

Operation manual

KA Series

Rack type dishwashing machine



For the
types of
the series:

KFU-S E054 AT55

KFU-S E308 AT55

KFU-M E062 AT55

KFU-M E113 V5 AT55

KFU-M E121 V5 N254-0 AT55

KFU-M E121 WTV N348-0 AT55

KFU-L E121 V5 AT55

KFU-M E121 WTV N602-0 AT55

KFU-L E121 WTV N356-0-0 AT55



Read operation manual before using the machine!

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1 Introduction and general instructions

An electrical wiring diagram is located inside the electrical compartment of this machine.

The MEIKO KA Series dishwashing machine has been designed exclusively for the washing of dishes, glassware, cutlery, and kitchen utensils in a commercial or institutional setting and must not be used for any other purpose.

MEIKO accepts no responsibility for damage to the appliance, surrounding equipment or environment that is caused by inappropriate installation or operation, or from any service that is undertaken by non-authorized personnel, or from the use of any parts except those that are approved by the manufacturer. any such installation, use or service will immediately void the manufacturer's warranty.

Any modifications to the appliance that are performed without the written permission of MEIKO will immediately void the manufacturer's warranty.

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1.1 Product identification

These operating instructions apply to the following machine types:

Rack type dishwashing machine KA-series (see rating plate):

KA 44:	KFU-S E054 AT55
KA 54:	KFU-S E308 AT55
KA 64:	KFU-M E062 AT55
KA 66:	KFU-M E113 V5 AT55
KA 76:	KFU-M E121 V5 N254-0 AT55
KA 80:	KFU-M E121 WTV N348-0 AT55
KA 86:	KFU-L E121 V5 AT55
KA 90:	KFU-M E121 WTV N602-0 AT55
KA 100:	KFU-L E121 WTV N356-0-0 AT55

1.2 Safe keeping

Keep this operating manual in the vicinity of the installation in a location that is easily accessible to all users.

1.3 Authorization for service technicians of our service partners

MEIKO exclusively authorizes authorized Service Partners for commissioning, inductions, repairs, maintenance, assembly and installation of the corresponding product groups within MEIKO devices.

The service instructions feature additional information for authorized partners on assembly, modifications and repairs of all optional modules for this dishwashing machine.

1.4 Related documents

In addition to these operating instructions, there are other documents that are available depending on the authorization:

Operator (included in delivery contents)	Authorized service technician
Short operating instructions	Dimension sheet
Wiring diagram	Service manual
	Installation instructions for optional components
	External/supplied dosing unit

2 Warranty

FOR WARRANTY CLAIMS,

please contact your authorized MEIKO service partner.


For an ASA entry, please either refer to the QR code on the back page of this manual or visit our website at www.meiko.us. You may also contact MEIKO Service directly at (800) 868-3840.


You will be asked to schedule your performance and installation inspection. This inspection is performed FREE of charge to ensure that your new dishwasher is properly installed.

YOUR WARRANTY IS NOT VALID UNTIL THIS FREE IN-SPECTION HAS BEEN PERFORMED BY YOUR AUTHORIZED SERVICE CENTER.

3 Explanations of the safety symbols used

The following safety symbols will appear throughout these operating instructions. These symbols are designed to draw the reader's attention to the text next to the safety instructions.

 **WARNING** – Possible hazard to persons, such as from electrical shock, crushing, or hot surfaces.

 **CAUTION** – Possible hazard to the dishwasher or to other equipment.

IMPORTANT - Vital information or tips for the installer or operator.









NOTE - Information or tips for the installer or operator.

3.1 Graphic reference symbols

The following notes and risk symbols can occur wholly or in part in the operating manual and on the installation. These symbols (or symbols on the installation) must be observed without fail!

The symbols have the following functions:

	Warning of danger		Manufacturer
	Read the operating manual		Equipotentiality
	ETL Certification		NSF Certification

4 General description and use for the purpose intended

4.1 General description

This machine is a rack type dishwashing machine for dishes, containers and common kitchen utensils.

Tables or conveyors can be put on the feeding or discharge side of the machine for loading and unloading dishware baskets.

The dishes to be cleaned are put into carrier baskets, preferably made of plastic, and transported through the dishwashing machine on transport equipment.

Wash ware is cleaned using a heated wash tank.

The dishes are finally rinsed using heated fresh water sprayed through fine nozzles.



4.2 Intended use

The dishwashing machine is intended for commercial use only and is designed to wash dishes, cutlery, glasses, kitchen utensils, baking trays and containers. The washware must be suitable for commercial dishwashing machines.

Operation of the dishwashing machine in a potentially explosive atmosphere is not in accordance with its intended use!

MEIKO does not accept any liability for damages resulting from improper use or incorrect operation. Any other use, conversions and modifications are not permitted and are dangerous.

4.3 Foreseeable misuse

- Washing washware outside the technical specification
- Washing kitchen utensils with electronic components
- Cleaning textiles, oven cloths or steel sponges
- Washing utensils made of iron or utensils that must not come into contact with foodstuffs (e.g. ashtrays, candlesticks, etc.)
- Cleaning living creatures
- Washing food for subsequent consumption
- Preparing foodstuffs in the machine
- Taking wash water to prepare food or for drinking
- Washing support grids of cooking hobs/gas hobs
- Introducing service water into the local waste water system
- Standing or sitting on machine parts
- Washing parts made of wood
- Washing plastic parts that are not heat and alkali-stable
- Washing parts made of aluminum (such as pots, containers or trays only with a suitable detergent to avoid black discoloration)

4.4 Workplaces

When determining the workplace organisation, the general/local principles of ergonomics must be observed.

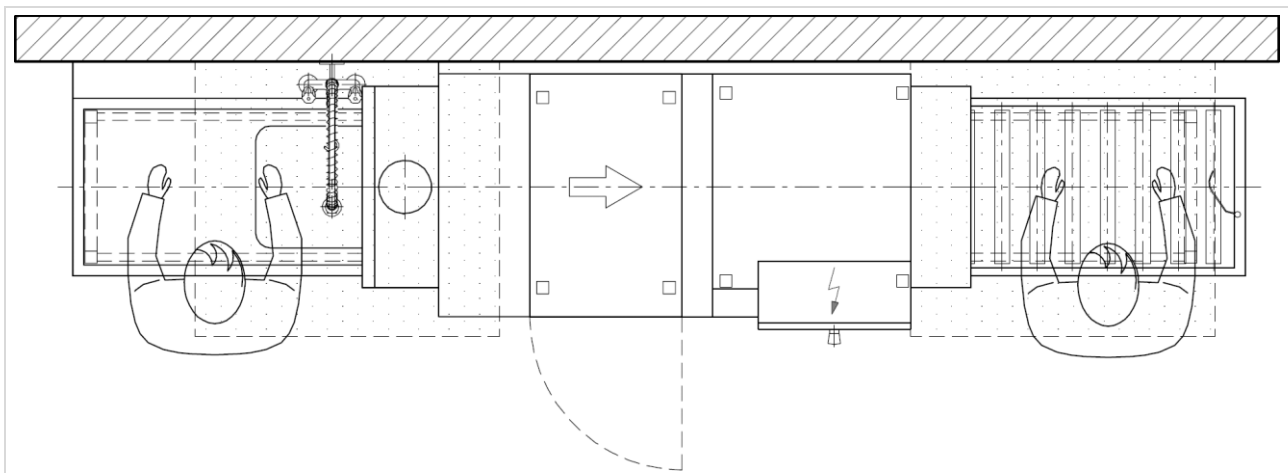
Ensure sufficient space for movement in the workplace area.

Two typical installation variants are shown; the tasks of the dishwashing staff are identical for both variants.

