

Operating and Installation Instructions

Laboratory Glassware Washer G 7835

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

en - US, CA

M.-Nr. 07 776 520

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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.

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 machine is designed for commercial use and for specialized applications only, as described in these Operating Instructions. Do not use for purposes other than those for which it was designed, as this could be dangerous.

The programs are designed for laboratory glassware which are declared reprocessible. Regard the information from the glassware manufacturer.

Miele is not responsible for damages caused by improper use.

► This machine is intended for indoor use only.

► The installation of this unit in non stationary locations 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 installed, 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 appliance is properly installed and grounded by an authorized technician. To guarantee the electrical safety of this appliance, continuity must exist between the appliance 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.

► A damaged or leaking machine is dangerous. Turn off the machine immediately at the main 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.

IMPORTANT SAFETY INSTRUCTIONS

- ▶ 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. This could cause the machine to tip over, resulting in injuries and damage.
- ▶ 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. Position them in the machine that you do 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 or chemical burns exists. When disinfectants are used a danger of the inhalation of toxic fumes exists. Let baskets and inserts 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 condensor 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 drying unit open the door to allow the items and inserts to cool.
- ▶ Never clean the machine, or in its vicinity, with a water or a high pressure hose.

IMPORTANT SAFETY INSTRUCTIONS

► 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 of a chemical disinfectant at moderate temperatures (for example 149°F / 65°C or lower) do NOT fulfill the official requirements for disinfection pursuant to FDA regulations. Always note their specifications for handling, application conditions and efficacy. The operator is responsible for the use of any such thermo-chemical processes.

► 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".

► 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-treating (e.g. with cleaning agents) certain soiling, and cleaning agents with a chemical interaction can cause foam. For pre-treatment and/or cleaning only use low-sudsing detergents and disinfecting agents which have been approved by Miele. Suds can have an adverse effect on the cleaning process.

IMPORTANT SAFETY INSTRUCTIONS

- ▶ In critical applications where very stringent requirements have to be met, it is strongly recommended that all the relevant factors for the process, such as cleaning agent, quality of water, etc. are discussed with a Miele Applications Specialist.
- ▶ 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.
- ▶ When using cleaning agents and specialized products it is essential that the manufacturer's instructions are followed. Only use the product for the application described by the manufacturer to avoid any material damage or the occurrence of strong chemical reactions.
- ▶ 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 or solvents, and in particular hydrochloric acid, chloride solutions or corroding ferrous material to get into the wash cabinet. Similarly avoid any materials with a corrosive effect. The presence in compounds of any solvents should be minimal.
- ▶ To avoid corrosion damage ensure that solutions or steam containing hydrochloric acid do not come into contact with the steel outer casing of the machine.
- ▶ Please follow the advice on installation in these instructions and the separate Installation Instructions.

Please note the following symbols on the machine:



Caution : See the Operating Instructions!



Caution : Danger of electric shock!

IMPORTANT SAFETY INSTRUCTIONS

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.

Disposal of an old appliance

► When discarding a lab washer, disconnect it from the power supply, remove the door to the wash cabinet and cut off the power cord. 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, so that children cannot accidentally shut themselves in. Make appropriate arrangements for the safe disposal of the machine.

If the machine contains a tank system, remove the water from the tank before disposing of the machine.

SAVE THESE INSTRUCTIONS

Function of the laboratory glassware washer

The Miele G 7835 Glassware Washer is designed for high-throughput, centralized wash areas. 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 optional automatic basket recognition system to help eliminate user error.

The G 7835 can handle a wide variety of cleaning challenges found in basic laboratory environments.

The G 7835 can accommodate a variety of baskets and inserts specifically designed for laboratory glassware. This includes injection baskets for difficult to clean narrow necked items, specially designed pipette cleaning baskets and standard baskets for wide-mouthed items.

The G 7835 has a HEPA-filtered forced-air drying, and on-board liquid detergent dispensing.

Standard model

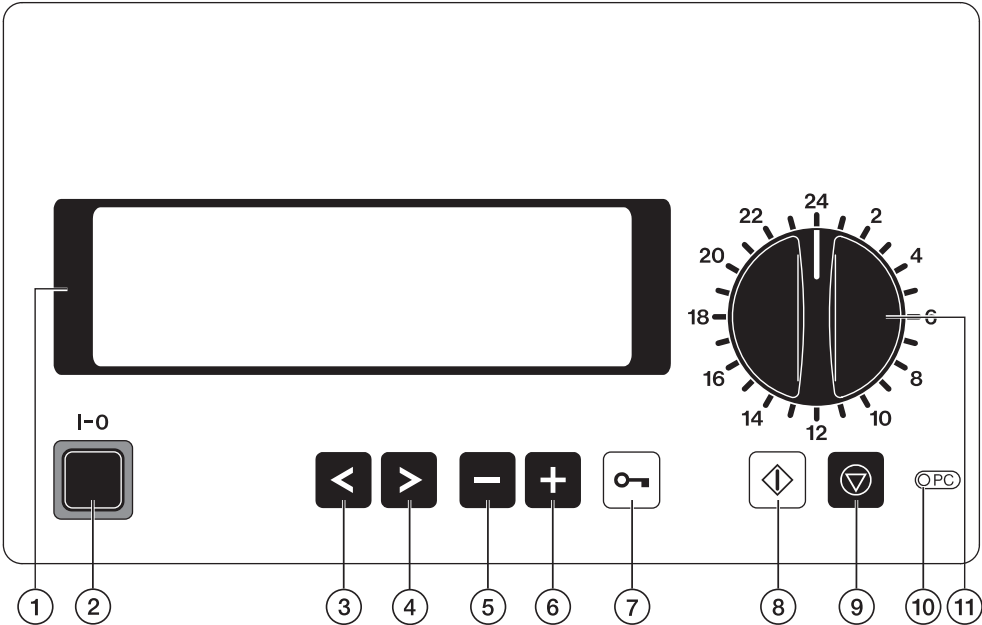
- HEPA-filtered forced - air drying
- Serial interface
- On-board liquid detergent dispensing
- Water softener
- Basket recognition

Available options

- Report printer (PRT)
- Dispensing systems DOS 2 and DOS 4

Guide to the laboratory glassware washer

Electronic controls



Guide to the laboratory glassware washer

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-O)

