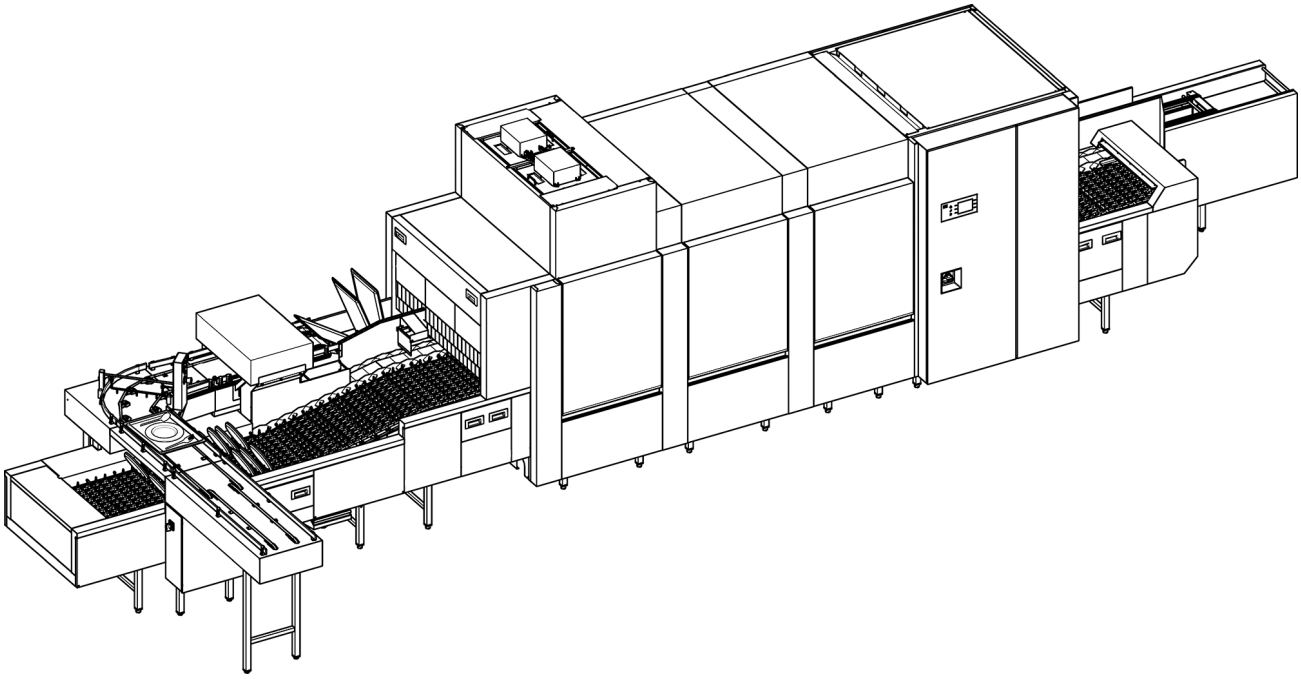
# MEIKO M-iQ BlueFire

Semi-automatic dishwashing system

## Original operating instructions



EN

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

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# 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 types:

- Semi-automatic dishwashing machine MEIKO M-iQ BlueFire

## 1.2 Delivery contents

The delivery contents include:

- Semi-automatic dishwashing machine MEIKO M-iQ BlueFire
- Documentation, for details see Related documents.

## 1.3 Related documents

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

| **Operator/operating company (included in delivery contents)** | |
|---|---|
| EC/EU declaration of conformity | Spare parts list |
| Declaration of Incorporation | Assembly plan (in advance) |
| Short operating instructions | Operating instructions tray dispenser trolley |
| Quick cleaning instructions | Installation plan (depending on order) |
| Wiring diagram | |
| **Authorised service technician** | |
| Service instructions | |

## 1.4 Presentation conventions

### 1.4.1 Warnings

⚠ **DANGER –** indicates an imminently hazardous situation which, if not avoided, will result in serious injury or death.

⚠ **WARNING –** indicates a potentially hazardous situation which, if not avoided, could result in serious injury or death.

⚠ **CAUTION –** indicates a possible hazardous situation which, if not avoided, could result in minor or moderate injury or damage to property.

### 1.4.2 Notices on use

▶ **Note –** indicates useful and important information about the product or its use.

### 1.4.3 Award elements

Description of the markup elements used in this document:

- 🛠 Required tool for subsequent action instruction.
- ▶ Requirement to be met for subsequent action instruction.
1. Successive action steps.
- ↳ Interim result for individual action steps.
- ✓ Final result of an action instruction.
- • A bullet point designates a list.
- [ ] Terms in square brackets indicate keys.
- (1) Position numbers shown in parentheses in the text refer to position numbers in illustrations.

### 1.4.4 Symbols

| | |
|---|---|
| | Read the operating instructions |
| | Disconnect from power supply |
| | Do not dispose of electrical appliances with household waste |
| | Potential equalisation connection |
| | Date of manufacture |
| | Manufacturer |
| | Caution |
| | Product documentation in available languages |
| | QR code with link to available product documentation |

### 1.4.5 Illustrations

The illustrations contained in this document are not necessarily true to the original or to scale. The illustration may deviate from the original, e.g. due to modifications to the product, but without diminishing the facts or comprehensibility.

# 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
- 2014/53/EU Directive on the placing of radio equipment on the market, OJEU L 153/62, 22 May 2014, amended by (EU) 2022/2380
- 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

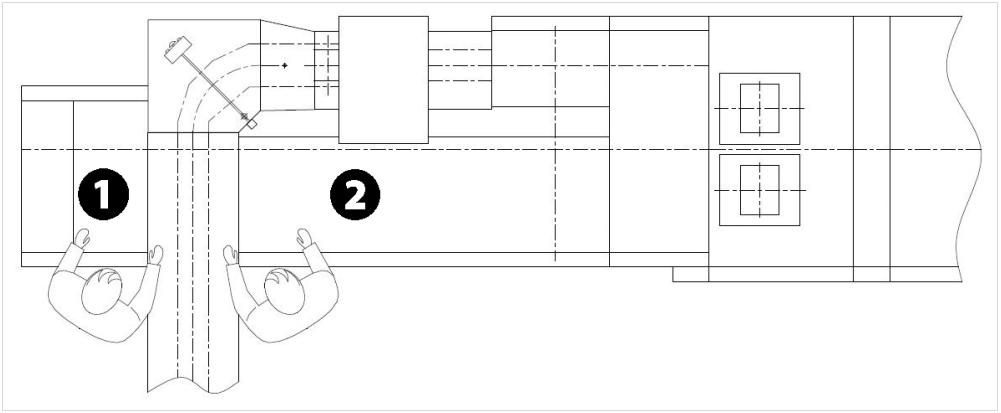
Read and observe all safety information, instructions and symbols attached on the product. Improper use may result in damage to the product or danger to the user.

## 3.1 Intended use

MEIKO does not accept any liability for damages resulting from improper use or incorrect operation. Any other use, conversions and modifications by means of non-approved conversion kits are not permitted and are dangerous.

**Overall system**

The system is intended exclusively for clearing and washing dishes, cutlery, trays, glasses, kitchen utensils, baking trays and containers in commercial use.




Due to the conveyor belt bridge, the height of the washware in the deposit area 1 is limited to 260 mm (Reference to technical data, see page 26). Any higher washware has to be placed in the deposit area 2!

**Cutlery lifting magnet**

The cutlery lifting magnet is used to remove cutlery pieces from trays in appropriate quantities (1x knife, 1x fork, 1x spoon, 1x spoon small).

**Tray dispenser trolley**

The tray dispenser trolley is intended exclusively for the manual transport and provision of trays in communal catering and gastronomy. Machine-assisted transport is not permitted.

The tray dispenser trolley is set up for the trays to be stacked, details can be taken from the order confirmation.

## 3.2 Foreseeable misuse

**Overall system**

- Washing electrical appliances
- Washing textiles
- Washing living creatures
- Washing or preparing food
- Taking wash water to prepare food or for drinking
- Washing items that must not come into contact with foodstuffs (e.g. ashtrays, candlesticks)
- Washing ferrous, non-corrosion-resistant objects (steel sponges, gratings, etc.).
- Washing objects made of wood
- Washing plastic parts that are not heat- and alkali-stable
- Washing support grids of cooking hobs/gas hobs
- Use of detergents unsuitable for the washware
- Using hand dishwashing detergent for pre-cleaning
- Incorrect dosing of detergent and rinse aid
- Filling the machine from an external source (e.g. with 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
- Washing washware outside the technical specification, see page 26.

**Tray dispenser trolley**

- Press the stacking platform down manually, e.g. for cleaning (risk of injury)
- Block the travel paths of the trolley outriggers, e.g. for cleaning (risk of injury)
- Placing objects on the floor panel while driving
- Transport of people

## 3.3 Safety information

The product has been manufactured in line with the state of the art and the established safety regulations and standards. Nevertheless, its use may result in functional hazards to the life and limb of the user or third parties. Therefore, read and observe the following safety notices before using the product.

**Strong permanent magnet**

Strong permanent magnets are installed in this product. They can affect the function of pacemakers and implanted defibrillators. A magnetic pulse could switch the pacemaker to a different mode. A defibrillator may no longer function.

- Observe safety signs.
- If you have a pacemaker or an implanted defibrillator, keep a minimum distance of 0.6 metres.
- Warn wearers of such active implants if necessary.

**Strong permanent magnet in the cutlery lifting magnet (optional)**

Strong permanent magnets are installed in the cutlery lifting magnet. They can affect the function of pacemakers and implanted defibrillators. A magnetic pulse could switch the pacemaker to a different mode. A defibrillator may no longer function.

- Observe safety signs.
- If you have a pacemaker or an implanted defibrillator, keep a minimum distance of 0.6 metres.
- Warn wearers of such active implants if necessary.

**Electric shock due to live parts!**

Live parts are freely accessible when the housing parts are open. Touching live parts can lead to serious electric shocks and injure or kill people.

- Have work on the electrical system carried out only by MEIKO authorised service technicians or a qualified specialist workshop.
- Before opening housing parts, always switch off the main switch and secure it against being switched back on.
- Have damaged insulation and components of the electrical system repaired immediately.
- Have damaged power cables replaced immediately.

**Risk of slipping due to leakage of liquids!**

Liquids may leak onto the floor during operation. Slip hazard!

- Be careful when liquids accumulate.
- Always wear suitable safety shoes.

**Wear personal protective equipment!**

Missing or unsuitable personal protective equipment increases the risk of health effects and injury to people.

- Define and provide personal protective equipment for the respective application.
- Only use personal protective equipment that is in proper condition and provides effective protection.
- Adapt personal protective equipment to the person, e.g. size.
- Personal protective equipment includes, for example
  - Work gloves
  - Safety shoes
  - Safety glasses
  - Protective clothing

**Wear suitable clothing!**

Loose clothing increases the risk of being caught or wound up on rotating parts and the risk of getting caught on protruding parts. This can severely injure people.

- Wear fitted clothing.
- Never wear rings, necklaces or other pieces of jewellery.
- Wear a hairnet for long hair.
- Wear sturdy shoes or safety footwear.

**Make sure safety labels and signs remain legible!**

Safety labels and signs on the machine provide warning of hazards at danger points and are important components of the machine's safety equipment. A lack of safety labels and signs increases the risk of serious and fatal injuries to people.

- Clean soiled safety labels and signs.
- Damaged and unrecognisable safety labels and signs must be replaced immediately.

**Make sure protective devices remain functional!**

If protective devices are missing or damaged, people can be seriously injured or killed.

- Replace damaged protective devices immediately.
- If the protective devices are damaged, shut down the machine.
- Never tamper with, bypass or override protective devices.
- Assemble dismantled protective devices and other parts before commissioning and move them into the protective position.

**Water can spray out under high pressure!**

Before working on the water supply, turn off the shut-off valve on the supply pipe to depressurise the water supply.

**Possible formation of germs when at a standstill for a prolonged period!**

If the machine is not used for a longer period of time, harmful germs can form in the water pipes.

- Wash the pipes thoroughly when recommissioning and after long periods of standstill to prevent the formation of germs.

**Only use approved components and materials for installation!**

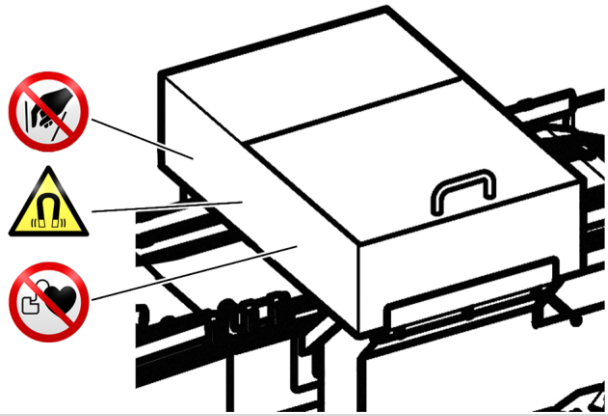
In order to ensure that the drinking water quality is maintained, the locally applicable regulations must be complied with during installation. Only suitable and approved components and materials may be used between the water supply pipe and the free discharge section of the machine.

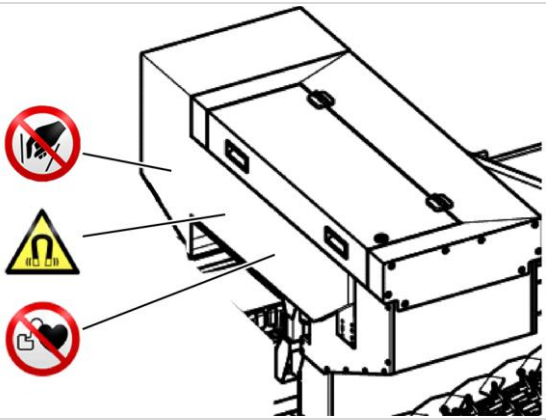
**Class 1 laser**

The machine is equipped with a photoelectric barrier that works with a Class 1 laser in accordance with DIN EN 60825-1. Lasers in this class are not dangerous and are considered “eye safe”. The photoelectric barrier is positioned in such a way that it is impossible to look directly into it during operation.

## 3.4 Safety labels and signs

**Cutlery lifting magnet**



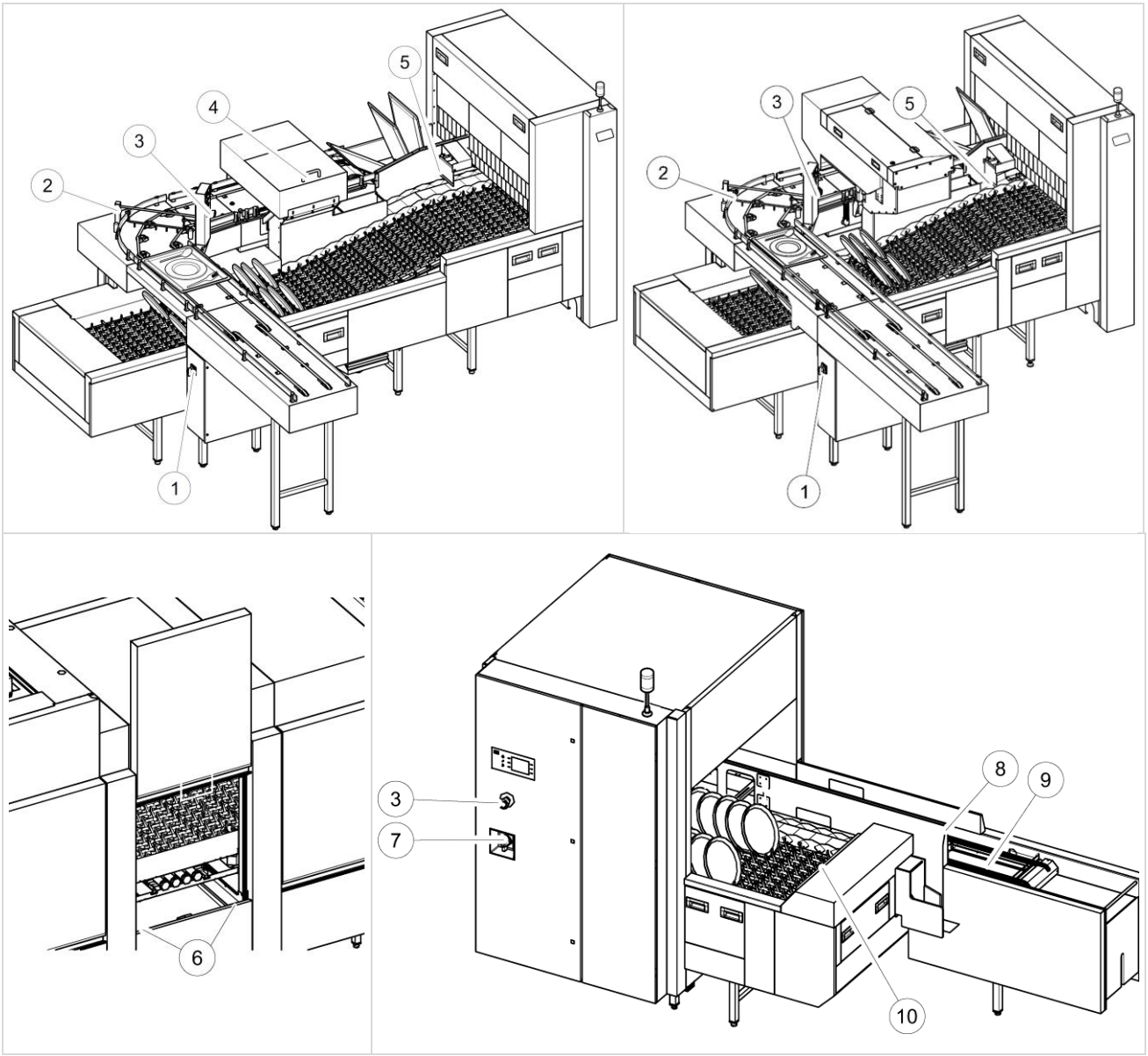


| | |
|---|---|
| Warning of strong magnetic field | Access prohibited for persons with pace-makers |
| Do not touch | |

**Further signs**

| | |
|---|---|
| | **Do not use a hand dishwashing detergent for pre-cleaning**<br>The sticker is enclosed with the machine. Apply to the feeding zone of the machine so that it is clearly visible. |

## 3.5 Safety devices




| No. | Designation | Effect on press/release |
|---|---|---|
| 1 | Main switch conveyor belt | Disconnect the conveyor belt from the power supply |
| 2 | Height limitation cutlery lifting magnet | Stop conveyor belt |
| 3 | Emergency stop button | Stop complete system, transport and pumps |
| 4 | Hood cutlery lifting magnet (only for long feeding section) | Stop complete system, transport and pumps with open hood |
| 5 | Height limitation cutlery belt | Stop dish track after 5 s, pump after 50 s + light signal |
| 6 | Door switch left/right | Stop complete system, transport and pumps with open door |
| 7 | Main switch M-iQ | Disconnect the entire system from the power supply |
| 8 | "Tray jammed" sensor | Stop tray track + light signal |
| 9 | "Tray belt occupied" sensor | Stop tray track + light signal |
| 10 | "Dish track occupied" switch | Stop dish track, pumping after 50 s |

## 3.6 Emergency stop function

When an emergency stop button is pressed or also when the hoodt of the cutlery lifting magnet or a door is opened, the display shows the message **Emergency stop function activated**, (see safety devices no. 3, 4 and 6). When the emergency stop function is activated, the entire system, the transport and the pumps stop. After eliminating the cause of the malfunction, the emergency stop button can be unlocked with a rotary movement, or the stop of the entire system is cancelled after closing the hood of the cutlery lifting magnet or door.

## 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.

**Only for machines with steam heating or heating with pump hot water:**

If steam escapes strongly, there is a danger of scalding when approaching. Do not close the steam supply/pump hot water supply at the steam stop valve on the machine side, but close the stop valve on site.

## 3.8 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

**Note**

The instructions must be acknowledged in writing.

