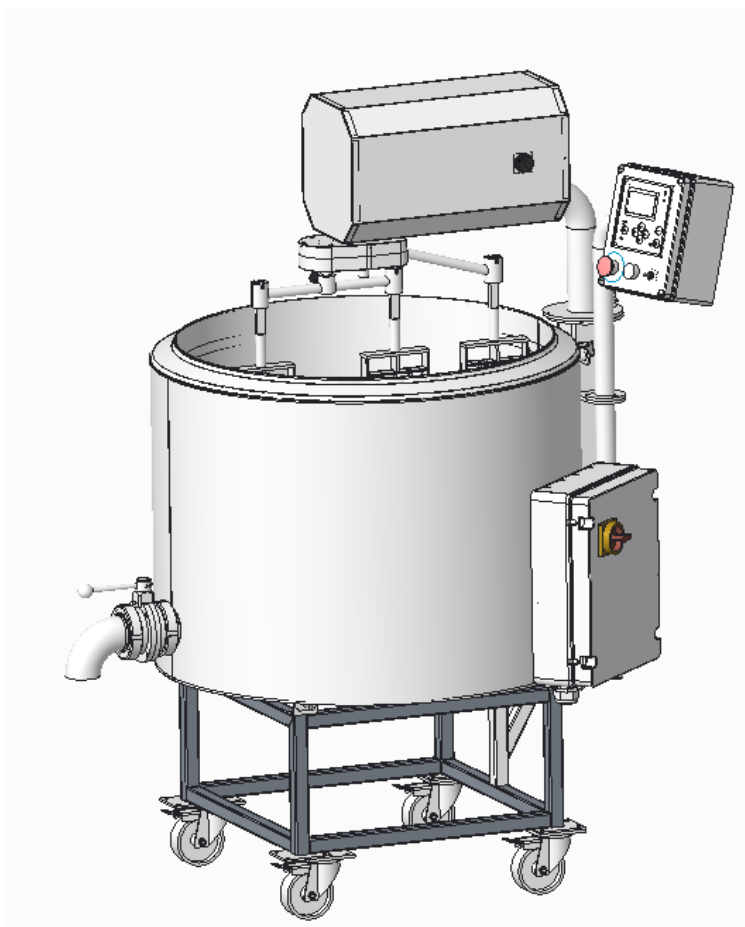




# JANSCHITZ

GMBH

## Multi function kettle - open type FJ - 200 OT; FJ - 300 OT



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Janschitz G.m.b.H  
Eisenstrasse 81  
A – 9330 Althofen

Tel: +43 (0) 4262 22 51-0  
Fax: +43 (0) 4262 22 51-23  
[www.janschitz-gmbh.at](http://www.janschitz-gmbh.at)  
[office@janschitz-gmbh.at](mailto:office@janschitz-gmbh.at)

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# 1. GENERAL SAFETY RECOMMENDATIONS

- **Before any installation read this manual very carefully.**
- **When using this device follow instructions in this manual and instructions for safe work.**
  - **When working always wear tight clothes, do not wear a tie.**
  - **Protect long hair with suitable head protection.**
  - **Do not wear jewelery (rings, necklace, etc.).**
  - **Wear eye protection – protective glasses.**
  - **Be at full psychofisycal abilities when using this device.**
  - **Illuminate the working area according to regulations.**
  - **Assure the clean and tidy working place, surrounding of the device should be free.**
- **Connect the device to a proper electrical socket.**
- **Only trained personnel is allowed to use this device.**
- **Before turning on the device always check:**
  - **That no part of the device is damaged.**
  - **That moving paths are clear of obstructions.**
  - **That device is FILLED WITH WATER**
- **The device has to be switched on by main switch.**
  
- **When there is a defect on the device, you must turn it off and put the plug from the power source.**
- **Don`t repair the device by yourself, in case of malfunction rather call authorized service provided by your distributor. Only authorized service with faultless tools can repair the device.**
- **Always report every brakedown or defect on device.**
- **In case of serious malfunctions switch off the main switch and unplug the device from electrical socket and compressed air socket, then call authorized service.**
- **You are allowed to use only the procedures that are described in this manual. Use of any other procedures or adjustments could result in destruction of the device or injury. Injuries connected with such procedures can not be subject of any product liability claims.**
  - **Do not reach into danger area – moving parts!**
  - **Do not leave the working area when device is in operation!**
  - **Do not lean the device while in operation!**
  - **Do not remove warning labels or security devices. Blocking or removing the security devices is forbidden!**
  
- **It is forbidden to clean, lubricate or repair the device during operation.**
- **Disconnect device from electrical socket before cleaning!**
- **Take care that milk, water or humidity will not come into the device.**



***BEFORE FIRST INSTALATION, CONNECT THE HOUSING OF THE DEVICE TO A PROPER EARTH CONNECTION TO AVOID INJURIES AND DAMAGE.***

**CAUTION:**

**AT NORMAL OPERATION HEATER PARTS COULD WARM UP. RISK OF BURNING IS POSSIBLE, AVOID CONTACT WITH HOT SURFACES.**

**CAUTION:**

**HOT - RISK OF INJURY.**



***WARNING!***

***Only trained people who are familiar with rules for safe work are allowed to work with this device.***

***NEVER START THE DEVICE BEFORE FILLING WATER, OTHERWISE HEATING ELEMENTS WILL BE DESTROYED AND INJURIES MAY ACCUR.***

***We are glad that you decide to buy our device and we promise that it will serve you for a long time if you will use and clean it according to descriptions stated in this User` s manual.***