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

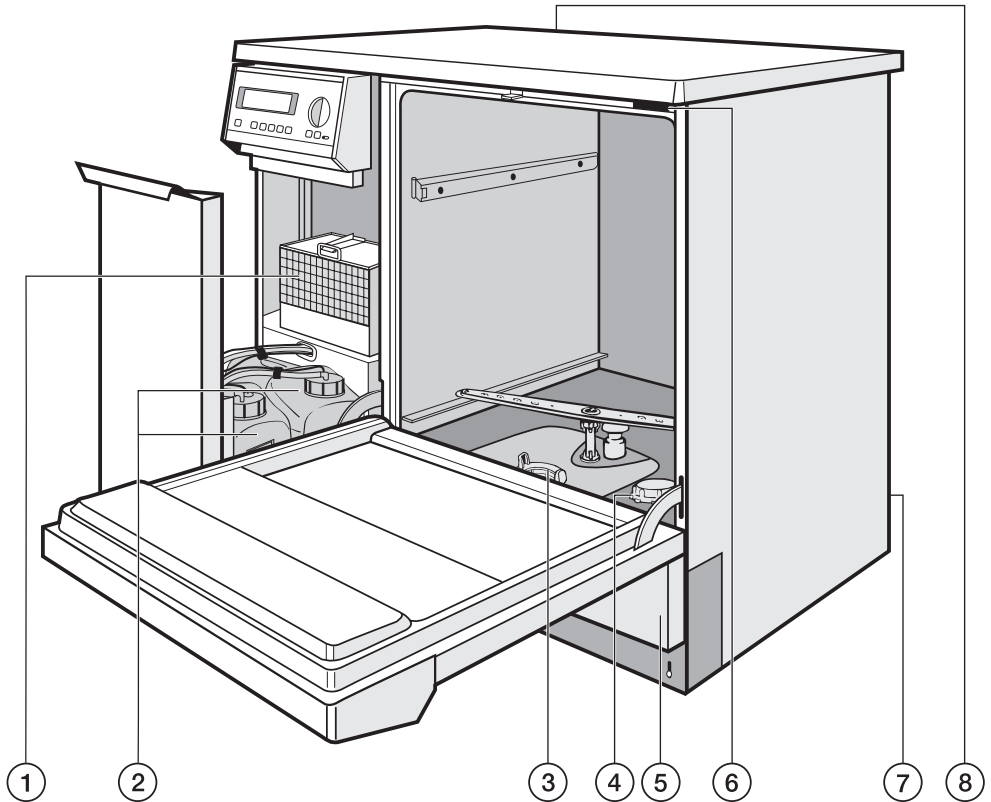
- Canceling a program
- Leaving the input screen without saving
- Leaving a menu

⑩ Optical interface (for service technician)

⑪ Program selector

Selecting programs 1-23

Guide to the laboratory glassware washer



① Drying unit (TA)

② Dispenser for neutralizing agent (red) and liquid detergent (blue)

③ Filter combination

④ Salt reservoir (water softener)

⑤ Service panel

⑥ Validation Access Port

⑦ Connection for DOS-module G 60 for addition of a third dosing line - rear side -

⑧ Serial interface - rear side (left upper side, behind cover plate) -

Opening and closing the door

Electric door lock

The machine is equipped with an electric door lock.

The door can only be opened if:

- the machine is connected to the electrical supply,
- the ON/OFF button **I-0** is pressed, and
- no wash program is running.

Opening the door

- Press the  door button, grasp the door handle and pull open the door.

 Do not touch the heating elements during or directly after the end of a program, you could burn yourself. They remain hot for some time after the end of the program.

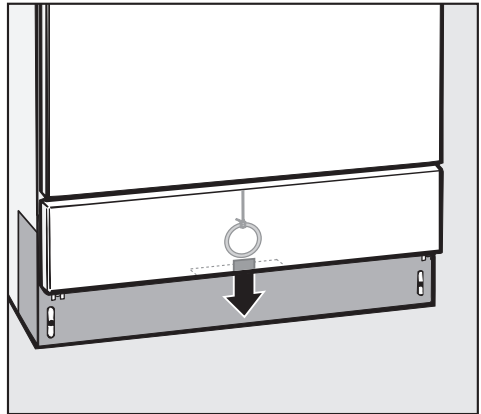
To close the door

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

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 case of a power failure.

- Turn the machine off with **I-0**.



- Reach up behind the service panel, located at the bottom of the machine, and pull the ring of the emergency release downwards.

 **Do not** use the emergency release when excessive temperatures have been reached in the cabinet. Danger of pressure wave release. Allow time for cooling.

Water softener

To obtain good cleaning results, the machine needs soft water. Hard tap water results in calcium deposits on the glassware and the machine.

If your tap water hardness is above 4°d, the water should be softened. This takes place automatically in the unit's integrated water softener.

To ensure a steady supply of soft water:

- The water softener must be filled with reactivation salt.
- The machine must be programmed to correspond to the water hardness in your area.
The local water authority will advise you of the water hardness in your area.

If the water hardness is below 70 ppm (4 gr/gal) the reservoir does not need to be filled.

The machine is factory set to a water hardness level of 340 ppm (18 gr/gal).

The default setting must be programmed to the local water hardness.

For fluctuating levels (e.g. 140 - 310 ppm) set the water softener to the highest setting (in this example to 310 ppm).

The built-in water softener has settings from 18 ppm - 1080 ppm.

Enter the water hardness to have it available for service calls (if needed):
_____ ppm

Setting the water softener

The water hardness must be programmed by Miele's Technical Service when the machine is commissioned. The water hardness is programmed in the Profitronic according to the Programming Manual (see "Operating information - Reactivation").

Salt indicator

Replenish the reactivation salt when the message ADD SALT is displayed.

Reactivation takes place automatically during a program.

During this process the message REACTIVATION is displayed.

Filling the salt reservoir

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

*Available from Miele's Professional Customer Service Department. Please see back page for more information.

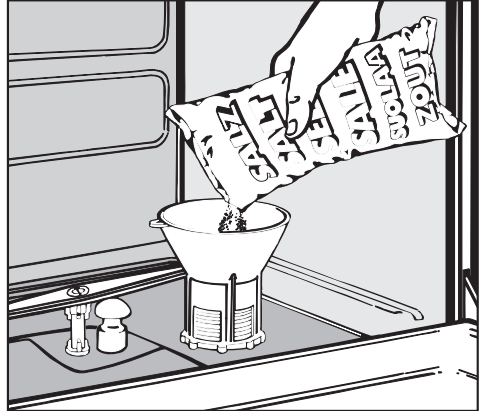
Do not use other types of salt, e.g. table salt, agricultural or gritting salt. These could contain components which are insoluble in water and could damage the water softener. If in doubt, consult Miele's Professional Department.