# 4 Product description

## 4.1 Functional description

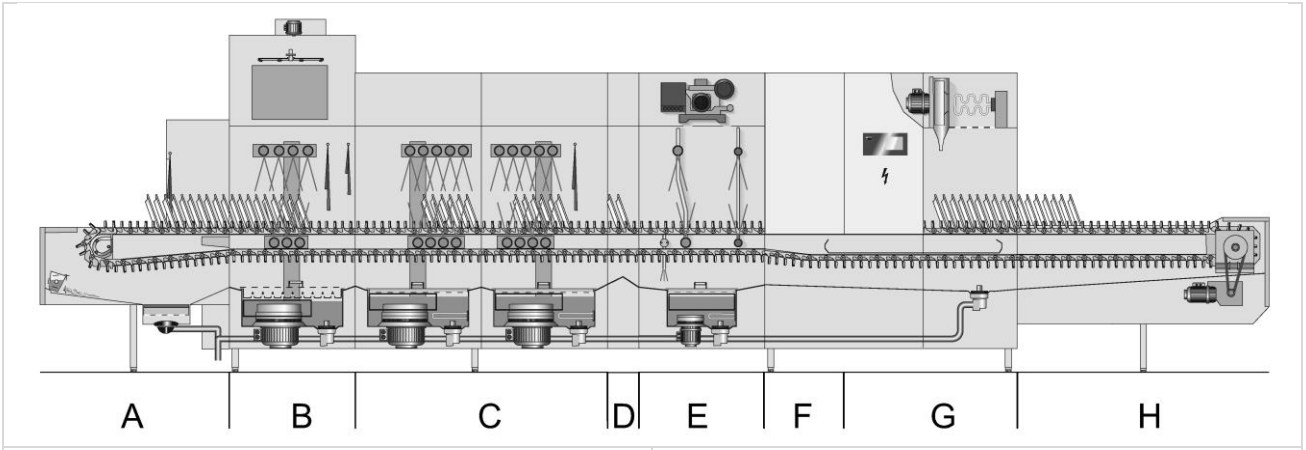
**Feeding zone of the system**

The trays are transported on the conveyor belt to the feeding section of the dishwashing machine, leared by the dishwashing staff with the exception of the cutlery pieces, see page 36.

The trays then pass under the cutlery lifting magnet, the cutlery pieces are magnetically lifted and fall onto the cutlery conveyor of the dishwashing machines. There, the cutlery pieces are immediately demagnetized.

Finally, the trays are placed on the tray track of the dishwashing machine in an upright position by the infeed.

**Dishwashing machine**




| | |
|---|---|
| A feeding zone (dirty side) | E final rinse zone |
| B pre-wash zone | F contact-plus zone |
| C main wash zone | G drying zone |
| D contact-plus zone | H discharge zone(clean side) |

The MEIKO M-iQ BlueFire is a flight type dishwashing machine. The washware is placed on the conveyor belt at the feeding zone (A) by staff or automatically and conveyed through the various zones (B-G) of the dishwashing machine, cleaned and dried.

In the pre-wash zone (B), the dishes are cleaned of the coarsest dirt. In the main wash zone (C), the remaining dirt particles are removed before washing in the final rinse zone (E) with recirculated and fresh water. This is followed by drying (G) with hot air. Curtains and Contact-plus zones (D, F) are situated at the transitions between the zones. This prevents water from being carried from one zone to the next.

For certain requirements, a thermal disinfection zone may be located behind the main wash zone (C).

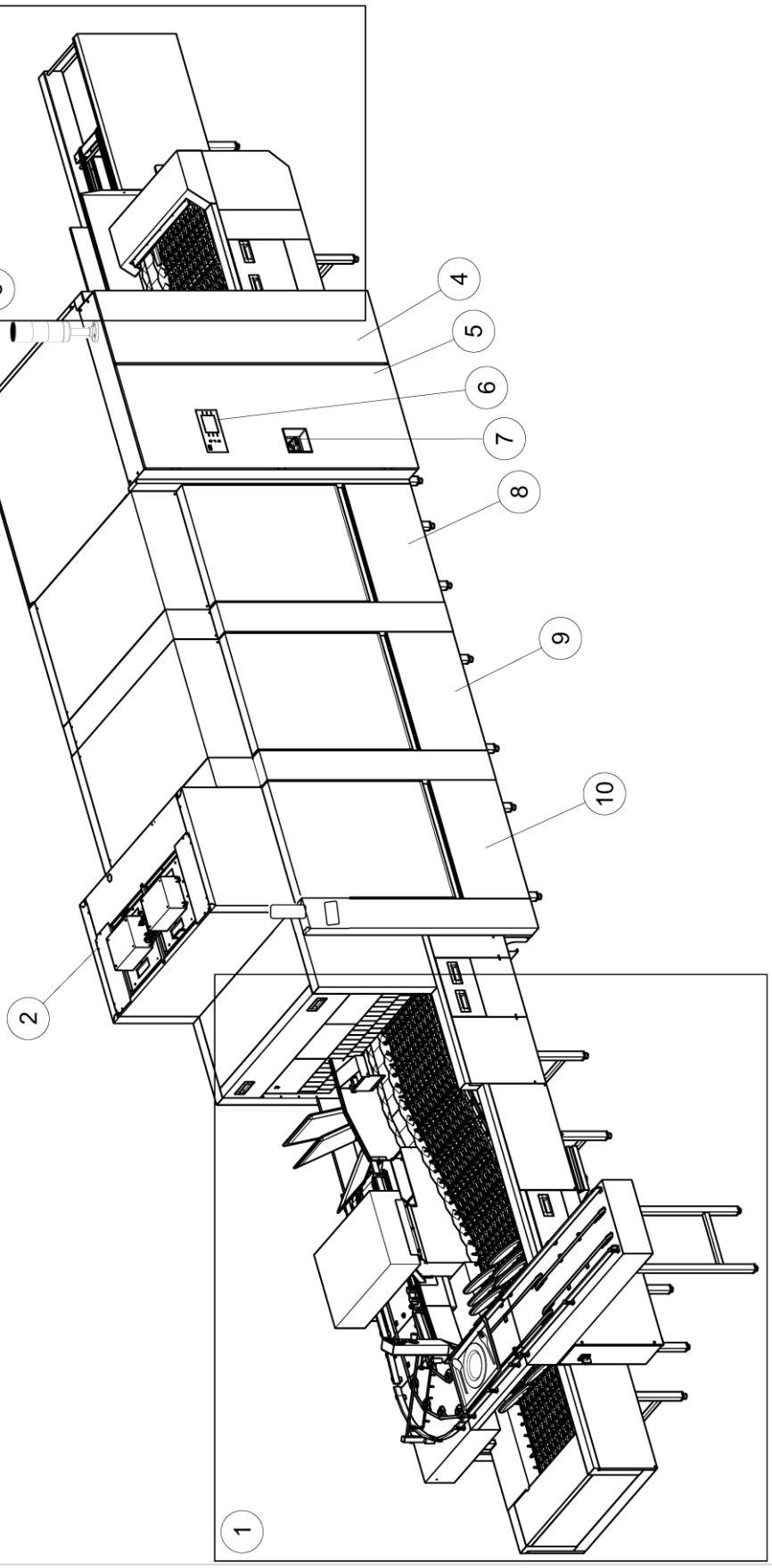
The number of tanks varies depending on the area of application and transport speed of the dishwasher. More tanks are required for faster speeds.

**Discharge zone of the system**

The cleaned dishes are removed from the conveyor by the dishwashing staff. If a piece of crockery is not removed and reaches the limit switch, the transport is stopped until the piece of crockery is removed. Washed cutlery pieces fall down a cutlery chute into a container provided. The trays are placed on a tray dispenser trolley by a tray stacker. When it is full, a photoelectric barrier is activated and a control light signals the change of the tray dispenser trolley. In the meantime, approx. 5 further trays can be accommodated in a buffer store so that the transport is not interrupted.

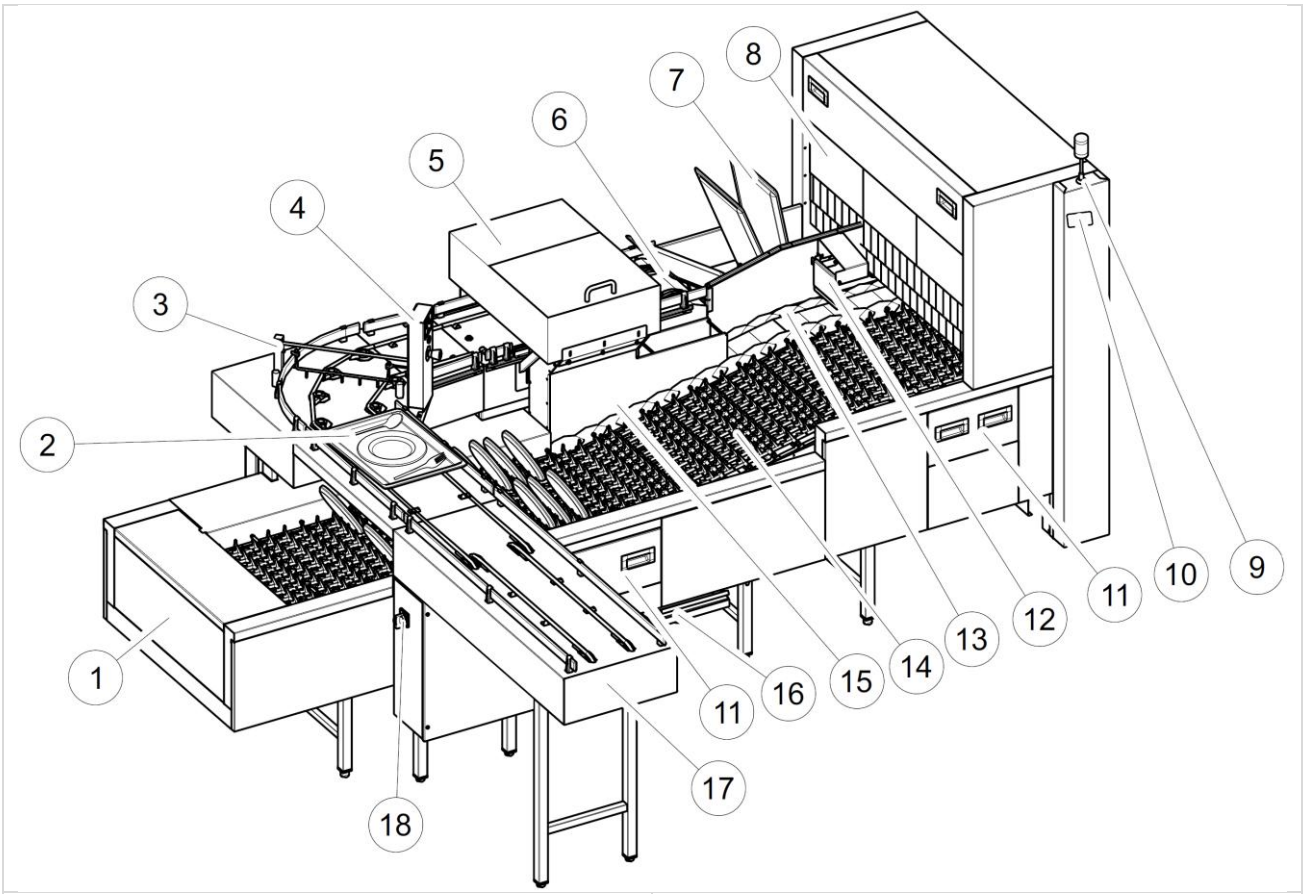
## 4.2 Overview illustration

**General overview**



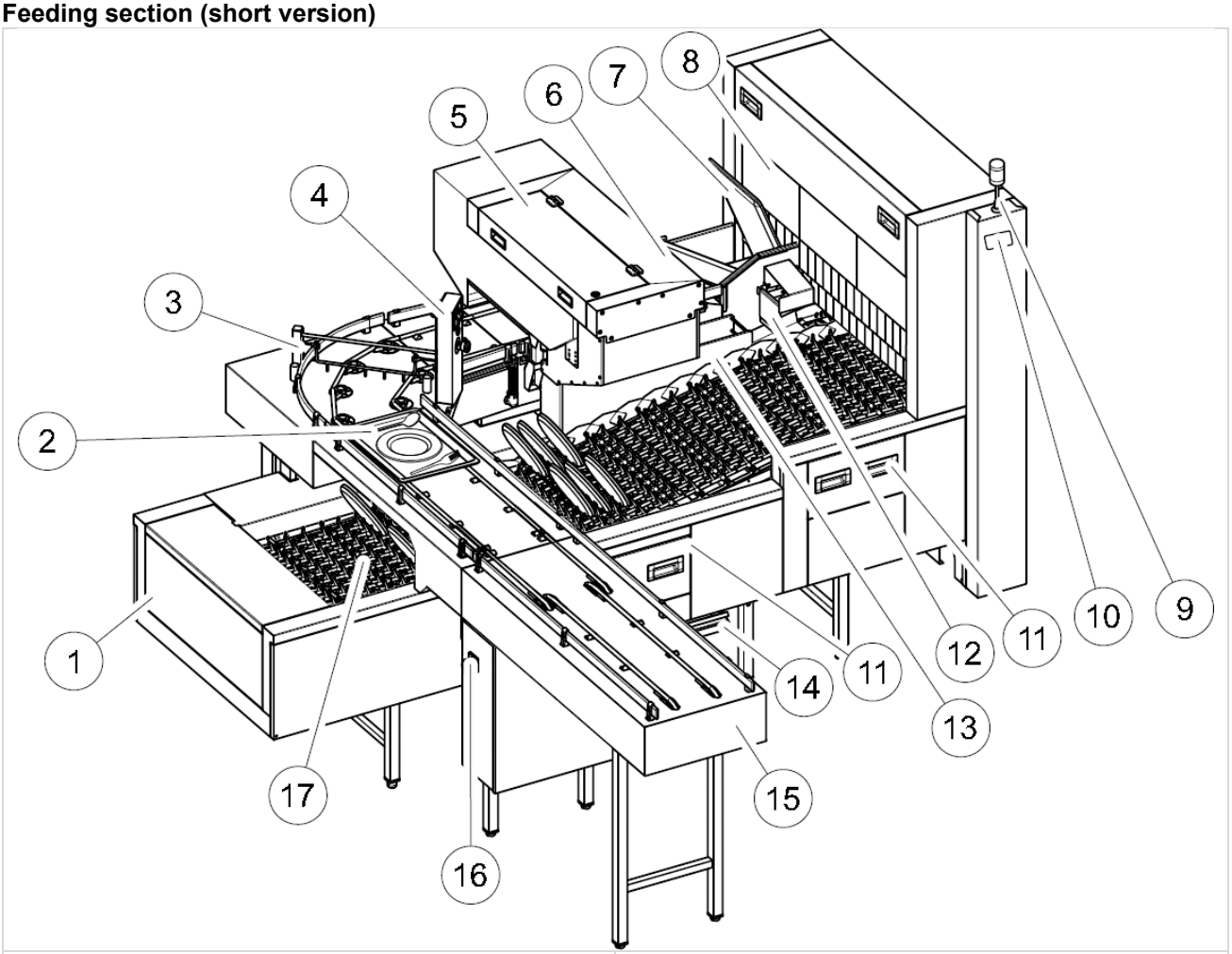

| | | | |
|---|---|---|---|
| 1 | Feeding section -see page 15 | 2 | Exhaust air heat recovery (heat recovery ) |
| 3 | Discharge section - see page 18 | 4 | Dryingg (TR) |
| 5 | Control cabinet | 6 | Glass operating panell, see page 32 |
| 7 | Main switch | 8 | Pump final rinse(PKSP) |
| 9 | Wash tank(WT) see page 19 | 10 | Wash tank pre-washing( WTV) |

**feeding section (long version with closed cutlery lifting magnet)**



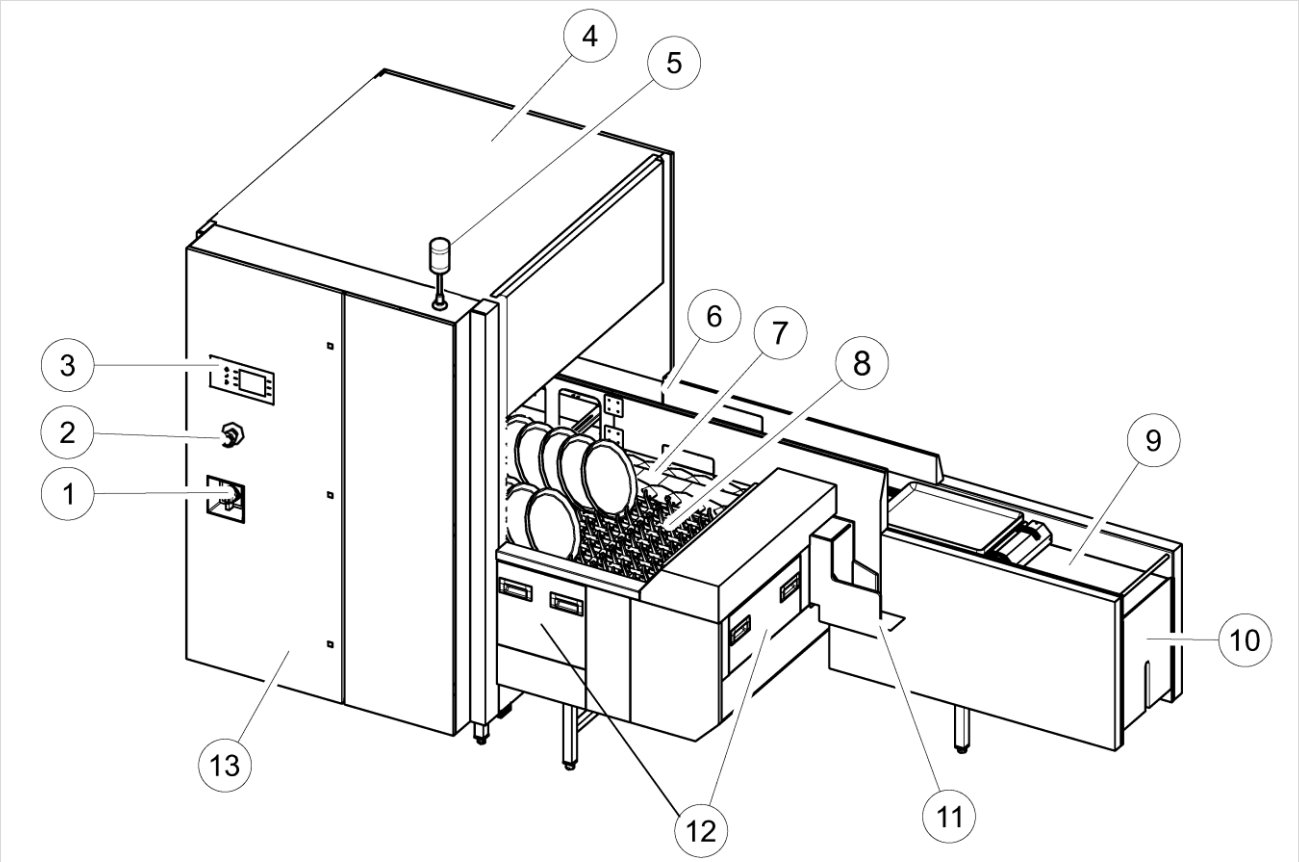

| | |
|---|---|
| 1 Cleaning flap front side | 2 Tray with dishes and cutlery |
| 3 Height limitation (cutlery lifting magnet) | 4 Control system conveyor belt and emergency stop function |
| 5 Cutlery lifting magnet | 6 Tray infeed device TST 6 |
| 7 Tray on tray track | 8 Curtain |
| 9 Signal lamp/signal lamp for in-flight catering (optional), see page 23 | 10 Control system transport speed dishwashing machine |
| 11 Cleaning flaps | 12 Height limitation (cutlery belt) |
| 13 Cutlery track | 14 Dish track with plates |
| 15 Demagnetization coil | 16 Feeding sieve |
| 17 Conveyor belt (to the feeding station) | 18 Electrical box with main switch for conveyor belt |