## 2. TECHNICAL SPECIFICATIONS

PRODUCT		FJ - 200 OT 400 V	FJ - 300 OT 400 V
Operating voltage	[V/Hz ]	400 / 50	400 / 50
Power supply		3 phase (3x230V), 18A	3 phase (3x230V), 18A
Type of heating	[W]	electrical	electrical
Heater power	[kW]	12	15
Current	[A]	18	22
Max. capacity	[litres]	200	300
Minimum capacity	[litres]	50	75
Volume of heating water	[litres]	50	66
Dimension of Milk outlet	DN	65	65
Dimension of cold water inlet (cooling)	[mm]	DN20	DN20
Dimension of hot water outlet (cooling)	[mm]	Φ32mm	Φ32mm
Maximum temperature	[°C]	92	92
Dimensions in cm	(w x d x h)	125x100x150	140x110x150
Net weight	[kg]	137	159
Protection type of electrical box		IP 56	IP 56

### CAUTION!

Minimum voltage applied is 220V, maximum voltage is 250V!

FJ-200/300 OT multipurpose kettle is designed for thermal processing of milk into dairy products (pasteurized milk, crème, cheese, yogurt, ...). Multipurpose kettle has open type construction, so heating water is never under pressure. It is made from stainless steel W. Nr. 1.4301 (AISI304), it is three walled insulated kettle. For cooling, tap water or cooling tank water is used. Cooling water flows freely through double wall of the kettle when cooling is applied. For heating two electrical heaters are installed. Motor stirrer can be individually turned on or off, mixing speed can be steplessly regulated. Also turning direction of the mixing motor can be chosen by switch. It is user and environment friendly and easy to use product.

***Please note!***

***Main cord must be connected to safety outlet with grounded terminal!***

### 3. UNPACKING

Unpack the device carefully and check that nothing is left in the cardboard box. Place it on the plain and stable floor in clean, dry and dust-free place. Before use check that all parts are assembled according to instructions.

**Room temperature where device is placed must never fall under 10°C, also it is not recommended that room temperature exceeds 30 °C. With low room temperature, the maximum milk temperature decreases.**

#### Accessories

Packaging of multi purpose kettle contains the following accessories:

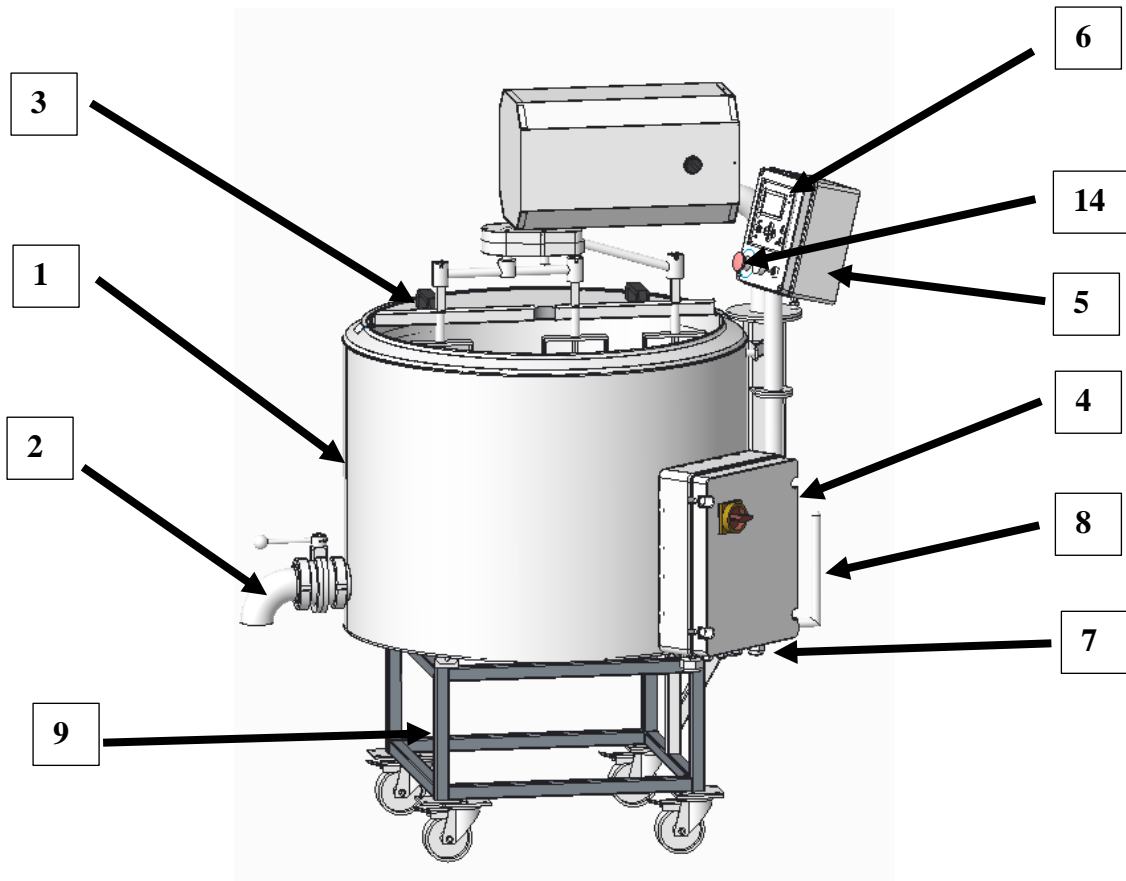
- Multi purpose kettle
- Two half covers with handles
- Outlet valve DN65 with outlet elbow
- Option 1 (Stirrer and stirring guide)
- Option 2 (3 part cheese harp, central stirrer and stirring guide)
- User`s Manual