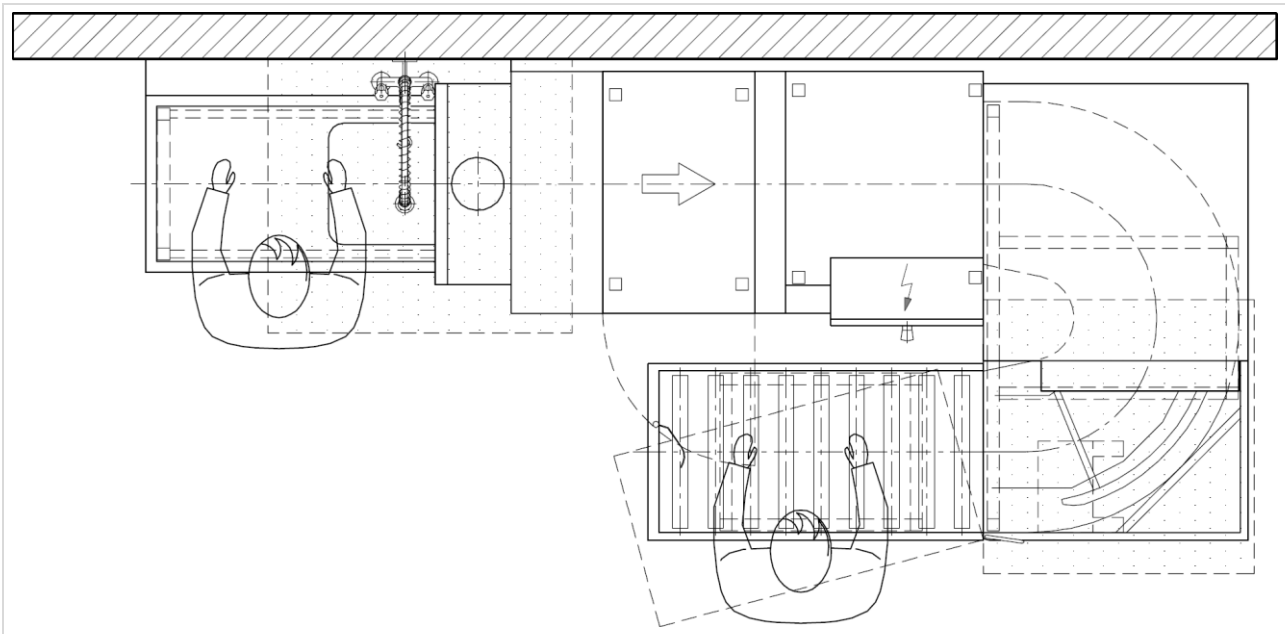
Thermal load:

At installation site, ensure that the room is suitably ventilated in accordance with the applicable standards and regulations.

Straight installation



Corner installation (workplace rotated by 180° on the discharge section, with mobile and swivelling table)



Dishwashing staff tasks in the feeding zone, e.g. at a feeding and sorting table:

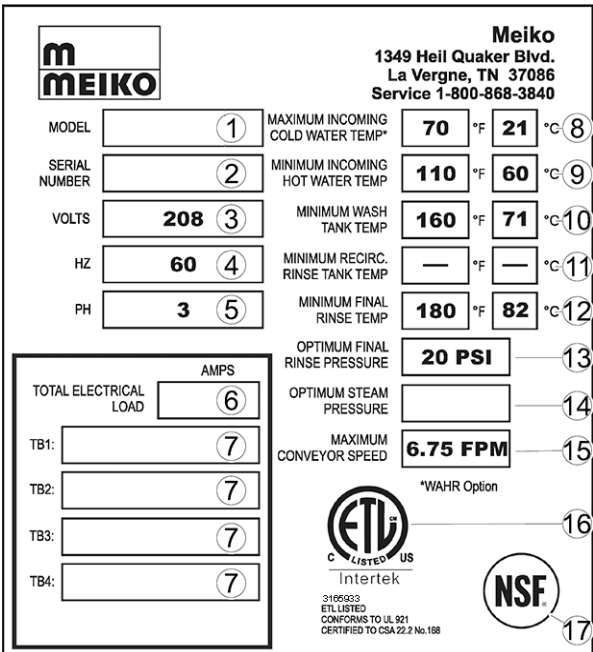
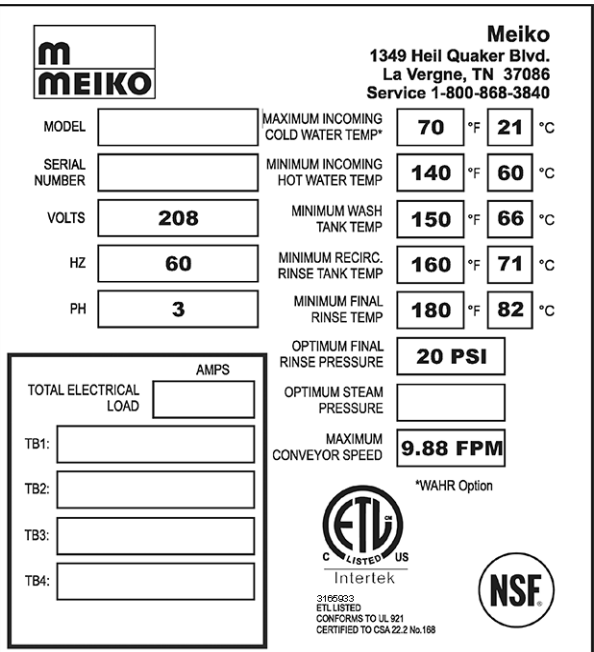
- Dispose of food waste and inorganic waste
- Load racks with washware.
- Shower off loaded racks with the hand spray to remove coarse dirt from the washware.
- Push loaded racks manually into the machine until the rack is automatically picked up by the transport system. The automated infeed takes place at approx. 1/3 of the rack length.
Do not push the rack in further than 1/3 of the rack length.
Hands must not get into the interior of the machine when pushing it in.

Feeding and sorting tables are not a mandatory part of the machine; they can be provided by the operator.

Tasks of the dishwashing staff in the discharge zone:

- Removal of the racks.
- Sorting and storing the clean washware.

4.5 Rating plate

Single tank	Multi tank
 <p>Meiko 1349 Heil Quaker Blvd. La Vergne, TN 37086 Service 1-800-868-3840</p> <p>MODEL [] ① MAXIMUM INCOMING COLD WATER TEMP* 70 °F 21 °C ⑧</p> <p>SERIAL NUMBER [] ② MINIMUM INCOMING HOT WATER TEMP 110 °F 60 °C ⑨</p> <p>VOLTS 208 ③ MINIMUM WASH TANK TEMP 160 °F 71 °C ⑩</p> <p>HZ 60 ④ MINIMUM RECIRC. RINSE TANK TEMP — °F — °C ⑪</p> <p>PH 3 ⑤ MINIMUM FINAL RINSE TEMP 180 °F 82 °C ⑫</p> <p>OPTIMUM FINAL RINSE PRESSURE 20 PSI ⑬</p> <p>OPTIMUM STEAM PRESSURE [] ⑭</p> <p>TOTAL ELECTRICAL LOAD [] AMPS ⑥</p> <p>TB1: [] ⑦</p> <p>TB2: [] ⑦</p> <p>TB3: [] ⑦</p> <p>TB4: [] ⑦</p> <p>MAXIMUM CONVEYOR SPEED 6.75 FPM ⑮</p> <p>*WAHR Option</p> <p>ETL LISTED US Intertek ⑯</p> <p>NSF ⑰</p> <p>3165933 ETL LISTED CONFORMS TO UL 921 CERTIFIED TO CSA 22.2 No.188</p>	 <p>Meiko 1349 Heil Quaker Blvd. La Vergne, TN 37086 Service 1-800-868-3840</p> <p>MODEL [] MAXIMUM INCOMING COLD WATER TEMP* 70 °F 21 °C</p> <p>SERIAL NUMBER [] MINIMUM INCOMING HOT WATER TEMP 140 °F 60 °C</p> <p>VOLTS 208 MINIMUM WASH TANK TEMP 150 °F 66 °C</p> <p>HZ 60 MINIMUM RECIRC. RINSE TANK TEMP 160 °F 71 °C</p> <p>PH 3 MINIMUM FINAL RINSE TEMP 180 °F 82 °C</p> <p>OPTIMUM FINAL RINSE PRESSURE 20 PSI</p> <p>OPTIMUM STEAM PRESSURE []</p> <p>TOTAL ELECTRICAL LOAD [] AMPS</p> <p>TB1: []</p> <p>TB2: []</p> <p>TB3: []</p> <p>TB4: []</p> <p>MAXIMUM CONVEYOR SPEED 9.88 FPM</p> <p>*WAHR Option</p> <p>ETL LISTED US Intertek</p> <p>NSF</p> <p>3165933 ETL LISTED CONFORMS TO UL 921 CERTIFIED TO CSA 22.2 No.188</p>
1 Model	2 Serial no.
3 Voltage	4 Frequency
5 Number of Phases	6 Total electrical load
7 Electrical loads strings 1-4 (if applicable)	8 Max. incoming cold water temp. (WAHR Option)
9 Minimum incoming hot water temperature	10 Min. temperature wash tank
11 Min. temperature recirculating rinse tank	12 Min. temperature final rinse
13 Optimal final rinse pressure	14 Not available
15 Max. conveyor speed	16 ETL Label
17 NSF Label	

4.6 FCC Compliance Statement USA

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help

4.7 IC Compliance Statement CANADA

CAN ICES-003(B) / NMB-003(B)

This device contains licence-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's licence-exempt RSS(s). Operation is subject to the following two conditions:

- (1) This device may not cause interference.
- (2) This device must accept any interference, including interference that may cause undesired operation of the device.