The salt reservoir holds approx. 2.5 kg of salt.

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

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

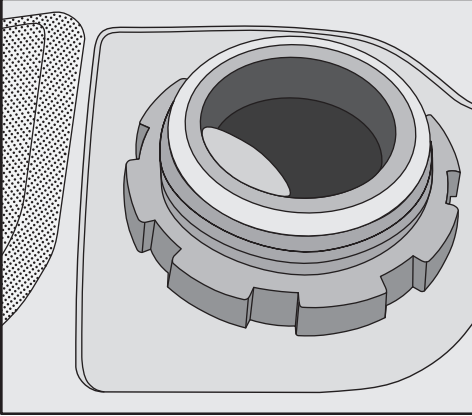
Before filling the salt reservoir with reactivation salt for the first time fill it with approx. 2.5 liters of water.



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

Some displaced water will run out - this is normal.

Water softener



- Wipe any residual salt off the screw threads and seal of the reservoir.
- Screw the cap on firmly.
- **Immediately after this step:** Run the "REMOVE SALT" program to remove any traces of salt from the cabinet.

Note: There may be a delay before the "REMOVE SALT" program starts due to the reactivation of the water softener.

Automatic mobile unit recognition (AWK)

In operating level C the AWK allocates a mobile unit with valid coding to a fixed program place. 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 electronic control unit) have to match each other.

Matching the coding and program place

- Each mobile unit must be coded before being used for the first time (see "Setting the mobile unit coding").
- The wash program through which the mobile unit is coded has to be assigned to the relevant program place (see the Programming Manual "System function - Selector Switch Organization").

Important!

Before starting the program with the "Start" button , check if the program needed for the mobile unit is displayed. Insufficient wash results may occur!

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

Mobile unit coding

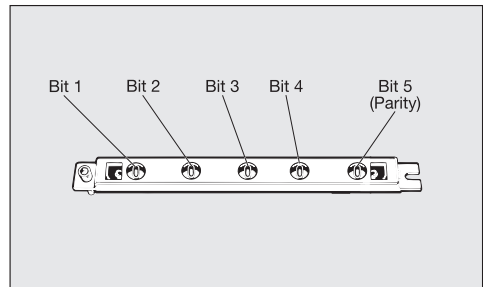
The AWK assigns a program place to a mobile unit. The mobile units must be coded with a magnetic strip via a Bit combination. In operating level C the only program available for a coded mobile unit is the one assigned to the corresponding program place.

After a coded mobile unit has been put in the machine and the door is closed, the control unit selects the allocated program.

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

- Press  to start the program.

Coding is affected through 5 Bits:



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

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.

Program location	Bit 1	Bit 2	Bit 3	Bit 4	Bit 5 Parity-Bit
-	0	0	0	0	0
1		0	0	0	
2	0		0	0	
3			0	0	0
4	0	0		0	
5		0		0	0
6	0			0	0
7				0	
8	0	0	0		
9		0	0		0
10	0		0		0
11			0		
12	0	0			0
13		0			
14	0				
15					0

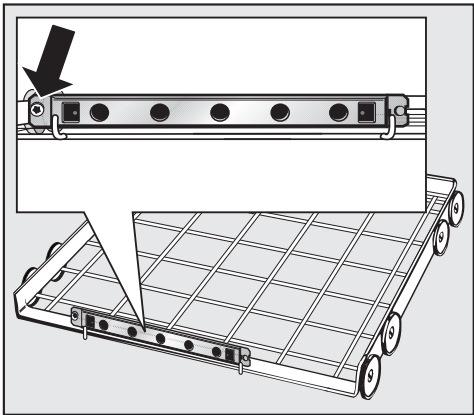
The coded total must be an even number.

If the coded total is an odd number, the message CHECK MOBILE UNIT RECOGNITION appears.

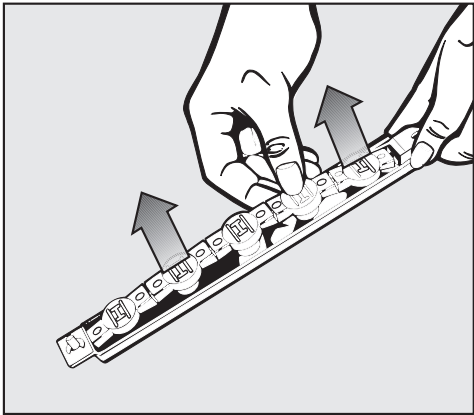
If the mobile unit total equals 0, the message NO MOBILE UNIT RECOGNITION will appear. In neither case can the program be started and the mobile unit recognition function will have to be reset.

Setting mobile unit coding

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

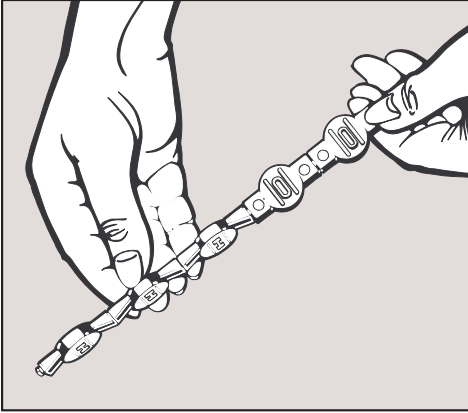


- Unscrew the track with an Allen wrench and remove from the retainer.

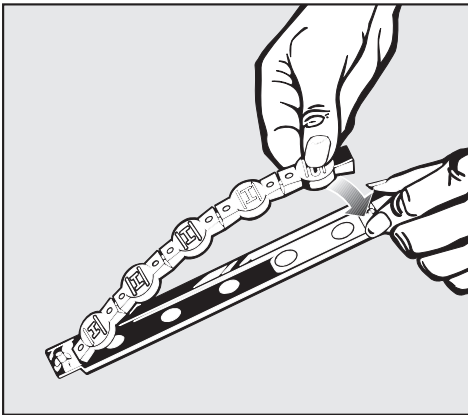


- Remove the magnetic strip from the track.