### 4. DEVICE SETUP

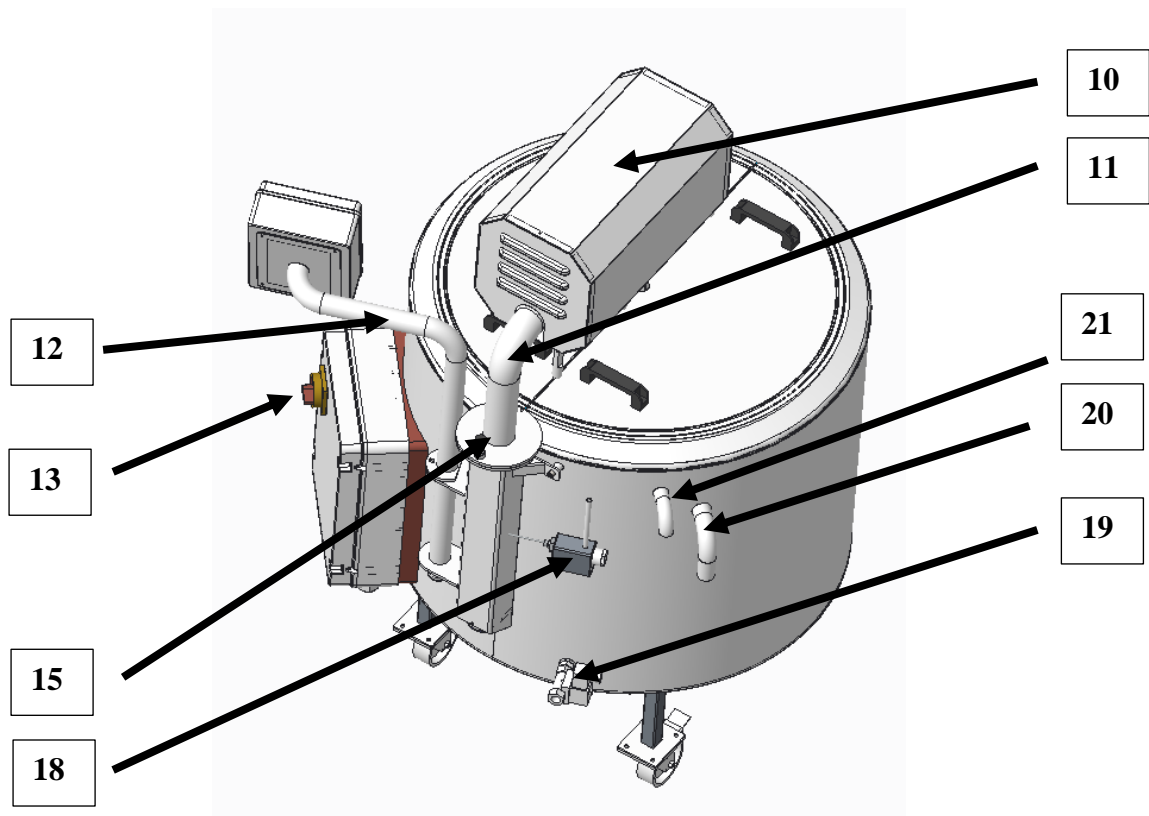
#### Main components

All important parts of device are named and described below:

