User Manual

MultiMix

OptiMix / OptiMix QuickChill

Maxi / MaxiMix / MaxiMix QuickChill

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Originalanleitung
Notice originale
Original instructions

Table of contents

ID: 0000002121-EN-002

General

Foreword

ID: 0000000047-EN-002

Please read this user manual carefully before using the appliance for the first time. This will ensure that you know how to use the appliance correctly and that you are aware of conditions that may be hazardous to the appliance and user.

ID: 0000001192-EN-003

Failure to follow the instructions in this user manual when using the appliance will render the manufacturer's warranty void. In addition, the manufacturer will not be liable for the product or any damage or consequential damage to material or injury to persons.

ID: 0000000049-EN-004

Certain functions described in this user manual relate to a specific model or extra equipment for the appliance. This means that not all sections are relevant to your appliance.

ID: 0000001201-EN-002

Valid through Software version 2.0.

ID: 0000001436-EN-002

The original user manual is written in Danish.

ID: 0000001320-EN-003

⚠ DANGER!

Always use original spare parts when carrying out maintenance and repair tasks.
The manufacturer's liability will be rendered void if non-original spare parts are used and a new risk assessment must subsequently be carried out and documented.

Manufacturer

ID: 0000001467-XX-001

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C.F. Tietgens Boulevard 28
DK-5220 Odense SØ
+45 6597 4815
sales@joeni.dk

Declarations of Conformity

ID: 0000001135-EN-001

See Appendix.

Description

ID: 0000001170-EN-003

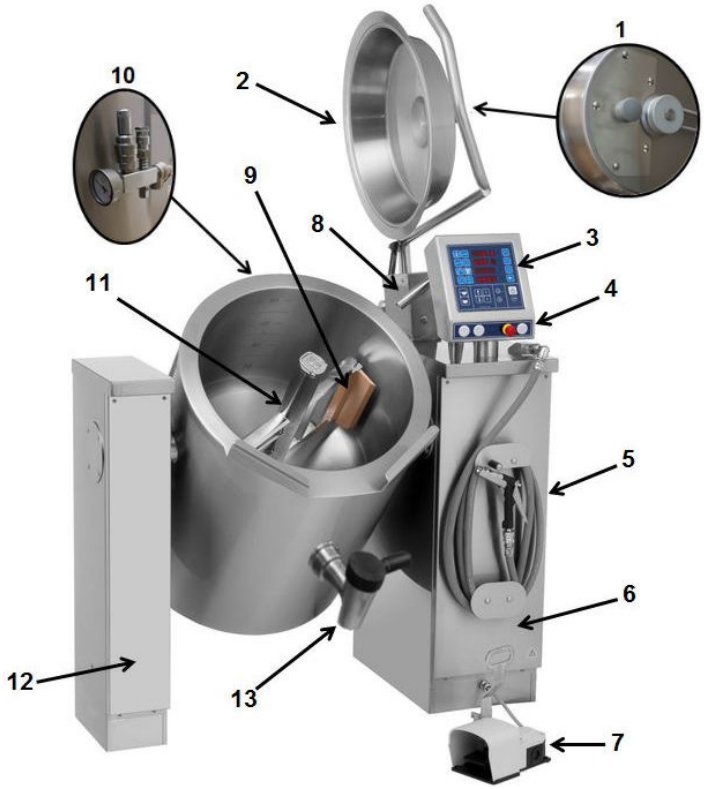


Fig. 0-1 Overview of the appliance

1 Inspection cover
2 Lid
3 Control panel
4 Function buttons and emergency stop
5 Spray gun
6 Mounting pillar
7 Foot pedal
8 Spout for water filling
9 Scraper
10 Safety device
11 Stirrer
12 Support pillar
13 Drain valve

Noise

ID: 0000001180-EN-001

The noise level of the appliance is below 70 dB (A)

Symbol explanation

ID: 0000001171-EN-003

⚠ DANGER!

Imminent danger situation:

There is an immediate risk of serious physical injury or death.

⚠ WARNING!

Potentially hazardous situation:

May result in serious physical injury or death.

⚠ CAUTION!

Potentially hazardous situation:

May result in minor physical injury.

NB!

Potentially harmful situation:

May result in damage to the product or other property.

Useful additional information and tips.

ID: 0000001489-EN-003

Warning

Pay attention and exercise extra caution.

Fig. 0-2

ID: 0000001488-EN-002

Read the user manual

Read the user manual before using the appliance.

Fig. 0-3

ID: 0000000496-EN-005

Potential equalization

Located nearby terminals where potential equalization must be connected.

Fig. 0-4

ID: 0000000497-EN-004

Electricity hazard

This sign is located on covers that house components with high voltages.

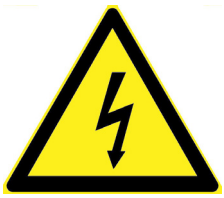


Fig. 0-5 Electricity hazard

Intended purpose

ID: 0000000048-EN-006

The appliance is intended for professional use in connection with heating, cooking, chilling, stirring and other similar food preparation processes in industrial kitchens.

ID: 0000001437-EN-002

The appliance may only be used for food that meets the conditions stated in the declaration of conformity for food contact materials.

ID: 0000001438-EN-002

Never step or stand on the appliance.

The appliance must be stored and used indoors.

ID: 0000001137-EN-004

After the appliance is installed and before it is taken into use, the employer must ensure that a preliminary inspection of the appliance is carried out.

The inspection must be carried out by competent persons and in accordance with the user manual, national legislation and practice.

ID: 0000000945-EN-004

The employer must ensure that all users receive the necessary instructions when using the appliance so that they can operate the appliance safely and without risk of personal injury or damage to the appliance.

Children under the age of 15 must not use the appliance.

Children over the age of 15 and persons with physical disabilities, reduced senses, mental retardation or lack of experience and knowledge may only use the appliance while under supervision or if they have been instructed in the safe use of the appliance and understand the hazards associated with it.

Installation

Drawings and diagrams

ID: 0000001135-EN-001

See Appendix.

General

ID: 0000002752-EN-001

The kettle is a CE marked pressure vessel approved for 1.3 bar in accordance with the Pressure Equipment Directive.

There may be national rules for installation and operation that need to be observed.

ID: 0000000568-EN-002

NB!

National and local regulations concerning assembly and installation must be followed, even if they deviate from the recommendations given in these instructions. If in doubt, consult your national or local authorities before commencing installation.

ID: 0000000567-EN-006

Operating environment

Ambient temperature: 5-35°C

ID: 0000001440-EN-002

Max. altitude: 1000 m

ID: 0000001242-EN-001

Relative humidity, free of dripping water and no condensation: 5-95%

ID: 0000001202-EN-004

Storage

Ambient temperature: 5-50°C

ID: 0000001441-EN-001

Before storing and transporting, the appliance must be emptied of water.

ID: 0000001242-EN-001

Relative humidity, free of dripping water and no condensation: 5-95%

Check upon receipt

ID: 0000000574-EN-001

Please notify the transport company of any damage caused during transport.

Please contact your dealer if the delivery is deficient in any respect.

Handling

ID: 0000000569-EN-004

⚠ **WARNING!**

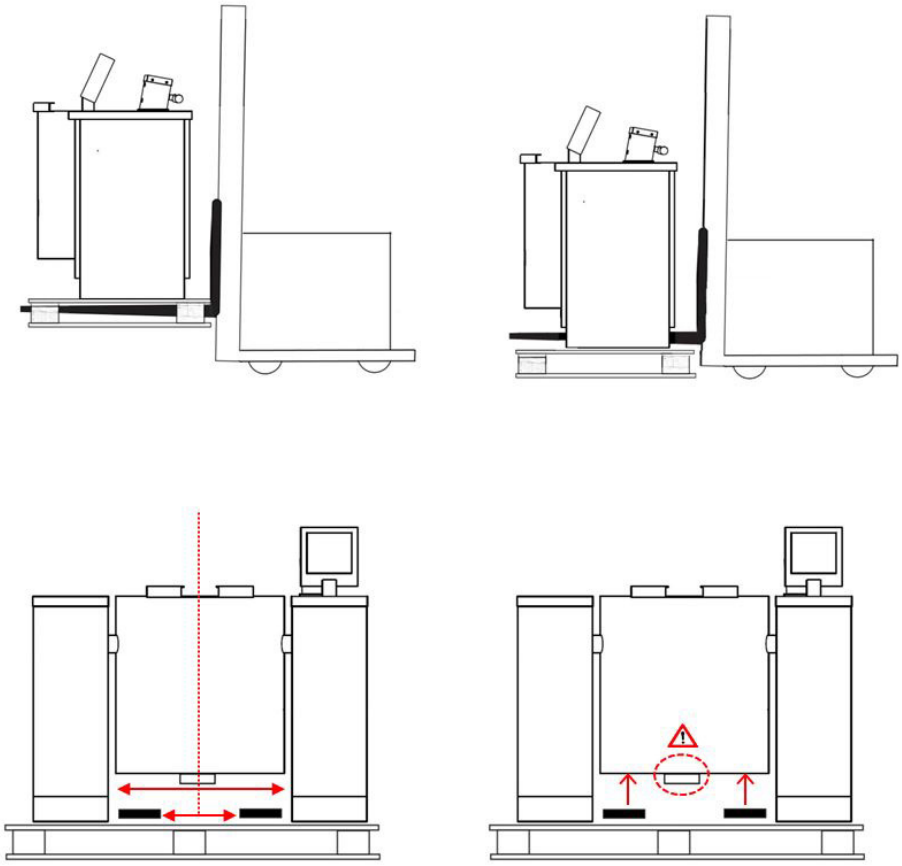
The center of gravity is offset.

ID: 0000000575-EN-003

NB!

Lifting of the appliance must be executed with the lifting forks under the kettle.
The pillars will rotate in relation to the kettle when the appliance is lifted.

ID: 0000001475-XX-001



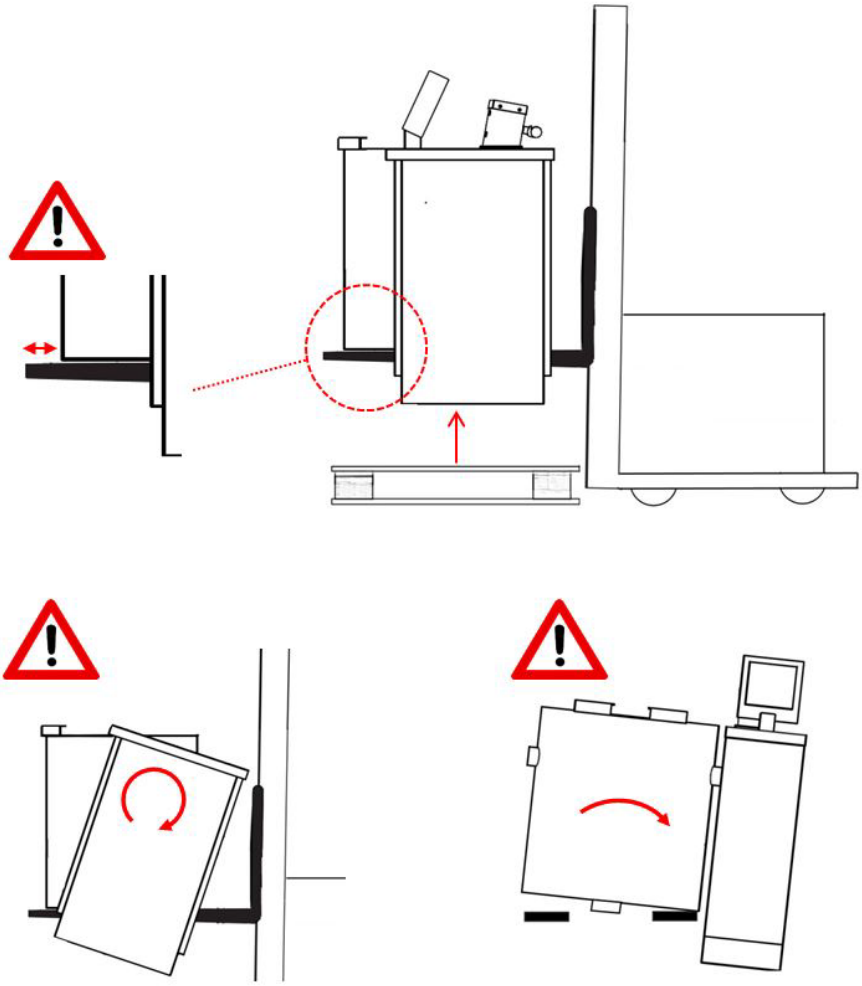


Fig. 0-6

Installation requirements

ID: 0000000583-EN-003

NB!

Ensure that water or moisture cannot penetrate the floor, move through storey partitions or penetrate into walls. For example at pipes, cables, bolts, lead-ins, floor coverings or similar.
If the appliance is mounted on a pillar, this also applies to the area inside the pillar.

ID: 0000000673-EN-002

⚠ DANGER!

Pipes, hoses or similar items must not be fitted to the safety valve because they can prevent the free flow of steam.
The operating handle must never be blocked.

ID: 0000000462-EN-002

NB!

Ensure that the building and its installations are not damaged in any way. For example, check if the floor has a membrane that can be damaged.

ID: 0000000585-EN-003

The appliance may only be installed in premises that have a floor drain.

ID: 0000001442-EN-002

There must be sufficient free space around the appliance to ensure that all use, including installation, operation, repair, maintenance and cleaning of the appliance, can be carried out freely and safely.

ID: 0000001443-EN-002

If there is a crushing hazard behind the appliance, this area must be closed off.

ID: 0000001444-EN-002

There must be sufficient free height above the appliance to ensure that the lid can be fully opened.

ID: 0000001445-EN-002

There must be sufficient ventilation around the appliance to ensure that it does not cause condensation formation.

ID: 0000001193-EN-002

The floor covering must be non-slip, also when it is wet or greasy.

ID: 0000001194-EN-002

It must be ensured that there is sufficient lighting to ensure the safe operation of the appliance.

ID: 0000000587-EN-005

Floor drain

A floor drain should be installed in front of the appliance. The recommended size and position is stated in the installation drawing/technical data.

ID: 0000000588-EN-006

Load-bearing capacity and stability

The floor/wall must be designed to carry the combined weight of the appliance and food.

ID: 0000000589-EN-005

Supply installations

All installations must be routed into the appliance in the areas/points that are indicated in the installation drawing/technical data.

Connection requirements

Connection of electricity supply

ID: 0000000591-EN-005

Cables

Refer to the installation drawing/technical data for the required cable length.

Aluminum cables must not be connected directly to the appliance.

When connecting the supply cable, ensure that the protective conductor is longer than the other conductors, so that this conductor will loosen last if the cable is being pulled.

For appliances not fixed to the floor/wall, use an oil resistant flexible sheathed conductor, at least of type H05RN-F (IEC 57 code 60245).

ID: 0000001446-EN-002

When connecting kettles with the AT02 controller, ensure that the cable is long enough, so that the electrical panel can be taken out of the pillar and placed on the floor in front of the kettle.

ID: 0000000592-EN-004

Supply voltage and back-up fuses

Check that the supply voltage matches the voltage shown on the machine plate.

Check that the backup fuse matches the fuses shown in the electrical diagram.

ID: 0000001447-EN-003

Kettles that have a stirrer have overload and short-circuit protection installed inside the kettle.

Kettles that do not have a stirrer must have overload and short-circuit protection installed in front of the kettle.

ID: 0000002786-EN-001

See technical data and the electrical diagram for further information.

ID: 0000000593-EN-003

Isolator switch

The recommended tightening torque for the Vario type isolator switch manufactured by Telemecanique is as follows:

Rating	20 A	40 A	80 A	125 A	175 A
Torque	2.1 Nm	2.1 Nm	4.0 Nm	22.6 Nm	22.6 Nm

Potential equalisation

ID: 0000000596-EN-005

Potential equalisation (bonding) must be executed between the appliance and metal objects within distance of 2.5 m.
For example:

- Metal pipes
- Cooker hood
- Drain grates
- Other machines/appliances

Potential equalisation points are marked with this symbol:

Fig. 0-7 Potential equalisation

ID: 0000001480-EN-002

NB!

The appliance may have several connection points and all of these must be used.

Earthing

ID: 0000000594-EN-004

DANGER!

If a protective conductor is disconnected, the frame of the appliance will become live.

ID: 0000000595-EN-003

The appliance is Class I equipment and must therefore be connected to an earth connection in the fixed installation. The protective conductor terminal is marked PE or ⏚.

ID: 0000001449-EN-004

Be aware of the leakage current for the appliance. This requires considerations in accordance with IEC 60364-7-707.

See the appliance nameplate for information about the leakage current size.

Fault protection

ID: 0000000327-EN-002

When connecting the appliance, be aware of the earthing system of the electrical supply, as the appliance may have leakage current to earth.

ID: 0000000458-EN-003

Installation in TN network

Neutral earthing is recommended. If a ground-fault circuit interrupter is used, TT network recommendations apply.

ID: 0000000598-EN-003

Installation in TT network

Kettles without a stirrer:

RCD type A can be used.

Kettles with integrated stirrer:

For a single phase frequency converter, an RCD type A can be used.

For a three phase frequency converter, RCD type B can be used.

ID: 0000000460-EN-002

Installation in IT network

Usually a leak current is not acceptable on an IT network. There are two ways to connect the appliance to an IT network.

1) Use insulation resistance monitoring equipment of a type that can deal with the leakage current.
2) Connect the appliance through an isolating transformer.

ID: 0000000326-EN-002

Overvoltage protection

To ensure the safe and reliable operation of the appliance overvoltage/transient protection must be installed in the electrical panel that supplies the appliance.

Connection of temperature sensor for external data collection

ID: 0000001269-EN-003

Temperature logging allows the electronic recording and storage of food temperature. The temperature is measured directly on the kettle's inner steel jacket.

In addition to the temperature, a [NO] signal is available. This signal indicates if the temperature regulation is active (with heating or cooling) or not, and can be used to assess whether it is relevant to log the temperature.

Temperature logging is available in two versions:

Direct measurement

A PT100/PT1000 sensor is connected to a terminal block and the user can thus connect the sensor to relevant logging equipment.

Signal transmission via RS485

The PT100/PT1000 sensor is connected to a signal converter.

The signal cable is connected directly to the signal converter.

Communication is achieved through simple commands in ASCII format via the RS485 protocol.

This solution requires a PC with suitable software and is not included with the delivery.

ID: 0000001448-EN-002

See the electrical diagram for more information.

Power reduction connection

ID: 0000001204-EN-003

NB!

To connect kettles with AutoTemp 32, 36 or 56 control, the overall system must be prepared/ adapted for 24 VAC control voltage.

ID: 0000000613-EN-004

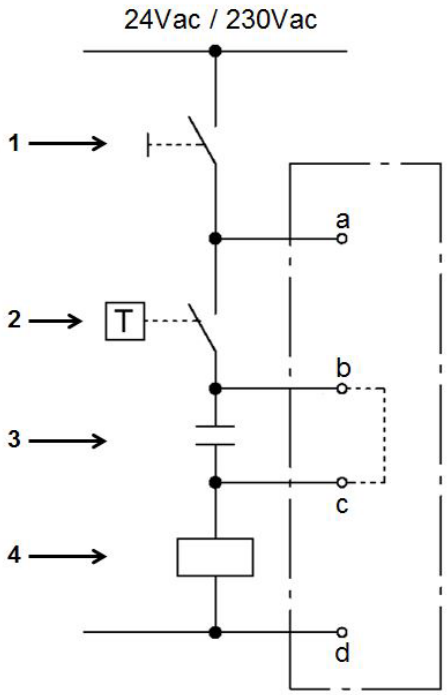


Fig. 0-8 Connection principle for power reduction

1 On / Off
2 Regulation
3 Separation
4 Load

a) Appliance is in heating mode. ‘Timeout’ 30 min (adjustable)
b) Heating request issued
c) Heating permitted
d) Common point

If the appliance is prepared for ‘Power reduction’, the appliance is supplied with terminals a, b, c and d for system connection.

The appliance is delivered with terminals b and c shorted.

The jumper between terminal b and c, must be removed before commissioning the power reduction system.

The terminals for ‘Power reduction’ are placed in the mounting pillar.

ID: 0000001448-EN-002

See the electrical diagram for more information.

Connecting potable water

ID: 0000001195-EN-004

NB!

To ensure that metal shavings and other impurities do not end up in the appliance, the fixed installation must be flushed before it is connected to the appliance.

ID: 0000000601-EN-003

The water pressure requirements are stated on the appliance nameplate.

ID: 0000001196-EN-002

All of the supplies must be fitted with a lockable supply disconnector, which users must have direct access to.

ID: 0000001290-EN-002

The connection must be made using a flexible connection with a pipe union.

ID: 0000000602-EN-003

If the appliance is equipped with a cooling function with potable water and installed in an area with hard water, it is recommended that the kettle is connected to a water softener unit to prevent calcium deposits forming inside the appliance's steam generator.

Connecting compressed air

ID: 0000001195-EN-004

NB!

To ensure that metal shavings and other impurities do not end up in the appliance, the fixed installation must be flushed before it is connected to the appliance.

ID: 0000000607-EN-004

The compressed air pressure measured at the kettle must be 6–8 bar, regardless of the consumption of the kettle or other appliances.

If the pressure drops below 6 bar, the kettle and all other kettles supplied from the same installation will shut down.

It is recommended that the compressed air pressure at the kettle is 7 bar when there is no consumption, because the pressure at the kettle and possibly other kettles/appliances will drop, when there is consumption.

NB!

The installation must be dimensioned correctly to avoid any excessive pressure drop in the installation before it reaches the kettle.

NB!

Note that all kettles in the same installation must be able to use the maximum compressed air at the same time.

The fixed installation must have fitted filters and a water separator.

The air quality must be in accordance with ISO 8573-1:2010, class 7:7:4.

ID: 0000001196-EN-002

All of the supplies must be fitted with a lockable supply disconnector, which users must have direct access to.

ID: 0000002057-EN-001

To ensure better distribution between several kettles, a ring main may be a good option.

Connection of steam

ID: 0000000608-EN-002

The kettle is CE marked as a pressure vessel, which is why the fixed installation must be fitted with a lockable shut-off valve, reduction valve, pressure gauge and safety valve.
The complete steam installation must be CE marked in accordance with the Pressure Equipment Directive.

ID: 0000000609-EN-002

⚠ WARNING!

The maximum pressure and temperature of the kettle is stated on the appliance nameplate. It must be ensured that the pressure and temperature are limited and secured to these values.

ID: 0000001195-EN-004

NB!

To ensure that metal shavings and other impurities do not end up in the appliance, the fixed installation must be flushed before it is connected to the appliance.

ID: 0000001196-EN-002

All of the supplies must be fitted with a lockable supply disconnector, which users must have direct access to.

ID: 0000000611-EN-003

The the steam supply quality must be pH 8-10 with a hardness of <0.056 °dH.

The kettle's built-in pressure gauge and safety valve on the kettle does not eliminate the need for a separate safety valve and pressure gauge to be fitted in the fixed installation.
The kettle's built-in safety valve will not be able to prevent an excessive pressure increase inside the kettle.

Hoses/piping with steam or condensate must always be insulated.

It is recommended that a steam trap is positioned on the supply line directly under the kettle, to avoid condensate and water hammering in the kettle.

The steam trap, dirt strainer and non-return valve are not included in the delivery.

Normally a ball float steam trap with an integral air vent is used.

The condensate outlet must be inclined away from the kettle. If this is not possible, a steam trap with a pumping function must be used.

ID: 0000001322-EN-003

NB!

When the kettle is cold, it can absorb more steam than stated in the technical data.
If this is unacceptable, the supply to each kettle must be limited.

ID: 0000002057-EN-001

To ensure better distribution between several kettles, a ring main may be a good option.

ID: 0000001179-EN-003

Steam-heated kettles with an external cooling water connection

In steam-heated kettles during normal operation, a small amount of ice water will be mixed with the condensate when changing from cooling mode to heating mode. Likewise, a small amount of condensate will be mixed with the ice water when changing from heating mode to chilling mode.

In the case of a kettle malfunction, it is not possible to predict how the two media will mix and this should be taken into consideration when choosing the medium for the steam system and ice bank.

Connection of external cooling water

ID: 0000000599-EN-003

NB!

The kettle may only be connected to water. All other liquids, such as saltwater or similar are not permitted.

ID: 0000000604-EN-003

⚠ DANGER!

The kettle is a pressure vessel, and the maximum pressure must never be exceeded.

ID: 0000001195-EN-004

NB!

To ensure that metal shavings and other impurities do not end up in the appliance, the fixed installation must be flushed before it is connected to the appliance.

ID: 0000001196-EN-002

All of the supplies must be fitted with a lockable supply disconnector, which users must have direct access to.

ID: 0000000603-EN-003

When cooling with external cooling water, the appliance must be connected to an ice bank.

The kettle's maximum operating pressure is stated on the appliance nameplate, and the cooling water supplied must be regulated and made safe so that the pressure inside the kettle can never exceed the maximum operating pressure. This also applies to faults in any regulation of the pump.

Pipe connections must be insulated to avoid condensation.

ID: 0000001291-EN-003

Option for operating without ice-bank when the kettle is prepared for external cooling water

For operation of electric-heated kettles that do not have an ice bank connected, the factory setting must be set to ‘Without cooling function’. The ‘Ice water return’ connection must be plugged and potable water connected to ‘Ice water in’ connection.

For operation of steam-heated kettle that do not have an ice bank connected, the factory setting must be set to ‘Without cooling function’. The ‘Ice water return’ and ‘Ice water in’ connections must be plugged.

ID: 0000001175-EN-003

Ice bank

Only use water and the hardness should be 3-5 °dH.

It must be ensured that the ice water is approximately 0.5°C at the kettle connection point.

When the cooling process is started, the water level in the ice bank drops due to the volume of water filling the pipes and kettle. This must not affect the function of the ice bank.

To compensate for the loss of water, the ice bank must be regularly replenished. If this is done automatically, the significant amounts of water located in pipes and kettles during the cooling process must be taken into account. Water will be pumped back into the ice bank only when the kettle is readying to heat.

Ice-bank overflow drains must always be established for safety reasons.

Steam-heated kettles with an external cooling water connection

In steam-heated kettles during normal operation, a small amount of ice water will be mixed with the condensate when changing from cooling mode to heating mode. Likewise, a small amount of condensate will be mixed with the ice water when changing from heating mode to chilling mode.

In the case of a kettle malfunction, it is not possible to predict how the two media will mix and this should be taken into consideration when choosing the medium for the steam system and ice bank.

ID: 0000001323-EN-002

Values for electric-heated kettles

Size	Total energy 100-3°C	Total energy 100-3°C	Ice per cycle	Backflow from the kettle after the cycle	Dimensioning basis for water flow	Safety valves exhaust capacity
l	kcal	kWh	kg	l	m³/h	l/min
80	8989	11	118	17	8	237
100	11074	13	146	21	8	237
150	17111	20	225	32	13.2	237
200	22145	26	291	39	13.2	237
250	28051	33	369	51	13.2	237
300	33718	40	444	68	13.2	237
400	44678	53	588	88	13.2	237
500	54378	64	716	88	13.2	237

Tab. 0-1

Values for steam-heated kettles

Size	Total energy 100-3°C	Total energy 100-3°C	Ice per cycle	Backflow from the kettle after the cycle	Dimensioning basis for water flow	Safety valves exhaust capacity
l	kcal	kWh	kg	l	m³/h	l/min
80	8155	10	107	26	8	237
100	10152	12	134	30	8	237
150	15452	18	203	49	13.2	237
200	20457	24	269	56	13.2	237
250	25665	30	338	76	13.2	237
300	30769	36	405	98	13.2	237
400	40944	48	539	126	13.2	237
500	50644	60	666	126	13.2	237

Tab. 0-2

ID: 0000001177-EN-004

Pumps

One pump should be used per kettle. The pump must be able to supply pressure of 2.3–2.5 bar at the kettle's connection point, to overcome drops in pressure through the kettle and back to the ice bank.

Start pump:

Due to the inertia in the large volumes of water, the pump must ramp up to approx. 20 seconds when cooling starts. For long piping, or if all or part of the piping is above kettle level, it may be necessary to start the pump even slower.

A regulating mechanism must be installed, so the pressure in the kettle can be set.

Solution 1:
A mechanical valve that ensures that the maximum pressure is not exceeded and a softstarter which ensures that the pump starts slowly.

NB!

Not all softstarters can ramp up and down as needed.

NB!

The drop in pressure over the regulating mechanism may be significant.

Solution 2:
The pump is controlled by a frequency converter that ensures that the pump starts slowly and controls the maximum pressure with the help of the maximum frequency. This produces the smallest drop in pressure in the pipe system and therefore the most economical operation.

Stop pump:

When the cooling stops, first the run signal to the pump stops, and then the valves close 5 seconds later. The delay is to avoid pressure impact in the installation, and therefore the pump must stop quickly. Ramping down must last no more than 2 seconds.

A control line must run to the kettle for the run signal to the pump.

ID: 0000001448-EN-002

See the electrical diagram for more information.

ID: 0000001231-EN-002

DANGER!

The exhaust capacity of the safety valves limits the allowed maximum flow. Therefore pumps must not be chosen that are too large.

ID: 0000001232-EN-003

Max. pressure in the kettle is 1.0 bar.
Be especially aware of pressure peaks when the cooling process starts and stops, as this will cause the kettle to go into error mode for safety reasons.

ID: 0000001233-EN-002

Be aware that the ice water pump is also used for water filling in the steam generator.

ID: 0000001178-EN-004

Piping

The connection point in the kettle's post is 1 1/2” for cold water's outward and return flow, but this dimension cannot be used for dimensioning of the piping. This depends on the piping's length and shape. The dimensioning must be calculated for the specific project.

During normal operation, the water in the return pipe can reach a temperature of 100°C.

If the kettle is defective, steam of up to 120°C can occur in the pipe for outward and return flow. To safeguard against consequential damage, only pipes of stainless steel or a similar heat-proof material should be used.

The pressure at the connection point for the return pipe in the post should not exceed 0.3 bar.

This pressure consists of static pressure and dynamic pressure. Static pressure arises if the ice bank is placed higher than the kettle, which is not recommended. The dynamic pressure is the drop in pressure in the return pipe to the ice bank. Therefore, the return pipe must be dimensioned so the drop in pressure in the pipe is reduced as much as possible, resulting in the best possible flow.

If the overall pressure cannot, for technical or financial reasons, be brought down to 0.3 bar, e.g. if the ice bank is placed higher than the kettle, the cooling will still work, but the flow in the kettle will be reduced and the cooling will take longer.

The overall pressure at the point of connection for the return pipe in the post must not exceed 0.8 bar, as the flow will not be strong enough to achieve satisfactory cooling in the kettle.

See the P&I diagram for how the ice bank connects to kettles.

Installation

Fastening of kettles on legs

ID: 0000002692-EN-001

NB!

If the device can be secured to the floor, this option should be elected.

ID: 0000002693-EN-001

Setting up kettles on legs

If the kettle's legs are fitted with machine feet for fastening, they have a Ø 15 mm hole for a bolt.

We recommend using bolts that are Ø 10 mm or larger.

1) Place the kettle in the desired location. Adjust the position of the posts, so they follow the drawing and are at the correct distance from nearby objects.
2) Check that the posts are plumb and level. Do this using, e.g. the adjusting screws on the kettle's legs.

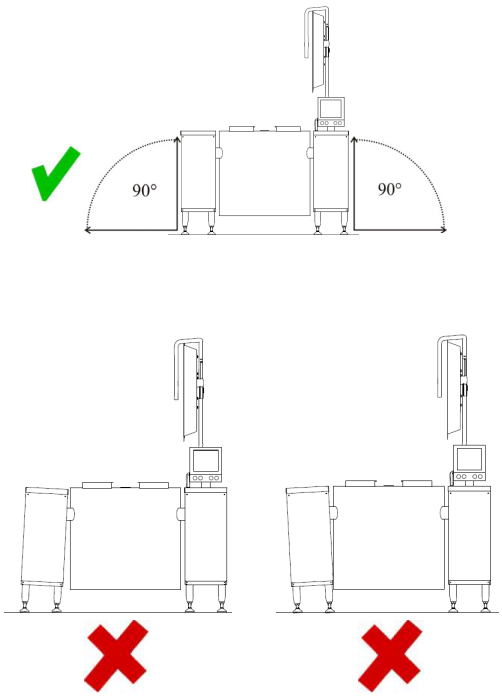


Fig. 0-9 Kettle plumb and level from the front

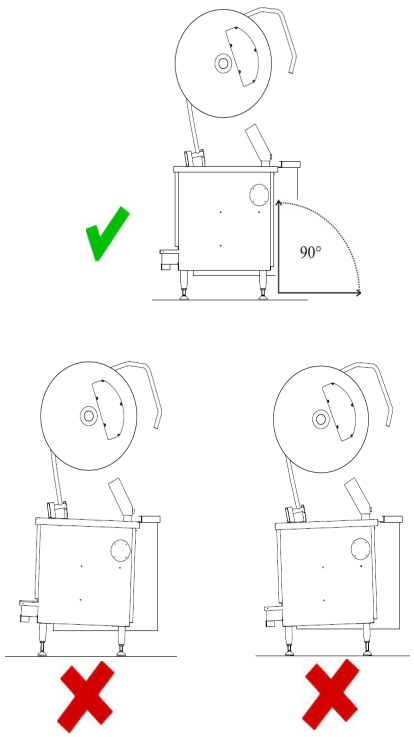


Fig. 0-10 Kettle plumb and level from the side

3) Adjust the feed down to the floor so they apply equal pressure in pairs in front of and behind each post.
4) Fasten the crossbar on the back of the post if it has been removed.
5) Tighten the nuts on the feet.