**Feeding section (short version)**



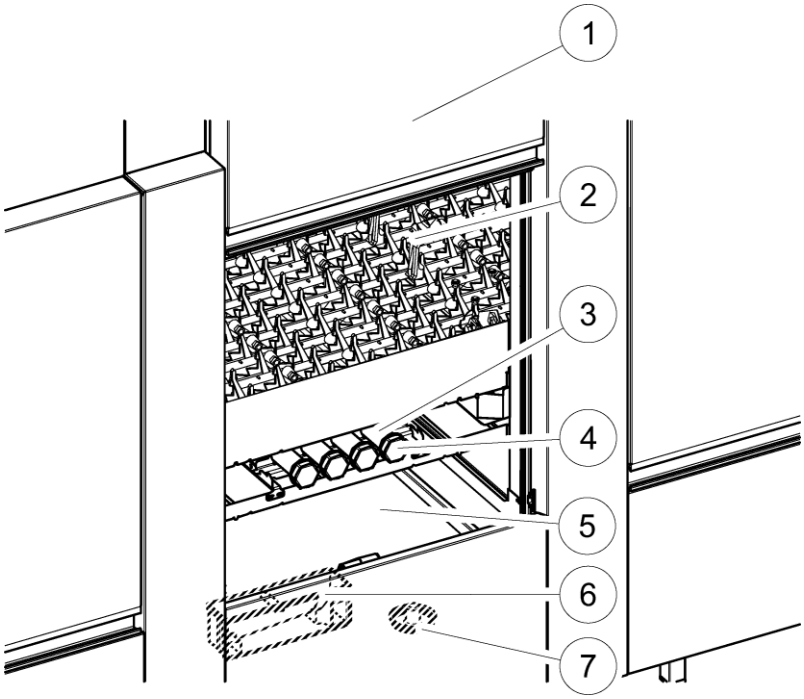

| | |
|---|---|
| 1 Cleaning flap front side | 2 Tray with dishes and cutlery |
| 3 Height limitation (cutlery lifting magnet) | 4 Control system conveyor belt and emergency stop function |
| 5 Cutlery lifting magnet | 6 Tray infeed device TST 6 |
| 7 Tray on tray track | 8 Curtain |
| 9 Signal lamp/signal lamp for in-flight catering (optional), see page 23 | 10 Control system transport speed dishwashing machine |
| 11 Cleaning flaps | 12 Height limitation (cutlery belt) |
| 13 Cutlery track | 14 Feeding sieve |
| 15 Conveyor belt (to the feeding station) | 16 Electrical box with main switch for conveyor belt |
| 17 Dish track with plates | |

**Discharge section**




| | |
|---|---|
| 1 Main switch | 2 Emergency stop function |
| 3 Glass operating panel | 4 Drying |
| 5 Signal lamp/signal lamp for in-flight catering (optional), see page 23 | 6 Tray track |
| 7 Cutlery track | 8 Dish track |
| 9 Tray stacker | 10 Device for inserting the tray dispenser trolley |
| 11 Cutlery discharge | |
| 12 Cleaning flaps | 13 Control cabinet |

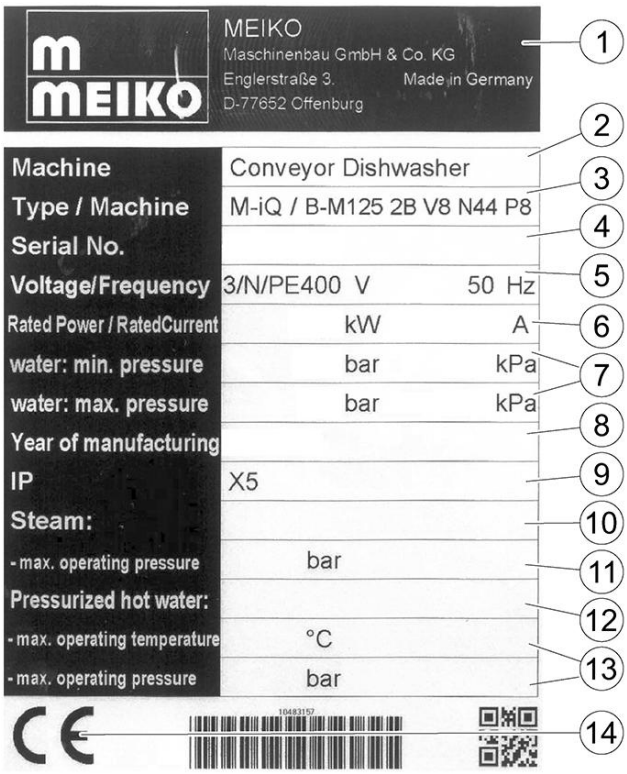
**Interior view wash tank(for display reasons, the returning belt is missing)**




| | |
|---|---|
| 1 | Door |
| 2 | Dish track |
| 3 | Washing system bottom |
| 4 | Cleaning cap |
| 5 | Tank cover sieve |
| 6 | Strainer basket |
| 7 | Tank drain filter |

## 4.3 Type label

The rating plate is located in the lower area on the control cabinet door. Another rating plate can be found on the inside of the control cabinet door. The rating plate includes the following information:




| | |
|---|---|
| 1 | Name and address of manufacturer |
| 2 | Machine type |
| 3 | Type key |
| 4 | Serial number |
| 5 | Electrical connection |
| 6 | Rated power/rated current |
| 7 | Water pressure on site min./max. |
| 8 | Year of manufacture |
| 9 | IP protection rating |
| 10 | Steam connection |
| 11 | Steam pressure on site max. |
| 12 | Pump hot water connection |
| 13 | Pump hot water temperature/pressure |
| 14 | CE mark |

## 4.4 WLAN and Bluetooth

This product is network-compatible and can be connected to the local network or a mobile device to use functions via MEIKO software.

The function of this software is dependent on the availability of local radio module approval.

Information on availability in your country can be found on the website: www.meiko.com/Connectivity.

The Bluetooth interface is used by the MEIKO-authorised service technician to connect to the machine and change settings.

The WLAN interface allows the operator to integrate the machine into the on-site WLAN network and retrieve data from the machine using software provided by MEIKO (e.g. MEIKO Assist Pro).

The MEIKO Assist Pro app can be downloaded from the Google Play Store or the Apple App Store.

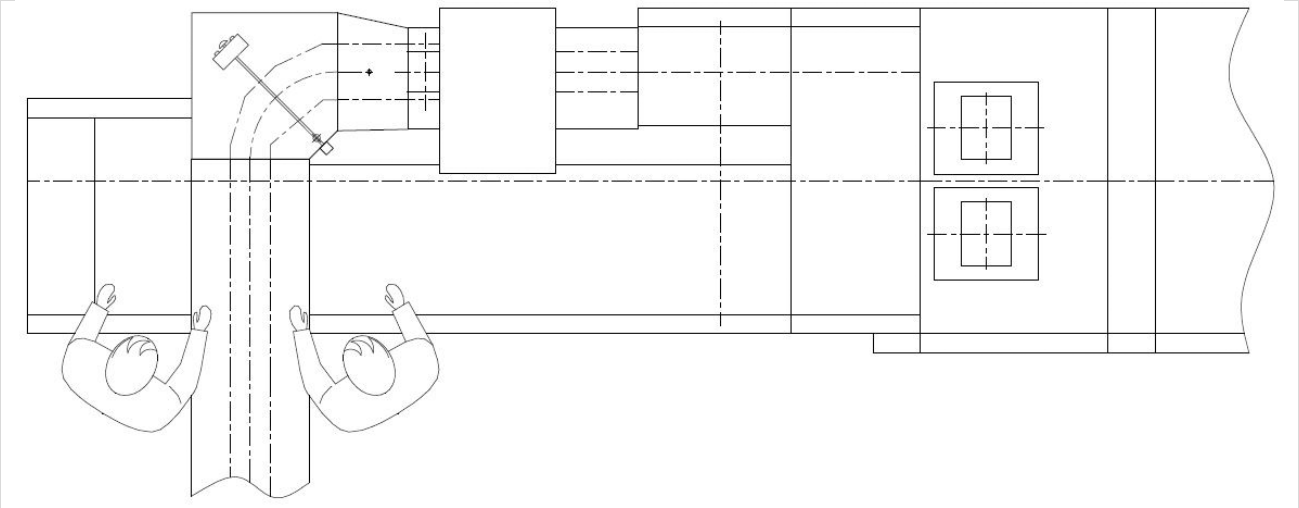
## 4.5 Workstations

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

**Thermal load:**

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

**Feeding section with 2 persons**

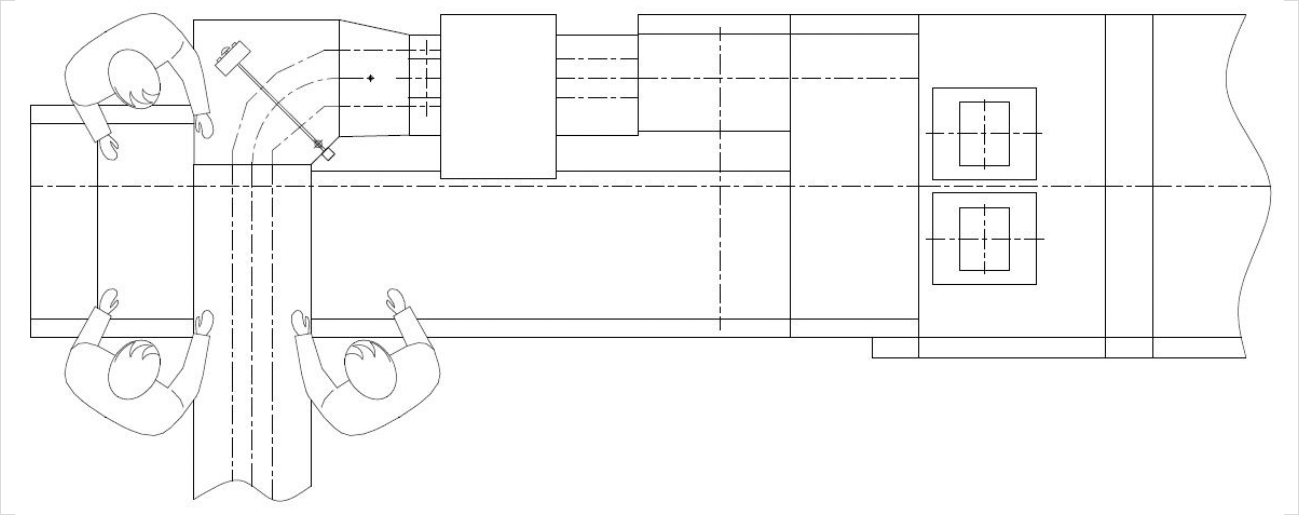


Tasks at the feeding section with 2 persons:

- Dispose of food waste and inorganic waste
- Remove dishes from the trays and place them on the dishwashing machine belt

Depending on the place setting, certain pieces of tableware can be assigned to individual persons and placed in a track. This facilitates the removal of the cleaned dishes at the discharge section (reduction of walking distances and movements).

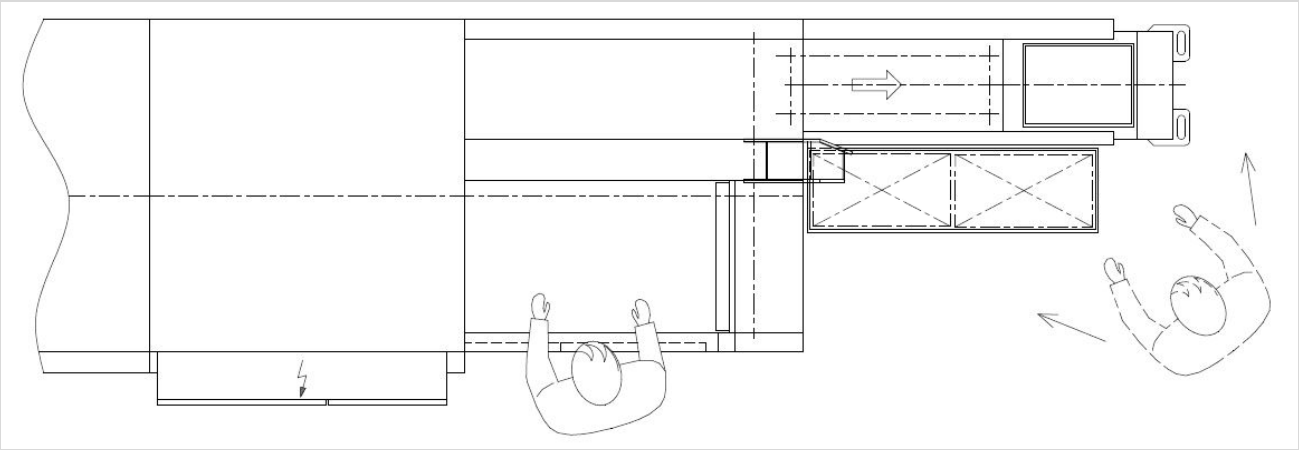
**Feeding section with 3 persons**



The tasks at the feeding section with 3 persons are identical to those at the feeding section with 2 persons.

The third workstation has better access to the height limitation and should take on dishes that are easy to put away because of the restricted accessibility to the dishwasher belt.

**Discharge section with one person (including jumper)**



Tasks at the discharge section with one person (including jumper):

- Remove dishes from dishwasher belt and sort into stacker
- Jumper: Change cutlery tray and tray stacking device

Walking distances and movements for person(s) at the discharge section should be kept to a minimum in order to make the removal of the cleaned dishes at the discharge section efficient.

## 4.6 Automatic cadence

The automatic cadence ensures that the machine only runs in full mode when there is washware in the machine. If this is not the case, the machine switches temporarily to standby mode.

The washware detection in the feeding tunnel recognises incoming washware. If the washware detection function is not activated for a defined period of time, the machine switches to standby mode:

- The display shows **INFEED BREAK**.
- The wash pumps switch off.
- The final rinse stops.
- The drying temperature is lowered.

The tank heaters remain switched on to ensure the minimum temperature for switching to full operation.

If the washware detection is activated again by incoming washware, the machine switches to full operation. The display changes to **MACHINE RINSING**.

## 4.7 Connections

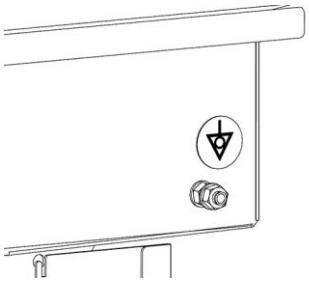
The following connections are provided for the dishwashing machine:

- Fresh water connection
- Waste water connection
- Electrical connection
- Connection for dosing system
- Connection for external cooling unit/air conditioning system (optional, only M-iQ CUP)

Connection of an exhaust air system may also be required on site.

The positions of the connections can vary greatly depending on the requirements and can be found in the respective assembly plan.

## 4.8 Protective equipotential bonding



The screw for the protective equipotential bonding is located on the PKSP tank behind the tank panelling. See assembly plan for position.

## 4.9 Blue operating concept

The parts of the dishwasher 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.

## 4.10 Dosing

⚠ **CAUTION – Reduced durability of dosing units and other dishwashing machine components**

The use of inappropriate detergent and rinse aid can corrode the dosing units and other machine components.

- If necessary, consult with MEIKO and the detergent supplier.

Basically, enough detergent must be added to the wash tank or wash tanks so that all dishes leave the dishwashing machine in a clean state.

Quantities cannot be given here, as the dosing quantity depends on a number of factors:

- the dosing system (liquid, powder, block, spraying system; ...)
- the degree of soiling
- the drying time
- from the preheating of the washware (e.g. plates)
- the quantity of starch present
- the water quality
- the type of detergent used (e.g. a disinfecting detergent)

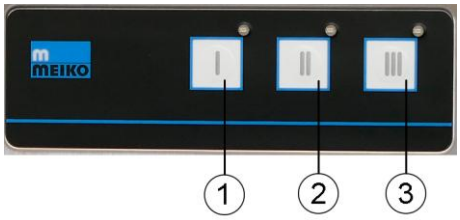
The washing result can also be influenced by the transport speed of the dishwashing machine. In addition, there may be differences between different chemical suppliers. MEIKO therefore recommends that the quantity settings be made by the chemical supplier.

## 4.11 Options

Depending on the order-specific design, various optional modules or functions may be included.

### 4.11.1 Membrane key pad

The dishwasher is optionally equipped with an additional membrane keypad. The membrane keypad is located on one or both sides of the feeding tunnel. The LED for the selected transport speed lights up green.




1 On/Off or conveyor speed I
2 Conveyor speed II
3 Conveyor speed III

### 4.11.2 Signal lamp

The dishwasher is optionally equipped with one or more signal lights to indicate various operating statuses. Depending on the version of the dishwasher, the signalling light is located on the control cabinet, the feeding tunnel or the discharge tunnel. The configuration of the light varies according to the specific requirements.

The signal light can consist of several lights of different colours. The respective colours and light modes indicate different operating states of the dishwasher. The individual meanings are labelled according to the arrangement of the lights.

### 4.11.3 Horn

The dishwashing machine is optionally equipped with a horn to provide an acoustic alert for faults and warnings. The horn is usually located on the control cabinet, but it can also be located elsewhere depending on requirements.

### 4.11.4 GiO-TECH

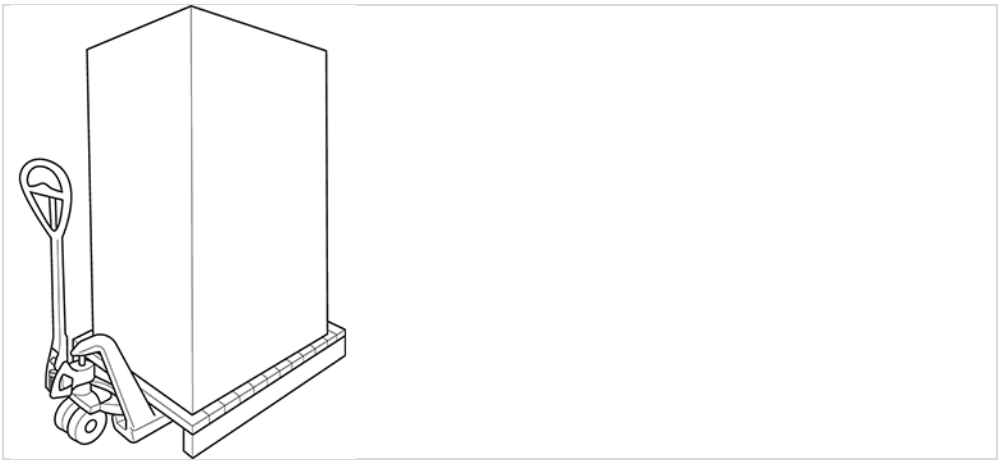
GiO-TECH is a water treatment technology that uses reverse osmosis. Hardness formers and salts, which can leave residues on the washware, are filtered out with GiO-TECH.

GiO-TECH has special requirements for fresh water and waste water connections. These requirements can be found in the enclosed GiO-TECH documentation.

# 5 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.

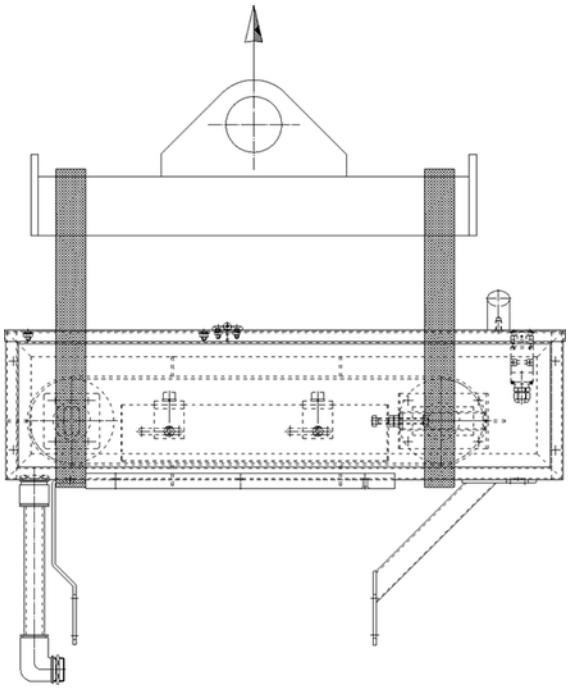
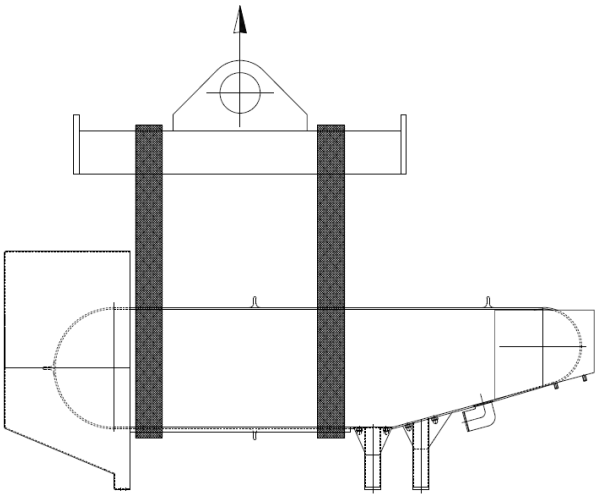


The packaging is specifically designed to allow the appliances to be moved safely and securely using a pallet jack or a sack truck. For safe transport, the installation is supported by a special square timber frame.