5 General safety rules

IMPORTANT - The following safety instructions are for your protection as well as the protection of others and the dishwasher. Compliance with the instructions is therefore absolutely necessary.

5.1 Operator's duty of care

This machine has been constructed and designed based on a risk assessment and careful selection of the applicable harmonized standards, as well as additional technical specifications.

It is therefore state of the art and guaranteed to provide maximum safety. Safety can only be guaranteed during operation if all necessary measures are taken.

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

5.2 Measures to ensure safe system operation

The operator must ensure in particular that...

- The dishwashing machine is installed in accordance with the requirements (cf. chapter 7).
- The dishwashing machine is used in accordance with the regulations only.

In case of other use or operation, damage or risks may arise for which we accept no liability (cf. chapter 4.2)
- In order to preserve the operational and safety guarantees, whenever required, only original parts supplied by the manufacturer are used. Any potential claims by the user shall be rendered void if the system was altered using parts other than original spare parts.
- Only appropriately qualified and authorized personnel use, maintain, and repair the installation.
- Staff is regularly trained in all questions relating to occupational safety and environmental protection and, in particular, that staff is familiar with the operating instructions as well as with the safety instructions they provide.
- The dishwashing machine is only operated in a perfect, operationally efficient condition and, in particular, that the safety systems and switch elements are checked on a regular basis for their operational efficiency.

- The required personal protective equipment is made available to and used by maintenance and repair personnel.
- The main switch must be turned off for cleaning.
- A functional test on all safety systems of the installation is carried out during every regular maintenance.
- All the safety, warning and operating instructions provided are not removed and are legible.
- Regular checks on supply parts are carried out. If required, more detailed information can be found in the relevant operating instructions.
- There are no further modifications after assembly, commissioning and handover of the dishwashing machine to customers/operators (e.g. electrical modifications or location changes). modifications to the dishwashing machine, and in particular technical modifications carried out without the manufacturer's written authorization, or any modifications carried out by unauthorized persons, will lead to the complete loss of any guarantee claims and will invalidate any liability for the product.

5.3 Basic safety measures

⚠ WARNING – Risk of injury due to electric shock, material damage.

Parts carrying electric current as well as moving or rotating parts can cause dangers to the user's life and limb and material damage.

Danger can arise from the improper use of the dishwashing machine or if it is used for purposes for which it was not intended.

The dishwashing machine may only be operated by adequately qualified personnel who have been trained by the operating company and who have been trained about the hazard and safety instructions.

When electrical devices are in operation, it is inevitable that some parts of these devices are live with dangerous voltage.

The entire dishwashing machine must be de-energized before opening the dish-washing machine housing parts or electrical equipment.

Set the main switch on site to the OFF position. Ensure appropriate measures are in place to prevent the switch from being turned on again.

Work and troubleshooting on electrical parts of the dishwashing machine must be performed by specialists only. Observe accident prevention regulations.

The operator must not restart the dishwashing machine until **all housing parts** have been replaced.

- **Qualified staff**, as defined by the Operating Instructions, are persons:
 - over 14 years of age
 - who have read and observe the safety instructions as well as the operating instruction.
- Observe all the instructions posted on the installation.
- The dishwashing machine may only be operated under the supervision of trained personnel. Do not use the dishwashing machine if you are unsure about system operation.
- Do not reach into the machine when it is in operation.
- Switch off the machine before opening doors/flaps. Open doors/flaps slowly: avoid contact with splashing water containing detergent solution.
- The water in the wash-up area is non-potable and must not be used for food preparation!
- The dishwashing machine must not be used to transfer waste water from other sources into the drain.
- Always keep hatches and cover panels closed!
- Do not spray the installation, switch cabinets and electronic components using a water hose or high-pressure cleaner!
- Avoid flooding the base of the system to prevent damage to components from penetrating water!
- The tank heating elements may still be hot after draining the tank. As a result, there is a risk of burns or scalding when cleaning the machine manually!
- All work and troubleshooting must be carried out by qualified professionals.

- Only use detergents, rinse aid and additives suitable for commercial dishwashing machines. Do not use said substances for any other purpose than their intended purpose. Please contact the manufacturers of these products for information. Detergent, rinse aid and additives may contain hazardous substances. Observe the manufacturers' hazard warnings on the original containers and safety data sheets. Observe the instructions of chemical product suppliers with regard to use and dosage. Hazardous, chemical substances used to operate the machine may escape when changing packing. Wear personal protective equipment.
- The operator's organizational methods must be followed if an injuries is caused when using the appliance. Go to see a doctor if an infection progresses.
- Please turn off the main switch at end of operations.
- Wear fitted work clothing. Wear full-length trousers or an apron. Do not wear rings, necklaces or other pieces of jewelry. Wear protective gloves. Wear sturdy, suitable shoes. (We recommend wearing safety shoes with slip-resistant soles.)

5.3.1 Working on the electric fittings

- Any repair work and troubleshooting on the system's electrical equipment must be carried out by a qualified electrician!
- Before carrying out any maintenance and repair work, switch off the power supply at the main electrical power isolator switch and secure the switch with a padlock! The key for this lock must be kept in the hands of the person carrying out the maintenance and repair work!
- Failure to observe these precautions can result in severe injury or damage to property.
 - Check the electrical equipment regularly!
 - Tighten any loose connections!
 - Replace any damaged leads/cables immediately!
 - Always keep the switch cabinet closed! Access for qualified persons only.

5.3.2 Water installation work

- Shut off and lock the main water supply valve before performing maintenance and repair work on the water installation!

6 Assembly instructions

Observe the following items when connecting MEIKO products to an existing installation:

- The components must be aligned with one another, connected in an appropriate manner, and fastened so that safe operation is assured. (Choose conditions and fasteners on site in line with this).
- Dangers (e.g. drawing in, crushing, shearing or cutting) that potentially arise due to the connection must be prevented appropriately.
- The electrical connection to the supply grid on site, and any necessary electrical connections must be implemented in line with the enclosed wiring diagram.
- During installation, make sure that you avoid damage, in particular to the electrical installation.
- After completing the works, check the system for damage.
- Safety and function checks must be performed at the latest within the scope of overall system testing prior to commissioning/machine handover.

6.1 Working on the electric fittings

⚠ WARNING – Risk of injury due to electric shock

Work or repairs to the electrical equipment of the system must be conducted by a qualified electrician!

The wiring diagram delivered contains all necessary operational shut-offs known to the manufacturer MEIKO, as well as other known, necessary shut-offs and electrical connections. Connections have been illustrated on the wiring diagram. Always make sure that these connections are implemented prior to commissioning the machine, and that they work reliably.

If any unknown sources of danger that are not described by MEIKO arise due to connecting system parts, you must eliminate them; this may potentially mean that you must not operate the machine.

7 Delivery, transport, installation and assembly

7.1 Delivery



NOTE - Check that the delivery is complete immediately after receiving it by comparing it to MEIKO's contract confirmation and/or the delivery note.

If necessary, complain about any missing parts immediately to the shipping company and notify MEIKO.

Check the entire installation for any damage that may have occurred during shipping. In the event of any transport damage, please inform MEIKO immediately in writing, and also send a photo of the damaged parts to us.

7.2 Transport and installation

⚠ WARNING – Risk of injury caused by heavy loads!

In order to avoid damaging the machine and causing serious injury during transport, loading, unloading and transport must be carried out by qualified personnel as per locally applicable occupational safety instructions. Read the chapter "General safety instructions".



- The machine must only be transported on the supplied wooden frame. The packing 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 machine is supported by a special square-timber frame.
- Open packaging using a suitable tool.
- Observe transport instructions on the packing.
- Handle with care.
- Unpack the machine.

7.3 Installation and assembly

MEIKO created an installation drawing featuring machine dimensions as well as connection and consumption values.

The system must be installed as per the information in the installation drawing. It must be installed by a licensed and authorized technician.

Assembly is completed by reference to the assembly diagram and, in general, by following the instructions of a trained MEIKO engineer. The machine must be installed and connected by an approved professional.

We do not accept any liability for damage caused by unprofessionally implemented connection work.

