and dosage changes. Cleaning performance must be validated again if necessary.

## Program sequence

After being started the program will proceed automatically. It is finished when PROGRAM END appears in the display and the background lighting flashes (press any button to switch off the flashing lights).

The flashing lights can be permanently switched off. See "System Functions" in the Programming Manual.

Detailed information on program sequences is given in the appendix of the Programming Manual.

The display background lighting goes out automatically after approximately 15 mins. To bring it back on again press one of the buttons.

Do not change the printer paper roll and cartridge during a running program.

## Turning off

- Press in and release the ON-OFF, I-0, button.
- Turn off the water supply.

# Operation

---

## Cancelling a program

A program can only be interrupted or cancelled in the operating levels B or D.

### In operating levels B or D

- Press the "Stop"  button.

The program is interrupted.  
>CANCEL< OR >CONTINUE< appears in the display.

- Select >CANCEL< with the  button.  
The cursor > < flashes.

- Press the "Start"  button.

The program is cancelled and the water is drained. DRAIN WATER appears in the display.

- After the water has been drained the required program can be selected and restarted.

## Interrupting a program

A program can only be interrupted or cancelled in operating levels B or D.


If the door needs to be opened in extreme cases, e.g. if items are moving:


## In operating levels B or D

- Press the "Stop"  button.

The program is interrupted.  
>CANCEL< OR >CONTINUE< appears in the display.

- Open the door.  
Important for machines with a clean and unclean side:  
With the setting "WITHOUT DOOR INTERLOCK - YES" the doors on either the clean or unclean side can be opened. If the setting "WITHOUT DOOR INTERLOCK - NO" is selected, only the door on the unclean side can be opened.

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

- Arrange the parts securely, observe any protective measures.
- Close the door.
- Press the "Start"  button.

The program continues.

# Serial interface

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Each machine is supplied with a 16' 5" (5 m) long interface cable for data transfer between the Profitronic system and an external report printer or PC.

The interface cable is rolled up inside the machine and must only be connected by a Miele Service Technician.

The serial interface is RS 232 compatible.

Various printers can be used as external printers:

- Epson-compatible sign-set
- HP Laserjet

For the interface configurations see "PC/Printer Function" in the Programming Manual.

The address of the 9-pole pin sub-D plug of the serial interface cable:

- 5GND (ground)
- 3TXD (transmit)
- 2RXD (receive)
- 1-4-6 (linked)
- 7-8 (linked)

A standard null-modem or laplink cable can be connected.

The extension cable to the printer/PC must not exceed 32' 9" (10 m).

Please note the following when connecting a printer or PC:

- Only use an industry-standard PC or printer.
- When installing the machine take the dimensions of the printer/PC into account.

The printer settings are described in the chapter PC/Printer function in the Programming manual.

The report printer offers the following print options:

- Program print
- Additional functions print
- Rinse protocol print
- Fault protocol print

Labwashers should undergo routine maintenance by the Miele Technical Service **every 1000 operating hours or at least once every 6 months.**

Maintenance covers the following:

- Electrical safety
- Door mechanism and door seal
- Screws and connections in the wash cabinet
- Water inlet and drain
- Internal and external dispensing systems
- Spray arms
- Triple filter system
- Drain pump and non-return valve
- Steam condensor
- All mobile units, baskets, and inserts

If applicable:

- Drying unit
- Connected printer

Also during maintenance, the following function checks are conducted:

- a test program is run
- wash temperatures are measured
- ensure a water tight door seal
- all safety-relevant measuring systems are checked (fault display).

# Maintenance

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## Routine checks

The user must complete these checks every day before using the washer. A checklist is supplied with the washer.

Check the following points:

- the filters in the base of the wash cabinet
- the spray arms in the washer and in the mobile units and inserts
- the wash cabinet and the door seal and
- all mobile units, baskets, and inserts



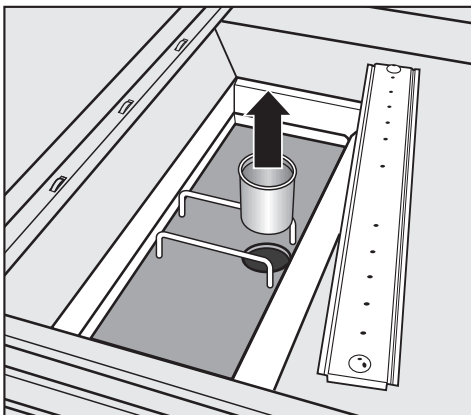
## Cleaning the filters in the wash cabinet

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

⚠ The machine must not be used without all the filters in place.