- Execute transport carefully.
- Always transport the dishwashing machine on the supplied wooden frame.
- Observe transport instructions on the packaging.
- Do not unpack the machine until it has been transported.

**Lifting instructions for cutlery lifting magnet**

The lifting straps must be attached as shown.

| | |
|---|---|
|  |  |
| Cutlery lifting magnet (enclosed version) | Cutlery lifting magnet (open version) |
| Transport weight including packaging approx. 100 kg | Transport weight including packaging approx. 190 kg |

**Cutlery lifting magnet: Transport instructions**

- The cutlery lifting magnet is delivered fully assembled unless otherwise agreed in the order confirmation.
- The cutlery lifting magnet is transported on a pallet made for the conveyor type. The main corners are fitted with protective caps and the entire conveyor is shrink-wrapped with foil. Transport the cutlery lifting magnet on the pallet using a forklift truck or a hand pallet truck.
- After unpacking, the cutlery lifting magnet can be transported to its place of use with the aid of lifting straps or round slings. Make sure that the lifting straps used have suitable edge protection and an appropriate load capacity.

## 5.1 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)

# 6 Assembly and commissioning

**Note**

Installation and water connection may only be carried out by qualified personnel. The electrical connection may only be carried out by a qualified electrician in accordance with local regulations.

# 7 Technical data

Each system is dimensioned specifically for the customer, therefore no values are given here for most properties. These are available in the order-specific assembly plan. Data on the connection can also be found on the rating plate, see page 19. The following features, among others, can be found in the assembly plan:

| **Mains connection** | | |
|---|---|---|
| Mains connection | V/Hz | See rating plate |
| Current consumption | A | |
| Rated power | kW | |
| **Noise emission** | | |
| Emission sound pressure level at the workplace LpA | dB(A) | 76 |
| **Other** | | |
| Floor load per machine foot (Ø 30 mm) | kg | Max. 220 |

| **Ambient conditions** | |
|---|---|
| Operating temperature | 5-40°C |
| Relative humidity | < 95 % |
| Fresh water pressure range | 350–800 kPa (3.5–8.0 bar) |
| Water temperature for optimum operation of an exhaust air heat recovery system | max. 12°C |

| **Cutlery lifting magnet and plate demagnetiser** | |
|---|---|
| Operating temperature | 20-40°C |
| Transport goods | Magnetically detectable cutlery pieces |
| Dimensions (standard canteen cutlery) | Length < 210 mm<br>average knife handle width > 12 mm<br>knife handle thickness <6 mm<br>knife weight < 70 g |
| Quantity | approx. 50 cutlery pieces per minute |
| Temperature of the transported goods | ca. 20–30°C |
| Transport weight incl. packaging | approx. 100 kg (closed version) |
| Transport weight incl. packaging | approx. 190 kg (open version) |

| **Ambient conditions** | |
|---|---|
| Operating temperature | 5-40°C |
| Relative humidity | < 95 % |
| Fresh water pressure range | 350–800 kPa (3,5–8 bar) |
| Fresh water pressure range | 350–800 kPa (3.5–8.0 bar) |
| Water temperature for optimum operation of an exhaust air heat recovery system | max. 12°C |

| Wireless module | |
|---|---|
| Frequency band | 2412–2484 MHz |
| WLAN standard | IEEE 802.11 b/g/n |
| Bluetooth version | 4.2 |
| Max. transmission power | 20 dBm |

| Washware | |
|---|---|
| Max. diameter plate (= max. height of washware) | 260 mm |

## 7.1 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

## 7.2 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.

## 7.3 Requirements for the installation location

- Consistently frost free storage and installation site
- Install anti-slip floor coverings in the work area

## 7.4 Requirements for the fresh water connection

- Fresh water connections must comply with the locally applicable regulations (e.g. DIN EN 806, DIN EN 1717). Install a shut-off valve locally in each fresh water supply line; the device must be easily accessible for the operating personnel. This dishwashing machine is installed as a fully functional unit and only needs to be connected to the local power and water supply.
- In the case of water softeners or demineralisation cartridges, the customer must also provide a shut-off valve, fine filter, backflow preventer and pipe aerator. If necessary, an activated carbon filter should also be provided to reduce chlorine or other oxidising components.
- From a biological perspective, the fresh water must be of drinking water quality. This also applies to treated water.
- In addition, the dishwashing machine is equipped with a safety device (e.g. according to DIN EN 61770/DIN EN 1717).
- Flush the local piping/shut-off valves and hoses before connecting the system.
- The water-carrying ducts and components are not frost-proof. If the temperature at the installation site of the machine falls below 5 °C, take suitable frost protection measures.
- If the minimum flow pressure is too low, increase the pressure using a pressure booster pump.
- If the maximum flow pressure is exceeded, limit the pressure using a pressure regulator.

Only for Australia/New Zealand:

- All work must be carried out in accordance with AS/NZS 3500.1!

| **Fresh water connection** | |
|---|---|
| Minimum flow pressure | 250 kPa / 2.5 bar before the solenoid valve |
| Maximum flow pressure | 600 kPa / 6.0 bar upstream of the solenoid valve<br>(1000 kPa / 10.0 bar in DK, SV, NO, FI) |
| Max. incoming water temperature with heat recovery | 12°C |
| Pressure range for valve control via fresh water | 350 kPa / 3.5 bar - 800 kPa / 8.0 bar<br>No pressure surges |
| Max. boiler incoming water temperature | 12°C |
| Max. tank incoming water temperature | 60°C |

| **General requirements for water quality** | |
|---|---|
| Total hardness | Up to 3 dH |
| Chloride content | Max. 50 mg/l water<br>To prevent pitting corrosion on the machine and cutlery parts |
| Heavy metals<br>Iron<br>Manganese<br>Copper | <br>0.1 mg/l water<br>0.05 mg/l water<br>0.05 mg/l water<br>(above this value discolouration of the washware and the machine may occur) |
| Total salt content<br>Porcelain/opal glass | (measured via conductivity)<br>Max. 400 µS/cm |

| | |
|---|---|
| Glass | Max. 100 µS/cm |
| Stainless steel | Max. 80 µS/cm |

## 7.5 Requirements for the waste water connection

- Waste water connections must comply with DIN EN 1256 and the locally applicable regulations.
- At the installation location, an odour seal is provided (further information in the installation drawing).
- Depending on the intended use of the dishwashing machine, a grease trap may be included, based on the general/location-specific regulations.
- Materials for on site pipes, sealants, etc. must be temperature-resistant up to 75 °C and resistant to acids and alkalis (pH value between 3 and 12).

Only for Australia/New Zealand:

The drain hose must be connected so that it is waterproof 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.

## 7.6 Requirements for the building ventilation system

- The dishwashing machine is equipped with a heat recovery system (AirConcept), which usually makes a machine exhaust air connection to the on site ventilation system superfluous. However, if the fresh water supplied is not cold enough (> 12 °C), it may make sense to install an exhaust air connection.
- The building ventilation system must comply with the locally applicable regulations (e.g. EN 16282), and must always be watertight and corrosion-resistant.
- The exhaust air may contain small amounts of aerosols, therefore discharge exhaust air through suitable exhaust air zones or exhaust air hoods near the discharge opening.
- Exhaust air temperature and exhaust air humidity can change depending on the operating status, e.g. in standby mode. The data for heat load (temperature/ relative humidity) from the order-related documents refer to uninterrupted washing cycle.
- If the exhaust air is discharged into the surrounding room, adjust the discharged volumetric air flow.

## 7.7 Requirements for the steam connection/pump hot water connection

- The on site operating pressure must not exceed the permissible nominal pressure of the taps of the dishwashing machine (see type plate).
- The connection to the on site steam pipe is always made from above, all necessary valves, control units and condensate traps are installed in the machine.
- For steam pipes from above, provide a condensate trap on site at the lowest point.
- Drain the condensate via a suitable drainage system (e.g. floor drainage) to prevent pressure surges caused by accumulated condensate in the machine. If the condensate is drained upwards, a discharge condensate trap (quick drain) is installed in the machine at the factory.
- Unpressurised condensate return line installed with a downward slope.
- Pipes upstream of the dishwasher's condensate not insulated.
- Use steam-resistant seals on the connections to the machine.
- Pressure and temperature of the supplied media (steam / hot water) are constant.
- Frost-free installation site or suitable frost protection measures at temperatures < 5 °C.

## 7.8 Requirements to the electrical connection

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.

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

**Fuse and backup 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) so that backup protection is guaranteed. Take note of the available connection variants.

**Main switch/mains connection cable**

- If the machine does not have a main switch, install a main switch with all-pole disconnection from the mains in accordance with the installer's regulations in the permanently wired 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.

**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.
- The protective measures and the connection of the equipotential bonding of the system and all its components (tables, feed units, belts) must be carried out in accordance with the local regulations and the requirements of the local utility companies.

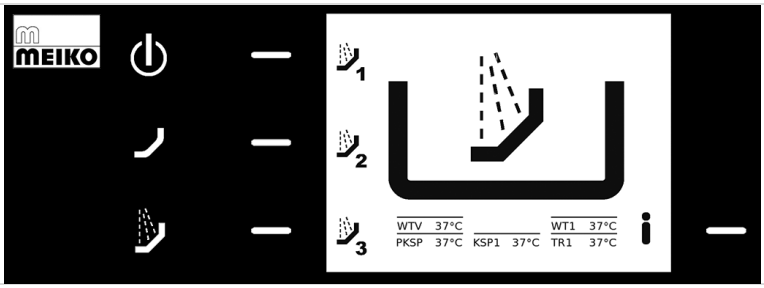
## 7.9 IT security requirements

**IT security**

If the machine is connected to the IT network, secure the IT network in accordance with the state of the art. This includes, in particular, configuration of secure WLAN settings and implementation of further technical protective measures.

# 8 Operation/use

## 8.1 Glass control panel



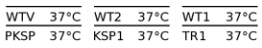

**Keys**

| Key | Meaning | Key | Meaning |
|---|---|---|---|
| | **On/Off key**<br>Filling/heating on or machine off | | **Service access key (MEIKO key)** |
| | **Confirmation keys**<br>• Meaning/function is shown on the display next to the relevant key<br>• Illuminated blue: function selectable<br>• Illuminated green: function active | | **Washing operation on**<br>• flashing green: filling/heating active<br>• illuminated blue: ready for operation<br>• illuminated green: washing operation |
| | **Washing interruption**<br>Short interruption of the washing operation | | |

**Functions of the confirmation keys**

| Symbol | Meaning | Symbol | Meaning |
|---|---|---|---|
| | Conveyor speed 1 / 2 / 3, not adjustable on all models | | Horizontal menu selection |
| | Machine status and settings (i-menu) | | Vertical menu selection |
| | Main menu | | Next digit in entry field |
| | Menu Self-cleaning/Draining | | Change value |
| | Filling per time | | Back without change |
| | Extended notes to a message | | Confirm the selection |

**Status displays**

| Status display | Meaning | |
|---|---|---|
| | • Ready for operation<br>• Machine washing<br>• Filling<br>• Filling/heating | • Heating<br>• Machine off<br>• Infeed break<br>• Dishes jam |
| **Tank temperatures**<br>  | WTV: Wash tank pre-washing<br>PKSP: Pump final rinse<br>FKSP: Fresh water final rinse | WT: Wash tank<br>TR: Drying |

## 8.2 Before switching on the machine

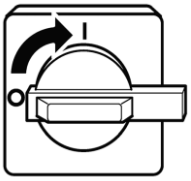
**⚠ WARNING – Risk of injury from contact with chemicals**

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

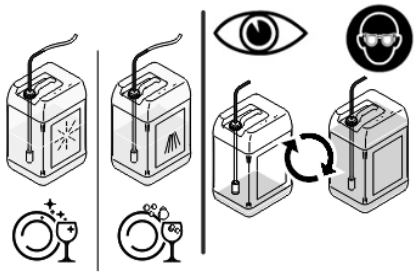
**⚠ CAUTION – risk of injury when closing the machine doors**

- To close the machine doors, use the handle designated for this purpose.

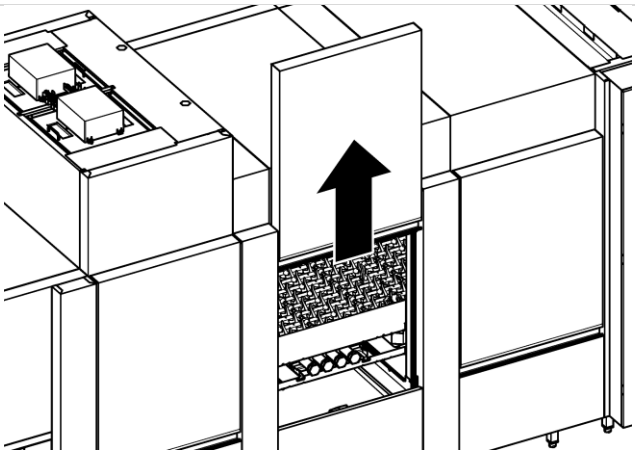
1. Ensure the water supply is available.



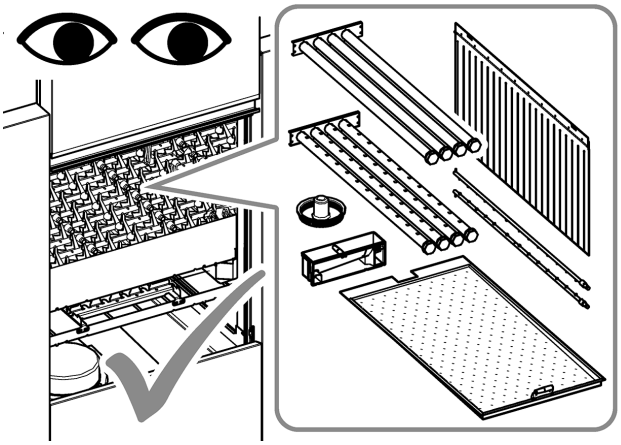
2. Turn on main switch.



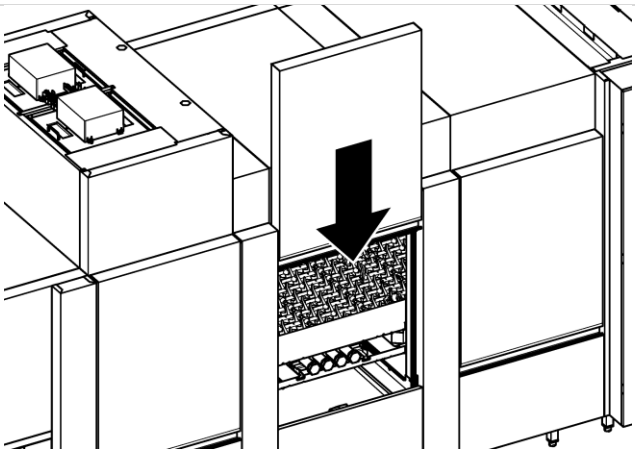
3. Check detergent and rinse aid, replace if necessary according to manufacturer's instructions.



4. Open machine doors.

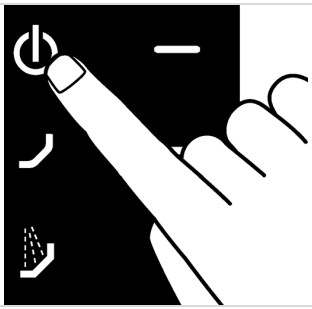


5. Make sure that all parts (strainers, plugs, etc.) that were removed for cleaning are correctly reinserted.



6. Close machine doors.

## 8.3 Start up the machine

| | | | |
|---|---|---|---|
|  | | | |
| 1. Press on/off key. | **FILLING** | **FILLING / HEATING** | **READY FOR OPERATION** |

**Note**

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.

## 8.4 Washing

**⚠ CAUTION – Risk of injury from reaching into the running conveyor belt of the dishwashing machine**

- Do not reach into the running conveyor belt.
- For troubleshooting, switch off the transport (emergency stop function).
- Wear suitable clothing (tight-fitting).

**⚠ CAUTION - Risk of injury from rotating drum motor, belt and guide roller of the cutlery lifting magnet**

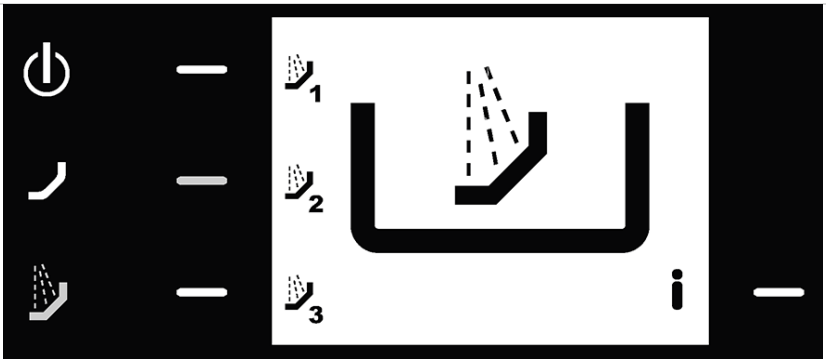
- When operating the cutlery lifting magnet, crushing and cutting of fingers and hand, pulling in, catching and winding up of hair or clothes is possible.
- Do not reach into the cutlery lifting magnet.
- Wear suitable clothing (hair net if necessary).
- Before troubleshooting, operate the emergency stop function.

**⚠ CAUTION - Risk of injury by using plates that are too large**

When using plates with a diameter > 26 cm, the gap between the belt bridge and the plate edge is very small. There is a risk of injury to the hands (crushing).

- Only use plates with a diameter < 26 cm.

1. Press the **Washing operation on** key.

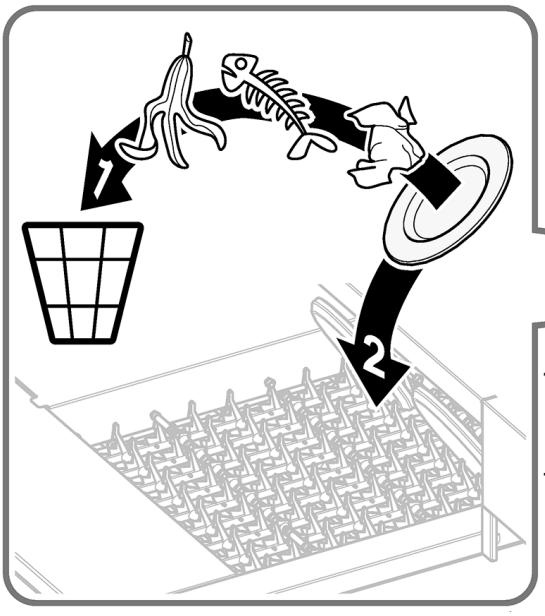


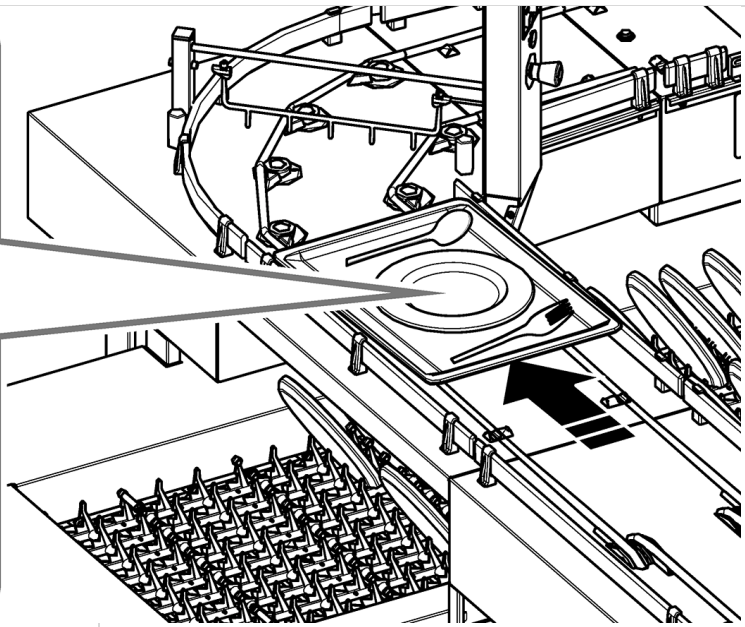

The **Washing cycle on** button lights up green and the display shows the ongoing washing cycle.