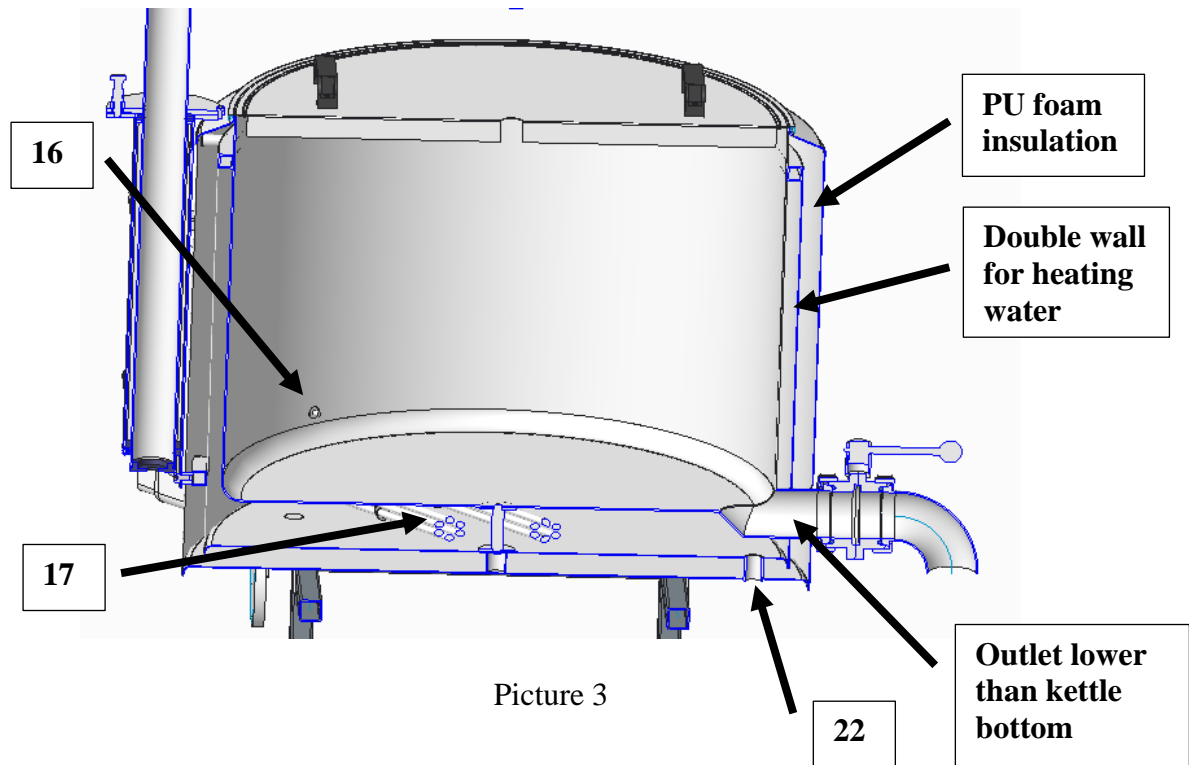
1. The kettle
2. Milk outlet valve with knee outlet
3. Two part cover with handles
4. Electric case
5. Controlling cabinet
6. Microprocessor unit
7. Power cord and socket (non European editions come without a socket)
8. Tilting lever (mechanism to lean the kettle when empty)
9. Stable support with wheels
10. Motor cover
11. Rotating motor support
12. Rotating control box support
13. ON/OFF switch
14. Safety stop switch
15. Fixing device for motor support
16. Milk temperature sensor (two temperature probes)
17. Electro heaters
18. Level sensor
19. Solenoid valve for cooling
20. Hot water outlet
21. Safety vent
22. Service outlet for heating water



Picture 1



Picture 2



## Electrical connection

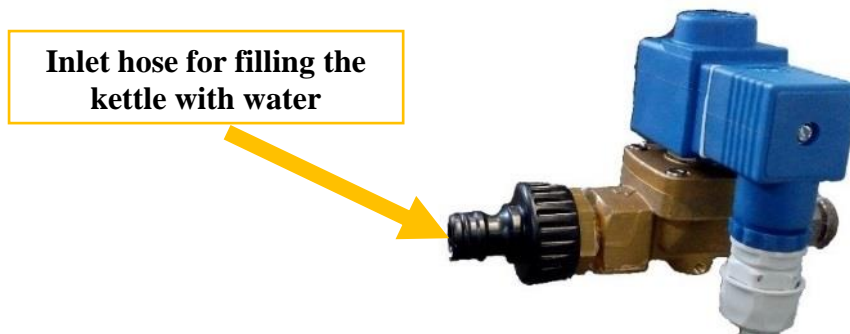
Before connection of device on electrical network, make sure that data on name label matches with voltage of power supply. Also connect the kettle housing to the ground – earthing connection.

NOTE: Version for non European market is supplied without electrical socket! Only trained personnel may connect proper locally approved multi phase socket to supplied device (see electrical scheme).



## Water connection

Before each start of device, make sure that pasteurizer is filled with water! You can use water from tap that fulfils the microbiological and chemical requirements. Water must be poured in slowly, not more than 3 liters/minute.



Picture 4

## Water filling into secondary coat

Use inlet hose to fill water into the double layer of device. The device needs to be properly filled with secondary water before start. Lack of secondary water or use of inappropriate water can damage the device. At startup program first checks for the presence of secondary water and demands the filling if no or inappropriate level of secondary water is detected.

### Filling procedure:

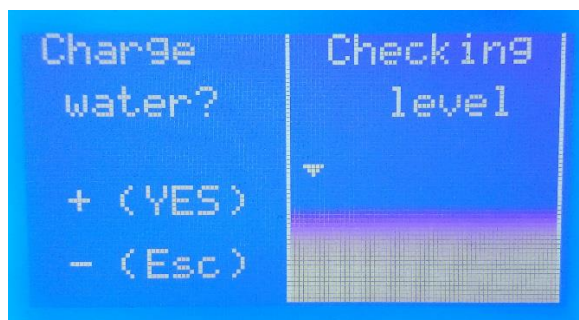
- Connect the tap water connection to inlet hose
- Connect hot water outlet connection to nearest siphone with flexible plastic hose
- Choose to fill water at microcontroller

When electronics is energized it first checks if heating water is present.

It offers to fill the water by pressing up key



or skip the choice by pressing down key.



