Operating instructions
Washer-disinfector
G 7825/G 7826

To avoid the risk of accidents or damage to the
machine, it is essential to read these instructions
before it is installed and used for the first time.
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Intended use

This Miele washer-disinfector is designed to clean, rinse, disinfect and dry re-usable medical devices, laboratory equipment and accessories from these areas. Always comply with the manufacturer’s instructions for the particular medical devices (EN ISO 17664; CAN/CSA-Z17664) as well as for the laboratory equipment.

Typical applications include:
- surgical instruments,
- minimally invasive instruments,
- instruments for anaesthetics and intensive care,
- baby bottles and teats,
- OR shoes
- rigid sterilization containers made of stainless steel and aluminum (including colour anodized aluminum),
- laboratory equipment used in research and production
- laboratory equipment for analytical and preparation applications
- microbiology and biotechnology laboratory equipment

Laboratory equipment includes devices from beakers, bottles, centrifuge tubes, Erlenmeyer flasks, funnels, pipettes, Petri dishes and round bottom flasks.

Medical devices, laboratory glassware and laboratory utensils for reprocessing are referred to as the wash load if they are not more closely defined.

Reprocessing instruments or laboratory equipment by machine achieves reproducible results and should be used in preference to processing by hand. Where disinfection is required to protect staff and/or patients, a thermal disinfection program, e.g. the DES-VAR-TD program, should be selected.

According to the A0 concept described in EN ISO 15883-1 (CAN/CSA-Z15883-1-09), thermal disinfection occurs at 80°C (+ 5 °C, - 0 °C) with 10 min holding time (A0 600), or at 90°C (+ 5 °C, - 0 °C) with 5 min holding time (A0 3000), depending on the disinfection result required. The efficacy standard A0 3000 includes the inactivation of the Hepatitis Virus.

Regional and/or other official directives may apply (e.g., CSA Z314.8 Decontamination of reusable Medical Devices).

The cleaning parameters should be optimally matched to the type of soiling and load being processed.

The processing chemicals used for reprocessing the products should be selected to suit the particular cleaning needs, and where applicable, to the analysis / analytical methods involved.
The cleaning result must ensure that the load can be disinfected correctly, that no residues are left behind, that subsequent sterilization can be carried out and that the instruments can be used again safely.

Re-usable medical devices are best reprocessed using the DES-VAR-TD process, or where applicable, the OXIVARIO process.

The use of a suitable carrier (wash carts, modules, insert, etc.) is important to ensure the adequate cleaning of the load. Examples are given in the section "Areas of application".

The washer-disinfector is designed to rinse with tap water or processed water (e.g., distilled water, pure water, demineralized water, partially demineralized water) depending on the quality required for your application(s). The water quality selected is especially important for laboratory equipment intended for analytical uses.

This washer-disinfector complies with EN ISO 15883 (CAN/CSA-Z15883).

**User profiles**

**Daily-routine operators**

For daily-routine operation of the washer-disinfector, operators must be instructed and receive regular training in the basic functions and loading of the washer-disinfector. They require a basic knowledge of machine reprocessing of medical devices.

Tasks for daily-routine work are located in operating levels A and C.

**Daily-routine supervisors**

Advanced knowledge of the machine-based reprocessing of medical devices is required for more complex tasks such as program interruption or program cancellation.

These tasks take place on operating level B.

**Service tasks and administration**

Additional expertise is required for changing the processes or adjusting the washer-disinfector, e.g. to suit accessories that are used or the site conditions.

This requires special expertise in the machine-based reprocessing of medical devices, in the reprocessing technology and the applicable standards and legislation.

Service tasks and alterations are carried out on operating level D.
Overview

Unclean (infeed) side

① Drying unit (optional)
② Handle
③ "Profitronic" electronic control system (also see Programming manual)
④ Controls
⑤ Master switch with "Emergency cut off" button
⑥ Drop-down door (closed)
⑦ Service panel
Guide to the machine

Unclean (infeed) side

1. Filter combination
2. Drop-down door (open)
3. Containers for dispensing systems DOS 1 / DOS 3, and optional DOS 2 / DOS 4
Clean (outfeed) side
(G 7826 only)

1 Handle
2 Door release
3 Drop-down door (closed)
4 Printer (optional)
   G 7825: on the unclean side
5 Service panel
Guide to the machine

Controls

1 Display
with screen saver; i.e. the background lighting switches itself off automatically after approx. 15 minutes; press any button to switch the display lighting back on

During operation, any error messages occurring will be shown in the display. A chart listing all error messages that can appear in the display is given in the Programming Manual.

2 On/Off button (I-0)

3 Cursor button left <
Moves the cursor to the left:
– to the previous menu item
– to the previous parameter
– to the previous entry point

4 Cursor button right >
Moves the cursor to the right:
– to the next menu item
– to the next parameter
– to the next entry point

5 Minus button –
– Program selection for program slots 24 and above
– Scrolls back page by page in menus
– Used to enter letters and numerals
– Used to change defaults, e.g. service parameters
6 **Plus button** ➕
- Program selection for program slots 24 and above
- Scrolls forward page by page in menus
- Used to enter letters and numerals
- Used to change defaults, e.g. service parameters

7 **Door switch** 🗺

8 **Start button** 🔗
- Starts a program
- Activates the programming mode
- Confirms the values and settings
- Confirms menu items to enter the corresponding sub-menu

9 **Stop button** 🚫
- Cancels a program
- Exits the programming mode without saving
- Exits from the menu

10 **Service interface** 🍀

11 **Program selector**

Select program slots 1-23
Warning and Safety Instructions

This machine complies with all statutory safety requirements. Inappropriate use can, however, lead to personal injury and material damage.
Read these instructions carefully before using it for the first time to avoid the risk of accidents and damage to the machine.
Keep these instructions in a safe place and make sure they are available at all times to any user of the machine.

Correct application

► This washer-disinfector is designed for use with the applications described in these Operating Instructions only. Alterations or conversions to the machine, or using it for purposes other than those for which it was designed, are not permitted and could be dangerous. This washer-disinfector must only be used for cleaning and disinfecting instruments or medical devices as well as laboratory glassware and utensils if the manufacturer has stated that they are suitable for machine reprocessing. Manufacturer’s cleaning and maintenance instructions for instruments and laboratory equipment must also be observed.
Miele cannot be held liable for damage caused by improper or incorrect use or operation of the machine.

► This washer-disinfector is intended for indoor use only.

Please pay attention to the following notes to avoid injury!

► The washer-disinfector must be commissioned, serviced and repaired by a Miele service technician only. To ensure compliance with Medical Device Regulations and Guidelines, a Miele service contract is recommended. Unauthorised repairs can pose considerable risks to the user.

► Do not install the machine in an area where there is any risk of explosion or of freezing conditions.

► The electrical safety of this washer-disinfector can only be guaranteed when correctly earthed. It is essential that this standard safety requirement is met. If in any doubt, please have the electrical installation tested by a qualified electrician. Miele cannot be held liable for the consequences of an inadequate earthing system (e.g. electric shock).

► A damaged or leaking washer-disinfector is dangerous and poses a safety hazard. Immediately disconnect the machine at the power switch and contact the Miele Service Department.

► Machine operators must be trained on a regular basis. Untrained personnel must not be allowed access to the washer-disinfector or its controls.
► Always exercise caution when handling the process chemicals for this machine. These products may contain irritant, corrosive or toxic ingredients.
Always comply with safety requirements and the manufacturer’s safety instructions (see safety data sheets)!
Use protective eyewear and gloves!

► The washer-disinfector is designed to operate with water and the recommended processing chemicals only. The machine must not be operated with organic solvents or flammable liquids!
This could cause an explosion, property damage due to the destruction of rubber and plastic components, and the resulting leakage of liquids.

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

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

► When operating the machine, beware of the high temperatures involved. If you bypass the electrical lock to open the door, there is a danger of scalding and heat or chemical burns. If disinfectants have been used, there is also the danger of inhaling toxic vapour.

► If toxic chemical substances can form in the wash water during processing (e.g. aldehydes in the disinfectant), the door seal and, if applicable, the function of the steam condenser must be checked regularly.
In this event, opening the door of the washer-disinfector during a program interruption is particularly hazardous.

