BioMaster® 4 Highline

M011FWCS10M1-30

Food waste infeed station



Original operating instructions

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1 Notes on the manual

This manual is part of the operating instructions for this product. The related documents are also part of the operating instructions.

The operating instructions must be read before first use, kept for future reference and be accessible at all times. Failure to observe the operating instructions may result in damage to persons and property.

This manual can be downloaded at the following addresses: ➦ *www.meiko.com* or ➦ *https://partnernet.meiko-global.com.*

1.1 Scope of applicability

This manual applies to the following machine types:

- **BioMaster® 4 Highline**
  M011FWCS10M1-30

1.2 Related documents

In addition to this manual, there are other documents that are available depending on the authorisation.

Included in the scope of delivery for the operator:

- EC/EU declaration of conformity
- Quick-start guide
- Wiring diagram
- Assembly plan
- Spare parts list

For the MEIKO authorised service technician:

- Service manual

1.3 Illustration

1.3.1 Warning notices

Warning notices in this manual have a standardised structure and are differentiated according to the severity of the hazard.

⚠ DANGER

Type and source of danger

The warning notice draws attention to a hazard with a high degree of risk which, if ignored, will result in death or serious injury.

⚠ WARNING

Type and source of danger

The warning notice draws attention to a hazard with a medium degree of risk which, if ignored, can result in death or serious injury.

⚠ CAUTION

Type and source of danger

The warning notice draws attention to a hazard with a low degree of risk which, if ignored, can result in minor to moderate injuries.

NOTICE

Type and source of danger

A notice draws attention to a possible danger which, if ignored, can lead to material damage to the product or to equipment in the surrounding area.

1.3.2 Info



Info

This section draws attention to important or useful information about the product or its use.

1.3.3 Markup elements

The following markup elements are used in this manual for emphasis.

Symbol	Description
▶	Requirement to be met for a subsequent action instruction
1.	Numbered action steps of an action instruction
➡	■ Intermediate result of an action step ■ Result of an action instruction
■	A preceding square indicates a bullet point in a list
[ ]	Terms in square brackets indicate keys, soft keys and buttons on touchscreens
(1)	Round brackets in the text with a number refer to position numbers in an associated figure
Italic text	Texts shown on the display are labelled in italics in the manual. These include, for example: ■ Operator messages ■ Warning messages ■ Error messages ■ Status indicators

Tab. 1: Markup elements

1.3.4 Illustrations

The illustrations contained in this document are not necessarily true to the original or to scale. The illustration may be schematic in nature and 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 the following EC Directive:

- 2006/42/EC, Machinery Directive, OJEU L157/24, 09/06/2006

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

- 2014/30/EU, Directive on Electromagnetic Compatibility, OJEU L96/79, 29/03/2014
- 2011/65/EU, Directive on the restriction of the use of certain hazardous substances in electrical and electronic equipment, OJEU L174/88, 01/07/2011
- The safety objectives set out in the Low Voltage Directive 2014/35/EU (OJEU L96/357, 29/03/2014) were met in accordance with Annex I, No. 1.5.1 of the Machinery Directive.
- 2014/53/EU Directive on the placing of radio equipment on the market

3 Safety

3.1 Intended use

This section describes the purposes for which and the conditions under which the product may be used in accordance with the manufacturer's specifications. These specifications must be adhered to in order to ensure safe operation and a long product service life.

The infeed station is intended exclusively for grinding loose organic preparation waste and food waste of the kind that is usually generated in large-scale kitchens, hotels, food service and communal catering.

The infeed station may only be operated commercially and only in conjunction with a MEIKO food waste treatment system.

The infeed station may only be operated by trained personnel.

Only operate the infeed station when it is in perfect working order.

Only operate the infeed station within the limits specified in the ambient conditions.

If servicing is required, only use original spare parts from the manufacturer. This is the only way to guarantee perfect function and safety.

The infeed station is not approved for operation in a potentially explosive environment.

Technical modifications or conversions are not permitted.

3.2 Foreseeable misuse

This section provides information on misuse that experience has shown can occur even though it does not correspond to the intended use. These specifications must be adhered to in order to avoid accidents, damage to the product and possible hazards to persons.

The following items must not be added to the infeed station:

- Food waste and waste with a grain size in excess of 80 mm
- Single-variety food waste and waste in quantities of more than 10 litres
- Food waste and waste with temperatures in excess of 40°C
- Fats that harden
- Service water
- Chemicals
- Cutlery and dishes

- Parts made of plastic, metal, glass, porcelain, wood, etc.
- Textiles, pot holders and cleaning utensils
- Living creatures

It is not permitted to use the system or parts of the system for standing, sitting or as a climbing aid.

3.3 Safety notices

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 for the user or other persons. Therefore, read and observe the following safety notices before using the product.

Contact with food waste and kitchen waste!

When working with or on the machine/system, contact with food waste and kitchen waste cannot be avoided, depending on the phase of life. Missing or unsuitable personal protective equipment increases the risk of health effects to people.

- Wear protective gloves when in direct contact with food waste and kitchen waste or when working where contact with food waste and kitchen waste cannot be ruled out.
- Only use personal protective equipment that is in proper condition and provides effective protection.
- Adapt personal protective equipment to the person, e.g. size.

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:

- Protective gloves
- Safety shoes
- Safety glasses
- Protective clothing

Risk of slipping due to leakage of liquids!

Puddles may form on the floor due to liquid leaking. There is a risk of slipping!

- Be careful when there is an accumulation of liquids.
- Immediately remove any liquids on the floor.
- Always wear suitable safety shoes.

Keep safety devices in working order!

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

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

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.

Caution: Magnetic field!

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

- Observe the safety labels.
- 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 by a MEIKO authorised service technician 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.
- When connecting with a mains plug, the mains plug must always be freely accessible.

Limit the transport speed of the tray conveyor belt!

If a tray conveyor belt is connected to the BioMaster® and the transport speed is too high, the operating personnel on the BioMaster® may become overburdened.

- The transport speed of any connected tray conveyor belt must be set so that the operating personnel on the BioMaster® are not overburdened by excessive frequency.
- In addition, an automatic shut-off device must be fitted to the conveyor belt to stop the conveyor belt in the event of a tray jam.

