TopClean 60

Multiwasher

Original operating instructions

For the types in the series: **M002CDUC10M2-30-MU**

EN

Before using the machine, read carefully the operating instructions, the product description and the safety instructions.

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Contents

1 Notes on the operating instructions

The operating instructions as well as the applicable documents must be read before the first commissioning, kept for later use, and must be accessible to the operator at all times. Failure to observe the operating instructions may result in damage to persons and property.

These operating instructions can be downloaded via the following address: **www.meiko.com** or https://partnernet.meiko-global.com.

1.1 Product identification

These operating instructions apply to the following machine type:

Multiwasher **TopClean 60:**

M002CDUC10M2-30-MU

1.2 Delivery contents

The delivery contents include:

- Multiwasher TopClean 60
- Connection hoses for fresh water and waste water
- Documentation

Optionally available:

- Racks, as per rack range

1.3 Related documents

The following documents provide additional information to these operating instructions:

- Dimension sheet
- Wiring diagram
- Installation instructions for optional components (e.g. GiO MODULE)

2 Declaration of conformity

This section reproduces the content of the EC/EU Declaration of Conformity for the product. The signed EC/EU Declaration of Conformity with serial number is enclosed with the product.

We hereby declare under our sole responsibility the conformity of the product with the essential requirements of this EC Directive:

- 2006/42/EC Machinery Directive, OJEU L157/24

Furthermore, we declare the conformity of the product with the following EU directives:

- 2014/30/EU Directive on Electromagnetic Compatibility, OJEU L96/79, 29/03/2014
- 2011/65/EU Directive on the restriction of the use of certain hazardous substances in electrical and electronic equipment, OJEU L174/88, 01/07/2011
- The safety objectives set out in the Low Voltage Directive 2014/35/EU *(OJEU L96/357, 29/03/2014)* were met in accordance with Annex I, No. 1.5.1 of the Machinery Directive.

3 Safety

Read and observe all safety information, instructions and symbols attached on the product. Improper use may result in damage to the product or danger to the user.

3.1 Symbol explanation

3.1.1 Notes in the instructions

Warnings

⚠ Danger

Short description of the danger:

The signal word **DANGER** designates an immediately threatening danger.
Failure to observe this leads to very serious injuries or death

⚠ Warning

Short description of the danger:

The signal word **WARNING** designates a possible danger.
Failure to observe this can lead to very serious injuries or death.

⚠ Beware

Short description of the danger:

The signal word **BEWARE** designates a possible danger.
Failure to observe this can lead to minor to medium injuries.

Application information

Caution

Short description:

The signal word **Caution** designates a possible danger.
Failure to observe this can lead to damage to the machine or system.

Note

The signal word **Note** designates further information on the machine / system or its application.

3.1.2 Safety symbols in the instructions

The following note and danger symbols are used both in the document and on the machine. Observe these symbols and signs on the machine to avoid personal injury and material damage!

The symbols have the following meanings:

Symbol	Meaning
	Warning of hazardous areas
	Warning of dangerous electric voltage
	Warning of the danger of hand injuries Caution, keep hands away from parts that bear this warning symbol. The danger exists that hands can be crushed, pulled in or otherwise injured.
	Warning of hot surfaces and liquids
	Warning of the machine falling over
	Warning of environmental damage
	Do not spray with water
	No drinking water
	Access prohibited for persons with pacemakers
	Eye protection must be used or protective glasses must be worn
	Hand protection must be worn
	Read the operating instructions
	Disconnect before servicing or repair
	Potential equalisation connection

3.2 Requirements for the personnel

Commissioning, instructions, repairs, maintenance, assembly and installation of or on MEIKO products may only be carried out/authorised by authorised service partners.

During operation it must be ensured that:

- Only adequately trained and instructed personnel are allowed to work on the machine.
- Personnel responsibilities for operation, maintenance and repairs must be clearly defined.
- Any personnel undergoing training are only allowed to work on the machine under the supervision of an experienced person.

Qualified personnel as defined by this document are persons who:

- Over 14 years of age.
- Due to their training, experience and instruction are able to perform the required activities.
- Are authorised to perform the required activities by the person responsible for safety of the system.
- Have read and understood the operating instructions and corresponding safety information and will follow them.

The required qualifications for performing specific work at the machine are determined by MEIKO:

Personnel **Activity**	**Trained operating personnel**	**In-house technician authorised by MEIKO**	**Service technician authorised by MEIKO**
Operation, use	✓	✓	✓
Cleaning	✓	✓	✓
Checking safety devices		✓	✓
Troubleshooting	✓	✓	✓
Error clearance, mechanical	✓	✓	✓
Error clearance, electrical		✓*	✓
Maintenance		✓	✓
Repairs		✓	✓

* with training as an electrician

3.3 Residual risks

Phase	Activity	Nature of the hazard	Avoidance measure
Transport and assembly	Loading and unloading with forklift truck	Crushing/impact	• Load-bearing capacity of the forklift truck must be adequate for the weight of the machine • Please note the machine's centre of gravity • Secure to prevent slipping
	Deposit at the installation site	Crushing/impact	• Ensure that the ground beneath is capable of taking the load • Ensure that the machine cannot tip
	Install electrical connections	Electric shock	• Only skilled personnel may connect up the machine • Adhere to the accident prevention regulations
	Install separate GiO MODULE (optional)	Tripping/falling/crushing	• We recommend fastening the GiO MODULE to the wall/table/machine • Mount freestanding module using solid base • If needed, run module at 90 degrees (lying)
Commissioning	Fill with detergent/rinse aid	Eye injury/health risks	• Wear safety eyewear/gloves • Avoid contact with skin and eyes
	Activities in the machine	Hand injuries on sharp edges	• Wear protective gloves
Operation	Programme is running	Contact with hot water	• Do not open door during programme run
	Loading and unloading the machine	Trapping of hand	• To open/close the machine door, use the handle provided for this purpose with both hands.
		Broken crockery causing cuts/severing	• Wash washware in the specially designed rack in the machine • Place small items in the appropriate rack inserts • Washware must not come into contact with rotating parts of the machine
		Risk of snagging with loose clothing or items of jewellery	• Wear suitable work clothing and sturdy shoes • Do not wear rings, necklaces or other pieces of jewellery
		Slipping	• Use non-slip floor coverings
		Contact with hot water and hot machine parts	• If necessary, allow washware to cool down • If necessary, allow machine components to cool down before touching • Do not remove tank cover sieve while appliance is in operation • Protective gloves recommended
	Other activities	Injury through standing or sitting on the open machine door	• Ensure that nobody sits or stands on the door
		Swallowing of water in the wash chamber	• Do not use the water in the wash chamber for food preparation or drink it
	Independent changes to chemical dosing	Breathing difficulties/suffocation	• Only allow specialist personnel to adjust dosing
	Refilling detergent/rinse aid	Tripping/falling over open dosing cover	• Close dosing cover as soon as refilling is complete
		Eye injury/health risks	• Wear safety eyewear/gloves • Avoid contact with skin and eyes

Phase	Activity	Nature of the hazard	Avoidance measure
Maintenance and cleaning	Any maintenance work	Electric shock	• Before opening the housing parts, ensure the mains switch has been disconnected and secured so that it cannot be turned on again • Only specialist personnel may carry out maintenance work
	Cleaning or maintenance	Tripping/falling over open door	• Always close door after use
		Contact with hot water and hot machine parts	• Allow machine components to cool down before touching • Wear protective gloves
		Hand injuries on sharp edges	• Wear protective gloves
	Cleaning	Poisoning	• Do not use aggressive cleaning or scouring agents • Only use descaling products suitable for commercial machines • Wear protective gloves
	GiO MODULE: replace filter cartridge	Water escaping	• Provide suitable vessel (e.g. base drip tray)
Dismantling and disposal	Dismantling	Eye injury/health risks	• Wear safety eyewear/gloves • Avoid contact with skin and eyes • If needed, clean hoses, dosing system and machine parts with fresh water
	Loading and unloading with forklift truck	Crushing/impact	• Load-bearing capacity of the forklift truck must be adequate for the weight of the machine • Please note the machine's centre of gravity • Secure to prevent slipping

3.4 Intended use

The machine is to be used only for commercial cleaning and disinfecting of various washware. The washware differs depending on the process used.

Washware TopClean 60 with thermal process (A0 60):

- operating theatre boots (thermostable)
- flower vases
- trays
- wash bowls
- buckets
- toys

Washware TopClean 60 with chemo-thermal process:

- thermolabile utensils in general
- operating theatre boots (thermolabile)
- face masks for training dummies

The washware must be suitable for thermal or chemo-thermal cleaning.

The multiwasher is not intended for cleaning or disinfection of medical devices!

Suitable cleaning chemicals and their dosing must be agreed with the chemical supplier.

The machine may only be operated by trained personnel.

Only operate the machine when it is in perfect working order.

Only operate the machine within the limits specified in the ambient conditions.

Only use original spare parts from the manufacturer. This is the only way to guarantee perfect function and safety.

The machine is not authorised for operation in a potentially explosive environment.