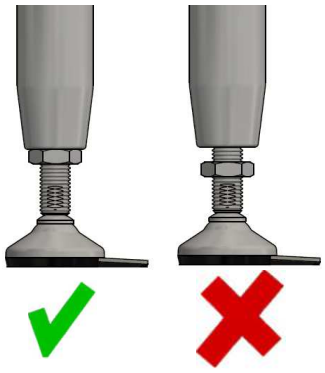
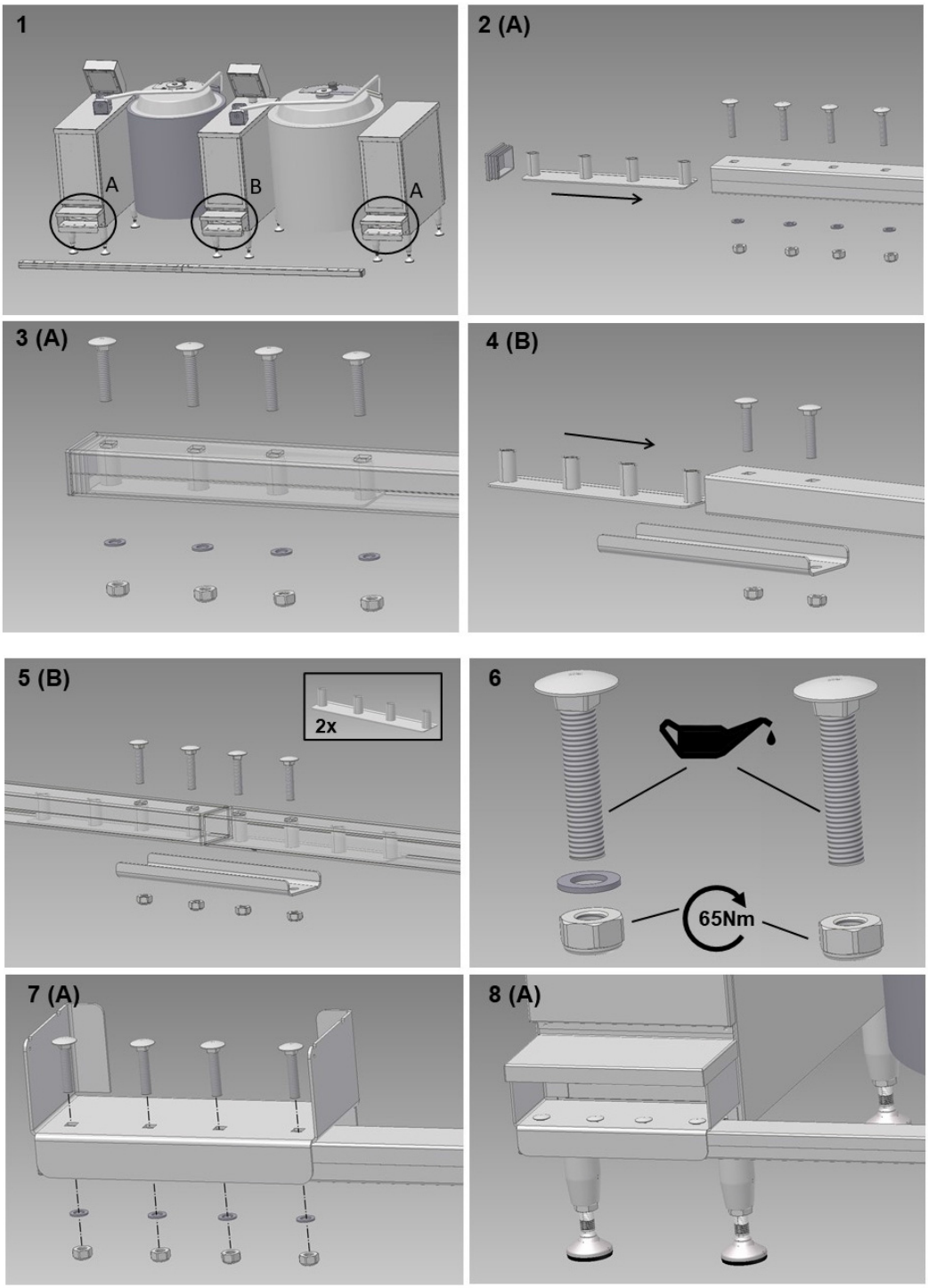
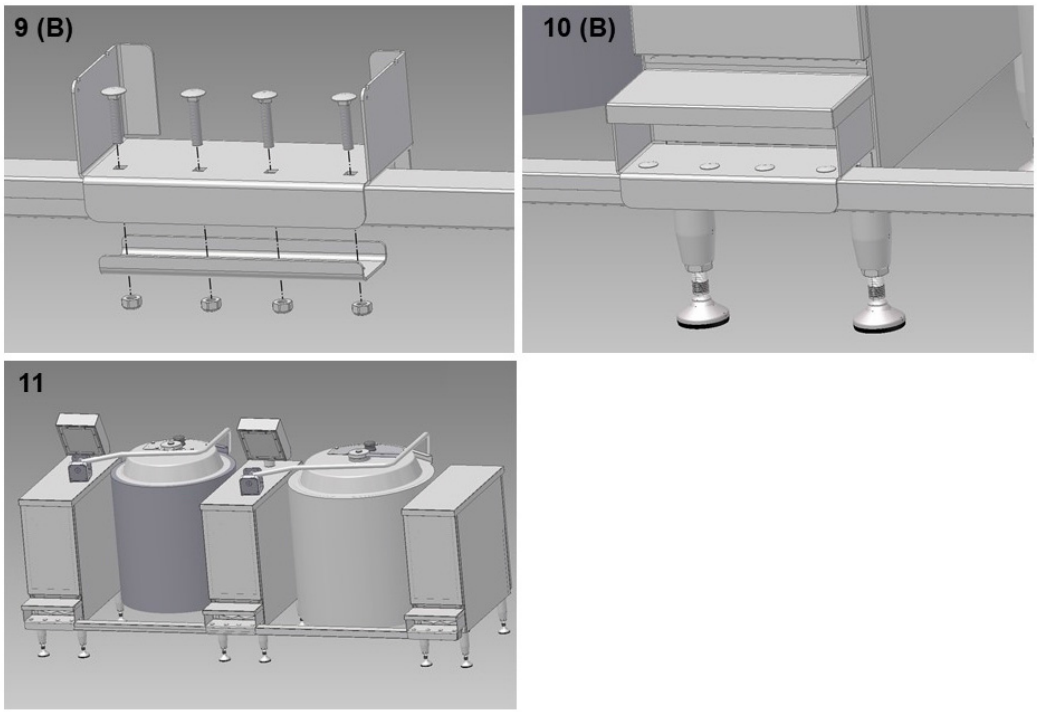


Fig. 0-11 The nuts on the feet must be tightened.


1
A
B
A
2 (A)
3 (A)
4 (B)
5 (B)
2x
6
65Nm
7 (A)
8 (A)



Securing the embedment fixture

ID: 0000001200-EN-002

Fixture

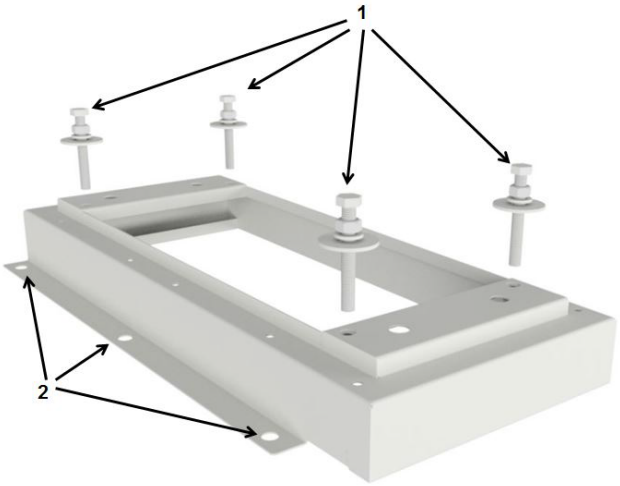


Fig. 0-12 Fixture

1 Removable bolts
2 Holes for fastening

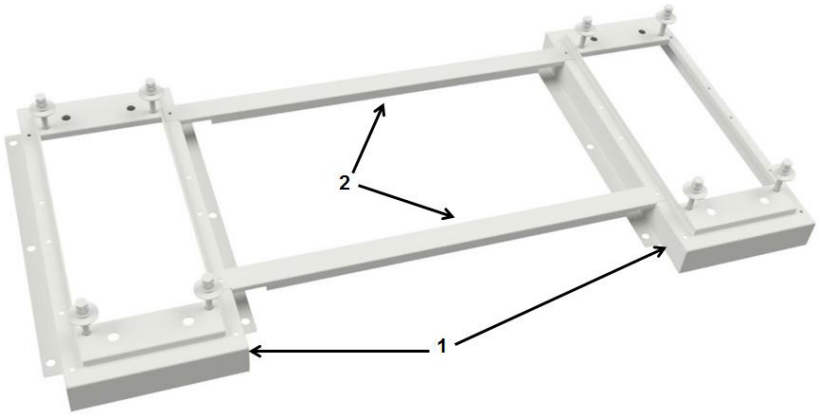


Fig. 0-13 Assembled fixture with fitted spacer rails

1 Fixtures
2 Spacer rails

ID: 0000000616-EN-004

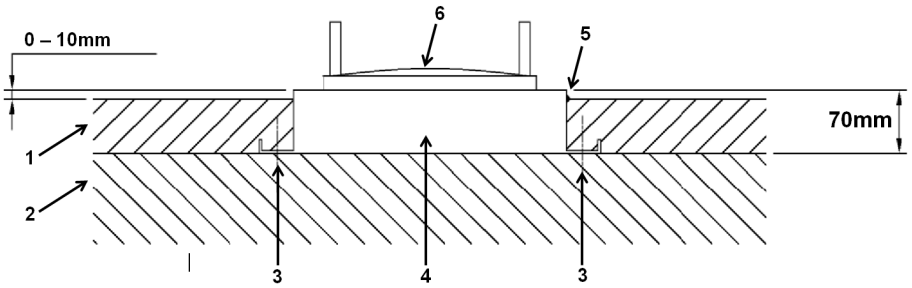


Fig. 0-14 Fixture sideview

1 Finished floor
2 Concrete base
3 Ø15 mm holes for bolts for securing the fixture
4 Fixture
5 Seal
6 The fixture is filled with concrete. 10mm projection in the middle.

ID: 0000000617-EN-003

Procedure to install the fixture:

1. Fit the spacer rails between the fixtures in accordance with the installation drawing.
2. Position the assembled fixture on the floor where the kettles are to be installed. Ensure that the assembled fixture is at the right level and longitudinally and transversely horizontal.
3. Check that the distance between the fixtures complies with the installation drawing and technical data. Also always check the positioning in relation to the rear wall and floor drain.
4. Check that the lead-ins for cable, water, etc. are positioned correctly in accordance with the installation drawing.
5. Secure the fixture to the concrete underlay using the holes in the base.
6. Remove the spacer rails.
7. Fill the fixtures with concrete, so that the height midway along the anchor arches approx. 10 mm above the top of the fixture's edge.

Let the removable bolts remain in the fixture until the installation of the kettle. This to ensure that the thread in the fixture is not damaged.

Mounting on the floor

ID: 0000001197-EN-003

Depending on the type of the floor, you can use, e.g. corrosion-resistant expansion bolts, adhesive anchors or penetrating bolts. These must minimum be M12, A2 and must be positioned in accordance with the installation drawing, floor drains and any rear walls.

Check that the lead-ins for cable, water, etc. are positioned correctly in accordance with the installation drawing.

Mounting of the pillar

ID: 0000000615-EN-002

To ease the installation of several connected kettles, the support bearing can be temporarily loosened.

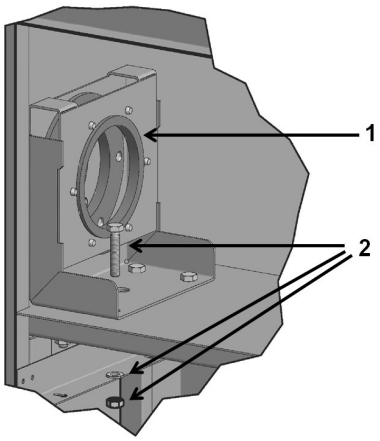


Fig. 0-15 Support bearing

1 Support bearing
2 Bolts, washers and nuts for fastening

ID: 0000000618-EN-003

The removable bolts in the fixture can be temporarily removed during the placement of the pillar, to facilitate the installation.

1. Position all kettles with pillars in accordance with the installation drawing and technical data.
2. Temporarily secure the pillars in place.
3. Adjust the positioning of the pillars so front and sides are vertical by using the adjustment bolts in the base of the pillar.
4. The front of the pillars must be parallel and coplanar.
   The top of the pillar must be parallel and coplanar.
5. The distance between the base of the pillar and floor must be minimized and the pillar must be supported by all of the adjustment bolts.
6. Secure the pillars using the accompanying clamps. Tighten the bolts with 25 Nm torque.

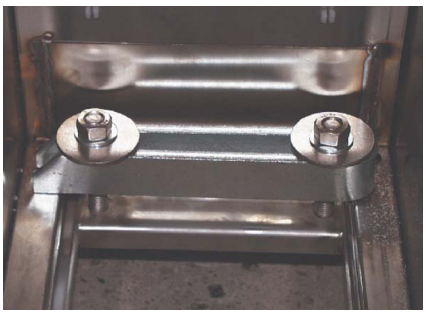


Fig. 0-16 Clamps

Drains and sealing of pillars

ID: 0000000620-EN-003

NB!

The gap between the floor and pillars must always be sealed. This is vital in order to maximize the lifetime of the product and to ensure reliable operation. The factory warranty will be invalidated if these gaps are not sealed.

ID: 0000000621-EN-003

The seal should prevent water and dirt from entering the pillar where electrical components are located. The seal must be capable of withstanding heavy duty cleaning.

For example, use an elastic sealant that is suitable for use in kitchen environments and can be attached to both stainless steel and the material below/behind the pillar.

ID: 0000000624-EN-002

NB!

It must be ensured, that any water inside the pillar is able to drain out. If this is not ensured the factory warranty will be rendered void.

ID: 0000000622-EN-003

Water in the pillar will cause humidity which will damage the electrical components. Therefore the drain is vital to problem-free operation and for ensuring the lifetime of the product.

For most cases the accompanying drain pipe can be used. This is placed beneath the pillar in the lowest corner. Ensure that the drain pipe's opening is positioned so that the cleaning water is not normally flushed directly towards the opening.

Integration of multiple kettles

ID: 0000002696-EN-001

If mounting multiple kettles adjacent to each other, these typically come individually and must be connected to each other at the installation site.

Grouping of electrical connections in common support post.

ID: 0000002697-EN-001

When installing two kettles with closed cooling and/or heating with direct steam and common support post, cable W1 and/or W2 must be connected at the installation site.

-W1 must be connected with -X7.1 (if the kettles are directly steam-heated).

-W2 must be connected to -X7.2 (if the kettles are connected to cold water cooling, i.e. QuickChill kettles).

Connect the cables as shown in the electrical diagram.

The wire numbers in the cables correspond to the terminals' numbers.

The start signal for the circulation pump must be connected to -X7.2 terminal 1 and 2.

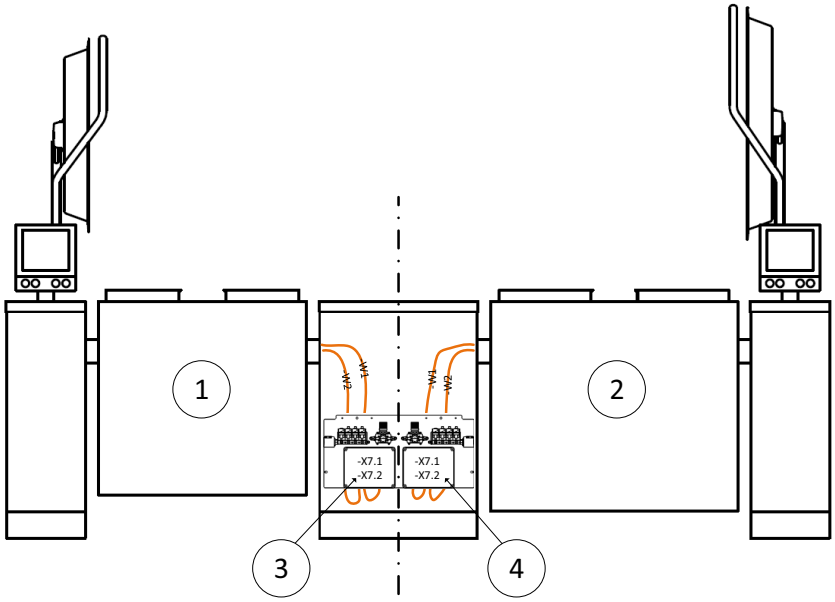


Fig. 0-17 Electrical integration of kettles for direct steam and/or cold water cooling

1) Kettle 1
2) Kettle 2
3) Connecting box kettle 1
4) Connecting box kettle 2

-W1 and -X7.1: The signal cable and terminals for steam valves (condensation valves, open cooling without recirculation).

-W2 and -X7.2: Signal cable and terminals for QuickChill kettles.

Grouping of tubes in common support post

ID: 0000002698-EN-001

Grouping of steam tubes in common support post

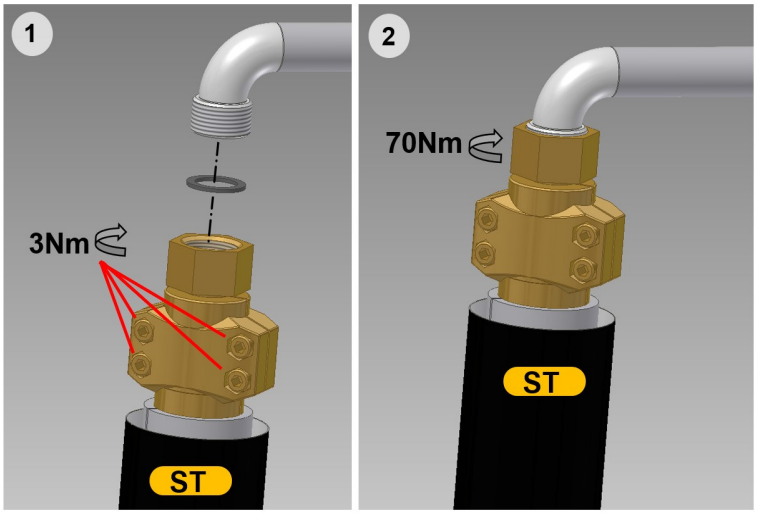


Fig. 0-18

The coupling on the steam tube is mounted on the steam pipe that exits the kettle's axle.

ID: 0000002699-EN-001

Grouping of condensation tubes in common support post

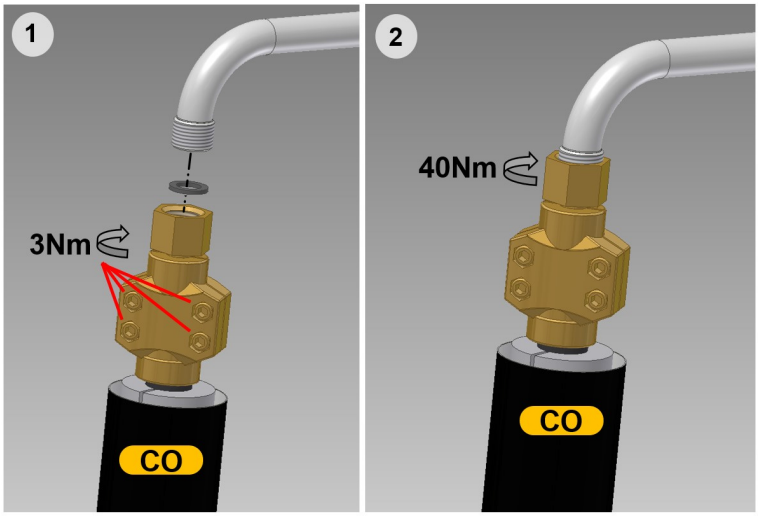


Fig. 0-19

Mount the coupling on the condensation tube on the condensation pipe that exits the kettle's axle.

ID: 0000002700-EN-001

Grouping of cooling water supply in common support post

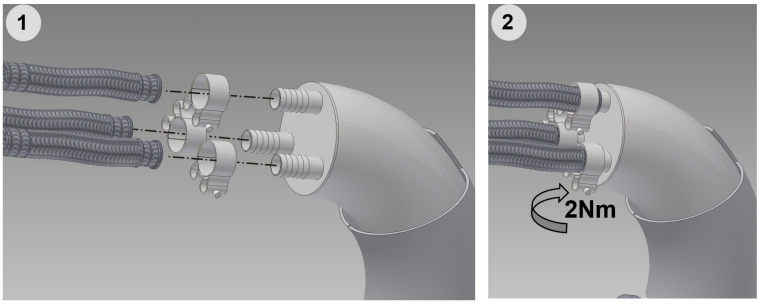


*Fig. 0-20 Hoses for cooling water supply 150–500 L **

Connect the hoses marked ‘Inlet’ to the cooling water supply in the post.

* 80 and 100 L kettles have only 2 cooling water hoses.

ID: 0000002701-EN-001

Grouping of cooling water return in common support post

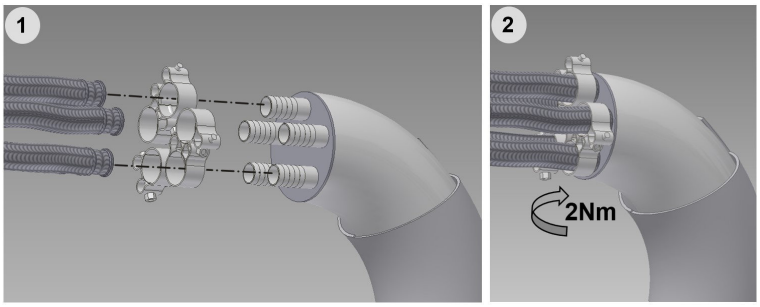


*Fig. 0-21 Hoses for cooling water return 150–500 L**

Connect the hoses marked ‘Outlet’ to the cooling water return flow in the post.

* 80 and 100 L kettles have only 3 hoses for cooling water return.

ID: 0000002702-EN-001

Grouping of unloading hoses in common support post

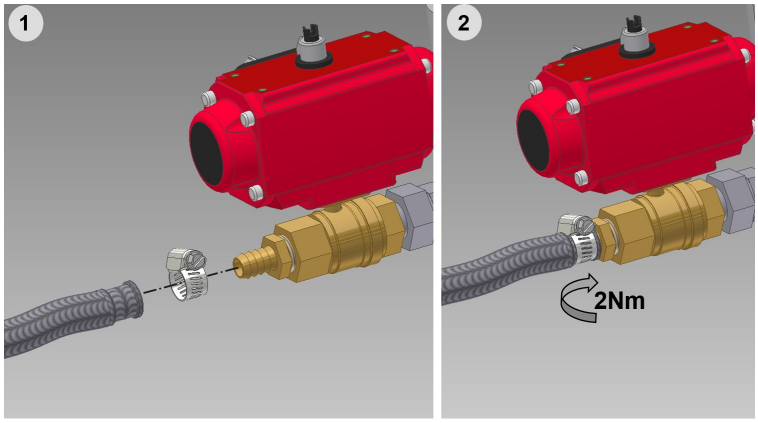


Fig. 0-22

Connect the hose marked ‘Emptying’ to the valve in the post.

Connection, adjustment and control

List of connection points

ID: 0000000629-EN-004

Label	Connection point for
WW	Warm water, max 60° C
CW	Cold water
CWI	Cold water in
CWO	Cold water out
ST	Steam
CO	Condensation
CA	Compressed air
PS	Power supply
LAN	Internet
CWS	Cold water start
PR	Power reduction (PowerManagement)
DA	Data acquisition
⏚	Equalizer

Connections procedure

ID: 0000000630-EN-005

- Mount the internal earth cables between kettle body and posts, potential equalizers and any other connections between kettle and post.
- Attach connection for data acquisition.
- Attach connection for power reduction.
- Connect start signal for cold water pump.
- Connect water supply.
- Connect steam and condensation inlet on steam-heated kettles, and insulate the fixed installation.
- Connect compressed air.
- Connect inlet and outlet for cooling water.
- Connect power supply with correct sequential order of phases.
- Connect LAN cable.

Checks

ID: 0000001199-EN-004

1) Retighten all connections, bolts and nuts.
2) Test tilting function, checking that the moving parts in the post move freely.
3) Check that the kettle returns to an upright position.
   See Adjusting tilting, page119.
4) Check that the lid is on correctly and is lying flat against the kettle
   See Adjusting the lid, page121.
5) Check the excess pressure monitor and safety valve as described in Testing the overpressure switch, vacuum valve and safety valve, page113.
6) Switch on the heat and check that the kettle is heating.
   Tilt the kettle and check that the heating stops when the kettle is tilted approx. 10 degrees.
   If the kettle has been subjected to temperatures lower than -10°C or significant impacts during transport, the dry-boiling safety device may have been affected and require resetting. See Inspecting the dry-boiling thermostat., page 115.
7) On kettles heated with direct steam, check that the condensation is exiting the kettle.
   This is best done by filling the kettle with water and heating it to boiling point. Make sure there is pressure of 0.9–1.0 bar in the kettle. If the kettle makes cracking sounds, the steam is being supplied through the condensation. That is because the condensation is not exiting the kettle.
8) Start the stirrer and check that it is turning.
9) Check that the stirrer stops as described in Checking that the stirrer stops when opening the lid, page 118.
10) Check of emergency button on the kettle with stirrer, as described in Checking the emergency stop, page 117.
11) If the kettle has a cooling function with water from the water supply, start the cooling function. Check that the kettle cools and that the pressure in the kettle does not exceed 1.0 bar.
    Stop the cooling function, switch to heat mode and check that the cooling water is emptied from the kettle.
12) If the kettle is equipped with cold water cooling, set it and then check that:
    a. the pressure at the start of cooling does not exceed 1.0 bar.
    b. the pressure on continuous cooling does not exceed 1.0 bar.
    c. when cooling stops, there is a sufficient delay after the pump stops and before the valves close, so no pressure impact occurs in the piping system.
13) If the kettle's posts are on the floor, check that there is a joint around the posts, so no water can seep into the posts.
    Check that any water that does penetrate the posts can run out again, e.g. through the factory-supplied drain pipe placed in the joint.
    Check that water/moisture cannot penetrate into the floor along installations and the like.
14) On kettles heated with direct steam or which are fitted with cooling with external cooling water, check that there is insulation around pipes and hoses for steam, condensation and cooling and that the insulation is intact.
15) After commissioning of the kettle, clean all filters of dirt and grime from the installation.
16) If the kettle is on legs, check that it stands firm on all feet when the stirrer is operating. See Adjustment of kettles with legs on the floor, page 34.

ID: 0000002694-EN-001

NB!

The kettle and posts will inevitably move a little during food preparation. However, the legs must not shift or be lifted off the floor.

Adjustment

ID: 0000002706-EN-001

Adjustment of kettles with legs on the floor

If the kettle is on legs, it is important that it stands firmly on all feet, so it does not become unstable during operation.

This is best done by filling water over the bottom's curvature and then starting the stirrer on program 1 at 80–90 RPM.

If the legs are displaced or lifted off the floor, adjust the legs until the kettle is stable on all legs. Then tighten the nuts on all legs. This adjustment may be necessary again after the kettle has been used a few times. See Setting up kettles on legs, page 22.

ID: 0000002718-EN-001

Setting of cold water

Before commissioning, the cooling water and compressed air supply must be adjusted to ensure problem-free operation.

1) Check that ice has formed in the ice bank.
2) Check that the compressed air is on and that the supply switch on the back of the post is open.
3) Turn down to about 20% cold water supply. Depending on the installation, it may be on a frequency converter or mechanical control valve.
4) Turn on the kettle and switch to cooling mode.
5) Check that the pump speed increases slowly and after about 20 seconds reaches its setting.
6) Check the kettle's pressure gauge, and slowly turn up the pump/control valve until the pressure in the kettle is about 0.9–1.0 bar.
7) Stop cooling and check that the pump stops after max. 2 seconds.
8) Start cooling and check that the pressure increases slowly and after about 20 seconds reaches 0.9–1.0 bar.
9) After approx. 5 min, stop the cooling and switch to heating mode, so the kettle uses compressed air to press the cooling water back to the ice bank (initialisation).
10) Keep an eye on the pressure gauge inside the post with the cold water valves to make sure it reads 0.7–0.8 bar. If needed, you can adjust the pressure with the pressure control inside the post.
11) Wait for initialisation to stop after about 2–3 minutes.

Disposal

ID: 0000000487-EN-002

Disposal

The appliance is classified in accordance with the Wast Electrical and Electronic Equipment Directive (2002/96/EC).

Operation

General

ID: 0000000475-EN-003

DANGER!

Only use original accessories with the appliance.

ID: 0000001311-EN-003

WARNING!

Should a hazardous situation arise with the appliance, disconnect all of the supplies using the supply disconnectors.

ID: 0000001275-EN-001

CAUTION!

The kettle must be operated from the front.

ID: 0000001276-EN-002

CAUTION!

No one is allowed to stand behind the appliance when it is in use.

ID: 0000000362-EN-002

CAUTION!

The appliance must not be left unattended when in use.

ID: 0000001451-EN-002

CAUTION!

When operating the appliance becomes very hot and is a burn hazard.

ID: 0000000363-EN-005

NB!

Do not use abrasive metal tools for stirring.

CAUTION!

Water or steam must not be discharged from the safety valve during use. If this happens, all supplies must be immediately disconnected.

CAUTION!

The appliance must not be moved if the appliance or its contents are so hot that there is a burn hazard.

NB!

Stainless steel surfaces are protected by a thin layer of chromoxide. This layer is vulnerable to damage by use of steel implements and exposure to chlorine, as found in normal kitchen salt for example.
Therefore always add salt to hot water.

ID: 0000001309-EN-002

⚠ **CAUTION!**

If the appliance is on castors, the castor brakes must be engaged when the appliance is in use.

Fig. 0-23

Switching the appliance on and off

ID: 0000000066-EN-002

Fig. 0-24 On

Fig. 0-25 Off

CtK I / AutoTemp 02e

ID: 0000000443-EN-002

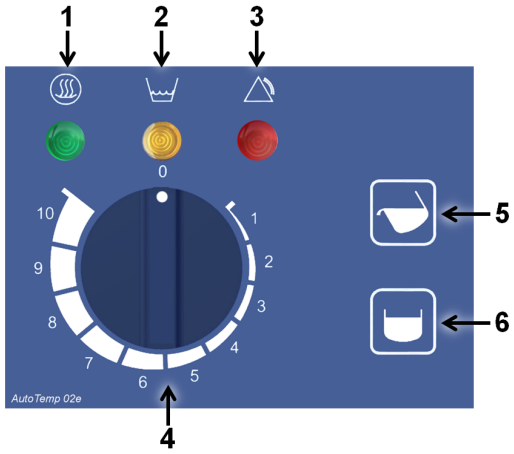


Fig. 0-26

1 Green LED indicates heating
2 Yellow LED indicates low water level
3 Red LED indicates critical fault
4 Heat adjustment knob
5 Tilt key
6 Tilt return key

Tilting function

ID: 0000000063-EN-003

The kettle will tilt when is pressed and return when is pressed. The kettle will only tilt or return while the respective key is pressed.

ID: 0000001317-EN-003

When the key is released, the kettle will remain in its current position, unless the 'Tilt back' function is installed. In this case, the kettle will tilt back for a number of seconds (0-3). This does not apply when the kettle is fully tilted.

The 'Tilt back' time can be adjusted by a service technician.

ID: 0000001280-EN-002

CAUTION!

Do not stand in front of the kettle when it is tilted because the hot liquid can spray when it is poured out.

Adjusting the heat

ID: 0000000445-EN-002

Use the heat adjustment knob to adjust heating power.

When the knob is in the 0 position no heat will be supplied and the green light will not be lit.

When the knob is in a position between 1 and 10, heat will be supplied and the green light will be lit.

In position 10, maximum heat will be supplied and in intermediate positions heat will be supplied proportionally. The kettle must be in the vertical position in order to heat.

ID: 0000000441-EN-002

⚠ CAUTION!

The red light indicates a critical fault and the appliance may not be used. Disconnect all of supplies and call service.

ID: 0000000442-EN-003

⚠ CAUTION!

The yellow light indicates that there is not enough water in the kettle steam generator and therefore the kettle cannot heat.

Cooling

ID: 0000000067-EN-002

The cooling function is used to chill the contents of the kettle. Chilling takes place by letting water through the steam jacket down to the floor grate.