If no water is present it will not allow to proceed.

Menu with water filling choice will disappear in 5 seconds after start if device is already filled with water.

**Water will flow through the device and exit at connection “hot water outlet”.  
To stop the filling, press down key.**



### Water quality

The quality of the water used for washing, rinsing, heating, cooling is very important. The water used must be appropriate for drinking. This requirements must be fulfilled to prevent accumulation of bacteria on equipment surfaces. It is also important to prevent accumulation of lime scale and to prevent corrosion on surfaces inside the device. Water must be clean both microbiologically and chemically.

#### *Microbiological requirements for water*

All coliform bacteria	Absent in 100ml
Faecal coliform bacteria	Absent in 100ml
Faecal streptococci	Absent in 100ml
Spores of sulfide reducing clostridium	Absent in 100ml
Microflora standard (PCA) at 22°C	Less than 100 CFU in 1ml
Microflora standard (PCA) at 37°C	Less than 100 CFU in 1ml
Pathogenic microorganisms	Absent
Iron oxidizing bacteria	Absent

In the case of chlorination of non-potable water residues that could affect the quality of the product or corrosion on the installations are not allowed.

#### *Chemical characteristics of water*

- Ammonia, hydrochloric acid, sulfuric acid, hydrogen sulfide and hydrofluoric acid must be absent from the water.
- The amount of iron can be 0.2 to 0.3 mg / l. The water must not taste of iron.
- Lead must be absent.
- Water should be free of alkaline earth metal salt. This will facilitate the cleaning and disinfection and improve the transmission of energy and reduce plaque on surfaces.
- The content of chloride ions must be less than 50 ppm.

### **WARNING!**

***Hardness of water, water should be soft (4-8 °dH)***

***Base, acid scale of water, pH value should be neutral pH 7 (+/- 1)***

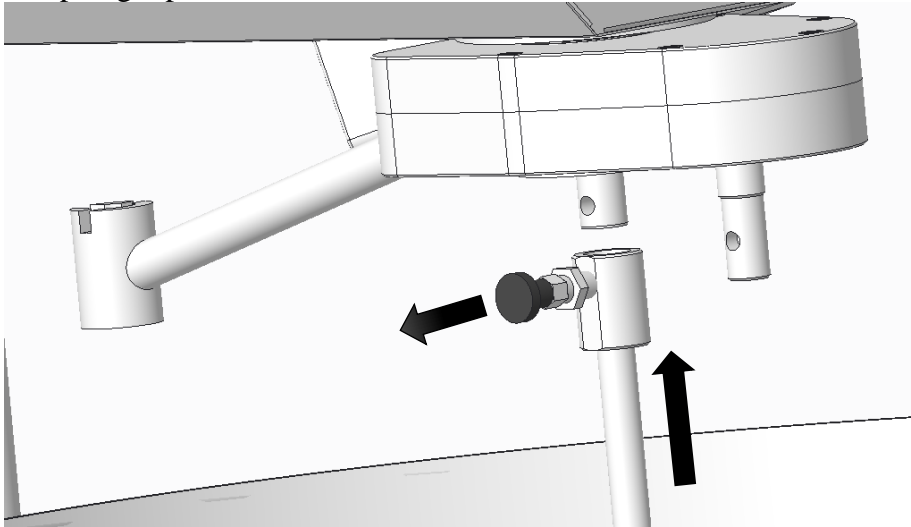
***Water must comply with standards DIN 2000 and DIN 1988.***

***Inappropriate water (inside the device) directly affects the life expectancy of the device which could be shortened by half. Water should be neutralized (with use of filter, softening devices, etc.) for longer life of the device.***

## Mounting mixer and cheese harp

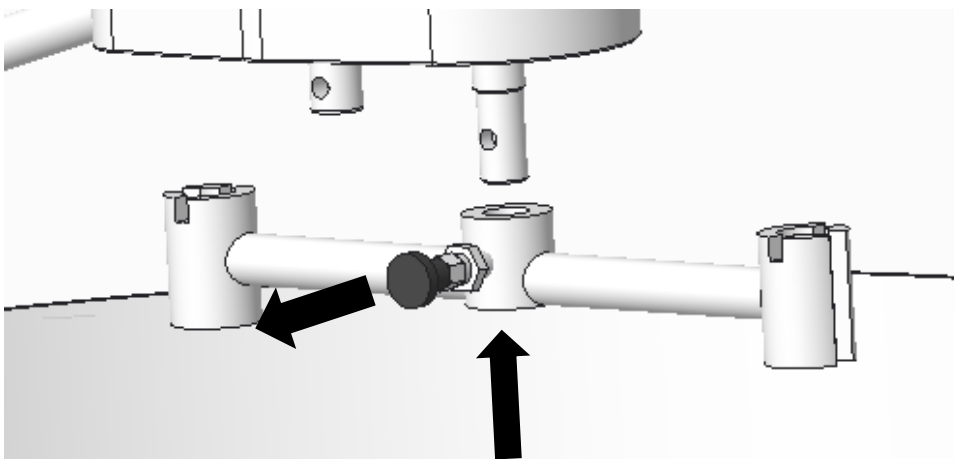
Installation of cheese harps and mixer must be carried out when multi function kettle is switched OFF. Main switch on the lower electrical cabinet must be in the "0" position.