When loading the machine, please note:

- All hollow containers must always be loaded upside down. Otherwise the water will not be drained from the washware and brilliant drying will not be possible.
- Always place plates and food platters at an angle between the belt fingers. The inner surfaces face upwards.
- When using cutlery, make sure that there are not too many cutlery pieces on the trays. If the cutlery piles on the cutlery belt are too large, the height limitation is activated and the machine is stopped.
- Do not place dishes on top of each other on the belt. Direct contact with the wash water would be made more difficult and the belt speed would have to be set unnecessarily slow. Sort the dishes into the tracks as evenly and without gaps as possible. For machines with Green-Eye washware detection (option), make sure that not all tracks of the dishwashing machine are used when there is a low volume of washware.

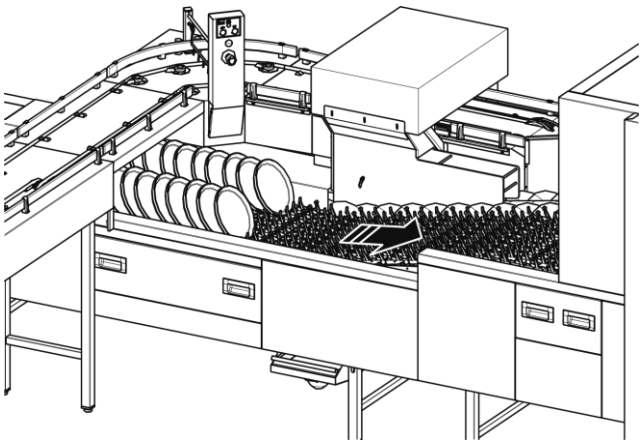
**Activities at feeding section**



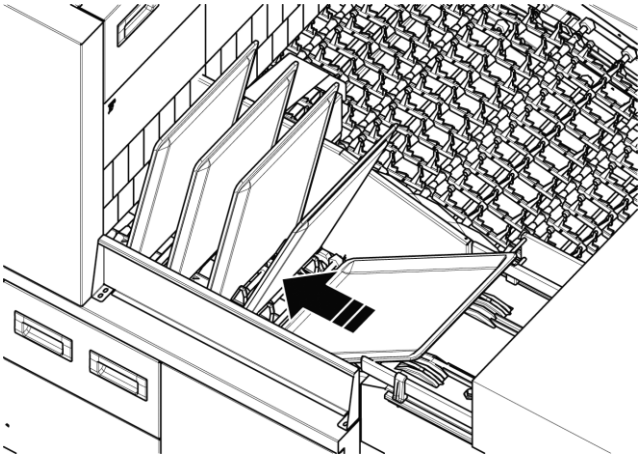



When the machine is switched on, the dish track with the cutlery track and the tray track start up. The tray conveyor belt with the cutlery lifting magnet must be switched on separately. The tray conveyor belt transports the used trays from the restaurant to the dishwashing machine.

1. Clear everything but the cutlery off the tray. Place plates, hollow ware, bowls on the dish track. Clear napkins/waste and food waste and sort accordingly.



The cutlery lifting magnet magnetically lifts the cutlery pieces remaining on the tray and drops them on the cutlery track. There, the cutlery pieces are demagnetized.

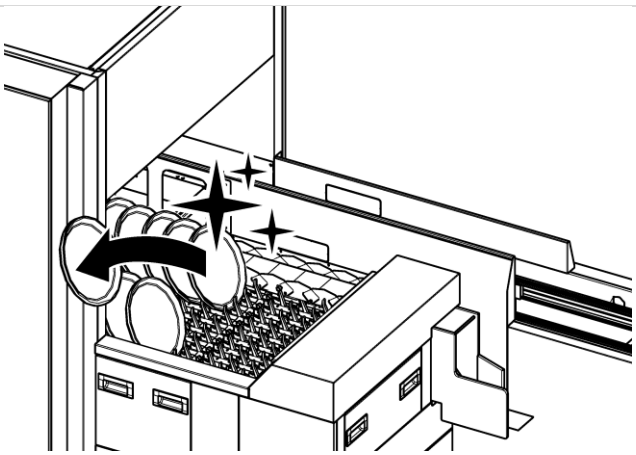


The trays are then automatically placed on the tray track of the dishwashing machine.
Dishes/cutlery and trays are transported through the dishwasher and washed.

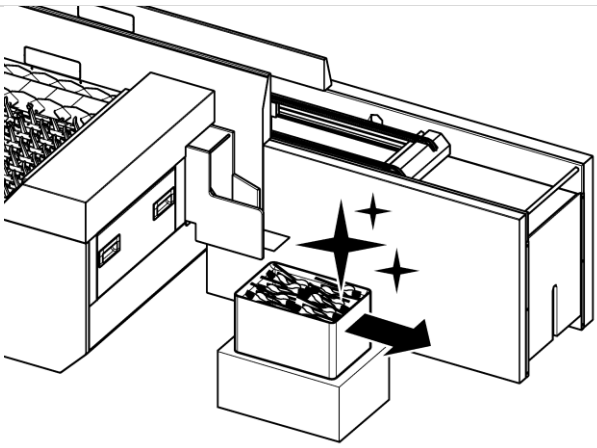
**⚠ CAUTION – Danger of burns and scalding due to hot wash water, washware and machine parts**

- Wear protective gloves if necessary.
- Let the machine cool down before touching machine parts, if necessary.
- Never open the doors during washing cycle.
- Only use the handles provided for opening or closing.

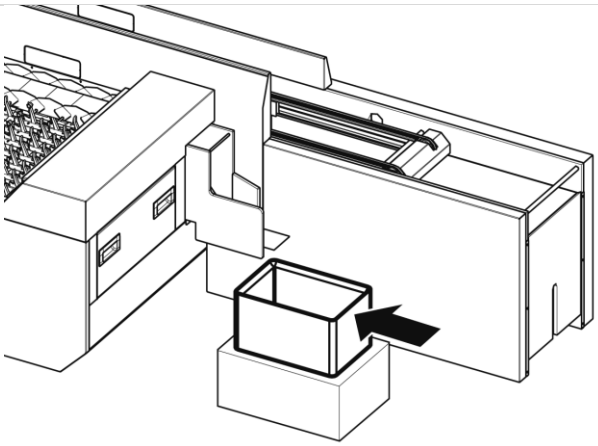
**Activities at discharge section**



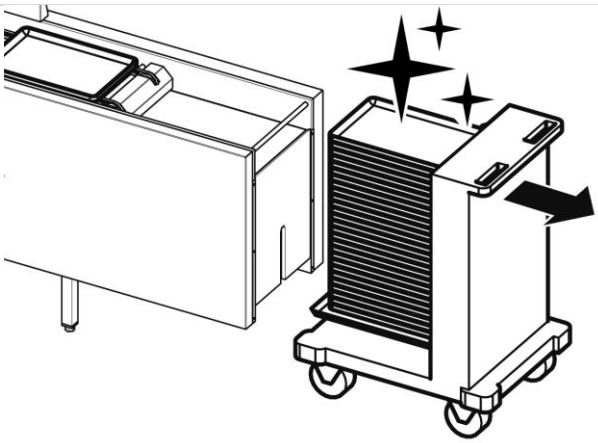
1. Remove the washed dishes from the conveyor and put them away accordingly.



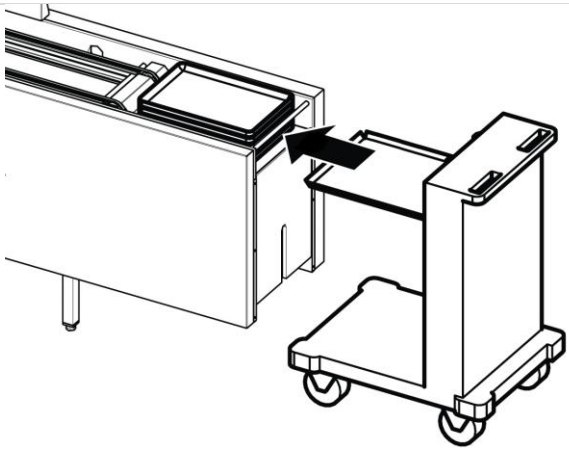
2. Replace full container of washed cutlery.



3. Provide containers for washed cutlery under the cutlery tray.



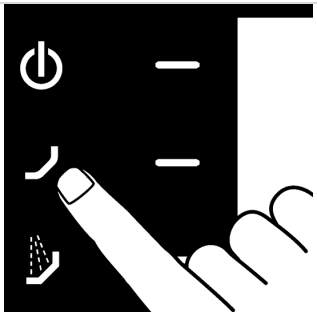
4. Move full tray dispenser trolley away from tray stacker.



5. Lift the trays that have accumulated in the meantime from the buffer onto the tray dispenser trolley. Move the tray dispenser trolley into the tray stacker.

### 8.4.1 Washing interruption

The dishwashing machine is running and the display shows the ongoing dishwashing operation with **OPERATION**.



1. Press the **Washing off** key.

The machine changes to the status **READY FOR OPERATION.** The wash key is flashing blue. Wash pumps and conveyor belts are switched off, tank heatings remain in operation to ensure a quick continuation of the process.

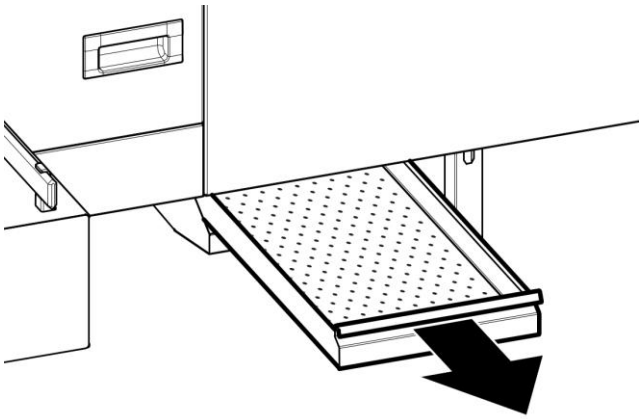
2. To continue the washing operation, press the key **Washing on.**

## 8.5 Washing during ongoing washing cycle

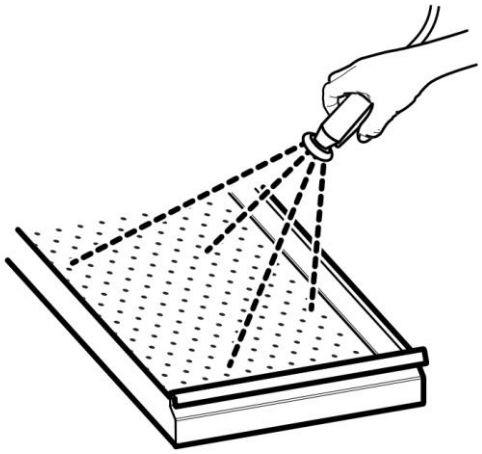
**⚠ CAUTION - risk of injury after removing the feeding sieve**

- Do not reach into the opening in the machine.

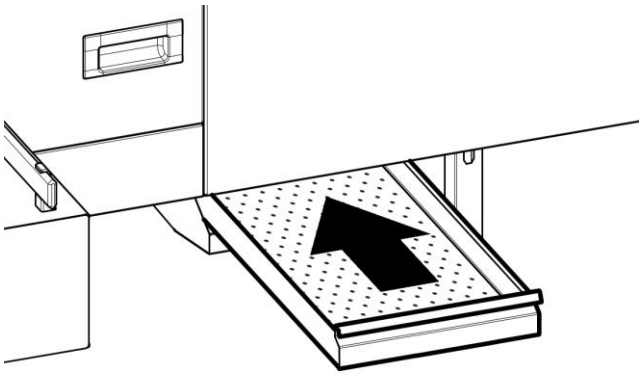
It is possible to clean the feeding sieve during ongoing washing cycle, e.g. in the event of heavy dirt ingress. For all other washing cycles, the machine must be turned off and drained see page 54.



1. Pull out the feeding sieve completely.

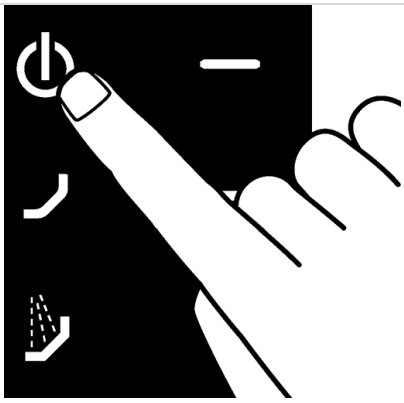


2. Empty and clean the feeding sieve.

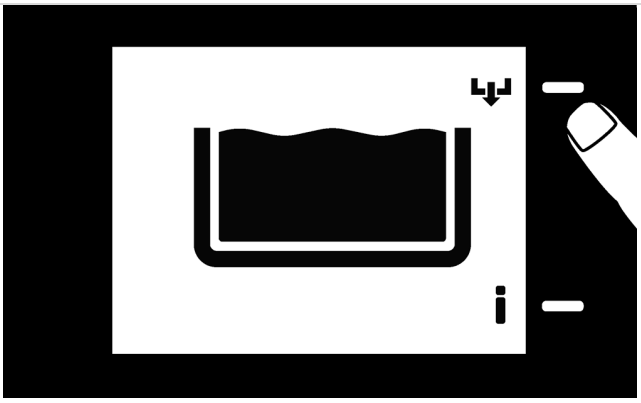


3. Push the feeding sieve back in.

## 8.6 Switch off the machine



1. To switch off the washing operation, press the on/off key.



2. Switch to the **Self-cleaning/Draining** menu.

✓ 3. Select **Self-cleaning** or **Draining** (see below).

➡ The machine is drained and ready for manual cleaning, see page 54.

**Self-cleaning/Draining menu**

| Menu entry | Meaning |
|---|---|
| **Self-cleaning feature** | Draining of the wash tank pre-washing, then the individual tanks are re-pumped, cleaned and drained until the entire machine is empty. The heat recovery system is cleaned. No refilling with fresh water but preparation for manual cleaning of the machine. |
| **Draining** | All tanks are drained at the same time. The heat recovery system is cleaned automatically. No refilling! |
| **PKSP refilling** | Change the water in the pump rinse tank. |
| **WT refilling** | Change water in all wash tanks. |
| **WTV refilling** | Change water in wash tank pre-washing. |
| **All tanks refilling** | Change water in all wash tanks and final rinse tanks. |

## 8.7 Assistance in case of malfunctions

If the described malfunctions occur several times, their cause must be identified in any case.

**More frequent disturbances**

| Malfunction | Possible cause | Remedy |
|---|---|---|
| Transport stops | Dishes/trays not removed at the discharge section | Remove dishes or change tray dispenser trolley |
| | Door or cleaning flap open | Close the door or cleaning flap |
| | Belt blocked, safety shutdown | Remove blockage, allow belt to reverse if necessary, see page 43. |
| | Accumulation of cutlery pieces on cutlery belt triggers stop (height limitation) | Distribute cutlery on belt |
| | Emergency stop function actuated, hood of cutlery lifting magnet opened | Release emergency stop function/ close hood |

**Occasional malfunctions**

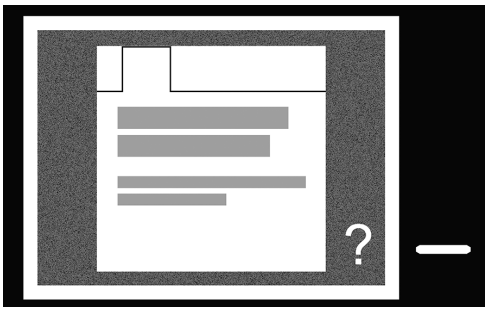
| Malfunction | Possible cause | Remedy |
|---|---|---|
| Dishwashing machine doesn't fill up | Shutt-off valve closed | Open the shut-off valve |
| | Dirt trap in water supply blocked | Clean the dirt trap |
| | Level electrode / float soiled | Clean air gap/float |
| | Doors open | Close doors |
| Final rinse does not spray | Shutt-off valve closed | Open the shut-off valve |
| | Dirt trap in water supply blocked | Clean the dirt trap |
| Vapour escaping | Incorrectly fitted or missing curtains | Check and insert curtains correctly |
| | Temperatures too high | Check temperatures and have adjusted by service technician if necessary |
| | Wash and rinse systems, drying nozzles, air guide plates bent or not fitted correctly | Check, align if necessary / insert correctly. |
| Streaks/smears on the washware | Unsuitable rinse aid | Change product |
| | Incorrect dosing quantity | Adjust dosing quantity |
| | Detergent got into the final rinse zone when washing containers that were too large | Refill pump final rinse, see page 44. |
| | Mineral content of the rinse water too high | Water pre-treatment may be necessary |
| | Water pre-treatment defective or regeneration not carried out | Check water pre-treatment, carry out regeneration if necessary |
| | Different quality of fresh water at different installation sites | Select water pre-treatment based on water quality |
| | Incorrectly fitted or missing curtains | Check and insert curtains correctly |
| | Conveyor speed too high | Reduce conveyor speed |

| Malfunction | Possible cause | Remedy |
|---|---|---|
| Strong foam formation in the wash tank | Dirt level too high | Pre-wash the washware more thoroughly / change the tank water more often, see page 44. |
| | Hand dishwashing detergent or foaming detergents are used for precleaning or for cleaning machine parts | Do not use foaming dishwashing detergents |
| | Unsuitable detergent or rinse aid | Change product |
| | Temperature too low (< 40 °C) | Check temperatures and have them adjusted if necessary |

### 8.7.1 Reversing the conveyor belt

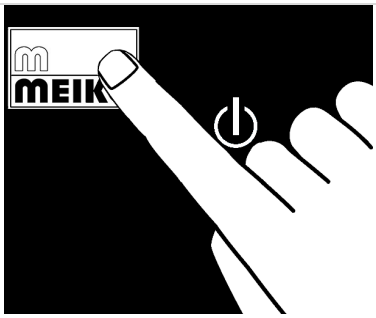
**⚠ CAUTION - risk of injury when reversing the conveyor belt / overload cut-off of the conveyor belt not in operation**

- Ensure that nobody reaches into the machine when reversing.
- Ensure that only instructed personnel carry out the function of **reversing the conveyor belt**.



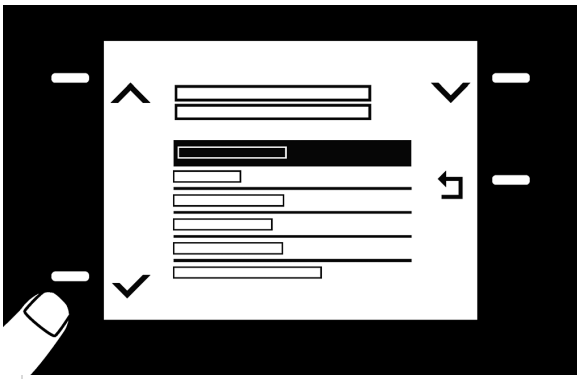
An object is jammed in the machine. The display shows the red message **TRANSPORT error 80**, **error 85, error 90** for drive 1, 2 or 3.

✓ • Confirm message.




1. Switch to setting level 1, see page 47.

i 2. In the i-menu switch to the **TRANSPORT** tab.



3. Use the direction arrows to select and confirm the entry **Reverse Conveyor**.

The submenu **REVERSE CONVEYOR** appears. The menu entry **Reverse Conveyor** is already selected.

✓ 4. Confirm the selection to let the conveyor belt move backwards for approx. 1.5 s. If necessary, repeat the procedure until the fault can be eliminated. Note: If there are several drives, they are always controlled simultaneously.