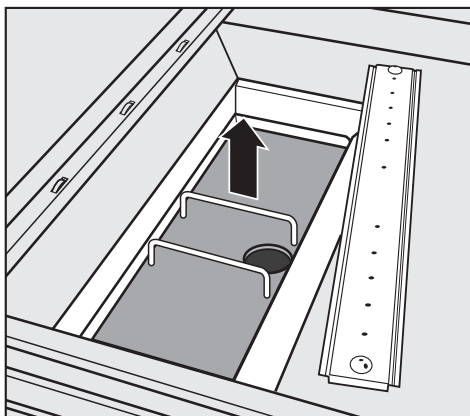
⚠ Be aware of glass splinters, danger of injury.

## Cleaning the fine filter



- Remove the fine filter and clean if necessary.

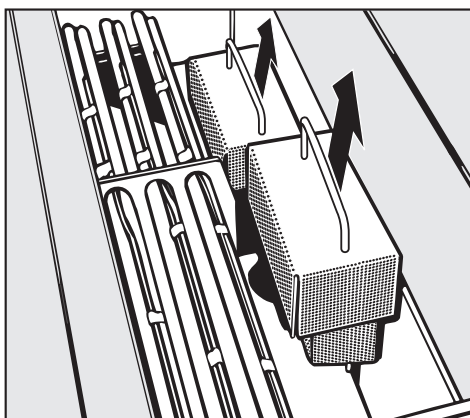
## Cleaning the flat filter



- Remove the flat filter and clean if necessary.

## Cleaning the filter system of the circulation pump

Two filters are situated under the flat filter (on the right, next to the heater block) to protect the circulation pump.



- Pull the filters up and out of the holder to remove. Clean if necessary.
- Replace the filter combination in the reverse order.

# Maintenance

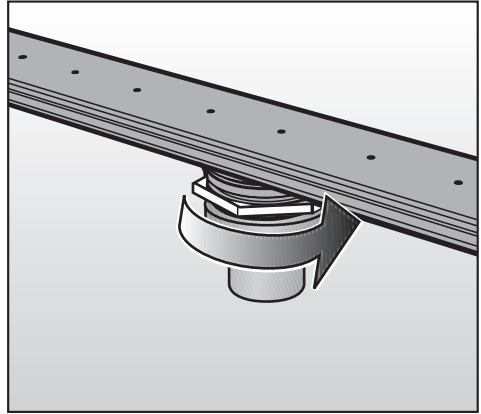
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## Cleaning the spray arms

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

- Use a sharp pointed object to push particles into the spray arm jets and rinse thoroughly under running water.
- Remove the mobile unit.

## Labwasher spray arms



- Loosen the nut with a 60 mm wrench and pull the spray arm upwards or downwards respectively.


## Mobile unit / insert spray arms

- Turn the nut with the spray arm counterclockwise and pull the spray arm downwards.
- Refit the spray arms after cleaning in the reverse order.

After replacing the spray arms check that they rotate freely.


## Cleaning the control panel


- Clean the control panel with a damp cloth or with a glass/plastic cleaner. To disinfect use an approved cleaning agent.

 Do not use abrasive or all purpose cleaners! They will damage the surface.

## Cleaning the exterior

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

 Do not use thinner or ammonium cleaner. They will damage the surface.

 Never clean the machine 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, call Miele for info.

## Cleaning the door seal

- To remove soiling clean the door seal regularly with a damp cloth.
- Damaged or leaking door seals should be replaced by Miele's Technical Service Dept.

# Maintenance

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## Mobile units, baskets and inserts

To ensure the proper function of mobile units, baskets and inserts, they must be checked daily. A checklist is supplied with the machine.

Check the following points:

- Are the rollers in the proper condition and are they securely fixed in the mobile unit/insert?
- Is the mobile unit connection correctly set and tightly screwed on?
- Are all spray jets, spray sleeves and hose adapters tightly connected with the mobile unit/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".
- Are the magnetic strips of the mobile unit free of any metallic items?
- Are the screws in the rail of the Automatic mobile unit recognition tightly screwed on?