When installing mixer push out black plunger and install mixer onto the axle and make sure that plunger pin is seated in the axle.

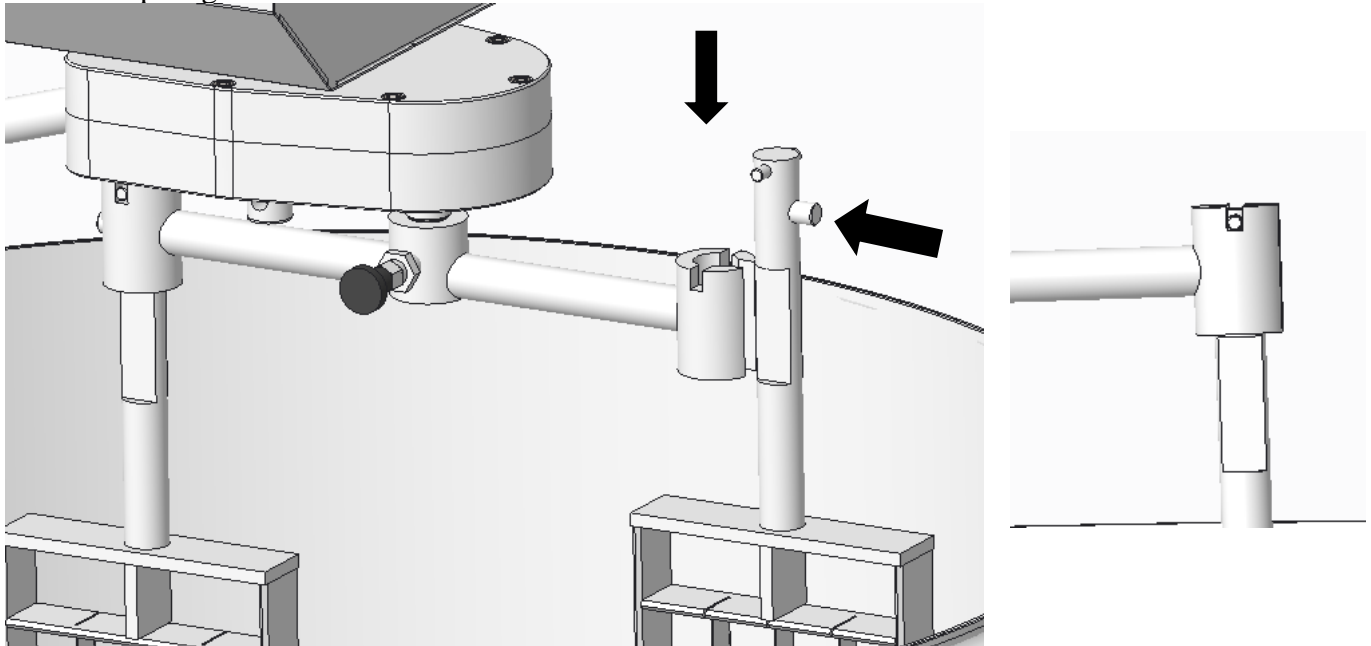


Before installation cheese harps first remove mixer then install harp holder.

When installing harp holder push out black plunger and install harp holder onto the axle and make sure that plunger pin is seated in the axle.



When installing cheese harp blades first align slots then put them from side on then push down that pins get seated into the slot.

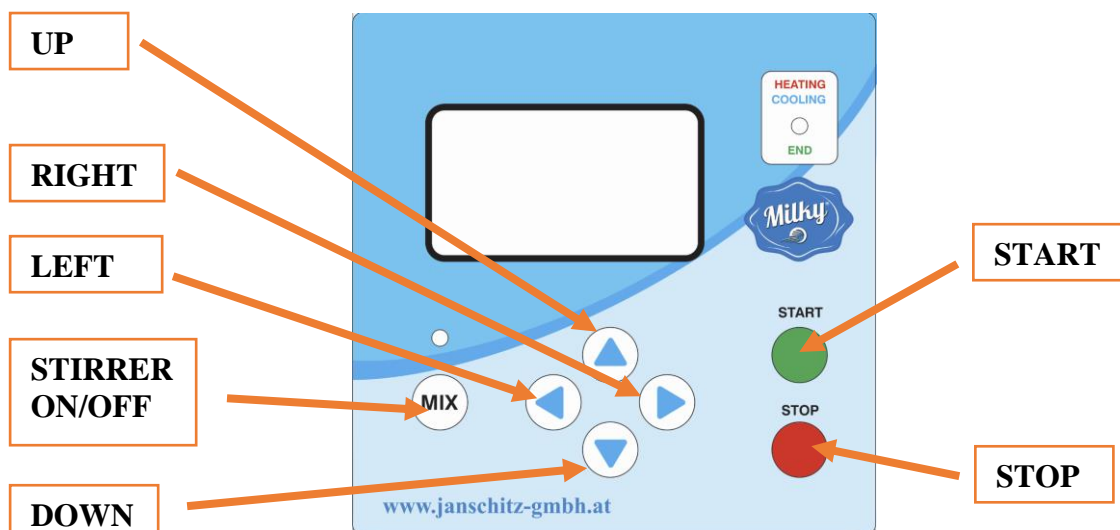


## 5. PROGRAM SETUP

### Control panel

Control panel of micro controller unit has four buttons (see picture below).