3.4 Safety devices

Emergency stop button

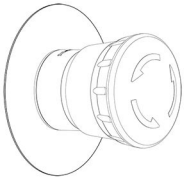


Fig. 1: Emergency stop button

Pressing the emergency stop button immediately interrupts the power supply to motors and units. After the cause of the fault is eliminated, unlock the emergency stop button by turning it. The emergency stop button must be easily accessible and free of obstacles at all times.

Lid lock safety switch

A mechanical locking mechanism with active guard locking prevents the lid from being opened while the homogenisation cycle is in progress. The locking of the lid depends on the status of the machine.

Machine status	Lid lock
■ Machine switched on, ■ homogenisation cycle active, ■ the *'Start'* LED lights up.	Locked
■ Machine switched on, ■ no homogenisation cycle active, ■ the *'Standby'* LED lights up.	Unlocked
■ Machine switched on, ■ the **[Emergency stop]** key is pressed, ■ Safety time of 10 seconds has elapsed.	Unlocked
■ Turn off the machine at the main switch.	The last state is retained.
■ Turn on the machine at the main switch.	The lid is unlocked.

3.5 Safety labels and signs

3.5.1 Description of the safety labels

This section describes the safety symbols on the safety labels affixed to the product.

Symbol	Description
	Warning of electrical voltage
	Warning of hand injuries
	Magnetic field warning
	Warning of hot surfaces

	Prohibited for people with pacemakers
	Prohibition on high-pressure cleaners

3.5.2 Positions of the safety labels

This section shows the positions of the safety labels affixed to the product.

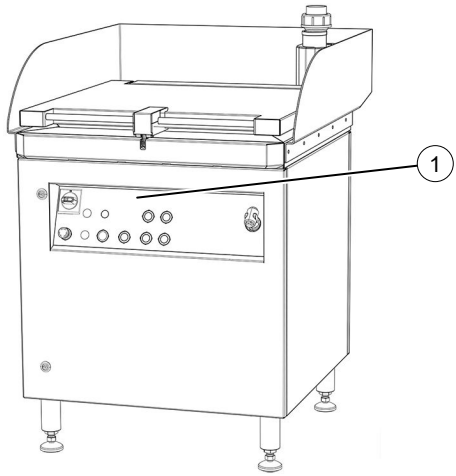


Fig. 2: Safety labels on the membrane keypad

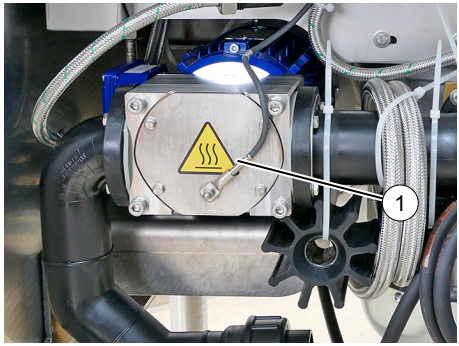


Fig. 3: Safety labels on the impeller pump

3.6 What to do in the event of an emergency

Press the emergency stop button in dangerous situations. Then disconnect from the mains using the main switch provided on site.

3.7 Personnel qualification

This manual specifies the qualifications of the persons listed below for the various tasks:

Carrier

The carrier may transport the machine / system. The carrier must be qualified for the safe transport of sensitive loads.

MEIKO authorised service technician

A MEIKO authorised service technician may carry out all work in the same way as the service technician. In addition, a MEIKO authorised service technician may carry out special setup, maintenance and repair work. MEIKO authorised service technicians must have completed special training from MEIKO.

Operating personnel

The operating personnel may switch the machine / system on and off, operate it in automatic operation, clean it and, if necessary, carry out simple maintenance work as described in the manual. The operating personnel must have been trained by MEIKO or instructed by the operator, provided that this ensures the described qualification. The operating personnel must be older than 14 years.

Service technician

The service technician is authorised to set up, connect and commission the machine, rectify mechanical faults, carry out certain maintenance work and decommission the machine. The service technician must have completed relevant professional training that qualifies them to carry out the work.

The service technician must be qualified as an electrician to work on the electrical equipment. For the purposes of this definition, a qualified electrician is someone who, on the basis of their technical training, knowledge and experience as well as knowledge of the relevant regulations, is able to assess the work assigned to them, carry it out in accordance with the electrical regulations and recognise potential hazards.

4 Product description

4.1 Delivery contents

The delivery contents include:

- BioMaster® 4 Highline
- Grinder unlocking key
- Control cabinet key, universal
- Documentation

4.2 Functional description

The BioMaster® grinds kitchen waste and food waste with the addition of process water and converts it into homogenised biomass for recycling. The biomass is pumped out of the BioMaster® and transported via a closed pipe system to a collection tank.

4.3 Overview

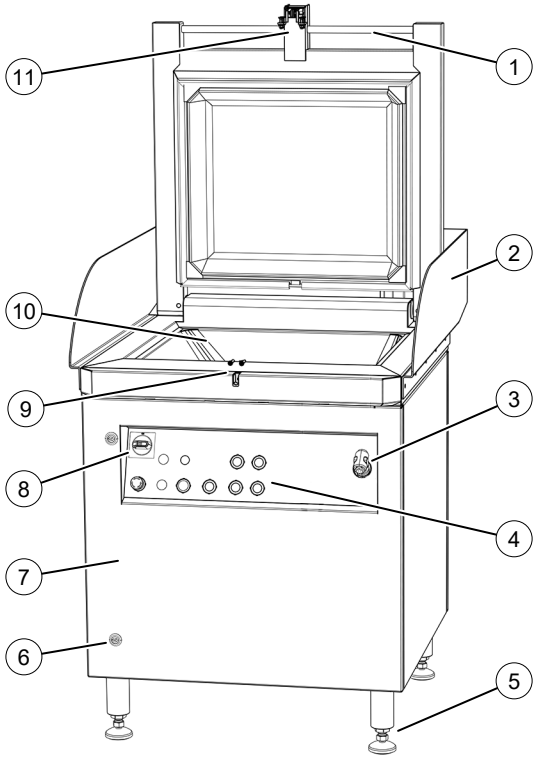


Fig. 4: Overview of the BioMaster® 4 Highline & Plus

1 Handle
2 Splash guard (option)
3 Hand spray (only for BioMaster® 4 Highline)
4 Control elements
5 Adjustable machine foot (4x)
6 Lock (2x)
7 Service hatch to the technical area, with control box on the inside
8 Main switch
9 Lid lock - actuator
10 Loading chute
11 Lid lock - safety switch

4.4 Type plate

The rating plate is located on the top of the control box behind the service door.