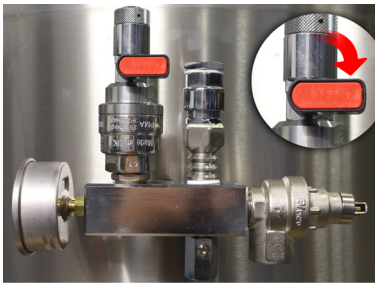
ID: 0000000382-EN-004

Start chilling

⚠ CAUTION!

Watch out for discharging steam/hot water when the valve for cooling water out is opened!

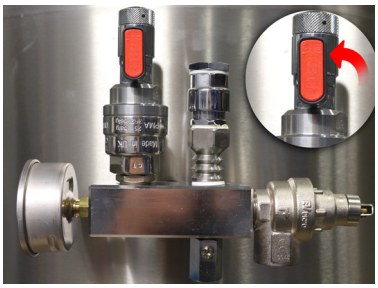
Step	Action	
1	Switch off the kettle´s heating and place the kettle bowl in the vertical position.	
2	Set the rotary switch in position cooling	
3	Wait until the pressure in the steam jacket is 0 bar.	

4	Open the valve for cooling water out.	
5	Close the kettle venting valve.	

ID: 0000000383-EN-003

Stop cooling

Step	Action	
1	Stop cooling	
2	Close the cooling water out valve.	

3	Open the kettle venting valve.	
4	Open the water level valve and allow the excess water to drain out.	
5	Close the valve for water level when no more water is draining out. The kettle is now ready for heating.	

Filling the kettle with water

ID: 0000000438-EN-002

NB!

The spout must not be located over the kettle when it tilts.

ID: 0000000448-EN-003

Fig. 0-27 One-handle faucet

To fill the kettle with water, open the lid and fill with water using the faucet on the top of the pillar.

Controller for CtMK I / AutoTemp 32, 36 and 56

ID: 0000001238-EN-004

⚠ CAUTION!

The emergency stop must only to be used in emergency situation.

If the emergency stop has been activated it must be checked. See Checking the emergency stop, page 117.

ID: 0000000799-EN-003

The kettle controller is switched on by pressing ⏽ and switched off by pressing ⏾.

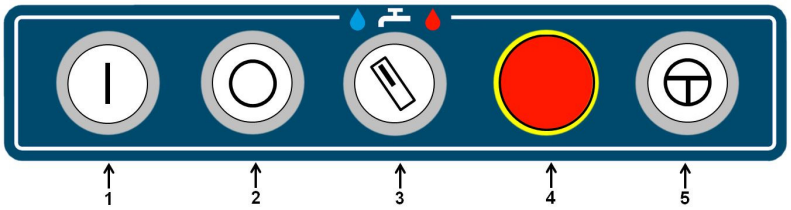
Once the controller is switched on, it can be put into "Standby" mode by pressing ⏻. This minimises power consumption and the controller will remember its initialisation status.

ID: 0000000062-EN-001

On kettles with compressed air, the compressed air supply must be opened in order for the kettle to function.

ID: 0000000791-EN-002

Function keys



1 Controller on
2 Controller off
3 Switch between hot and cold water filling (accessory)
4 Emergency stop (only for kettles with mixer)
5 SlowMix (accessory)

Using the operating panel

ID: 0000000358-EN-002

Control methodology

In general, a function key is pressed so that the associated display flashes, indicating that the value can be altered using the arrow keys. The large arrows change the value in large steps and the small arrows change the value in small steps. If the key is held down, the value will increase/decrease at an increasing rate.

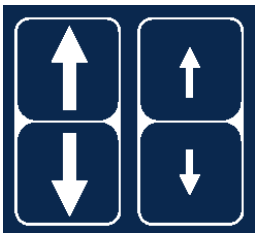


Fig. 0-28

For all relevant function groups there is an ON/OFF key and an LED.

alternately activates and deactivates the function. The LED will illuminate when the function is activated.

ID: 0000001279-EN-002

The controller will exit from the function if no key is pressed for three seconds or if another function is selected.

CtMK I

ID: 0000000793-EN-003

AutoTemp 16

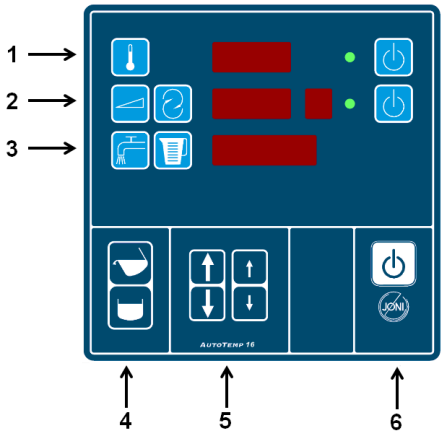


Fig. 0-29

1 Heating functions
2 Stirrer functions
3 Water filling functions
4 Tilt/tilt back keys
5 Arrow keys for adjustment
6 Standby key

Tilting function

ID: 0000000063-EN-003

The kettle will tilt when is pressed and return when is pressed. The kettle will only tilt or return while the respective key is pressed.

ID: 0000001280-EN-002

⚠ CAUTION!

Do not stand in front of the kettle when it is tilted because the hot liquid can spray when it is poured out.

ID: 0000000064-EN-004

When the key is released, the kettle will remain in its current position unless the 'TiltBack' function is activated. If 'Tilt Back' is selected, the kettle will tilt back after a pre-selected number of seconds (0.0–3.0) for a pre-selected periode of time (0.0–3.0 sec.). This does not however apply when the kettle is only slightly tilted or when it is fully tilted.

Adjusting the heat

ID: 0000000800-EN-005

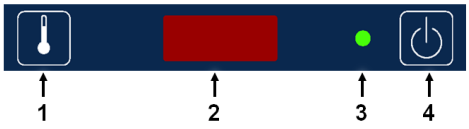


Fig. 0-30

1 Jacket temperature key
2 Jacket temperature display
3 LED for heating and cooling on
4 Key for heating and cooling on/off

Generally, the display will show the actual jacket temperature. The desired temperature the steam jacket is set by pressing so that the display flashes. Set the desired temperature by using the arrow keys.

ID: 0000000372-EN-003

Generally

The heating power supplied is switched on/off by pressing . When the heating is switched on, the LED will be lit.

To ensure that the food is heated evenly and quickly, it should be stirred whenever possible. This also ensures even thermal distribution and better temperature measurement for controlling the heating process.

The kettle must be in the vertical position in order to heat. If the kettle is tipped and is returned to vertical position again within two minutes, the heating will switch on automatically.

Cooling

ID: 0000000067-EN-002

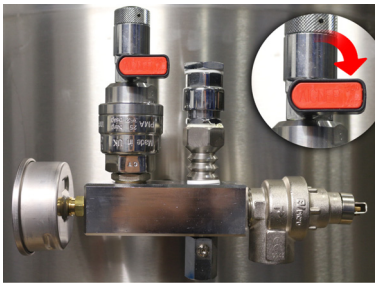
The cooling function is used to chill the contents of the kettle. Chilling takes place by letting water through the steam jacket down to the floor grate.

ID: 0000000382-EN-004

Start chilling

⚠ CAUTION!

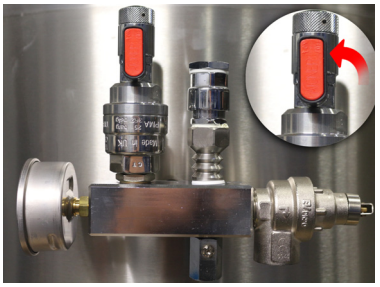
Watch out for discharging steam/hot water when the valve for cooling water out is opened!

Step	Action	
1	Switch off the kettle´s heating and place the kettle bowl in the vertical position.	
2	Set the rotary switch in position cooling	
3	Wait until the pressure in the steam jacket is 0 bar.	
4	Open the valve for cooling water out.	
5	Close the kettle venting valve.	

ID: 0000000383-EN-003

Stop cooling

Step	Action	

1	Stop cooling	
2	Close the cooling water out valve.	
3	Open the kettle venting valve.	
4	Open the water level valve and allow the excess water to drain out.	
5	Close the valve for water level when no more water is draining out. The kettle is now ready for heating.	

Filling the kettle with water

ID: 0000000816-EN-003

Fig. 0-31

1 Manual water filling key
2 Continuous water filling key

ID: 0000000081-EN-002

Manual water filling

This function enables the user to fill the kettle with water by holding down a key.

When is pressed, water will be added to the kettle.

Filling will stop when is released.

Continuous water filling

This function enables the user to fill the kettle with water without holding down a key.

Water filling will start when is pressed.

Filling will stop when is pressed again.

Stirrer

ID: 0000000086-EN-005

The stirrer enables the food to be stirred mechanically. Stirring can be used for mashed potatoes, to thicken sauces, etc. Stirring also means that the kettle contents are evenly and more rapidly heated or chilled and therefore should always be used.

When stirring clockwise, the stirrer tool scrapes against the sides/bottom of the kettle for maximum effect. When stirring anticlockwise the stirrer tool does not touch the sides/bottom and therefore is used when gentle stirring is required or if the contents are very viscous and difficult to stir.

For safety reasons, the stirrer can only be used when the lid is closed. If the kettle is equipped with SlowMix, the stirrer can however rotate slowly when the lid is open.

Fitting a stirrer/cleaning tool

Before the stirrer is started, it is important that the tool is mounted correctly in the kettle.

Fig. 0-32

1) Tilt the kettle bowl to the horizontal position.
2) If necessary, place the tool on a height-adjustable trolley, which can be pushed in front of the kettle. This minimises the need for lifting.
3) Make sure that the bottom scraper on the stirrer is on the right side and hangs down.
4) The side scraper should be on the left side and point upwards.
5) Push the tool in over the shaft of the stirrer.
6) Tilt the kettle bowl to the vertical position.
7) Secure the tool by tapping the lifting handle down to a horizontal position.

ID: 0000000387-EN-003

Operating the stirrer

The stirrer is controlled using the part of the control panel shown in the following illustration.

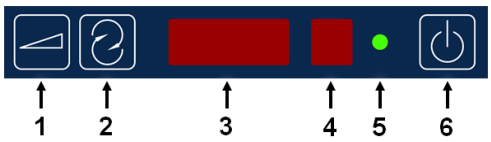


Fig. 0-33

1 Revolutions per minute (rpm) key
2 Stirring pattern key
3 Display for rpm
4 Display for stirring pattern
5 Stirrer on LED
6 Stirrer on/off key

The displays are generally turned off and turned on by pressing , or .

The required rpm is specified by pressing so that the display flashes.

The required stirring pattern is specified by pressing so that the display flashes.

Stirring patterns containing pauses. The length of the pause depends on the speed of the stirrer. This means that with a high rpm the pause will be short, and with a low rpm the pause will be long. This ensures that the stirring patterns work optimally at all speeds.

For safety reasons, the stirrer accelerates/decelerates at 20 RPM each second. However, if the lid is opened, the stirrer will stop quickly.

The following table shows the stirring patterns and suggestions for intended use. The last column show the maximum speed for each pattern. For patterns where this is not specified, the value from the factory settings is applied. If a stirring pattern is selected where the set rpm is not permitted, the rpm will be reduced to the maximum permitted value.

ID: 0000001305-EN-003

⚠ CAUTION!

An excessively high stirrer speed may lead to an ejection hazard.

ID: 0000000823-EN-004

Stirring pattern	Usage	Function	Max.
C	Used together with the cleaning tool.	Stirring with frequent directional changes.	60
0	Used when connecting/disconnecting the stirring tool.	Small steps in both directions. Operated using the arrow keys.	5
1	Low speed is used for sauce, soup, porridge or similar. High speed is used to whisk food.	Continuous stirring with scraper (clockwise).	-
2	Meat sauce, cold sauces or similar.	Stirring with directional changes. 10 revolutions clockwise, 2 revolutions pause, 5 revolutions anticlockwise, 2 revolutions pause, etc.	80
3	Mash potatoes, thickening or similar.	Stirring with directional changes. 4 revolutions clockwise, ½ revolution pause, 3 revolutions anticlockwise, ½ revolution pause, etc.	30-55[a]
4	Stews or similar, which require careful stirring at regular intervals.	Stirring with directional changes. 3 revolutions clockwise, 50 revolutions pause, 3 revolutions anticlockwise, 50 revolutions pause, etc.	80
5	Used when the scraper fuction is not wanted.	Continuous stirring without scrapers (anticlockwise).	-
6	Used to optimise the chilling process	Stirring with directional changes. 20 revolutions clockwise, 0.5 revolutions pause, 2 revolutions counter clockwise, 0.5 revolutions pause etc.	-

a. The maximum speed is limited to the range in which the stirrer has greatest power. This depends on the type and size of the kettle.

ID: 0000001296-EN-003

NB!

When stirring viscous material, it is best to use pattern 3 with maximum speed.

ID: 0000000389-EN-004

PowerMix

The PowerMix function enables the user to quickly and easily change the kettle's stirring pattern. For example, when thickening or adding other ingredients.

The stirrer must be switched on before PowerMix can be activated.

Press ⏻ and hold down the key. After one second, the stirring pattern will switch to P.

When the key is released, the stirrer will return to its original stirring pattern and speed.

Use the setup menu to set the stirring speed of the PowerMix function.

ID: 0000000825-EN-006

SlowMix

To activate SlowMix, open the lid completely. The symbol “L” is shown in the stirring pattern display.

To activate SlowMix press and hold down the SlowMix button.

SlowMix will stop when the SlowMix button is released.

To select speed, 5-20 rpm, press , and the display will flash. The value can be adjusted by pressing the arrow keys .

Use the setup menu to adjust the default speed of the stirrer for SlowMix.

AutoTemp 32

ID: 0000000796-EN-003

AutoTemp 32

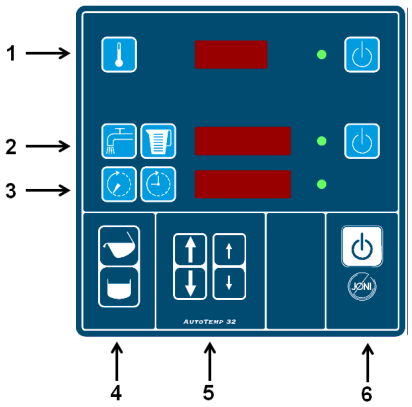


Fig. 0-34

1 Heating functions
2 Water filling functions
3 Timer functions
4 Tilt/tilt back keys
5 Arrow keys for adjustment
6 Standby key

Passcode

ID: 0000000060-EN-003

If the passcode required function has been activated in the setup menu, the heating display will show 'PAS' and a 4-digit passcode must be entered to activate the kettle.

The passcode will be shown in the water display and is set using the arrow keys. The large arrows alter the passcode by 100 and the small arrows alter the code by 1.

When the passcode has been selected, press water-

Tilting function

ID: 0000000063-EN-003

The kettle will tilt when is pressed and return when is pressed. The kettle will only tilt or return while the respective key is pressed.

ID: 0000001280-EN-002

⚠ CAUTION!

Do not stand in front of the kettle when it is tilted because the hot liquid can spray when it is poured out.

ID: 0000000064-EN-004

When the key is released, the kettle will remain in its current position unless the 'TiltBack' function is activated. If 'Tilt Back' is selected, the kettle will tilt back after a pre-selected number of seconds (0.0–3.0) for a pre-selected periode of time (0.0–3.0 sec.). This does not however apply when the kettle is only slightly tilted or when it is fully tilted.

Adjusting the heat

ID: 0000000800-EN-005

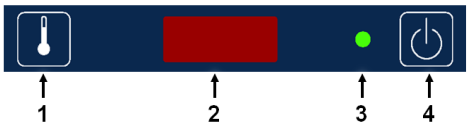


Fig. 0-35

1 Jacket temperature key
2 Jacket temperature display
3 LED for heating and cooling on
4 Key for heating and cooling on/off

Generally, the display will show the actual jacket temperature. The desired temperature the steam jacket is set by pressing so that the display flashes. Set the desired temperature by using the arrow keys.

ID: 0000000372-EN-003

Generally

The heating power supplied is switched on/off by pressing . When the heating is switched on, the LED will be lit.

To ensure that the food is heated evenly and quickly, it should be stirred whenever possible. This also ensures even thermal distribution and better temperature measurement for controlling the heating process.

The kettle must be in the vertical position in order to heat. If the kettle is tipped and is returned to vertical position again within two minutes, the heating will switch on automatically.

Cooling

ID: 0000000067-EN-002

The cooling function is used to chill the contents of the kettle. Chilling takes place by letting water through the steam jacket down to the floor grate.

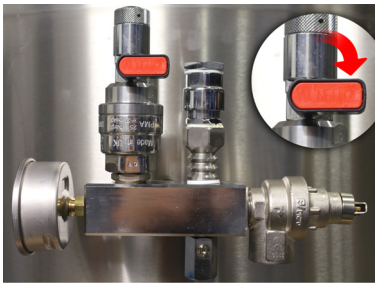
ID: 0000000382-EN-004

Start chilling

⚠ CAUTION!

Watch out for discharging steam/hot water when the valve for cooling water out is opened!

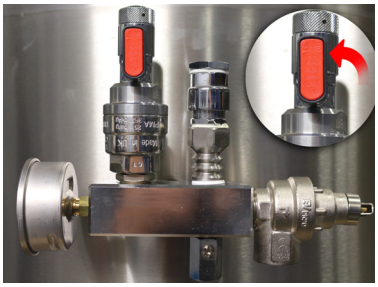
Step	Action	
1	Switch off the kettle´s heating and place the kettle bowl in the vertical position.	

2	Set the rotary switch in position cooling	
3	Wait until the pressure in the steam jacket is 0 bar.	
4	Open the valve for cooling water out.	
5	Close the kettle venting valve.	

ID: 0000000383-EN-003

Stop cooling

Step	Action	
1	Stop cooling	

2	Close the cooling water out valve.	
3	Open the kettle venting valve.	
4	Open the water level valve and allow the excess water to drain out.	
5	Close the valve for water level when no more water is draining out. The kettle is now ready for heating.	

Filling the kettle with water

ID: 0000000814-EN-003

Fig. 0-36

1 Manual water filling key
2 Automatic water filling key
3 Water quantity or time diplay
4 Water on LED
5 Water on / off key

ID: 0000000818-EN-002

Hot or cold water filling switch

ID: 0000001470-XX-001

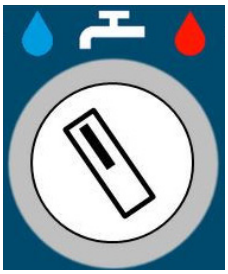


Fig. 0-37

ID: 0000001297-EN-002

Operating the water flowmeter

Press so that the display flashes. The quantity is set to one decimal with a maximum value equal to the volume of the kettle.

The large arrows change the set quantity by 10 litres and the small arrows change the quantity by 0.1 litres until the value has been changed by 1 litre, after which it will start to change by 1 litre at a time.

The display will now show the required quantity. If you want to adjust the required quantity once more press .

Start the filling of the required quantity by pressing so that the LED illuminates and the quantity is counted down.

The filling process can be interrupted by pressing again so that the LED extinguishes. The remaining quantity can now be adjusted using the arrows.

The display will automatically switch off after 10 minutes without use or if is held down for three seconds.

Manual water filling

This function enables the user to fill the kettle with water by holding down a key.

When is pressed water will be added to the kettle. The quantity added will be counted on the display.

When is released filling will stop.

If is pressed again within three seconds, the counting of the quantity added will continue.

Timer

ID: 0000000085-EN-004

Fig. 0-38

1 Set timer key
2 Set alarm clock key
3 Timer status/clock time display
4 Timer activated LED

The timer function is used to switch off heating/coolling function at a particular time or after a set time set in the timer. The beeper and display are also activated and the LED will flash.

The signal lasts for ten seconds, but can be stopped by pressing either or .

If the timer function is not active, the current time will be shown on the display.

The timer is activated automatically if a time or remaining time is set. The LED will illuminate when the function is activated.

To deactivated the timer press and hold down or for three seconds.

Setting the alarm clock

Press so that the display and LED flash slowly. Set the alarm clock time using the arrow keys.

If the timer function is active, the current signal time will be shown.

Setting the remaining time before the signal

Press so that the display and LED flash slowly. Set the required time using the arrow keys.

If the timer function is active, the current remaining time will be shown.

Setting the clock

ID: 0000000841-EN-003

Simultaneously press and hold down and . After five seconds the display will start to flash and the LED will flash rapidly. Set the clock time using the arrow keys.

AutoTemp 36

ID: 0000000797-EN-003

AutoTemp 36

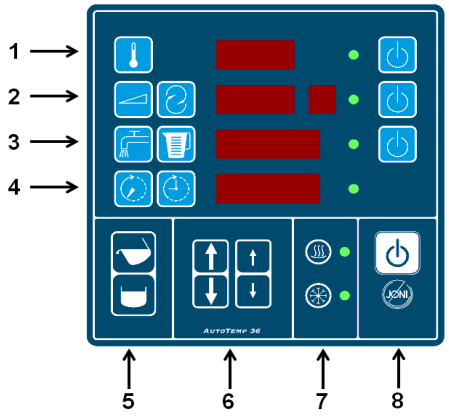


Fig. 0-39

1 Heating and coolling functions
2 Stirrer functions
3 Water filling functions
4 Timer functions
5 Tilt/tilt back keys
6 Arrow keys for adjustment
7 Functions for heating and cooling modes
8 Standby key

ID: 0000000374-EN-003

The kettle’s function depends on whether it is in heating mode or cooling mode. The control panel indicates which mode is active.

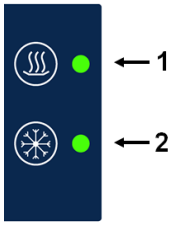


Fig. 0-40

1 LED for heating mode
2 LED for cooling mode

Passcode

ID: 0000000060-EN-003

If the passcode required function has been activated in the setup menu, the heating display will show 'PAS' and a 4-digit passcode must be entered to activate the kettle.

The passcode will be shown in the water display and is set using the arrow keys. The large arrows alter the passcode by 100 and the small arrows alter the code by 1.

When the passcode has been selected, press water-

Tilting function

ID: 0000000063-EN-003

The kettle will tilt when is pressed and return when is pressed. The kettle will only tilt or return while the respective key is pressed.

ID: 0000001280-EN-002

⚠ CAUTION!

Do not stand in front of the kettle when it is tilted because the hot liquid can spray when it is poured out.

ID: 0000000064-EN-004

When the key is released, the kettle will remain in its current position unless the 'TiltBack' function is activated. If 'Tilt Back' is selected, the kettle will tilt back after a pre-selected number of seconds (0.0–3.0) for a pre-selected periode of time (0.0–3.0 sec.). This does not however apply when the kettle is only slightly tilted or when it is fully tilted.

Adjusting the heat

ID: 0000000800-EN-005

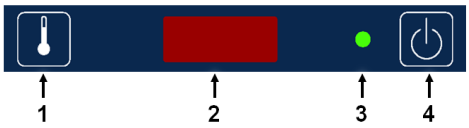


Fig. 0-41

1 Jacket temperature key
2 Jacket temperature display
3 LED for heating and cooling on
4 Key for heating and cooling on/off

Generally, the display will show the actual jacket temperature. The desired temperature the steam jacket is set by pressing so that the display flashes. Set the desired temperature by using the arrow keys.

ID: 0000000372-EN-003

Generally

The heating power supplied is switched on/off by pressing . When the heating is switched on, the LED will be lit.

To ensure that the food is heated evenly and quickly, it should be stirred whenever possible. This also ensures even thermal distribution and better temperature measurement for controlling the heating process.

The kettle must be in the vertical position in order to heat. If the kettle is tipped and is returned to vertical position again within two minutes, the heating will switch on automatically.

Cooling

ID: 0000000376-EN-003

Starting and stopping cooling

To set the kettle to cooling mode press and hold down for three seconds until the heating mode LED switches off and the cooling mode LED switches on.

To start and stop chilling, press . The LED will light when cooling is activated.

The kettle must be in the vertical position in order to chill otherwise an error code U11 will be generated and the LED will flash until the kettle is once again in the vertical position or cooling has been switched off. If the kettle is returned to vertical position within two minutes, cooling will be switched on automatically again.

ID: 0000000378-EN-003

To set the kettle to heating mode, press and hold down for three seconds until the cooling mode LED switches off.

The kettle now performs an initialisation which takes several minutes, as the steam jacket must be emptied of cooling water. During this period, the LED next to flashes and the kettle can neither heat nor cool.

When the initialisation is complete and the kettle is ready to heat, the LED next to will illuminate.

ID: 0000001298-EN-002

⚠ CAUTION!

Exercise caution when the cooling function is activated as water/steam may be discharged from the bottom of the kettle.

ID: 0000000807-EN-003

Setting water consumption for cooling

ID: 0000000809-EN-004

The required cooling power is set in the user menu point 5.1.

This feature determines the cooling intensity and water consumption.

Filling the kettle with water

ID: 0000000814-EN-003

Fig. 0-42

1 Manual water filling key
2 Automatic water filling key
3 Water quantity or time diplay
4 Water on LED
5 Water on / off key

ID: 0000000818-EN-002

Hot or cold water filling switch

ID: 0000001470-XX-001

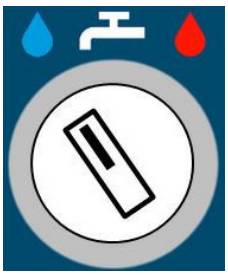


Fig. 0-43

ID: 0000000083-EN-003

Automatic water filling

This function enables a particular quantity of water to be added to the kettle.

The function depends on whether the kettle is fitted with a water flowmeter.

Automatic water filling with a water flow meter

With this method, a water flow meter is fitted to the kettle, so that the controller accurately measures how much water is added into the kettle

Operating the water flow meter

Press so that the display flashes and set the required quantity using the arrow keys. The quantity is set to one decimal with a maximum value equal to the volume of the kettle.

The large arrows change the set quantity by 10 litres and the small arrows change the quantity by 0.1 litres until the value has been changed by 1 litre, after which it will start to change by 1 litre at a time.

The display will now show the required quantity. If you want to adjust the required quantity once more press .

Start the filling of the required quantity by pressing so that the LED illuminates and the quantity is counted down. Filling will stop automatically when the required quantity reaches 0.

The filling process can be interrupted by pressing again so that the LED extinguishes. The remaining quantity can now be adjusted using the arrows.

The display will automatically switch off after 10 minutes without use or if is held down for three seconds.

Manual water filling

This function enables the user to fill the kettle with water by holding down a key.

When is pressed, water will be added to the kettle.

When is released, filling will stop.

If is pressed again within three seconds, the counting of the quantity added will continue.

ID: 0000001285-EN-002

Automatic water filling without a water flowmeter

In this case, the method is selected in the user menu:

- Time duration setting (default setting)

  The user sets the length of time for how long the solenoid valve remains open.

  This is an easy method to understand but water pressure will have an effect and setting the correct length of time will require practical experience.
- Estimated water quantity

  In the user menu the user specifies how much water flows into the kettle in one minute. Based on this value, the required number of litres is converted to the number of minutes that the solenoid valve shall remain open.
  This method is advantageous because the required water quantity can be set without purchasing any additional equipment. However, its precision will be affected if the water pressure fluctuates.

Using the time duration setting

Press . The display will flash. Set the desired time in minutes and seconds using the arrow keys.

Use the large arrow keys to change the minutes and the small arrow keys to change the seconds.

The display will now show the desired time. If you want to adjust the required time once more press .

To start the timer-set filling process press . The LED will illuminate and the timer will count down and filling will stop automatically when the timer reaches zero.

The filling process can be interrupted by pressing again. The LED will switch off. The remaining time can now be adjusted using the arrows keys.

The display will automatically switch off after 10 minutes without use or if is held down for three seconds.

Operation of estimated water quantity

Will be operated as indicated in "Operating the water flow meter".

Timer

ID: 0000000085-EN-004

Fig. 0-44

1 Set timer key
2 Set alarm clock key
3 Timer status/clock time display
4 Timer activated LED

The timer function is used to switch off heating/coolling function at a particular time or after a set time set in the timer. The beeper and display are also activated and the LED will flash.

The signal lasts for ten seconds, but can be stopped by pressing either or .

If the timer function is not active, the current time will be shown on the display.

The timer is activated automatically if a time or remaining time is set. The LED will illuminate when the function is activated.

To deactivated the timer press and hold down or for three seconds.

Setting the alarm clock

Press so that the display and LED flash slowly. Set the alarm clock time using the arrow keys.

If the timer function is active, the current signal time will be shown.

Setting the remaining time before the signal

Press so that the display and LED flash slowly. Set the required time using the arrow keys.

If the timer function is active, the current remaining time will be shown.

Setting the clock

ID: 0000000841-EN-003

Simultaneously press and hold down and . After five seconds the display will start to flash and the LED will flash rapidly. Set the clock time using the arrow keys.

Stirrer

ID: 0000000086-EN-005

The stirrer enables the food to be stirred mechanically. Stirring can be used for mashed potatoes, to thicken sauces, etc. Stirring also means that the kettle contents are evenly and more rapidly heated or chilled and therefore should always be used.

When stirring clockwise, the stirrer tool scrapes against the sides/bottom of the kettle for maximum effect. When stirring anticlockwise the stirrer tool does not touch the sides/bottom and therefore is used when gentle stirring is required or if the contents are very viscous and difficult to stir.

For safety reasons, the stirrer can only be used when the lid is closed. If the kettle is equipped with Slow-Mix, the stirrer can however rotate slowly when the lid is open.

Fitting a stirrer/cleaning tool

Before the stirrer is started, it is important that the tool is mounted correctly in the kettle.

Fig. 0-45

1) Tilt the kettle bowl to the horizontal position.
2) If necessary, place the tool on a height-adjustable trolley, which can be pushed in front of the kettle. This minimises the need for lifting.
3) Make sure that the bottom scraper on the stirrer is on the right side and hangs down.
4) The side scraper should be on the left side and point upwards.
5) Push the tool in over the shaft of the stirrer.
6) Tilt the kettle bowl to the vertical position.
7) Secure the tool by tapping the lifting handle down to a horizontal position.

ID: 0000000387-EN-003

Operating the stirrer

The stirrer is controlled using the part of the control panel shown in the following illustration.

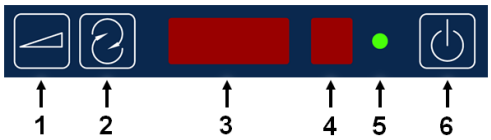


Fig. 0-46

1 Revolutions per minute (rpm) key
2 Stirring pattern key
3 Display for rpm
4 Display for stirring pattern
5 Stirrer on LED
6 Stirrer on/off key

The displays are generally turned off and turned on by pressing , or .

The required rpm is specified by pressing so that the display flashes.

The required stirring pattern is specified by pressing so that the display flashes.

Stirring patterns containing pauses. The length of the pause depends on the speed of the stirrer. This means that with a high rpm the pause will be short, and with a low rpm the pause will be long. This ensures that the stirring patterns work optimally at all speeds.

For safety reasons, the stirrer accelerates/decelerates at 20 RPM each second. However, if the lid is opened, the stirrer will stop quickly.

The following table shows the stirring patterns and suggestions for intended use. The last column show the maximum speed for each pattern. For patterns where this is not specified, the value from the factory settings is applied. If a stirring pattern is selected where the set rpm is not permitted, the rpm will be reduced to the maximum permitted value.

ID: 0000001305-EN-003

⚠ CAUTION!

An excessively high stirrer speed may lead to an ejection hazard.

ID: 0000000823-EN-004

Stirring pattern	Usage	Function	Max.
C	Used together with the cleaning tool.	Stirring with frequent directional changes.	60
0	Used when connecting/disconnecting the stirring tool.	Small steps in both directions. Operated using the arrow keys.	5
1	Low speed is used for sauce, soup, porridge or similar. High speed is used to whisk food.	Continuous stirring with scraper (clockwise).	-
2	Meat sauce, cold sauces or similar.	Stirring with directional changes. 10 revolutions clockwise, 2 revolutions pause, 5 revolutions anticlockwise, 2 revolutions pause, etc.	80
3	Mash potatoes, thickening or similar.	Stirring with directional changes. 4 revolutions clockwise, ½ revolution pause, 3 revolutions anticlockwise, ½ revolution pause, etc.	30-55[a]
4	Stews or similar, which require careful stirring at regular intervals.	Stirring with directional changes. 3 revolutions clockwise, 50 revolutions pause, 3 revolutions anticlockwise, 50 revolutions pause, etc.	80
5	Used when the scraper fuction is not wanted.	Continuous stirring without scrapers (anticlockwise).	-
6	Used to optimise the chilling process	Stirring with directional changes. 20 revolutions clockwise, 0.5 revolutions pause, 2 revolutions counter clockwise, 0.5 revolutions pause etc.	-

a. The maximum speed is limited to the range in which the stirrer has greatest power. This depends on the type and size of the kettle.

ID: 0000001296-EN-003

NB!

When stirring viscous material, it is best to use pattern 3 with maximum speed.

ID: 0000000389-EN-004

PowerMix

The PowerMix function enables the user to quickly and easily change the kettle's stirring pattern. For example, when thickening or adding other ingredients.

The stirrer must be switched on before PowerMix can be activated.

Press and hold down the key. After one second, the stirring pattern will switch to P.

When the key is released, the stirrer will return to its original stirring pattern and speed.

Use the setup menu to set the stirring speed of the PowerMix function.

ID: 0000000825-EN-006

SlowMix

To activate SlowMix, open the lid completely. The symbol “L” is shown in the stirring pattern display.