► Should personnel accidentally come into contact with toxic vapours or processing chemicals, consult the manufacturer's safety data sheets for emergency procedures.

► Always allow wash carts, modules, inserts, and loads to cool down before unloading. Any water remaining in concave items could still be very hot. Empty them into the wash cabinet before taking them out.

► After drying with the drying unit, leave the door open at first to allow the items, wash carts, modules and inserts to cool down.

► If the boiler has been programmed to "BOILER READY", always beware of hot water and steam when opening the door! Looking from the unclean side, the inlet pipe is located beneath the left basket guide rail.

► Do not touch the heating elements when you open the door directly after completion of a program. They remain hot even for some minutes after the program has ended and can cause burns.

► Steam heating is permissible up to a pressure of 1000 kPa (145 psi). This corresponds to a water steam temperature of 179 °C.
Warning and Safety Instructions

► Do not hose down the washer-disinfector or the immediate vicinity, e.g. with a water hose or pressure washer.

► The washer-disinfector must be disconnected from the mains electricity supply before any maintenance or repair work is carried out.

The following points should be observed to assist in maintaining quality standards when reprocessing laboratory equipment and medical devices, in order to protect patients, and to avoid damage to the loads being cleaned.

► If the washer-disinfector is being used for disinfection ordered by the authorities, the steam condenser and its connections to the wash chamber and outlet discharge must be disinfected before any repair or exchange.

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

► Is is the responsibility of the operator to routinely check that the required cleaning and disinfection standards for medical devices are being met. Therefore, process results need to be regularly tested and documented, both thermo-electrically and through inspection. For thermochemical processes, additional testing is required using chemical or biological indicators.

► For thermal disinfection, the appropriate temperatures and holding times, as required by microbiological and public health standards and guidelines, must be used to achieve the required degree of infection control.

► The disinfection of medical devices is carried out by means of thermal disinfection. The disinfection of items that are not heat-resistant (e.g. OR shoes) can be carried out using the CHEM-DESIN program with the addition of a chemical disinfectant. The disinfection parameters are based on claims made by the disinfectant manufacturers. Their instructions on handling, use and efficacy must be observed. The use of chemical disinfection procedures is the responsibility of the operator. Chemical disinfection processes of this type are not suitable for the reprocessing of medical devices.

► Under certain circumstances processing chemicals can cause damage to the washer-disinfector. Always follow the recommendations of the processing chemical manufacturers. In case of damage or doubt about compatibility, please consult with Miele.
Warning and Safety Instructions

- Do not use any abrasive process chemicals in the washer-disinfector. These can cause damage to machine components, e.g. the spray arm bearings. If such chemicals are used for manual pre-treatment of containers or instruments, these must be removed without trace prior to reprocessing in the washer-disinfector.

- Pre-treating (e.g. with cleaning agents or disinfectants), some types of soiling and the interaction of certain processing chemicals can cause foaming. Foam can have an adverse effect on the cleaning and disinfection results obtained.

- The process must be set so that no foam escapes the wash compartment. Escaping foam jeopardizes the safe operation of the washer-disinfector.

- The process must be checked regularly in order to detect any foaming.

- To prevent material damage to the washer-disinfector and accessories used from the effects of processing chemicals, soiling and their interaction, follow the notes in chapter "Chemical Processes and technology".

- Even when a chemical additive (e.g. cleaning chemical) is recommended on technical application grounds, the machine manufacturer takes no responsibility for the effect of such chemicals on the material of the items being cleaned. Note that formulation changes, storage conditions, etc., that are not disclosed by the chemical manufacturer may adversely affect the cleaning results obtained.

- When using processing chemicals, always follow the instructions of the chemicals manufacturer. In order to avoid material damage and possibly violent chemical reactions (such as explosive hydrogen gas reactions), use processing chemicals only for the applications intended by the manufacturer.

- For critical applications, where very stringent reprocessing requirements have to be met, it is strongly recommended that all process-related factors (processing chemicals, water quality, etc.) are discussed in advance with Miele.

- For applications that demand especially stringent cleaning and rinsing results, the operator must ensure that quality control occurs on a regular basis to meet the standards involved.

- Wash carts, modules and inserts should only be used as intended by the manufacturer. Hollow items must be positioned for full exposure to wash water, internally and externally.

- Empty all containers and hollow utensils before loading them into the machine.
The amount of residual solvents and acids on items going into the wash chamber should be minimal. This applies in particular to hydrochloric acid, chloride solutions and corroding ferrous materials. Only trace amounts of any organic solvents should be present in any soiling.

To avoid corrosive damage, make sure the stainless steel housing does not come into contact with solutions or steam containing hydrochloric acid.

After any plumbing work the water pipework to the washer-disinfector will need to be primed. If this is not done, components can be damaged.

Follow the installation instructions in the operating instructions and in the installation instructions.

Using accessories

Only Miele accessories should be connected to this machine for the appropriate application. Consult Miele for details on the type of equipment to use.

Only use Miele wash carts, baskets and inserts with this washer-disinfector. Using wash carts and inserts made by other manufacturers, or making modifications to Miele accessories can cause unsatisfactory cleaning results, for which Miele cannot be held liable. Any resultant damage would not be covered by the warranty.

Only use process chemicals that are approved by their manufacturer for the application involved. Responsibility for any negative effects on the material of the load and the washer-disinfector itself lies with the chemical manufacturer.

Symbols on the machine

Warning: Observe the operating instructions!

Warning: Danger of electric shock!
Disposing of your old appliance

Please note that the machine may have contamination from blood, bodily fluids, pathogenic germs, facultative pathogenic germs, genetically modified material etc. in it and must be decontaminated before disposal.

For environmental and safety reasons ensure the machine is completely drained of any residual water, chemical residues and cleaning chemicals. Observe safety regulations and wear protective eyewear and gloves.

Remove or destroy the door latch to prevent children from locking themselves in. Then make appropriate arrangements for its safe disposal.

For equipment with a tank system, be sure to drain the water from the tank before disposal.

Miele will not be held liable for damage caused by failure to comply with these Warning and Safety Instructions.
Automatic program recognition

The automatic program recognition feature assigns a program place to a wash cart. For this to work, the wash carts must be coded with a magnetic strip (via a bit combination). In operating level C, the only program available for a coded wash cart is the one assigned to the corresponding program place.

When a coded wash cart is inserted into the washer-disinfector and the door closes, the automatic program recognition system will select the assigned program.

The processes for coding the wash cart and for changing program places are described in the Programming manual for the washer-disinfector.

⚠️ Make sure that no small metallic objects or instrument parts are stuck to the magnetic strip, in particular to the underside of it. Any metallic objects on the strip can result in the coding being incorrectly read.

Bit 6 is not a part of the modifiable magnetic strip. Note that wash carts with side coupling must be coded with magnetic strips that have Bit 6 set to 1. Wash carts without side coupling must be coded with magnetic strips that do not contain Bit 6. The magnetic strips in G 7824 / G 7825 / G 7826 washer disinfectors must contain grey magnets.
General information
The washer-disinfector can be fitted with various wash carts, adapted to the type and shape of the items that need to be cleaned and disinfected; they can be equipped with a wide variety of modules and inserts.

Wash carts, baskets and inserts should be properly selected to match the application involved.

Notes on the individual areas of application and examples of loading are given on the following pages.

Before Starting a program

You should carry out a visual check on the following before every program start:

- Are the items properly sorted, loaded and connected in the washer-disinfector?
- Are the spray arms clean, and can they rotate freely?
- Is the filter combination free of coarse debris?
  Remove any coarse material and clean the filters if necessary.
- Is the wash cart correctly connected to the water supply?
- Are the removable modules, jets, sleeves and other rinsing attachments correctly connected?
- Are all chemical containers sufficiently filled?

At the End of each program

The following must be checked at the end of every program:

- Carry out a visual check of the load for cleanliness.
- Check that all hollow shafted instruments are still securely located on their jets.

⚠️ Any hollow instruments that have become disconnected from their adapters during reprocessing must be re-processed.

- Check that the lumen of hollow instruments are free of obstruction.
- Check that jets and connectors are securely held in position in the baskets or inserts.