4.5 Hopper

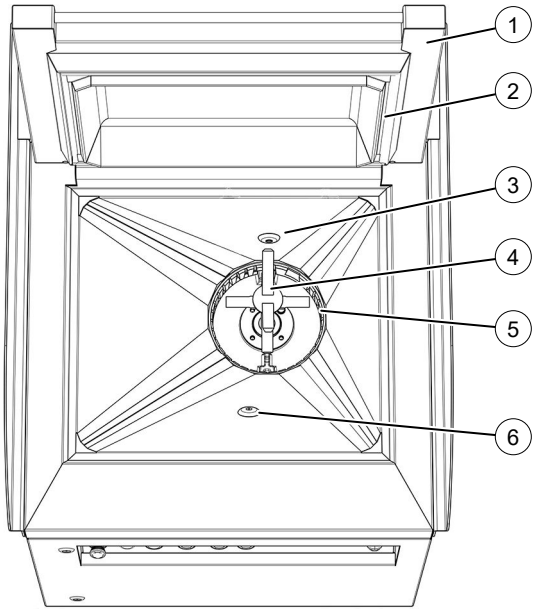


Fig. 5: Hopper

1 Cover
2 Lid seal
3 Process water nozzle
4 Pre-grinding unit (option)
5 Grinder
6 Cleaning nozzle (only with Bio-Master® 4 Highline)

4.6 Control elements

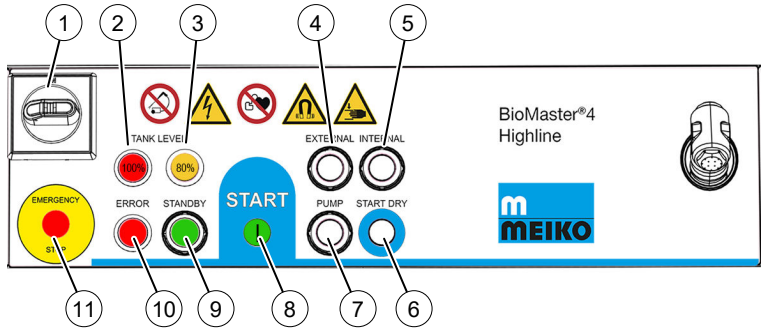


Fig. 6: Control elements

Item	Description
1	Main switch
2	*'TANK LEVEL 100%'* LED ■ The LED (red) lights up when the collection tank is full. The machine cannot be started. The collection tank must be emptied.
3	**[TANK LEVEL 80 %]** button: ■ The LED (orange) flashes when the fill level of the collection tank reaches 80 %. ■ Once you have confirmed by pressing the button, the LED will remain lit until the fill level falls below 80 %.
4	Only with Highline **[EXTERNAL]** button: ■ Starts the manual addition of water using the hand spray. ■ The button lights up as long as the water supply is active.
5	Only with Highline **[INTERNAL]** button: ■ Starts the cleaning cycle. ■ The button lights up as long as the cleaning cycle is active.

Item	Description
6	Only with Highline **[START DRY]** button: ■ Starts DRY mode. ■ The button lights up as long as DRY mode is active.
7	**[PUMP]** button: ■ Manual pumping for max. 30 seconds. ■ The button lights up while the pump is active.
8	**[START]** button: ■ Starts automatic operation. ■ The LED lights up when the grinding cycle starts.
9	*'STANDBY'* LED ■ The LED (green) lights up when the machine is ready for operation and the lid is closed.
10	*'ERROR'* LED ■ The LED (red) lights up in the event of general technical faults. ■ The LED flashes if there is a fault in the water supply.
11	Emergency stop button ■ Interrupts the power supply to the motor and pump. ■ Any cycle currently in progress is interrupted and the lid is unlocked.

Tab. 2: Control elements

4.7 DRY mode

DRY mode allows more effective processing of dry or expanding food waste. DRY mode differs from the standard cycle in that it uses a larger quantity of process water and a longer grinder cycle. The function is started manually.

5 Technical data

This section lists all technical data relevant for the safe and proper operation of the system. Further and detailed information can be found in the related documents (wiring diagram, assembly plan, supplier documentation).

5.1 Dimensions and weights

Dimensions		
Dimensions (L x W x H)	mm	700 x 700 x 865–935
Weight	kg	170
Hopper gross volume	l	40
Mains connection		
Mains connection	V/Hz	See rating plate
Current consumption	A	
Power consumption	kW	
Power		
Grinder motor power	kW	4.5
Max. grinding capacity (batch mode)	kg/h	1,000
Water supply		
Cold water connection		DN20 ¾“ external thread
Addition of process water		Automatic
Noise emission		**Idle/load**
Sound pressure level L_{pA}	db(A)	≤ 70
Other		
Protection class		IPX5
Machine housing material		1.4301

5.2 Ambient conditions

Permissible ambient temperature	5 ... 40°C
Permissible storage temperature	-25 ... 55°C
Relative humidity	< 95%
Permissible height of the installation site above sea level	1,000 m

Tab. 3: Ambient conditions

6 Transportation

This section is intended for the following group of people, unless otherwise stated:

Personnel:

- Carrier

For more information on the required qualifications, see ➦ *Chapter 3.7 'Personnel qualification' on page 16*.

6.1 Checking the delivery

1. Check the delivery for completeness using the order confirmation from MEIKO or the delivery note.
2. If parts of the delivery are missing, complain immediately to the forwarding agent and notify MEIKO.
3. Check the delivery for transport damage.
4. If transport damage is visible:
   - Do not accept delivery or accept delivery subject to compensation.
   - Document the damage in the delivery documents, e.g. with photographs.
   - Report the damage in writing to MEIKO. Attach photographs.

   ➡ The delivery has been checked for completeness and transport damage.

6.2 Transport with the pallet truck

The machine is securely fixed to a pallet ex works. Larger machines may be dismantled into smaller units and packed on separate pallets for safe transport.