To activate SlowMix press and hold down the SlowMix button.

SlowMix will stop when the SlowMix button is released.

To select speed, 5-20 rpm, press , and the display will flash. The value can be adjusted by pressing the arrow keys .

Use the setup menu to adjust the default speed of the stirrer for SlowMix.

AutoTemp 56

ID: 0000000798-EN-003

AutoTemp 56

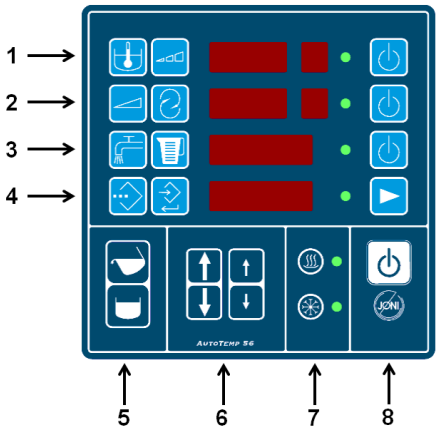


Fig. 0-47

1 Heating and cooling functions
2 Stirrer functions
3 Water filling functions
4 Program functions
5 Tilt/tilt back keys
6 Arrow keys for adjustment
7 Functions for heating and cooling modes
8 Standby key

ID: 0000000374-EN-003

The kettle’s function depends on whether it is in heating mode or cooling mode. The control panel indicates which mode is active.

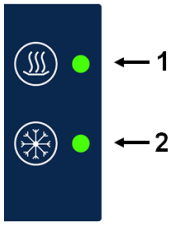


Fig. 0-48

1 LED for heating mode
2 LED for cooling mode

Passcode

ID: 0000000060-EN-003

If the passcode required function has been activated in the setup menu, the heating display will show 'PAS' and a 4-digit passcode must be entered to activate the kettle.

The passcode will be shown in the water display and is set using the arrow keys. The large arrows alter the passcode by 100 and the small arrows alter the code by 1.

When the passcode has been selected, press water-

Tilting function

ID: 0000000063-EN-003

The kettle will tilt when is pressed and return when is pressed. The kettle will only tilt or return while the respective key is pressed.

ID: 0000001280-EN-002

⚠ CAUTION!

Do not stand in front of the kettle when it is tilted because the hot liquid can spray when it is poured out.

ID: 0000000064-EN-004

When the key is released, the kettle will remain in its current position unless the 'TiltBack' function is activated. If 'Tilt Back' is selected, the kettle will tilt back after a pre-selected number of seconds (0.0–3.0) for a pre-selected periode of time (0.0–3.0 sec.). This does not however apply when the kettle is only slightly tilted or when it is fully tilted.

Adjusting the heat

ID: 0000000801-EN-005

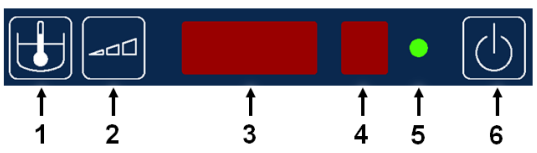


Fig. 0-49

1 Key for food temperature
2 Key for heating power
3 Display for food temperature
4 Display for heating power
5 LED for heating and chilling on
6 Key for heating chilling on/off

By default, the display will show the actual food temperature. The set point for food temperature is set by pressing so that the display flashes. Set the temperature set point using the arrow keys.

The function will be exited automatically after three seconds without a key press or if another function is selected.

The required heating power is set by pressing so that the display flashes. Set the required power using the arrow keys.

The heating power function is used to determine the temperature of the steam jacket based on the food temperature, and therefore how gentle the heating should be. As the food is heated, the temperature of the jacket will automatically increase.
Lower power gives a more gentle heating but a longer heating time.
Higher power gives less gentle heating but a shorter heating time.
When power step 9 is selected, the temperature of the jacket will be set to maximum and the heating time will be the shortest possible.

ID: 0000000372-EN-003

Generally

The heating power supplied is switched on/off by pressing . When the heating is switched on, the LED will be lit.

To ensure that the food is heated evenly and quickly, it should be stirred whenever possible. This also ensures even thermal distribution and better temperature measurement for controlling the heating process.

The kettle must be in the vertical position in order to heat. If the kettle is tipped and is returned to vertical position again within two minutes, the heating will switch on automatically.

Cooling

ID: 0000000804-EN-003

Setting the desired food temperature

To set the desired food temperature press so that the display flashes. Set the desired temperature using the arrow keys.

To ensure that the food is at the desired temperature it may be necessary to set the food temperature lower, e.g. to 1 ºC.

ID: 0000000376-EN-003

Starting and stopping cooling

To set the kettle to cooling mode press and hold down for three seconds until the heating mode LED switches off and the cooling mode LED switches on.

To start and stop chilling, press . The LED will light when cooling is activated.

The kettle must be in the vertical position in order to chill otherwise an error code U11 will be generated and the LED will flash until the kettle is once again in the vertical position or cooling has been switched off. If the kettle is returned to vertical position within two minutes, cooling will be switched on automatically again.

ID: 0000000378-EN-003

To set the kettle to heating mode, press and hold down for three seconds until the cooling mode LED switches off.

The kettle now performs an initialisation which takes several minutes, as the steam jacket must be emptied of cooling water. During this period, the LED next to flashes and the kettle can neither heat nor cool.

When the initialisation is complete and the kettle is ready to heat, the LED next to will illuminate.

ID: 0000001298-EN-002

CAUTION!

Exercise caution when the cooling function is activated as water/steam may be discharged from the bottom of the kettle.

ID: 0000000807-EN-003

Setting water consumption for cooling

ID: 0000000806-EN-003

This function is used to set the intensity of the chilling. The lower the value that is selected, the smaller the quantity of water that passes through the steam jacket and the longer the chilling process will last. When power step 9 is selected, the flow rate will be set to maximum and the chilling time will be the shortest possible.

The required chilling power is set by pressing so that the display flashes. Set the required power using the arrow keys.

Filling the kettle with water

ID: 0000000814-EN-003

Fig. 0-50

1 Manual water filling key
2 Automatic water filling key
3 Water quantity or time diplay
4 Water on LED
5 Water on / off key

ID: 0000000818-EN-002

Hot or cold water filling switch

ID: 0000001470-XX-001

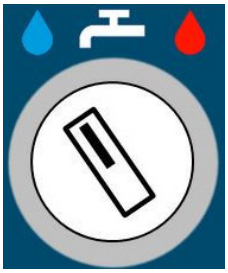


Fig. 0-51

ID: 0000001297-EN-002

Operating the water flowmeter

Press so that the display flashes. The quantity is set to one decimal with a maximum value equal to the volume of the kettle.

The large arrows change the set quantity by 10 litres and the small arrows change the quantity by 0.1 litres until the value has been changed by 1 litre, after which it will start to change by 1 litre at a time.

The display will now show the required quantity. If you want to adjust the required quantity once more press .

Start the filling of the required quantity by pressing so that the LED illuminates and the quantity is counted down.

The filling process can be interrupted by pressing again so that the LED extinguishes. The remaining quantity can now be adjusted using the arrows.

The display will automatically switch off after 10 minutes without use or if is held down for three seconds.

Manual water filling

This function enables the user to fill the kettle with water by holding down a key.

When is pressed water will be added to the kettle. The quantity added will be counted on the display.

When is released filling will stop.

If is pressed again within three seconds, the counting of the quantity added will continue.

Stirrer

ID: 0000000086-EN-005

The stirrer enables the food to be stirred mechanically. Stirring can be used for mashed potatoes, to thicken sauces, etc. Stirring also means that the kettle contents are evenly and more rapidly heated or chilled and therefore should always be used.

When stirring clockwise, the stirrer tool scrapes against the sides/bottom of the kettle for maximum effect. When stirring anticlockwise the stirrer tool does not touch the sides/bottom and therefore is used when gentle stirring is required or if the contents are very viscous and difficult to stir.

For safety reasons, the stirrer can only be used when the lid is closed. If the kettle is equipped with Slow-Mix, the stirrer can however rotate slowly when the lid is open.

Fitting a stirrer/cleaning tool

Before the stirrer is started, it is important that the tool is mounted correctly in the kettle.

Fig. 0-52

1) Tilt the kettle bowl to the horizontal position.
2) If necessary, place the tool on a height-adjustable trolley, which can be pushed in front of the kettle. This minimises the need for lifting.
3) Make sure that the bottom scraper on the stirrer is on the right side and hangs down.
4) The side scraper should be on the left side and point upwards.
5) Push the tool in over the shaft of the stirrer.
6) Tilt the kettle bowl to the vertical position.
7) Secure the tool by tapping the lifting handle down to a horizontal position.

ID: 0000000387-EN-003

Operating the stirrer

The stirrer is controlled using the part of the control panel shown in the following illustration.

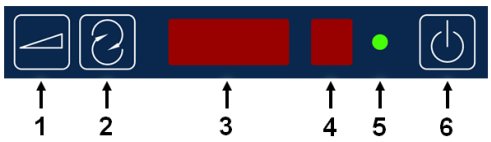


Fig. 0-53

1 Revolutions per minute (rpm) key
2 Stirring pattern key
3 Display for rpm
4 Display for stirring pattern
5 Stirrer on LED
6 Stirrer on/off key

The displays are generally turned off and turned on by pressing , or .

The required rpm is specified by pressing so that the display flashes.

The required stirring pattern is specified by pressing so that the display flashes.

Stirring patterns containing pauses. The length of the pause depends on the speed of the stirrer. This means that with a high rpm the pause will be short, and with a low rpm the pause will be long. This ensures that the stirring patterns work optimally at all speeds.

For safety reasons, the stirrer accelerates/decelerates at 20 RPM each second. However, if the lid is opened, the stirrer will stop quickly.

The following table shows the stirring patterns and suggestions for intended use. The last column show the maximum speed for each pattern. For patterns where this is not specified, the value from the factory settings is applied. If a stirring pattern is selected where the set rpm is not permitted, the rpm will be reduced to the maximum permitted value.

ID: 0000001305-EN-003

⚠ CAUTION!

An excessively high stirrer speed may lead to an ejection hazard.

ID: 0000000823-EN-004

Stirring pattern	Usage	Function	Max.
C	Used together with the cleaning tool.	Stirring with frequent directional changes.	60
0	Used when connecting/disconnecting the stirring tool.	Small steps in both directions. Operated using the arrow keys.	5
1	Low speed is used for sauce, soup, porridge or similar. High speed is used to whisk food.	Continuous stirring with scraper (clockwise).	-
2	Meat sauce, cold sauces or similar.	Stirring with directional changes. 10 revolutions clockwise, 2 revolutions pause, 5 revolutions anticlockwise, 2 revolutions pause, etc.	80
3	Mash potatoes, thickening or similar.	Stirring with directional changes. 4 revolutions clockwise, ½ revolution pause, 3 revolutions anticlockwise, ½ revolution pause, etc.	30-55[a]
4	Stews or similar, which require careful stirring at regular intervals.	Stirring with directional changes. 3 revolutions clockwise, 50 revolutions pause, 3 revolutions anticlockwise, 50 revolutions pause, etc.	80
5	Used when the scraper fuction is not wanted.	Continuous stirring without scrapers (anticlockwise).	-
6	Used to optimise the chilling process	Stirring with directional changes. 20 revolutions clockwise, 0.5 revolutions pause, 2 revolutions counter clockwise, 0.5 revolutions pause etc.	-

a. The maximum speed is limited to the range in which the stirrer has greatest power. This depends on the type and size of the kettle.

ID: 0000001296-EN-003

NB!

When stirring viscous material, it is best to use pattern 3 with maximum speed.

ID: 0000000389-EN-004

PowerMix

The PowerMix function enables the user to quickly and easily change the kettle's stirring pattern. For example, when thickening or adding other ingredients.

The stirrer must be switched on before PowerMix can be activated.

Press ⏻ and hold down the key. After one second, the stirring pattern will switch to P.

When the key is released, the stirrer will return to its original stirring pattern and speed.

Use the setup menu to set the stirring speed of the PowerMix function.

ID: 0000000825-EN-006

SlowMix

To activate SlowMix, open the lid completely. The symbol “L” is shown in the stirring pattern display.

To activate SlowMix press and hold down the SlowMix button.

SlowMix will stop when the SlowMix button is released.

To select speed, 5-20 rpm, press , and the display will flash. The value can be adjusted by pressing the arrow keys .

Use the setup menu to adjust the default speed of the stirrer for SlowMix.

Programs

ID: 0000000390-EN-003

Fig. 0-54

1 Program selection/interruption key
2 Correct variant /confirm value key
3 Display for program and variant
4 Program display
5 Program start key

Selecting the program and variant

Press . The display will flash. To select the program, use the large arrows and to select the variant, use the small arrows.

Change the variant

Press to alter the program and the variant shown in the program display.

The water display now shows that the first parameter is being set. The program display shows the associated value. To set the value, use the arrow keys.

When the value is set correctly, to confirm the value, press . The water display will then show the next parameter. When the value of the last parameter has been confirmed, the new values are saved and the program display will flash‘----’.

ID: 0000000856-EN-004

The program function is used when the user wants the kettle to carry out a sequence of processes automatically. For example, to cook at a given temperature for a given period of time and then keep the contents warm at a lower temperature.

The word ‘Wait’ in the tables below is used to indicate that the control system waits a set amount of time before the next action is performed. One or more functions can be active in this period.

A program is pre-defined through a series of actions, e.g. program 4:

Step	Action
1	Switch to heating mode
2	Wait for the required time
3	Add water to the kettle
4	Set the desired point for food temperature and heating power
5	Switch on heating
6	Set the stirring pattern and stirring rpm. Switch on the stirrer
7	Wait for the required time
8	Change to new food temperature and new heating power
9	Set new stirring pattern and new stirring rpm

The user must set the relevant parameters to enable the kettle to execute a program. In this example, the following parameters must be set:

- When the process should start?
- How much water should be added to the kettle?
- What temperature and heating power should be set?
- What speed and stirring pattern should be used?
- Heating time duration for first given temperature?
- Next temperature and power setting?
- Next speed and stirring pattern?

A set of parameters is called a variant of the program and 10 variants can be saved for each program.

The same programs can therefore be executed with different sets of values. For example, variant number 1 could start at 05.00, add 50 litres of water to the kettle and heat it to 90ºC, heating power 9, and at the same time stir at 75 rpm, stirring pattern 1 for 12 minutes. Thereafter, heating at 80ºC, heating power 7, and at the same time stir at 30 rpm, stirring pattern 2.

Variant number 2 could start at 06.00, add 30 litres of water into the kettle and heat it to 50ºC, heating power 1, and at the same time stir at 50 rpm, stirring pattern 3 for 20 minutes. Thereafter heat at 90ºC, heating power 9, and at the same time stir at 20 rpm, stirring pattern 3.

Program 4 can be set up in the following table:

Step	Action	Parameter	Variant 1	Variant 2
1	Switch to heating mode			
2	Wait for the required time	P02.1 Time	05.00	06.00
3	Add water in required quantity	P03.1 Water quantity	50	30
4	Set the set point for food temperature and heating power	P04.1 Food temperature P04.2 Heating power	90 9	50 1
5	Switch on heating			
6	Set the stirring pattern and stirring speed Switch on the stirrer	P06.1 Stirring pattern P06.2 Stirring speed	1 75	3 50
7	Wait for the required time	P07.1 Time	12	20
8	Set the desired point for food temperature and heating power	P08.1 Food temperature P08.2 Heating power	80 7	90 9
9	Adjust new stirring pattern and stirring rpm. Switch on the stirrer	P09.1 Stirring pattern P09.2 Stirring speed	30 2	20 3

Example of setting up a program

If program 4 is to be setup, the procedure would be as follows:

ID: 0000000404-EN-003

Program 4

Step	Action	Parameter
1	Switch to heating mode	
2	Wait for the required time	P02.1 Time
3	Add water in the required quantity	P03.1 Water quantity
4	Set the desired point for food temperature and heating power	P04.1 Food temperature P04.2 Heating power
5	Switch on heating	
6	Set stirring pattern and stirring speed. Switch on the stirrer	P06.1 Stirring pattern P06.2 Stirring speed If stirring pattern 0 is selected, this step will be skipped
7	Wait for the required time	P07.1 Time
8	Set the desired point for food temperature and heating power	P08.1 Food temperature P08.2 Heating power
9	Set stirring pattern and stirring speed. Switch on the stirrer	P09.1 Stirring pattern P09.2 Stirring speed If stirring pattern 0 is selected, this step will be skipped.

ID: 0000000854-EN-004

1) Press . The program display flashes. Select program 4 using the large arrow keys. Select the variant using the small arrow key.
2) Press twice to alter parameter P02.1. The water display shows P02.1. Set the time in the program display using the arrow keys. Once the value has been set press .
3) The water display shows P03.1. Set the water quantity in the program display using the arrow keys. Once the value has been set press .
4) The water display shows P04.1. Set the food temperature in the program display using the arrow keys. Once the value has been set press .
5) The water display shows P04.2. Set the heating power in the program display using the arrow keys. Once the value has been set press .
6) The water display shows P06.1. Set the stirring pattern in the program display using the arrow keys. Once the value has been set press . If stirring pattern 0 is selected, skip this step and jump to P07.1
7) The water display shows P06.2. Set the stirring speed in the program display using the arrow keys. Once the value has been set press .
8) The water display shows P07.1. Set the time in the program display using the arrow keys. Once the value has been set press .
9) The water display shows P08.1. Set the food temperature in the program display using the arrow keys. Once the value has been set press .
10) The water display shows P08.2. Set the heating power in the program display using the arrow keys. Once the value has been set press .
11) The water display shows P09.1. Set the stirring pattern in the program display using the arrow keys. Once the value has been set press . If stirring pattern 0 is selected, skip this step and jump to step 13.
12) The water display shows P09.2. Set the stirring speed in the program display using the arrow keys. Once the value has been set press .
13) The program display flashes '----' and the new values are saved.

ID: 0000000392-EN-002

Running the program

Press to start the program and the variant that is shown in the program display. The LED will illuminate while the program is being run.

Press and hold for three seconds to stop the program. The LED will extinguish when the program is cancelled.

If a program is cancelled, all functions will continue in their current mode. This means that no functions will be activated/deactivated.When a program is running, it will respond to manual key presses. This has three important consequences:

- The kettle can be used normally whilst the program is running. The user can therefore add water to the kettle or adjust the temperature if desired while the program is running.
- Many aspects of the program execution can be altered. If for example the program switches on the heating and the user then turns it off again by pressing for the heating, the kettle will not heat its contents. If the next step depends on a particular temperature, the program will not continue to the next step.
- If the given action is impossible, the program will continue. If for example the program is set to start the stirrer but the lid is open, the stirrer will switch to pause mode and the program will continue.

It is important to be aware of the operation of the kettle when it is running a program, so as not to accidentally cancel an operation.

Generally the program display shows the time.

If is pressed, the active program and variant will be shown.

If is pressed, the remaining time for the current program step will be shown.

The remaining time can be adjusted using the arrows. If the current program step has no remaining time, '----' will be shown in the program display.

If is pressed, the active program step will be shown.

Program functions

ID: 0000000394-EN-001

The following tables describe the function of each program and the parameters that must be set.

ID: 0000000401-EN-003

Program 1

Step	Action	Parameter
1	Wait for the required time	P01.1 Time
2	Turn off heating	
3	Switch off the stirrer	
4	Activate beeper	

ID: 0000000402-EN-003

Program 2

Step	Action	Parameter
1	Wait until the set time	P01.1 Clock time
2	Turn off heating	
3	Switch off the stirrer	
4	Activate beeper	

ID: 0000000403-EN-003

Program 3

Step	Action	Parameter
1	Switch to heating mode	
2	Set the desired food temperature and heating power	P02.1 Food temperature P02.2 Heating power
3	Switch on heating	
4	Set the stirring pattern and stirring speed Switch on the stirrer	P04.1 Stirring pattern P04.2 Stirring speed If stirring pattern 0 is selected, this step will be skipped.
5	Wait for the required time	P05.1 Time
6	Set the desired food temperature and heating power	P06.1 Food temperature P06.2 Heating power
7	Set the stirring pattern and stirring speed Switch on the stirrer	P07.1 Stirring pattern P07.2 Stirring speed If stirring pattern 0 is selected, this step will be skipped.

ID: 0000000404-EN-003

Program 4

Step	Action	Parameter
1	Switch to heating mode	
2	Wait for the required time	P02.1 Time
3	Add water in the required quantity	P03.1 Water quantity
4	Set the desired point for food temperature and heating power	P04.1 Food temperature P04.2 Heating power
5	Switch on heating	
6	Set stirring pattern and stirring speed. Switch on the stirrer	P06.1 Stirring pattern P06.2 Stirring speed If stirring pattern 0 is selected, this step will be skipped
7	Wait for the required time	P07.1 Time
8	Set the desired point for food temperature and heating power	P08.1 Food temperature P08.2 Heating power
9	Set stirring pattern and stirring speed. Switch on the stirrer	P09.1 Stirring pattern P09.2 Stirring speed If stirring pattern 0 is selected, this step will be skipped.

ID: 0000000405-EN-004

Program 5

Step	Action	Parameter
1	Set the stirring pattern and stirring speed. Switch on the stirrer.	P01.1 Stirring pattern P01.2 Stirring speed If stirring pattern 0 is selected, this step will be skipped.
2	Wait for required time	P02.1 Time
3	Set stirring pattern and stirring RPM. Switch on the stirrer	P03.1 Stirring pattern P03.2 Stirring speed If stirring pattern 0 is selected, this step will be skipped.
4	Wait for required time	P04.1 Time
5	Switch off the stirrer	
6	Activate beeper	

ID: 0000000406-EN-004

Program 6 (Only with the additional equipment for cooling)

Step	Action	Parameter
1	Switch to cooling mode	
2	Set the desired food temperature and cooling power	P02.1 Food temperature P02.2 Cooling power
3	Switch on cooling	
4	Set stirring pattern and stirring speed. Switch on the stirrer	P04.1 Stirring pattern P04.2 Stirring speed If stirring pattern 0 is selected, this step will be skipped.
5	Pause for required time	P05.1 Time
6	Switch off cooling	
7	Switch off the stirrer	
8	Activate beeper	

ID: 0000000407-EN-004

Program 7 (Only with the additional equipment for cooling)

Step	Action	Parameter
1	Switch to cooling mode	
2	Set the desired food temperature and cooling power	P02.1 Food temperature P02.2 Cooling power
3	Switch on cooling	
4	Set the stirring pattern and stirring speed. Switch on the stirrer	P04.1 Stirring pattern P04.2 Stirring speed If stirring pattern 0 is selected, this step will be skipped.
5	Pause until the desired food temperature has been reached	
6	Switch off cooling	
7	Switch off the stirrer	
8	Activate beeper	

ID: 0000000408-EN-003

Program 8 (Only with the additional equipment for chilling)

Step	Action	Parameter
1	Switch to heating mode	
2	Set the desired food temperature and heating power	P02.1 Food temperature P02.2 Heating power
3	Switch on heating	
4	Set the stirring pattern and stirring speed. Switch on the stirrer	P04.1 Stirring pattern P04.2 Stirring speed If stirring pattern 0 is selected, this step will be skipped.
5	Wait for required time	P05.1 Time
6	Set the set point for food temperature and heating power	P06.1 Food temperature P06.2 Heating power
7	Set stirring pattern and stirring RPM. Switch on the stirrer	P07.1 Stirring pattern P07.2 Stirring rate If stirring pattern 0 is selected, this step will be skipped.
8	Pause for required time	P08.1 Time
9	Switch to chilling mode	
10	Set the desired food temperature and cooling power	P10.1 Food temperature P10.2 Cooling power
11	Switch on cooling	
12	Set the stirring pattern and stirring speed. Switch on the stirrer	P12.1 Stirring pattern P12.2 Stirring speed If stirring pattern 0 is selected, this step will be skipped.
13	Pause until the desired food temperature has been reached	
14	Switch off cooling	
15	Switch off the stirrer	
16	Activate beeper	

ID: 0000000409-EN-003

Program 9 (Only with the additional equipment for cooling)

Step	Action	Parameter
1	Switch to heating mode	
2	Pause until the required time	P02.1 Time
3	Add water in required quantity	P03.1 Water quantity
4	Set the desired food temperature and heating power	P04.1 Food temperature P04.2 Heating power
5	Switch on heating	P05.1 Time
6	Set the stirring pattern and stirring speed. Switch on the stirrer	P06.1 Stirring pattern P06.2 Stirring speed If stirring pattern 0 is selected, this step will be skipped.
7	Wait for the required time	P07.1 Time
8	Set the desired food temperature and heating power	P08.1 Food temperature P08.2 Heating power
9	Set the stirring pattern and stirring speed. Switch on the stirrer	P09.1 Stirring pattern P09.2 Stirring speed If stirring pattern 0 is selected, this step will be skipped.
10	Wait for the required time	P10.1 Time
11	Switch to cooling mode	
12	Set the desired food temperature and cooling power	P12.1 Food temperature P12.2 Cooling power
13	Switch on cooling	
14	Set the stirring pattern and stirring speed. Switch on the stirrer	P14.1 Stirring pattern P14.2 Stirring speed If stirring pattern 0 is selected, this step will be skipped.
15	Pause until the desired food temperature has been reached	
16	Switch off cooling	
17	Switch off the stirrer	
18	Activate beeper	

ID: 0000000410-EN-003

Program 10 (Only with the additional equipment for cooling)

Step	Action	Parameter
1	Switch to cooling mode	
2	Set the desired food temperature and cooling power	P02.1 Food temperature P02.2 Cooling power
3	Switch on cooling	
4	Set the stirring pattern and stirring speed. Switch on the stirrer	P04.1 Stirring pattern P04.2 Stirring speed If stirring pattern 0 is selected, this step will be skipped.
5	Wait for the required time	P05.1 Time
6	Switch to heating mode	
7	Set the desired food temperature and heating power	P07.1 Food temperature P07.2 Heating power
8	Switch on heating	
9	Set the stirring pattern and stirring speed. Switch on the stirrer	P09.1 Stirring pattern P09.2 Stirring speed If stirring pattern 0 is selected, this step will be skipped.
10	Wait for the required time	P10.1 Time
11	Set the desired food temperature and heating power	P11.1 Food temperature P11.2 Heating power
12	Set the stirring pattern and stirring speed. Switch on the stirrer	P12.1 Stirring pattern P12.2 Stirring speed If stirring pattern 0 is selected, this step will be skipped.
13	Wait for the required time	P13.1 Time
14	Switch to cooling mode	
15	Set the desired food temperature and cooling power	P15.1 Food temperature P15.2 Cooling power
16	Switch on cooling	
17	Set the stirring pattern and stirring speed. Switch on the stirrer	P17.1 Stirring pattern P17.2 Stirring speed If stirring pattern 0 is selected, this step will be skipped.
18	Pause until the desired food temperature has been reached	
19	Switch off cooling	
20	Switch off the stirrer	
21	Activate beeper	

ID: 0000000411-EN-003

Program 11 (Only with the additional equipment for cooling)

Step	Action	Parameter
1	Switch to heating mode	
2	Set the desired food temperature and heating power	P02.1 Food temperature P02.2 Heating power
3	Switch on heating	
4	Set the stirring pattern and stirring speed. Switch on the stirrer	P04.1 Stirring pattern P04.2 Stirring speed If stirring pattern 0 is selected, this step will be skipped.
5	Wait for the required time	P05.1 Time
6	Set the desired food temperature and heating power	P06.1 Food temperature P06.2 Heating power
7	Set the stirring pattern and stirring speed. Switch on the stirrer	P07.1 Stirring pattern P07.2 Stirring speed If stirring pattern 0 is selected, this step will be skipped.
8	Wait for the required time	P08.1 Time
9	Switch to cooling mode	
10	Set the desired food temperature and cooling power	P10.1 Food temperature P10.2 Cooling power
11	Switch on cooling	
12	Set the stirring pattern and stirring speed. Switch on the stirrer	P12.1 Stirring pattern P12.2 Stirring speed If stirring pattern 0 is selected, this step will be skipped.
13	Pause until the desired food temperature has been reached	
14	Activate beeper	

ID: 0000001075-EN-005

Program 12

Step	Action	Parameter
1	Switch to heating mode	
2	Set the desired food temperature and heating power	P02.1 Food temperature P02.2 Heating power
3	Switch on heating	
4	Set the stirring pattern and stirring speed Switch on the stirrer	P04.1 Stirring pattern P04.2 Stirring speed If stirring pattern 0 is selected, this step will be skipped.
5	Wait until the desired food temperature has been reached	
6	Set the desired food temperature and heating power	P06.1 Food temperature P06.2 Heating power
7	Set the stirring pattern and stirring speed Switch on the stirrer	P07.1 Stirring pattern P07.2 Stirring speed If stirring pattern 0 is selected, this step will be skipped.
8	Wait for the required time	P08.1 Time
9	Set the set point for food temperature and heating power	P9.1 Food temperature P9.2 Heating power
10	Set the stirring pattern and stirring speed Switch on the stirrer	P10.1 Stirring pattern P10.2 Stirring speed If stirring pattern 0 is selected, this step will be skipped.
11	Wait for the required time	P011.1 Time
12	Activate beeper	

ID: 0000001076-EN-006

Program 13

Step	Action	Parameter
1	Switch to heating mode	
2	Wait for the required time	P02.1 Time
3	Add water in required quantity	P03.1 Water quantity
4	Set the desired food temperature and heating power	P04.1 Food temperature P04.2 Heating power
5	Switch on heating	
6	Set the stirring pattern and stirring speed Switch on the stirrer	P06.1 Stirring pattern P06.2 Stirring speed If stirring pattern 0 is selected, this step will be skipped.
7	Wait until the desired food temperature has been reached	
8	Set the desired food temperature and heating power	P08.1 Food temperature P08.2 Heating power
9	Set the stirring pattern and stirring speed Switch on the stirrer	P09.1 Stirring pattern P09.2 Stirring speed If stirring pattern 0 is selected, this step will be skipped.
10	Wait for the required time	P10.1 Time
11	Set the desired food temperature and heating power	P11.1 Food temperature P11.2 Heating power
12	Set the stirring pattern and stirring speed Switch on the stirrer	P12.1 Stirring pattern P12.2 Stirring speed If stirring pattern 0 is selected, this step will be skipped.
13	Wait for the required time	P13.1 Time
14	Activate beeper	

ID: 0000001077-EN-004

Program 14 (Only with the additional equipment for cooling)

Step	Action	Parameter
1	Switch to heating mode	
2	Set the desired food temperature and heating power	P02.1 Food temperature P02.2 Heating power
3	Switch on heating	
4	Set the stirring pattern and stirring speed. Switch on the stirrer	P04.1 Stirring pattern P04.2 Stirring speed If stirring pattern 0 is selected, this step will be skipped.
5	Pause until the desired food temperature has been reached	
6	Set the desired food temperature and heating power	P06.1 Food temperature P06.2 Heating power
7	Set the stirring pattern and stirring speed. Switch on the stirrer	P07.1 Stirring pattern P07.2 Stirring speed If stirring pattern 0 is selected, this step will be skipped.
8	Wait for the required time	P08.1 Time
9	Set the desired food temperature and heating power	P09.1 Food temperature P09.2 Heating power
10	Set the stirring pattern and stirring speed. Switch on the stirrer	P10.1 Stirring pattern P10.2 Stirring speed If stirring pattern 0 is selected, this step will be skipped.
11	Wait for the required time	P11.1 Time
12	Switch to cooling mode	
13	Set the desired food temperature and cooling power	P13.1 Food temperature P13.2 Cooling power
14	Switch on cooling	
15	Set the stirring pattern and stirring speed. Switch on the stirrer	P12.1 Stirring pattern P12.2 Stirring speed If stirring pattern 0 is selected, this step will be skipped.
16	Pause until the desired food temperature has been reached	
17	Activate beeper	

ID: 0000001078-EN-006

Program 15 (Only with the additional equipment for cooling)

Step	Action	Parameter
1	Switch on cooling	
2	Set the desired food temperature and cooling power	P02.1 Food temperature P02.2 Cooling power
3	Switch on cooling	
4	Set the stirring pattern and stirring speed. Switch on the stirrer	P04.1 Stirring pattern P04.2 Stirring speed If stirring pattern 0 is selected, this step will be skipped.
5	Wait for the required time	P05.1 Time
6	Switch to heating mode	
7	Set the desired food temperature and heating power	P07.1 Food temperature P07.2 Heating power
8	Switch on heating	
9	Set the stirring pattern and stirring speed. Switch on the stirrer	P09.1 Stirring pattern P09.2 Stirring speed If stirring pattern 0 is selected, this step will be skipped.
10	Wait for the required time	P10.1 Time
11	Set the stirring pattern and stirring speed. Switch on the stirrer	P11.1 Stirring pattern P11.2 Stirring speed If stirring pattern 0 is selected, this step will be skipped.
12	Pause until the desired food temperature has been reached	
13	Set the desired food temperature and cooling power	P13.1 Food temperature P13.2 Cooling power
14	Set the stirring pattern and stirring speed. Switch on the stirrer	P14.1 Stirring pattern P14.2 Stirring speed If stirring pattern 0 is selected, this step will be skipped.
15	Pause for the required time	P15.1 Time
16	Set the desired food temperature and heating power	P16.1 Food temperature P16.2 Heating power
17	Set the stirring pattern and stirring speed. Switch on the stirrer	P17.1 Stirring pattern P17.2 Stirring speed If stirring pattern 0 is selected, this step will be skipped.
18	Wait for the required time	P18.1 Time
19	Activate beeper	

Setting the clock

ID: 0000001299-EN-001

Simultaneously press  and  and keep them pressed. After five seconds the display will start to flash and the LED will flash rapidly. Adjust he clock using the arrow keys.