Assembly, installation and repair may only be carried out by authorised specialists. Changes or conversions are not permitted.

3.5 Foreseeable misuse

- Cleaning electrical appliances.
- Cleaning textiles.
- Cleaning living creatures.
- Cleaning / preparation of food
- Cleaning ferrous, non-corrosion-resistant objects (steel sponges, gratings, etc.).
- Only clean aluminium parts with a suitable cleaner.
- Cleaning wooden objects.
- Cleaning plastic parts that are not heat- and alkali-stable.
- Heating objects or keeping them warm (hot water bottles, pre-packaged food, etc.).
- Use of incorrect or non-approved process chemicals
- Filling of other liquids into the canisters of the process chemicals.
- Using hand dishwashing detergent for pre-cleaning.
- Filling the machine from an external source (e.g. with a shower).
- Disposing of dirty water via the machine (e.g. from a cleaning bucket).
- Standing or sitting on machine parts or using the machine as a climbing aid.

3.6 Fundamental safety and accident prevention regulations

Note

The following safety instructions aim to protect operating personnel as well as third parties and the multiwasher itself.
Observe the instructions in these operating instructions and the signs on the multiwasher.

Safety can only be guaranteed during operation if all necessary measures are taken.

The operator of the machine has an obligation of care to ensure that these measures are planned for and also to check that they are correctly implemented.

The operator must ensure in particular that:

- the Multiwasher is only used as intended. In the event of the machine being used or operated contrary to this, damage or risks may arise.
- in order to guarantee functionality and safety, only original spare parts supplied by the manufacturers may be used.
- the safety of the multiwasher is not impaired by the subsequent installation of a dosage facility.
- only appropriately qualified and authorised personnel may use, maintain, and repair the multiwasher.
- no one sits or stands on the open door.
- staff are regularly trained in all questions relating to occupational safety and environmental protection and are familiar with the operating instructions and, in particular, the safety information that they contain.
- the area around the machine is assessed with reference to the risk to other people, e.g. children, people with physical, sensory or mental impairments, people lacking in knowledge or experience. In case of doubt, special optional initiation functions other than conscious, intentional operation (i.e. operation from the screen) are to be deactivated.
- the multiwasher is only operated in perfect, functional condition, all protection devices and covers are installed.
- the safety and switching equipment is regularly tested to ensure it is functioning correctly.
- the required personal protective equipment is made available to and worn by maintenance and repair personnel.
- a functional test on all safety systems of the device/installation is carried out during all regular maintenance.
- none of the safety and warning notices affixed to the multiwasher itself are removed and all are legible.
- upkeep (maintenance and inspection) is carried out on optional vendor parts according to the requirements in the corresponding instructions.
- following installation, commissioning and handing over of the multiwasher to the customer/operator, no modifications are made (e.g. electrical or mechanical machine components).
- an uninterrupted energy supply is required for the professional operation of a multiwasher. Use of an on-site performance optimisation system is not permitted , as switching off water heaters leads to temperature reductions and it cannot be guaranteed that the washing and hygiene result will be achieved.

Information on operating the multiwasher:

- only operate the multiwasher under the supervision of trained personnel.
- do not use the multiwasher if you are unsure about its operation.
- always close all doors and flaps.
- after use, turn off the machine at the on-site mains isolator. This is located in the electricity supply pipe for the machine.
- wear suitable work clothing.
- wear suitable protective gloves when working on the multiwasher.
- allow machine components and washware to cool down before touching.

Information on the use of detergents/disinfectants and rinse aid:

- only use detergents/disinfectants and rinse aid that are suitable for the thermal and chemo-thermal cleaning disinfection process.
- Please contact the manufacturers of these products for information.

Detergents/disinfectants and rinse aid can be hazardous to health. The cleaning water used during operation contains chemicals.

- Never drink cleaning water.
- If cleaning water is swallowed, consult a doctor immediately.
- Pay attention to the manufacturer's hazard statements on the original canisters and safety data sheets.
- When handling chemicals, wear appropriate protective gloves and safety eyewear.
- Do not mix up detergent/disinfectant and rinse aid.
- Ensure that the suction connections for the multiwasher are correctly connected to the canisters.

Information on the use of descaling agents

Residue from descaling agents can cause damage to the plastic components and sealing materials in the machine.

- Please contact the manufacturers of these products for information.
- Please observe the manufacturer's hazard warnings.
- Thoroughly remove any residue after use.

Information on cleaning the machine

In multiwashers, foam can cause malfunctions and a poor cleaning result.

- Do not use a foaming hand dishwashing detergent for pre-cleaning or for cleaning the machine.
- allow machine components and washware to cool down before touching.

Information on cleaning the surrounding area

When cleaning the surrounding area, the machine can be damaged by aggressive external influences (steams, detergents) or the ingress of water.

- Do not use aggressive detergents (e.g. aggressive tile cleaner).
- If installed at ground level, never allow the surrounding area to flood.

Notices on electrics and electronics

There is a danger to life if exposed parts and damaged supply lines under electrical voltage are touched.

- Please take note of the warning notices in these instructions and the signs on the cleaning and disinfection machine.
- Whenever you are working on electrical components in the machine, ensure that electrical connections are physically secure.
- Whenever you are working on electrical components in the machine, check wires and cables for any potential damage and replace, if necessary.

Incorrect cleaning can cause damage to the electronics.

- The multiwasher, control cabinets and other electrical components must never be sprayed with a hose or high pressure cleaner.
- Make sure that no water can enter the machine unintentionally.

Notice on non-ionising radiation

Non-ionising radiation is not produced intentionally but unfortunately comes about due to electrical operating equipment (e.g. electrical motors, high-voltage cables and magnetic coils). In addition, the machine has no strong permanent magnet.

3.7 What to do in the event of an emergency

- In dangerous situations, disconnect from the power supply using the locally available mains isolator.

4 Product description

4.1 Functional description

The multiwasher is a cleaning and disinfection machine with a square rack.

The washer-disinfector has a cleaning, disinfection and a final rinse cycle.

A temperature controller maintains the set cleaning and disinfection temperature within one cycle. A circulation pump pumps the wash water from the water tank into the wash nozzles. The water jets hit the wash items from different directions. This ensures uniform cleaning results.

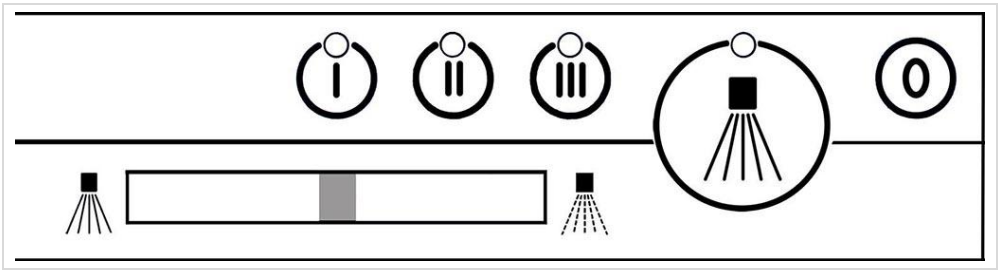
The cleaning cycle is followed by a fresh water final rinse. The washware are rinsed with hot fresh water via a separate nozzle system. This heats up the washware for the following drying process.

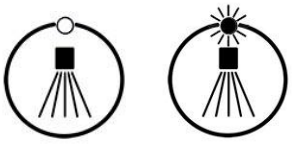
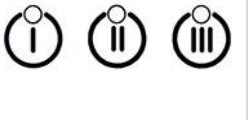
At the same time, the final rinse water is used to regenerate the wash water, which reduces the degree of soiling of the rinse water.

The multiwasher TopClean 60 is available in 2 versions with different disinfection processes:

- Thermal disinfection with an A0 value of 60 for most medical uses
- With a chemo-thermal disinfection with defined chemicals especially for thermo-labile utensils

4.2 Membrane key pad



	Programme start key with light • Start programme cycle • Lights up: Programme cycle is running • Flashing: Self-cleaning programme / drain programme is running
 	Programme keys 1-3 with light • Any key switches the machine on • Programme selection • Lights up: Machine ready for operation, programme selected • Flashes: Machine is made ready for operation.
	Off key • Programme interruption • Switch off the machine

Display

	• Temperature Cleaning/Disinfecting
	• Rinse temperature

4.3 Type label

The rating plate is on the outside of the front panel. Additional rating plates are located on the control box behind the front panel and on the separate GiO MODULE (if it is part of the cleaning and disinfection appliance).

4.4 GiO MODULE

The module works according to the principle of reverse osmosis. Drinking water is pressed by a pump through a semi-permeable membrane. The membrane lets only water molecules through. The hardness components and salts (lime scale, etc.) contained in the water are held back. The clean water (permeate) is brought to the machine; the materials held back (concentrate) are brought to the drain.

4.5 Blue operating concept

1 AktivPlus filter

The parts of the cleaning and disinfection machine that must be touched by the operator in operation and in daily use are blue. And so after a short briefing, operators know intuitively that they have to remove and clean the wash system, tank cover sieve and filter, for example.