⚠ CAUTION

Risk of crushing due to the machine tipping over!

- Transport work must be performed only by qualified persons.
- Please note safety instructions on the packaging.
- Always transport the machine only on the supplied wooden frame.
- Wear safety shoes.

Protective equipment: ■ Safety shoes

1. Ensure that all components on the pallet are secured against tipping over and falling off.

2. Carefully lift the pallet using the lift truck and transport it to its destination.
3. Set the pallet down at its destination.

   ➡ The machine was safely transported and can be unpacked.

6.3 Unpacking

For safe transport, the machines are wrapped in protective film ex works and secured to the pallet using packaging straps.

Tool:

- Cutter
- Wire cutter

1. Cut the protective film with the cutter and remove.
2. Cut and remove the straps securing the machine to the pallet with the side cutter.
3. Remove the machine from the pallet.
4. Recycle or dispose of packaging material in accordance with local regulations.
   ➦ *Chapter 6.4 'Disposal of the packaging material' on page 25*

   ➡ The machine is unpacked.

6.4 Disposal of the packaging material

All the packaging materials are recyclable. These should be recycled or disposed of in accordance with local regulations.

The following materials may be used:

- Wood for pallets
- PE foil
- Foam material
- Cardboard packaging
- Steel strapping for packaging straps
- Polypropylene for packaging straps
- Anti-slip mats made from nitrile butadiene rubber
- Stainless steel for transport locks

7 Assembly

This section is intended for the following group of people, unless otherwise stated:

Personnel:

- MEIKO authorised service technician

For more information on the required qualifications, see ➥ *Chapter 3.7 'Personnel qualification' on page 16*.

7.1 On site requirements

7.1.1 Requirements of the electrical system

Socket type	CEE socket 400 V / 16 A / 5 p / 6 h / IP67 degree of protection
Back-up fuse	Max. 16 A / tripping characteristic K or C
Surge protection	Category 2 (SPD 2)
Residual current device	RCD type B, all-current sensitive, 300 mA
Additional protective conductor	Min. 6 mm², Cu
Rotating field	Clockwise rotating field
Max. short-circuit breaking capacity	10 kA

Tab. 4: Requirements for the electrical connection

Note for Australia and New Zealand!

All work must be carried out in accordance with AS/NZS 3000!

7.1.2 Requirements for the fresh water connection

Air gap	Type AB, in accordance with EN 1717 and EN 61770
Permissible water hardness	0 ... 14 °dH
Permissible temperature range	5 ... 30°C
Permissible water pressure	200 ... 1,000 kPa (2 ... 10 bar)
Connection	DN20 ¾″ external thread
Fine filter	≤ 100 µm

Tab. 5: Fresh water connection

- Fresh water connections must comply with the locally applicable regulations (e.g. 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.
- Only connect the machine using suitable hoses and seals. Do not use damaged hoses!
- When replacing an old machine with a new one, make sure that the existing feed hose is exchanged for the new feed hose supplied with the machine.
- From a microbiological perspective, the fresh water must be of drinking water quality. This also applies to treated water.

7.2 Installing the machine

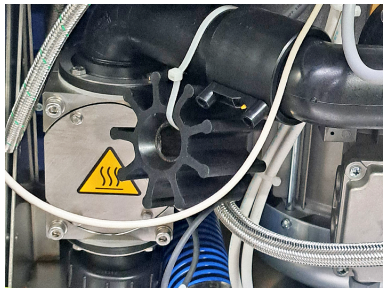
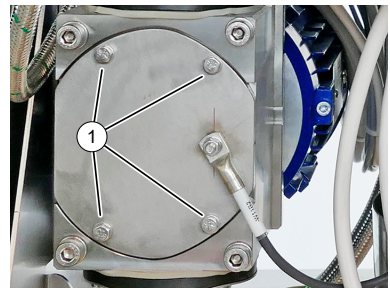
7.2.1 Inserting the pump impeller

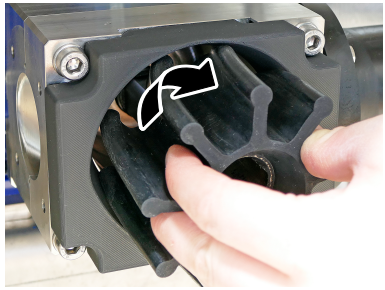
On a new machine, the pump impeller is secured in the technical cabinet using cable ties. Once the machine has been unpacked, the pump impeller is inserted into the impeller pump.

Tool:
- 8 mm box spanner
- Mounting aid for impeller pump (art. no.: 9843539)
- Wire cutter

Material:
- Silicone spray

► The machine has been unpacked and the technical cabinet has been opened.

1. 


   Use wire cutters to free the impeller (Fig. left).
2. Remove 4x M5 x 20 hexagon bolts (1) and remove the lid (Fig. right).
3. Place the installation aid onto the pump head.
4. 

   Spray the pump impeller generously with silicone spray and press it into the pump seat by turning it. Observe the direction of travel of the pump.
5. Install the lid with 4x M5 x 20 hexagon bolts.

   ➡ The pump impeller has been inserted. Check during commissioning that the impeller pump is operating correctly and in the correct direction of travel.

7.2.2 Connecting the connections

Electrician

The work must be carried out by a qualified electrician.

⚠ WARNING

Danger to life due to electric shock if casing parts are opened!

If the machine is operated without casing parts, electrified parts are freely accessible. Contact with live electrical parts may result in serious injury or death.

- Before opening the casing parts, disconnect the machine from the power supply and secure it against being switched back on.
- Attach all casing parts before placing the machine back in operation.

► The wiring diagram is available.

1. Using a flat spanner, adjust the four machine feet until the machine is level and aligned in height.
2. Connect transport pipe DN56 to the tank system.
   CAUTION! Ensure kink-free installation and maintain a minimum radius of 45°.
3. Connect the fresh water pipe to the on-site water supply.
4. Route the protective conductor according to the circuit diagram and connect in the control cabinet.
5. If the BioMaster® is operated using a tank system, connect the interface to the tank system in the control box.
6. Close the control box and the technical cabinet.

   ➡ The BioMaster® has been installed and can be put into operation. Before switching on for the first time, check whether the power supply on site runs a clockwise rotating field.