User messages

ID: 0000001224-EN-003

User error messages

If the user attempts to perform an action which is not permitted, an error code will be shown and the LED will flash slowly. The error code will generally disappear once the error condition ceases, i.e. the lid is opened or the key is released.

ID: 0000000842-EN-004

Error code	Description
U01	Incorrect passcode entered
U10	The heating cannot be switched on because the kettle is tilted.
U11	The chilling cannot be switched on because the kettle is tilted.
U12	Water filling is not permitted because the kettle is tilted.
U13	Testing of safety pressure switch and safety valve cannot begin/resume until kettle is in an upright position.
U14	The stirrer cannot be switched on because the kettle is tilted.
U15	Initialization paused, because the kettle is tilted.
U20	Water filling is not permitted because the lid is closed.
U21	The kettle cannot be tilted because the lid is closed.
U23	The stirrer cannot be switched on because the lid is open.
U30	The kettle cannot tilt because the motor’s duty factor has been exceeded. Wait approx. 30 seconds and tilt again. After 4 minutes, the tilt motor's duty cycle will be reset.
U40	Chilling mode cannot be activated because the kettle is not fitted with the cooling function.
U41	Testing of safety pressure switch and safety valve is not possible because the kettle is in cooling mode.
U42	The heating function cannot be used until the kettle initialisation has been performed. Wait until the initialisation is completed.
U49	The function foot pedal is not selected.

Accessories

Inspection cover

ID: 0000001472-XX-001

Fig. 0-55

ID: 0000000090-EN-003

Cleaning tool

The cleaning tool can be used to loosen the dirt on the inside of the kettle.

The cleaning tool is fitted in the kettle in the same way as the normal tool.

Make sure, that the brushes are pushed correctly into the rails.

The kettle is filled about one-third with water mixed with detergent and the stirring tool is started on stirring pattern C, speed 60.

The removable brushes on the cleaning tool can be cleaned in a dishwasher.

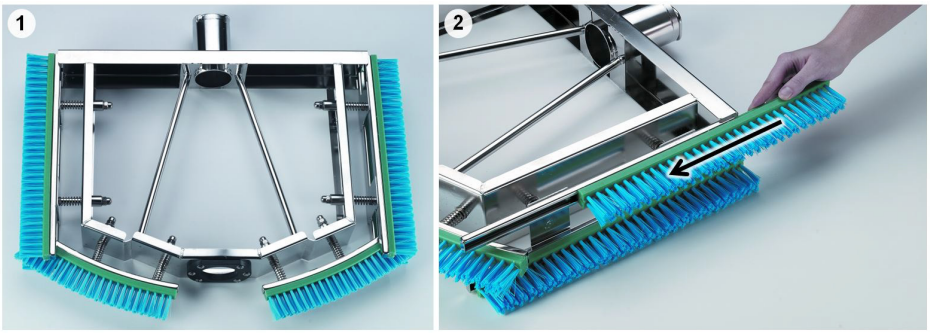


Fig. 0-56

ID: 0000000072-EN-002

Sieve plate

⚠ CAUTION!

It is important that the sieve plate is in contact with the pouring lip throughout its entire length and that the correct size of plate is used.

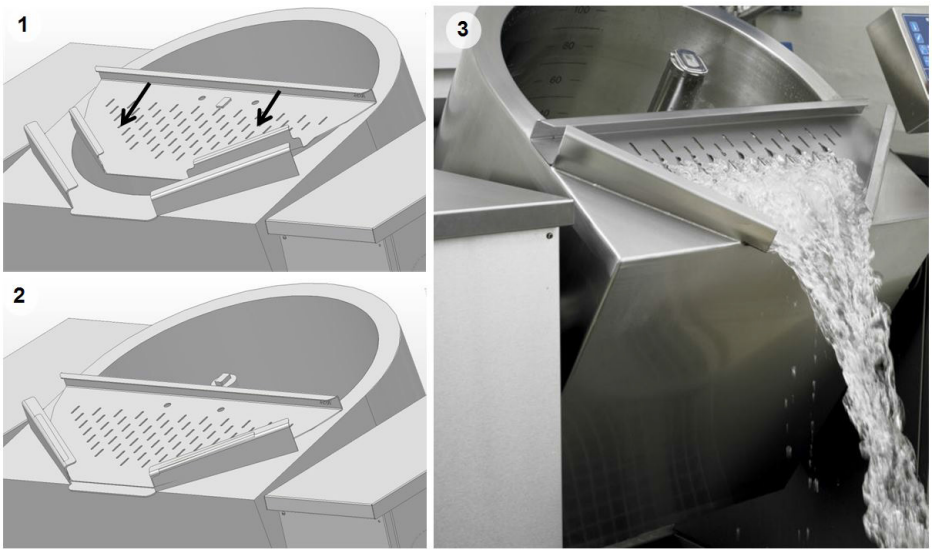


Fig. 0-57

ID: 0000000073-EN-002

Pouring plate

⚠ CAUTION!

It is important that the pouring plate is in contact with the pouring lip throughout its entire length and that the correct size of plate is used.

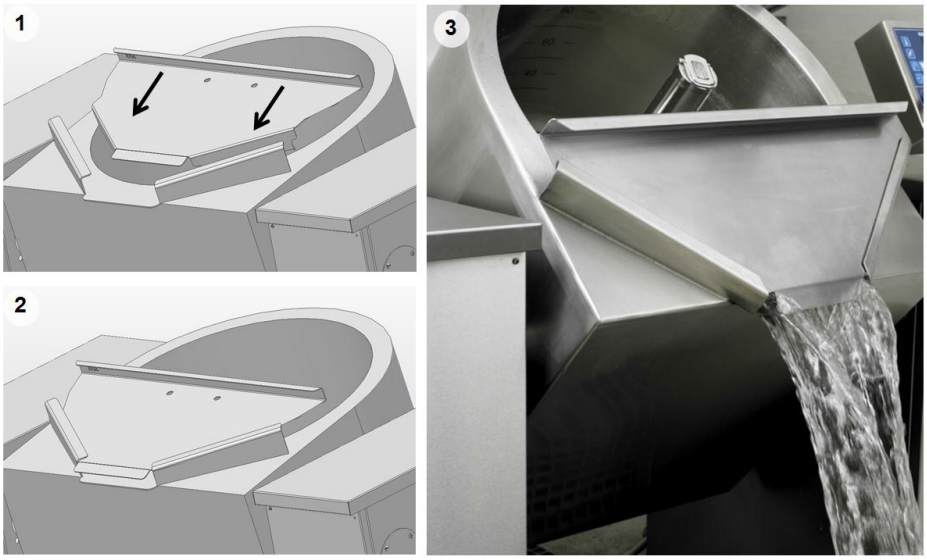


Fig. 0-58

ID: 0000000099-EN-003

Cooking basket

⚠ CAUTION!

Do not fill the basket too much or use lifting equipment to avoid heavy lifting and back injuries.

Fig. 0-59 Cooking basket

Use cooking baskets when you want to lift the food out of the kettle. Hook the accompanying handles to the basket in order to lift the basket.

ID: 0000000414-EN-002

Measuring rod

NB!

The measuring rod must not be used together with the stirrer.

Fig. 0-60

Container holder

ID: 0000002716-EN-001

Using container holders for proportioning

Place the container on the holder and tip the kettle until the desired quantity is poured.

NB!

The TiltBack function should be on, to prevent overrun. This is especially useful when filling smaller containers.

⚠ CAUTION!

Max. 20 kg load.

⚠ CAUTION!

Be careful of splattering of the hot contents.

ID: 0000002788-EN-001

⚠ CAUTION!

All fittings must be in a locked position before the container holder is used.

ID: 0000001295-EN-003

Mounting container holders on kettles with a round front edge

For proportioning

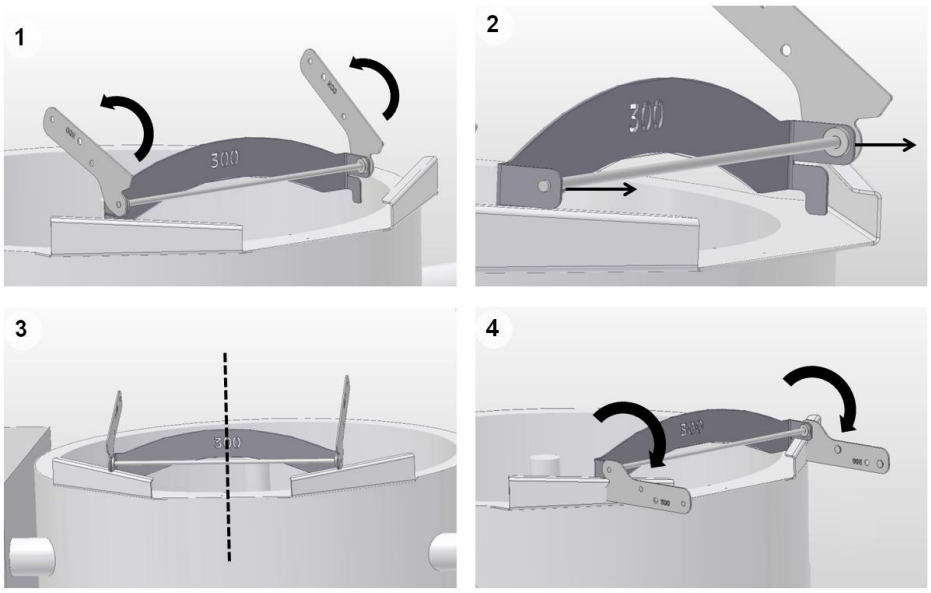


Fig. 0-61

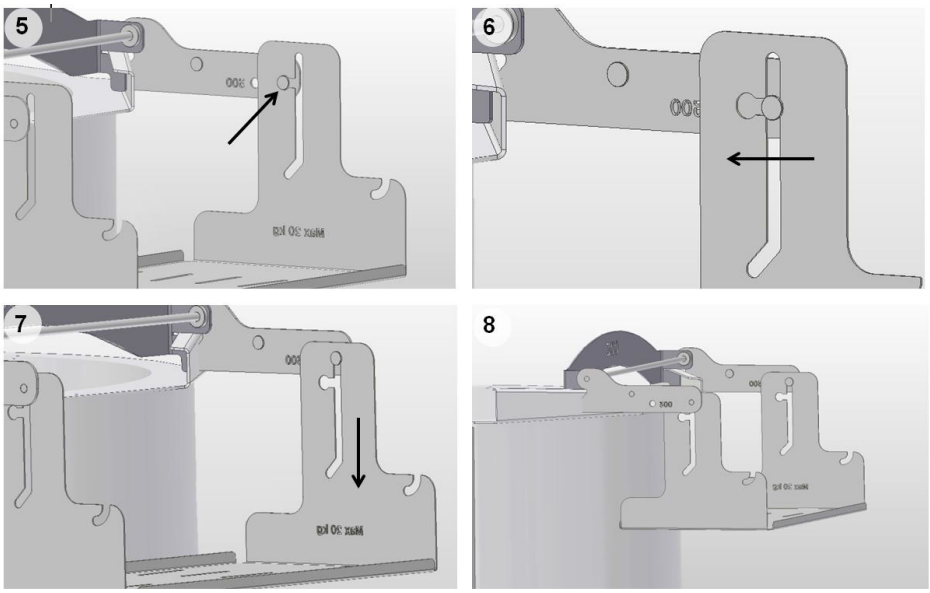
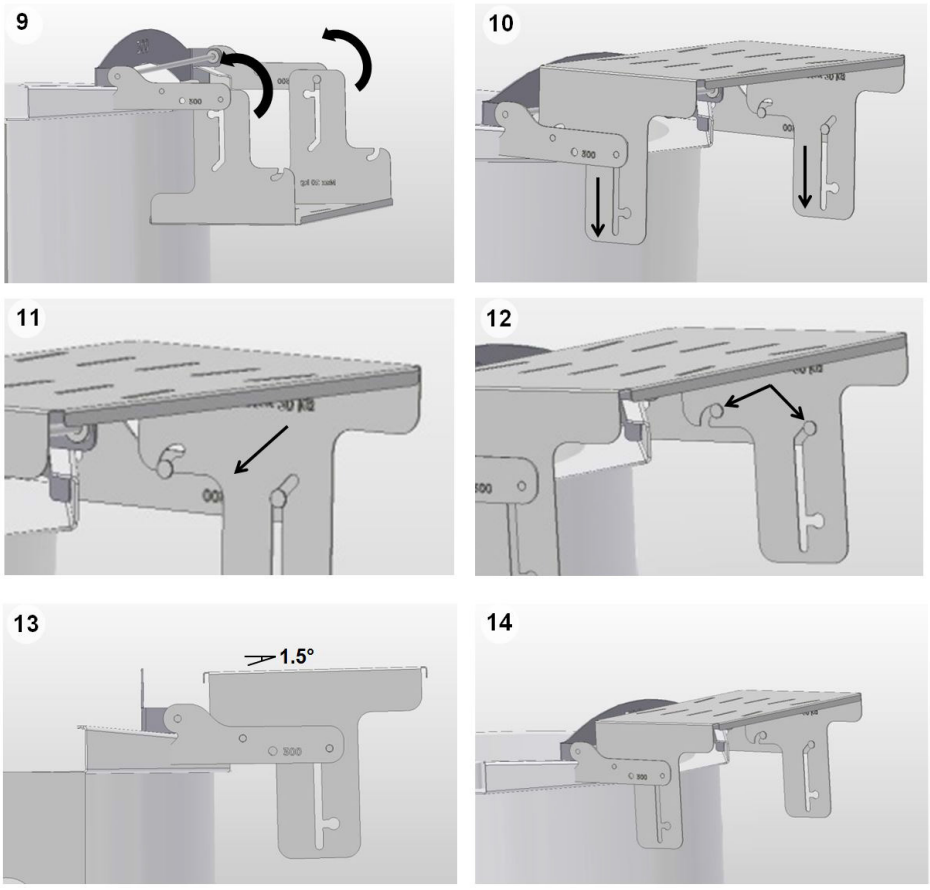


Fig. 0-62

For filling

For kettles with a round front, the container holder can also be used as a table for laying utensils and the like.



ID: 0000002705-EN-001

Mounting container holders on kettles with a flat front

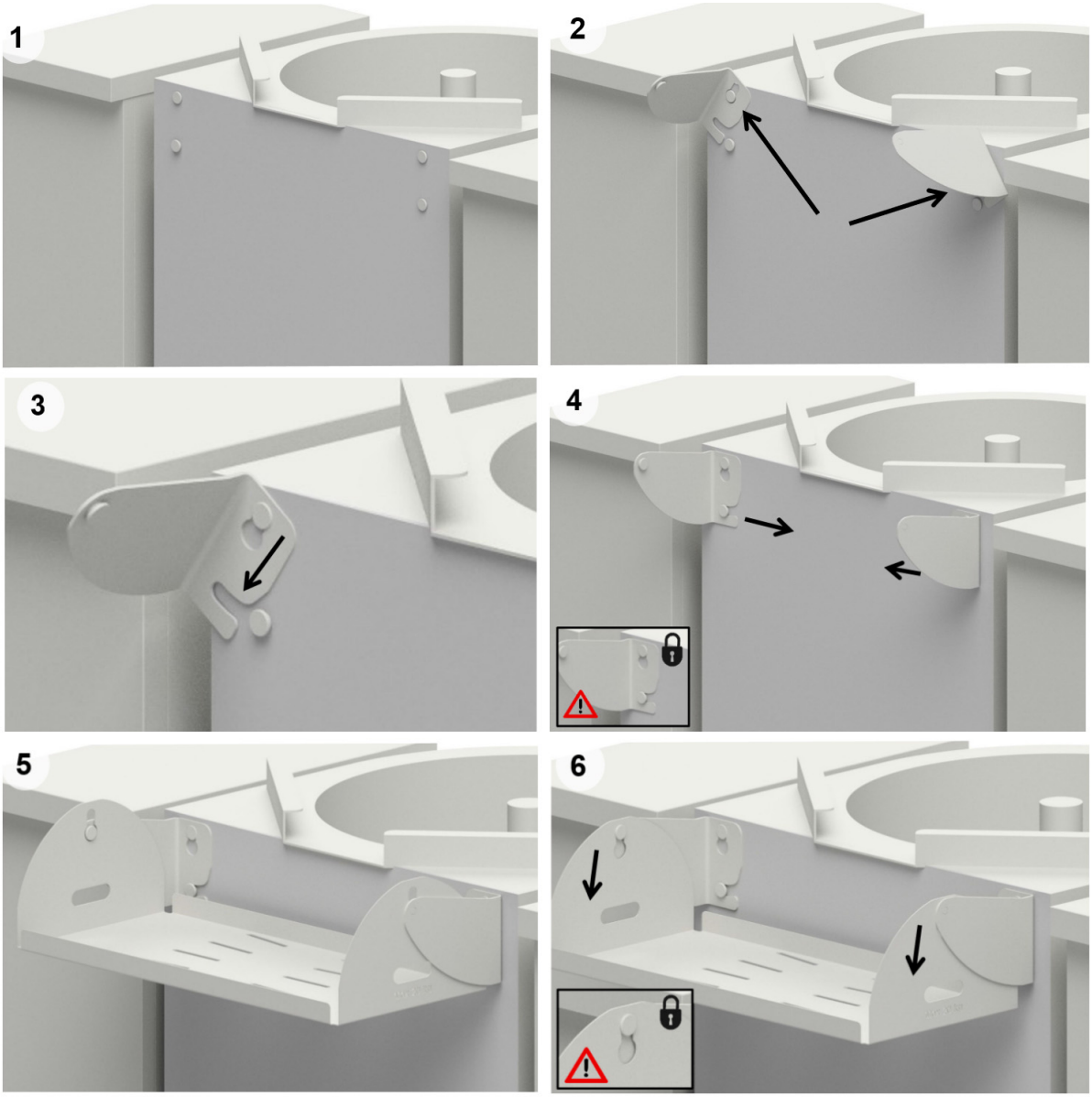


Fig. 0-63 Fastening container holders on kettles with a flat front

Output for temperature logging

ID: 0000000379-EN-003

Depending on the contents of the kettle and stirring there may be a difference between the temperature shown in the display and the actual temperature of the food when cooling the food. It is therefore important to check the temperature of the food using a temperature measurement made directly in the food.

ID: 0000000415-EN-004

The temperature sensor is installed in the kettle. The end-user is responsible for connecting a data logging system.

Connecting a temperature logging system means the food-temperature readings can be stored electronically. The temperature is measured on the steel jacket immediately on the other side of the food.

ID: 0000000834-EN-002

When the cooling or heating is active, a signal can be used to start a data logger ensure the relevant data is logged.

ID: 0000000418-EN-004

Spray gun

NB!

Always close the mixing tap after using the spray gun.

⚠ CAUTION!

The spray gun may only be used to clean the kettle.

ID: 0000001476-XX-001

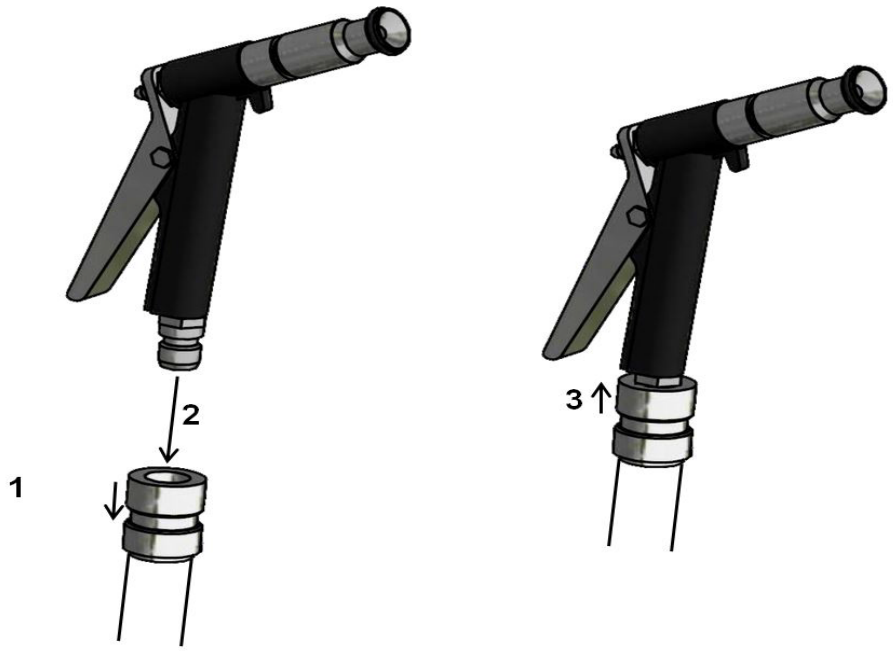


Fig. 0-64

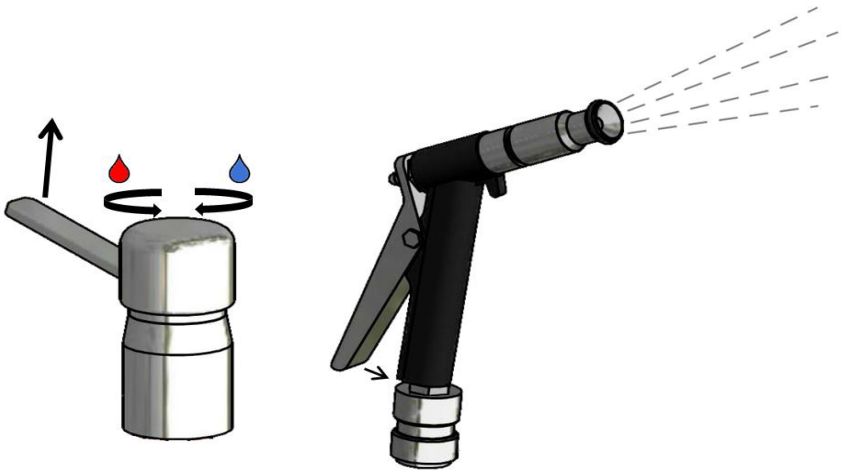


Fig. 0-65

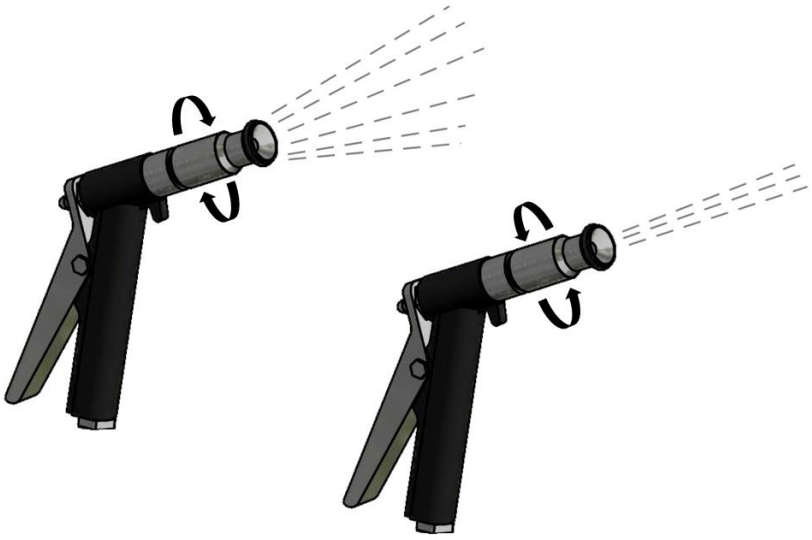


Fig. 0-66

ID: 0000000419-EN-003

Tool trolley

Fig. 0-67

⚠ CAUTION!

Max load on each side is 20 kg.

ID: 0000001316-EN-002

Wall bracket

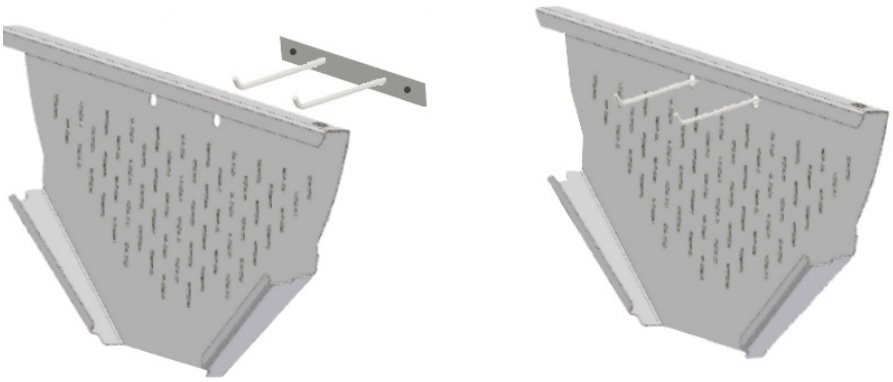


Fig. 0-68

⚠ CAUTION!

Max load 20 kg.

Foot pedal

ID: 0000000848-EN-006

The foot pedal allows you to control tilt, tilt-return, water filling and SlowMix.

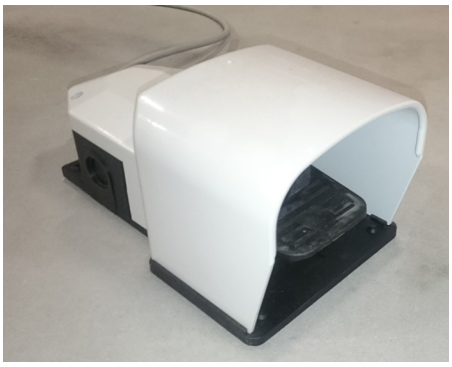


Fig. 0-69

The foot pedal is operated by placing the foot pedal on a flat, firm surface.

Insert your foot so that it strickes the activation pole and the foot is then pressed downwards towards the pedal to activate the switch.

The foot pedal is deactivated by lifting the foot away from the pedal.

Tilt

Connect the foot pedal and tilt function by pressing the key and hold the key while the foot pedal is activated.

Tilt will now be activated every time the foot pedal is activated.

Tilt-return

Connect the foot pedal and tilt-return function by pressing the key and hold the key while the foot pedal is activated.

Tilt-return will now be activated every time the foot pedal is activated.

Water filling

Connect the foot pedal and water filling function by pressing the key and hold the key while the foot pedal is activated.

Water filling will now be activated every time the foot pedal is activated.

SlowMix

Connect the foot pedal and SlowMix fuction by pressing the key and hold the key while the foot pedal is activated.

SlowMix will now be activated every time the foot pedal is activated

The current function-pedal connection will be deactivated if the foot pedal has not been activated for 60 seconds or if another function connection is chosen.

ID: 0000000851-EN-003

If the foot pedal is pressed hard to the bottom, the appliance emergency stop will be activated. The appliance will then have to be restarted.

Drain tap, Echtermann type

ID: 0000001025-EN-003

NB!

Note that there may be food inside the tap/valve, that is not as prepared as the other content.

ID: 0000001026-EN-003

⚠ CAUTION!

Check the tap/valve gaskets for damage before use.

ID: 0000001479-XX-001

Fig. 0-70

ID: 0000000858-EN-003

Mounting of drain tap, Echtermann type

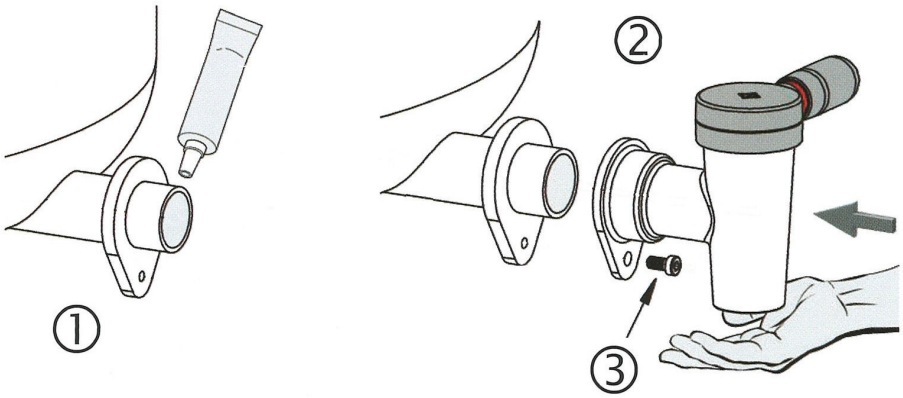


Fig. 0-71

ID: 0000000859-EN-003

Operating the drain tap, Echtermann type

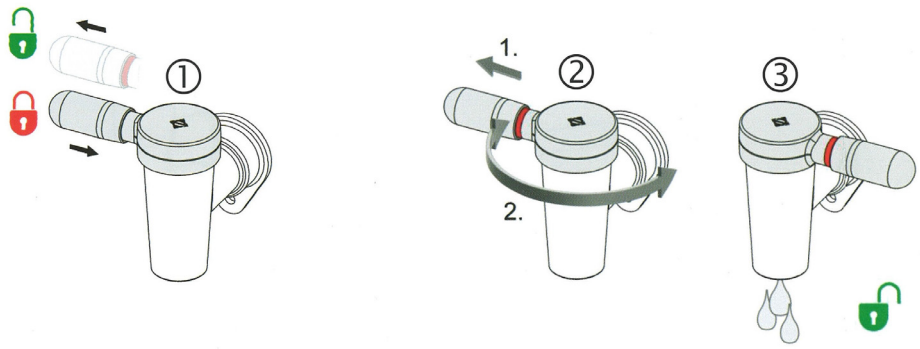


Fig. 0-72

ID: 0000000861-EN-004

Lubricate the drain tap, Echtermann type

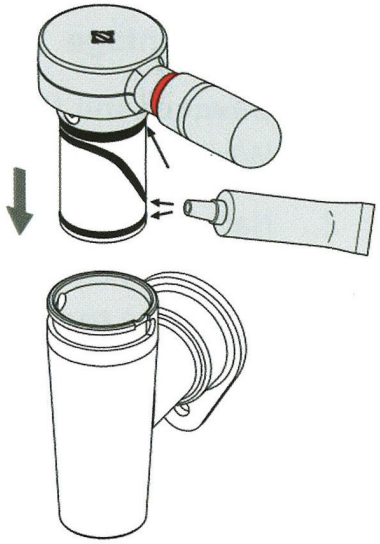


Fig. 0-73

Lubricate the tap gaskets using special grease before use.

Drain tap, butterfly valve type

ID: 0000001025-EN-003

NB!

Note that there may be food inside the tap/valve, that is not as prepared as the other content.

ID: 0000001026-EN-003

⚠ CAUTION!

Check the tap/valve gaskets for damage before use.

ID: 0000001478-XX-001

Fig. 0-74

ID: 0000000913-EN-003

Procedure to open the butterfly valve

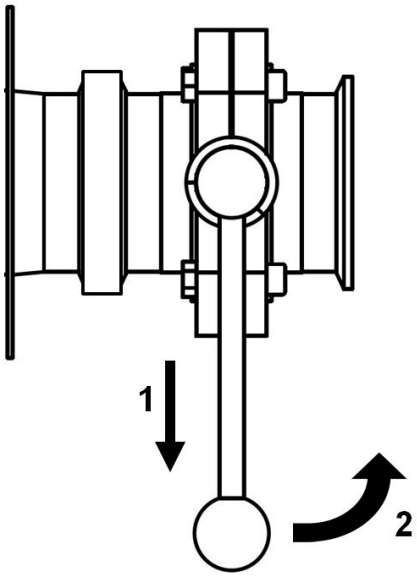


Fig. 0-75

Fig. 0-76 Open

ID: 0000000912-EN-003

Procedure to close the butterfly valve

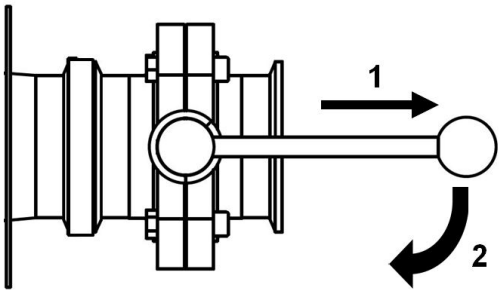


Fig. 0-77

Fig. 0-78 Closed

ID: 0000000533-XX-001

Cleaning

ID: 0000000905-EN-003

NB!

When cleaning the drain valve, ensure that the valve and connecting pipe to the kettle are also cleaned.

Appliance

ID: 0000000203-EN-004

NB!

Cleaning water must never be left in the kettle bowl. The kettle should always be fully tilted after cleaning and the bowl subsequently dried off.

NB!

Never use steel wool or steel sponge to clean the kettle.

NB!

Never clean the appliance by hosing down.

NB!

Never use detergent containing chlorine.

The whole appliance may be rinsed using the mounted spray gun or a similar spray gun. Ensure that the water does not enter the appliance.