4.6 Cleaning programmee

Button	Meaning	Washware
	Short programme Cleaning programme I	Lightly soiled washware
	Normal programme Cleaning programme II	Normally soiled washware
	Water change programme Cleaning Programme III	Heavily soiled washware

Programme assignment

The programme assignment varies depending on the machine type, electrical connection and water supply. The programme configuration is shown in the following table.

Programme table TopClean 60 standard

No.	Setpoint boiler temperature	Setpoint cleaning time	
		Cleaning	Total
	[°C]	[s]	[s]
1	83	71	90
2	83	101	120
3	83	221	240
4	65	71	90
5	83	141	160
6	83	161	180
7	83	191	210
8	83	341	360
9	65	101	120
10	65	141	160
11	65	161	180
12	65	191	210
13	65	221	240
14	65	341	360
15	85	71	90
16	85	101	120
17	85	141	160
18	85	221	240
19	85	341	360
20	83	251	270
21	83	281	300
22	83	311	330
23	83	341	360
24	83	371	390
25	83	401	420
26	83	431	450
27	83	461	480
28	83	491	510
29	83	521	540
30	83	71	90 (WW)
31	83	101	120 (WW)
32	83	131	150 (WW)
33	83	161	180 (WW)
34	83	191	210 (WW)
35	83	221	240 (WW)
36	83	251	270 (WW)
37	83	281	300 (WW)
38	83	311	330 (WW)
39	83	341	360 (WW)
40	83	371	390 (WW)

WW = Water change programme (option)

Programme table TopClean 60 especially for face masks

No.	Setpoint boiler temperature	Setpoint cleaning time	
		Cleaning	Total
	[°C]	[s]	[s]
Chemo-thermal disinfection process			
1	59	335	360
2	59	515	540
3	59	655	720 (WW)
Disinfection process with the A_0 control system			
23	83	341	360
27	83	461	480
39	83	341	450 (WW)

WW = Water change programme

Note

The concentration of the rinse aid in the water remains constant: if the rinse time is changed, the dosage amount of the rinse aid changes correspondingly.

4.7 Detergent and rinse aid

Warning

Risk of injury from contact with chemicals

- Observe the safety data sheets and dosing recommendations of the chemical manufacturers.
- Use eye protection.
- Wear protective gloves.
- Do not mix different chemical products.

The cleaning and disinfection machine is equipped by default with dosing units for dosing liquid detergent/disinfectant and rinse aid. Manual dosing with powder cleaner is not intended.

Approved products:

	Process	
	thermal	chemo-thermal
Rinse aid	MEIKO ACTIVE KS N	MEIKO ACTIVE KS N
Detergent/ disinfectant	DOYEN® RF 90	EW 80 mat

4.7.1 Detergent

Detergents are alkaline (pH value should be > 7) and are needed to dissolve soiling from the washware. If necessary, the concentration can be adjusted depending on the water quality, washware and degree of soiling. This setting is made during commissioning by an service technician authorised by MEIKO or the chemical supplier.

Change dosing quantity, see page 42.

4.7.2 Rinse aid

Rinse aids are acidic (pH value should be between 2 and 7) and accelerate the drying of the washware by reducing the surface tension of the water so that it can run off the washware quickly.
The correct dosage is achieved when the water drips evenly from the washware and depends on the available water quality on-site. This setting is made during commissioning by an service technician authorised by MEIKO or the chemical supplier.

Change dosing quantity, see page 42.

4.7.3 Dosing equipment

The components of the dosing units are subject to high demands and must therefore be regularly maintained and, if necessary, replaced in accordance with the maintenance specification.

4.7.4 Suction lances

Suction lances with level monitoring for rinse aid (blue) and detergent (grey)

Suction lances ensure that the liquid chemical product is sucked in correctly. Suction lances are inserted vertically into the canisters and are optionally equipped with level monitoring. When the canister is running low, a message will appear on the machine display.

4.7.5 Change of products

⚠ Caution

When changing the detergent product (even to a product from the same manufacturer), crystallisation may occur, which can lead to failure of the dosing system.

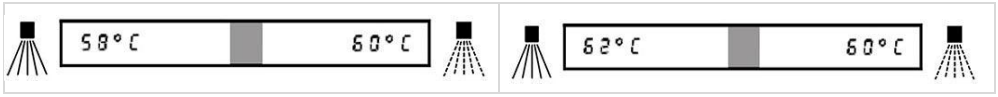
- When changing the detergent product, flush the dosing system with warm water.

Procedure for changing the detergent product:

1. Provide a suitable container with warm water and insert the suction lance.
2. Thoroughly flush the dosing system several times by **venting the lines,** see page 41.
3. Wipe the suction lance and put it into the canister with the other detergent product.
4. Refill the dosing system by **venting the lines**.

In addition, observe the instructions of the manufacturer of the chemicals and the respiratory protective equipment. This applies in particular to the conversion from manual to mechanical processing.

4.8 Chemo-thermal disinfection method



The tank temperature falls when the programme begins, depending on the items being cleaned. The set programme cycle time can be exceed by the time it takes to reach the prescribed disinfection parameters. Due to the technical hysteresis, the temperature of the wash water can reach 62°C for a short time. This ensures that 60°C prevails continuously on the washware.

4.9 Thermal disinfection with A_0 process

Note

The standard factory setting is A_0°60.

The tank temperature falls when the programme begins, depending on the items being cleaned. The set programme cycle time can be exceed by the time it takes to reach the prescribed disinfection parameters.

- The tank temperature during washing is up to 74 C.
- The value A0 is shown on the display.
- For tank temperatures of 65 C or higher, each tank temperature is assigned a factor.
- Using the measured tank temperature, a value is determined and added every second until the hygiene value **A_0 60** is reached.
- The programme cycle runs until the end of the programme cycle time, but at least until the hygiene value is reached. After this comes a pause for draining and the final rinse.

5 Technical data

Ambient conditions		
Operating temperature		5°C ... 40°C
Relative humidity		< 95%
Storage temperature		5°C ... 40°C
Maximum height of the installation site above sea level		2000 m
Net weights		
Variant/options		**Machine**
TopClean 60		73 kg
+	GiO MODULE reverse osmosis	23 kg
Noise emission		
Emission sound pressure level at the workplace		≤70 dB (A)

Further data should be taken from the MEIKO dimension sheet.

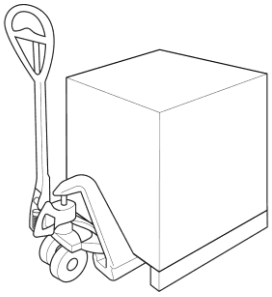
6 Transport

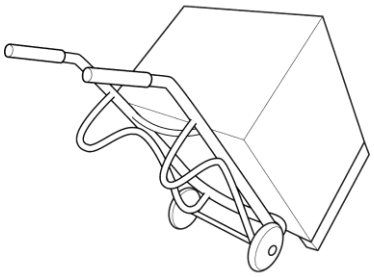
⚠ Warning

Danger of injury due to machine tipping

- Only qualified personnel may carry out transport works.
- Please note safety notices on the packaging.
- Always transport the machine on a wooden frame only.
- Wear protective gloves and safety shoes.

The packaging is specifically designed to allow the appliances to be moved safely and securely using a pallet jack or a sack truck. For safe transport, the cleaning and disinfection machine is supported by a special square timber frame.





- Transport with care.
- Open packaging using a suitable tool.
- Only unpack the cleaning and disinfection machine after transportation.

6.1 Disposal of packaging materials

All the packaging materials are recyclable. The following materials are used:

- Square timber frame
- Plastic sheeting (PE film)
- Foam material
- Cardboard packaging (edge protection)
- Packaging strap (steel strip)
- Packaging strap (plastic (PP)
- If needed, transport safety bracket (stainless steel)

7 Assembly

⚠ Warning

Danger of injury from entering a danger zone

Unauthorised persons might be in or enter the danger zone during transport, assembly, commissioning, maintenance and repair work. This can lead to injuries.

- Only permit qualified persons to perform work at the machine.
- Remove unauthorised persons from the danger zone.
- Cordon off danger zone and signpost it for third parties.
- Never remove or disable safety devices on the machine.
- Always wear cut-resistant protective gloves when removing housing parts and when working inside the machine!

7.1 Prerequisites for assembly

7.1.1 Checking the condition at delivery

- Check that the delivery is complete immediately after receiving it by comparing it with MEIKO's order confirmation and/or the delivery note.
- If applicable, submit a claim for any missing parts immediately to the freight forwarder and notify MEIKO.
- Check the machine for transportation damage.

Note

If there is any suspicion of transportation damage, the shipping company and MEIKO must be informed immediately in writing. Photograph any damaged parts and send the pictures to MEIKO.

7.1.2 Requirements for the installation area

The cleaning and disinfection appliance is only frost-proof in as-delivered state or if equipped with special features (option: frost drainage).

Installation of the cleaning and disinfection machine in an area where the ambient temperature is below 0° C can result in damage to the internal water circuit components (e.g. pump, solenoid valve, boiler, etc.).

- Make sure that the storage and installation site are always frost free.
- Make sure that the ground beneath is capable of taking the load, level and horizontal.