8 Commissioning

This section is intended for the following group of people, unless otherwise stated:

Personnel:

- Service technician

For more information on the required qualifications, see ➦ *Chapter 3.7 'Personnel qualification' on page 16*.

⚠ 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 live electrical parts may result in serious injury or death.

- Switch off power to the machine and secure it against being switched back.
- Before opening the housing parts, wait at least 5 minutes until the capacitors of the frequency converter have discharged.
- Attach all housing parts before placing the machine back in operation.

► The machine is at its installation site and is assembled.

1. Open the on site water tap and - if present - open the ball valve of the ascending pipe.
2. Connect the mains plug and switch on the machine at the main switch.
3. Start an empty cycle and check the direction of travel of the impeller pump, as well as checking the machine and all pipes and connections for leaks.
4. Check that all safety devices are working correctly. ➦ *Chapter 3.4 'Safety devices' on page 13*

   ➡ The machine has been commissioned.

9 Operation/use

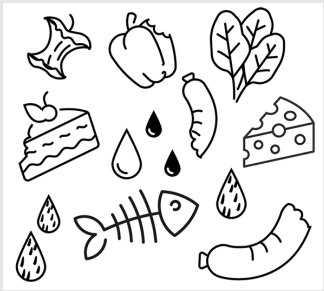
This section is intended for the following group of people, unless otherwise stated:

Personnel:

- Operating personnel

For more information on the required qualifications, see ➦ *Chapter 3.7 'Personnel qualification' on page 16*.

9.1 Approved food waste



What may be disposed of in the system?

- Food waste
- Preparation waste
- Fully liquid edible oils that do not solidify



Mix expanding food and hard food waste with normal wet food waste:

- Cereals and pasta
- Flour and sugar
- Thick fruit peel, e.g. lemons, bananas
- Fish skins, mussels, shellfish and crustaceans
- Poultry bones (long bones)
- Used coffee grounds



What must not be disposed of in the system?

- Warm food waste > 40°C
- Stone fruit and fruit with large seeds
- Bones (except poultry bones)
- Objects made of wood, metal or plastic
- Textiles and paper
- Oils that solidify
- Detergents
- Any inorganic or chemical substances as well as substances containing mineral oil

Tab. 6: Approved food waste

9.2 Switch on machine

► The machine has been connected and commissioned.

1. Turn on the machine at the main switch.
2. The lid is unlocked.

   ➡ The machine is ready to start. When the lid is closed, the *'STANDBY'* LED lights up green.

9.3 Reset emergency stop

► The emergency stop button has been pressed.

1. Eliminate the reason for the emergency stop.
2. Unlock the emergency stop button by turning it.
3. Check the safety devices for correct condition.

   ➡ The machine is ready for operation. Operation can be restarted.

9.4 Opening the lid

⚠ CAUTION

Risk of crushing at the rear lid gap!

When opening the lid, there is a risk of crushing hands and fingers at the rear lid gap.

- Only open the lid when nobody else has their hands in the area of the lid gap.
- Do not reach into the lid gap.

▶ The lid is unlocked. ➦ *'Lid lock safety switch' on page 14*

1. Open the lid as far as it will go.
   ➡ The lid is open and remains in this position.

9.5 Adding food waste

⚠ CAUTION

There is a danger of crushing when closing the lid!

- Always hold the handle when opening and closing the lid.
- Do not reach under the lid.

⚠ CAUTION

Risk of crushing at the rear lid gap!

When opening the lid, there is a risk of crushing hands and fingers at the rear lid gap.

- Only open the lid when nobody else has their hands in the area of the lid gap.
- Do not reach into the lid gap.

NOTICE

Material damage due to foreign objects in the hopper

Foreign objects in the hopper can cause serious damage to the machine during operation.

- Only place approved food waste in the hopper.
- In the event of loud, rumbling or banging noises during the homogenisation process, immediately stop the machine.
- Check the hopper contents and remove any foreign matter.

1. Open the lid as far as it will go.
2. Add the food waste. Do not fill above the MAX mark.
   CAUTION! The hopper has a maximum capacity of 40 litres.
3. Close the lid once you have added the food waste.

   ➡ Food waste has been added.

9.6 Starting the homogenisation cycle

► Food waste has been added.

1. Close the lid.
2. Press the **[START]** key.

   ➡ The lid is locked and the homogenisation cycle starts. The *'STANDBY'* LED goes out. The **[START]** key lights up during the cycle. When the cycle is complete, the *'STANDBY'* LED lights up again and the lid is unlocked.

9.7 Draining

⚠ CAUTION

There is a danger of crushing when closing the lid!

- Always hold the handle when opening and closing the lid.
- Do not reach under the lid.

Larger quantities of liquid, such as soup or water, can be pumped out without a homogenisation cycle.

► There is no food waste in the hopper.

1. Open the lid.
   ➦ *Chapter 9.4 ‘Opening the lid’ on page 33*
2. Add the larger quantities of liquid to the hopper. Do not fill above the MAX mark.
   CAUTION! The hopper has a maximum capacity of 40 litres.
3. Close the lid.
4. Press and hold the **[PUMP]** key.
   ➡ The pump operates for a maximum of 30 seconds as long as the **[Drain]** key is pressed. Pressing the key again restarts the pump. The LED on the key lights up while the process is underway.

9.8 Switching off the machine



Switch off the machine even for short periods of downtime!

The machine should also be switched off for short periods of downtime, e.g. for shift changes, overnight or at weekends.

► The machine is switched on.

1. Turn off the machine at the main switch.
   ➡ The machine is switched off.

9.9 Assistance in case of malfunctions

The faults listed in the table can usually be rectified by the operating personnel.

If a fault is not described in the table below or its cause cannot be rectified, contact MEIKO Service.

Fault	Possible cause	Remedy
The machine has no power.	The mains plug is not plugged in.	Plug in the mains plug.
	The main switch on site is not turned on.	Turn on the main switch on site.
	The main switch is turned off.	Turn on the main switch.