System installation steps:

Position the unpacked machine according to the dimensions specified on the installation drawing.

Set up the machine so that it is correctly levelled and aligned.

Refer to the separate installation instructions for additional information on installation.

7.4 Floor load from the dishwashing machine

The floor load per leg (with a loaded area $\varnothing=1.2$ in (30 mm) per leg) is approx. 485 lbs. (220 kg).

7.5 Requirements to the installation area

- Ensure that the storage and installation area is permanently frost free.

If the system is installed in an area where the surrounding temperatures are below 41 °F (5 °C), the water freezing inside may damage the internal water components (pump, solenoid valve, etc.).

- Anti-slip floor coverings must be provided in the system's work area.

7.6 Requirements to the electrical connection

The dishwashing machine must be connected by a qualified electrician!

7.6.1 Electrical system

The electrical connection must be carried out in accordance with the locally applicable regulations (e.g., NFPA 70 (USA)/CSA C22.1 (Canada)/NOM-001-SEDE (Mexico)/HD 60364-1/IEC 60364-1) so that the machine can be connected to the mains supply in accordance with the installer regulations and the machine ratings. However, national installer regulations may differ. The machine and its accessories are intended for permanent connection to the locally available power supply and to the locally available protective equipotential bonding system and have been tested for the market accordingly.

Some machines may have more than one power supply connection point. Disconnect all supply lines connected to the machine from the power supply and follow the lockout/tagout procedures before servicing the machine or opening the electrical cabinet.

The supply network voltage should not differ from the machine's nominal voltage rating (refer to the rating plate/wiring diagram).

7.6.2 Electrical connection/mains connection cable

All connections are 4-wire connections (3 line wires, 1 ground wire, no neutral wire). Incoming supply lines must be appropriately sized for the rated current (refer to the rating plate/wiring diagram/cabinet labels), taking the on-site conditions and environment into consideration. The incoming supply lines shall be based on the use of power supply wires rated with min 75 °C (167 °F) for any supply connections, use copper conductors only.

Some machines may have been designed to be supplied from above. In this case the electrical supply line should be routed into the control box from above, if possible.

Openings in the box for the supply lines may NOT be available and should be made using appropriate strain relief devices thus avoiding the risk of water entering the enclosure.

7.6.3 Fuse and backup protection

Install and protect the machine in accordance with the local conditions/regulations, the rated current and the nominal supply circuit voltage (refer to the rating plate/wiring diagram/cabinet labels) as a separately fused circuit (final circuit) so that backup protection and electrical safety are guaranteed.

All the ungrounded phase conductors of the equipment should be protected against overcurrent caused by a short circuit or overload. Use of individual circuit breaker/disconnects with lockout/tagout features is strongly recommended (not provided with the machine, type must be according to national standards (in North America refer to CEC/NEC).

If the machine has multiple power supply connection points, it is highly recommended to protect each supply line separately.

Unless otherwise specified by the user, the supplier of the electrical equipment shall not be responsible for providing the overcurrent protective device for the supply lines connected to the electrical equipment.

Mains connection cables, if they are not part of the standard scope of delivery, must be oil-resistant, sheathed, flexible cables, no lighter than a normal polychloroprene-sheathed cable (or another equivalent synthetic elastomer) in accordance with 60245 IEC 57 or national standards (in North America refer to CEC/NEC).

Observe any connection variants differing from the wiring diagram.

7.6.4 Main switch

If not provided with the machine, a main switch should be permanently installed in the on-site installation, in accordance with the installer regulations, the rated current and the nominal supply circuit voltage.

The main switch must be easily accessible for the operating personnel and located near the machine. The main switch has to disconnect all ungrounded conductors from the supply circuit simultaneously.

Some machines may have multiple power supply connection points. Therefore, a disconnecting device should be provided for each machine supply circuit. Where more than one disconnecting device is installed, those should be grouped in one location, where practicable, and clearly labeled and identifiable.

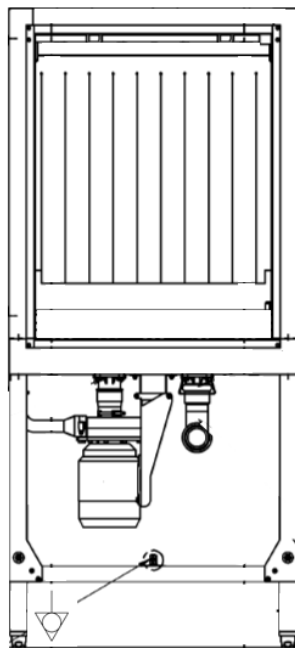
Use of an enclosed and dead-front switch (in accordance with UL98 (USA), CSA C22.2 N°4-16 (Canada), NMX-J-162-ANCE (Mexico), for example) operable by means of external equipment (e.g., handle) is recommended (not provided with the machine).

The contact opening width must correspond to overvoltage category III in each pole. For technical data about the main switch, such as torque and stripping length, refer to the wiring diagram or the data sheet of the main switch.

7.6.5 Electrical safety

Electrical safety of the equipment is only guaranteed if the equipment is connected to a properly installed protective conductor system. It is very important to verify this fundamental safety requirement. If in doubt, have the local wiring checked by an electrician. The protective measures and the equipotential bonding connection of the installation and all its components (tables, feed units and belts) must be carried out in accordance with the local regulations and the requirements of the local utility companies. For the connection point, refer to the assembly plan. Some machines may have multiple power supply connection points. Therefore, a grounding conductor shall be provided for each machine supply circuit. Alternatively, and acting on their own responsibility, the operator may use a mains-side residual current device (RCM or RCD) for protection in the event of direct or indirect contact. MEIKO recommends a type "B" (30 mA) residual current device sensitive to universal current in accordance with IEC/EN 60755 or national standards (in North America refer to UL 943).

7.6.6 Equipotential bonding connection



The screw for the equipotential bonding is located on the housing under the rinsing zone (view from the rear).

The equipotential bonding connection must be carried out in accordance with the requirements of the local electricity supply companies and all applicable local regulations. Incorporate the machine and any conductive substructures and table systems into the local potential equalization system.

7.7 Temperature sensors/temperature limit switches

All safety temperature limiters and temperature sensors which have been loosely rolled must be positioned in their correspondingly highlighted location.

⚠ CAUTION – Do not bend the capillary filling pipe, as otherwise the temperature probe could become damaged and unserviceable! Observe the instructions on installation and removal in the service instructions!

7.8 Requirements to the fresh water connection

The water-carrying pipes and components are not frost-proof. If the temperature of the place where the appliance has been installed can fall below 41 °F (5 °C), suitable precautions for protection against frost must be taken.

- Information on nominal widths, diameters, etc. relate to the connections on the machine.
- Installations on site must be dimensioned to match local conditions (e.g. cable arrangements, access lengths). Media and power connection of the machine are described in the service instructions.
- The connections must be made by approved professionals.
- All parameters for the media and energy supplies must be maintained at a constant level during all the operations.
- Fresh water connections must be carried out in accordance with the requirements of the local regulations.
- The owner/operator must install a shut-off device in each water supply pipe/hose; the device must be accessible to operating personnel.
- A backflow preventer is installed depending on the machine version. Refer to the service instructions for more detailed information.
- Waste water connections must be implemented in accordance with local regulations.
- When using water softening devices, partial desalination or complete desalination cartridges, a local shut-off device, a local particulate filter, a local non-return device and a local vacuum breaker must be provided by the owner/operator.
- Unless stated to the contrary, a minimum flow pressure of 36.3 psi (250 kPa) on site and maximum pressure of 87 psi (600 kPa) must be guaranteed.



- It is possible to clean the dirt screens without turning off the main water supply. The water supply is automatically cut off when the lower component in which the screen is located is unscrewed. This enables the screen to be cleaned during maintenance.

Information on the water quantities, quality and temperatures needed can be found in the installation plan.

Keep the feed water temperature of the water line supplying the final rinse components to a minimum to achieve optimum results with potentially installed heat recovery components.

Inlet water for final rinse components with a higher temperature affects the conditions relating to the appliance's exhaust air.

If valves on the appliance are also controlled by fresh water, a minimum flow pressure is necessary. Refer to the service instructions for required pressure values and quantities.

7.9 Requirements to the waste water connection

Connect the waste water line to the building's waste water network in compliance with local waste disposal regulations.

The waste water connection must be carried out in accordance with the requirements of all applicable local regulations.



All water drains of the machine must be connected to the kitchen's waste water system via a sufficiently dimensioned odor trap.