There is a danger of slipping in the working area due to the use of water.

- After assembly, put in place non-slip floor coverings in the working area based on the general/location-specific safety regulations.

7.1.3 Requirements for the waste water connection

A waste water pump is integrated into the drain pump.

- Connect the drainage hose to the locally available waste water pipe.
  - **For Australia only:**

    The drain hose must be connected such that it is watertight with a drain fitting in accordance with AS 1589 AS 2887 and a sanitary waste water pipe or sanitary waste water fitting in accordance with AS / NZS 1260.
- Depending on the cleaning and disinfection machine application, a grease trap may be included, based on the general/location-specific regulations.
- For cleaning and disinfection machines with GiO MODULE, the maximum drain height must be considered (see dimensional drawing).

7.1.4 Requirements for the fresh water connection

For Australia and New Zealand only:
All work carried out must be in accordance with AS/NZS 3500.1!

Fresh water connections and their components must be carried out in accordance with local regulations, e.g. EN 1717/DIN 1988-100. The fresh water must be of the same quality as drinking water in microbiological terms. This also applies to processed water.

The basic model of the washer-disinfector features an air gap (type AA or AB as per EN 1717 or EN 61770). In the case of SVGW (Switzerland) and other countries, a type EA safety device (at least) is also required in front of the connection hose, depending on the machine version. Installation components and materials must be suitable and permitted in accordance with local regulations. A solenoid valve is integrated into the cleaning and disinfection machine's fresh water pipe. This, together with the leakage detector in the base drip tray in the subframe, ensures that in the event of a leak within the machine, the fresh water inlet is shut off.

Pressure range of the fresh water supply flow pressure upstream of the solenoid valve:

- Machines with air gap or pressure booster pump:
  60 – 500 kPa (0.6 – 5 bar)
- Machines with a safety device to prevent backflow:
  250 – 500 kPa (2.5 – 5 bar)

Maximum pressure

- Do not exceed maximum pressure of 500 kPa (5 bar).

Measures to ensure correct water pressure:

- If the minimum flow pressure is too low, increase the pressure using a pressure booster pump.
- If the maximum pressure is exceeded, limit the pressure using a pressure regulator.

Other measures:

- Ensure that no foreign iron particles can enter the appliance via the fresh water connection. The same also applies for contamination by other metal particles (e.g. copper shavings). Corresponding instructions are contained in the assembly plan.
- A dirt trap must be fitted in the fresh water supply to protect the solenoid valve.
- After the washer-disinfector has been unused for longer periods of time, drain the connection pipe and clean it before placing the machine in operation again.
- When replacing an old machine with a new one, make sure that the existing feed hose is exchanged for the new feed hose supplied with the machine.

7.1.5 Requirements to the electrical connection

Note

The wiring diagram is located behind the front panel of the machine. This must remain in the machine!
The rating plate with the electrical connected loads is located inside the front panel.

For Australia and New Zealand only:
All work carried out must be in accordance with AS/NZS 3000!

Electrical connection must be carried out in accordance with the locally applicable regulations (e.g. HD 60364-1/IEC 60364-1/VDE 0100-100) so the machine can be connected to the mains supply in accordance with the installer's regulations. However, national installer's regulations may differ. The machine and accessory appliances are intended for permanent connection to the on-site power supply and the on-site protective equipotential bonding and have been tested accordingly before being brought to market.

Fuse protection

- Set up the machine according to the local conditions and according to the rated current (see rating plate) as a separately fused circuit (final circuit). Take note of the available connection variants.
- The requirements for limiting voltage changes, fluctuations and flicker in accordance with IEC 61000-3-11 are fulfilled for this machine if the network has a current-carrying capacity of ≥ 100 A.

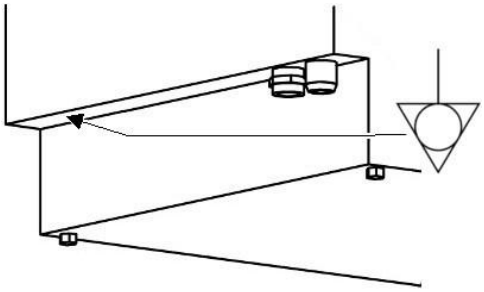
Main switch/mains connection cable

- Install a main switch with all-pole disconnection from the mains in accordance with the installer's regulations in the permanently installed on-site installation.
- The main switch must be easily accessible for the operating personnel.
- The contact opening width must correspond to overvoltage category III in each pole.
- Mains power cables, unless part of the standard product scope of supply, must be oil-resistant, sheathed, flexible cables no lighter than a normal polychloroprene-sheathed cable (or other equivalent synthetic elastomer) with the marking 60245 IEC 57.
- Mains connection cables may only be replaced by persons trained by MEIKO.

Electrical safety

- The electrical safety of this machine is only ensured if it is connected to a properly installed protective conductor system. It is very important to verify this fundamental safety feature. If in doubt, have the building wiring checked by an electrician.
- Carry out the protective measures as well as the connection of the equipotential bonding in accordance with the regulations of the local power supply companies as well as the locally applicable regulations.
- As an alternative to equipotential bonding, the operator can, acting on its own responsibility, use a mains-side residual current device (RCM or RCD) for personal protection. A type “A” according to IEC 60755 is sufficient.

Position of the protective equipotential bonding



The screw for the equipotential bonding is located on the back of the machine near the media connections.

7.2 Perform assembly

⚠ Warning

Danger of injury due to machine tipping

If machine is freestanding and not secured, it could fall over and cause crushing.

- If machine if freestanding, it must be secured long term to prevent tipping.
- Wear protective gloves and safety shoes.

Caution

Material damage due to steam emission

Small quantities of steam may escape through the cleaning and disinfection machine's door. It is possible that adjacent furniture may warp.

- Protect adjacent furniture from warping.
- If possible, avoid installing the machine in an area close to furniture susceptible to warping.

Note

Assembly may be performed **only** by a licensed and authorised service technician!

Assembly must be carried out in accordance with the installation drawing.

- Ensure the machine is level in both directions by using a water level.
- Compensate for an uneven floor by adjusting the foot studs (1).
- Table joints must be sealed with detergent-resistant sealing compound (e.g. silicone).
- Check that the machine is stable.

For disposal of packaging materials, see page 21!

8 Commissioning

⚠ Warning

Danger of injury from entering a danger zone

Unauthorised persons might be in or enter the danger zone during transport, assembly, commissioning, maintenance and repair work. This can lead to injuries.

- Only permit qualified persons to perform work at the machine.
- Remove unauthorised persons from the danger zone.
- Cordon off danger zone and signpost it for third parties.
- Never remove or disable safety devices on the machine.
- Always wear cut-resistant protective gloves when removing housing parts and when working inside the machine!

8.1 Check prerequisites for commissioning

Caution

Material damage due to steam emission

Small quantities of steam may escape through the cleaning and disinfection machine's door. It is possible that adjacent furniture may warp.

- Protect adjacent furniture from warping.
- If possible, avoid installing the machine in an area close to furniture susceptible to warping.

Prerequisites to be provided by the customer:

- Consistently frost free storage and installation area.
- Firm, level ground.
- Anti-slip floor coverings installed in the work area around the cleaning and disinfection appliance and/or cleaning combination.
- Electrical connection in accordance with the dimensional drawing.
- Fresh water connection in accordance with the dimensional drawing.
- Compressed air connection in accordance with the dimensional drawing.
- Waste water connection in accordance with the dimensional drawing.

8.2 Perform commissioning

Note

Instruction and initial commissioning may only be performed by an authorised service technician! The operator must not use the product before completing training.

Note

Instruction and initial commissioning may be performed **only** by an authorised service technician! The operator must not use the cleaning and disinfection appliance before completing training.
The recurring commissioning at a new installation site may only be carried out by an authorised in-house technician who has been trained by MEIKO to this effect.

To avoid damage or dangerous injuries during commissioning, please note the following points:

- Make sure that all tools and foreign parts are removed from the appliance.
- Make sure that any escaped fluids have been removed.
- For cleaning and disinfection appliances with GiO MODULE, attention must be paid to the "Commissioning certificate for GiO MODULES" and the instructions adhered to accordingly.

9 Operation/use

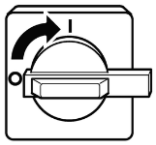
9.1.1 Preparing the cleaning and disinfection machine

Warning

Danger of injury from contact with chemicals

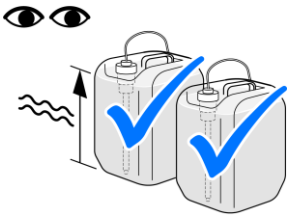
Detergent/disinfectant and rinse aid result in damage to health if in contact with skin or eyes or if swallowed.

- Use eye protection.
- Wear protective gloves.
- Contact a physician immediately if chemicals or water containing chemicals (clean water) are swallowed.



1. Switch on the power.

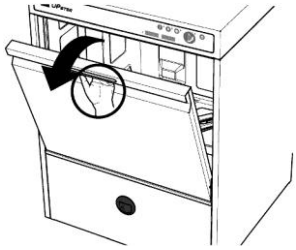
2. Turn on the tap.