Fault	Possible cause	Remedy
	BioMaster® 4 Plus: The motor protection switch has tripped, the error LED is lighting up.	■ Turn on the motor protection switch. ■ Contact Technical Service in the event of repeated tripping.
Homogenisation cycle cannot be started.	*'TANK LEVEL 100 %'* LED lighting up, collection tank is full.	■ Visually check the collection tank fill level. ■ Arrange for the tank to be drained. ■ BioMaster® remains out of service.
	Emergency stop button pressed.	■ Remedy any faults. ■ Unlock the emergency stop function.
	'ERROR LED' flashing.	■ Fault in the water system. ■ Contact Technical Service.
	'ERROR LED' lighting up.	■ Technical fault. ■ Contact Technical Service.
	Lid is not properly closed. *'STANDBY'* LED not lighting up.	Close the lid correctly. The *'STANDBY'* LED must light up.
[TANK LEVEL 80 %] LED flashing.	Collection tank fill level = 80%.	■ Arrange for the tank to be drained soon. ■ Press the **[TANK LEVEL]** key for > 3 seconds. ■ LED lighting up orange continuously.

Fault	Possible cause	Remedy
[TANK LEVEL 100 %] LED lighting up.	Collection tank fill level = 100%.	■ Visually check the collection tank fill level. ■ Arrange for the tank to be drained. ■ BioMaster® remains out of service.
'ERROR LED' lighting up.	Emergency stop button pressed.	■ Remedy any faults. ■ Unlock the emergency stop function.
	Pump, grinder motor or control unit is overheated.	■ Wait until the components have cooled down. ■ Press the **[Reset]** key. ■ If the fault persists, contact Technical Service.
	Grinder blocked or motor overloaded.	■ Check the hopper contents for foreign matter. ■ Check using the unlocking key that the grinder can move freely. ■ Remove any foreign matter from the hopper. ■ Turn off the BioMaster® at the main switch, wait for 10 seconds and then turn it on again.

Fault	Possible cause	Remedy
'ERROR LED' lighting up.	Fault in the water supply.	Check: ■ Tap open? ■ Hose kinked or damaged? ■ BioMaster® 4 Highline: Press the **[EXTERNAL]** key and operate the hand spray.
Unusual noises from the hopper.	Foreign matter in the hopper, such as cutlery, bones or ceramics.	■ End the cycle with the **[Start]** key or turn off the main switch. ■ Remove foreign matter or rectify the fault.
Grinder no longer rotating.	The grinder is blocked or the motor is overloaded.	■ Release the blockage with the unlocking key. ■ Contact Technical Service if necessary.
Lid not remaining in the open position.	Hinges defective.	■ Contact Technical Service.

Fault	Possible cause	Remedy
Biomass is not being pumped out of the hopper.	Impeller pump, grinder or pipework is blocked.	■ Remove any blockage in the grinder. ■ Open the lid and press and hold the **[PUMP]** key for approx. 5 seconds. If the fill level drops, repeat the process until the hopper is empty. ■ If the feed matter is too dry, add hot water and start the draining process. ■ Contact Technical Service if necessary.

Tab. 7: Faults and their remedies

9.9.1 Remedying grinder blockages

⚠ CAUTION

There is a danger of crushing when closing the lid!

- Always hold the handle when opening and closing the lid.
- Do not reach under the lid.

⚠ CAUTION

Dangers of cutting injuries on the grinder

- Always switch off the main switch before working on the loading chute or the grinder.
- Wear cut-resistant gloves when working in the loading chute or on the grinder.

If the grinder becomes blocked during operation, it can be released using the unlocking key supplied.

Protective equipment: ■ Protective gloves, mechanical hazard

Tool: ■ Unlocking key

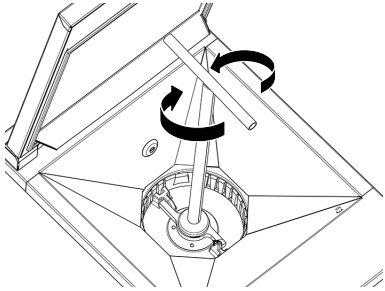
► The grinder is blocked.

1. Press the emergency stop button.

   ➡ The machine stops. The lid is unlocked after 10 seconds.

2. Turn off the main switch and open the lid.
   ➦ *Chapter 9.4 'Opening the lid' on page 33*

   ➡ Always turn off the main switch before carrying out work on the grinder!

3. 

   Place the unlocking key on the rotor or the pre-grinder (optional).

4. Use the unlocking key to move the grinder back and forth in both directions several times until the blockage is released.
5. Remove any foreign objects from the grinder.
6. Remove the unlocking key and close the lid.

   ➡ The blockage is released, turn on the main switch.

10 Cleaning

This section is intended for the following group of people, unless otherwise stated:

Personnel:

- Operating personnel

For more information on the required qualifications, see ➦ *Chapter 3.7 'Personnel qualification' on page 16*.

Daily cleaning recommended

Cleaning should be performed daily or at the end of the shift to ensure continuous trouble-free operation.

Water consumption during cleaning

During cleaning, minimise the amount of additional water used. A high input of water into the food waste collection system means that the collection tank needs to be emptied more frequently than usual.

⚠ CAUTION

Risk of crushing at the rear lid gap!

When opening the lid, there is a risk of crushing hands and fingers at the rear lid gap.

- Only open the lid when nobody else has their hands in the area of the lid gap.
- Do not reach into the lid gap.

⚠ CAUTION

There is a danger of crushing when closing the lid!

- Always hold the handle when opening and closing the lid.
- Do not reach under the lid.

NOTICE

Damage to the electrical system due to water ingress!

- Never use high pressure cleaners or steam cleaners for cleaning.
- Ensure that no water can accidentally enter the control cabinet or other electronic components.
- If installed at ground level, never flood the surrounding room.

10.1 Starting the cleaning programme

The cleaning programme can clean the hopper of any remaining food waste. It does not replace the daily cleaning of the machine.

► The hopper has been pumped empty.

1. Close the lid.
2. Press the **[INTERNAL]** key.
   ➡ The cleaning programme starts. Water is fed into the hopper via the cleaning nozzle. The grinder starts automatically. After the programme ends, the **[INTERNAL]** key goes out.

10.2 Removing coarse food waste using the hand spray

The hand spray can be used to remove food waste sticking to the hopper.

⚠ CAUTION

Risk of injury from sharp edges in the hopper!

There is a risk of injury from the sharp edges of the pre-grinder and knife ring.

- Wear protective gloves when working in the hopper.