Automatic mobile unit recognition (AWK)



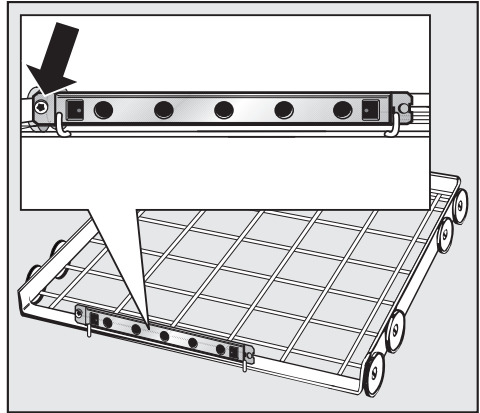
- Set the program place coding.



- 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 in the track.



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

The magnetic strip on the G 7835 and G 7836 must have **grey** magnets.

Use

The machine can be fitted with a variety of mobile units, baskets and inserts, depending on the cleaning application in question. The diversity of these units and inserts is so great that it is not possible to illustrate them all or give detailed instructions on their use here. For example, there are inserts for direct spraying or rinsing of glassware which contain internal surfaces, tubes and pipes that need stringent cleaning.

Loading the machine

Removing excess soils

- Empty all containers before loading them into the machine.



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

Check before cleaning

- Are the items to clean correctly sorted and connected?
- Are the spray arms clean and can they rotate freely?
- Is the filter combination free of coarse soiling?
- Is the adapter to the water inlet in place?
- Are 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.

Loading tips

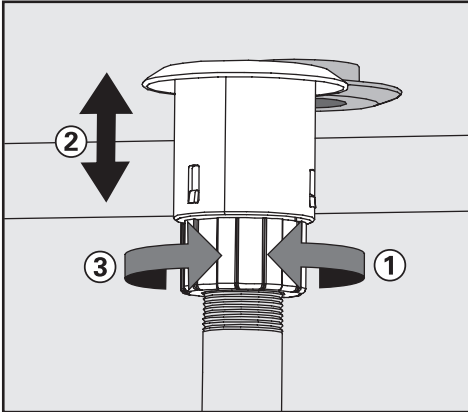
Select mobile units, baskets and inserts appropriate for the application.

- Load the items to be washed so that water can access all surfaces. This ensures that they are properly cleaned.
- Do not place items to be cleaned inside other pieces where they may be concealed.
- 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 a mesh tray for small items, to secure lightweight items and 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 and baskets with an adapter must engage correctly.
- The spray arms must not be blocked by tall items or items which hang in their path. If necessary, manually rotate the arms to test.

Use

Spring adapter water connection

Make sure that the spring adapter for water connection engages correctly when a basket or injector unit is inserted in the machine. It must be $\frac{3}{16}$ " (4-5 mm) higher than the water connection inlet in the machine. If this is not the case, adjust the adapter.



- Loosen the lock ring, ①.
- Push up the adapter (4-5 mm higher than the water connection inlet in the machine), ②.
- Tighten the lock ring, ③.

Height adjustable top basket

The upper basket can be adjusted above and below the middle position by $\frac{13}{16}$ " (2 cm).

Depending on the position of the upper basket and usage of an insert, items of different heights can be accommodated in the baskets.

To adjust the upper basket

- Pull out the top basket, lift from the runners and remove.
- Unscrew the knurled nuts (roller bearings) on both sides of the basket with a suitable wrench, reposition as required.

Laboratory glassware (LG)

Wide necked glassware, 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 used in laboratories, e.g. beakers, conical flasks, petri dishes, test tubes, etc. can be arranged in full size, half or quarter inserts at the higher or lower level. 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.

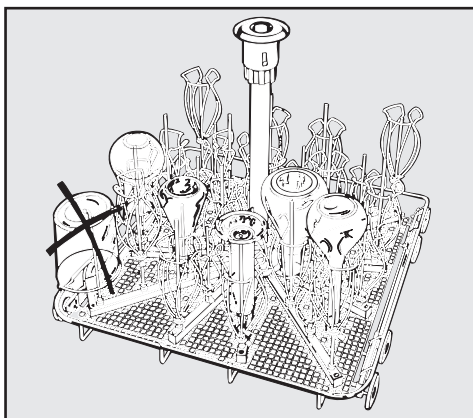
 Ensure that no acid or solvent residues, especially hydrochloric acid or chlorides get into the wash cabinet.

- 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, faucets and taps - should be secured in suitable basket inserts.

Note

- 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 in the mobile unit with at least 1 1/8" (3 cm) between them and the edge of the mobile unit.

E 350 Injector unit 1/1 (E 380 with connection to TA)



Sufficient for narrow neck laboratory glassware with 32 (33) jets/clips.

Adding of liquid detergents and neutralizers

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

This lab washer is fitted with 2 dispensers as standard:

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

Additional DOS modules (optional):

- Dispensing system DOS 2 (red) to dispense acid media such as neutralizing agent. The dosing rate is 105 ml/min.
- Dispensing system DOS 4 (green) to dose a low-foam disinfecting agent suitable for machine washing, or a further cleaning agent. The dosing rate is 120 ml/min.

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

Preparing the DOS dispensers

The agents can be filled into 5 l plastic containers, which are color coded for the relevant dispensing system.

When first commissioning, or when the message "FILL CONTAINER DOS 1" and/or DOS 2, 3, 4 flashes in the display after switching on or at the end of a program, fill the storage container with the correct detergent or neutralizer.

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.

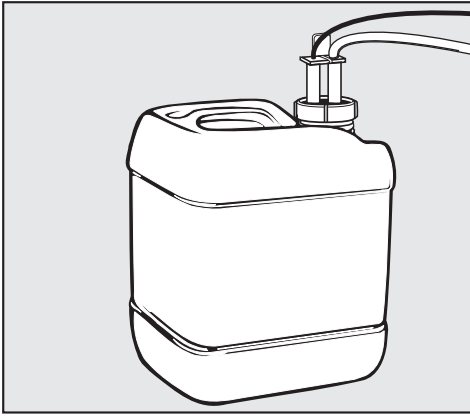
When first commissioning or when the message "CHECK THE DISPENSING SYSTEM... ", appears, start the DOS-FILL program to prime the dispensing system (see "Priming the liquid dispensing system").

 Exercise caution when handling detergents! These may contain acids, alkalis or disinfectants. Follow the instructions and relevant safety procedures carefully. Wear protective gloves and goggles.