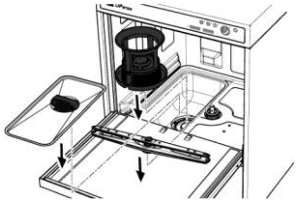
3. Check the canister fill level.

Note

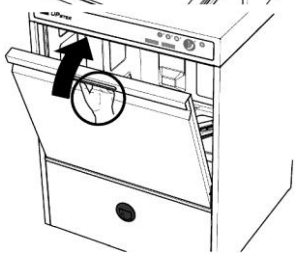
If there is air in the hoses, the automatic dosing will not function correctly. The relevant pipe must be vented, see page 41.



4. Open door.



5. Insert filter, tank cover sieve and wash systems.



6. Close door.

9.2 Switching on the machine

The washer-disinfector is closed and does not contain a rack.

1. Press **the programme key I, II or III**.

The washer-disinfector is filled and heated. During this time, the control light above the programme key flashes. The time required for the machine to be ready to operate depends on the temperature of the water supply and the installed boiler or tank heating capacity.

When the machine is ready to operate, the control light above the programme key is permanently on.

9.3 Cleaning

9.3.1 Rack range

Korb SK 500-1

for operating theatre boots (8 pairs per rack)

Universal rack SK 500

with mandrel (optional) for optimum loading with washware

Rack SKR 500-2

for trays

Base rack

with rack insert (optional) and hold-down grid (optional) for up to 8 face masks

Wire-mesh basket for small parts

with hinged lid for use in the SK 500 universal rack

(240 mm x 310 mm x 72 mm)

Insert rack for wire-mesh basket for small parts

with hinged lid for insertion into the wire-mesh basket for small parts

(100 mm x 280 mm x 50 mm, mesh size: 4 x 4 mm)

9.3.2 Instructions for loading the washware

The following fundamental principles must be observed when placing the washware in the racks:

TopClean 60 with thermal cleaning process:

- All hollow containers must always be loaded upside down. Otherwise the water will not be drained from the washware and drying will not be possible.
- Do not stack washware in the rack. Direct access to the wash water would be more difficult and the wash times would have to be unnecessarily long. Shorter cleaning with racks which are not overfilled is more economical.

TopClean 60 with chemo-thermal cleaning process:

- Special racks are provided for the masks. Place the masks and the small items in the intended positions in the racks.

9.3.3 Selecting the cleaning programme

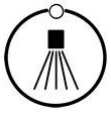
1. Press the required programme key.
   During the programme run, the wash chamber door is locked.

The control light of the selected programme key is on.

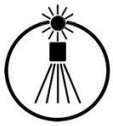
9.3.4 Starting the cleaning process

1. Preclean washware that is very dirty (coarse dirt residues, etc.) and insert into the rack.
2. Put the washware into the rack.
3. Open door.
4. Insert the rack into the washer-disinfector.

5. Ensure that the correct programme has been selected, see page 29.
6. Close door.



7. Press the **programme start key**.



The control light above the programme start key lights up. The washer-disinfector cleans and disinfects automatically and switches off the wash programme after completion.

The cleaning and disinfection time may differ from the set programme runtime if the programme runtime is not sufficient to heat up the boiler and tank water to the preset temperature. In this case, the cleaning cycle time is automatically extended. This means that the washer-disinfector runs until the required temperatures are reached, but max. 5 minutes.

The cleaning and disinfection programme starts and automatically runs through to the end of programme.
During the programme run, the wash chamber door is locked.

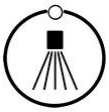
9.3.5 Removing the washware

⚠ Caution

Danger of burns and scalding due to hot clean water, washware and machine parts

Contact with hot clean water, washware and machine parts can result in burns/scalding of the skin.

- Wear protective gloves if necessary.
- Let the washware cool down before emptying, if necessary.
- Let the machine cool down before touching machine parts, if necessary.
- Never open the machine door or hood during a wash cycle.
- Only open and close the hood/door using the designated handle(s).



After the end of programme, the control light above the programme start key turns off and an acoustic signal sounds.

1. Open door.
2. Carefully remove rack.

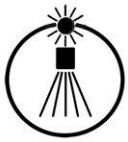
   Check disassembled individual parts for: cleanliness, changes, wear. Do not use unusable parts anymore!
3. Close door.

9.4 Switch off the machine

➡ The washer-disinfector is closed and does not contain a rack.

Press the Off button. All control lights turn off.

The self-cleaning programme with subsequent emptying is started.



The control light on the programme start key flashes. The cleaning water is pumped out and the tank is sprayed with hot fresh water. After the operation has finished, the machine automatically switches into OFF mode.

➡ After the end of the process, clean the machine, see page 47.

9.5 Fill consumables

⚠ Warning

Danger of injury from contact with chemicals

Detergent/disinfectant and rinse aid result in damage to health if in contact with skin or eyes or if swallowed.

- Use eye protection.
- Wear protective gloves.
- Contact a physician immediately if chemicals or water containing chemicals (clean water) are swallowed.

9.5.1 Replacing the canister

Lack of rinse aid

Lack of detergent/disinfectant

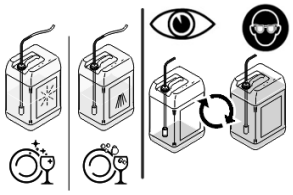
Note

The canisters for detergent and rinse aid are located in the immediate vicinity of the cleaning and disinfection machine.

Note

When using a suction lance which detects whether a canister is empty, a shortage of detergent/disinfectant or rinse aid will be indicated on the display.

➡ A canister is empty.



1. Remove the suction lance from the empty canister and insert it into a full canister.
2. If necessary, ventilate the pipelines, see page 41.

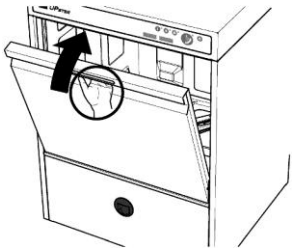
9.6 Water change programme (option)

A water change programme can be assigned to the cleaning programme keys. In the standard setting, the water change programme is stored at the cleaning programme key III.

The cleaning and disinfection machine cleans normally and empties the tank. The fresh water final rinse follows. The water from the fresh water final rinse is already used for refilling the wash tank. The control light above the cleaning key goes out.

The following options are now available:

1.

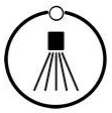


- Open door, remove rack, close door.

- Press programme key I or II if the following programme is to be without a complete water change.

➡ Machine is made ready for operation.

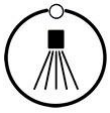
2.



- Open the door, remove the rack, close the door and press the programme start key.

➡ Machine is made ready for operation and the programme cycle is started directly after that.

- Press the Off button.



- Press the programme start key.

The self-cleaning programme with subsequent emptying of the tank and boiler is started in order to decommission the cleaning and disinfection machine.

9.7 Malfunctions

Despite careful construction, minor malfunctions may occur, which are usually easy to fix. Possible errors and troubleshooting measures for the operator are described in the following.

If the described operational problems occur repeatedly, the cause must be identified.

Common malfunctions

Fault	Possible cause	Remedy
Machine does not fill	No water present	Open shut-off valve
	Dirt collector blocked	Clean dirt collector
	Open door/hood	Close door/hood
Final rinse not spraying	No water present	Open shut-off valve
	Dirt collector blocked	Clean dirt collector
Streaks/smears on the washware	Unsuitable rinse aid	Change product
	Incorrect dosing quantity	Adjust dosing quantity
	Water pre-treatment defective	Check water pre-treatment
Strong foam formation in wash tank	Dirt level too high	Pre-wash the washware more thoroughly/change tank water more frequently
	Hand dishwashing detergent used	Do not use a foaming hand dishwashing detergent for pre-cleaning or for cleaning the machine. Foam can cause machine malfunctions and a poor cleaning result.
	Unsuitable detergent	Change product
	Unsuitable rinse aid	Change product

As a rule, malfunctions that are not described here require assistance from an authorised service technician. Please contact your subsidiary or authorised dealer.

9.7.1 Messages

When a malfunction occurs, an information or error message **(INFO/ERR)** is displayed.

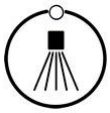
- Information messages **(INFO)** can be confirmed with the programme start key. If the cause has been remedied (see table), operation can be continued.
- Error messages **(ERR)** usually require the deployment of an authorised service technician!
- If the machine displays an info or error message not listed in the following tables, contact your MEIKO service!