1. Open the lid.
   ➦ *Chapter 9.4 'Opening the lid' on page 33*
2. Remove the hand spray from the holder and hold it over the open hopper.
3. Press the **[EXTERNAL]** key.
   ➡ The hand spray is activated for 30 seconds; the **[EXTERNAL]** key lights up.

4. Press the button on the hand spray and rinse out the hopper. Once the time has elapsed, the water stops flowing and the **[EXTERNAL]** key goes out. If necessary, press the **[EXTERNAL]** key to reactivate the hand spray.
5. Once cleaning is complete, replace the hand spray in its holder.
6. Close the lid.
7. Press the **[PUMP]** key repeatedly until the hopper is pumped empty.
➦ *Chapter 9.7 'Draining' on page 34*

➡ The coarse food waste has been removed.

10.3 Cleaning the hopper

Only use hot water, a biodegradable detergent and a sponge cloth for cleaning.

Use biodegradable detergents!

To avoid contaminating the biomass, only clean the loading chutes with biodegradable detergent.

⚠ CAUTION

Risk of injury from sharp edges in the hopper!

There is a risk of injury from the sharp edges of the pre-grinder and knife ring.

− Wear protective gloves when working in the hopper.

Protective equipment: ■ Protective gloves, mechanical hazard

Tool: ■ Sponge cloth

► The hopper is empty.

1. Turn off the main switch.
2. Open the lid.
➦ *Chapter 9.4 'Opening the lid' on page 33*
3. Thoroughly clean the hopper, lid and lid seal and remove any residues.
4. Then dry the cleaned areas with a cloth.
5. Close the lid.
6. Turn on the main switch and pump out any remaining water.
➦ *Chapter 9.7 'Draining' on page 34*

➡ The hopper has been cleaned.

10.4 Flushing transport pipes

The transport pipes should be flushed weekly to ensure trouble-free operation in the long term.

► The hopper is empty.

1. Open the lid and fill the hopper with lukewarm tap water up to the maximum mark.
2. Add some biodegradable detergent according to the detergent instructions.
3. Close the lid and pump out the contents until the hopper is empty.

   ➡ The transport pipes and the impeller pump are flushed by the pumping process.

10.5 Cleaning the stainless steel surfaces

NOTICE

Damage to stainless steel due to improper cleaning!

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

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

Tool: ■ Lint-free cloth

Material: ■ Stainless steel cleaner

1. Clean lightly soiled surfaces using a soft, lint-free cloth.

   Moisten the cloth if necessary.
2. Clean heavily soiled surfaces using stainless steel cleaner.
3. Remove the stainless steel cleaner from the surface with a damp cloth.
4. After cleaning, rub all damp surfaces thoroughly dry.

   ➡ The stainless steel surfaces are cleaned.

11 Maintenance

11.1 Maintenance plan

The maintenance plan describes the maintenance work recommended by MEIKO. For individual components, additional or different maintenance activities and intervals may be specified in the supplier documentation that are not listed in this maintenance plan. MEIKO recommends observing the contents of the supplier documentation and, if necessary, carrying out further maintenance measures in accordance with the information provided there.

The specified maintenance intervals refer to fixed periods as standard (e.g. annually or every six months). The maintenance requirement also depends on the number of cycles. The respective maintenance activity must be carried out after the time interval or the number of cycles has been reached – whichever occurs first. The following conversion formula is used:

Cycles	Maintenance interval
2500	Annually
1250	Every six months

11.1.1 Complete machine

Interval	Maintenance work	Personnel
Monthly	Check operating elements for damage and legibility.	Operating personnel
Annually	Check the machine for proper working order and leaks.	Service technician
	Check that safety equipment is working.	MEIKO authorised service technician
	Check safety labels and signs.	Service technician
	Check the machine for external damage.	Service technician
	Check the silicone joints on attachment chutes or table connections.	Service technician
	Replace the service hatch seal.	Service technician
	Only for version with ascending pipe:	
	Check the valves for correct operation.	Service technician

11.1.2 Lid

Interval	Maintenance work	Personnel
Annually	Check the function of the lid hinge.	Service technician
	Replace the lid seal.	Service technician
	Check the lid lock with safety switch for damage and ease of movement.	Service technician
	Check the silicone seal for damage.	Service technician

11.1.3 Grinder

Interval	Maintenance work	Personnel
Monthly	Check the hole in the grinder casing for any residue leaking out	Service technician
Annually	Check the pre-grinding unit, rotor disc, blade ring and chute seal for damage and wear.	Service technician
	Check that the screws on the grinder housing are tight.	Service technician
Every 2 years	Replace the grinder seal set.	Service technician

11.1.4 Control box

Interval	Maintenance work	Personnel
Annually	Check the earthing cable for damage and tight fit.	Service technician
	Check the cable entries for damage.	Service technician
	Check the control box for water residue and leaks.	Service technician

11.1.5 Process water supply

Interval	Maintenance work	Personnel
Annually	Check the water connection for leaks.	Service technician
	Check the float switch for contamination and proper working order.	Service technician
	Clean the fine sieve of the solenoid valve.	Service technician
	Check the process water quantity and adjust if necessary.	Service technician

11.1.6 Impeller pump

Interval	Maintenance work	Personnel
Monthly	Check the impeller pump for leaks.	Operating personnel
Annually	Check pump head contour for wear.	Service technician
	Check clutch shaft for wear.	Service technician
	Replace impeller.	Service technician
Every 2 years	Replace the impeller pump seal set.	Service technician
	Replace the seals of the product and transport pipes.	Service technician

11.2 Maintenance activities

⚠ DANGER

Danger to life from electric shock if the main switch is switched off!

When the main switch is off, electrical circuits may still have voltage, such as cables upstream of the main switch and the electronic interfaces to connected machines or systems. Contact with live electrical parts may result in serious injury or death.

- Work on the electrical system may only be carried out by a qualified electrician.
- Before working on the electrical system, disconnect the machine from the power supply and secure it against being switched back on.
- Check the wiring diagram before working on the electrical system.

⚠ CAUTION

There is a danger of crushing when closing the lid!

- Always hold the handle when opening and closing the lid.
- Do not reach under the lid.

⚠ CAUTION

Risk of crushing at the rear lid gap!

When opening the lid, there is a risk of crushing hands and fingers at the rear lid gap.