Adding of liquid detergents and neutralizers

Filling the containers with liquid cleaning agents

- Turn the machine off.
- Pull the door of the storage cabinet (with container for liquid agents) open.



- 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 container (observe the color code).

Once the storage containers have been filled the message clears.

Remember to refill the containers in time, they should not be allowed to empty completely.

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

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-O** 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
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.	– Find and correct the causes of the damage. See "Connected processing chemicals", "Soiling" and "Reactions between processing chemicals and soils" for more information.
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. If foaming occurs, the cleaning process is not standardized and not validated.	– Find and correct the cause of the foaming. – The process must be checked regularly in order to detect any foaming. See "Connected processing chemicals", "Soiling" and "Reactions between processing chemicals and soils" for more information..
Stainless steel corrosion in the wash compartment and/or accessories may appear in various ways: – rust formation (red spots / stains), – black spots / stains, – white spots / stains (smooth surface is slightly corroded). 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).	– Find and correct the cause of the corrosion. See "Connected processing chemicals", "Soiling" and "Reactions between processing chemicals and soils" for more information.

Effects of Processing Chemicals

Connected processing chemicals	
Effects	Action
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. General categories: – alkaline to neutral pH products, – acid to neutral pH products, – hydrogen peroxide.	– Use only those processing chemicals recommended by Miele. – Perform regular visual inspections of the metering system. – Regularly check the feed performance of the metering system.
The processing chemicals can damage the elastomer and plastic components of the lab washer and its accessories.	– Use only those processing chemicals recommended by Miele. – Perform regular visual inspections of all visible elastomer and plastic components.
The following oxidizing processing chemicals can damage the elastomer components (hoses and seals) and, in some cases, the plastic components of the lab washer: – nitric acid, – peracetic acid, – products containing active chlorine.	The washing temperature should not exceed – 122 °F (50 °C) for nitric acid, – 95 °F (35 °C) for peracetic acid, – 176 °F (80 °C) for products containing active chlorine.
The following processing chemicals can release large quantities of oxygen: – hydrogen peroxide, – peracetic acid.	– Use only tested processes such as OXIVARIO or OXIVARIO PLUS (if available). – In the case of hydrogen peroxide, the washing temperature should be below 158 °F (70 °C). – Consult Miele.

Effects of Processing Chemicals

Connected processing chemicals

Effects	Action
The following processing chemicals can result in excessive foaming: – cleaning and rinsing agents that contain tensides, – emulsifiers. The foaming can occur: – 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.	– 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.
Antifoaming agents, particularly silicone-based antifoaming agents, can cause the following: – 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.	– 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 ORGANICA program (if available). – Consult Miele.

Effects of Processing Chemicals

Soiling

Effects	Action
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).	– Retrofit the lab washer with more grease-resistant elastomers. – 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. – To process the load, use the program "OIL" (if available) or use the special program with emulsifier metering.
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.	– First rinse the load with a sufficient quantity of water. – Select a wash program with one or more short pre-rinses with cold or warm water. – Taking the specific application into account, add an antifoaming agent, one without silicone oils if possible.
The following substances can cause corrosion of the stainless steel in the wash compartment and accessories: – hydrochloric acid, – other substances that contain chloride, e.g. sodium chloride, etc. – conc. 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.	– Use the program OIL (if available). – Use the special program with emulsifier (neutral pH) metering for pre-rinsing. – Taking the specific application into account, add an antifoaming agent, one without silicone oils if possible.
In combination with alkaline processing chemicals, loads with soiling that contains proteins, e.g. blood, can cause excessive foaming.	– Select a wash program with one or more short pre-rinses with cold water.
In combination with very acidic or alkaline processing chemicals, base metals such as aluminum, magnesium and zinc can release hydrogen (detonating gas).	– Observe the instructions of the manufacturer of the processing chemicals.

Operation

Turning on

- Open the water supply (if closed).
- Turn the power 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.

Operating levels

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 "Programming manual")

Changing the operating level

- Press **<** and **>** at the same time. Operating levels A B C D will appear in the display.
- Select the desired operating level using the **<** or **>** keys.
- Press **⏏** to confirm the selection.
- Enter your 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 be displayed.

- Close the door.

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

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 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 and the program will proceed.

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

Operation

C. Automatic mobile unit recognition (AWK)

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

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.

Make sure, that the places assigned for programs using 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 turn off the flashing lights).

The flashing lights can be permanently turned off. See "Programming Manual - System Functions".

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.

Turning off

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

Canceling a program

A program can only be canceled 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  cursor button. The cursor > < flashes.

- Press the "Start"  button.

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

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

Operation

Interrupting a program

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

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

When continuing an interrupted DESIN (disinfection) program, check the message in the display at the end of the program. If the message PROCESS PARAMETERS NOT MET is displayed, the door was opened **after** the disinfection sequence of the program and the DESIN parameters were not fulfilled. The program must be repeated.

In operating levels B or D

- Press the "Stop"  button, the program will be interrupted.

The display shows >CANCEL< OR >CONTINUE<.

- Open the door.

 Caution! Water and items in the machine may be hot. Danger of scalding or burning.
During programs with chemical disinfection, hot steam with high contents of disinfection agents could occur.

- Rearrange the load. Follow infection control regulations and wear protective gloves.
- Carefully close the door.

 If there is a lot of hot water in the wash cabinet and the door is closed quickly, hot water may spray out. Danger of scalding/burning.

- Press the "Start"  button.

The program continues.

At the rear of each machine a 9 pole Sub-D plug for data transfer between the Profitronic system and an external report printer or PC is supplied.

The serial interface is RS 232 compatible.

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

Various printers can be used as external printers:

- Epson-compatible
(contact Miele for a list of suitable models)
- HP LaserJet

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 42 ½ ft. (13 m).

Please note the following when connecting a printer or PC:

- Only use an industry-standard PC or printer.
- The size of the printer or PC must be taken into account when installing the machine.

The report printer settings are described in detail in the Programming manual under "PC/Printer function".