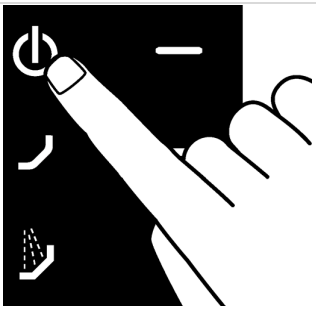
⌂ 5. When programming is complete, press the Home key to return to the main screen.

✓ 6. Press the service access key (MEIKO) and confirm with Yes to exit the setting level.

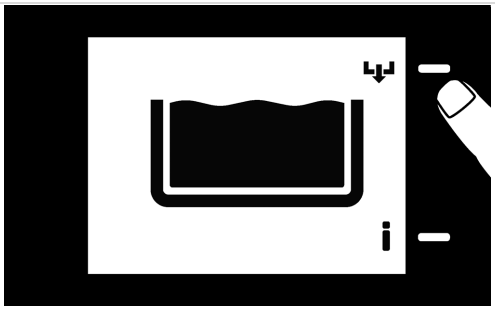
### 8.7.2 Changing water

**Note**

If the wash water is heavily soiled, it is advisable to replace the water in the tanks of the dishwashing machine during operation.



1. To switch off the washing operation, press the on/off key.



2. Switch to the **Self-cleaning/Draining** menu (see below).

3. Make the desired selection and confirm.

The water is renewed.

**Self-cleaning/Draining menu**

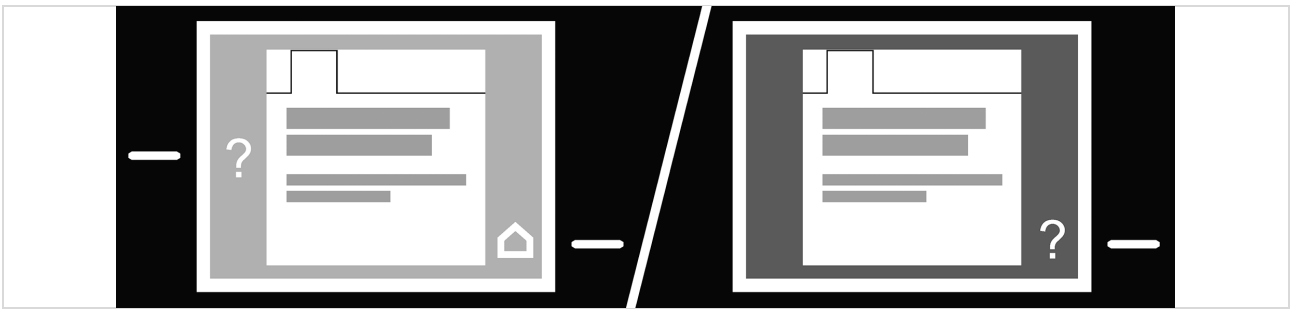
| Menu entry | Meaning |
|---|---|
| **Self-cleaning feature** | Draining of the wash tank pre-washing, then the individual tanks are re-pumped, cleaned and drained until the entire machine is empty. The heat recovery system is cleaned. No refilling with fresh water but preparation for manual cleaning of the machine. |
| **Draining** | All tanks are drained at the same time. The heat recovery system is cleaned automatically. No refilling! |
| **PKSP refilling** | Change the water in the pump rinse tank. |
| **WT refilling** | Change water in all wash tanks. |
| **WTV refilling** | Change water in wash tank pre-washing. |
| **All tanks refilling** | Change water in all wash tanks and final rinse tanks. |

### 8.7.3 Bypass operation of the water treatment plant

If the reverse osmosis system GiO-TECH produces too little water, the **message 710: Mains disconnection MIN undershot** is displayed. After a period of 15 s, the system switches to bypass mode and the **message 790: Water treatment inactive** appears on the display. **Caution: Operation without demineralized water!**

If no acknowledgement option in the form of a checkmark is shown on the display, this means that no water is available on site, or that the on-site shut-off valve is closed. As soon as the on-site water supply is available, and the minimum level is raised above the bypass line, the messages 706/710 disappear. The reverse osmosis system can then be reactivated again with the checkmark. If this is still not the case, please inform the responsible service representative.

## 8.8 Messages



When a malfunction occurs, a grey or red message is shown on the display depending on the nature of the malfunction.

- Grey messages can be acknowledged using the relevant confirmation key.
- Red messages usually require the deployment of an authorised service technician.
- If a message shown on the display is not described in the table or its cause cannot be rectified, contact a service technician authorised by MEIKO.
- Switch off on-site power supply
- Close on-site water supply
- Call an in-house technician/service technician

**Abbreviations in combination with message number indicate the fault location, see also product overview:**

| Abbreviation | Meaning | Abbreviation | Meaning |
|---|---|---|---|
| FKSP | Fresh water final rinse | TD | Thermal disinfection |
| GiO | Reverse osmosis | TR | Drying |
| KSP | Final rinse | TRSP | Transportation |
| LC | Liquid cooler | WT | Wash tank |
| PKSP | Pump final rinse | WTV | Wash tank pre-washing |

**Messages**

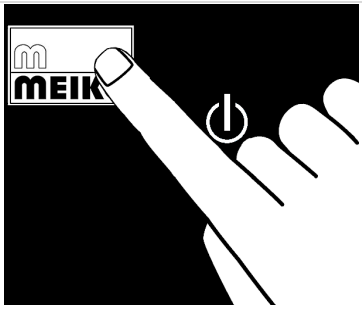
| No. | Display text | Measures/remedial action |
|---|---|---|
| 1 | Emergency stop activated | Eliminate cause and unlock emergency stop button. |
| 3 | Perform maintenance | Call service technician. |
| 7 | Replace reverse osmosis pre-filter | |
| 9 | Restricted operation activated | If this message reoccurs, call a service technician. |
| 10–18 | Status messages for the operating log | Information for the operator, can be acknowledged. |
| 20 | Check final rinse unit | Replace rinse aid canister. |
| 21 | Check detergent dosage unit | Replace canister for detergent. |
| 22 | Check gas module | See gas module description |
| 23 | Check water treatment | See water treatment description |
| 24 | Check external transport unit | See description in wiring diagram |
| 25 | Check dosing system | See dosing system description |
| 26 | On-site compressed air supply | Check on-site compressed air supply |
| 27 | Switch off via external unit | See description in wiring diagram |
| 32 | Programme suggestion is present | If necessary, change programme, since utilization has been reduced/increased. |
| 33 | Programme suggestion cancelled | No intervention is necessary. |
| 44–46 | Messages concerning increased on-site steam pressure | Call an in-house technician/service technician. |
| 57 | Automatic refill of hot water circuit is running | No intervention is necessary. |

| No. | Display text | Measures/remedial action |
|---|---|---|
| 60/70 | Flap open | Close all flaps. If this message reoccurs, call a service technician. |
| 61–62/ 71–72 | Flap switch signals not identical | Possible to continue work with restrictions.<br>Call service technician. |
| 80/85/90 | Conveyor overload (mechanical) | Remove jamming (reverse belt if necessary). |
| 81/86/91 | Conveyor overload (motor current) | |
| 84/89/94 | Height limitation | Eliminate cause. |
| 100/150/200/250/400/450/500 | First fill error | Check the drain filter, clean seal and seal seat, if necessary.<br>Check the dirt trap in the supply pipe and clean if necessary. |
| 101/151/201/251/401/451/501 | Refill error | |
| 102/152/202/252/402/452/502 | Door open | Close door. If this message reoccurs (door malfunction), call a service technician. |
| 103.104/153.154/203.204/253.254/403.404/453.454/503.504 | Door switch signals not identical | Possible to continue work with restrictions.<br>Call service technician. |
| 111/161//211/261/411/461/511 | M-filter pump thermal contact | Check washing systems: correctly inserted, missing caps.<br>Check drain filter. Remove dirt. If this error message reoccurs, call a service technician. |
| 112/162/212/262/412/462/512 | Filter box missing | Insert filter box correctly. |
| 113/163/213/263/413/463/513 | Drain filter missing | Insert drain filter correctly. If this error message reoccurs, call a service technician. |
| 115/165/215/265/415/465/515 | Refill amount unusually high | Check washing systems: correctly inserted, missing caps.<br>Check drain filter. Remove dirt. If this error message reoccurs, call a service technician. |
| 117/167/217/267/417/467/517 | M-filter pump run time exceeded | |
| 118/168/218/268/418/468/518 | Washing pressure critical | |
| 131/181/231//281/431/481/531 | Minimum level not reached<br>-> transport stop | Check washing systems: correctly inserted, missing caps.<br>Check drain filter. Remove dirt. If this error message reoccurs, call a service technician. |
| 610–630 | Low pressure switch triggered | See FrigorTec operating instructions, if necessary contact FrigorTec. |
| 611–631 | High pressure switch tripped | |
| 640/652/664/676/688 | Door open | Close door. If this message reoccurs (door malfunction), call a service technician. |
| 641.642/653.654/665.666/677.678/689.690 | Door switch signals not identical | Possible to continue work with restrictions.<br>Call service technician. |
| 718/748/778 | Check final rinse unit | Check rinse aid fill level. |
| 790/793/796 | Water treatment inactive | Change pre-filter if necessary. If this message reoccurs, call a service technician. |
| 791/794/797 | Check on-site water supply | Check on-site water supply. |

## 8.9 Modifying settings

**Note**

To view the machine status and the current settings, the settings level does not have to be changed (level 0)!

| | |
|---|---|
|  <br>1. Hold service access key for approx. 3 seconds | <br>2. Enter the service code of the required setting level.<br>**Level 0: Machine status (no code entry)**<br>**Level 1: Advanced settings (code for level 1)** |
| The unlocked setting level is displayed. | |
| 3. Confirm message | Settings can now be changed in the i-menu, see page 47. |

**i-menu**

| | Sym-bol | Level | Description |
|---|---|---|---|
| **Language** | | 0/1 | Set display language |
| **Feeding section** | | 0/1 | View flap switch status |
| **Extraction** | | 0/1 | View fan status |
| **Wash tank V pre-washing** | | 0/1 | View temperatures, water level, status of heater and door switch |
| **Wash tank** | | 0/1 | |
| **Thermal disinfection (option)** | | 0/1 | |
| **Pump final rinse** | | 0/1 | |
| **Final rinse** | | 0/1 | View temperatures, flow rate, status of heaters and liquid cooler (option) |
| **Drying** | | 0/1 | View temperatures, door switch and heater status |
| **Heat exchanger (option)** | | 0/1 | View temperature/pressure of hot water circuit |
| **Discharge section** | | 0/1 | View flap switch status |
| **Transport** | | 0/1 | View status of limit switch and dish detection (option)<br>Allow belt to reverse |

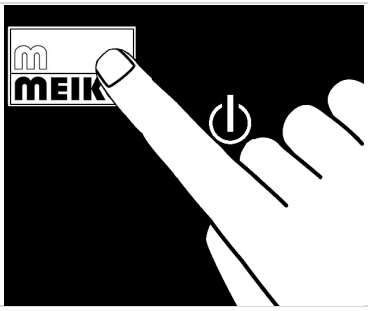
| | Symbol | Level | Description |
|---|---|---|---|
| **Global (Machine)** | | 1 | Set parameters of self-cleaning feature, Bluetooth communication, restricted operation |
| **Operational times** | | 0/1 | View maintenance intervals, GiO filter change interval (option), operational times |
| **Consumption** | | 0/1 | View water consumption |
| **Daily protocol** | | 0/1 | View archived operational times, events, etc. |
| **General** |  | 0/1 | View software version, machine serial number, machine type |
| **Setup** | | 1 | Display settings (units/display)<br>Set date/time<br>Set weekly programme (times) |

### 8.9.1 Setting the language

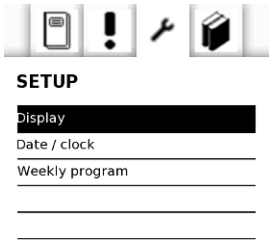
1. Open the i-menu.

2. In the **LANGUAGE** tab, the desired language can be selected with the arrow keys and confirmed with the checkmark.

### 8.9.2 Set date and time



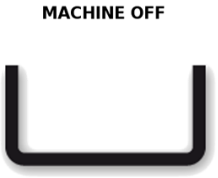
3. Switch to setting level 1, see page 47.




4. In the i-menu switch to the **SETUP** tab.

5. Use the direction arrows to select and confirm the **DATE/TIME** entry.

6. Use +, - and the arrow key to set the date and time. At the end confirm with the checkmark & save.



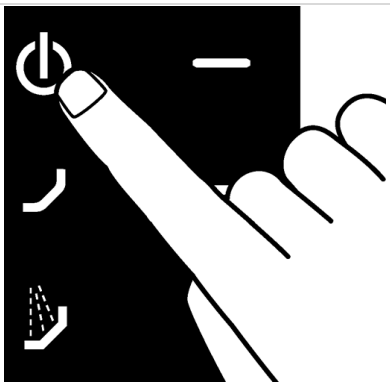

7. When programming is complete, press the Home key to return to the main screen.

8. Press the service access key (MEIKO) and confirm with Yes to exit the setting level.

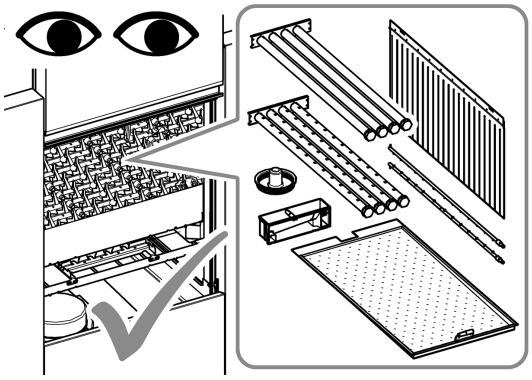
### 8.9.3 Set filling per timer

**FILLING PER TIMER** is only possible when the main switch is switched on. It requires the presence of personnel at the set time! **FILLING PER TIMER** must be activated once by the service technician (MEIKO-authorized).

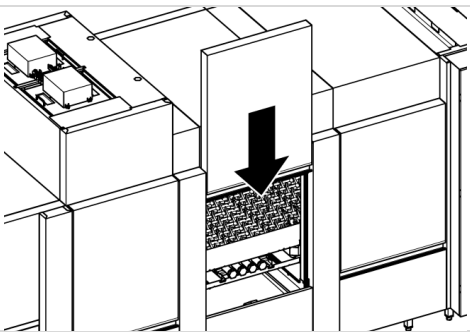
**Activating filling per timer**



1. If necessary, press the on/off key to set the machine to the **MACHINE OFF** status.



2. Make sure that all parts (strainers, plugs, etc.) that were removed for cleaning are correctly reinserted.



3. Close doors.

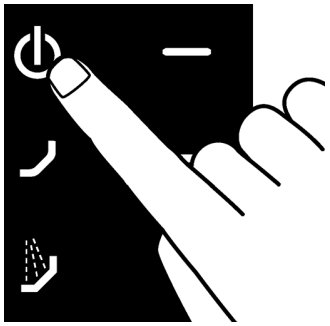
4. Select clock.
   The **FILLING PER TIMER** dialogue box appears. The set filling time is displayed. By default, the next day is preset with the last selected time. If this setting is correct, leave the machine in this state. Times programmed via the weekly programme are suggested here.

**Changing the filling time**

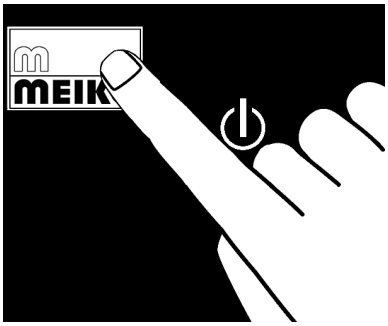
To change the filling time, select the clock again. Set the desired value with + and - and save and close with the checkmark.

### 8.9.4 Set weekly program for FILLING PER TIMER

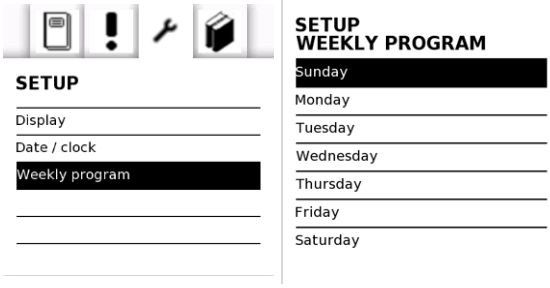
You can programme up to three times per weekday. These are available as a time suggestion when **FILLING PER TIMER**. The programming is retained after the machine is switched off.



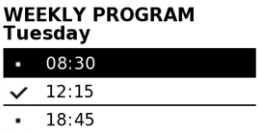
1. If necessary, press the on/off key to set the machine to the **MACHINE OFF** status.




2.Switch to setting level 1, see page 47.




3. In the i-menu, switch to the **SETUP** tab. Select **WEEKLY PROGRAMME** with direction arrows.




4. You can programme three times per day with + and - for quick selection. The active time is marked with a checkmark.

5. When programming is complete, press the Home button to return to the main screen.

6. Press the service access key (MEIKO) and confirm with Yes to exit the setting level.

## 8.10 Setting up WLAN and Bluetooth connections

### 8.10.1 Enabling WLAN

► Operator is logged in with authorisation level 1.
1. Open the **[i-menu]**.
2. Navigate to the **GLOBAL (MACHINE)** menu item.
3. Select the **Parameter** and confirm with the **[Confirm]** soft key.
4. Select Enable WLAN communication and confirm with the [Confirm] soft key.
5. Select **Yes** and confirm with the **[Confirm]** soft key.

✓ WLAN is enabled, the **WLAN** tab is now visible in the i-menu.

### 8.10.2 Selecting a WLAN network (SSID)

► WLAN is switched on, see above.
► Operator is logged in with authorisation level 1.
1. Open the **[i-menu]**.
2. Select the **WLAN** menu item.
3. Select the **Parameter** and confirm with the **[Confirm]** soft key.
4. **Select SSID search** and confirm with the [Confirm] soft key.
↳ The available WLAN networks (SSID) are displayed.
5. Select the desired WLAN network and confirm with the [Confirm] soft key.
✓ The WLAN network has been selected. The password must be entered for a successful connection. MEIKO recommends that you do not use words or character strings that refer to persons for the SSID and password.

### 8.10.3 Entering the password

► The **WLAN** tab is open.
1. Select **WLAN Passphrase WPA2** and confirm with the **[Confirm]** soft key.
2. Use the bottom right soft key to switch to **+/-** input in order to enter the WLAN network key.
3. Use the **+/-** soft keys to enter the individual digits of the network key. After approx. 2 s without input, the cursor jumps to the next position. Use the bottom right soft key to switch to the direction arrows to check individual digits and correct them if necessary. If you have entered too many or too few digits, you can switch to delete/insert mode using the bottom right soft key.
4. Check individual digits of the entire key before confirming.
5. Confirm the entry with the **[Confirm]** soft key.
✓ The WLAN network is configured. Press the **Back** soft key to return to the WLAN tab. If the network key was entered correctly, the successful connection is displayed here.

### 8.10.4 Enabling Bluetooth

► Operator is logged in with authorisation level 1.
1. Open the **[i-menu]**.
2. Navigate to the **GLOBAL (MACHINE)** menu item.
3. Select the **Parameter** and confirm with the **[Confirm]** soft key.
4. Select Enable Bluetooth communication and confirm with the [Confirm] soft key.
5. Select **Yes** and confirm with the **[Confirm]** soft key.
✓ The Bluetooth interface is switched on. The machine can now be located with its name and serial number via Bluetooth and can be paired with a smartphone, for example.

### 8.10.5 Connecting to the machine via Bluetooth

► The Bluetooth function must be enabled on the machine.
1. Search for Bluetooth devices on the end device.
2. Select the desired machine and pair with it.
3. Complete the pairing process by entering the displayed pairing code 0000.
✓ The machine is paired with the end device.

### 8.10.6 Setting up the WLAN connection with the MEIKOAssist Pro App

As an alternative to setting up the connection on the glass operating panel, the machine can be connected to the WLAN much more conveniently using the 'MEIKO Assist Pro' app. The app is available in the Google Play Store or the Apple App Store.

**Note**

Setting up a Wi-Fi connection using the ‘MEIKO Assist Pro’ app is currently only possible on Android mobile devices.