- With pressing on a green button you start a process.
- With pressing on a red button you stop a process.
- With pressing MIX button you start rotating a stirrer or you stop rotating a stirrer if it is already rotating.
- With four buttons (up, down, left, right) you manipulate process data and settings. With keys up and down you can change entered values.



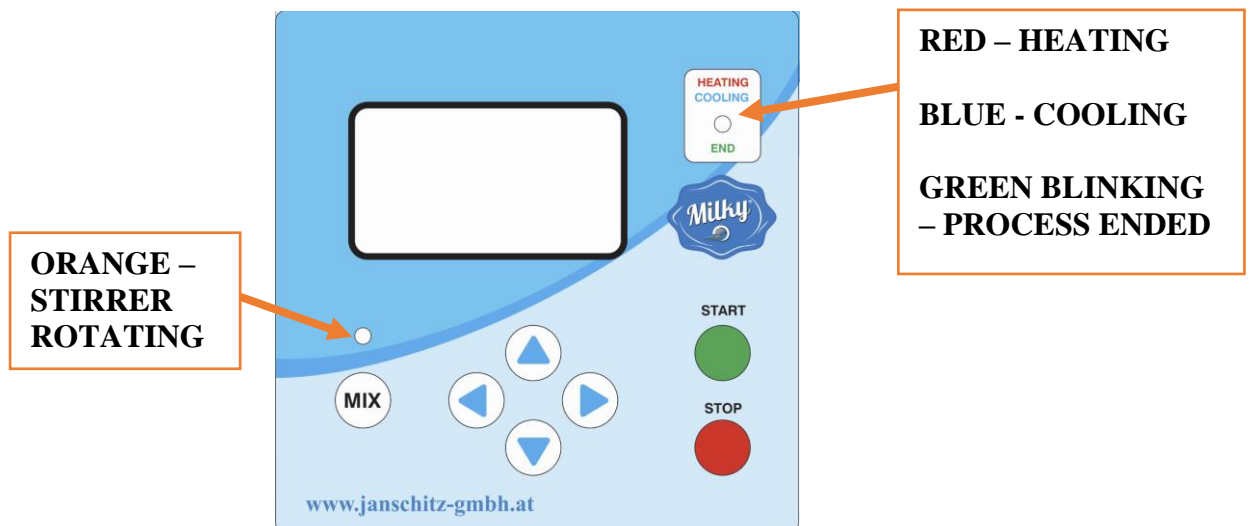
When device is energized you can read most important values on the screen.



*Before start of the heating process make sure the device is properly filled with water and that settings are properly adjusted.*

Control panel of micro controller unit has also indicating led lights.

- ORANGE light above “MIX” button indicates that stirring is activated and mixer or harp system rotates.
- GREEN BLINKING light on the upper right corner indicates that process is done.
- RED light on the upper right corner indicates that process of heating is currently active.
- BLUE light on the upper right corner indicates that process of heating is currently active.



## Main menu

The control panel of microprocessor unit is clear and easy to use. If no button is pressed it will show main menu with all necessary data.

On the left side of control panel process setpoints are displayed when process is running, otherwise only current clock is shown.




On the right side of control panel, milk temperature is displayed in large font. Below is information about the stirrer and process state (heating, cooling)

There is also an icon displayed for each heater and cooling valve when activated.

When the process is running on left side is information about current phase (1-4), Setpoint temperature and duration time (elapsed time – set time)



## Settings menu

The settings menu is entered when right key  is pressed in main menu configuration. First page of settings menu is a setpoint table of temperatures [°C] and times [min].



With pressing up key, value is increased by 1 unit.



With pressing down key, value is decreased by 1 unit.

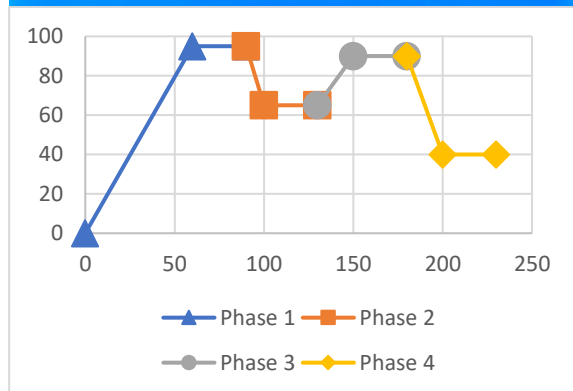


With pressing right key, you switch to another item.



Settings recepies...

Pha.	1	2	3	4
°C	65	65	90	40
m	30	30	30	30

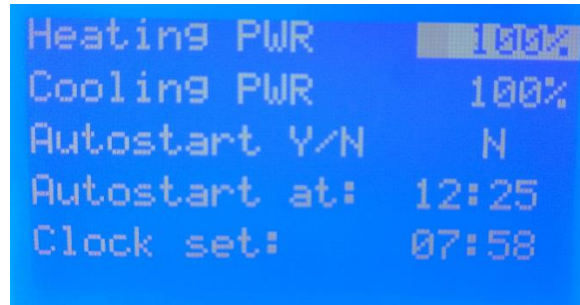


Second page of settings menu offers:

- **Reduction of heating power** from 10-100 % with increments by 10 %

To decrease, press  key, to

increase, press  key.