When selecting materials for pipes, sealants etc., you must bear in mind that the temperature of the water discharged from the machine can be 158 – 167 °F (70 – 75 °C). Furthermore, the pH values can lie between 3 and 12 depending on the nature and concentration of the detergent; in other words, the materials must be resistant to both acids and alkalis.

7.10 Requirements to the exhaust air connection of the appliance

Observe the following when connecting an extractor system to the machine:

Air conditioning equipment must be designed to comply with local regulations and must in all cases be waterproof and resistant to corrosion.

The values stated in the order-specific documentation for the exhaust air temperature and moisture content may be higher in certain operating states (e.g. standby).

The machine exhaust air may contain slight amounts of aerosol; it may need to be dissipated by appropriate measures near the exhaust outlet.

When exhaust air is dissipated into the room, note that the specifications for the temperature and relative humidity and thus the load levels for the room apply to uninterrupted washing. Otherwise a temporary increase of the exhaust air temperature, relative humidity or load level in the room is possible, depending on the operational state.

The exhaust air shall not be vented into a wall, a ceiling, or a concealed space of a building.

The discharge air connection must be connected to the building's exhaust air system as in the installation plan.

The hot, moist air from the machine must be removed from the washing-up kitchen. Safeguard the locally available negative pressure (vacuum) is adequate to ensure optimum extraction. If applicable, the machine exhaust air may be directly extracted at the input/output.

7.11 Installing and connecting dosing equipment

When operating the dishwashing machine, it is necessary to use a commercial washing liquid and rinse aid. Use only detergents and rinse aid that are suitable for machine dishwashing appliances and approved by the responsible authority. The safety regulations relating to their handling, dosing, storage and use must be observed in all cases.

Use a suitable dosing system to dose the detergent and/or rinse aid. MEIKO recommends the use of a MEIKO dosing system with appropriate detergent and rinse aid. We do not recommend manual chemical dosing.

The dosing system must be installed by authorized, specialist personnel or by a qualified dosing system supplier.

As an exceptionally wide range of dosing equipment is available in the market, it is not possible for us to provide detailed instructions on its installation. Your chemical supplier will be familiar with the best installation position for their product.

The dosing system used must comply with current safety regulations and be suitable for use in commercial dishwashing machines. No major modifications may be made to the dishwashing machine.

Due to the hazards that highly-concentrated chemicals can present, specific precautions must be taken when using dosing systems from different chemical suppliers. The operator must ensure that the safety of the dishwashing machine is not compromised by the retrofitting of a dosing system.

Precautions that prevent chemicals being sprayed when the dishwashing machine doors are opened may need to be taken here! There must be no danger to the operator at any time!

When the tank doors are opened, the dosing of the detergent is immediately interrupted. This must also be ensured when using third-party dosing technology.

Different chemical suppliers use systems from different manufacturers. MEIKO accepts no liability for damage caused by the use of unsuitable dosing technology.

7.12 Detergent and rinse aid

The chemical supplier selects suitable detergents and rinse aids according to the conditions on site. The machine is equipped with a rinse aid connection. Use only this connection!

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.**

⚠ CAUTION – Only use products that are suitable and approved for commercial dishwashing machines.

The dishwashing machine can be equipped by the manufacturer with dosing units for liquid or solid detergent/rinse aid. Manual dosing with powder cleaner is not intended.

Optionally, the dishwashing machine can be equipped with external dosing systems. Information on the electrical connection of the dosing units can be found on the wiring diagram and in the operating instructions for the dosing units.

7.12.1 Detergent

Detergents are alkaline (pH value should be > 7) and are needed to dissolve soiling from the washware.

The chemical supplier determines the necessary concentration depending on water quality, washware and degree of soiling. This setting is made during commissioning by a MEIKO authorized service technician or the chemical supplier.

Refer to the operating instructions for the dosing unit for information on how to set the dosing quantity.

7.12.2 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. It also depends on the available water quality on site. This setting is made during commissioning by a MEIKO authorized service technician or the chemical supplier.

Refer to the operating instructions for the dosing unit for information on how to set the dosing quantity.

7.12.3 Dosing units

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. When maintaining the dosing units, observe the dosing unit operating instructions. For example, when working on the equipment, the main switch on the machine must be turned off.

The service life of the dosing units and other components of the dishwashing machine depends on the use of suitable chemical products.

Electrical connection

Work and troubleshooting on the electrical installation of the machine must be performed only by qualified electricians. Observe accident prevention regulations. The "XD" terminal strip supplies electrical power and controls the dosing systems. (More detailed information can be found on the machine's wiring diagram.) No other connections are permissible.

Dosing equipment or other additional units must not be installed in the electrical switch cabinet.


Water connection

When installing dosing units, it must be ensured that the water connection is made in accordance with the applicable local standards.

7.12.4 Suction lances

Suction lances ensure that the liquid chemical product is sucked in correctly. The suction lances used by MEIKO are inserted vertically into the canisters.

7.12.5 Change of products

 **CAUTION** – When changing the detergent product (even to a product from the same manufacturer), crystallization 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:

In all cases, discuss the change of product with the chemical supplier and follow its instructions.

Recommission the dosing units in accordance with the dosing unit operating instructions.

CAUTION

Do not use a foaming detergent for dishwashing by hand for pre-cleaning close to the dishwasher.

Foam can cause malfunctions in the dishwasher and a poor wash.

8 Adjustment of the machines effected by authorized service technician during the first setting in operation

8.1 Commissioning



NOTE - Commissioning and training will be handled and provided by MEIKO authorized service technician. The operator must not use the installation before completing training

Perform any required initial checks on supplied parts, such as water treatment units or other units. More detailed information, if required, can be found in the relevant operating instructions.

To avoid damage or dangerous injuries during the setting in operation of the installation, please observe the following points:

WARNING – Risk of injury, damage to property!

As a result of unintended work on the system. All persons involved in operation, maintenance or repair work must have read and understood the General safety instructions section.

⚠ WARNING – Risk of fatal electrical shock or fatal injuries caused by moving parts!

- All cladding must be intact before commissioning!

Check any escaped fluids have been removed.
Activate all the safety systems before commissioning.
Check that all screw connections are tight.

8.2 Chemical product settings

The correct settings for the quantity of detergent and rinse aid depend on the product used. The relevant chemical product supplier can install the correct setting.

8.3 Work prior to initial commissioning

It is paramount to comply with the instructions in this section prior to initial commissioning.

Water carrying pipes

All pipes must be thoroughly flushed. In this process, the heating must be switched off (remove the fuses) to avoid dry-heating of the heating elements. Subsequently clean all dirt traps.

Steam pipes

All lines must be thoroughly flushed. In this process, all valves must be open and all condensation traps must have been removed. Subsequently clean all dirt traps.

Electrical connection

- Retighten all electrical terminals in the electrical cabinet; check that electrical plug-in connections are firmly seated.
- Check all motors for correct sense of direction.
- Carry out a visual check on all electrical equipment (e.g. switches, cables, housings, covers).
- Carry out functional tests on all electrical switches.

Machine interior

Ensure that there are no foreign bodies inside the machine (e.g. cleaning rags, loose bolts/washers/nuts, tools, packaging materials etc.).

⚠ CAUTION – Safeguard smooth transitions in areas where moving parts move past fixed parts (e.g. guide rail, water guiding plate, etc.)

Make sure that all wash pipes, wash systems, final rinse arms, sieves, tank covers and drain filters as well as flaps have been connected to the input and output. Ensure that all the parts are correctly installed!

9 Operating the dishwashing machine

9.1 Basic safety measures for standard operation

IMPORTANT -

The installation may only be operated by trained and authorized persons who are familiar with the operating instructions and who are capable of working in accordance with them!

Ensure the following before switching on the installation:

- Exclusively authorized and instructed persons are within the work zone of the installation.
- Nobody could be injured by setting the dishwashing machine into operation.

Before commissioning, each time

- Inspect the installation for any visible damage and ensure that it will only be operated in a perfect condition!

Report any defects to the foreman immediately!

Remove material/objects from the installation's work zone which are not required to operate the installation!

- Check and ensure that all the safety equipment is operating perfectly!

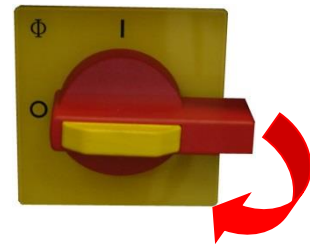
9.2 Switching on and working with the machine

⚠ WARNING – Risk of fatal electrical shock or fatal injuries caused by moving parts!