► Bluetooth and WLAN must be switched on at the machine for setup.

► The ‘MEIKO Assist Pro’ app must be installed on your mobile device.

1. MEIKO Open Assist Pro.
2. In the **Machine Overview** view, tap **‘Connect machine** ’.

1. The screen **‘Connect Machine** ’ is displayed.

3. Tap**‘WLAN configuration’.**

↳ After a scan, the available machines are displayed in the view **‘Connect via Bluetooth’**.

4. Tap **‘Pair’** for the machine you want.

↳ After a scan, the available networks are displayed in the view **‘Connect to WLAN'**.

**Note**

When pairing for the first time, confirmation must be given on the glass operating panel.

5. Tap the WLAN network you want to connect to.

↳ A prompt for the **network password** appears.

6. Enter the password for the selected WLAN network and tap **‘Connect**’.

↳A message appears stating that the machine has been added.

7. Tap **OK**.

✓ The machine is connected to the WLAN and is available in MEIKO Assist Pro.

## 8.11 Connecting the machine to MEIKO Assist Pro

**Note**

The MEIKO Assist Pro app can be downloaded from the Google Play Store or the Apple App Store.

► The machine is connected to the same WLAN network as the end device or paired with the end device via Bluetooth.

1. Press the **[Service access]** button for 2 s to access code entry.
2. Touch the **[Service access]** button again for 2 seconds to display the session key. This is located in the first line.
3. Enter the session key in the MEIKO Assist Pro app.

The machine is connected to MEIKO Assist Pro. The machine data can now be displayed.

# 9 Cleaning

**⚠ CAUTION - Danger of burns from hot machine parts**

- Let the machine cool down before cleaning
- Wear protective gloves if necessary.
- Only use the handles provided for opening or closing.

**⚠ CAUTION – Material damage to stainless steel due to incorrect cleaning**

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

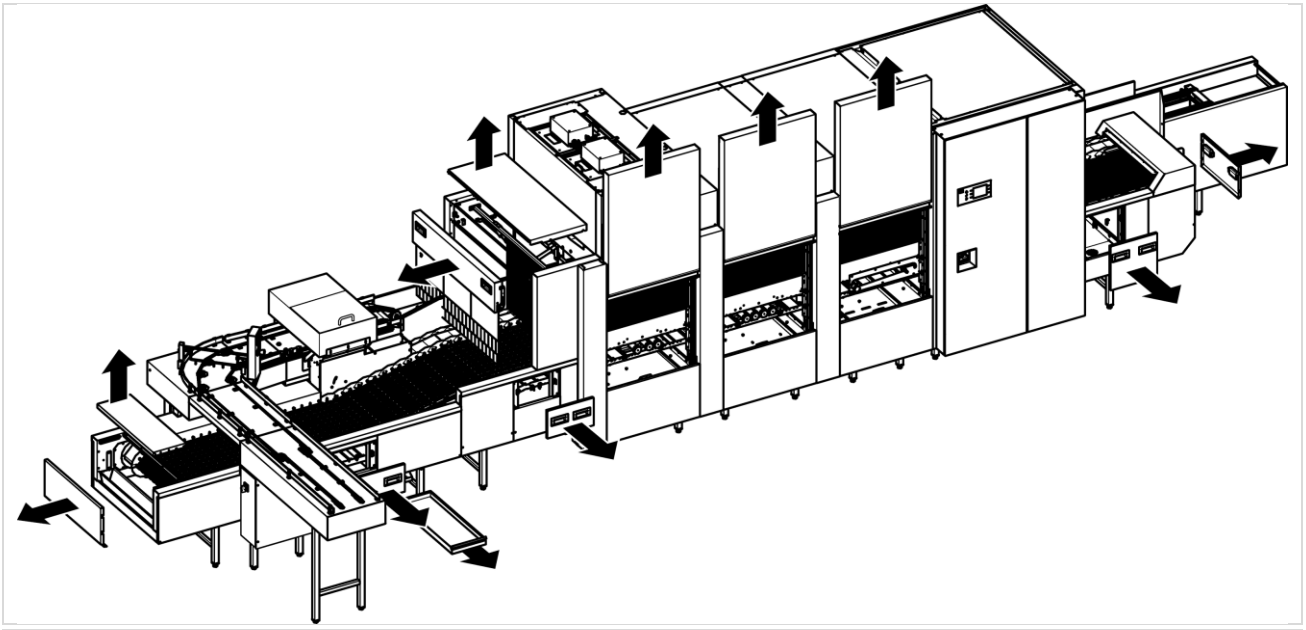
- Never use aggressive detergents or scouring agents.
- Never use detergents that contain hydrochlorid acid or bleaches based on chlorine.
- Do not use cleaning utensils previously used to clean non-stainless steel.

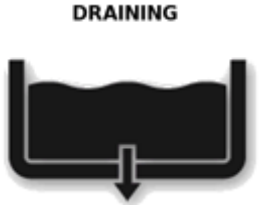
**⚠ CAUTION - Evaporation of aggressive detergents**

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

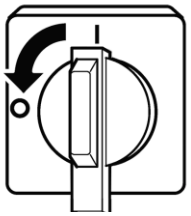
- Make sure that the detergents and care products cannot have direct contact with the machine.
- Do not use aggressive detergents (e.g. aggressive tile cleaner) to clean the surrounding area.
- Please observe the notes on the product packaging.
- In case of uncertainty, request information from the suppliers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

**Doors and housing parts to be opened for cleaning**

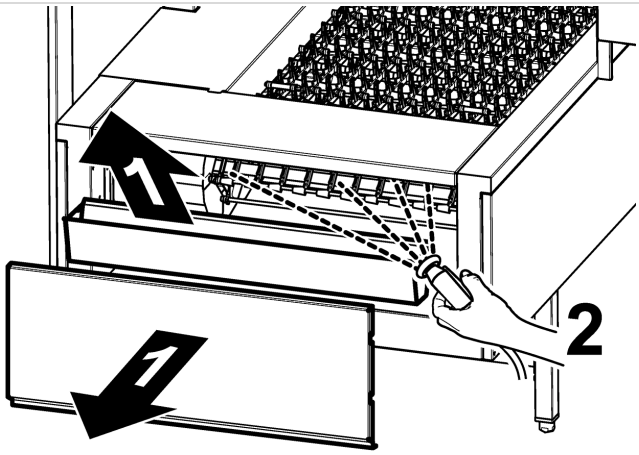




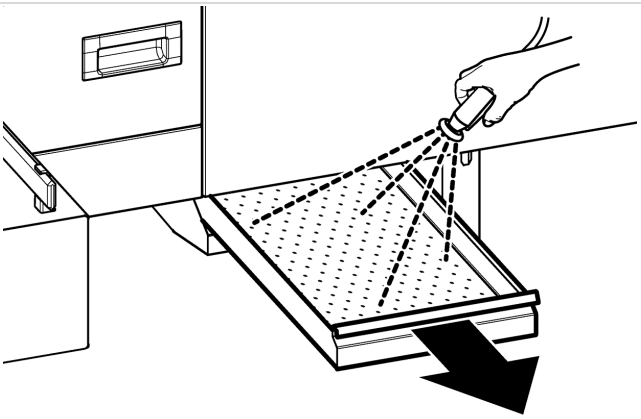
Before manual cleaning, carry out self-cleaning so that the machine is emptied and in the **MACHINE OFF** status, see page 41.



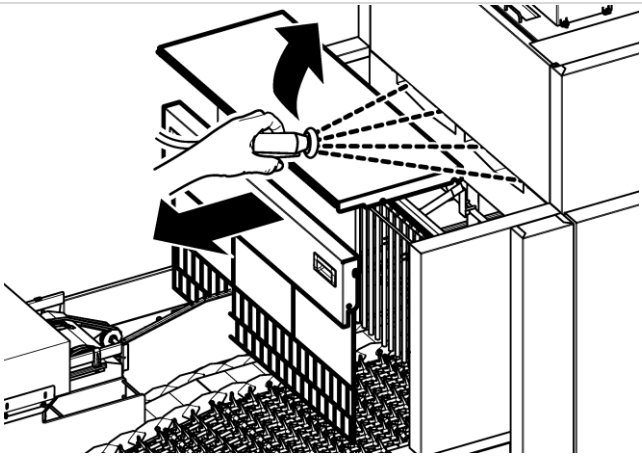
1. Turn off the main switch and close the shutt-off valve.



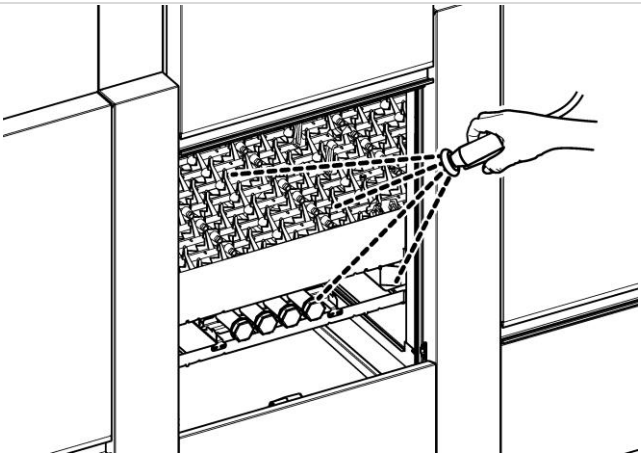

2.Remove the cleaning flap, remove and clean the tilting trough in the feeding , spray out the feeding section.



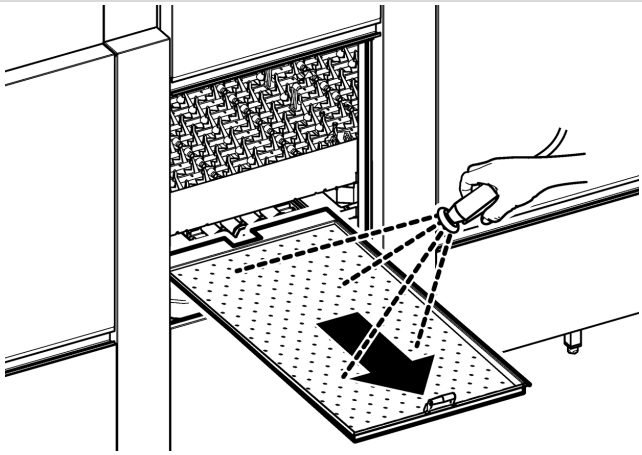
3. Pull out and clean the feeding sieve.



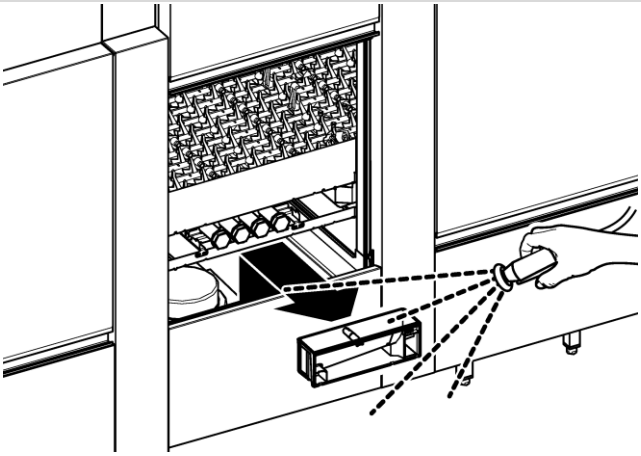
4. Clean heat exchanger (option).



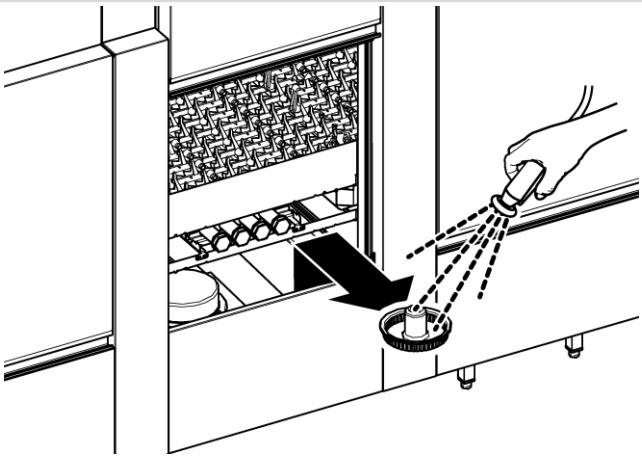
5. Spray out the chamber of the tank.



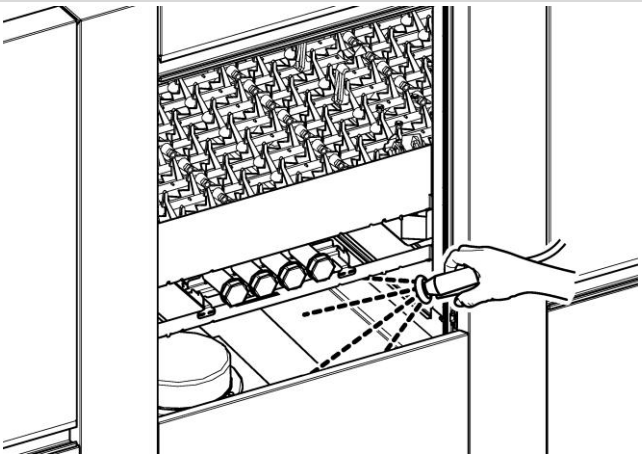
6. Remove and clean the tank cover sieves.



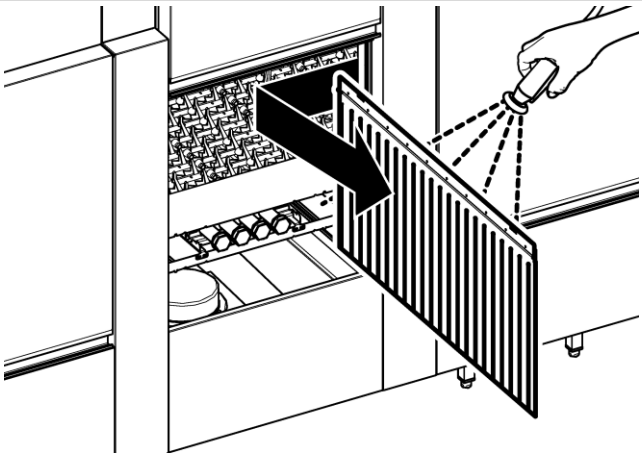
7. Remove and clean the strainer baskets.



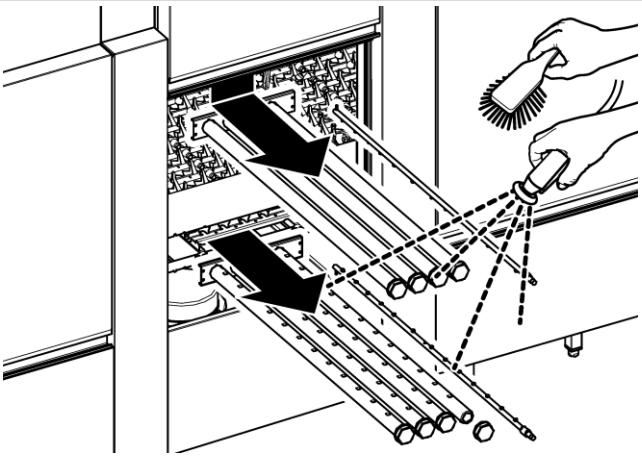
8. Remove and clean the tank drain valves.



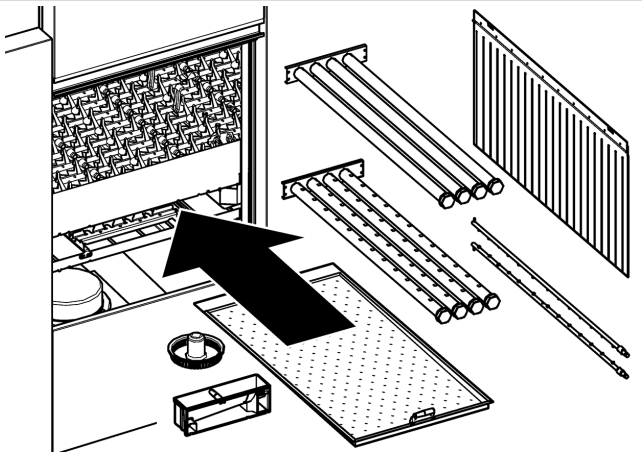
9. Spray out the tank bottom.



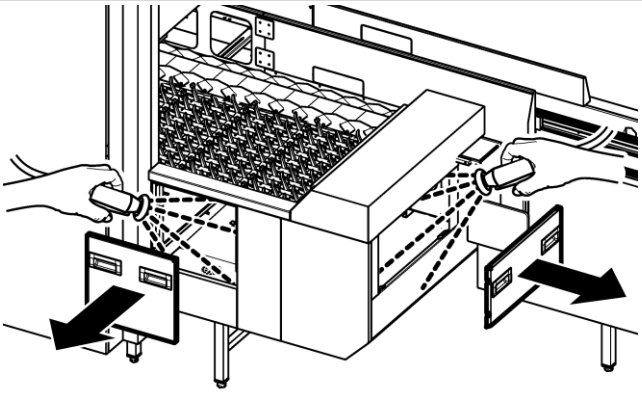
10. Unhook and clean the spray protection curtains.



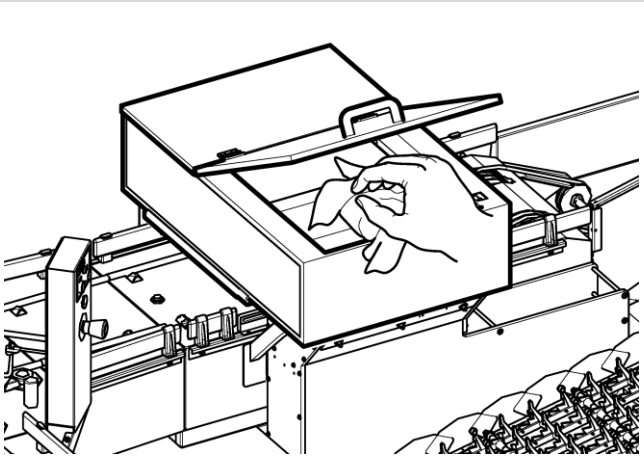
11. Remove and clean washing systems and rinse arms. The caps on the individual arms can be removed for this purpose.