For the kettle and separate parts the following cleaning procedure is recommended:

1) Rinse off large food scarps from the kettle.
2) Apply detergent manually Ecolab Sopal or apply foam e.g. Ecolab Sopal.
3) Allow the detergent to work for the recommended time.
4) Rinse thoroughly with water.
5) Disinfect the kettle manually e.g. by applying Ecolab Sirafan.
6) Allow the detergent to work for the recommended time.
7) Rinse thoroughly with water.
8) When the kettle is not being used for a longer period of time, you may need or to treat the stainless steel, stainless steel care as f. ex. Ecolab Cromol can be used.

Parts of stainless steel can be cleaned with a non-abrasive nylon sponge or similar. Parts of synthetic material such as electrical operating handles, membrane keypads, etc. must be cleaned with a cloth.

Separate parts

Sieve plate, pouring plate, GN-support, measuring rod, stirring tool, cooking basket and cover for inspection hatch can be cleaned in a dishwasher. Clean the scrapers using detergent intended for plastic. Never use abrasive detergent to clean the scrapers or other synthetic parts.

NB!

When cleaning the stirrer tool, ensure that the inside is also cleaned. Use a tube brush for this.

After cleaning the above-mentioned utensils, store them in a hygienically safe place.

Rotatable lid

ID: 0000001477-XX-001

Fig. 0-79

Cleaning drain tap, Echtermann type

ID: 0000000860-EN-003

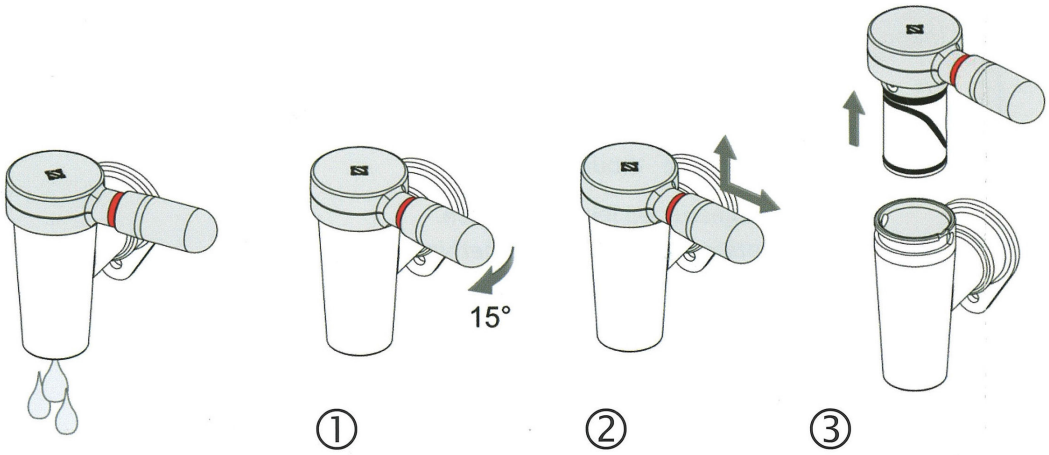


Fig. 0-80 Disassemble the drain tap

1 Turn the handle on the open tap 15°.
2 Pull the handle outwards and upwards.
3 Remove the insert from the tap. Now it can be cleaned.

Cleaning drain tap, type butterfly valve

ID: 0000001324-EN-003

To clean the whole butterfly valve, the valve must be dismantled, as shown in Fig. 0-81
Once all parts have been cleaned, reassemble the butterfly valve.

Fig. 0-81

Regular maintenance

Stirrer tool and whipping tool

ID: 0000000452-EN-003

Scrapers and bushing are wearing parts which must be inspected for visible damage such as notches or changes in the surface, black marks or discolouration, bubbles and deformations. Any damaged parts must be replaced.

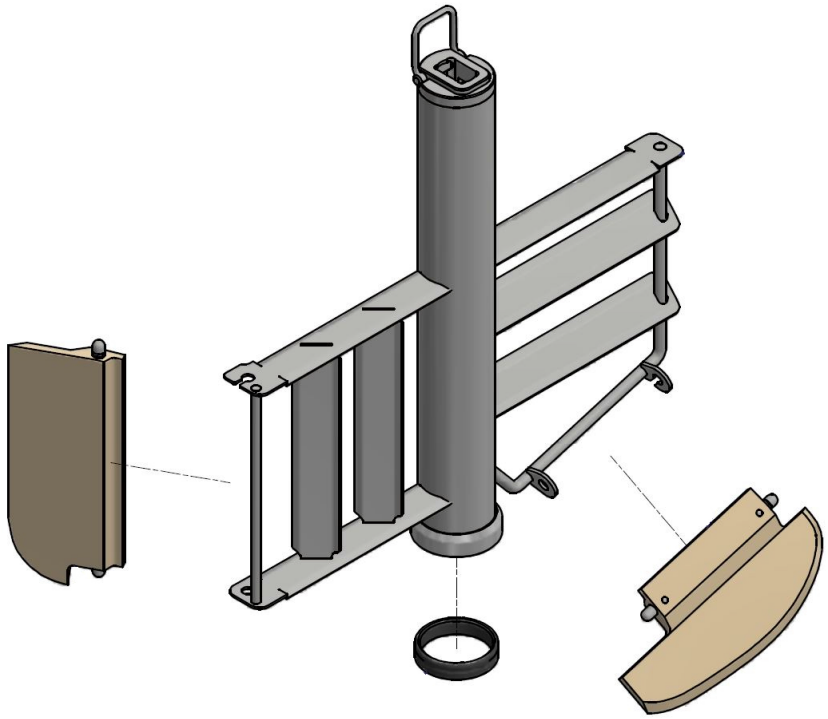


Fig. 0-82

Safety valve

ID: 0000000119-EN-004

⚠ CAUTION!

Exercise caution when the safety valve is open to avoid escaping steam.

The safety valve must be operated every month to ensure that it is operating correctly and that it has not become jammed as a result of limescale deposits, etc. Inspect the kettle's manometer to check that the kettle is without pressure. The valve can then be opened and closed.

The handle must be fully raised and lowered again

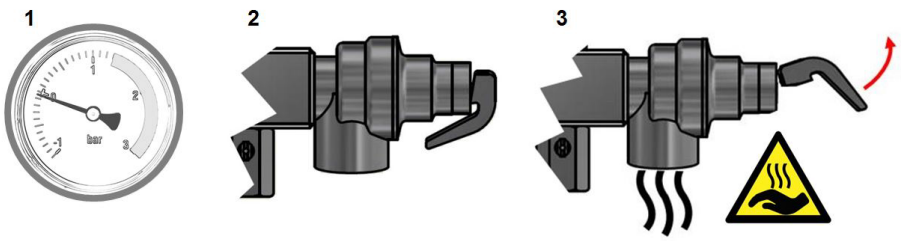


Fig. 0-83

User menu and factory settings menu

ID: 0000000421-EN-003

The kettle's control system depends on a number of parameters which must be set correctly in order for the kettle to work correctly. These parameters are set in the user menu and the factory settings menu. Only the parameters that are relevant to the control of the kettle will be shown. As the parameters in the factory settings menu have an effect on parameters in the user menu, changes must first be made in the factory settings menu.

Before changing any parameters you must be certain that you understand its consequences.

Factory settings menu

ID: 0000000829-EN-003

This group of parameters is set at the factory, so that the settings are appropriate for the kettle's configuration. Furthermore parameters of a more technical kind can be found which normally do not need to be set. These parameters will only need to be set in special circumstances such as when a printed circuit board needs to be replaced.

To access the factory setting menu, pres the standby key ⏻ and then press ↓ and ⏻ simultaneously and hold them down for 10 seconds.
Next, press ↑ and ↓ within three seconds.

ID: 0000000833-EN-002

With the AutoTemp 32, 36, and 56 controllers, the current menu item is shown in the temperature display, while the water display shows the current value. To set the value use the arrow keys and save by pressing water ⏻.

ID: 0000000832-EN-003

With the AutoTemp 16 control, the current menu item and the associated value are shown alternately in the temperature display. To set the value user the arrow keys and save by pressing heating- ⏻.

ID: 0000000831-EN-005

When a value has been saved, the next menu item will appear. The factory settings menu is exited when the last parameter has been saved and the display shows '---'.

The factory settings menu will be cancelled if the user presses ⏻ or if no key is pressed for two minutes.

Item	Description	Selection
00.0	Shows program	
00.1	Shows program version	
51.0	Select whether the units are to be altered	0 = No 1 = Yes Select 1 if 51.1 and 51.2 are to be shown.
51.1	Select temperature unit	1 = Celsius 2 = Fahrenheit
51.2	Select water quantity unit	1 = Litre 2 = UK Gallon 3 = US Gallon
52.0	Select kettle volume	20-600 l
53.0	Select heating type	1 = Electrical heated 2 = Direct steam heated
54.0	Select the maximum allowed jacket temperature	1 - 120° C 33 - 248° F
56.0	Select lid type	0 = separate lid/hinged lid without switch 1 = Hinged lid with switch
60.1	Select safety factor for maximum opening time of solenoid valve	2.0-5.0 1.0 corresponds to 12 l/minute through the valve.
60.2	Select whether a water flowmeter has been fitted	0 = No 1 = Yes
70.0	Select the method for tilting the kettle	0 = No tilt 1 = Electric tilt (actuator) 2 = Hydraulic tilt

80.0	Select whether temperature corrections are to be altered	0 = No 1 = Yes Select 1 if 80.1 - 80.6 are to be shown.
80.1	Select correction for jacket temperature at 10° C/ 50° F	Celsius: -5.0 to +5.0 Fahrenheit: -9.0 to +9.0
80.2	Select correction for jacket temperature at 100° C/212° F	Celsius: -5.0 to +5.0 Fahrenheit: -9.0 to +9.0
80.5	Select correction for food temperature at 10° C/ 50° F	Celsius: -5.0 to +5.0 Fahrenheit: -9.0 to +9.0
80.6	Select correction for jacket temperature at 100° C/212° F	Celsius: -5.0 to +5.0 Fahrenheit: -9.0 to +9.0
85.0	Select cooling type	0 = No cooling/manual cooling 1 = Automatic cooling without recirculation of water 2 = Automatic cooling with recirculation of coolant.
90.1	Select stirrer gearing factor (1:X)	10.0 - 50.0 This parameter must not be set higher than specified in ‘Factory data’
90.2	Select the maximum RPM for the stirrer	50-155 rpm This parameter must not be set higher than specified in ‘Factory data’
91.0	Select whether the kettle is fitted with SlowMix	0 = No 1 = Yes
91.1	Select whether the kettle is fitted with foot pedal	0 = No 1 = Yes

User menu

ID: 0000000835-EN-002

User menu

The user can set this group of parameters to optimize the operation of the kettle to suit their needs. The user menu is activated by switching off the kettle by pressing ⏻ and then press ↑ and ⏻ simultaneously and holding them down for 5 seconds.

ID: 0000000833-EN-002

With the AutoTemp 32, 36, and 56 controllers, the current menu item is shown in the temperature display, while the water display shows the current value. To set the value use the arrow keys and save by pressing water ⏻.

ID: 0000000832-EN-003

With the AutoTemp 16 control, the current menu item and the associated value are shown alternately in the temperature display. To set the value user the arrow keys and save by pressing heating- ⏻.

ID: 0000000837-EN-004

When a value has been saved, the next menu item will appear. The user menu is exited when the last parameter has been saved and the display shows ‘---’. The user menu will be canceled if the user press ⏻ or if no key is pressed for two minutes.

Item	Description	Selection
00.0	Displays program	
00.1	Displays program version	
1.0	Should the passcode function be active?	0 = Inactive 1 = Active
1.1	Select passcode	0000-9999 This item is only shown if 1.0 = 1
2.1	Select return tilt time	0.0 - 3.0 seconds. 0.0 = Off
2.2	Select the delay before return tilt is activated	0.0 - 3.0 seconds This item is only shown if 2.1 is set to be greater than 0.0
3.1	Is water filling permitted with the kettle tilted?	0 = No 1 = Yes
3.2	Is water filling permitted with a closed lid?	0 = No 1 = Yes
4.0	Specify method used to control water quantity. Only relevant when factory settings menu item 60.2 = 0	1 = Estimated water quantity. 2 = Time
4.1	Specify the conversion factor from quantity of water to minutes. Only relevant when user menu item 4.0 = 1.	1.0-999.9 units, e.g. litre/minute. Adjust until the water quantity is appropriate.
4.2	Select the number of impulses from the water-flow meter per litre. Only relevant when factory settings menu item 60.2 = 1.	0.1-999.9 Adjust until the quantity is appropriate. See the formula for calculating a new constant in the service instructions.
4.3	Specify the factor for the number of impulses from the water flow meter selected in the user menu, item 4.2	1.0-100.0
5.1	Select the cooling power for water-saving cooling	1-9 When this value is set to 9, the water quantity will not be reduced.
6.1	Select the rpm for PowerMixing	5-80 rpm
6.2	Select max. rpm for SlowMix Only relevant if factory settings menu item 91.0 = 1.	5-20 rpm. 30 only for test purpose.
7.0	Select the type of acoustic signal	0 = No signal 1 = Beeper sounds periodically
8.0	Specify whether programs are to be written to the internal memory. This must be performed when commissioning new controllers. The programs will then be generated and all variants will be set to their default values. Ensure that all items in the factory settings menu are set correctly before this item is carried out.	0 = No 1 = Yes

Maintenance, troubleshooting and repair in general

ID: 0000000662-EN-003

DANGER!

For 15 minutes after the power supply has been disconnected high voltages will still be present on the frequency converters.

ID: 0000000644-EN-002

WARNING!

In accordance with EN 60204-1, orange wire is used for external control signals and these are not interrupted by the power supply disconnector switch. This means that these wires may be live after the supply disconnector switch is switched off.

ID: 0000000642-EN-002

WARNING!

Only suitably qualified personnel may carry out maintenance, troubleshooting and repair work.

ID: 0000000675-EN-003

WARNING!

Before working on the appliance, all supply disconnector switches must be disconnected and locked with a padlock.

ID: 0000000680-EN-002

WARNING!

Exercise caution - crushing hazard!

ID: 0000000643-EN-002

CAUTION!

There is a large amount of steam and hot water in the appliance's steam chamber. Exercise caution, for example when using/removing the appliance's bottom plug, valves, level switch or handles.

ID: 0000001431-EN-002

WARNING!

Before carrying out maintenance, troubleshooting or repairs, it may be necessary to support the kettle to prevent it from tilting or falling down accidentally. The support must be safe and secure at all times.

Kettle support

ID: 0000001237-EN-002

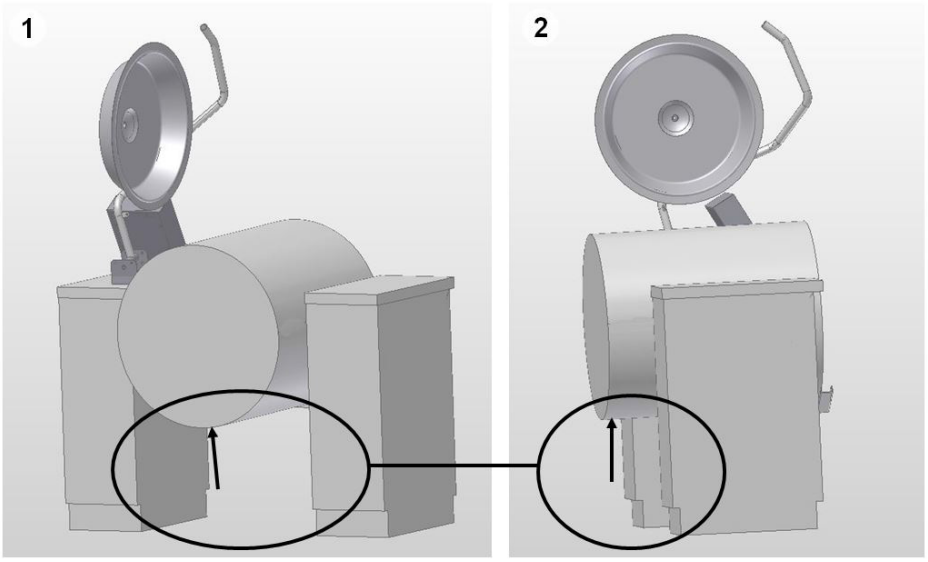


Fig. 0-84 Point for support, when the kettle is tilted

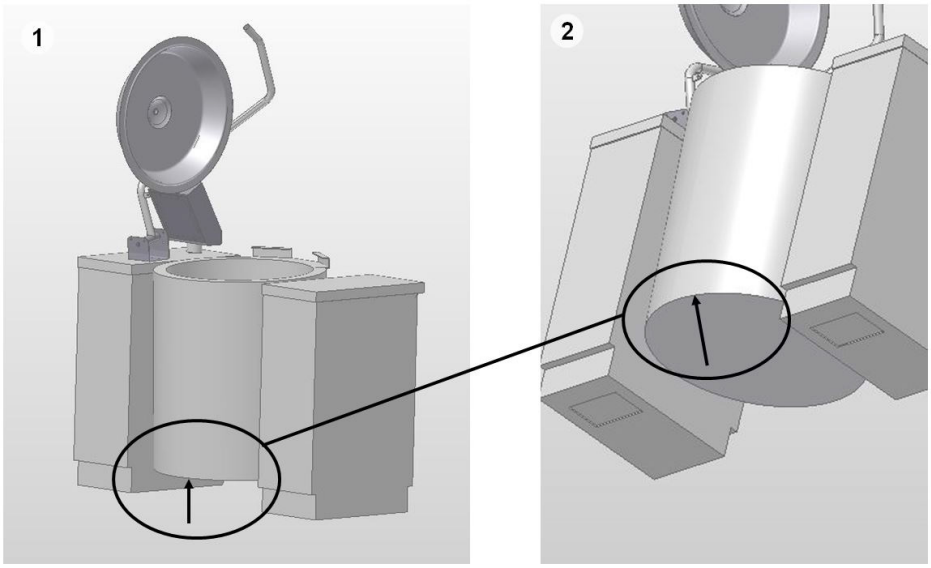


Fig. 0-85 Point for support, when the kettle is not tilted

Function principles

ID: 0000000635-EN-003

Electrical heating

A steam generator is built into the bottom of the kettle. The heating elements heat the water, turning the water into steam. The steam rises up along the inside of the kettle, where it condenses due to the temperature difference and gives off energy to the stainless steel. The condensate then runs back to the steam generator, where it is reheated and turned back into steam.

The energy supply is adjusted electrically.

Pressure switches and a safety valve ensure that the pressure in the kettle remains at a safe level.

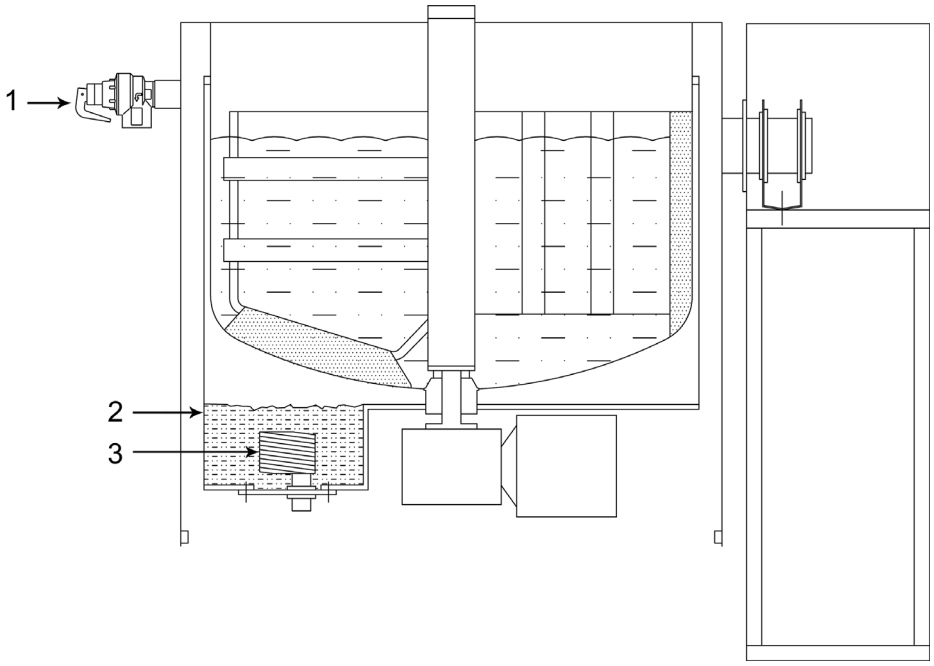


Fig. 0-86 Principle of electric-heated kettle

1 Safety valve
2 Steam generator
3 Heating elements

ID: 0000001277-EN-002

The water level in the steam generator is monitored by the kettle control system and water is added automatically when required.

ID: 0000000636-EN-004

Steam heating

Steam enters the kettle via an external steam unit and rises up along the inside of the kettle where it condenses due to the temperature difference and releases energy to the stainless steel.

The condensate drips down to the bottom of the kettle bowl where the steam pressure in the kettle forces it through a water/condensate trap. The condensate returns to the external steam unit.

The supply of steam is regulated by a valve.
A safety valve in the fixed installation ensures that the pressure in the kettle remains at a safe level.

⚠ DANGER!

The safety valve installed on the kettle does not protect the kettle from excessively high pressures inside the kettle caused by a defect in the fixed installation.

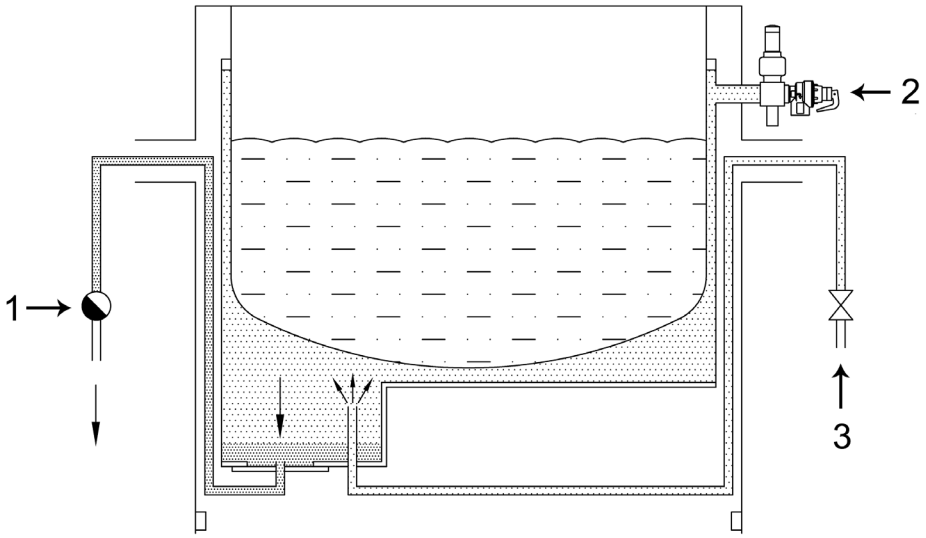


Fig. 0-87 Heating function for direct steam heated kettle

1 Steam trap
2 Safety valve
3 Steam

ID: 0000000637-EN-001

Steam trap (venting valve)

The steam trap allows air to escape when the kettle is heated, so that there is saturated steam in the steam jacket. During use, the steam trap will open regularly to ensure that there is pure steam in the steam jacket. This means that a little water may run out of the steam trap during use.

ID: 0000000638-EN-001

Vacuum valve

The vacuum valve allows air in when the kettle cools, so that a negative pressure is not created in the steam jacket.

Drawings and diagrams

ID: 0000001135-EN-001

See Appendix.

Maintenance

ID: 0000000122-EN-004

⚠ WARNING!

Thorough maintenance must be carried out on the appliance regularly to ensure maximum operational and personal safety. The essential maintenance that is described below must be carried out by the owner/user of the appliance. Failure to carry out this essential maintenance renders the manufacturer's liability void.

ID: 0000002752-EN-001

The kettle is a CE marked pressure vessel approved for 1.3 bar in accordance with the Pressure Equipment Directive.

There may be national rules for installation and operation that need to be observed.

ID: 0000001107-EN-003

Annual maintenance

ID: 0000001216-EN-002

Depending on how much the appliance is used, some items will need to be carried out more often than others.

When the inspection is started, the kettle must be empty.

Check all points and replace/repair if necessary.

Function

ID: 0000001509-EN-001

- Check emergency stop function. See ‘ Checking the emergency stop‘, page 117.

ID: 0000001510-EN-001

- Check the controllable non return valves. See ‘ Checking the steam generator non-return valve‘, page 121.

ID: 0000001511-EN-001

- Check that the pressure gauge reads 0.9-1.0 bar when the kettle is empty and has been at maximum temperature for approximately 5 minutes.

ID: 0000001513-EN-001

- Check that the stirrer stops when the lid is opened.
  See ‘ Checking that the stirrer stops when opening the lid‘, page 118.

ID: 0000001514-EN-001

- Check the SlowMix’s safety function. See ‘ Checking the safety function of SlowMix‘, page 118.

ID: 0000001516-EN-001

- Check over-pressure switch, safety valve, vacuum valve and pressure gauge. See ‘ Testing the over-pressure switch, vacuum valve and safety valve‘, page 113.

Mechanical

ID: 0000001517-EN-001

- Check that all controls are intact.

ID: 0000001518-EN-001

- Check that there are no loose or worn components, or other conditions that affect the safety condition of the appliance.

ID: 0000002105-EN-001

- Check that the appliance is still firmly attached to the floor.

ID: 0000001520-EN-001

- Check that the top of the kettle is horizontal in the normal position. See ‘ Adjusting tilting‘, page 119.

ID: 0000002695-EN-001

- Check that posts on legs are plumb and level, that the legs do not move while the machine is operating and that all nuts and bolts on the legs are tightened. See Checks, page 33.
  Check that all bolts in the cross bar behind the kettles are tightened. See Setting up kettles on legs, page 22.

ID: 0000001521-EN-001

- Check that the lid is closing properly. See ‘ Adjusting the lid‘, page 121.

ID: 0000001522-EN-001

- Check that no water has seeped into the pillars, where it could cause damage. Any water in the bottom of the pillars must be removed.

ID: 0000001523-EN-001

- Check that the gaskets on all cover plates are intact.

ID: 0000001524-EN-001

- Check that the seals between the floor and pillars are intact.

ID: 0000001525-EN-001

- Check the dry-boiling thermostat. See ‘ Replacing the dry-boil thermostat‘, page 144.

ID: 0000001526-EN-001

- Check hoses for damage.

ID: 0000001527-EN-001

- Clean filters in water system. See ‘ Cleaning the filter of the water system‘, page 115

ID: 0000001528-EN-001

- Clean the steam generator of any sediment/lime scale deposits. To access to the steam generator see ‘ Replacing the heating elements‘, page 143.

ID: 0000001529-EN-001

- Clean up the level-switch housing of any sediment/lime scale deposits. See ‘ Replacing the level switch‘, page 143.

ID: 0000001530-EN-001

- Check the water installations in the pillars for leaks.

ID: 0000001543-EN-001

- Check that the potential equalisation is working.

ID: 0000001531-EN-001

- Check the internal protective conductor. See ‘ Checking the continuity of the protective conductor‘, page 116.

ID: 0000001532-EN-001

- Inspecting the electrical connections. See ‘ Inspecting the electrical connections‘, page 116.

ID: 0000001533-EN-001

- Visual inspection of emergency stop circuit. See ‘ Checking the emergency stop‘, page 117.

ID: 0000001534-EN-001

- Inspect labels. See ‘ Checking labels‘, page 118.

ID: 0000001535-EN-001

- The hydraulic tilt cylinder must be lubricated using the same type of hydraulic oil that is used in the hydraulic pump.

ID: 0000001536-EN-001

- Remove the gear motor, lubricate the stirrer shaft and reinstall the gear motor. This will prevent fretting corrosion and ensure the easy replacement of bearings. See ‘ Replacing bearings, sealing rings and stirrer slide washer‘, page 146.

ID: 0000001537-EN-001

- Dismantle the water spout. Check for dirt and wear.

ID: 0000001538-EN-001

- Check to ensure that the lid closes tightly against the inner washer in the center (only applies to for 40-300 l).

ID: 0000001539-EN-001

- Check that hoses are not rigid or broken; especially the hoses in the bottom of the kettle.

Description of inspection

ID: 0000000197-EN-004

Testing the overpressure switch, vacuum valve and safety valve

DANGER!

This test may only be carried out by trained personnel, familiar with the appliance and pressure equipment.

DANGER!

A separate manomter must be fitted during the test procedure.

DANGER!

The pressure inside the kettle must never exceed 1.43 bar. If the pressure is exceeded, stop the test immediately.

DANGER!

The pressure inside the kettle must never fall below -0.3 bar. If the pressure falls below -0.3 bar, stop the test immediately and open the safety valve.

CAUTION!

Exercise caution and avoid escaping steam when the safety valve is opened.

NB!

If national regulations deviate from the following, the national regulations must always be followed.Please check with the National Working Environment Authorities, whose regulations must be followed.

Before the kettle is used for the first time and at least annually thereafter, a test must be performed to ensure that the safety pressure switch and the safety valve are working correctly. A record must be kept of this test. See ‘ Inspection record‘, page 149.

ID: 0000000198-EN-006

Testing electrically heated kettles

The kettle must be in the vertical position and in heating mode when this test is performed.

1) Install a separate control manometer on the ball valve on the rear of the kettle. Open the ball valve. Ensure that the manometer reading is visible at all time during the test.

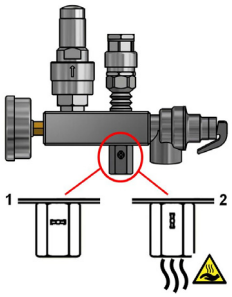


Fig. 0-88 Ball valve for control manometer

1 Test ball valve open
2 Test ball valve closed

2) Check that the manometer reads 0 bar when the kettle is cold.
3) Operate the safety valve, see ‘ Safety valve‘, page 102
4) Remove the mounting pillar front cover, to gain free access to test button “S4”
The button position differs from model to model, but it is always labelled “S4”.

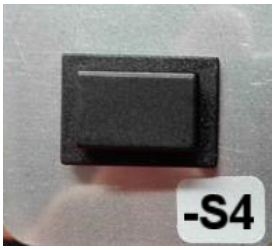


Fig. 0-89 Test button “S4”

5) Empty the contents of the kettle and turn the heat to its highest setting. Wait until the pressure in the steam jacket is 0.9-1.0 bar.
6) Press heat function key (AutoTemp 56) or (AutoTemp 16, 32 and 36) and heating on/off key simultaneously and hold the two keys down throughout the entire process. After 5 seconds, the LED will start to flash rapidly.
Heat will now be supplied to the kettle.
7) Deactivation of the safety pressure switch is indicated by the temperature flashing in the display. This occurs at approximately 1.2 bar.
8) Press test button “S4” and also hold this down throughout the rest of the process.
9) Continue the heating process by holding down all three keys. The safety valve should now activate at around 1.3 bar.
10) Continue heating and check that the pressure does not exceed 1.43 bar.
If the pressure exceeds 1.43 bar stop the test by releasing all keys/buttons and open the safety valve - exercise caution!
If the pressure does not drop, fill the kettle with cold water.
11) Release the test button “S4” when you are certain that the pressure is no longer rising.
12) Release the other two other keys.
13) Wait for the kettle to cool down. When the safety pressure control activates at approximately 0.8 bar, the safety valve will close. The kettle will then be ready for use again.
14) Check that the vacuum valve is working correctly. Heat an empty kettle until the pressure reaches 0.8-1.0 bar. Switch off the heat and fill the kettle with cold water, so that it is cooled. If the pressure drops below -0.3 bar the vacuum valve must be replaced.

If the kettle is switched off before the safety pressure control is engaged error E99 will occur. The procedure is then to switch off the supply to the kettle and wait until the pressure has dropped to below 0.8 bar.

ID: 0000000429-EN-004

Steam-heated kettles

To operate the safety valve on the kettle, see ‘ Safety valve‘, page 102.

With steam-heated kettles, a check must be performed to ensure that the safety valve and reduction valve in the fixed installation upstream of the kettle are working correctly, The procedure for this test depends on the fixed installation. A check must also be made to ensure that the safety pressure switch on the kettle is operating correctly. This can only be done by increasing the pressure in the kettle.

Refer also to the regulations for the fixed installation.

ID: 0000001234-EN-002

NB!

The safety valve on the kettle must not be confused with the steam safety valve that must be installed in the fixed installation.

Inspecting the dry-boiling thermostat.

ID: 0000001212-EN-003

This point only applies to electric-heated kettles.

1) Unscrew the plastic cap.
2) Inspect that the thermostat is undamaged and the gasket packs tight.
3) Screw the plastic cap back on.

Fig. 0-90 Dry-boiling thermostat.