INFO	Description	Possible cause	Measures/remedial action
120	Emergency programme active	• No boiler/tank heating • No fresh water supply	• Possible to continue work at limited capacity • Call service technician!
121	Door/hood not closed	• Open door/hood • I/O board is defective. • Microswitch defective • Microswitch not correctly set	• Close door/hood • Call service technician!
122	Incorrect password/no authorisation	• Code incorrectly entered	• Enter code again
123	Factory setting parameter list	• Switch supply voltage on/off	• No intervention by the operator is necessary • Message disappears after 5 min.
126	Maintenance necessary	• The set operating hours (P122) or batch number (P123) has been reached.	• Possible to continue working • Call service technician!
420	Lack of rinse aid (with integrated fill-level detection)	• Canister empty • Suction lance not correctly introduced	• Replace empty canister • Check suction lance • If needed, ventilate pipes
520	Lack of detergent/disinfectant (with integrated empty-tank detection)		

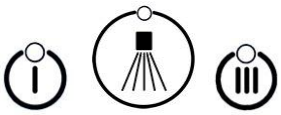
ERR	Description	Possible cause	Measures/remedial action
001	EEPROM error	• EEPROM – Not present/defective – Installed incorrectly – Incorrect data/empty	• Not possible to continue working • Call a service technician!
111	Floor pan leakage	• There is a leak	• Not possible to continue working • Call a service technician!
117	Door not locked	• The pin of the lifting magnet is not correctly in the locking device • The magnetic coil of the lifting magnet is damaged • Door locking query is not correct	
201	Boiler level not reached during first filling (with integrated pressure booster pump)	• Fresh water inlet insufficient (water tap closed) • Feed hose kinked/disconnected/leaks • Inlet filter soiled • Solenoid valve defective • Boiler switch defective	• Check water supply • Check feed hose • Check pre-filter/sieve and clean, if necessary • Where appropriate, call a service technician!
202	Boiler level not reached on time during filling (with integrated pressure booster pump)		
203	No change detected by the boiler level switch when emptying (with integrated pressure booster pump)	• Pressure booster pump defective • Plug connections disconnected (e.g. pressure booster pump) • Start capacitor defective • Boiler level switch defective • No signal to or from pressure booster pump and I/O circuit board • No signal boiler full - from I/O circuit board	• Not possible to continue working • Call a service technician!
204	No change yet detected at the boiler level switch (with integrated pressure booster pump installed) after the rinse time expired		
205	Boiler temperature not reached after max. heat time (P310)	• Boiler heating defective/melting beads, heating element • Temperature sensor defective, incorrect installation position • Boiler protection defective, output switch triggered • No signal from I/O circuit board	• Not possible to continue working • Call a service technician!
206	Wash time increase	• Boiler not ready for final rinse on time (temperature or level not reached) • Boiler heating defective (melting beads) • Temperature sensor defective • Boiler protection defective, output switch triggered • No signal from I/O circuit board	• Acknowledge message, continued work possible • Let programme run without intervention by the operator • If it occurs frequently, call a service technician!
210	Boiler temperature sensor short-circuit	• Sensor defective • Sensor position not correct • Plug contact not connected properly	• Not possible to continue working • Call a service technician!
211	Boiler temperature sensor interruption		
212	“Actual” boiler temperature too high (>95°C)	• Contactor sticking • Incorrect sensor/defective sensor	• Not possible to continue working • Call a service technician!

ERR	Description	Possible cause	Measures/remedial action
301	Number of circulatory pumping cycles for tank filling exceeded Tank level analysis disrupted	• Feeding water pressure too low • Inlet filter soiled • Rinse nozzles dirty • Air trap dirty • Condensate in level pipe • Feed hose kinked/disconnected/leaks	• Check water supply • Check feed hose • Clean inlet filter • Clean rinse nozzles • Call a service technician!
302	While drain pumping during the cleaning programme, tank level 1 is not fallen below on time (with integrated drain pump)	• Drain pump output too low • Drain pump dirty/defective • Impeller loose • Drain pump plug connection open • Start capacitor defective • Tank level analysis disrupted • Aquastop does not close correctly • No signal from I/O circuit board	• Not possible to continue working • Call a service technician!
303	While drain pumping during the cleaning programme, tank level 3 is not fallen below on time (with integrated drain pump)		
304	Tank temperature not reached after max. heat duration (P.314)	• Tank heating defective/melting beads, heating element • Temperature sensor defective, incorrect installation position • Tank protection defective, output switch triggered	• Not possible to continue working • Call a service technician!
305	Number of boiler fills insufficient for rinsing. Tank level 2 not reached	• Feeding water pressure too low • Inlet filter soiled • Rinse nozzles dirty • Air trap dirty • Condensate in level pipe • Feed hose kinked/disconnected/leaks • Level sensor defective • Plug contact not connected properly	• Check water supply • Check feed hose • Clean inlet filter • Clean rinse nozzles • Call a service technician!
306	Max. tank level exceeded Tank level analysis disrupted	• Air trap dirty • Condensate in level pipe • Level sensor defective • Plug contact not connected properly	• Empty cleaning and disinfection machine and refill • Call a service technician!
307	Tank level sensor defective	• Connection plug loosened • Sensor or I/O circuit board defective	• Call a service technician!
310	Temperature sensor short-circuit	• Sensor defective • Sensor position not correct • Plug contact not connected properly	• Not possible to continue working • Call a service technician!
311	Temperature sensor interruption		
312	Actual tank temperature too high (>85°C)	• Contactor sticking • Incorrect sensor/defective sensor	• Not possible to continue working • Call a service technician!
502	Lack of disinfectant	• If the device is ready for operation, a lack of disinfectant will be signaled	• Replace empty canister

9.8 Change authorisation level

Key/symbol	Meaning
	**Off key** Start programming
	**Programme start key** Confirm entry and jump to next position in the code
	**Programme key 1** Increase value by one
	**Programme key 3** Decrease value by one

1. Press and hold the Off key for approx. three seconds.



2. Enter the service code for the required authorisation level.

After entry of the correct code, the desired authorisation level (1, 4) is displayed in the left field in the first digital position. If the entry is incorrect, the message **Info 122** appears.

Authorisation level 1 – Service level

Read service data (**service code: 10000**)
The operator can view the service data.

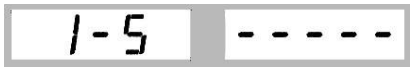
Read/modify service data (**service code 10001**)
The operator can carry out all functions required for normal operation and configure the settings.

Authorisation level 4 – Dosing equipment level

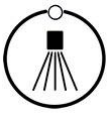
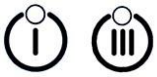
Read settings (**service code: 40000**)
The operator can view the data for the dosing technology.

Read/modify settings (**service code 40044**)
The operator can view/edit all the relevant parameters for the dosing technology.

9.9 Service level

Code display	Meaning
	View parameter, see page 37.
	Vent rinse pipe, see page 41.
	Vent detergent pipe, see page 41.
	Reset the counter for replacing the partial desalination cartridge, see page 41.

9.9.1 View parameters

 1. Switch to authorisation level 1 **Service level (10000)**, see page 36.	 2. Select the entry 1–1.
 3. Confirm the selection.	 The first parameter is displayed.
 4. Use the programme keys to scroll through and view the parameters.	 Level 1 can be exited with the **Off key.**

Par. Nr.	Configuration options	Use as	Value range	Unit	Factory setting	Comment
101	Cleaning programme button 1	Parameter	1 … 50	-	1	Assign cleaning programme number to button 1; assignment adjustable
102	Cleaning programme button 2	Parameter	1 ... 50	-	3	Assign cleaning programme number to button 2; assignment adjustable
103	Cleaning programme button 3	Parameter	1 ... 50	-	4	Assign cleaning programme number to button 3; assignment adjustable
104	Rinse aid dosing quantity	Parameter	0.10 .. 1.00	ml/litre water	0.2	The value can be read from the rinse aid container label (depends on the water quality)
105	Detergent dosing quantity	Parameter	0.1...20.0	ml/litre water	2.0	Value can be read from the detergent container label (depends on the water hardness)
106	Degree of hardness	Parameter	0 ... 50	°dH	0	The quantity of soft water available between two regenerations depends on the water hardness
107	Beep on/off	Parameter	0/1	-	1	Switch acoustic ready message on/off
108	Empty indicator mode	Parameter	0/1	-		Empty indicator 0: via INFO 420, 520 1: Output of special characters

Par. Nr.	Configuration options	Use as	Value range	Unit	Factory setting	Comment
109	Partial/full demineralisation available?	Parameter	0/1/2	-		0: no 1: Partial demineralisation (PD) 2: Full demineralisation (FD)
110	Hardness litres per cartridge type	Parameter	0…250	1000 L		"Replace cartridge" is displayed when the cartridge's capacity is reached (hardness litres / degree of hardness) (INFO 725) (only for PD)
111	Total operating time display	Ads	5 digits	hrs.		Operating time, query only
112	Total number of cleaning cycles	Ads	5 digits	-		Wash cycles/loads, query only
113	Total number of wash cycles since last reset	Ads	5 digits	-		Wash cycles/loads, resetting possible
114	Serial number	Ads	8 digits	-		Option to query factory parameters
115	Cartridge remaining capacity status	Ads	0…100	%		Only for partial/full demineralisation: PD: Indication in % FD: 100 = OK; 0 = Replace
119	IR communication	Parameter	0/1	-	1	Option to shut off communication via IR interface. (0)
120	Load factory setting of service parameters	Parameter	0/1	-	0	Effective only upon power supply reset ON/OFF. **Caution!** All changes to service parameters are reset. Power supply reset must be carried out within 5 minutes, otherwise factory settings will not be loaded. Without the power supply reset, information 123 will be displayed.
121	Activate maintenance display	Parameter	0 ... 3		0	0 = OFF 1 = operating hours 2 = batch counter 3 = operating hours or batch number
122	Reference value, operating hours	Parameter	10 ... 10000	hours	0	Evaluation according to operating hours
123	Reference value batch counter	Parameter	100 … 50000	Loads	0	Evaluation according to number of loads
124	Reset maintenance display	Parameter	0/1		0	0 = NO 1 = YES Note: With M-Commander, an upload and download is required for the reset.
201	Machine type	Parameter	1 – 9	-	2	1: FV 40.2 / FV 60.2 / FV28 GiO-M 2: FV 130.2 / FV 250.2 / DV 270.2/ TopClean D 3: DV 80.2 / DV 200.2 4: DV 120.2 / DV 125.2 / DV 200.2PW 5: FV 70.2D / FV 40.2TL / TopClean60 6: FV 130.2 TL / FV 250.2 TL / DV 270.2 TL 7: DV 80.2 TL / DV 200.2 TL 8: DV 120.2 TL / DV 125.2 TL / DV 200.2 TL PW **Caution!** Only changes the assignment list and machine sequences - not the parameters