## Report printer (Option)

### Replacing the print paper


Replace the print paper, 2 ¼" (58 mm) wide, when the red indicator lights in the report printer.

- Open and pull down the front panel of the printer.
- Take the empty roll together with its spindle from the roll holder, fit the new roll on the spindle and put it back in place.
- Cut the paper at an angle and guide it up and over the paper transport roller (slit behind the ribbon cartridge). Press the green paper transport button until the paper reemerges above the ribbon cartridge (see the illustration on the inside of the front panel).
- Guide the paper through the slit of the front panel. Shut the front panel.

Replacement paper rolls, 2 ¼" (58 mm) wide, outer diameter approx. 2" (50 mm) can be obtained from Miele.

### Replacing the ribbon cartridge


- Open and pull down the printers front panel.
- Pull the ribbon cartridge (above the paper roll) forward and out of its holder and replace it with a new one. The paper must be guided between the ribbon and the cartridge housing.
- Turn the small wheel for manual ribbon transport on the right clockwise until the ribbon is tight.
- Cut the paper at an angle and guide it through the slit of the front panel. Shut the front panel.

 Please refer to the installation diagram supplied with the machine.

Replacement ribbon cartridges can be obtained from Miele.


## After sales service

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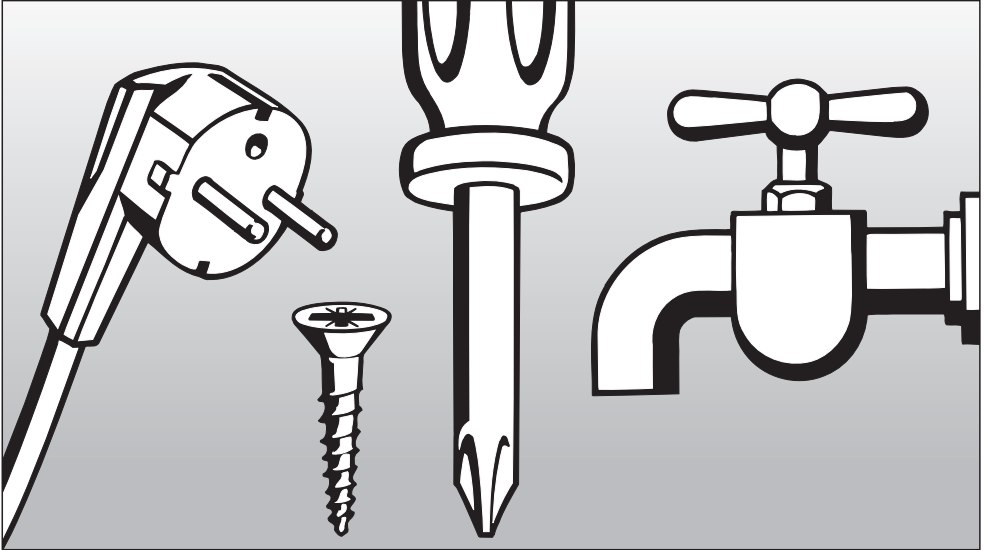
 This lab washer must be installed, maintained and repaired by an authorized Miele service technician. Maintenance and repair work performed by unqualified persons can place the user at risk.

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

 1-800-565-6435  
service@miele.ca

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





## INSTALLATION INSTRUCTIONS


# Installation

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## Steam/Electro or Electro/Steam conversion

If the machine is convertible, the heating type can be changed in the service program from STEAM>>ELECTRO to/from ELECTRO>>STEAM.

- Select program STEAM>>ELECTRO or ELECTRO>>STEAM (see "Operation - B. Free program selection").
- Press the "Start"  button. When the service program has ended, a message appears in the display.
- Confirm the instruction >CONTINUE< with .

 Mount on a non-combustible floor only!



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

**WARNING:  
THIS APPLIANCE MUST BE  
GROUNDED**

- Installation, repairs and other work by unqualified persons could be dangerous. The manufacturer cannot be held responsible for unauthorized work.
- The direction the motor spins depends of the electrical connection of the machine. Connect the machine in-phase for clockwise rotation.