- Operate the dishwashing machine with completely closed casing only. Before removing any cladding, the on-site mains electricity supply must be switched off and secured with a padlock to prevent it from being switched back on. Otherwise there's the risk of fatal injury!



Open the possibly existing stop valve in the water pipe.

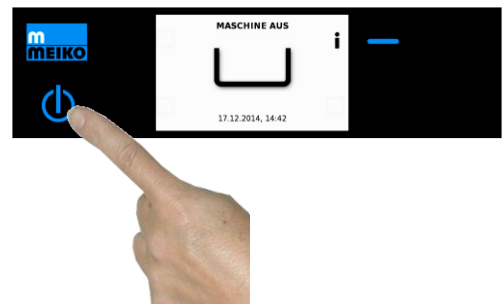


Switch on the on-site power supply.

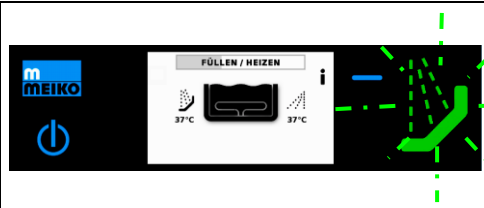
Ensure that all wash pipes, wash systems, final rinse arms, sieves, tank outlet valves and drain filters as well as flaps have been installed on the input and output. Ensure that all the parts are correctly installed!



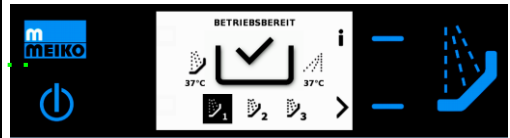
Close the door.



Press the "ON/OFF" button.

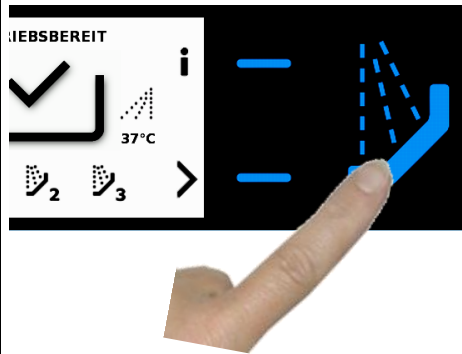


The green LED flashes. The wash tank is filled and heated up automatically.



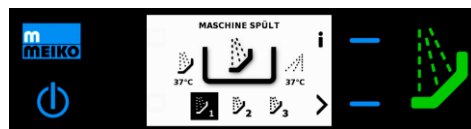
The following message appears on the display once the wash tank has been filled and heated to the desired temperature:

"READY FOR OPERATION"



Press the blue "Dishwasher on" button to start the dishwasher.

Transport and the wash pump have now been started and the dishwashing process can begin. The machine is normally equipped with rinse water conservation; in other words the rinse process is not in operation continuously. All other functions, e.g. temperature monitoring or wash tank water level checks are performed by the machine control; thus no other manual operations or checks are needed.



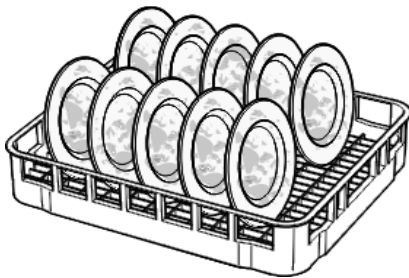
The dishwashing machine rinses and the "Dishwashing processes" button lights up green.

9.3 Switch on the dishwashing machine



NOTE

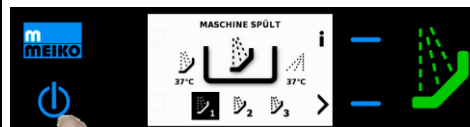
- Do not push the rack in further than 1/3 of the rack length.
- Hands must not get into the interior of the machine when pushing it in or removing the rack.



1. Pre-wash the washware (removing any large food waste, napkins, tooth picks, lemon peel etc.).
2. Put the washware into the rack.
3. If necessary, pre-clean the washware with the hand spray.
4. Push loaded racks manually into the machine until the rack is automatically picked up by the transport system. The automated infeed takes place at approx. 1/3 of the rack length.

The rack is transported through the machine, the washware is cleaned and dried if necessary.

9.4 Washing interruption



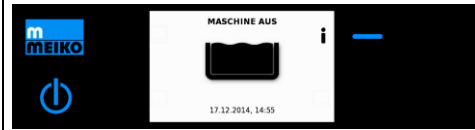
To interrupt the washing cycle temporarily, press the blue "washing cycle OFF" button

	<p>Wash pump and transport are switched off. However the tank heating continues so that the machine remains "READY FOR OPERATION" and the display indicates this.</p>
	<p>Press the blue "Dishwasher on" button to start the dishwasher.</p>
	<p>The dishwashing machine rinses and the "Dishwashing processes" button lights up green.</p>

10 Shutting down the machine

The dishwashing machine must be shut down after use or if the installation area is not regularly monitored by personnel!

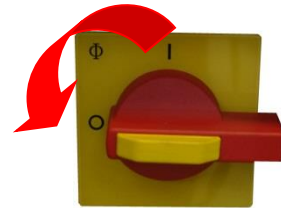
	<p>Press the "ON-OFF" button twice to completely switch off the dishwashing machine.</p>
--	--



After the procedure has completed, the display shows "MACHINE OFF".



Close the possibly existing stop valve in the water pipe.



Switch the on-site power supply off.

The dishwashing machine is now disconnected from the power supply. Clean the appliance; see the "Cleaning" section.

In dishwashing machines with:

- automatic regeneration of water softeners
- frost protection
- integrated reverse osmosis equipment
- automatic wash tank filling and heating via "Fill with timer"

Automatic operation may only be activated if the premises in which the appliance is located are under regular surveillance by staff.

11 Cleaning

⚠ WARNING – Material damage or severe injury!

Do not spray the system, switch cabinets and electronic components using a water hose or pressure washer!

Avoid flooding the base of the system to prevent damage to components from penetrating water!

Danger of scalding!

The tank heating elements may still be hot after the tank has been emptied. As a result, there is a risk of burns or scalding when the machine is cleaned manually!

11.1 Cleaning – daily

⚠ WARNING – Risk of injury due to electric shock! Damage to property!

Switch off the power supply using the locally available mains disconnecter prior to any cleaning or maintenance work and secure it with a padlock!

The key for this lock must be kept in the hands of the person carrying out the maintenance and repair work!

Failure to observe these precautions can result in severe injury or damage to property.

IMPORTANT - Wear personal protective equipment during all cleaning processes. Scalding may result from not using personal protective equipment.

11.2 Cleaning instructions – daily

 <p>Switch off the machine (press twice).</p>	 <p>Remove all spray protection curtains.</p>	 <p>Clean all spray protection curtains.</p>	 <p>Switch off the locally available power supply.</p>	 <p>Open the door.</p>
 <p>Spray the machine's internal chamber.</p>	 <p>Remove the top and bottom wash system. Hold the wash system in the middle.</p>		 <p>Remove the tank cover screen.</p>	 <p>Pull the stand pipe <u>with the handle only</u> and drain the tank.</p>
 <p>Removing the pre-rinse arm (if available).</p>	 <p>Remove both sieves in the prewash zone (if available)</p>		 <p>Clean the inner chamber of the tank.</p>	
 <p>Remove all rinse arms and nozzles. Use a nylon brush to clean the nozzles. Check that the wash arms and end caps are complete and water-tight.</p>			 <p>Clean all tank cover screens.</p>	

	<p>When you have cleaned the machine, replace all the parts.</p> <p>Check that all parts are present and in the correct position!</p> <p>The machine must only be operated once it has been completely assembled (cover panels, splash curtains, safety device, sieve). Malfunctions may occur in the event of non-compliance. Non-compliance may also result in injury.</p>
<p>Do not spray the dishwashing machine, switch cabinets or other electronic components with a water hose or high-pressure cleaner!</p>	<p>IMPORTANT</p> <p>Ensure that all wash arms end caps are properly secured after having inserted the washing system! Check that all end caps are water-tight.</p>

The dishwasher must be emptied every day!

12 Maintenance and care

12.1 Care, general

The installation has been designed to keep the need for cleaning, care and maintenance to a minimum.

However, for reliable, safe and long-term function of the installation, and in the interest of hygiene and cleanliness, correct care and maintenance is necessary.

12.2 Care of stainless steel surfaces

We recommend cleaning the stainless steel surfaces only when needed with cleaner and care products suitable for stainless steel.