Par. Nr.	Configuration options	Use as	Value range	Unit	Factory setting	Comment
202	Set temperature tank	Parameter	10 ... 80 (50 ... 176)	°C/°F	60	Standard for all the cleaning programmes of one appliance! Output dependent on definition
203	Pre-cleaning time	Parameter	0 ... 8	sec.	0	See pre-cleaning process step
204	Rinsing time	Parameter	4 ... 30	sec.	8	Energizing duration for the pressure booster pump (Running time limited by P306!)
205	Indication of operation	Parameter	0 ... 8	-	1	Definition of the information which triggers the potential-free contact 0 – no information 1 - filling/Heating, ready for cleaning/cleaning, pumping out 2 - filling/Heating, ready to clean/cleaning 3 - filling / Heating 4 - ready for cleaning 5 - cleaning 6 - draining 7 - error 8 – not status machine OFF and draining 9 - reserve 10 -not status Machine off
211	Fine adjustment rinse time	Parameter	0.0...0.9	sec.	0	0: FV 130.2 / FV 250.2 / TopClean D Decimal place from P204
218	Lack of rinse aid	Parameter	0/1		0	Monitoring display
219	Lack of detergent	Parameter	0/1		0	Monitoring display
224	Actuation mode rinse aid dosing unit	Parameter	0 ... 4	-	1	Definition actuationl of rinse aid dosing unit: 0 - rinse aid dosing unit = 0; do not activate 1 - rinse aid dosing unit; activate according to calculated running time 2 – rinse aid dosing unit = pressure booster pump; energizing as pressure booster pump 3 - rinse aid dosing unit = wash pump; control like wash pump 4 - free
225	Activation method for detergent pump	Parameter	0 … 4		1	Definition: activation of detergent pump: 0 – detergent pump; no signal 1 – detergent pump; energizing according to calculated running time 2 - detergent dosing unit = pressure booster pump; control as for pressure booster pump 3 – detergent pump = wash pump; Activate as wash pump 4 – option detergent dosing unit using negative pressure dosing (only DV80.2 und DV200.2)

Par. Nr.	Configuration options	Use as	Value range	Unit	Factory setting	Comment
240	Factory settings for loading configuration data	Parameter	0/1	-	0	Effective only upon power supply reset ON/OFF. **Caution!** All changes to service parameters are reset. Power supply reset must be carried out within 5 minutes, otherwise factory settings will not be loaded. Without the power supply reset, information 123 will be displayed.
241	A0 value	Parameter	0 …60	-	0	Only in connection with disinfection machine no. 5 - 9 in parameter 201
321	Rinse aid dosing unit output	Parameter	0.1 ...10	l/h		Rinse aid dosing pump Output definition
322	Detergent dosing unit output	Parameter	0.1 ... 20	l/h		Detergent dosing unit Output definition
326	Rinse aid vent time	Parameter	0 ... 255	sec.		Activate rinse aid dosing unit temporarily to ventilate the supply pipe
327	Detergent vent time	Parameter	0 ... 100	sec.		Activate detergent dosing unit on time to ventilate supply pipe
347	Disinfection temperature	Parameter	10 ... 80	°C/°F	0	Only in connection with disinfection machine no. 5 - 9 in parameter 201
348	Disinfection holding time	Parameter	0 ... 900	sec.	0	Only in connection with disinfection machine no. 5 - 9 in parameter 201

9.9.2 Ventilating the pipes

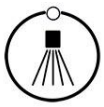
	1. Press the **OFF key** for approx. 5 seconds until CodE 1- - - - - is displayed.
	2. Enter the code for level 1. 1-1 - - - - - is displayed.
	3. Press **programme key I**. 1-2 - - - - - is displayed.
	4. Press the **programme start key**. Priming of the rinse aid pipe will start. The time remaining is displayed.
	5. If the time has expired and 1-2 - - - - - is displayed, press **programme key I**. 1-3 - - - - - is displayed.
	6. Press the **Off button**. Priming of the detergent pipe will start. The time remaining is displayed.
	7. If the time has expired and 1-3 - - - - - is displayed, press the **OFF key** to switch the machine off.

9.9.3 Replace counter for partial desalination cartridge (optional)

For machines with a partial desalination cartridge or GiO MODULE and activated end-of-service indicator, the counter must be reset after changing the partial desalination cartridge.

1. Switch to authorisation level 1 **Service level (10001)**, see page 36.

2. To reset the counter, select entry 1-5.



3. Confirm the selection to reset the value.

The setting level can be departed with the **Off key**.

9.10 Dosing system level

1. Switch to authorisation level 4, Dosing technology level (40000 or 40044), see page 36.

➡ The parameters relevant for the dosing technology are displayed and can be changed.

Code display	Meaning	Adjusting range
P104	Rinse aid dosing quantity	0.10 - 1.00 ml/L
P105	Detergent/disinfectant dosing quantity	0.10 - 20.0 ml/L
P218	Lack of rinse aid	1/0 = Display on/off
P219	Lack of detergent/disinfectant	1/0 = Display on/off
P224	Rinse aid dosing unit activation method	0 = Do not activate 1 = Activate through calculated running time 2 = Activate as per pressure booster pump 3 = Activate as per wash pump
P225	Detergent/disinfectant dosing pump activation method	0 = Do not activate 1 = Activate through calculated running time 2 = Activate as per pressure booster pump 3 = Activate as per wash pump
P321	Rinse aid dosing unit output	0.10 - 10 L/h
P322	Wash pump output	0.10 - 20 L/h
P326	Rinse pipe ventilation time	0 - 255 s
P327	Detergent/disinfectant pipe ventilation time	0 - 100 s

10 Maintenance and cleaning

Warning

Danger to life from electric shock

Contact with live electrical parts can lead to serious injury or death.

- Work at or repairs to the electrical system must be conducted by a qualified electrician who complies with the electrotechnical rules.
- Disconnect the machine from the power supply before working on the electrical system. To do this, turn the local mains switch to **OFF** and ensure that it can't be switched back on again.

Warning

Danger to life from electric shock if cover panels are open

If the machine is operated without cover panels, electrified parts are freely accessible. Contact with these parts can lead to serious injury or death.

- Disconnect the machine from the power supply before opening the cover panels. To do this, turn the local mains switch to **OFF** and ensure that it cannot be switched back on again.
- Attach all cover panels before placing the machine back in operation.

Warning

Danger of injury from entering a danger zone

Unauthorised persons might be in or enter the danger zone during transport, assembly, commissioning, maintenance and repair work. This can lead to injuries.

- Only permit qualified persons to perform work at the machine.
- Remove unauthorised persons from the danger zone.
- Cordon off danger zone and signpost it for third parties.
- Never remove or disable safety devices on the machine.
- Always wear cut-resistant protective gloves when removing housing parts and when working inside the machine!

Caution

Danger of burns and scalding due to hot clean water, washware and machine parts

Contact with hot clean water, washware and machine parts can result in burns/scalding of the skin.

- Wear protective gloves if necessary.
- Let the washware cool down before emptying, if necessary.
- Let the machine cool down before touching machine parts, if necessary.
- Never open the machine door or hood during a cleaning cycle.
- Only open and close the hood/door using the designated handle(s).

Caution

Environmental damage due to improper disposal of liquids

Environmentally hazardous liquids (e.g. grease and oils, hydraulic oils, coolants, cleaning agents containing solvents etc.) may be used during work on and with the machine. Improper disposal of these liquids can damage the environment.

- Always capture, store and transport liquids in suitable containers.
- Never mix liquids.
- Dispose of liquids properly in accordance with local requirements.

10.1 Maintenance activities

Note

MEIKO recommends having the machine serviced by an authorised service technician at least once a year. As part of the maintenance, an electrical safety inspection is also carried out in accordance with DIN VDE 0701-0702 / DGUV Regulation 3. Wear parts are checked and replaced, if necessary, and the machine tested. Cleaning work and changing pre-filters in machines with GiO MODULE must be carried out by trained operators.
Neglected or improper maintenance increases the residual risk of unforeseen damage to property and persons, for which no liability will be assumed.