Protein test

Cleaning results should be subjected to periodic protein tests, e.g. with the Miele test kit or the Miele ProCare Protein Check. Cleaning verification shall be carried out weekly in accordance with "CSA Z314.8 Decontamination of reusable medical devices."
Preparing the load

⚠️ Only items which have been declared by their manufacturer as suitable for machine reprocessing may be reprocessed. The manufacturer's specific reprocessing instructions must be observed. Disposable instruments must not be put into the machine for reprocessing.

- Arrange the load so that water can access all surfaces. This ensures that it gets properly cleaned.
- Do not place items to be cleaned inside other pieces where they may be concealed.
- Hollow instruments must be thoroughly cleaned, internally and externally.
- Ensure that instruments with long narrow hollow sections can be flushed through properly before placing them in inserts or connecting them to jets.
- Hollow items should be inverted and placed in the correct wash cart, modules and inserts to ensure that water can flow in and out of them unrestricted.
- Deep-sided items should be placed at an angle to make sure water runs off them freely.
- Tall, narrow, hollow items should be placed in the centre of the basket if possible to ensure better water coverage.
- Take apart any items which can be dismantled according to the manufacturer’s instructions and reprocess the individual parts separately from each other.
- Lightweight items can be secured with cover nets (e.g. A 6), and small parts can be placed in a small item mesh tray, so that they do not block the spray arms or become attached to the magnetic strip on the automatic program recognition.
- Only reprocess small items and micro components in special inserts, mesh trays with lids or mesh inserts, such as e.g. E 473/1 for micro components.
- The spray arms must not be blocked by items that are too tall or hang through the baskets. Gently rotate the arms by hand to check mobility.
- It is advisable to use only instruments made of special application steel which are not susceptible to corrosion.
- Items made of nickel and colour-anodised aluminum require special reprocessing conditions and are not suitable for machine reprocessing.
- Heat-sensitive load must only be reprocessed using a chemo-thermal program.
- Plastic items must be thermally stable.
### Application technology

<table>
<thead>
<tr>
<th>Prepare items before loading</th>
</tr>
</thead>
<tbody>
<tr>
<td>Empty all items before loading into the machine (pay particular attention to regulations regarding infectious diseases and epidemics).</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Storing instrument before reprocessing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Whenever possible, instruments should be reprocessed in washer-disinfectors without pre-soaking.</td>
</tr>
<tr>
<td>Chemically pre-treated instruments must be rinsed thoroughly before reprocessing in the washer-disinfector to avoid a significant build-up of foam.</td>
</tr>
</tbody>
</table>
**Application technology**

**Surgical instruments**

Surgical instruments should be stored for as short a time as possible before machine reprocessing and for no longer than 2 hours. It is best to reprocess surgical instruments using the DES-VAR-TD program.

The OXIVARIO program should be used for surgical instruments where there is a long delay between the time they are used and the time they can be reprocessed. See "Special options".

Disinfection of surgical instruments and of those used for minimally invasive surgery should take place thermally.

Demineralized water with a conductivity level of ~15μS/cm (microsiemens per centimetre) should be used for the final rinse whenever possible to ensure no marks are left on the load and to avoid corrosion. If the water used contains more than 100 mg chloride/litre there is a risk of corrosion.

Most rigid sterilization containers can be disinfected thermally with the CONTAINERS program. If anodized aluminum containers are being reprocessed, de-ionized water must be used for the wash cycles and the final rinse. These containers must not be reprocessed with an alkaline detergent.

For reprocessing rigid containers to an $A_0=600$ disinfection standard, the CONTAINER-600 program must be programmed in retrospectively by Miele.

The wash carts for surgical instruments and sterilization containers come with their own operating instructions.

When reprocessing narrow lumen instruments, e.g. those used in minimal invasive surgery an intensive internal cleaning result is imperative. Only the programs DES-VAR-TD and OXIVARIO are suitable for thorough cleaning. Always observe the specific loading instructions, and all applicable procedures, including for the use of appropriate detergents for these sensitive instruments.

For rinsing, use demineralized water with a conductivity of ~15 μS/cm (microsiemens per centimeter).

Very narrow-lumen instruments must be pre-cleaned manually where necessary. Follow the instrument manufacturer’s instructions!
Ophthalmic instruments

Ophthalmic instruments can be cleaned and disinfected by machine in the E 729/1 injector wash cart.

For the final rinse, use demineralized water with a conductivity of ~15 μS/cm. To remove chemical residues from ophthalmic instruments, a custom program with 2 demineralized water rinses needs to be used. A custom "Ophthalmology" program must be programmed retrospectively by Miele.

In addition, the rinse water must have a low endotoxin and pyrogen content.

The upper level features various connectors for hollow instruments, e.g., rinsing and suction hand pieces and cannulas.

Silicone holders and stoppers placed in the mesh tray hold and secure the instruments to the hose connections in the injector wash cart.

The lower level of the injector wash cart is designed to take E 441/1 inserts or E 142 / E143 mesh trays for reprocessing solid instruments.

⚠️ In washer-disinfectors used to reprocess hollow narrow-lumen ophthalmic instruments, cover nets with plastic fibres must not be used. Plastic fibres can block narrow lumens.

The wash cart for ophthalmological instruments comes with its own operating instructions.

Anaesthetic instruments

Anaesthetic instruments should be thermally disinfected using the DES-VAR-TD-AN program.

⚠️ If no sterilization will occur after washing, germ growth will need to be inhibited during storage. Because this requires thorough drying, a sufficient amount of drying time must be selected.

The wash cart for anaesthetic instruments comes with its own operating instructions.
Baby bottles

Baby bottles in E 135 containers can be processed in the two lower levels of wash cart E 735/1. In addition, E 364 containers with wide-necked teats and E 458 containers with screw-cap teats can be placed in the upper level of the wash cart.

– Only use baby bottles with washer-safe volume markings.
– If there is a delay of 4 hours or more before bottles can be washed, fill them with water to prevent residues from drying on.

If the process is not to be followed by sterilization, the load should be dried completely to avoid the development of water-borne bacteria. A sufficient drying time is therefore absolutely essential.

The inserts for baby bottles and bottle teats come with their own operating instructions.

Support frame

E 750

Place the support frame in the middle of the upper level of the E 735/1 wash cart.

Place one E 135 container on each side on the hook of the support frame.

The angled positioning of the containers ensures that all of the inside of the bottle is reached by the water jets.
Both blocked corners of the insert must be located at the positions marked with X in the drawing. In this area the inside of the bottle is not reached sufficiently by the jets of water and the bottles are not properly cleaned.
OR shoes

OR shoes and/or insoles made of heat-sensitive materials should be thermo-chemically cleaned and disinfected at 60°C using the CHEM-DESIN program.

A thermal disinfection program (SHOE-TD-75/2 program) can be used as long as the manufacturer has confirmed the thermo-stability of the product(s) involved.

For reprocessing OR shoes to an $A_0=60$ disinfection standard, the SHOE-60 program must be programmed in retrospectively by Miele.

For information on the efficacy of thermochemical disinfection, contact the disinfectant manufacturer directly.

OR shoes should be cleaned and disinfected in a machine installed specifically for this purpose only. If OR shoes are to be reprocessed in a washer-disinfector which is used for other applications, a risk assessment must be carried out by the user.

The wash cart E 775-2 can be used with a suitable insert, e.g. E 930.

When OR shoes are cleaned, large quantities of lint can accumulate. For this reason, be sure to check the wash cabinet filters frequently and clean as needed (see section on "Cleaning and care").
Laboratory equipment

...wide necked
Wash load items with wide necks, e.g. beakers, wide necked Erlenmeyer flasks and petri dishes, or cylindrical items, e.g. test tubes, can be cleaned inside and out by rotating spray arms. To do this the wash load is positioned in full, half or quarter inserts and placed in an empty basket with a spray arm.

...narrow necked
Wash load items with narrow necks, e.g., narrow-necked Erlenmeyer flasks, round-bottomed flasks, measuring cylinders and pipettes, require injector wash carts or injector modules.

The injector wash carts and modules come with their own operating instructions.