Lightly soiled parts can be wiped with a (possibly damp) cloth or sponge.

Be sure to wipe dry after cleaning to avoid traces of scale. Use demineralized water if possible.

Do not use aggressive cleaning or scouring agents.

The care products must not attack the stainless steel, form deposits, or cause discoloration.

Never use cleaning agents that contain hydrochloric acid or bleaches based on chlorine.

Never use cleaning equipment that you have used previously by non-stainless steel to avoid external corrosion.

Aggressive, external influences due to cleaning and care products that evaporate in the vicinity of the system, or direct application, may lead to system damage and put the material at risk (e.g. aggressive tile cleaners).

Caution!

Observe the manufacturers' hazard warnings on the original containers and safety data sheets.

12.3 Check list after cleaning

Make sure you reinstall all parts correctly **after having cleaned the dishwashing machine.**

Check that the following parts are **present and in the correct position:**

- check the tank cover screens
- rinse pipes
- pump rinse pipes
- curtains
- wash systems at the top and bottom
- check the wash pipe end caps for completeness

The dishwashing machine is now ready for the next shift.

12.4 Deliming the machine

Using very hard water may cause unfavorable lime deposits within the machine. However, apart from this (white, rough coat), lime deposits do not influence the dishwashing results.

However, the lime-scale deposits on the wash tank heating elements and in the rinse water flow heater are much more serious. An excessively thick layer on the heating element acts as a thermal insulator and so prevents the transfer of heat from the heating element into the water. As a result the heating element overheats and burns out.

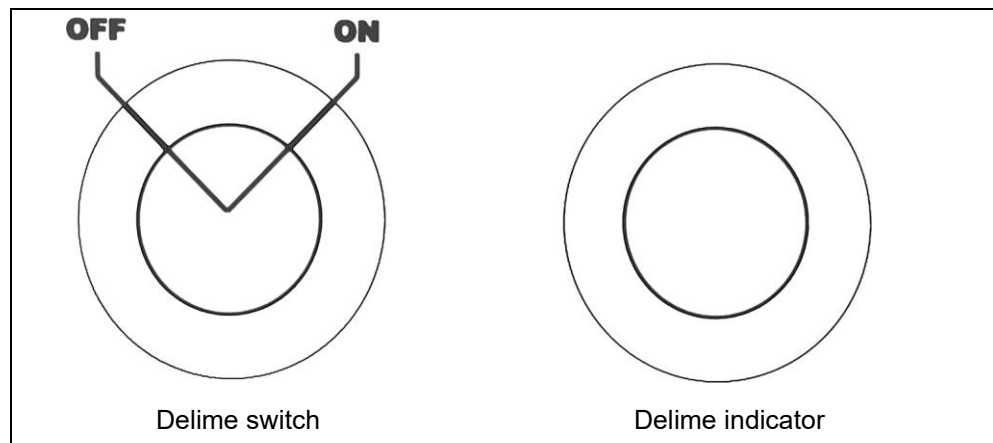
Lime-scale deposits can be removed with special scale removal products (ask your chemical product supplier). However, these products contain acid and are very aggressive. They should therefore not be used too frequently and must on no account be used in a too high concentration as they can attack and destroy not just the lime-scale deposits but also other parts of the machine.

Only use scale remover suitable for commercial warewashing machines. Do not use said substances for any other purpose than their intended purpose. Please contact the manufacturers of these products for information.

12.4.1 Deliming procedure

⚠ 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.**



With machine ready for operation (filled and heated with no detergent in tank):

1. Turn delime switch to “on”
2. Turn machine “off” using touch panel display
3. Open wash tank door – add delimer
4. Close door and turn machine “on” using the touch panel display.
5. Press start button on touch panel display. Machine will run for 10 minutes, then stop.
6. Turn machine “off” using touch panel display.
7. Open door and drain machine
8. Close door and turn machine “on” using touch panel display. Machine will fill.
9. Press start button on touch panel display. Allow machine to run several minutes.
10. Turn machine “off” using the touch panel display.
11. Open door and drain machine.
12. Turn delime switch “off”. Machine is now ready for normal operation.
13. After removing lime-scale, the machine **MUST** be thoroughly flushed out and emptied to ensure that all residues from the lime-scale remover have been neutralized. The machine should then be refilled and allowed to run for at least 15 minutes.

13 Operating errors

Despite being expertly designed, the machine may develop minor faults which are usually easy to eliminate. This section explains a number of possible problems and how you can deal with them yourself.

⚠ WARNING – Risk of injury due to electric shock! Damage to property!

Always de-energize the system before carrying out work on the open system.

For this purpose, switch off the system power supply using the locally available mains disconnecter and secure it using a padlock.

The key for this lock must be kept in the hands of the person carrying out the maintenance and repair work!

Failure to observe these precautions can result in severe injury or damage to property.

Should any of the operational faults described arise repeatedly, their cause must be established in each case.

13.1 Self-help in the event of malfunctions

Malfunction:	Remedy
Machine not filling	<ul style="list-style-type: none"> * No water present * Dirt trap clogged * Level system dirty * Solenoid valve defective * Main switch turned off
Final rinse not spraying	<ul style="list-style-type: none"> * No water present * Dirt trap clogged * Solenoid valve defective * If the machine has automatic water conservation, the conservation grid switch/timing switch is defective * Air gap pump not functioning * Limescale in final rinse system
Vapor escaping	<ul style="list-style-type: none"> * Curtains missing * Temperatures too high * Poor room air flow/draught through open door * Wash arms, drying nozzles, air guide plates bent or not fitted correctly
Poor cleaning result	<ul style="list-style-type: none"> * Washing temperature too low * Detergent dosing quantity too low * Wrong detergent * Washware not placed correctly in rack * Clogged nozzles * Conveyor speed too high * Dirt has dried onto washware due to standing for too long * Washware not suitable for machine warewashing

Malfunction:	Remedy
Stripes and smears on dishes	<ul style="list-style-type: none"> * Mineral content of final rinse water too high * If only found at certain times, check water softening unit with a view to regeneration. * Water pre-treatment unit defective * May also be different water, depending on the waterworks * Unsuitable rinse agent or incorrect dosing quantity * Incorrectly fitted or missing curtains * Oversize containers previously washed. This causes detergent to be transferred to rear tanks * Conveyor speed too high * Washware not suitable for machine warewashing
Strong foam formation in wash tank	<ul style="list-style-type: none"> * Foaming hand dishwashing detergent enters wash tank on pre-cleaned parts * Daily cleaning of the machine is carried out with foaming cleansing agents which subsequently enter the machine. * Improve pre-washing, as too much soiling is entering the tank. Alternatively, empty wash tanks between uses. * Final rinse water quantity too low * Unsuitable detergent or rinse aid * Temperatures too low < 104 °F (40 °C)
<p data-bbox="159 1012 427 1075">Poor drying result with drying available</p> <p data-bbox="159 1254 427 1404">Washware/rack trapped in the machine Overload switch has tripped</p>	<ul style="list-style-type: none"> * Conveyor speed too high * Wash tank temperatures too low * Washware not suitable for machine warewashing * Rinse aid product not adapted to washware material (porcelain/plastic). A compromise may have to be made here. * Plastic washware (new washware) * Washware not placed correctly in rack * Release the blockage, see next chapter "Troubleshooting on tripping the overload switch."

You should contact your MEIKO Authorized Service Agent if:

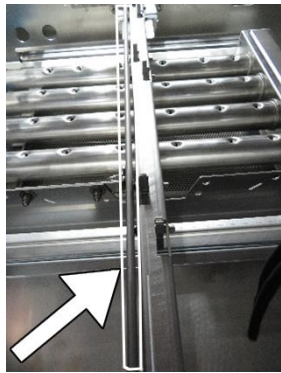
- The dishwasher encounters a problem but does not display an error code, OR
- The listed action fails to correct the problem.

An Authorized Service Agency Listing can be accessed by either scanning the QR Code on back cover of this manual, visiting our website at www.meiko.us or by call (800) 868-3840 for assistance.

13.2 Troubleshooting on tripping the overload switch

The overload switch has tripped because an object has been trapped in the transport system.