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

The data plate is on the cover plate behind the service panel of the unclean side.

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

The unit is convertible for use with steam or electric heating.

Connection requirements are as follows: 208 V, 60 Hz, 3 phase, 30 Amps and rated load 10 KW.

# Plumbing

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## Water connection

This machine must be connected to the water supply in accordance with all national and local plumbing codes.

 **Water in the machine is not suitable for drinking.**

The washer is constructed so that it may be connected to a water supply without an extra non-return valve, unless required by code.

Water and drain connections should be situated as close to the machine as possible, and be easily accessible.

### Water supply pressure

Hot + Cold water connection =  
min. 22 psi - max. 145 psi  
DI water connection =  
min. 9 psi - max. 145 psi


### Recommended water pressure

Hot + Cold water connection =  
over 37 psi - max. 145 psi  
DI water connection =  
over 22 psi - max. 145 psi  
to avoid long intake times

The machine cannot be operated with an inflow pressure of less than 10 psi.

The machine is supplied with 3 connection hoses 5 ft. (1.5 m) long with  $\frac{3}{4}$ " (19 mm) female hose thread ends.

Large area filters, supplied with the machine, are to be installed in the hose attached to the water supply. See "Cleaning and Care - Cleaning the water inlet filters".

 **Do not shorten or damage the hoses!**  
**Do not remove the filters in the hoses.**

## Requirements

**(refer to the Installation Diagram for more information)**

### 1. Cold water connection

One ½" (13 mm) cold water supply line with a standard ¾" (19 mm) male hose thread faucet is needed. The cold water supply hose is marked with blue tape.

### 2. Hot water connection


One ½" (13 mm) hot water supply line with a standard ¾" male hose thread faucet is needed. The water temperature must not exceed 158°F / 70°C (recommended: 140°F / 60°C). The hot water supply hose is marked with red tape.

If no hot water line is available, the red marked hose must be connected to the cold water line.

### 3. DI water connection

One ½" (13 mm) deionized water supply line with a standard ¾" (19 mm) male hose thread faucet is needed. The machine cannot be operated conventionally with a flow pressure of less than 10 psi. In this case the installation of an optional DI pump is required. The DI water supply hose is marked with green tape.

If the water pressure is below 29 psi, the intake time will increase.

 If the machine will not be connected to DI water, the programs must be changed by Miele Technical Service. The intake hose stays at the rear of the machine.

### DI water connection (pressure less) 1.25 - 9 psi (optional)

For connection to 1.25 - 9 psi water pressure the machine must be converted if it was not ordered from the factory as a special model. A feed pump must be installed by Miele's Technical Service Dept.

The discharge nipple of the DI water container (pressure less) must be at least at the same height as the machine's upper edge.

# Technical Data

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Height:	78 <sup>3</sup> / <sub>4</sub> " (200 cm) min. room height without steam condenser 94 <sup>1</sup> / <sub>2</sub> " (240 cm) min. room height with steam condenser
Width:	35 <sup>7</sup> / <sub>16</sub> " (90 cm)
Depth:	29 <sup>1</sup> / <sub>2</sub> " (75 cm)
Depth with door open	58 <sup>7</sup> / <sub>16</sub> " (148.5 cm)
Weight (net):	approx. 1,110 lbs (505 kg)
Operating weight	approx. 1,470 (665 kg)
Voltage / Fuse:	see data plate
Air pressure connection:	87 psi (required for steam operation)
Steam connection	
with Electro TA	36 - 145 psi, 284 - 356 °F (140 - 180 °C)
with Steam TA	36 - 87 psi, 284 - 327 °F (140 - 164 °C)
Water pressure (flow rate):	30 - 145 psi
Cold, hot and de-ionized water (DI):	up to max. 158 °F (70 °C)
Surrounding temperature:	41 - 104 °F (5 - 40 °C)
Max. relative humidity	80% for temperature up to 88°F (31°C)
Linear reduction up to	50% for temperature up to 104°F (40°C)
Height above sea level:	up to 4921 feet (1500 m)
Noise level in dB (A):	
Sound pressure level LpA during washing and drying	<70
Test marks:	CSA
CE-mark:	MPG-Guidelines 93/42/EWG, Class IIb
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.

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