When loading please note:
- Place petri dishes or similar items in the appropriate insert with the dirty side facing towards the middle.
- Place pipettes with the pointed end facing downwards.
- Quarter segment inserts should be positioned at a minimum 3 cm distance from the edge of the basket.
- Position quarter segment inserts for test tubes around the middle to leave the corners of the basket free.
- Use a cover net to avoid breakages if required.
Preparing the load

- Empty all items before loading into the machine (pay particular attention to relevant regulations).
- Remove non-water soluble residues such as paint, adhesives and polymer compounds using appropriate solvents.
- Rinse wash load items which have been in contact with solvents, chloride solutions or hydrochloric acid thoroughly with water and drain well before loading in the machine.

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

⚠️ Chloride solutions, in particular hydrochloric acid, or corrosive iron materials must not be placed in the cabinet.

- Scoop nutrient media (Agar) out of petri dishes.
- Shake out any blood residues and remove any clots.
- If necessary rinse the wash load briefly with water to avoid introducing coarse soiling into the machine.
- Remove all stoppers, corks, labels, sealing wax residue, etc.
- Small items such as stoppers and taps, should be secured in suitable baskets for small parts.

It may be necessary in individual cases to check whether extremely stubborn contamination e.g. vacuum grease, paper labels, etc. which could affect the cleaning result, must be removed in advance.

It must be determined whether wash load items which are contaminated with microbiological material, pathogenic germs, facultative pathogenic germs, genetically modified material etc. need to be sterilized prior to machine reprocessing.
<table>
<thead>
<tr>
<th>Program</th>
<th>Area of application</th>
</tr>
</thead>
</table>
| LAB-STANDARD     | A simple, short program for light soiling and low rinse requirements:  
|                  | – for a wide range of soiling types,  
|                  | – not suitable for denatured residues such as proteins,  
|                  | – not suitable for acid-soluble residues such as metallic salts and amines.                                                                                                                                         |
| LAB-UNIVERSAL    | General program for light to moderate soiling with moderate rinse requirements:  
|                  | – for removing organic residues such as proteins and some oils and greases,  
|                  | – for some inorganic residues (e.g. pH 7 water-soluble metallic salts),  
|                  | – for preparative and analytical applications.                                                                                                                                                                     |
| LAB-INTENSIVE    | Program for moderate to heavy soiling with moderate to high rinse requirements:  
|                  | – for removing organic residues such as proteins, cell and tissue cultures, and some oils and greases,  
|                  | – for some inorganic residues (e.g. pH 7 water-soluble metallic salts),  
|                  | – For preparative and analytical applications,                                                                                                                                                                     |
| ORGANIC          | Program for moderate to heavy soiling with moderate rinse requirements:  
|                  | – for removing organic residues such as oils, greases, wax and agar,  
|                  | – not suitable for acid-soluble residues such as metallic salts and amines.                                                                                                                                         |
| INORGANIC        | Program for light to moderate soiling, with moderate to high rinse requirements:  
|                  | – for removing inorganic residues,  
|                  | – for analytical applications and water analytics,  
|                  | – for aqueous culture media with acid-soluble metallic salts such as $\text{Ca}^{2+}$, $\text{Mg}^{2+}$ etc.                                                                                                         |
Transfer trolley for loading and unloading the machine

⚠ Contaminated surfaces of the transfer trolley must be disinfected after the machines has been loaded. Only use chemical disinfectants recognized by Health Canada.

The Miele transfer trolley can be used to transport wash carts from the preparation area to the washer-disinfector and from there to the checking and wrapping table.

The height of the transfer trolley can be adjusted by Miele. The height should be set so that the open machine door is held underneath the side catches on the transfer trolley.

If the machine is not fitted on a base the position of the foot pedal on the transfer trolley may need to be changed.

Adjusting the foot pedal

- Unscrew foot pedal ①.
- Loosen lock nuts ② on the set screw ③.
- Screw the set screw ③ further through the foot pedal so that the end stop is reached earlier.
- Relock the set screw.
- Screw on the foot pedal.
Loading and unloading
Transporting wash carts

- Hang the wash cart into the locating slots on the transfer trolley using both hooks.
- To lift the wash cart step down on the transfer trolley foot pedal.
- Push the transfer trolley under the open door on the washer-disinfector as far as it will go. The wash cart will then sit over the door.
- Secure the brakes on the wheels.

- To lower the wash cart step down on the transfer trolley foot pedal.
Application technology

At the end of a program

- Move the transfer trolley up to the washer-disinfector so that the machine door is held underneath the side catches on the transfer trolley.

- Pull the wash cart up to the stopping point on the open door so that it is lifted with the transfer trolley and can be moved away.
Chemical processes and technology

Chemical reactions

In this section you will find a description of the causes of common chemical reactions which can occur between different types of soiling, processing chemicals and the components of the machine, along with their remedies as necessary.

This section is intended as a guide. If unforeseen interactions occur during processing, or if you have any queries on this subject, please seek advice from Miele.

<table>
<thead>
<tr>
<th>General information</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Problem</strong></td>
</tr>
</tbody>
</table>
| If elastomers (seals and hoses) and plastic components in the machine are damaged, this can lead to, for example, swelling, shrinking, hardening or brittleness of materials leading to the development of tears and cracks. Components can then not function correctly and this generally leads to leaks. | – Find and correct the causes of the damage.  
See also the information on "Process chemicals", "Soiling" and "Reactions between processing chemicals and soiling". |
| Heavy foaming during a program affects cleaning and rinsing results. Foam escaping from the wash cabinet can cause damage to the washer-disinfector. Cleaning processes cannot be regulated where there has been a build-up of foam. | – Find and correct the cause of foaming.  
– The process must be checked regularly in order to detect any foaming.  
See also the information on "Process chemicals", "Soiling" and "Reactions between processing chemicals and soiling". |
| Corrosion to stainless steel of the wash cabinet and to accessories has various appearances:  
– rust formation (red spots / stains),  
– black spots / stains,  
– white spots / stains (smooth surface is slightly corroded).  
Corrosive pitting can lead to the washer-disinfector not being water-tight. Depending on application corrosion can influence cleaning and rinsing results (laboratory analysis) or cause corrosion to stainless steel items in the cabinet. | – Find and correct the cause of corrosion.  
See also the information on "Process chemicals", "Soiling" and "Reactions between processing chemicals and soiling". |
## Connected processing chemicals

<table>
<thead>
<tr>
<th>Problem</th>
<th>How to resolve it</th>
</tr>
</thead>
<tbody>
<tr>
<td>The ingredients in processing chemicals have a strong influence on the</td>
<td>– Use Miele approved process chemicals in this machine. The instructions and</td>
</tr>
<tr>
<td>longevity and functionality (throughput) of the dispensing system.</td>
<td>recommendations of the manufacturer of the process chemicals must be observed.</td>
</tr>
<tr>
<td>The dispensing system (hoses and pumps) should be set up for a</td>
<td>– Carry out regular visual inspections of the dispensing system to check for signs</td>
</tr>
<tr>
<td>particular type of process chemicals.</td>
<td>of damage.</td>
</tr>
<tr>
<td>General types:</td>
<td>– Regularly check the flow rate of the dispensing system.</td>
</tr>
<tr>
<td>– alkaline to neutral pH products,</td>
<td></td>
</tr>
<tr>
<td>– acid to neutral pH products,</td>
<td></td>
</tr>
<tr>
<td>– hydrogen peroxide.</td>
<td></td>
</tr>
<tr>
<td>Process chemicals can damage elastomers and plastics in the washer-</td>
<td>– Use Miele approved process chemicals in this machine. The instructions and</td>
</tr>
<tr>
<td>disinfecter and accessories.</td>
<td>recommendations of the manufacturer of the process chemicals must be observed.</td>
</tr>
<tr>
<td></td>
<td>– Perform regular visual inspections of all visible elastomer and plastic</td>
</tr>
<tr>
<td></td>
<td>components for damage.</td>
</tr>
<tr>
<td>Hydrogen peroxide can release large amounts of oxygen.</td>
<td>– Only use approved processes such as OXIVARIO or OXIVARIO PLUS.</td>
</tr>
<tr>
<td></td>
<td>– The wash temperature must be lower than 70 °C when using hydrogen peroxide.</td>
</tr>
<tr>
<td></td>
<td>– Please contact Miele Service for advice.</td>
</tr>
</tbody>
</table>
### Connected processing chemicals