A functional test on all safety systems of the machine is carried out during every regular maintenance.

- Comply with the maintenance intervals prescribed in these operating instructions.
- Please note the maintenance instructions for the individual components in these operating instructions.
- Carefully dispose of any detergents that could harm the environment.

10.2 Maintenance plan

Note

Maintenance work must **only** be carried out by MEIKO authorised staff!

Maintenance work Visual check	U= TopClean 60 H= N/A	Checked	Cleaned	Reconditioned	Maintenance requirements
1. Error memory					
Check error memory for unusual events using M-Commander 2.7	U/H				annually
2. Pumps					
Check pumps for leaks and any visible damage	U/H				annually
Check pumps for pump rotor noise and function	U/H				annually
3. Wash tank, wash and rinse system					
Functional and visual tests of wash and rinse arms	U/H				annually
Replace the ring, nut, bearing and spacer washer on the wash and rinse arms	U/H				annually
Check air trap on tank and clean if necessary	U/H				annually
Check tank level control for leaks	U/H				annually
Check sieves and filters	U/H				annually
Check rack holder/guide for damage	U/H				annually
Check wash and rinse systems for leaks	U/H				annually
Check water level in tank	U/H				annually
Check door seal	U				annually
Check tank and boiler heating	U/H				annually
4. Casing					
Check casing, tank and covers for damage and correct operation	U/H				annually
Check door and door counter balance for correct operation	U				annually
5. Fresh water installation					
Check valves, clean dirt trap	U/H				Annually
Check that boiler level control/air gap does not leak	U/H				Annually
Check that boiler, hoses, clamps and plastic parts do not leak	U/H				Annually
Check boiler drainage system does not leak	U/H				Annually
Check the free discharge section for cleanliness and tightness of the connections (visual check)	U/H				Annually
6. Wastewater installation					
Replace flap on ventilation valve	U/H				annually
Check operation of drain pump during drainage	U/H				annually
Check that pumps, hoses are not leaking	U/H				annually
7. Detergent dosing					
Replace peristaltic hose	U/H				annually
Check detergent dosing system is working and not leaking	U/H				annually
8. Rinse aid dosing					
Replace peristaltic hose	U/H				annually
Check rinse aid dosing system is working and not leaking	U/H				annually
9. Test run with function test of whole machine					
Check filling and heating until it is **ready for operation**	U/H				annually
Visual inspection of the entire machine for leaks	U/H				annually
Carry out test wash and check results	U/H				annually

10. Options									
ActiveClean water softener (if applicable)									
Check water hardness setting					U/H				annually
Check the seal on the lid of the salt container					U/H				annually
Start and check the regeneration process manually					U/H				annually
Integrated reverse osmosis system (if applicable)									
Visually check whole system for leaks					U/H				annually
Prefilter change standard membrane (< 0.1 mg/l)					U/H				every six months
Change pre-filter, chlorine-resistant membrane (≥ 0.1 and ≤ 2.0 mg/l)					U/H				every three months
Check fine sieve insert and choke in concentrate pipeline					U/H				annually
Check correct function of concentrate drain and check for deposits					U/H				annually
Fill in separate log: **Certificate of Commissioning, GiO**					U/H				annually
Partial demineralisation (PD)/full demineralisation (FD) (if applicable)									
Check operation					U/H				annually
Exhaust air heat recovery (if applicable)									
Check operation of fan					H				annually
Check operation of solenoid valve					H				annually
Carry out visual inspection and check for leaks					H				annually

11. Water quality, temperature									
Drinking water	°C	°dH	°CH	µS/cm	U/H				annually
Water quality after water treatment (if applicable)		°C	°dH	µS/cm	U/H				annually
12. Electrical safety check (certificate is optional)									
Carry out the visual inspection					U/H				annually
Check the protective earth conductor					U/H				annually
Insulation resistance measurement					U/H				annually
Measure current on protective earth conductor					U/H				annually

10.3 Daily cleaning

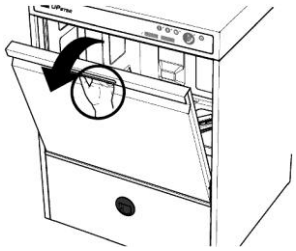
Caution

Material damage due to water ingress

Electrical cables and electronic components can be damaged if they come into contact with water.

- The cleaning and disinfection machine, control cabinets and other electrical components must never be sprayed with a hose or high pressure cleaner.
- Ensure that no water can enter the machine by accident.
- If installed at ground level, **never** flood the surrounding room.

The machine is emptied, see page 30.



1. Open door.

2. Remove tank cover sieve, filter, wash systems top and bottom. All parts to be cleaned are blue or have a blue handle.
3. All residues sticking to the tank, tank heating element and sieves must be removed with a brush.
4. Remove wash and rinse arms and rinse thoroughly under running water. When doing this, pay particular attention to the nozzles!
5. Clean filter under running water.
6. Reinstall all parts in reverse sequence.

10.4 Cleaning the stainless steel surfaces

Caution

Material damage due to incorrect cleaning

Cleaning of parts made of stainless steel with unsuitable cleaning agents, care products and cleaning utensils leads to damage, deposits or discolourations on the machine.

- Never use aggressive cleaning or scouring agents.
- Never use cleaning agents that contain hydrochloric acid or bleaches based on chlorine.
- Do not use cleaning utensils previously used to clean non-stainless steel.

Caution

Material damage due to aggressive cleaning products

The use of aggressive cleaning and care products near the machine can cause damage to the machine due to their fumes.

- Make sure that the cleaning and care products cannot have direct contact with the machine.
- Do not use aggressive cleaning agents (e.g. aggressive tile cleaner) to clean the surrounding area.
- Please observe the notes on the product packaging.
- In case of uncertainty, request information from the suppliers of these products.

We recommend that, when required, the stainless steel surfaces are cleaned exclusively using cleaning and care products that are suitable for stainless steel.

- Lightly soiled parts can be cleaned with a soft and possibly damp cloth or sponge. For moistening we recommend only using demineralised water.
- In order to prevent limescale, we recommend wiping the surfaces thoroughly dry after cleaning.

10.5 Descaling

⚠ Warning

Danger of injury from contact with acids

Descaling agents can cause damage to health if they come into contact with skin or eyes or are swallowed.

- Use eye protection.
- Wear protective gloves.
- Contact a physician immediately if chemicals or water containing chemicals (clean water) are swallowed.
- Please take note of the manufacturer's safety instructions.

Caution

Destruction of plastic parts and seals from residues of de-scaling agent

Completely flush the de-scaling agent out of the machine.

Operating the cleaning and disinfection machine with hard water can result in the build up of lime scale deposits in the boiler and the tank interior. If this occurs, it is necessary to de-scale the tank interior, boiler housing, tank heating, boiler heating and the washing and rinsing systems.

Notes on conducting descaling:

- Only use products suitable for cleaning and disinfection machines (for the chemo-thermal cleaning disinfection process) for descaling. Follow the manufacturer's instructions.
- Completely flush the de-scaling agent out of the cleaning and disinfection machine. To do so, perform 1 or 2 rinse cycles with fresh water.
- Where necessary, assign Customer Service the task of descaling the boiler.

10.6 Spare parts

Please provide the following information on any query and/or when ordering spare parts:

Type: ……..

SN: ……..

……..

(This information can be found on the type plate, see page 15.)

11 Non-use for several days

11.1 Break in operation (e.g. seasonal operation)

- Run self-cleaning programme and clean the machine, see page 47.
- Close the on-site shut-off valve.
- Switch off on-site mains isolator.
- Manually open a gap in the front door or hood to prevent germ formation and odours.
- Frost protection: If necessary, have the machine frost-proofed by the authorised service technician. Dishwashing machines of the M-iClean U series without GiO MODULE can be frost-proofed by yourself.

11.2 Commissioning after break in operation

- Set up the machine for 24 h at 25°C if it is not frost-free. Have an authorised service technician commission the machine again.
- Have reverse osmosis (GiO MODULE) (option) disinfected in the case of down-times of more than 6 months.
- Open the on-site shut-off valve and switch on the main switch.
- Put machine into operation, see page 27.

12 Dismantling and disposal

In addition to valuable raw materials and recyclable materials, the packaging and the old appliance may also contain substances that are harmful to health and the environment and were required for the function and safety of the old appliance.

12.1 Dismantling and disposal of the old device

⚠ Warning

Risk of injury from contact with chemicals

- Observe the safety data sheets and dosing recommendations of the chemical manufacturers.
- Use eye protection.
- Wear protective gloves.
- Do not mix different chemical products.

If applicable, wash machine components, containers, dosing units and hoses with fresh water to remove chemical residues. Wear suitable clothes (gloves, safety glasses) for this.

The appliance is marked with this symbol. Please observe the local regulations for proper disposal of your old appliance.

The components should be separated by material for recycling.

When disposing of the old appliance, the battery contained in the control system must be removed and disposed of separately.

13 Index

14 Notes

The clean solution

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