The following features can be printed:

- ① Programs
- ② Additional functions
- ③ Rinse protocol
- ④ Fault protocol

Maintenance

Periodical maintenance for this washer/disinfector must be carried out by Miele Technical Service **after 1000 operating hours or every 6 months.**

The maintenance covers the following:

- Electrical safety
- Door mechanism and door seal
- Threads 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 faucet
- Steam condenser:
- All mobile units, baskets and inserts

If available:

- Drying unit
- Connected printer

Part of the maintenance is a function check:

- A program is run as a test
- A thermoelectrical measurement
- A leak tightness check
- All safety relevant measuring systems (Display of faults)

Routine checks

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

Check the following points:

- the filters in the base of the wash cabinet,
- the spray arms in the machine and at the mobile units and inserts,
- the wash cabinet and the door seal, and
- the mobile units, baskets and inserts.

Cleaning and Care

 Wear protective gloves and goggles when cleaning this machine.

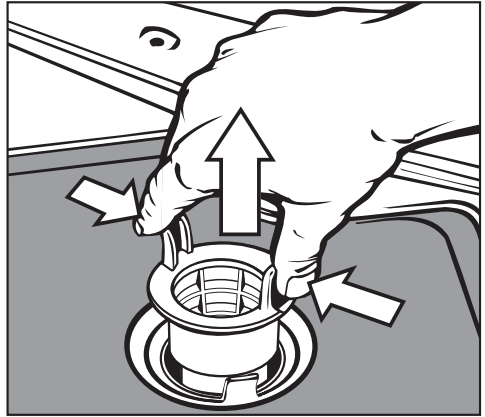
Cleaning the filters in the wash cabinet

 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.

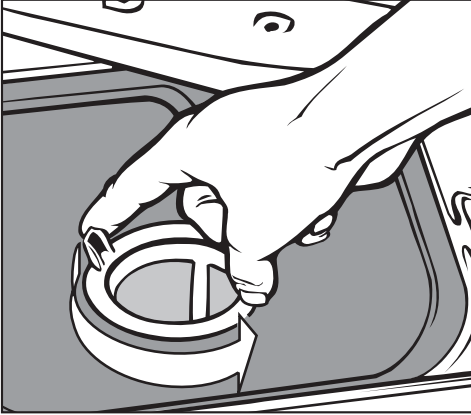
Cleaning the coarse filter



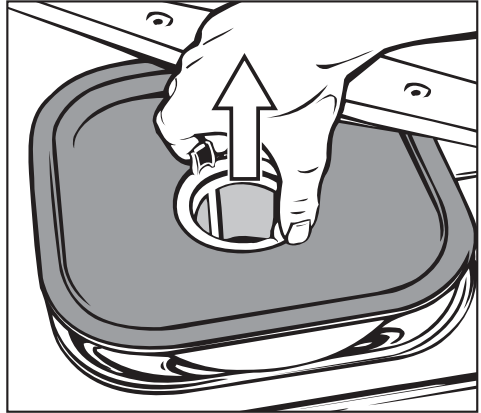
- Press the two tabs together, remove and clean the coarse filter.
- Put the clean filter back in position and press until it clicks into place.

Cleaning 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 and Care

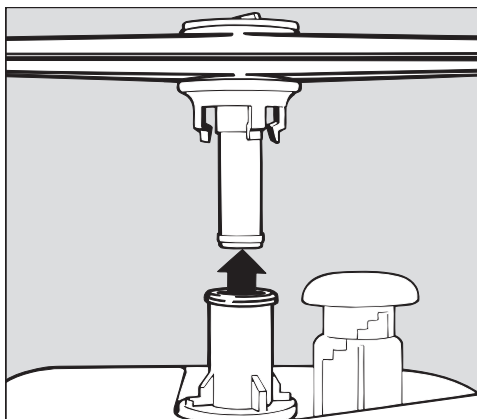
Cleaning the spray arms

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

Removing the spray arms

- Remove the baskets.

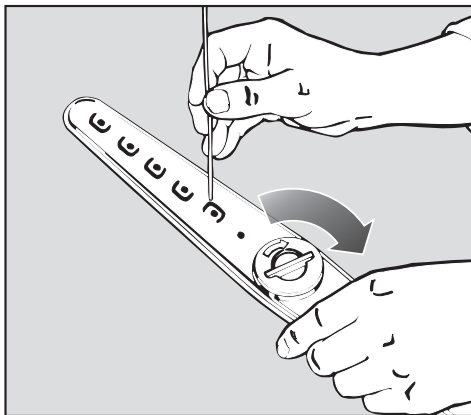
Spray arm at the upper basket or mobile unit (if available):



- 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 the control panel

- Clean the operating 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 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 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

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

Damaged or leaking door seals should be replaced by Miele's Technical Service.

Cleaning and Care

Mobile units, baskets and inserts

To ensure the 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 a proper condition and are they securely fixed at 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 all covers and fasteners tightly screwed on the spray sleeves?

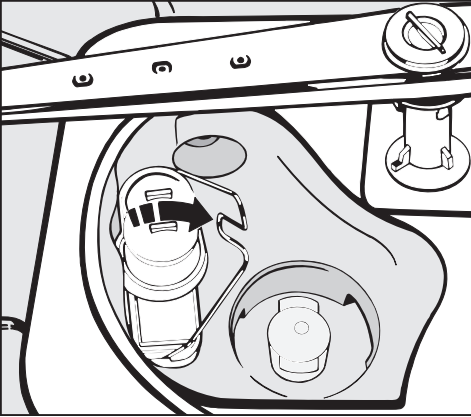
If available:

- 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 AWK rail for magnets, tightly screwed on?

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.

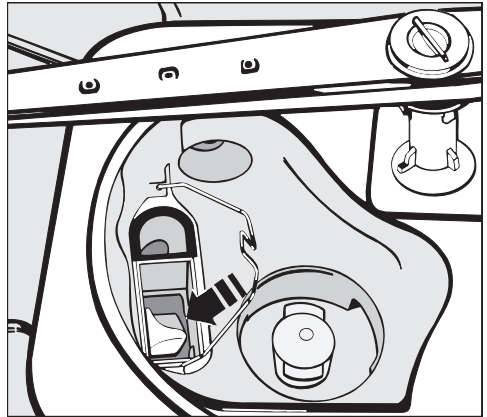
- Turn off the machine.
- Remove the filter combination out of the wash cabinet.



- 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 and Care

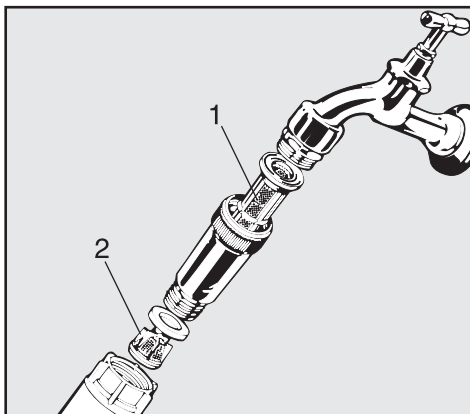
Cleaning the water inlet filters

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.