<table>
<thead>
<tr>
<th>Problem</th>
<th>How to resolve it</th>
</tr>
</thead>
<tbody>
<tr>
<td>The following process chemicals can cause large amounts of foam to build up:</td>
<td>- Process parameters in the wash program, such as dispensing temperature, dosage concentration etc. must be set to ensure the whole process is foam free or very low foaming.</td>
</tr>
<tr>
<td>- cleaning and rinsing agents that contain tensides.</td>
<td>- Observe the instructions of the manufacturer of the processing chemicals.</td>
</tr>
<tr>
<td>Foam can occur:</td>
<td></td>
</tr>
<tr>
<td>- in the program block in which the process chemical is dispensed,</td>
<td></td>
</tr>
<tr>
<td>- in the subsequent program block due to carry-over,</td>
<td></td>
</tr>
<tr>
<td>- in the case of rinsing agents, in the subsequent program due to carry-over.</td>
<td></td>
</tr>
<tr>
<td>Antifoaming agents, particularly silicone-based antifoaming agents, can cause the following:</td>
<td></td>
</tr>
<tr>
<td>- deposits in the wash cabinet,</td>
<td>- Use antifoaming agents only in exceptional cases or when they are absolutely necessary for the process.</td>
</tr>
<tr>
<td>- deposits on the load,</td>
<td>- Periodic cleaning of the wash cabinet and accessories without a load and without an antifoaming agent using the ORGANICA program (if available).</td>
</tr>
<tr>
<td>- damage to elastomers and plastics in the washer-disinfector,</td>
<td>- Please contact Miele Service for advice.</td>
</tr>
<tr>
<td>- damage to certain plastics (e.g. polycarbonate and plexiglass) in the load being processed.</td>
<td></td>
</tr>
</tbody>
</table>
### Chemical processes and technology

#### Soiling

<table>
<thead>
<tr>
<th>Problem</th>
<th>How to resolve it</th>
</tr>
</thead>
<tbody>
<tr>
<td>The following substances can damage elastomers (hoses and seals) and plastics in the washer-disinfector:</td>
<td></td>
</tr>
<tr>
<td>– Oil, wax, aromatic and unsaturated hydrocarbons,</td>
<td>– Depending on usage wipe the lower door seal on the washer-disinfector periodically with a lint-free cloth or sponge. Clean the wash cabinet and accessories without a load using the ORGANIC program (if available).</td>
</tr>
<tr>
<td>– emollients,</td>
<td>– Prepare the load using the &quot;OIL&quot; program (where this is available) or use a special program that dispenses emulsifiers.</td>
</tr>
<tr>
<td>– cosmetics, hygiene and skin care products such as creams (analytical applications).</td>
<td></td>
</tr>
<tr>
<td>The following substances can cause excessive foaming during washing and rinsing:</td>
<td></td>
</tr>
<tr>
<td>– agents such as disinfection agents etc.</td>
<td>– Rinse the items with a sufficient quantity of water before placing them in the washer-disinfector.</td>
</tr>
<tr>
<td>– reagents for analysis, e.g. for microtitration plates,</td>
<td>– Select a wash program with one or more short pre-rinses with cold or hot water.</td>
</tr>
<tr>
<td>– cosmetics, hygiene and skin care products such as shampoos and creams (analytical applications).</td>
<td>– Depending on application use antifoaming agents that do not contain silicone oils.</td>
</tr>
<tr>
<td>– foaming substances in general, for instance tensides.</td>
<td></td>
</tr>
<tr>
<td>The following substances can cause corrosion of the stainless steel in the wash cabinet and the accessories:</td>
<td></td>
</tr>
<tr>
<td>– hydrochloric acid,</td>
<td>– Rinse the items with a sufficient quantity of water before placing them in the washer-disinfector.</td>
</tr>
<tr>
<td>– other substances containing chlorides such as sodium chloride etc.,</td>
<td>– Let the load drip dry before putting it on the carts, baskets and inserts and placing in the washer-disinfector.</td>
</tr>
<tr>
<td>– concentrated sulphuric acid,</td>
<td></td>
</tr>
<tr>
<td>– chromic acid,</td>
<td></td>
</tr>
<tr>
<td>– iron particles and shavings.</td>
<td></td>
</tr>
</tbody>
</table>
### Reaction between processing chemicals and soiling

<table>
<thead>
<tr>
<th>Problem</th>
<th>How to resolve it</th>
</tr>
</thead>
</table>
| Natural oils and fats can be emulsified with alkaline processing chemicals. This can lead to a heavy build-up of foam. | - Use the program OIL (if available).  
- This special program dispenses emulsifiers (pH neutral) in the pre-rinse.  
- Depending on application use antifoaming agents that do not contain silicone oils. |
| In combination with alkaline processing chemicals, items 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 process chemicals, base metals such as aluminum, magnesium and zinc may release hydrogen (oxyhydrogen reaction). | - Observe the instructions of the manufacturer of the processing chemicals.                           |
Dispensing systems

⚠ Use only detergents and neutralizers specially designed for washer-disinfectors, and observe the manufacturer’s recommendations for use! Please observe carefully any instructions relating to toxic residues. It is recommended to use tested Miele process chemicals only. For suitable process chemicals contact Miele Professional.

The washer is equipped as standard with two dispensing pumps:
– Dispensing system DOS 1 (blue) for dispensing liquid detergents. The dosing rate is 120 ml/min.
– Dispensing system DOS 3 (red) for dispensing acidic processing chemicals, such as neutralizers or rinsing agents. The dosing rate is 20 ml/min.

Additional DOS pumps (optional):
– Dispensing system DOS 2 (white) for dispensing acidic processing chemicals, such as neutralizers or lubricants. The dosing rate is 20 ml/min.
– Dispensing system DOS 4 (green) for dispensing low-foam, washer-compatible disinfection agents or an additional detergent. The dosing rate is 120 ml/min.

Depending on the application(s) chosen for this washer-disinfector, the appropriate amounts of liquid processing chemicals are dispensed through these systems.

If a dispensing system is to dispense different process chemicals, the change of chemicals must be carried out by Miele Service Department.

Optional feature

⚠ Further information regarding the OXIVARIO process and how to connect the container with H₂O₂ solution, see the section on “Optional feature - OXIVARIO”.

OXIVARIO

This washer-disinfector can be set up or retro-fitted to use the OXIVARIO process by adding an additional dispensing pump and a special buffer tank for hydrogen peroxide (H₂O₂ solution). The H₂O₂ solution hose is colour coded black.

The DOS 2 dispenser is used for the H₂O₂ solution.
Dispensing liquid detergents and neutralizer

"Fill DOS [X] container"
- Refill or replace the container shown in the display.

[x] Instead of an X, the number of the affected dispensing system will appear.

Fill the containers when a message to that effect appears in the display, e.g. FILL DOS 1 CONTAINER. This will prevent air locks and the subsequent requirement to vent the system.

Adding liquid detergents and neutralizers
- Switch off the washer-disinfector using the main switch.

- Open the service panel and tilt it to the left.

- Remove the container from the washer-disinfector.
- Unscrew the suction lance and remove it.
- Fill the container with the required product.
Dispensing liquid detergents and neutralizer

Insert the suction lance into the container opening and screw it into place.

Once the containers have been filled, the message clears from the display.

Place the container in the washer-disinfector.

Close the service panel.

Message "Check dispensing system [X]"
The current program has been interrupted.

Check the container(s) and dispensing hoses shown in the display.

[x] Instead of an X, the number of the affected dispensing system will appear.

Refill the container or replace it with a full one.

Use the appropriate service program to prime the affected dispensing system (clear it of air).

If a container is not being used, the level query for the unused dispensing system can be turned off to avoid the error message (see "Machine functions, container query..." in the Programming Manual supplied with the washer-disinfector).

Priming the dispensing system
Whenever a container has been allowed to completely empty, it must be primed (cleared of air) after refilling.

Select the corresponding service program, e. g., DOS1-FILL.

Press the start button.
**Main switch**

The main switch disconnects the user side of the washer-disinfector from the electrical supply.

- Turn the main switch to **ON**.

After completion of the start process the washer-disinfector is ready for operation.

**Switching on**

- Press the **I-O** button.