- Only open the lid when nobody else has their hands in the area of the lid gap.
- Do not reach into the lid gap.

11.2.1 Open the service hatch.

⚠ DANGER

Danger to life from electric shock if the main switch is switched off!

When the main switch is off, electrical circuits may still have voltage, such as cables upstream of the main switch and the electronic interfaces to connected machines or systems. Contact with live electrical parts may result in serious injury or death.

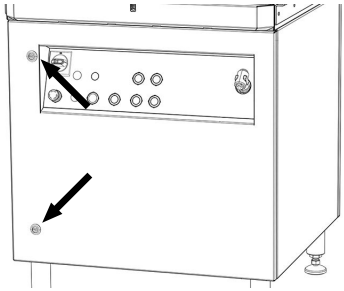
- Work on the electrical system may only be carried out by a qualified electrician.
- Before working on the electrical system, disconnect the machine from the power supply and secure it against being switched back on.
- Check the wiring diagram before working on the electrical system.

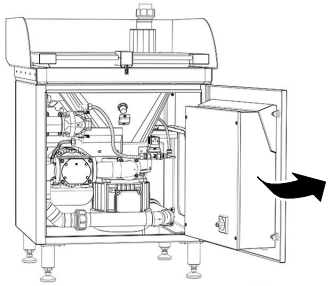
Personnel: ■ Service technician

Tool: ■ VDE double-bit spanner

► The machine is switched off and secured against being switched back on.

1.





Open the locks with the key (fig. left).

2. Open the service hatch.

   ➡ The technical area and the control box are accessible when the service hatch is open.

11.2.2 Check safety labels and signs

Safety labels and signs on the product must always be clearly legible.

Personnel: ■ Service technician

1. Check all safety labels and signs for legibility.

   ➦ *Chapter 3.5.2 'Positions of the safety labels' on page 15*

2. Replace damaged or illegible safety labels and signs. These can be reordered at MEIKO.

   ➡ The safety levels and signs have been checked.

11.2.3 Checking the lid lock for proper working order

Personnel: ■ Service technician

1. Turn on the main switch.

   ➡ The lid is unlocked.

2. Open the lid completely.

   ➡ The lid must not close automatically.

3. Close the lid.
4. Start the homogenisation cycle.
5. Try to open the lid during the cycle.

   ➡ The lid must be locked during the cycle and must not be able to be opened. If the lid opens during the cycle, turn off the system immediately at the main switch, secure it against being turned back on and contact Technical Service.

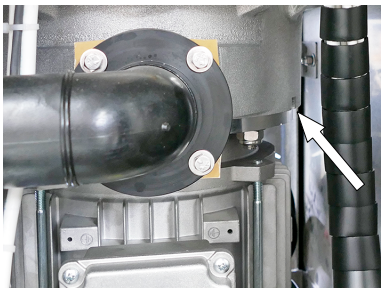
11.2.4 Checking the hole in the grinder for any residues leaking out

Personnel: ■ Service technician

► The machine is switched off and secured against being switched back on.

1. Open the service flap.

2.



Check the hole on the side of the grinder (arrow) for any residues leaking out.

3. If clearly visible residues are leaking from the hole, contact Technical Service.

➡ The grinder has been checked for any residues leaking out.

11.2.5 Checking the impeller pump for leaks

⚠ CAUTION

Danger of burns from hot impeller pump!

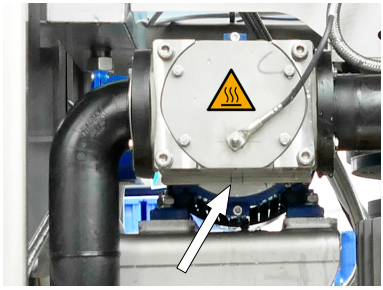
The impeller pump becomes very hot when operated without any pump fluid. Touching the pump may cause burns.

- Before carrying out any work on the impeller pump, allow the pump to cool down for at least 60 seconds.

Personnel: ■ Service technician

► The service flap to the technical cabinet is open.

1.



Check the recess at the bottom of the adapter plate (arrow) for leaking residues.

2. If residues are clearly visible, the radial shaft seal of the impeller pump must be replaced. Contact Technical Service.

   ➡ The impeller pump has been checked for leaks.

12 Decommissioning

⚠ DANGER

Danger to life from electric shock if the main switch is switched off!

When the main switch is off, electrical circuits may still have voltage, such as cables upstream of the main switch and the electronic interfaces to connected machines or systems. Contact with live electrical parts may result in serious injury or death.

- Work on the electrical system may only be carried out by a qualified electrician.
- Before working on the electrical system, disconnect the machine from the power supply and secure it against being switched back on.
- Check the wiring diagram before working on the electrical system.

⚠ CAUTION

Danger of burns from hot impeller pump!

The impeller pump becomes very hot when operated without any pump fluid. Touching the pump may cause burns.

- Before carrying out any work on the impeller pump, allow the pump to cool down for at least 60 seconds.

Personnel:
- Service technician

Tool:
- Flat spanner, 8 mm
- Control cabinet key
- 5 litre bucket

1. Clean the machine and hopper.
2. Fill the hopper several times with lukewarm, clear water and pump it out manually to wash the transport pipes.
3. Close the on-site water tap.
4. Turn off the main switch.
5. Pull out the mains plug.
6. Open the service hatch and position the drip vessel beneath the impeller pump.
   ➦ *Chapter 11.2.1 ‘Open the service hatch.’ on page 49*
7. If present, close the shut-off valve in the ascending pipe.
8. Remove the cover of the impeller pump, collect the residual water and dispose of it via waste water.

9. Install the impeller pump cover and close the service door.

➡ The machine has been decommissioned.

13 Dismantling and disposal

13.1 Removal

Personnel: ■ Service technician

► The machine has been decommissioned.

1. Disconnect the fresh water connection.
2. Disconnect the hose connection to the transport pipe and seal with a plug.
3. If necessary, disconnect the interface to the connected tank system.

   ➡ The machine is prepared for further disassembly.

13.2 Disposal

Symbol	Description
	The product is marked with this symbol. Apply the local regulations for proper disposal of the old appliance. This includes separate collection and subsequent recycling in order to reutilise raw materials. Commission a specialised company for environmentally friendly disposal and reuse.

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