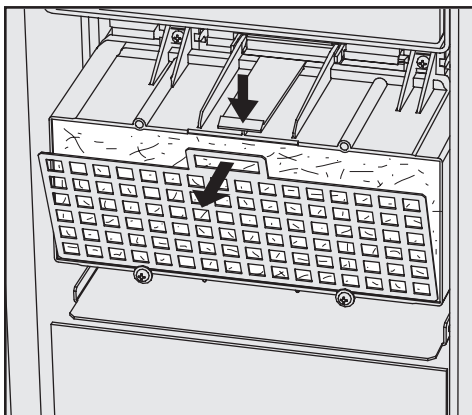
- Rinse the large area filter **1** and fine filter **2** under running water, and replace if necessary.
- Return filters and seal. Make sure they are seated correctly.
- Reconnect the hose to the water faucet, checking that it is not cross-threaded.
- Open the water supply.
- Check for leaks.

Drying unit (TA)

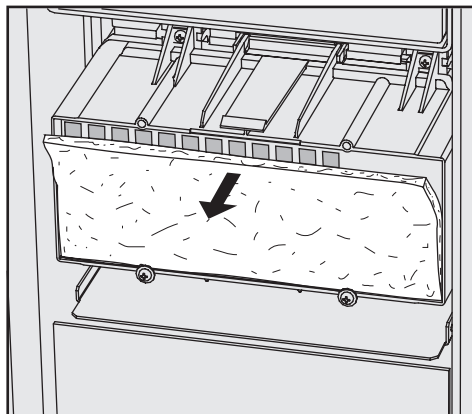
The service programs CHANGE TA - COARSE and FINE were set by default to program places 62 and 63, but they can be moved to other program places. See "System functions" in the Programming Manual. Changing the coarse filter

The coarse filter should be changed when the message CHANGE COARSE FILTER flashes in the display.

- Open the door of the storage cabinet.



- Take out the metal perforated plate at the drying unit.



- Change the coarse filter. The soft filter side must face the front.
- Replace the perforated plate by positioning it at the base and pressing it into place at the top.
- Close the door.

After the coarse filter has been changed, set the operating timer to zero.

- Select the program CHANGE TA COARSE.
- Press the "Start"  button.

When the service program has ended, a message appears in the display.

- To >CONTINUE< press "Start" .

Cleaning and Care

Replacing the HEPA-Filter

The HEPA filter should be changed when the message CHANGE FINE FILTER flashes in the display.



This filter should only be changed by a Miele Service Technician.

To ensure the machine operates correctly, use original Miele HEPA filters only.

After the HEPA filter has been changed set the operating timer to zero.

- Select the Program CHANGE TA FINE (see "Use - B. Free program selection").
- Press the Start button

When the service program has ended a message appears in the display.

- To >CONTINUE< press "Start" .

Repairs should only be carried out by a qualified and trained person in accordance with local and national safety regulations. Unauthorized repairs could cause personal injury or machine damage. In the event of any problems which cannot be corrected, please contact the Miele Technical Service Department.

Messages regarding the operating status of the machine and fault messages are shown in the display.

The error message table is supplied in the Programming Manual under "Messages".

Heater limiter

This machine 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 message "CHECK WASH CABINET HEATING" is displayed (water has not heated up in the wash cabinet and the program takes too long):

- Isolate and correct the cause of the problem.
- Remove the service panel (see "Electrical connection").
- Press the RESET button on the temperature sensor located on the right side of the machine.

If this switch trips repeatedly, contact the Miele Technical Service Department before using the machine again.

After sales service

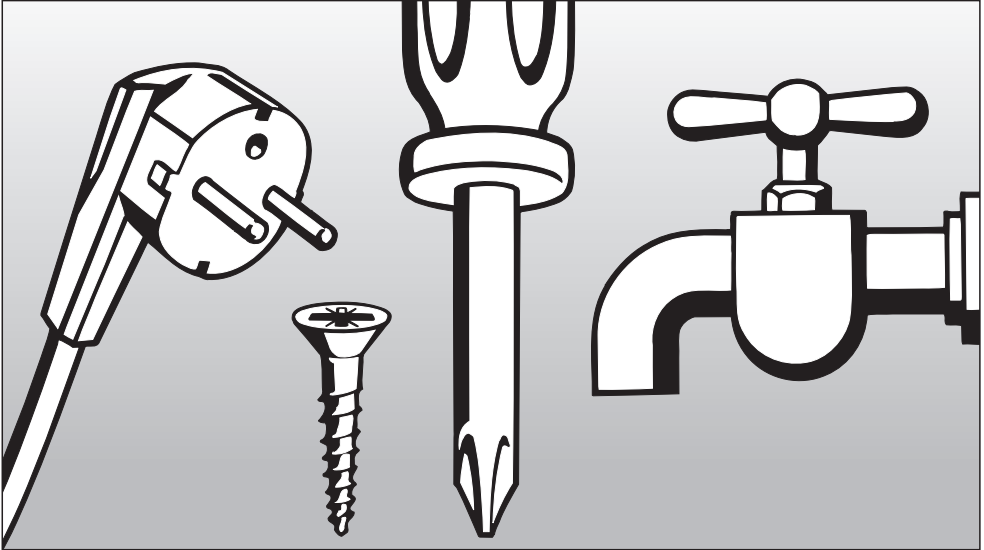
 This lab washer must be installed, maintained and repaired by an authorized Miele service technician. Maintenance and repair work performed by unqualified persons can place the user at risk.