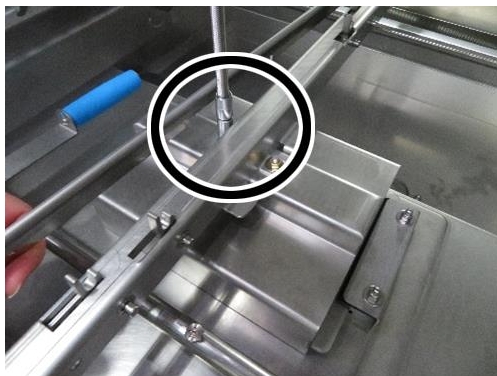
1. Turn off the main switch.
2. Remove jamming, remove racks and washware from the area of the transport system.
3. If necessary, the transport rail can be removed by loosening the cap nuts in the area of the final rinse:



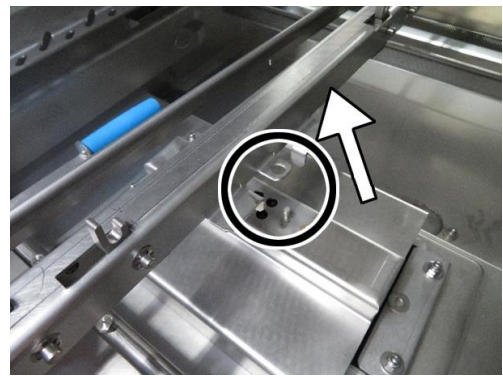
Position of the slide rail of the transport system.



4. Loosen the cap nuts.



5. Loosen the cap nut of the transport rail.



6. Disconnect the transport rail from the drive element.
7. Eliminate the jam
8. Reattach the loosened parts in reverse order.

14 Staff training

Only trained and instructed personnel is allowed to work at the dishwashing machine.

Staff responsibilities must be clearly defined in terms of operation, maintenance and repairs.

Personnel to be instructed must always work at the dishwashing machine under the supervision of an experienced person.

Persons	Activity		
	Trained operating personnel	Authorized trained persons	Authorized service technician
Installation and assembly			◆
Commissioning			◆
Operation, use	◆	◆	◆
Cleaning	◆	◆	◆
Check safety devices		◆	◆
Troubleshooting		◆	◆
Remedies, mechanical		◆	◆
Remedies, electrical		◆*	◆
Maintenance		◆	◆
Repair works		◆	◆

* trained electrician.

The instructions must be acknowledged in writing.

15 Maintenance, servicing

MEIKO recommends having the machine serviced by an authorized service technician at least once a year. As part of the maintenance, an electrical safety inspection is also carried out. Wear parts are checked and replaced, if necessary, and the machine tested.

Regular maintenance is a prerequisite for the long-term reliable and safe operation of a warewashing machine. Maintenance which is neglected or improperly carried out increases the residual risk of unforeseen damage to property and persons, for which no liability will then be assumed.

We recommend you conclude a maintenance contract with our agency to guarantee a long service life of the system.

Observe the maintenance intervals prescribed in the operating instructions!

Observe the maintenance instructions for the individual components!

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

Lubricants, cooling or cleaning agents endangering the environment must be properly disposed of!

15.1 Basic safety measures during normal operation

WARNING – Risk of injury due to electric shock! Damage to property!

Switch off the power supply using the locally available mains disconnecter prior to any maintenance or repair work and secure it with a padlock!

The key for this lock must be kept in the hands of the person carrying out the maintenance and repair work!

Failure to observe these precautions can result in severe injury or damage to property.

WARNING – Danger of injury from entering a danger zone

Unauthorized 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 unauthorized 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!

Danger of scalding!

Before carrying out any maintenance and repair work, ensure that all the parts of the machine that may be touched have cooled down to room temperature!

15.1.1 Before setting in operation - after maintenance and repair works

Legal requirements relating to the avoidance of waste materials and to their recycling/removal in accordance with applicable regulations must be observed!

In particular, during installation, repair and maintenance work, materials that could pollute water must not pollute the ground or run into the sewerage system:

- grease and oils
- hydraulic oils
- coolant
- cleaning fluids containing solvents

These materials must be stored, shipped, collected and disposed of in suitable containers!

16 Maintenance plan

IMPORTANT

Maintenance work should only be conducted by authorized MEIKO personnel. Whenever any electrical components are disconnected and reconnected, replaced or repaired, a safety test must be conducted, at least on these components!

Maintenance work	CHECKED	CLEANED	REPLACED	<u>Maintenance re- quirement</u>
1. Electrical safety check (certificate is optional)				
Carry out the visual inspection				at least once a year
Check the protective earth conductor				at least once a year
Insulation resistance measurement				at least once a year
Measure current on protective earth conductor				at least once a year
2. Wash pumps and pump final rinse				
Visual inspection of the motor and ventilation grid				at least once a year
Replace mechanical seal in the following tank modules (cross out components that are not applicable) WT 2 / WT 1 / PKSP				every 3000 h or 2 years
3. Wash tanks, wash systems and pump final rinse				
Functional and visual inspection of the wash systems and brackets				at least once a year
Visual inspection of rising pipes, wash systems				at least once a year
Clean air trap insert				at least once a year
Visual inspection of the stand pipe, rubber seal				at least once a year
Visual inspection of the sieves				at least once a year
Visual inspection of door hinges, door locks, door seals				at least once a year
4.- Heat recovery/air duct				
Check fan				at least once a year
Clean exhaust fan				at least once a year
Clean heat exchanger				at least once a year
5. Clean water rinsing system				
Visual inspection of nozzles, spray arms, spray arm locking devices				at least once a year
Replace sealing rubber rising pipe of the fresh water final rinse				at least once a year
Fresh water final rinse				
Visual inspection of the air-gap pump, ventilation grilles and check for leaks				at least once a year

Check minimum float switch in air-gap tank				at least once a year
Check float valve in air-gap tank				at least once a year
Clean dirt trap in fresh water rinse path				at least once a year
Visual inspection for leaks on the rinse aid dosing within the machine				at least once a year
6. Installation				
Clean dirt trap in fill path				at least once a year
Visual inspection for leaks				at least once a year
Check lines and connections are securely connected and there are no leaks				at least once a year
7. Transport				
Visual inspection of the gear motor and ventilation grid				at least once a year
Visual inspection that the transport catches are complete and move freely				at least once a year
Option:				
Check the transport system on the supply table				at least once a year
Check the roller conveyor at the discharge				at least once a year
8. Checking the function of the overall system				
Check filling and heating until it is ready for operation				at least once a year
Check dishes' final switch-off				at least once a year
Visual inspection on the entire machine for leaks				at least once a year
Visual inspection of the cable routing under the machine				at least once a year
Check power consumption of all heating elements (IN see wiring diagram)				at least once a year
9. Conveyor system				
Check basket transport for fault-free operation				at least once a year
Check gear motor				at least once a year
Check mechanical overload cut-off				at least once a year
10. Water quality, temperature (record values)				
Drinking water °F/°C gpg µS/in	at least once a year
PKSP:°F/°C / WT2:°F/°C / WT1:°F/°C				
KSP 1: °F gal/h		at least once a year
11. Drying (option)				
Visual inspection of the motor and ventilation grid				at least once a year
Installation space of the heating register, blower wheel and blower wheel housing				at least once a year
Clean air nozzles and suction grid				at least once a year

.....
Place, Date:

Authorized service technicians:

17 Dismantling and disposal

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

Please do not dispose of your old device in residual waste. Instead, contact your dealer or the collection points set up in your community for information regarding the disposal of your old device.

17.1 Disposal of packaging materials

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

- Square timber frame
- Plastic sheeting (PE film)
- Cardboard packaging (edge protection)
- Packaging strap (steel strip)
- Packaging strap (plastic (PP))



NOTE

The square timber frame consists of untreated raw pine / spruce. In order to guard against pests, country-specific import regulations may also stipulate the use of treated wood.

17.2 Dismantling and disposal of the old device

WARNING – Risk of injury from contact with chemicals

Detergent 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 (wash water) are swallowed.
-
- Where appropriate, rinse machine components, containers, dosing units and hoses with fresh water to remove chemical residues. Wear suitable clothes (gloves, safety glasses) for this.

18 Noise emission

Work place noise level: $L_{pA} \leq 80$ dB (A)

The workplace level shall be determined in accordance with DIN EN ISO 11204 precision class 2, applying a measurement uncertainty of +/- 2.5 dBs.

Measurements shall take place at a height of 63 in over the ground and at a distance of 39.4 in front of or behind the input/output tunnel.

All data shall relate to the emissions caused by the machine, additional emissions caused by handling the wash ware shall not be taken into account.

19 Abbreviations

LpA	LpA denotes the emission sound pressure levels at the workplace
dB	Abbreviation denoting decibel, the so-called sound pressure level. This designates the so-called noise level.

20

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