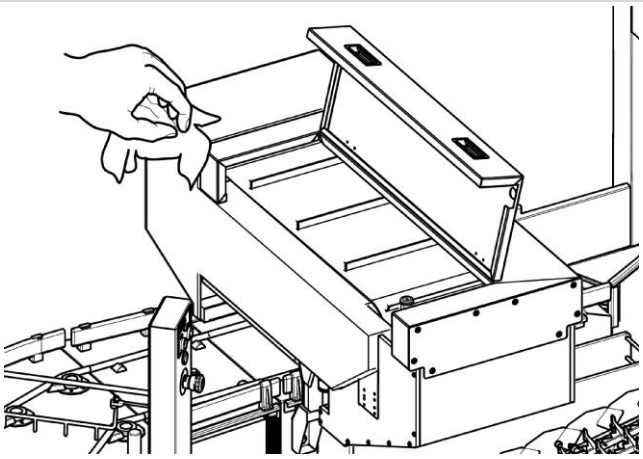


12. Reinstall all removed parts.

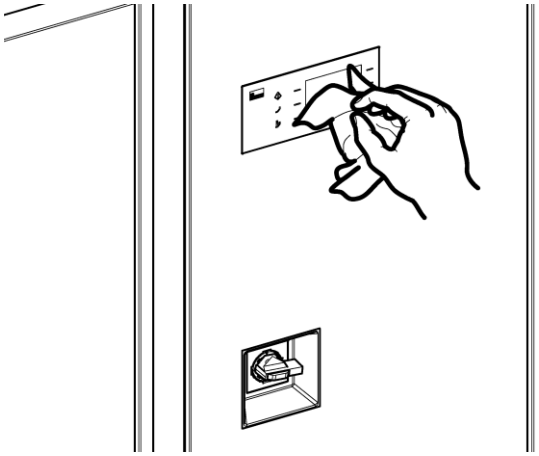


13. Remove the flaps on the discharge section and spray out the interior.

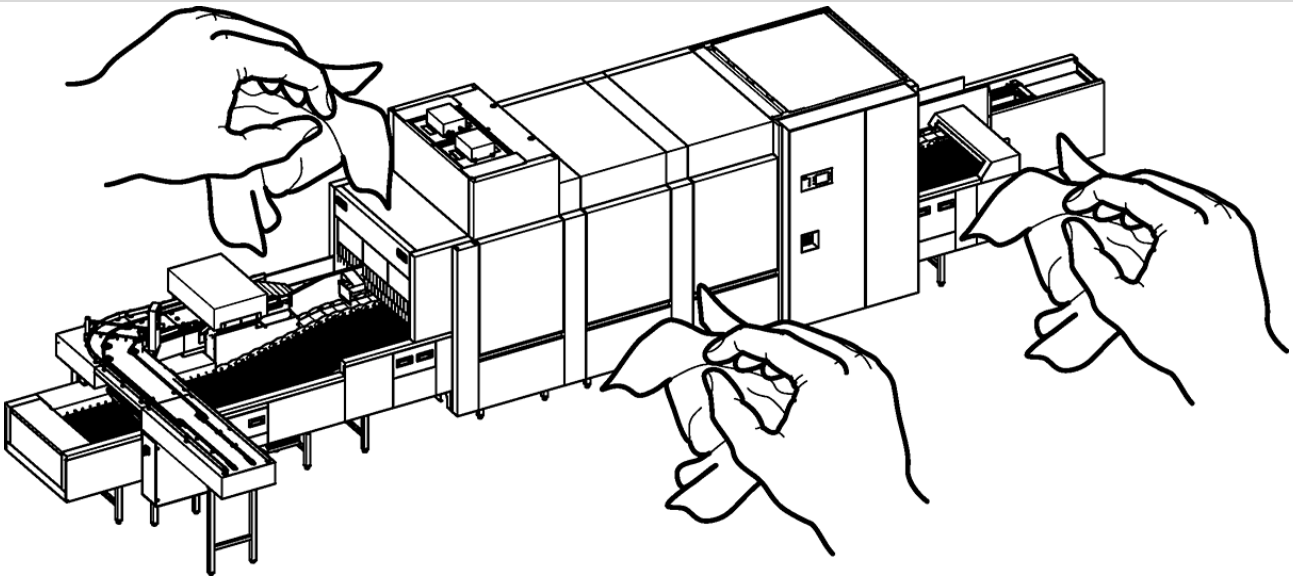




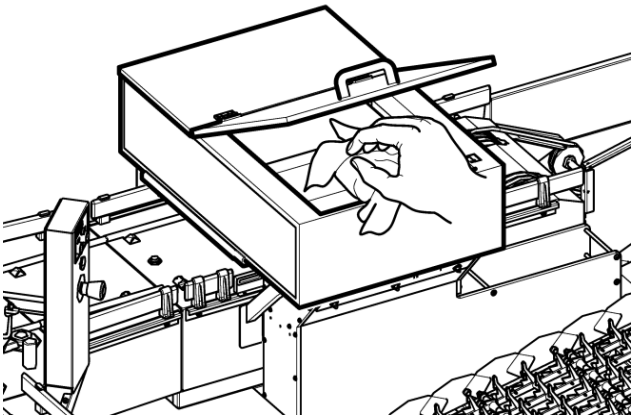
14. Clean the belt sliding surface and belt of the cutlery lifting magnet with a cleaning cloth and light alkaline cleaner.

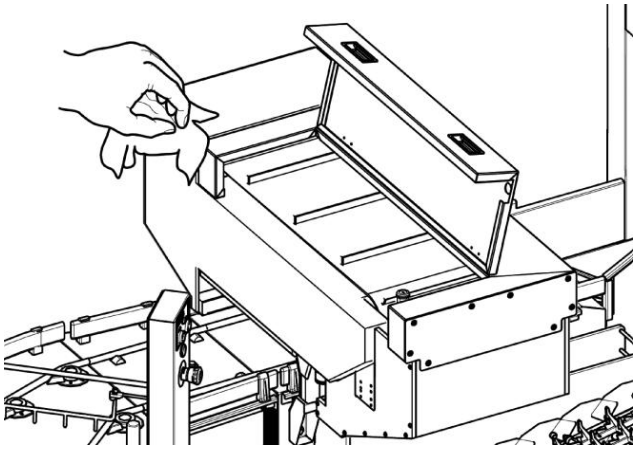


15. Wipe the display with a cleaning cloth.

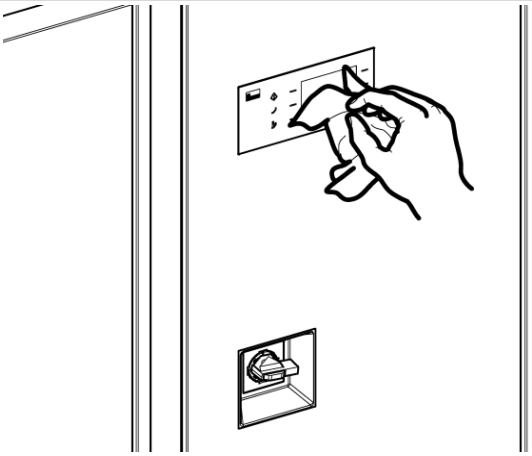


16. Wipe stainless steel surfaces with a damp cleaning cloth and a suitable cleaner. After cleaning, wipe dry thoroughly to prevent limescale. Tip: For best results, use only demineralized water.

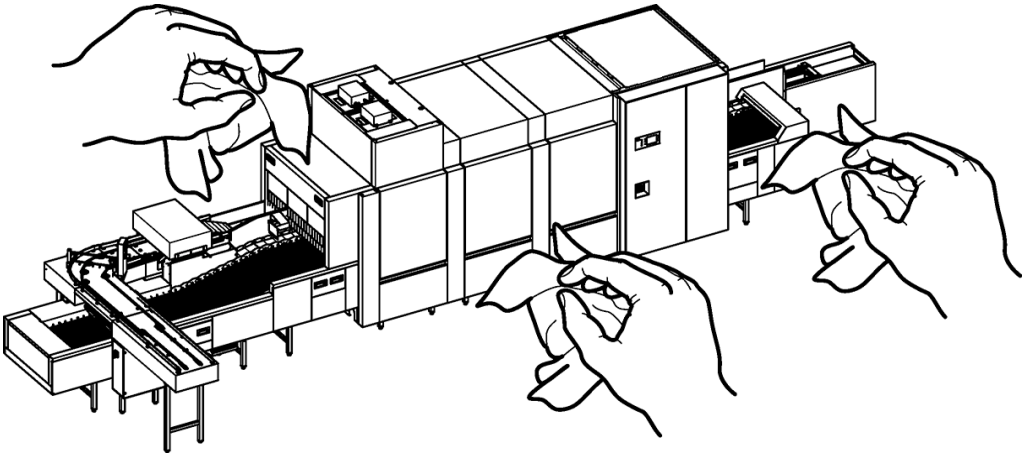




17. Clean the belt sliding surface and belt of the cutlery lifting magnet with a cleaning cloth and light alkaline cleaner.



18. Wipe the display with a cleaning cloth.



19. Wipe stainless steel surfaces with a damp cleaning cloth and a suitable cleaner. After cleaning, wipe dry thoroughly to prevent limescale. Tip: For best results, use only demineralised water.

**Tray dispenser trolley**

- Do not scratch the surface with sharp-edged objects. Do not use a sponge with a scratchy surface, steel wool or steel brush.
- Do not use abrasive or aggressive detergents, such as oven spray.
- Do not use detergents containing sand, soda, acid, chloride or solvents.
- Do not use any commercially available detergents. Do not make your own detergent.
- Avoid prolonged exposure to liquids with a high salt content, as this can lead to discoloration of the surface or rusting through.

- For stainless steel, avoid direct prolonged contact with rusting iron parts such as steel kitchen sponges.

## 9.1 Descaling

Water containing limescale can cause limescale build-up inside the machine.

Limescale build-up on the heating rods in the wash tank and in the booster heater can lead to overheating and burn-out of the heating rods. This causes the machine to malfunction. Regular descaling extends the service life of the machine.

Limescale build-up in the interior of the machine has no influence on the washing result.

Descaling procedure:

1. Remove limescale build-up in the machine with a descaling agent. Follow the manufacturer's instructions.
2. After descaling, rinse the inside of the machine thoroughly and perform the emptying procedure to remove all residues of the descaling agent.
3. Then fill the machine with fresh water and run it empty for at least 15 minutes before loading it with dishes again for the first time.

✓ The machine is descaled.

# 10 Maintenance

**⚠ WARNING – Danger to life from electric shock**

- Work on the electrical system may only be carried out by a qualified electrician.
- 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 cannot be switched back on again.

**⚠ WARNING – Danger to life due to electric shock if housing parts are opened**

If the machine is operated without housing parts, 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 housing parts. To do this, turn the local mains switch to OFF and ensure that it cannot be switched back on again.
- Attach all housing parts before placing the machine back in operation.

**⚠ WARNING – Danger of injury due to entry into 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 qualified persons should perform work at and with the machine.
- Remove unauthorised persons from the danger zone.
- Block off danger area and mark 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 wash water, washware and machine parts**

- Wear protective gloves if necessary.
- Let the machine cool down before touching machine parts, if necessary.
- Only use the handles provided for opening or closing doors/flaps.

⚠ **CAUTION – Environmental damage due to improper disposal of liquids.**

Environmentally hazardous liquids (e.g. grease and oils, hydraulic oils, coolants, detergents containing solvents etc.) may be used during work on and with the machine.

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

| Maintenance work | Checked | Cleaned | Reconditioned | N/A | Maintenance requirement (minimum) |
|---|---|---|---|---|---|
| **11 Machine in total** | | | | | |
| Clean feeding section | | | | | Daily |
| Clean heat recovery unit | | | | | Daily |
| Clean interior | | | | | Daily |
| Clean discharge section | | | | | Daily |
| **2. Error memory** | | | | | |
| Check error memory for anomalies | | | | | After 2000 h or every year |
| **3. Pumps** | | | | | |
| Check pumps for leaks and any visible damage | | | | | After 2000 h or every year |
| Check pumps for running noise and correct operation | | | | | After 2000 h or every year |
| Replace slide ring sealing (delete as appropriate): WTV, WT 1, WT 2, WT 3, PKSP, TD1, TD2 | | | | | After 5000 h or every 2 years |
| **4. Wash tank, wash and rinse system** | | | | | |
| Functional and visual inspection of the wash systems and brackets | | | | | After 2000 h or every year |
| Check spray pattern in the fresh water pre-rinse tunnel (M-iQ CUP / optional) | | | | | After 2000 h or every year |
| Replace the rubber seal for ascending pipe of the washing systems | | | | | After 2000 h or every year |
| Replace the rubber seal in the ascending pipe of the pump final rinse | | | | | After 2000 h or every year |
| Check air gap of tank insert and clean if necessary | | | | | After 2000 h or every year |
| Replace the rubber seal on the drain filter | | | | | After 2000 h or every year |
| Visual check of sieves, M-filter sieves | | | | | After 2000 h or every year |
| Visual check of door guides, roller springs | | | | | After 2000 h or every year |

| | | | | | |
|---|---|---|---|---|---|
| Replace roller springs | | | | | After 10,000 door move-ments or 5 years |
| Check water level in tank | | | | | After 2000 h or every year |
| **5. Drying** | | | | | |
| Visual check of the motor and ventilation grid, clean if necessary. | | | | | After 2000 h or every year |
| Clean installation space of the heating register, blower wheel and blower wheel housing | | | | | After 2000 h or every year |
| For steam heating: clean heat exchanger | | | | | After 2000 h or every year |
| Clean air nozzles and suction grid | | | | | After 2000 h or every year |
| Visual check of door guides, roller springs | | | | | After 2000 h or every year |
| Replace roller springs | | | | | After 10,000 door move-ments or 5 years |
| **6. Vibration drying (M-iQ Cup)** | | | | | |
| Check bearings for ease of movement and wear | | | | | After 2000 h or every year |
| Grease bearings if necessary (except stainless steel bearings) | | | | | After 2000 h or every year |
| Check drive chains for elongation and wear, replace if necessary. Lubricate if necessary. | | | | | After 2000 h or every year |
| Check moving parts for tight screw connection | | | | | After 2000 h or every year |
| Visual check of door guides, roller springs | | | | | After 2000 h or every year |
| Replace roller springs | | | | | After 10,000 door move-ments or 5 years |
| **7. Heat recovery/air duct** | | | | | |
| Clean exhaust air blower and heat exchanger | | | | | After 2000 h or every year |
| **8. Fresh water rinse system** | | | | | |
| Clean exhaust air blower and heat exchanger | | | | | After 2000 h or every year |
| Visual inspection of nozzles, spray arms, spray arm locking devices | | | | | After 2000 h or every year |
| Replace rubber seal riser of fresh water flushing system | | | | | After 2000 h or every year |
| **9. Fresh water rinse system module** | | | | | |
| Clean exhaust air blower and heat exchanger | | | | | After 2000 h or every year |

| | | | | | |
|---|---|---|---|---|---|
| Visual check for tightness of the air-gap pump, ventilation grilles and leak tightness | | | | | After 2000 h or every year |
| Check the minimum and maximum position of the float switch in the system separation tank | | | | | After 2000 h or every year |
| Check float valve in air-gap tank | | | | | After 2000 h or every year |
| Cleaning the dirt trap on the fresh water rinse system module | | | | | After 2000 h or every year |
| Visual check for leaks of the rinse aid dosing within the machine | | | | | After 2000 h or every year |
| Replace the lock and seal on the FKSP ascending pipe | | | | | After 2000 h or every year |
| **10. Installation area module** | | | | | |
| Clean dirt trap on water supply | | | | | After 2000 h or every year |
| Visual check for tightness | | | | | After 2000 h or every year |
| **11. Transportation** | | | | | |
| Visual inspection of the gear motor and ventilation grid | | | | | After 2000 h or every year |
| Visual check of drive chain for sufficient grease | | | | | After 2000 h or every year |
| Check the belt tension | | | | | After 2000 h or every year |
| Visual check of deflection pulleys and adjusting rings | | | | | After 2000 h or every year |
| **12. M-Filter** | | | | | |
| Replace the seal, check the suction | | | | | After 2000 h or every year |
| **13. Waste water pipe from pump final rinse to wash tank pre-washing (bypass)** | | | | | |
| Check hose connection and connections for tightness | | | | | After 2000 h or every year |
| **14. Checking the function of the overall system** | | | | | |
| Check filling and heating until readiness for operation stage | | | | | After 2000 h or every year |
| 15 minutes test run with M-Commander, check I/O recording | | | | | After 2000 h or every year |
| Check dishes' final switch-off | | | | | After 2000 h or every year |
| Visual check of the entire machine for leaks | | | | | After 2000 h or every year |
| Visual inspection of the cable routing under the machine | | | | | After 2000 h or every year |
| Check current consumption of all electrical heaters (see wiring diagram) | | | | | After 2000 h or every year |
| Functional test switch cabinet ventilator | | | | | After 2000 h or every year |

| | | | | | |
|---|---|---|---|---|---|
| Check fan at equalisation openings (e.g.: machine roof - not covered) | | | | | After 2000 h or every year |
| Functional test of the fan in the electrical box of the fresh water final rinse module | | | | | After 2000 h or every year |
| Check function of exhaust air motor | | | | | After 2000 h or every year |
| Check function of bypass line solenoid valve | | | | | After 2000 h or every year |
| Check function of wash arm in heat recovery system | | | | | After 2000 h or every year |
| **15. Conveyor system** | | | | | |
| Check conveyor belt or rack transport for trouble-free operation | | | | | After 2000 h or every year |
| Check mechanical overload cut-off | | | | | After 2000 h or every year |
| Check photoelectric barriers for proper working order | | | | | After 2000 h or every year |
| **16. Cyclone housing (sand filter in the pre-wash zone) (optional)** | | | | | |
| Visual inspection for leaks in the water circuit | | | | | After 2000 h or every year |
| **17. Options** | | | | | |
| **Integrated reverse osmosis system** | | | | | |
| Visual check of the entire system for leaks | | | | | After 2000 h or every year |
| Change pre-filter (standard membrane (<0.01 mg/l)) | | | | | Every six months |
| Check fine sieve insert and choke in concentrate line | | | | | Every six months |
| Check that concentrate drain is working correctly and check for deposits | | | | | Every six months |
| Raw water temperature (°C) | | | | | Every six months |
| Total hardness of raw water (°dH) | | | | | Every six months |
| Conductivity of raw water (µS/cm) | | | | | Every six months |
| Raw water flow pressure (bar) | | | | | Every six months |
| Water hardness permeate ( dH) | | | | | Every six months |
| Permeate conductivity (µS/cm) | | | | | Every six months |
| Permeate volume | | | | | Every six months |
| **18. Steam installation and pump hot water installation (if available)** | | | | | |
| Check admission pressure in expansion tank when cold | | | | | After 2000 h or every year |
| Check slide ring sealing of hot water pump | | | | | after 2000 h |

| | | | | | |
|---|---|---|---|---|---|
| Check installation for leaks | | | | | After 2000 h or every year |
| Check system pressure according to specification (manometer plate) | | | | | After 2000 h or every year |
| **19. Liquid cooler (LC) / AirCool (optional)** | | | | | |
| Visual check of water cycle and plate heat exchanger for tightness | | | | | After 2000 h or every year |
| Check hose pump for air dosage of level control system | | | | | After 2000 h or every year |
| **20. Thermal disinfection (TD, option)** | | | | | |
| Check hose pump for air dosage of the level control system | | | | | After 2000 h or every year |
| **21. Checking water quality and temperatures (in °C)** | | | | | |
| **Filling** | | | | | |
| Temperature (°C) | | | | | |
| Water hardness ( dH) | | | | | |
| Conductivity (µS/cm) | | | | | |
| **WT temperature** | | | | | |
| WT 1 (°C) | | | | | |
| WT 2 (°C) | | | | | |
| WT 3 (°C) | | | | | |
| **PKSP + TD temperature** | | | | | |
| PKSP (°C) | | | | | |
| TD 1 (°C) | | | | | |
| TD 2 (°C) | | | | | |
| **KSP 1** | | | | | |
| Temperature (°C) | | | | | |
| Water hardness ( dH) | | | | | |
| Conductivity (µS/cm) | | | | | |
| Filling quantity (l/h) | | | | | |
| **KSP 2** | | | | | |
| Temperature (°C) | | | | | |
| Water hardness ( dH) | | | | | |
| Conductivity (µS/cm) | | | | | |
| Filling quantity (l/h) | | | | | |
| **22. Electrical safety check in accordance with country-specific regulations, with a protocol (certificate optional)** | | | | | |
| Perform visual check | | | | | |
| Perform protective earth conductor check | | | | | |
| Isolation resistance measurement | | | | | |
| Perform protective conductor current measurement | | | | | |

| | | | | |
|---|---|---|---|---|
| **4. Bi-cord conveyor with tray infeed device, tray destacking and cutlery lifting magnet or cutlery conveyor belt** | | | | |
| **Conveyor drive** | | | | |
| Check gear motor and drive chains | | | | |
| Check belt pulleys | | | | |
| **Transport** | | | | |
| Check belt tension | | | | |
| Visual check of round belts | | | | |
| Check the belt for an even run | | | | |
| Check lateral tray guides | | | | |
| **Tray stop** | | | | |
| Check transport stop switch | | | | |
| Check transport interlock of bi-cord conveyor with M-iQ machine | | | | |
| **Electrical installation** | | | | |
| Visual check of all electrical components | | | | |
| **Tray infeed device** | | | | |
| Check transfer of conveyor belt to machine | | | | |
| **Tray stacking** | | | | |
| Check transfer M-iQ to tray stacker and tray stacking trolley | | | | |
| **Cutlery lifting magnet** | | | | |
| Visual check of belt and belt body | | | | |
| Check belt tracking | | | | |
| Check cutlery chute at feeding and discharge section of M-iQ machine | | | | |
| Check cutlery monitoring switch | | | | |
| Check magnet system | | | | |

# 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.

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# 14 Notes

The clean solution

**MEIKO Maschinenbau GmbH & Co. KG**
Englerstraße 3
77652 Offenburg
Germany
www.meiko-global.com
info@meiko-global.com

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