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

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

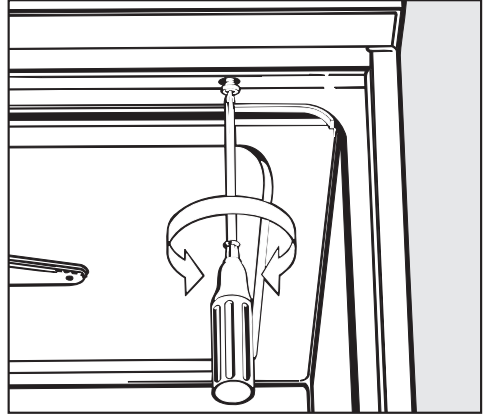
- **Free-standing**
- **Slot-in**, next to other machines or furniture or in a suitable space. The space must be at least $35 \frac{7}{16}$ " (90 cm) wide and $27 \frac{9}{16}$ " (70 cm) deep
- **Undercounter**

The machine can be installed under a continuous counter top or sink drain. The niche must be at least:
Width $35 \frac{7}{16}$ " (90 cm)
Depth $29 \frac{7}{16}$ " (75 cm)
Height $32 \frac{5}{16}$ " (82 cm).

The lab washer can be built into a recess of $32 \frac{5}{16}$ " (82 cm) high by removing the lab washer top.

Leveling the legs

Any unevenness in the floor can be compensated for and the height of the machine raised or lowered by adjusting the four screw feet.



When the feet are screwed in, the machine can be moved back and forth on its rollers.

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 countertop using screws through each of the 2 holes in the front trim.
- When not mounted undercounter, floor mounting brackets must be used.

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

Removing the lid (if necessary)

- Open the door.
- Remove the fixing screws on both sides using a cross slotted screwdriver.
- Pull the machine lid approx. 5 mm forwards, lift upwards and remove.

Protecting the countertop

Important for machines with steam condenser (depending on model):

To prevent steam damage to the countertop, adhere the protective foil $9 \frac{13}{16}" \times 22 \frac{13}{16}"$ (25 x 58 cm) underneath the countertop near the steam condenser.

Depending on the requirements for installation, the following **kit** can be ordered from the Miele Technical Service Department.

Cover plate (protects the countertop)

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

Plumbing

Water inlet

 Water in the machine is not suitable for drinking.

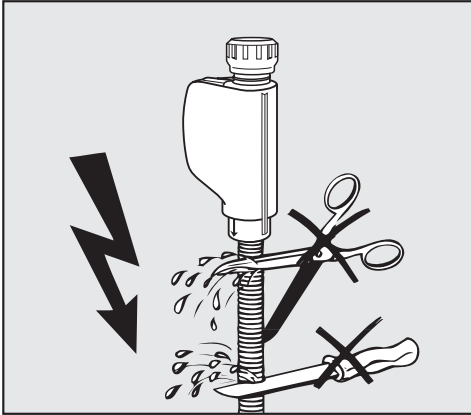
- The machine must be connected to the water supply in accordance with local and national regulations.
- The washer is constructed so it may be connected to a supply without an extra non-return valve, unless required by code.
- Water supply pressure
Hot + Cold water connection = min. 12 psi - max. 145 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
- If the water pressure is not in the range of 12 to 145 psi, contact Miele's Technical Support. The display might show "CHECK WATER INTAKE".

- The machine is supplied standard to be connected to a cold (coded blue) **and** a 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. The steam condenser inlet hose (without waterproof connector) should be connected to the cold water supply, using the adapter supplied

If no hot water supply is available, the hot water inlet hose marked **red** should also be connected to a cold water supply by a y-adapter. For a DI-water connection (H2O pure), see next page.

- Water valves with $\frac{3}{4}$ " (2 cm) 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 $\frac{3}{4}$ " (2 cm) 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 "Cleaning the water inlet filters"). 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 in any way.

- See also the installation diagram supplied.

DI-Water connection (pressure resistant) (over 9 to 145 psi)

The machine comes with a standard connection for a pressurized DI system. The recommended water pressure (flow rate) is 25 - 60 psi however, water pressure of 9 - 147 psi is acceptable.

- The DI pressure-tested hose (marked "H₂O pure") with a $\frac{3}{4}$ " (2 cm) hose thread must be connected to the on-site water valve for DI purified water.

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

DI water connection (pressureless) 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 (pressureless) must be at least at the same height as the machine's upper edge.

Plumbing

Drainage

- The drainage system is fitted with a non-return valve which prevents dirty water from flowing back into the machine via the drain hose.

- The machine should preferably be connected to a **separate** drainage system onsite.

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

The onsite drain connection point should be located between 1 ft.

(0.3 m) and 3 ft. (1 m) **above the lower edge of the machine.**

If it is lower than 1 ft. (0.3 m), lay the hose in a curve at a height of at least 1 ft. (0.3 m).

The drainage system must be able to take a minimum drainage flow of 16 l/min.

- The drain hose is approx. 5 ft. (1.5 m) long, is flexible and has an internal diameter of $\frac{7}{8}$ in (22 mm). It must not be shortened. Hose clamps are supplied for securing it in position.
- 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 meters).
- See the supplied installation diagram.

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

The machine is equipped with a 6 ft. (1.8 m) long power cord, without a plug. A plug, rated for the required power which will fit the receptacle, is to be supplied by the electrician doing the installation. It should be connected to the main power supply.

The receptacle should be accessible after installation.

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 converting diagram and wiring diagram.

The converting diagram and data plate are located on the rear of the machine, and on the plinth (behind the service panel).

The wiring diagram is supplied with the machine.

- See the supplied installation diagram. Contact Miele Technical Service for more information.

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

WARNING
THIS APPLIANCE MUST BE GROUNDED

Technical Data

Height:		
with lid	33.5"	85 cm
without lid	32.3"	82 cm
Width:	35.4"	90 cm
Depth:	27.5"	70 cm
Depth with the door open:	49.8"	126.5 cm
Net weight:	265 lbs	120 kg
Voltage / Fuse:	see dataplate	
Power cord	approx. 5' 7"	1.7 m
Water temperature:		
Cold water	max. 68°F	20 °C
Hot and DI water connection	max. 158° F	70 °C
Static water pressure:	max. 145 psi	
Hot and Cold water connection:		
Minimum water pressure (flow rate)	25 psi - 145 psi	
Recommended water pressure (flow rate)	over 37 psi - 145 psi	
DI-Water connection		
Acceptable water pressure (flow rate)	min. 9 psi - max. 145 psi	
Recommended water pressure (flow rate)	over 22 psi - max. 145 psi	
DI Water Connection (pressureless) optional	1.23 psi - 8.70 psi	
Delivery head:	min. 12" (0.3 m), max. 39 3/8" (1 m)	
Steam condenser:	approx. .5 - 1 gal/min 2 - 4 l/min	
Surrounding temp.:	from 40°F (5°C) to 104°F (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 NN:	up to 1640 yds (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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