Depending on the set operating level, the following will appear in the display:

<table>
<thead>
<tr>
<th>Operating level</th>
<th>Message in display</th>
</tr>
</thead>
<tbody>
<tr>
<td>A and B</td>
<td>the last selected program</td>
</tr>
<tr>
<td>C</td>
<td>AUTOMATIC MOBILE UNIT RECOGNITION</td>
</tr>
<tr>
<td>D</td>
<td>Select from:</td>
</tr>
<tr>
<td></td>
<td>– the last selected program</td>
</tr>
<tr>
<td></td>
<td>– Program guide</td>
</tr>
<tr>
<td></td>
<td>– Programming</td>
</tr>
</tbody>
</table>

The display background lighting switches itself off automatically after approx. 15 minutes. Press any button to switch it back on again.
Operation

Door lock
The machine is equipped with an electric door lock.
The door can only be opened when:
– the washer-disinfector is connected to the electrical supply,
– the main switch is in the **I-ON** position,
– the **I-O** button is pressed,
– no wash or disinfection program is running.
To open the door on the clean side (G 7826), please also note the following:
– Disinfection programs must have been completed without fault
  according to program parameters,
or
– the **INTERLOCK YES** function is active.

Opening the door

[■] Press the door switch [¼]. At the same time, grip the handle and open the door.

⚠️ Do not touch the heating element under the sump filter when you open the door directly after completion of the program. They remain hot even for some minutes after the program has ended and can cause burns.

Closing the door

[■] Lift the door upward and push until it clicks shut.

⚠️ If Boiler ready has been programmed for the boiler heating, remember that hot water or steam may escape when the door is open. The inlet pipe is below the left-hand basket guide rail, as seen from the unclean (infeed) side.
Changing operating level

Four operating levels are available for selection in the electronic control unit of the washer-disinfector:

<table>
<thead>
<tr>
<th>Operating level</th>
<th>Authorized access for</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Pre-set programs / open programs</td>
</tr>
<tr>
<td>B</td>
<td>Open program selection</td>
</tr>
<tr>
<td>C</td>
<td>Automatic program recognition (program selection via wash cart coding) - optional</td>
</tr>
<tr>
<td>D</td>
<td>Open program selection / programming / change code (see Programming Manual)</td>
</tr>
</tbody>
</table>

To change operating level:

- Press and hold the \(<\) and \(\rightarrow\) buttons simultaneously.

The display will show the operating levels A B C D.

- Use \(<\) or \(\rightarrow\) to select the operating level.

- Press \(\circlearrowright\) to confirm selection.

- Enter code when prompted in the display.
  The factory preset coding is set to >0000<.
  To enter the code:

  - Press the Start button \(\circlearrowright\).
    [0000] will appear.

  - Enter numbers using the \(<\) and \(\rightarrow\) buttons. Select the cursor position with the \(\rightarrow\) or \(<\) buttons.

  - Press \(\circlearrowright\) to confirm code.

If you enter the wrong code:
FALSE CODE, ENTER AGAIN will appear in the display.

Selecting or changing your own code

The factory default code can be changed. See "System functions" 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 overview chart in the accompanying Programming Manual.

⚠️ Any program or dosing changes in connection with the preparation of medical devices must be documented in a log book.

A: Pre-set programs

Preset programs can be compiled in operating levels B or D once and cleared for operating level A (see Programming Manual/System function - Programs under "A" free access).

- Check the display to see whether the required program is being displayed.
  - If several pre-set programs are being compiled and cleared, use the program selector to choose a particular one.
- Press the Start button ⏯.

Further information about program selection can be found in the Programming manual in "Operating level A".

B: Open program selection

In operating level B, you have three ways to select a program:

1. Program slots 1 - 23 can be selected using the program selector.
2. Programs 24 and above are accessible via ± and ▶.
3. The program chart lists all stored programs.

1. Program selector
   - Turn the program selector to the desired program number.
   - The program name appears in the display.
   - Press the Start button ⏯.
   - The programme will run.

2. ± and ▶ buttons
   - Turn the program selector to 24.
   - From program 24 upwards:
     - Press ± (scrolls forwards) until the required program is shown.
   - From program 64 downwards:
     - Press ▶ (scrolls backwards) until the required program is shown.
   - Press the Start button ⏯.
   - The program will run.
3. Program chart

The PROGRAMME-SURVEY menu lists all stored programs.

- Select the PROGRAMME-SURVEY menu option with ⬅️ and confirm with ✅.

- Select the program with ⬅️ or ➤️ and confirm with ✅.

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

- Press the Start button ✅.

The program will run.

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

Operating level C

⚠️ Make sure that no small metallic objects or instrument parts are stuck to the magnetic strip, in particular to the underside of it. Any metallic objects on the strip can result in the coding being incorrectly read.

⚠️ Before starting a program by pressing the Start button it is absolutely essential to check that the program required for this wash cart is the one shown in the display. Otherwise inadequate cleaning or disinfection could be the result. Please make sure, that the places assigned for the programs using automatic program recognition are not changed around arbitrarily.

- Open the door.

- Push the coded wash cart into place in the washer-disinfector.

- Close the door.

- Check that the correct program is displayed and press ✅ to start.

The program will run.

D: Open program selection

- Select the PROGRAMME-SURVEY menu option with ⬅️ and confirm with ✅.

- Select the program with ⬅️ or ➤️ and confirm with ✅.

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

- Press the Start button ✅.

The program will run.
Program sequence
The program will start automatically as soon as the Start button is pressed.

The program stages are shown in the display during the program sequence.

Detailed information on program sequence is given in the appendix of the Programming manual.

⚠️ Do not change the printer paper roll or ribbon cartridge during a running program.

End of program
At the end of the program PROGRAMME - END is shown in the display and the background lighting flashes.

- Press any button to stop the lighting from flashing.

For general information on how to switch off the flashing signal, see the section "System functions" in the Programming Manual.

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

In order to conduct a performance qualification to assess the cleaning result, the program must be cancelled before it proceeds to the disinfection step (as per EN ISO 15883-1; CAN/CSA Z.15883-1-09).

In operating level B or D
- Press the Stop button 🚫.

The program is interrupted.

The following will appear in the display:
CANCEL OR>CONTINUE<

⚠️ In cases involving mandatory decontamination, disinfectant must be added to the contaminated water before it can be discharged into the sewerage system.

The door on the unclean side can be opened for this purpose.

- Use cursor ⬅ to select >CANCEL<, the cursors will start flashing.

- Press the Start button ⏯.

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

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

If a disinfection program has been interrupted and then continued, be sure to check the display upon program completion. If the message PROCESS PARAMETERS NOT MET appears, the door has been opened after the disinfection, hence the disinfection parameters are not met. Repeat the program if necessary.

If the door must be opened for urgent reasons, e.g., if items are moving around too much, or the cleaning performance needs to be checked:

In operating level B or D

■ Press the Stop button \(\text{■}\).

The program is interrupted.

The following will appear in the display:

CANCEL OR>CONTINUE<

■ Open the door \(\text{■}\).

For pass-through machines:

The setting at Machine function/Door interlock determines which door of the washer-disinfector can be opened, see Programming manual.

The door on the unclean side can always be opened, regardless of the setting.

The door on the clean side can then only be opened when the machine is set to INTERLOCK YES.

When using the washer-disinfector as a medical device (as per EN ISO 15883, CAN/CSA Z.15883), INTERLOCK NO should always be configured.

⚠️ Caution. Water and items in the machine may be hot. There is the danger of burning or scalding. In programs with thermochemical disinfection, steam containing high levels of disinfectant can escape!

■ Rearrange the load.

Follow infection control regulations and wear protective gloves.

■ Close the door.

■ Press the Start button \(\text{■}\).

The program continues.
For data transfer between Profitronic system and an external report printer or PC, a 5 m interface cable is included with the appliance.

The interface cable is wound up inside the machine and must only connected by Miele Service.

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:

- Miele PRT 100 report printer.
- Epson-compatible character set (font) (a list of suitable printers can be obtained from Miele Service).

Pin configuration in the 9-pole sub-D connector on the interface cable:
5 GND (ground)
3 TXD (transmit)
2 RXD (receive)
1-4-6 (linked)
7-8 (linked)

A standard null modem or laplink cable can be connected.
The maximum length of the extension cable for the printer/PC must be 10 m.