Cleaning the filter of the water system

ID: 0000002102-EN-001

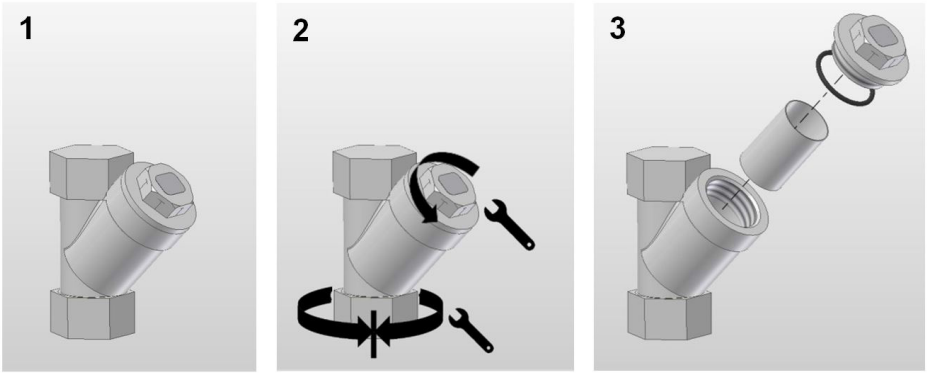


Fig. 0-91

ID: 0000001292-EN-003

Inspecting the electrical connections

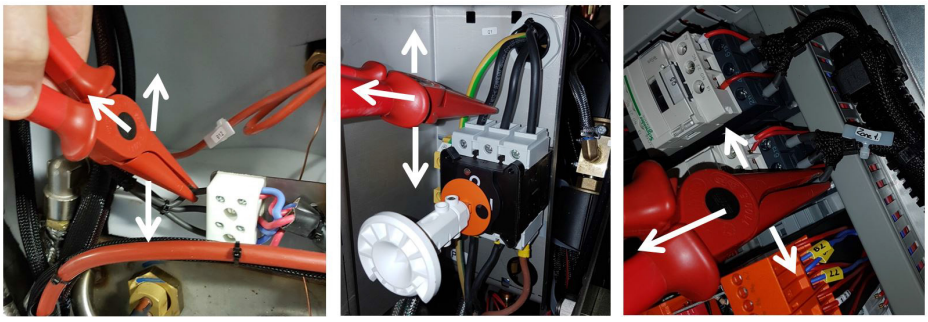


Fig. 0-92

The inspection is performed in the power circuit. Gently pull the wires in all directions using needle-nose pliers.

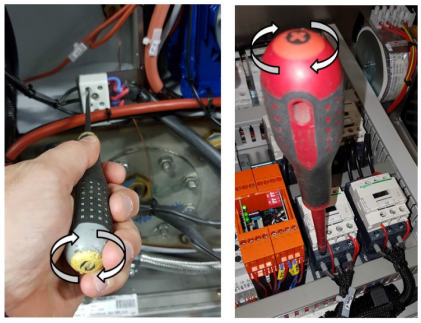


Fig. 0-93

Tighten the wire connections.

ID: 0000001294-EN-005

Checking the continuity of the protective conductor

The internal protective conductor is important for protecting the user from electric shocks and therefore it must be checked annually in accordance with EN 60204-1 section 18.2.

The results must be recorded in Test Record for internal protective conductor, page 149.

ID: 0000001496-XX-001

A ←Ω→ B	≤ 500mΩ
A ←Ω→ C	≤ 500mΩ
A ←Ω→ D	≤ 500mΩ
A ←Ω→ E	≤ 500mΩ

Fig. 0-94

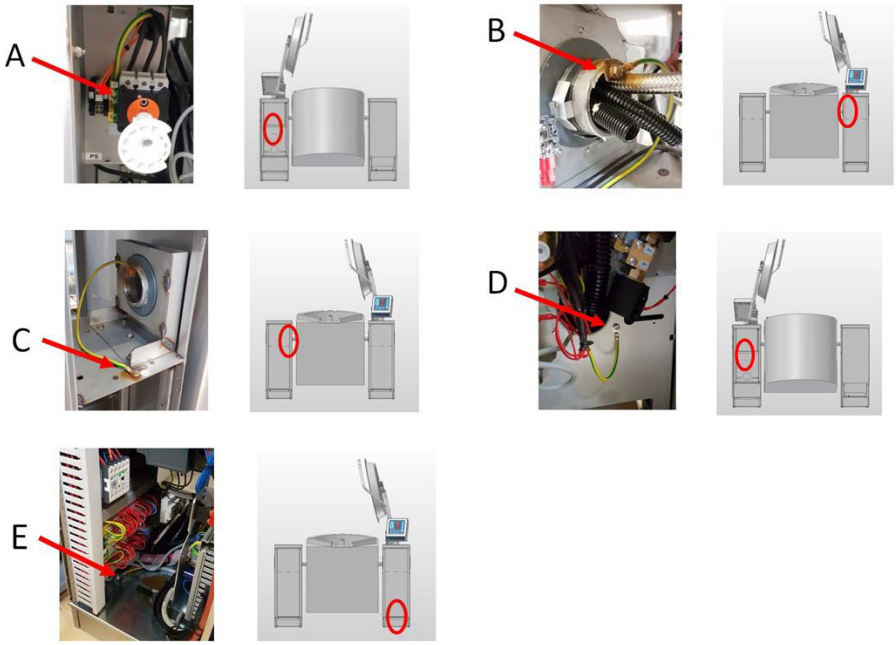


Fig. 0-95

ID: 0000001388-EN-003

Checking the emergency stop

1) Inspect the emergency stop.
   The emergency stop button must appear intact and in good condition.
2) Make sure the contact block on the back of the button is firmly attached.
3) Check all electrical connections in the emergency stop circuit for loose connections, tighten all screw connections. See the electrical diagram for more information.
4) Perform a functional test of the emergency stop:
   Press the emergency stop button until it is activated and make sure it "locks" and remains in the activated position. Check that the appliance has switched off. Turn the emergency stop knob counterclockwise and make sure it returns to the unactivated position. Check that the device can be restarted.

ID: 0000001314-EN-002

Checking that the stirrer stops when opening the lid

1) Close the lid and start the stirrer
2) Open the lid and see that the stirrer stops when the lid is opened 45 mm, measured furthest from the lid hinge.
3) Check that the frequency converter display shows StO.
4) Check that the microswitch is activated when the lid is lowered and is 15-20 mm above the kettle edge. The frequency converter display shows rdy

ID: 0000001313-EN-003

Checking the safety function of SlowMix

⚠ WARNING!

Remove the stirrer before performing this test.

⚠ CAUTION!

Be aware that the rotational speed of the shaft briefly exceeds the maximum permissible speed. Keep to a safe distance!!!

Read all of the following instructions carefully before starting the test.

1) Note the value in the 'User menu' item 6.2.
2) Set the value in the 'User menu' item 6.2 to 30.
3) To activate SlowMix, open the lid completely. The symbol “L” is shown in the display for the stirring pattern.
4) Set stirrer speed to 30.
5) SlowMix is activated by pressing and keeping the function button for SlowMix pressed.
6) Check that error code E70 appears in the kettle display.
7) Check that the frequency converter display shows SAFF.
8) Set value in point 6.2 of the 'User menu' back to the original value (max. 20).
9) Reset the fault by turning off the supply disconnector switch. Wait for the frequency inverter to turn off and on again.

ID: 0000001456-EN-002

Checking labels

Check to ensure that the following labels and their lamination are intact.

ID: 0000001491-XX-001

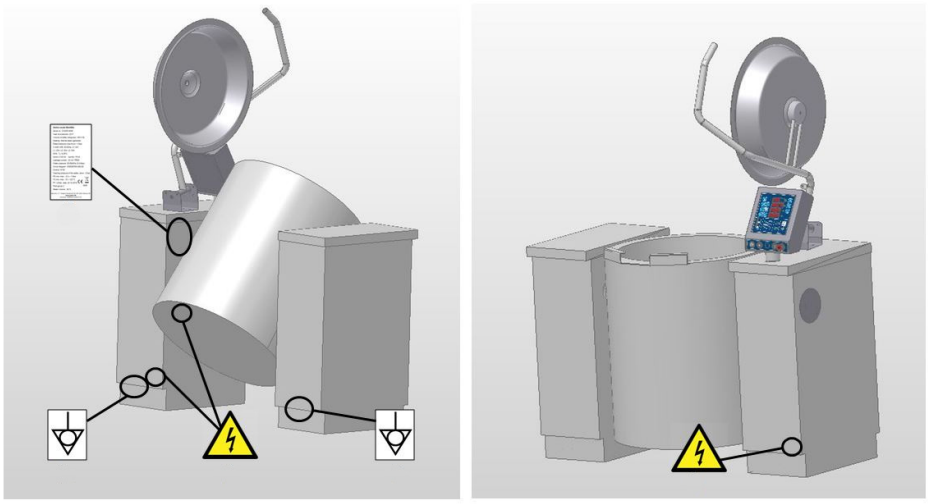


Fig. 0-96

Adjusting tilting

ID: 0000001213-EN-003

Standing actuator

The tilting function can be adjusted as follows:

1) Loosen locknut (1).
2) Adjust the height using nut (2) until the kettle is level.
3) After adjustment, retighten the locknut (1).

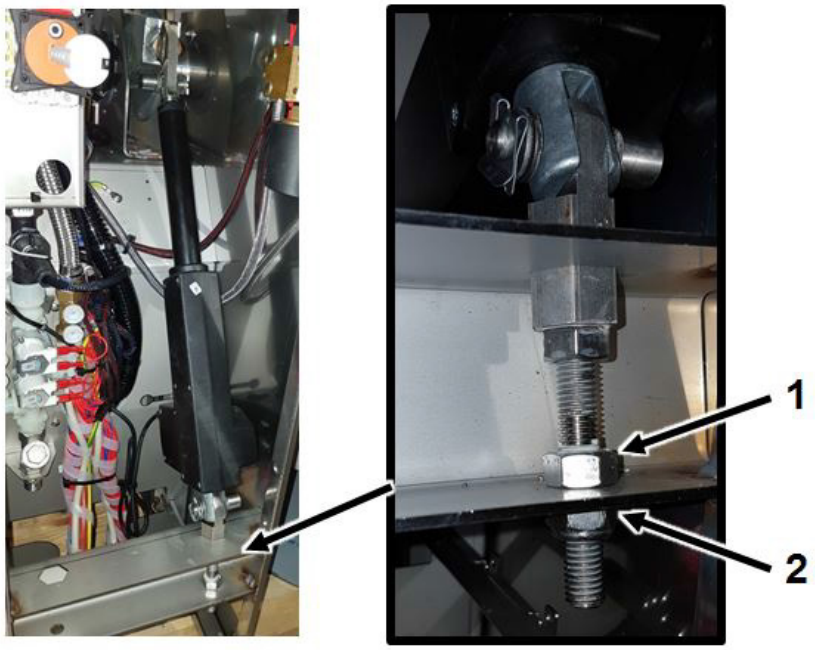


Fig. 0-97 Standing actuator

ID: 0000001214-EN-003

Horizontal actuator

The tilting function can be adjusted as follows:

1) Loosen locknut (1).
2) Adjust the height using nut (2) until the kettle is level.
3) After adjustment, retighten the locknut (1).

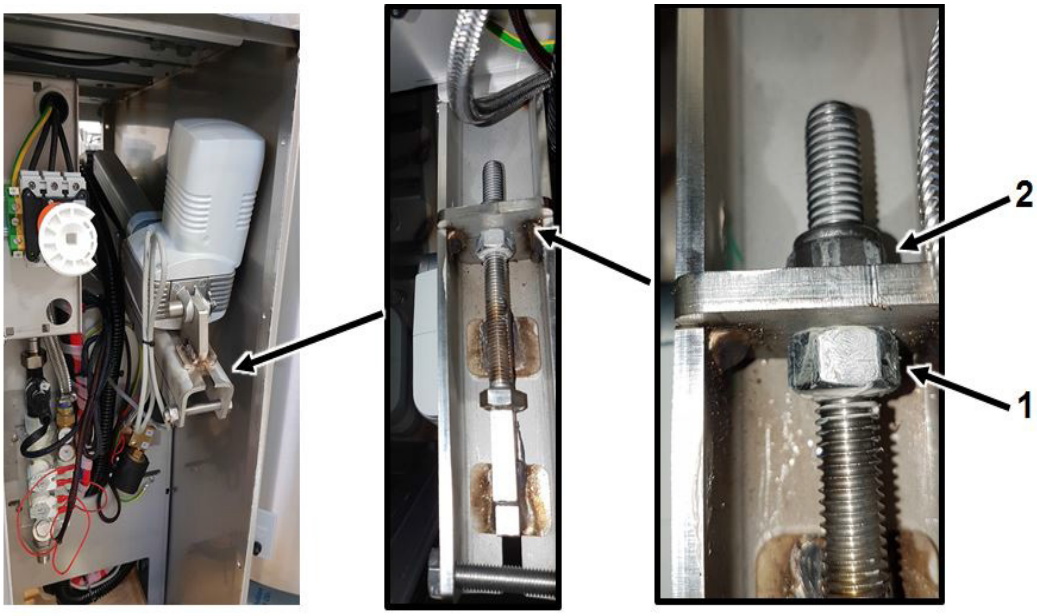


Fig. 0-98 Horizontal actuator

ID: 0000001215-EN-002

Hydraulics

The tilting function can be adjusted as follows:

1) Loosen the nut (1) on both sides.
2) Adjust screws (2) until the kettle is level.
3) After adjusting, retighten the nut (1) on both sides.

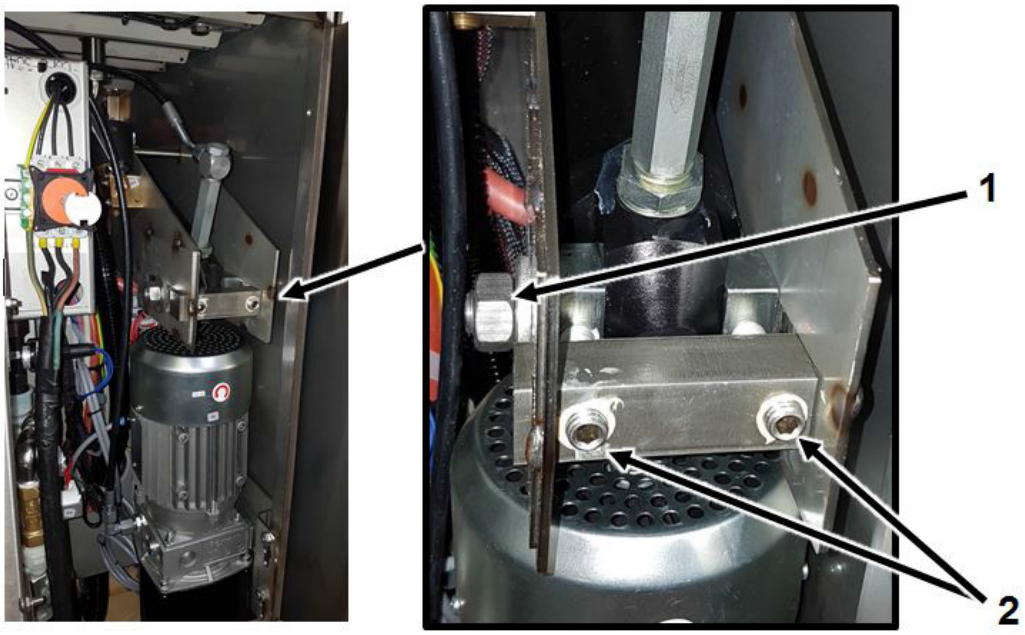


Fig. 0-99 Hydraulics

Adjusting the lid

ID: 0000001198-EN-002

The lid is adjusted by loosening the nut on the top of the lid, placing the lid in the correct position and then tightening the nut again.
If the lid centre does not correspond to the centre of the kettle, loosen the lid console from the underside of the pillar top and align the lid.

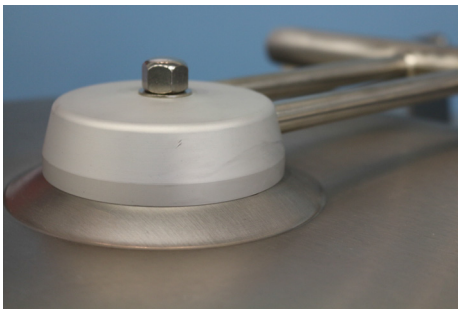


Fig. 0-100

Checking the steam generator non-return valve

ID: 0000000666-EN-005

⚠ CAUTION!

Exercise caution - avoid escaping steam!

The purpose of the non-return valve is to ensure that steam does not flows back into the water system.

1) Turn on the heat.
2) Wait until the reading on the pressure gauge shows approximately 0.5 bar.
3) Turn off the heat.
4) Carefully unscrew position 3 and check that water/steam is not discharged.

⚠ CAUTION!

Do not unscrew the kettle test plug on position 4 as steam will escape here.

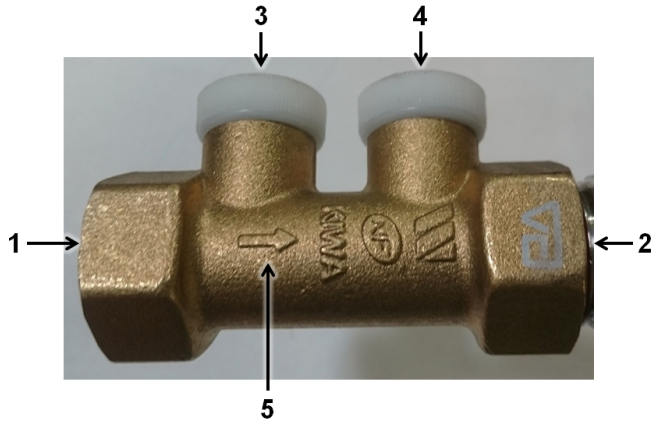


Fig. 0-101 Non-return valve

1 Water supply
2 Supply to kettle
3 Test plug water supply
4 Test plug kettle
5 Arrow for direction

Schedule for replacing wearing parts

ID: 0000001321-EN-002

Wearing parts lifetimes are based on the following assumptions:

The appliance is used 250 days a year.

The appliance is used for 4 portions a day

The operating time for one portion is estimated at 2 hours

ID: 0000001241-EN-002

Component	Lifetime in years (replace at end of life-time)
Contactors, heat	5
Actuators	6
Gas springs	6
Safety valves	10
Vacuum valve	6
Venting valve	10
Stirrer bearings	6

Scrapers	2
Brushes for cleaning tool	2
Drain valve gasket	1
Gaskets for connection to the drain valve	1
Bushings in tools	3
Steam hoses	10
Gaskets for steam hoses	10
Non-return valve in water system	10
Fan, stirrer	5
Fan, steam	5

ID: 0000001320-EN-003

DANGER!

Always use original spare parts when carrying out maintenance and repair tasks.
The manufacturer's liability will be rendered void if non-original spare parts are used and a new risk assessment must subsequently be carried out and documented.

Troubleshooting

ID: 0000001228-EN-002

DANGER!

When troubleshooting it may be necessary to open the appliance to gain access to areas with live parts.

ID: 0000000645-EN-002

DANGER!

The adjustment screws on the pressure switch are live.

ID: 0000000646-EN-002

Always check that the correct voltage is available.

Check the fuses in the fixed installation. Check that the supply disconnector switch is switched on and that the emergency stop is not activated.

To simplify the troubleshooting, all digital inputs and relay outputs are marked with LEDs on the control. LED lights up when input/relay is activated.

ID: 0000000647-EN-001

Fuses

Check the fuses inside the appliance.

There is one fuse on the control current transformer and two fuses on the circuit board.

ID: 0000000648-EN-002

Filters

Note that there are filters placed in front of solenoid valves.

Service menu

ID: 0000000672-EN-004

NB!

Using the service menu may disable the normal safety functions of the kettle. Only qualified technicians who have been trained may use this function.

The 'service menu' is available in kettles with AutoTemp 16, 32, 36, and 56 controls

The controller functions can be checked using the service menu.

To activate the service menu press standby and then press and simultaneously and hold them down for 10 seconds. Subsequently simultaneously press and within three seconds.

The test number and information about the test is shown in the temperature display. The test is activated and de-activated by pressing the heat key.

When the test is not active the number of the desired test can be adjusted by the arrow keys.

To cancel the service menu press . In addition, if no key is pressed for two minutes the service menu will be cancelled.

Test	Description	Function
1	Display test	Press : All segments and dots will light up in all 7-segment characters. Press . All segments and dots will extinguish in all 7-segment characters.
2	LEDs test	Press to toggle between the following conditions: All LEDs illuminated. Heating display: ALL Only LED no. 1 illuminated. Heating display: 1 Only LED no. 2 illuminated. Heating display: 2 … Only LED no. x illuminated. Heating display: 6 No LED's illuminated. Heating display: OFF
3	Keys test	Every time a key is pressed the number of the key is shown in the heating display, until the key is released. By double pressing the number of the individual key is shown by turn. See also ' Checking the membrane keypad‘, page 127. **Note:** • Press the heat to display the number of the key. Release for no longer display the key. Only then the test is completed.
4	Test of PT100 sensor, input 1 Jacket temperature	The heating display is consecutively indicating the temperature measured at PT100 sensor input 1. The temperature is shown as °C or °F depending on what is set to in the factory settings menu.
5	Test of PT100 sensor, input 2 Food temperature	See test 4.
6	Test of PT100 sensor, input 3 Cooking probe temperature	See test 4.
7	Test of PT100 sensor, input 4 Steam temperature	See test 4.
8	Test of digital input 0	The heating' LED is On or Off, depending whether the input is high or low. The heating display shows: 'P00'.
9	Test of digital input 1	The 'heating' LED is On or Off, depending whether the input is high or low. The heating display shows 'P01'.
10	Test of digital input 2	The 'heating' LED is On or Off, depending whether the input is high or low. The heating display shows 'P02'.
11	Test of digital input 3	The 'heating' LED is On or Off, depending whether the input is high or low. The heating display shows 'P03'.
12	Test of digital input 4	The 'heating' LED is On or Off, depending whether the input is high or low. The heating display shows 'P04'.

13	Test of digital input 5	The ‘heating’ LED is On or Off, depending whether the input is high or low. The heating display shows ’P05’.
14	Test of digital input 6	The ‘heating’ LED is On or Off, depending whether the input is high or low. The heating display shows ’P06’.
15	Test of digital input 7	The ‘heating’ LED is On or Off, depending whether the input is high or low. The heating display shows ’P07’.
16	Test of digital input 8 water flowmeter	The number of acknowledged pulses from the flowmeter are counted. The counted amount of pulses is shown in the heating display. When more than 999 pulses is counted the display starts over from 0 again.
17	Test of digital input 9	The ‘heating’ LED is On or Off, depending whether the input is high or low. The heating display shows ’P09’.
18	Test of relay output 0	By pressing heating LED is illuminated and the relay is activated. By pressing the heating LED goes out and the relay is de-activated. Heating display shows ‘P00’ during the test.
19	Test of relay output 1	See test 18. Heating display shows ‘P01’ during the test.
20	Test of relay output 2	See test 18. Heating display shows ‘P02’ during the test.
21	Test of relay output 3	See test 18. Heating display shows ‘P03’ during the test.
22	Test of relay output 4	See test 18. Heating display shows ‘P04’ during the test.
23	Test of relay output 5	See test 18. Heating display shows ‘P05’ during the test.
24	Test of relay output 6	See test 18. Heating display shows ‘P06’ during the test.
25	Test of relay output 7	See test 18. Heating display shows ‘P07’ during the test.
26	Test of relay output 8	See test 18. Heating display shows ‘P08’ during the test.
27	Test of relay output 9	See test 18. Heating display shows ‘P09’ during the test.
28	Test of relay output 10	See test 18. Heating display shows ‘P10’ during the test.
29	Test of relay output 11	See test 18. Heating display shows ‘P11’ during the test.
30	Test of relay output 12	See test 18. Heating display shows ‘P12’ during the test.
31	Test of relay output 13	See test 18. Heating display shows ‘P13’ during the test.
32	Internal beeper test	By pressing the heating LED is illuminated and the beeper is activated. By pressing the heating LED goes out and the beeper is de-activated.
33	Frequency converter speed reference test	**Note:** • Disconnect the analog signal at the frequency converter during the test. Press to toggle between the following conditions: 0 V on analogue output. Heating display: 0 2 V on analogue output. Heating display: 2 4 V on analogue output. Heating display: 4 6 V on analogue output. Heating display: 6 8 V on analogue output. Heating display: 8 10 V on analogue output. Heating display: 10

Checking the membrane keypad

ID: 0000000693-EN-002

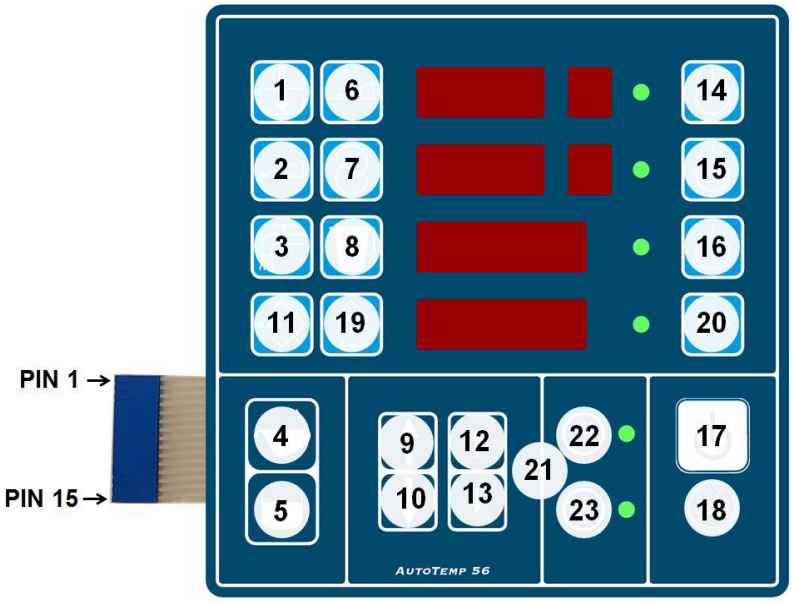


Fig. 0-102 Keypad key and pin overview

PIN	1	2	3	4	5	6	7	8	15
9	1	2	3	11	6	7	8	19	x
10	15	20	18	22	14	16	17	23	x
11	x	10	13	4	x	5	9	12	x
12	x	x	x	x	x	x	x	x	x
13	x	x	x	x	x	x	x	x	x
14	x	x	x	x	x	x	x	x	21

Tab. 0-3 Keypad matrix

Check the connection with an ohmmeter. With a key pressed, the resistance should be 30-60 ohm.

Fault when heating

Electric-heated kettles AutoTemp 16, 32, 36 and 56

ID: 0000000650-EN-003

Problem	Possible cause	Action
The kettle does not become hot	Defective power regulator, dry boil thermostat, pressure switch or contactor.	Check to determine whether any of these components are defective.
	Microswitch for vertical position is not activated.	Check that the microswitch is activated (closed) when the kettle is in the normal position.
The kettle does not become sufficiently hot.	One or more defective heating elements.	Check that the current consumption corresponds to the power output.
	Too much water in the steam generator.	Empty the generator to the correct level.
		Check water supply system.
	Working pressure switch, trips too early.	Check that the interrupt pressure is between 0.9 and 1.0 bar with a fully heated, empty kettle.
	Power regulator defective.	Check that heating is continuous when set to full power.
	Defective venting valve	Check venting valve. See ‘ Checking the venting valve‘, page 132.
The kettle heats but the heat cannot be adjusted.	Defective power regulation	Replace the power regulator.
Steam comes out of the safety valve.	Defective safety valve.	Use the manometer to check that the opening pressure is approximately 1.3 bar.
	Working- and safety-pressure switch defective.	Check that the working pressure switch trips at 1.0 bar and the safety pressure switch trips at approximately 1.2 bar.
Water comes out of the safety valve.	Level switch is defective	Check the level switch.
	Defective solenoid valve or ice-water valve.	Check the solenoid valves and ice-water valves

Electric-heated kettles, AT02e

ID: 0000001217-EN-002

Problem	Possible cause	Action
Red light for fault is illuminated	Defective working-pressure switch	Check that the heating is stopped at 1.0 bar. To reset the fault, the power supply must be briefly interrupted.
	Dry-boil thermostat has tripped.	Check the automatic waterfilling of the steam generator. Reset the dry-boil thermostat afterwards.
Yellow light for fault is illuminated	Low water level in the steam generator.	Check the level switch, solenoid valve, and water supply for the steam generator.

Steam-heated kettles

ID: 0000000652-EN-003

Problem	Possible cause	Action
Kettle does not become warm, even though the green light is illuminated.	No supply of compressed air.	Check the supply of compressed air, including that the supply disconnector switch is open.
	Pilot valve defective.	Replace pilot valve.
The kettle does not become sufficiently hot.	Not enough steam.	Check the supply for the kettle.
	Defective venting valve.	Check the venting valve, see ‘ Checking the venting valve‘, page 132.
A loud bang is heard when the steam supply is open. This is caused by too much condensate in the kettle.	Steam trap not working correctly. Check the steam trap by dismantling the hoses in the pillar and allowing the condensate to drain out onto the floor.	The steam trap can be dismantled, cleaned or replaced.
	If the kettle has already been simmering gently for a very long time, there may be insufficient pressure in the kettle to force the condensate out. When the temperature drops to approximately 100°C, there will be a vacuum in the kettle bowl and air will be sucked in via the vacuum valve.	Let in steam/turn up the heat to increase the pressure.
	The condensate pipe is blocked.	Check the condensate pipe.
	Poor steam quality.	Check whether the steam that is being supplied to the kettle is dry.

When hot steam comes into contact with the condensate, bubbles of steam can collapse producing a loud bang.

ID: 0000000071-EN-003

Empty the condensate manually

This applies only to steam-heated kettles

During normal operation, the condensate is automatically removed.

Sometimes unfortunately situations can arise or if the installation is not optimal where the condensate accumulates in the bottom of the kettle.

This will result in loud bangs when the steam is passed through the condensate.

If this happens, the condensate can be discharged through a valve at the bottom of the kettle body.

Fig. 0-103 Condensate out valve

⚠ CAUTION!

Exercise caution - steam/hot water may discharge from the valve when it is opened.

Step	Action	
1	Switch off the kettle´s heating and place the kettle bowl in the vertical position.	
2	Wait until the pressure in the steam jacket is 0 bar.	
3	Open the condensate valve.	

4	Close the valve when no more condensate drains out.	

ID: 0000001221-EN-002

Steam and condensate valve status indicator

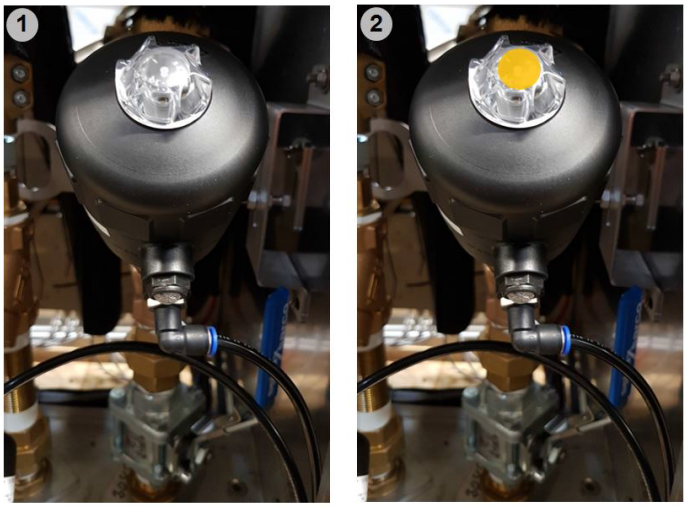


Fig. 0-104

1 Blank - Valve closed
2 Yellow indicator - Valve open

Level switch

ID: 0000001235-EN-002

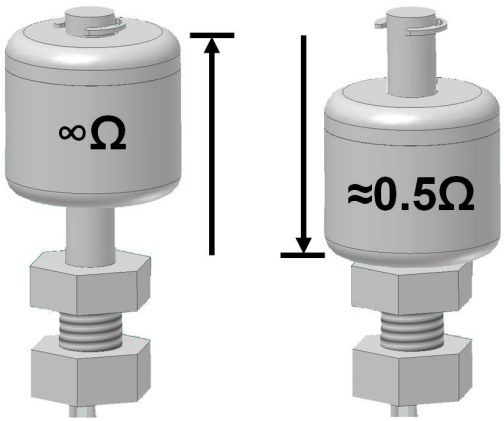


Fig. 0-105 Function of the level switch

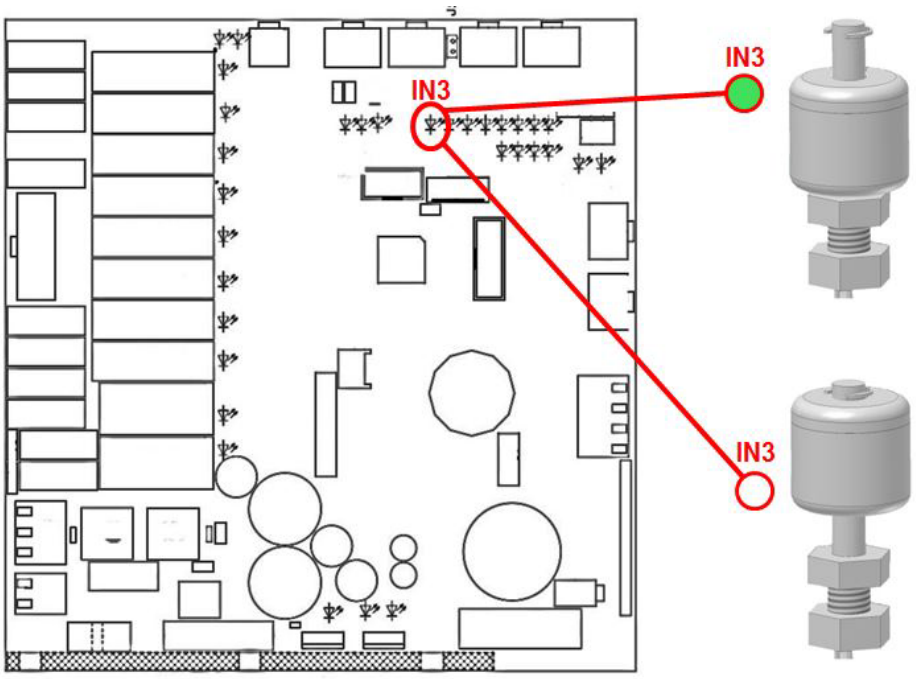


Fig. 0-106 Status indication of the level switch on the rear of the controller.