If connecting a printer or PC, please note the following:
- Only use an industry-standard PC or printer (IEC 60950 certified).
- Select a printer or PC that is suited to the installation application.

For instructions on how to set the report printer functions, refer to the section on PC/Print functions in the Programming Manual.

Various reports can be printed:
1. Program report
2. Optional function report
3. Wash protocol report
4. Fault protocol report
**Service**

After **every 2000 hours of operation, or at least once a year** Miele Service will need to perform preventative maintenance on the washer-disinfector.

Maintenance covers the following:

- electrical integrity
- Door mechanism and door seal
- Any screw connections and connectors in the wash cabinet
- Water inlet and drainage
- Internal and external dispensing systems
- Spray arms
- Filter combination
- Sump including drain pump and non-return valve
- All wash carts, baskets, inserts, and modules.

Where applicable:

- Steam condenser
- Drying unit
- Connected printer.

The following operational tests will be carried out within the framework of the maintenance:

- A program test run
- Seals will be tested for water tightness
- All relevant measuring systems will be safety tested, including fault displays
- Safety features
Performance qualification
Performance qualification needs to be performed as outlined in "CSA Z314.8 Decontamination of reusable instruments". It is the responsibility of the operator to check that the required cleaning and disinfection standards are always met.

Routine checks
Before each day's use, the operator must conduct a series of routine checks. A routine checklist is supplied with the machine.
The following items must be checked:
- All filters in the wash cabinet
- The spray arms in the machine and on any wash carts or baskets
- The wash cabinet and the door seal
- The dispensing systems and
- All wash carts, baskets, inserts, and modules.
Cleaning the filters

Cleaning the fine filter

- Remove the fine filter and clean it under running water.
- Replace the fine filter.

Cleaning the surface filter

- Remove the surface filter and clean it under running water.
- Replace the flat filter.
Cleaning the filter in front of the circulation pumps

Underneath the flat filter, on the right beside the heater element block there are two filters for protecting the circulation pumps.

- Pull the filters straight up from their brackets and clean under running water.
- Replace the filters by carrying out the above steps in the reverse order.

Check that the filters are positioned correctly.
Cleaning the spray arms

It is possible for spray arm jets to become blocked by particles inside them. Therefore, it is important to inspect the spray arms every day.

- Use a sharp, pointed object to push any particles into the spray arm jets, then rinse thoroughly under running water.

Remove the spray arms as follows:

**Spray arms in the wash cabinet:**
- Remove wash cart.
- Loosen the fastening on the spray arm with an SW 60 spanner and pull the spray arm upwards or downwards to remove.

**Spray arms on wash carts/modules:**
- Turn the nut (left hand thread) together with the spray arm clockwise and then pull the spray arm downwards and off.

If there is considerable visible wear on the bearing on the spray arm, contact Miele Service as this can result in functional problems.

- After cleaning the spray arms screw them back into position.

After replacing the spray arms, check that they rotate freely.
Cleaning the control panel
- Clean the control panel and the glass door with a damp cloth or with a suitable cleaner for glass or plastic. For disinfection purposes low and intermediate chemical disinfectants may be used.

⚠️ Do not use abrasive cleaners or all-purpose cleaners. Because of their chemical composition they could cause serious damage to the plastic surface.

Cleaning the front of the washer-disinfector
- To clean the stainless steel front, use a damp cloth with a solution of washing-up liquid and hot water, or with a non-abrasive cleaning agent for use on stainless steel.
- To help prevent re-soiling (fingerprints, etc.), a suitable stainless steel conditioner can be used after cleaning.

⚠️ Do not use ammonium-based cleaners or thinners! They can damage the surface material.

⚠️ Do not hose down the washer-disinfector or the immediate vicinity, e.g. with a water hose or pressure washer.

Cleaning the wash cabinet
The wash cabinet is mostly self-cleaning.
- If you notice a build-up of deposits, please contact Miele Service for advice.

Cleaning the door seal
- The door seals should be cleaned regularly with a damp cloth to remove any soiling.

有用提示：受损或渗漏的门封条应由Miele客服更换。
Wash carts, modules and inserts

Wash carts, modules and inserts should be checked daily to make sure they are functioning correctly. The washer-disinfector is supplied with a check list.

Check the following points:

- Are the rollers in proper condition, and are they securely attached to the wash cart/basket?
- For wash carts in the modular system, are the caps in the module connection working properly?
- Are all spray jets, spray sleeves and hose adaptors securely attached to the wash cart/insert?
- Are all spray jets, spray sleeves, and hose adapters unclogged so that wash water can flow through?
- Are all caps, covers, and fasteners securely attached to the spray sleeves?

Where applicable:

- Do the spray arms rotate freely?
- Are the spray jets clogged? See the section on "Maintenance/Cleaning the spray arms".
- Are the screws in the magnetic rails for automatic program recognition tightly secured?
- Is the magnetic strip of the automatic program recognition feature free of attached metal objects?

Wash carts, baskets and inserts must be inspected in the course of the routine checks of the washer-disinfector after 2000 operating hours or at least once per year, see "Maintenance/Routine checks".
**Maintenance**

**Built-in printer (optional)**

A red indicator light behind the front panel of the printer will light up when the printer roll is finished. Regularly check how much paper is left on the roll. To change the paper roll do this:

- Open the front panel of the printer at the upper edge and then pull it downwards.
- Remove the empty paper roll and spindle together from the holder, fit the new roll onto the spindle and put back in place.
- Guide the paper up and over the paper transport roller (slit behind the ribbon cartridge). Press the grey paper transport button until the paper re-emerges above the ribbon cartridge.
- Guide the paper through the slit in the front panel. Shut the panel.

Replacement paper rolls (58 mm wide / outer diameter approx. 50 mm) can be purchased from Miele.

**Replacing the paper roll**

**Replacing the ribbon cartridge**

- Open the front panel of the printer at the upper edge and then pull it downwards.
- The ribbon cartridge is above the paper roll. Pull it forward and out of the holder and replace it with a new one. The paper must be guided between the ribbon and the cartridge housing.
- Turn the small wheel on the right for manual ribbon transport clockwise until the ribbon is taut.
- Guide the paper through the slit in the front panel. Shut the panel.

Replacement ribbon cartridges can be purchased from Miele.
After sales service

⚠ Repairs should only be carried out by Miele Service. Unauthorized or incorrect repairs could cause personal injury or damage the machine.

To avoid unnecessary service call-outs, check that the fault has not been caused by incorrect operation when an error message first appears.

An overview of all error messages that can appear in the display is given in the Programming Manual under "Messages".

If a fault occurs and cannot be corrected using the advice in the Operating Instructions and Programming Manual, please contact Miele Service.

The telephone number of the Miele Service can be found on the back cover if these operating instructions.

When contacting Miele Service, please quote the model and serial number of your washer-disinfector. These are located on the data plate (see "Electrical connection").
Converting the type of heating

Converting from steam to electric heating or from electric to steam

If your machine is convertible, you can change the type of heating using the STEAM >>ELECTRO or ELECTRO >>STEAM service program.

- Select STEAM >>ELECTRO or ELECTRO >>STEAM (see Operation / B. Free program selection).

- Press the Start button .

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

- To confirm >CONTINUE< press .
Electrical connection

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

- The electrical installation must be in compliance with current local and national safety regulations.
- The plug connection must comply with national regulations, the socket must be accessible after the machine has been installed. This is to facilitate access for safety checks, for example when the machine is being commissioned or serviced.
- For hard-wired machines, connection should be made via a suitable mains switch with all-pole isolation. The contact opening between all open contacts must be at least 3 mm wide and the mains switch must be lockable in the open position.
- An equalization of the potentials should be carried out.
- For technical data, see the data plate or the attached wiring diagram!
- For increased safety, it is recommended to protect the machine with a 30 mA residual current device (RDC).
- The rotational direction of motorized power units depends on the electrical connection of the washer-disinfector. Connect the washer-disinfector in phase with clockwise rotating field.

Further notes on electrical connection are given on the Installation diagram supplied with the machine.

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

The data plate showing relevant test marks is located on the cover plate behind the service panel on the unclean side of the machine.

The wiring diagram is supplied with the machine.

WARNING

THIS APPLIANCE MUST BE EARTHED
Electrical connection

Electromagnetic compatibility

The machine has been tested for electromagnetic compatibility in accordance with EN 61326-1 and is suitable for operation in commercial environments, such as hospitals, medical practices and laboratories and other similar environments which are connected to the mains power supply.

The machine's HF emissions are very low and are therefore unlikely to interfere with other electronic appliances in the vicinity.

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

The quality of the power supply should comply with that found in a typical commercial or hospital environment and should deviate from the nominal voltage by a maximum of +/- 10 %.
Water connection

⚠ Please refer to the installation diagram supplied with the machine.

– The water supply must at least meet the standards for drinking water. A high iron content can leave a rust film on items being cleaned and the machine itself. When the chloride content in the water supply is above 100 mg/l, the risk of corrosion damage to items being cleaned is greatly increased.

– In certain regions (e.g. mountain regions) the water composition may cause precipitates to form, requiring the use of softened water for the steam condenser.

– The machine is designed for connection to cold, hot and DI water. If there is no hot water supply, the intake valve for the warm water connection should be connected to the cold water supply.

In the Water intake program phase two valves can be controlled in parallel to shorten the program duration.
## Technical data

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Height</td>
<td>2000 mm (space required)</td>
</tr>
<tr>
<td>Height incl. steam condenser</td>
<td>2400 mm (space required)</td>
</tr>
<tr>
<td>Width</td>
<td>900 mm</td>
</tr>
<tr>
<td>Depth</td>
<td>750 mm</td>
</tr>
<tr>
<td>Depth with door open</td>
<td>1485 mm</td>
</tr>
<tr>
<td>Useable cabinet dimensions H/W/D</td>
<td>683/541/610 mm</td>
</tr>
<tr>
<td>Weight (net)</td>
<td>Approx. 505 kg</td>
</tr>
<tr>
<td>Operating weight</td>
<td>Approx. 665 kg</td>
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<tr>
<td>Voltage</td>
<td>see data plate</td>
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<tr>
<td>Connected load</td>
<td>see data plate</td>
</tr>
<tr>
<td>Fuse rating</td>
<td>see data plate</td>
</tr>
<tr>
<td>Compressed air connection</td>
<td>600 kPa (required for steam operation)</td>
</tr>
<tr>
<td>Steam connection with electric drying unit</td>
<td>250 - 1000 / 140 - 180 kPa / °C</td>
</tr>
<tr>
<td>Steam drying unit</td>
<td>250 - 600 / 140 - 164 kPa / °C</td>
</tr>
<tr>
<td>Water pressure (flow pressure)</td>
<td>200 - 1000 kPa overpressure</td>
</tr>
<tr>
<td>Cold, hot, and deionized (DI) water</td>
<td>70max. °C</td>
</tr>
<tr>
<td>Ambient temperature</td>
<td>5 °C - 40 °C</td>
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<tr>
<td>Relative humidity maximum linear decreasing to</td>
<td>80% for temperatures up to 31°C</td>
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<tr>
<td></td>
<td>50% for temperatures up to 40°C</td>
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<tr>
<td>Altitude above sea level</td>
<td>up to 1500 m #</td>
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<tr>
<td>Degree of soiling (as per IEC/EN 61010-1)</td>
<td>P2</td>
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<tr>
<td>Overvoltage category (according to IEC 60664)</td>
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<tr>
<td>Ingress protection (as per IEC 60529)</td>
<td>IP20 (dust penetration)</td>
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<td>Noise level in dB (A),peak LpA for cleaning and</td>
<td>&lt; 70</td>
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<tr>
<td>drying cycles</td>
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<td>Certifications</td>
<td>CSA, Health Canada registered Class II</td>
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<td></td>
<td>Medical Device, radio interference protection,</td>
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<td></td>
<td>EN ISO 15883 Part 1 and 2 (CSA Z15883 Part 1</td>
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<tr>
<td></td>
<td>and 2)</td>
</tr>
<tr>
<td>CE-mark</td>
<td>MPG Guidelines - 93/42/EEC, Class IIb</td>
</tr>
<tr>
<td>Manufacturer’s address</td>
<td>Miele &amp; Cie. KG, Carl-Miele-Straße 29,33332</td>
</tr>
<tr>
<td></td>
<td>Gütersloh, Germany</td>
</tr>
</tbody>
</table>

** At a steam pressure of 250 - 300 kPa, the drying unit reaches a maximum drying temperature of 90 - 100°C.

# If installed at altitudes above 1500 m the boiling point of the suds solution will be lower. Disinfecting temperature parameters should be lowered and the holding time increased (A0 value).
Optional equipment

Options:
- Drying unit
- Steam condenser
- Report printer
- Dispensing systems DOS 2 and DOS 4
- OXIVARIO retrofitting kit

Water softener
If your tap water hardness is > 4 gr/gal, you should plan to install a water softener. The "PG 8597 Aquasoft system" is suitable (up to 40 gr/gal).
Optional feature

Optional feature OXIVARIO

Intended use
This washer disinfector can be set up or retro-fitted to use the OXIVARIO process by adding two additional dispenser pumps together with a buffer tank for hydrogen peroxide solution $\text{H}_2\text{O}_2$. The DOS 2 dispenser is used for the $\text{H}_2\text{O}_2$ solution.

The OXIVARIO and OXIVARIO PLUS programs are available for this process.

The OXIVARIO process releases active oxygen under alkaline conditions. The cleaning agent used must be tenside free and have a pH value of between 11 and 11.5.

Areas of application

The OXIVARIO process has an alkaline main wash making it particularly suitable for the reprocessing of surgical instruments where existing procedures are not satisfactory.

This process is especially suited for reprocessing surgical instruments, e.g. those used in high frequency surgery, orthopaedic surgery as well as for instruments which have dried out during long delays until reprocessing, and for instruments affected by antiseptics.

The OXIVARIO PLUS process is designed to prevent iatrogenic prion transmission (vCJD - variant Creutzfeldt-Jakob disease).

The cleaning processes are gentle enough for minimally invasive instruments, including fibre optics, as long as the manufacturer has approved alkaline cleaning methods for them.

However, these processes are not suitable for anodized aluminum. The materials in titanium alloys, e.g., implants, may vary in terms of material compatibility. Colour-coding can change, resulting in errors. Consult the manufacturer of the items for verification.

⚠️ The processes clean so thoroughly that, to prevent damages, instruments with metal surfaces sliding across each other (e.g. scissors, forceps) must be carefully attended to with suitable medical grade lubricant immediately following reprocessing.
Warning and Safety Instructions

⚠️ These warning and safety instructions are in addition to those given at the beginning of this booklet.

- **H₂O₂ solution** must only be used in special containers from "Dr. Weigert", with the matching adapters.
- Always comply with the safety instructions (material safety data sheets) from the manufacturers of the process chemicals.
- Be especially careful when handling H₂O₂ solution. It is a corrosive chemical. Always comply with all applicable safety regulations! Protective eyewear and gloves must be worn.
- Empty containers must be disposed of in accordance with the manufacturer's instructions.
- H₂O₂ solution must not be mixed with any other chemicals. This could cause a violent chemical reaction, such as flash fire.

Connecting the H₂O₂ container

The connection hose for the H₂O₂ solution container is identified by a black label.
The connection hose is supplied without an adapter as extraction systems for hydrogen peroxide container will vary depending on supplier.

- Connect the appropriate adapter from the manufacturer to the (black) connection line.
- Connect the H₂O₂ container.
- Start the DOS2-FILL service program.

⚠️ Unlike with other processing chemicals, the H₂O₂ solution container must be fully emptied before it is exchanged for a new one.

Do not replace the H₂O₂ solution container with a new one until the FILL DOS 2 CONTAINER message is displayed. After connecting the new container you must run the DOS2-FILL service program. If the CHECK DISPENSING SYSTEM 2 message appears you should check the container as well as the dispensing system. The program automatically pauses for this.
Disposing of your old appliance

Old electrical and electronic equipment often still contain valuable materials. However, they may also include harmful substances that were essential for proper functioning and safe use. Improperly disposing of these items in your household waste can be harmful to your health and the environment. Therefore, please do not dispose of your old appliance in your regular household waste.

Instead, use your local community waste collection and recycling centre for electric and electronic appliances.

Ensure that your old machine presents no danger to children while being stored for disposal.
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