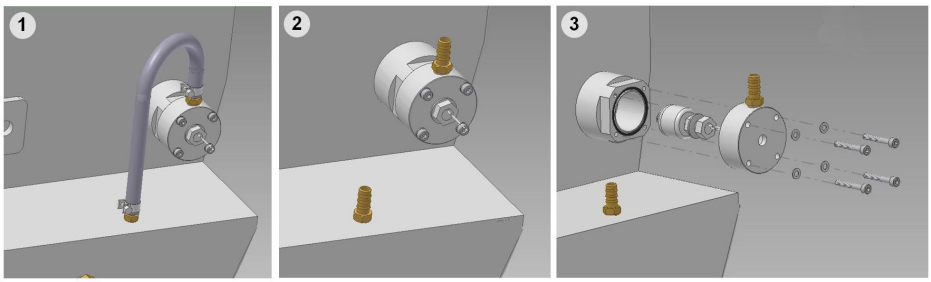


Fig. 0-107 Level switch disasembly

Functional problems with the level switch may be due to dirt in the chamber that is preventing the float from moving or because there is dirt in the hose, so that the level in the chamber does not match the level in the steam generator.

Checking the venting valve

ID: 0000000656-EN-002

When the pressure in the kettle is 0.9-1.0 bar the venting valve must open and close regularly for short periods of time.

Tilt

ID: 0000000659-EN-003

Electric actuator, AutoTemp 02e

Problem	Possible cause	Action
The kettle does not tilt	If the red light on the power supply is illuminated as soon as a key is pressed, the current limit is exceeded.	Allow the power supply to cool down.
	Defective power supply, actuator or keypad.	Check the components against the electrical circuit diagram.

ID: 0000000660-EN-003

Electric actuator, AutoTemp 16, 32, 36 and 56

On these models, the power supply to the tilt motor is integrated into the controller.

Problem	Possible cause	Action
The kettle does not tilt	Defective fuse	Check the fuse on the controller. F3: 5 x 20 mm,5A T.
	Defective controller	Check the power supply from the controller.
	Defective actuator	Check actuator.

ID: 0000000661-EN-003

Hydraulic tilt

Problem	Possible cause	Action
The kettle does not tilt	Incorrect phase sequence on the hydraulic pump	Switch the phases so that the motor runs in the right direction.
	There is a lack of oil in the system	Refill oil and close any leak. For correct oil level, see ‘ Replacing the tilting system‘, page 145.
	Defective pump	Measure the pressure on the pump.

The kettle sinks when it is tilted	Seals on the cylinder are leaking	Replace cylinder
	Solenoid valve or non-return valve is leaking, possibly due to dirt.	Clean or replace component
The kettle does not return	Non-return valve or reduction valve is blocked	Replace the valve
	Solenoid valve does not get supply voltage	Find the fault using the electrical diagram.
	Defective rectifier in plug for solenoid valve	Replace the plug.
	Defective solenoid valve or coil	Replace component
The kettle 'chops' during tilting	There is a lack of oil in the system	Refill oil and close any leak.
	There is air in the oil	Vent the system by using the vent screw on the cylinder
	Plastic bushing and shaft stick together	Lubricate plastic sleeve and shaft with mounting paste, OKS 260 or similar.
The kettle is whining during tilting.	The sealing ring of the hydraulic cylinder is dry	Lubricate cylinder with hydraulic oil.

Stirrer

ID: 0000000662-EN-003

DANGER!

For 15 minutes after the power supply has been disconnected high voltages will still be present on the frequency converters.

ID: 0000000663-EN-004

Problem	Possible cause	Action
Stirrer does not operate or kettle display shows E70.	The motor is too hot so the internal thermal protection (Klixon) has tripped. Error code EPF1 in frequency converter (ATV320).	Wait for the fan to cool down the motor. Check internal thermal protection if the error presists when the motor is cold.
	Remove front cover and read error code on Frequency converter. This must be done before the supply disconnector switch is interrupted.	Look up fault codes in the frequency inverter manual and follow the troubleshooting instructions.
	Defect analog output.	Check analogue speed signal from controller to the frequency converter: 0-10 VDC. Maximum speed is achieved with less than 10 VDC.
	Check the run signals from the controller to the frequency converter.	Check that the converter is ready. The display should read: [Ready] (rdY) When given respectively forward and reverse signal, the display should switch to the frequency that represents the speed signal from the PCB. If this does not happen, measure the output terminals according to the electrical circuit diagram.
	No light in the converter display, with power connected.	Short-circuit of 24 VDC voltage from the converter. Most likely caused by the klixon in the motor
	Inverter display reads ‘SAFF’.	See ‘ SlowMix‘ page 135.

SlowMix

ID: 0000000664-EN-003

Slow stirring at a maximum speed of 20 rpm with an open lid.

The safe, low speed of no more than 20 rpm is monitored by the converter (SLS), which measures the speed of the stirrer. If an error occurs on the controller and/or the frequency converter and the speed rises, the converter will immediately stop the motor and error message E70 will be shown on the stirrer display. Inverter display reads ‘SAFF’.

‘Reset’ can only be done by disconnecting the power at the supply disconnector switch.

To test the function of the frequency converter and associated system, change the rpm setting to 30 in menu 6.2 in the user menu, see ‘ User menu‘, page 105.

Then the SlowMix function of the kettle can used in the normal way. Check that the frequency converter stops the stirrer when the speed exceeds 20 rpm.

After testing, reset the parameter in menu item 6.2 to its original value.

Water

ID: 0000001318-EN-003

Water in the kettle

Problem	Possible cause	Action
Water is not added to the kettle	No water supply.	Check the water supply.
	No power supply to the solenoid valve	Find the fault using the electrical diagram.
	Defective solenoid valve.	Replace the solenoid valve.
The kettle is filling up with water but the water quantity on the display is not counting down.	Defective water flowmeter.	Check that signal is received at the controller by checking the LED IN8 at the rear of the controller. Check that the water flowmeter has power. Check power (24 VDC) at the flow meter.
The water flowmeter is counting incorrectly.	Incorrect measuring constant in parameter 4.2 in the user menu.	See ‘ Calculate flowmeter constant‘, page 136.

ID: 0000000665-EN-003

Water in the steam generator

Problem	Possible cause	Action
Water is not added to the steam generator.	Defective level switch.	Clean/replace the level switch. See ‘Fig. 0-113 ‘, page 144.
	Defective solenoid valve.	Replace the solenoid valve.
	No power to coil.	Find the fault using the electrical diagram.

Calculate flowmeter constant

ID: 0000001218-EN-002

([Present constant] x [Entered value on controller]) / [Quantity (litres) in the kettle] = New constant

Example of calculating a new constant:

A 100 l kettle, which already has a parameter constant of 4.2 = 300. When the operator asks for a full kettle (100 L in the display), they only get 95 l in the kettle.

300 x 100 / 95 = 315.78 is the new constant for parameter 4.2.

Cooling

Open cooling (water through the steam jacket to the drain)

ID: 0000000669-EN-002

Problem	Possible cause	Action
The kettle does not cool	No water is flowing through the steam jacket.	Check water supply
		Check solenoid valves
The kettle does not cool sufficiently.	This could be caused by dirt in the strainer placed in front of the solenoid valves.	Clean the strainer.
The steam chamber is not emptied of water after cooling	Defective solenoid valves	Replace valve
	Dirt in the strainer.	Clean the strainer

Closed chilling (Chilled water return to ice bank)

ID: 0000001227-EN-003

Problem	Possible cause	Action
The kettle will not cool	No cooling water	Check the valves for cooling water and cooled water supply. See ‘ Position indicator valve actuator for cooling‘, page 138.
		Check that the circulation pump is running
		Check the supply of compressed air.
The kettle does not cool sufficiently.	Cooling water not cold enough	Check the amount of ice in the bank and that the ice is formed properly around the tubes. The ice must not be in one big block as the surface is then too small and the ice cannot melt fast enough.
	Insufficient cooling water	Check the water quantity that is being pumped through the kettle. If the pressure in the kettle is 1.0 bar during cooling, the water quantity must not be increased further.
The steam chamber does not emptied of water after cooling	Drain valve does not open	Check function of the drain valve. See ‘ Position indicator valve actuator for emptying‘, page 139.
	Lack of "empty" compressed air	Check the draining pressure of the compressed air, which should be close to 1 bar. Se ‘ Adjusting the draining pressure‘, page 138.
		Check for leaks and other open valves.

Adjusting the draining pressure

ID: 0000001219-EN-002

The adjustment must be performed while draining.

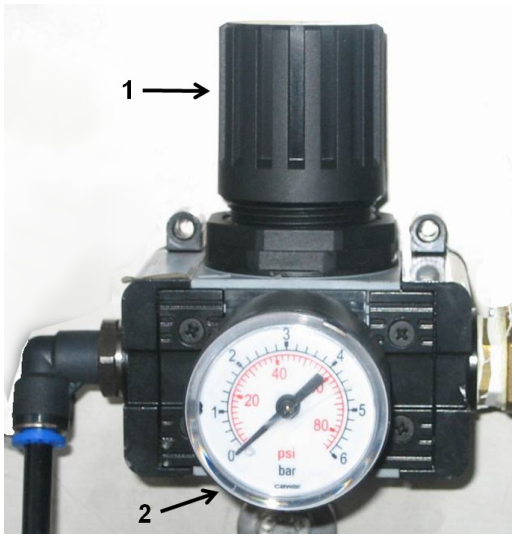


Fig. 0-108 Air reduction valve.

1 Rotary handle
2 Manometer

1) Lift the rotary handle to unlock the valve.
2) Turn the rotary handle clockwise to increase the pressure or counterclockwise to reduce the pressure until the pressure gauge shows a maximum of 1.0 bar.
3) Press down the rotary handle to lock the valve.

Position indicator valve actuator for cooling

ID: 0000001222-EN-002

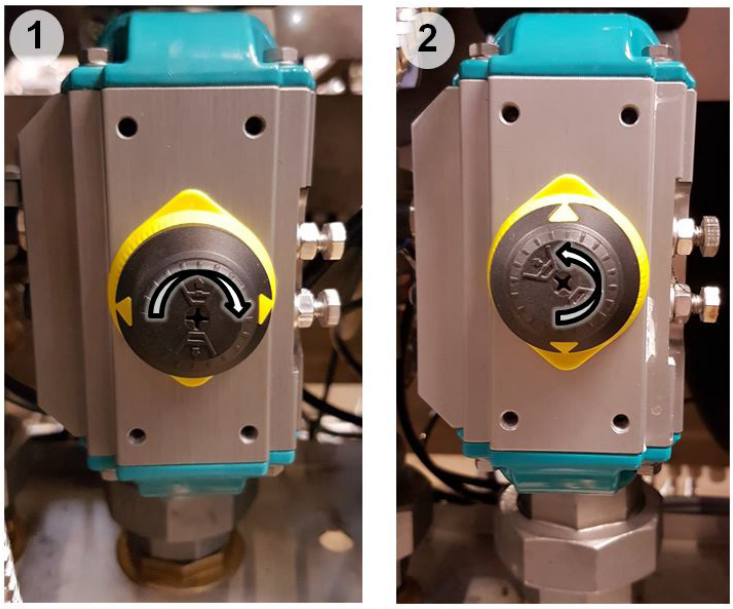


Fig. 0-109 Position indicator valve actuator for cooling

1 Valve actuator closed.
2 Valve actuator open.

Position indicator valve actuator for emptying

ID: 0000001220-EN-002

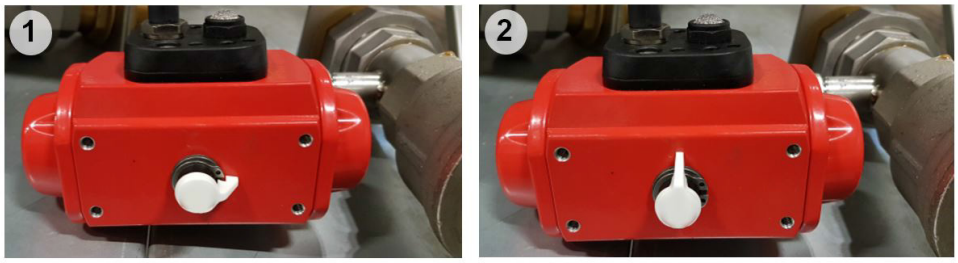


Fig. 0-110 Position indicator valve actuator for emptying

1 Valve actuator open.
2 Valve actuator closed.

Override of air actuators for valves

ID: 0000001223-EN-002

Fig. 0-111 Valve air actuators override

1 Override function not activated, valve in normal operation.
2 Override function activated, valve open.

Control

ID: 0000000671-EN-003

Problem	Possible cause	Action
No LEDs lit on PCB.	No power supply	Check the power supply.
	Emergency stop activated (only on models with a stirrer)	Check the emergency stop.
	Defective fuse.	Replace the fuse on the PCB.
Input LED lit, but the kettle behaves as though the input is not active.	Defective input.	Check input. Refer to ‘ Service menu‘, page 124.
Output LED not lit and no signal measured at output.	No power to outputs on PCB.	Check voltage (24V AC) at connector –X4 pin 4. If kettle has cooling, –X4 pin 3 must be powered also.
Output LED lit but no signal measured at output.	Defective output	Check input. Refer to ‘ Service menu‘, page 124.

Error codes

ID: 0000001225-EN-001

If the system detects a fault, an error code will be shown. If there are multiple simultaneous errors, the error codes are displayed alternately.

Error messages

ID: 0000000843-EN-005

E50 - E74 can be acknowledged by the ‘Standby’ key .

E75 - E99 requires a restart of the appliance. For restart, press and hereafter on .

If the error is not resolved by a restart, call for service.

Error code	Description
E50	Food temperature < -10°C Check the sensor and ensure that the sensor wires are not short-circuited.
E51	Food temperature > 130°C Check the sensor and ensure that the sensor wires are still connected.
E55	Jacket temperature < -10°C Check the sensor and ensure that the sensor wires are not short-circuited.
E56	Jacket temperature > 130°C Check the sensor and ensure that the sensor wires are still connected.
E57	Steam temperature < -10°C Check the sensor and ensure that the sensor wires are not short-circuited.
E58	Steam temperature > 130°C Check the sensor and ensure that the sensor wires are still connected.
E60	Safety stop of water filling using water flowmeter, as no signals have been received from the water flow meter. Check the water supply and the water flowmeter and its electrical connections.
E61	Safety stop of water magnetic valve during automatic water filling using water flowmeter (open too long in relation to safety factor).
E62	Safety stop of manual water filling without a water flowmeter, as the maximum opening time has been exceeded.
E63	Safety stop of continuous water filling, as the maximum opening time has been exceeded.
E70	Frequency converter reports an error. Wait until the stirrer motor cools if it has been subjected to a heavy load. Check that the fan in the bottom of the kettle is operating. Cooling takes time. Reset the frequency inverter error by disconnecting the power to the kettle using the power isolator switch. If required, check the fuse in front of the frequency converter.
E75	A key has been pressed for an abnormally long time. The membrane keypad may be defective. Disconnect the power supply for 10 seconds and try again.
E76	1.0 bar pressure switch has been switched off for too long.
E77	Air pressure has fallen below the permitted level.
E79	E99 occurred during the initial cooling.
E80	E99 occurred without 1.0 bar pressure switch has switched off.

E81	E99 occurred during the heating function.
E82	E99 occurred during cooling function.
E83	E99 occurred during emptying function.
E84	E99 occurred during filling of water to level.
E85	E99 occurred during filling of water to remove pressure.
E86	Timeout on 'remove pressure' during initialisation.
E87	Timeout on emptying during initialisation.
E88	Timeout on 'remove pressure' during pre-cooling.
E89	Tilt-switch is not activated even tough the tilt key has been pressed for more than 5 seconds.
E90	The level sensor has detected a low water level in the kettle with a closed system. Add more water.
E91	The level sensor has detected a low water level. Filling with water for the maximum permitted time has not produced a normal water level. Check the water supply to the machine and the strainer, solenoid valve, hoses and level sensor.
E95	Internal memory error. Execute item 8.0 in the user menu.
E96	Software error. Disconnect the power supply for 10 seconds and try again.
E97	Software error. Disconnect the power supply for 10 seconds and try again.
E98	Software error. Disconnect the power supply for 10 seconds and try again.
E99	The dry boil thermostat or the overpressure switch has tripped. Check the pressure by reading the pressure gauge. Reset safety dry-boiling thermostat. Disconnect the power supply to the kettle until the pressure drops below 0.7 bar and switch it on back again.

ID: 0000001226-EN-003

For information on user error messages, see ’ User messages‘, page 84.

Repair instructions

Replacing the heating elements

ID: 0000001493-XX-002

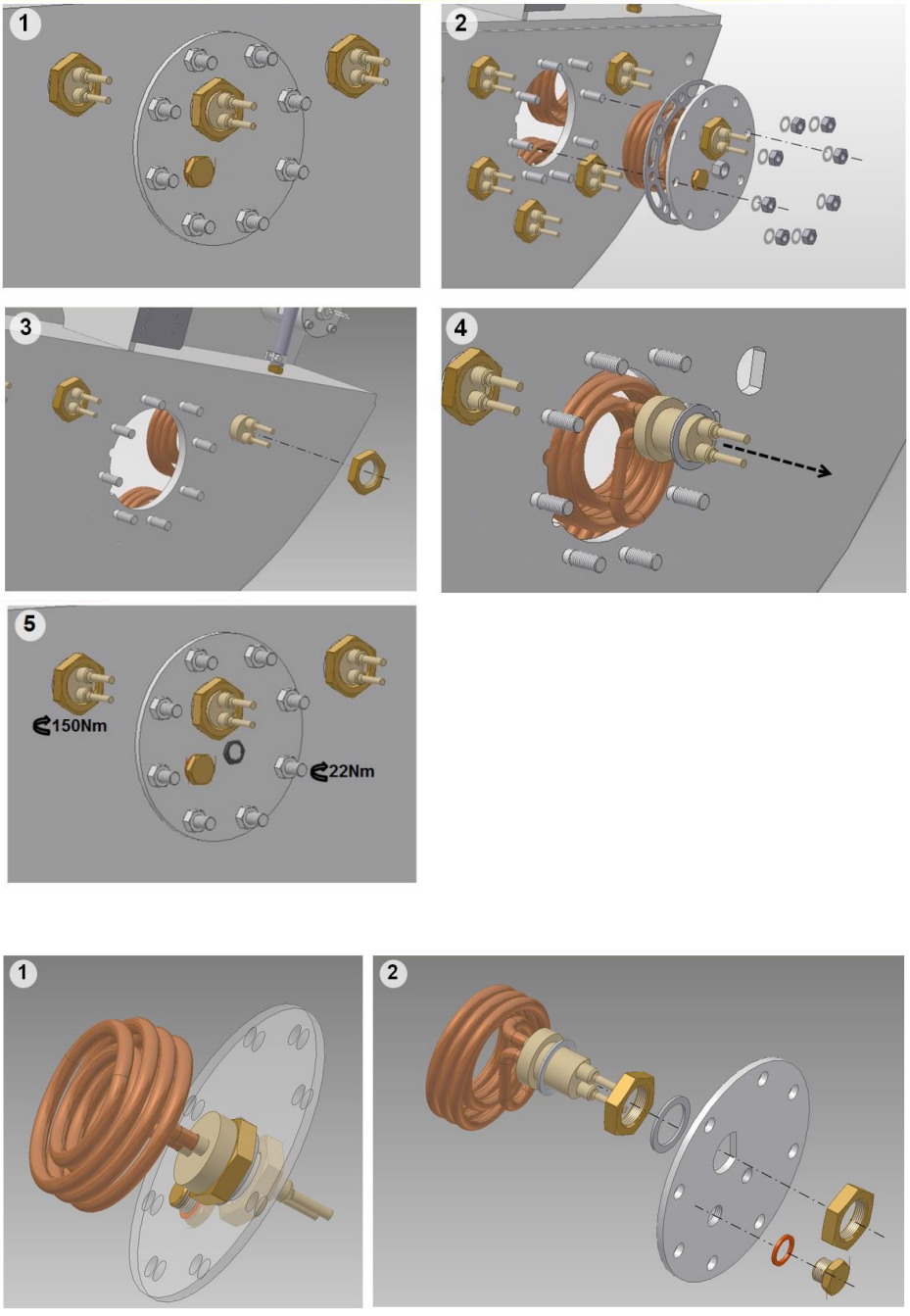


Fig. 0-112

Replacing the level switch

ID: 0000001497-XX-001

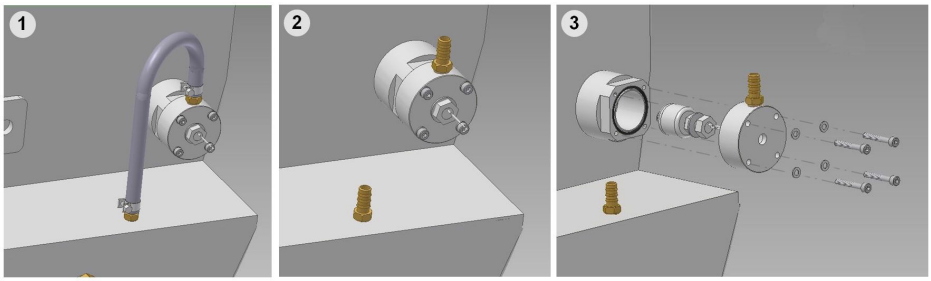


Fig. 0-113

Replacing the dry-boil thermostat

ID: 0000000677-EN-003

Dry-boil thermostat disassembly

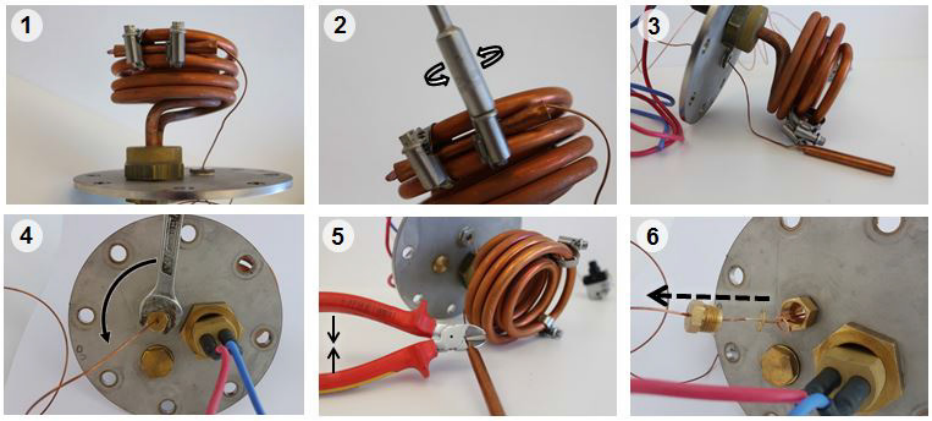


Fig. 0-114 Dry-boil thermostat disassembly

Mounting the dry-boil thermostat

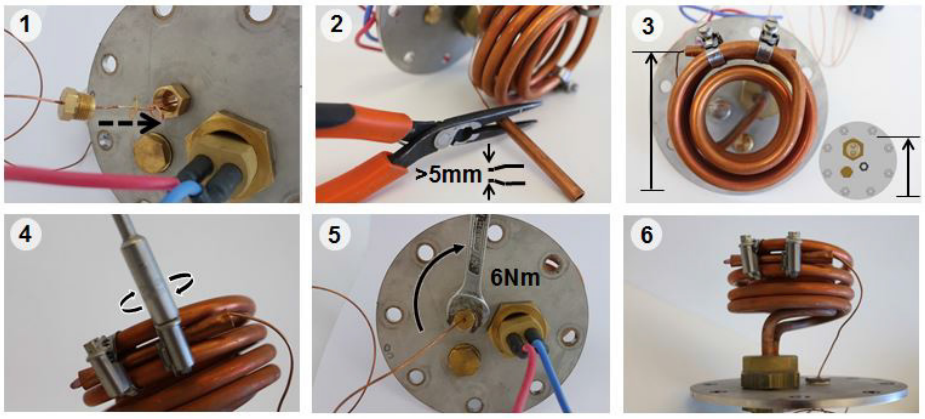


Fig. 0-115 Mounting of dry-boil thermostat

Replacing the safety valve

ID: 0000001239-EN-001

The tightening torque of the safety valve must not exceed 50 Nm.

Resetting the dry-boil thermostat

ID: 0000001492-XX-001

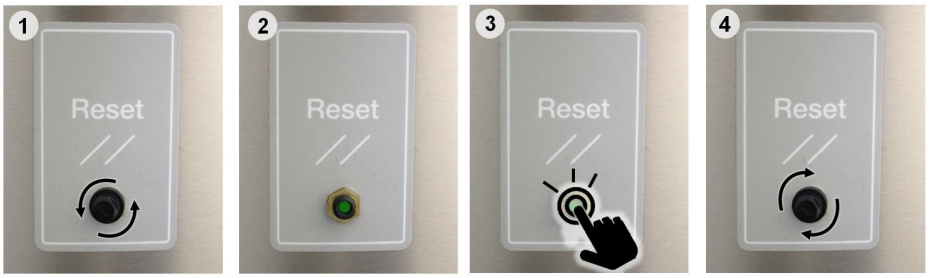


Fig. 0-116

Replacing the tilting system

ID: 0000000680-EN-002

⚠ WARNING!

Exercise caution - crushing hazard!

ID: 0000000681-EN-002

⚠ WARNING!

When replacing the tilting system, the kettle must be properly supported to ensure that it does not fall down when the tilting system is released. See ‘ Kettle support‘, page 107

ID: 0000000686-EN-002

NB!

The hydraulic system is vulnerable to impurities in the oil!

ID: 0000000684-EN-002

⚠ WARNING!

Use caution when venting, as there is crushing hazard!

ID: 0000000685-EN-002

NB!

Note the direction of rotation of the hydraulic pump.

ID: 0000000682-EN-003

Oil is filled through a filter with a mesh size of 25 µm or better. Use an approved quality with viscosity of 24-40 cSt. at 25 °C.

ID: 0000001495-XX-001

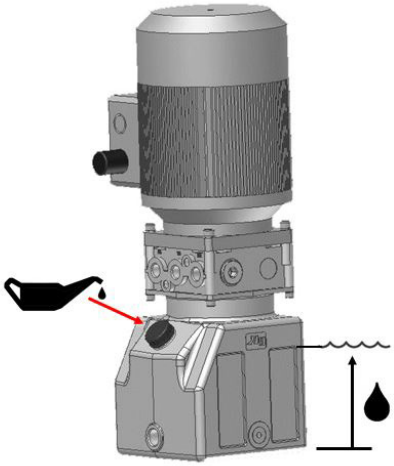


Fig. 0-117

Replacing bearings, sealing rings and stirrer slide washer

ID: 0000001236-EN-002

Disasembly of bearings for stirrer

ID: 0000001494-XX-001

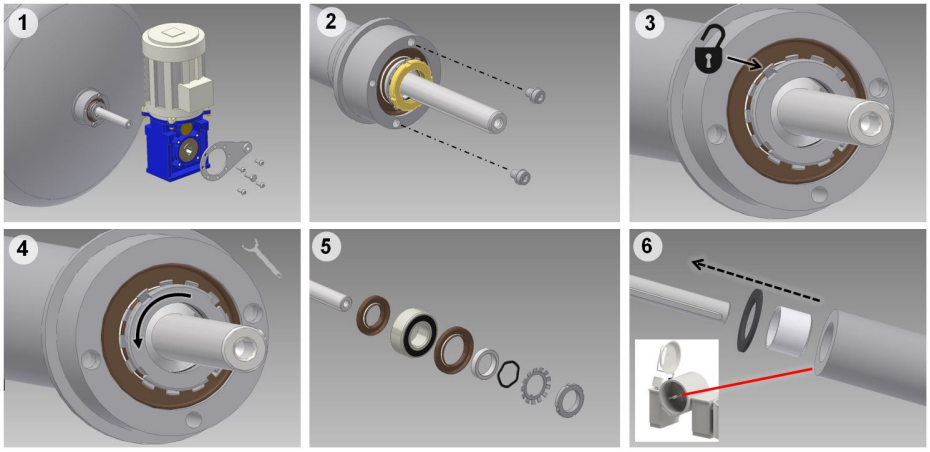


Fig. 0-118

ID: 0000001319-EN-001

Mounting of bearings for stirrer

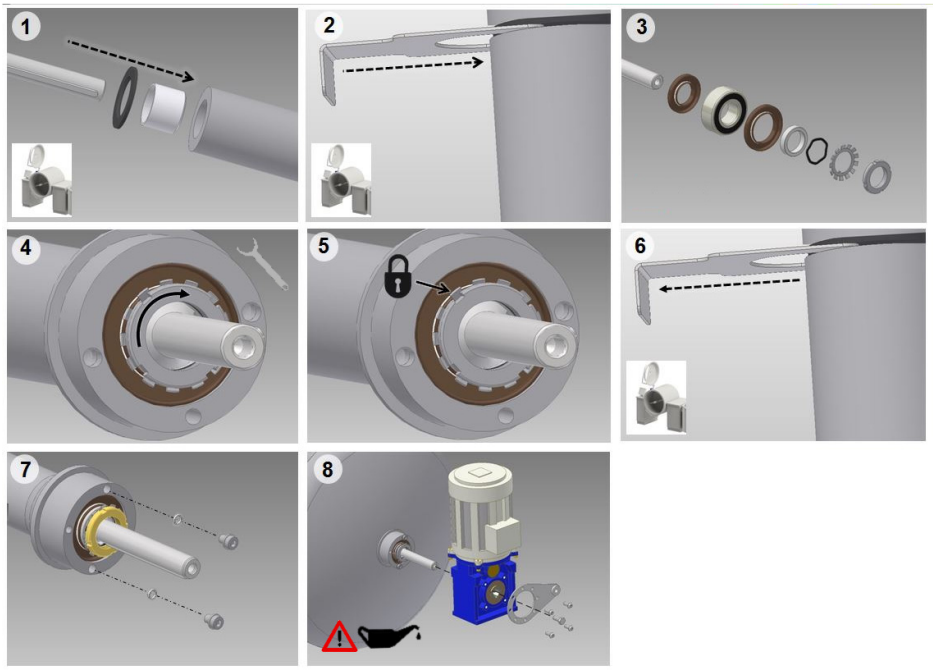


Fig. 0-119

Lubrication required as instructed in the spare parts drawing.

Replacing the keypad membrane and labels

ID: 0000001229-EN-002

NB!

If replacing the membrane keypad means there is a risk of damage to the PCB, the PCB should be temporarily removed.

ID: 0000000689-EN-003

Remove the old keypad/lable using a putty knife or similar. It is important to remove all the old adhesive and to degrease the surface thoroughly. This adhesive should preferably be removed mechanically using an industrial cleaner from 3M or citrus oil, which will however only partially dissolve the adhesive. Isopropyl alcohol should be used for degreasing, never methylated spirits or acetone, both of which leave a residue behind when they evaporate. After applying cleaning fluid, clean off with a new, clean piece of paper – not a cloth.

When fitting the new keypad/lable, make sure that the entire adhesive surface is pressed down hard in order to start the adhesion process, as the adhesive is encapsulated in small blisters on the foil. These blisters burst under pressure, releasing the adhesive. It is recommended to use a small rubber roller to press the foil down firmly against the surface.

With membrane keypads, the opening for the flat cable must be sealed with nonacidic silicone.

Replacing printed circuit boards (PCBs)

ID: 0000000690-EN-002

NB!

Static electricity can damage electronic components.

ID: 0000000691-EN-002

When replacing electronic parts, for example, printed circuit boards, etc., ensure that the components are not exposed to static electricity.

Do not touch components on the PCB, hold on to the PCB on the edges.

When mounting the new part, touch grounded metal parts immediately before unpacking the PCB / part from the antistatic bag to ensure any static electricity on your body has discharged first.

ID: 0000000692-EN-001

PCB-board AutoTemp 16-56

Before removing the defective PCB-board, note the values in the user menu, if possible, in order to transfer the changes to the new PCB-board.

When fitting, check that the LEDs on the front fits into the holes on the front plate, before screwing tightening the PCB-board into place.

Appendix

ID: 0000001482-EN-002

Test Record for internal protective conductor

ID: 0000001502-EN-001

Appliance serial-no.: _____ - _____

ID: 0000001500-EN-002

Date	A←Ω→B	A←Ω→C	A←Ω→D	A←Ω→E	Company Signature
	(must be ≤ 500 mΩ				

ID: 0000001549-EN-001

Inspection record

ID: 0000001502-EN-001

Appliance serial-no.: _____ - _____

Date	Pressure switch	Safety valve	Company name
	Pressure switch trip pressure: 1.15-1.25 bar	Max pressure : 1,3bar+10% = 1,43bar	Signature