- **Reduction of cooling power** from 10-100 % with increments by 10 %

To decrease, press  key, to

increase, press  key.

- **Option for autostart the process** with entered setpoint table. To

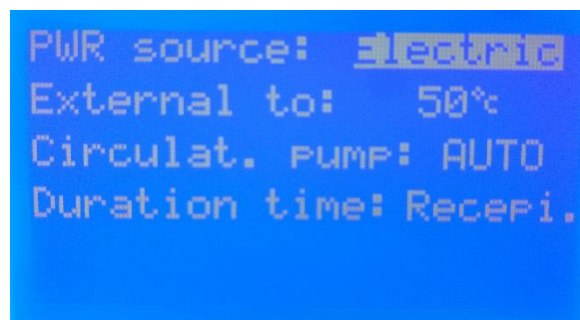
autostart select “Y” with  key.

Clock can be set in this page of settings, values can be changed by pressing up key for increment and down key for decrease. Third page of settings menu offers a setting of duration time.

PWR source: does not apply to this type of device.

External to: does not apply to this type of device.

Circulat. Pump: does not apply to this type of device



**Duration time** setting is factory made “**Recipe**”. That means when milk reaches setpoint temperature, it then holds at this temperature for a set amount of time, before it proceeds to the next phase.

If duration time is set as “**Manual**”, device will hold at setpoint temperature for infinite

amount of time. Only with pressing the



key it switches to next phase.

## Heating procedure

Before heating procedure device must be properly connected.

- Place the device on the firm, plain and stable floor. It is recommended that the source of cooling water and the drain is not more than 2 m away from the device.
- Connect water supply to inlet hose and start filling procedure.
- Connect power supply to electric case.
- Pour desired amount of milk into the kettle.
- Turn on the device – Turn the main switch on (located on the side of the electric case).
- Heating can begin when device is properly setup.
- Press green button to start the heating process. The red light on the upper left part of control box is lit, indicating the heating is in progress. The display shows the present temperature and begins to heat till setpoint temperature is reached.
- After set temperature is reached heating transforms to holding, control unit beeps and the holding time is displayed on screen.
- Device switches to next phase automatically when holding time is passed and stops the process automatically when fourth phase holding time is passed.
- You can switch the phases if you want, by pressing the start key.

**Cover the kettle with two part lid. If kettle is not covered with lid, the time of heating will be longer and it will not reach maximal stated temperature!**

**If you want to move on second process, even if first process is not finished yet, just press key start.**



## Cooling procedure

Before cooling procedure device must be properly connected.

- Connect cooling water to cooling water inlet connection
- Connect drain hose to hot water outlet connection.

Slowly open the valve on your water network or cooling tank, that you connected inlet hose to. Cooling water supply must always be connected to the device, device will open the flow automatically, when needed. When setpoint temperature of milk will be lower than current temperature of milk, the device will automatically start the cooling procedure. The blue light on the upper left part of control box is lit, indicating the cooling is in progress. Cold water will slowly come in the device's double wall and out through outlet hose to the drain. Cooling speed depends on cooling water temperature and flow. When desired temperature is reached, cold water flow will be automatically stopped by solenoid valve.

**ATTENTION:**

**Cooling water coming out of device is hot!**

**Be careful that hose for outlet cooling water is free (is not pressed)**

## 6. CLEANING

Before cleaning make sure that the device is switched off and disconnected from main power supply. Some of device parts could be hot, let them cool down before cleaning.

- The milk kettle and the cover should be cleaned with hot water adding fat soluble detergents. Afterwards these parts should be rinsed with pure water.
- Other equipment shall be cleaned only with wet cloth and afterwards dried with dry cloth.
- Do not use abrasive materials to avoid scratches.
- After use always clean the kettle. Do not use aggressive detergent.
- If milk or cream rests get dry do not remove them with sharp objects or sharp duster.

### Detergents

The base and acid for cleaning must meet the specifications of the manufacturer and should not contain foreign content, which would change the effect of the cleaning solution and affect the equipment. The same applies to disinfectants.

- The base detergent which is usually used is sodium hydroxide (NaOH, caustic soda) with concentration 30/36%. Dilute it to a final concentration of 0.2 / 2% at 70 ° C.
- Maximum content of chloride ions in the solution of sodium hydroxide is 50 ppm. The solution should not contain impurities.
- The acid detergent which is normally used is a solution of nitric acid (NOH3) 33/36% concentration. Dilute it to a final concentration of 0.5 / 2% at 65°C.

- Maximum content of chloride ions in the solution of nitric acid is 50 ppm. The solution should not contain impurities.

*Ensure that no water comes into contact with electronics and electronic parts.*

*Please note!*

*Before cleaning you must always disconnect device from electricity.*

*Use lift handle to lean the empty kettle for easy cleaning.*

## 7. MAINTENANCE AND SERVICE

### Troubleshooting

When a fault occurs, the information will be written on display and device will stop, if not stop it yourself by main switch and disconnect it from main power supply. When device

malfunctions, disconnect the device from mains and call the authorised service - do not repair it yourself!

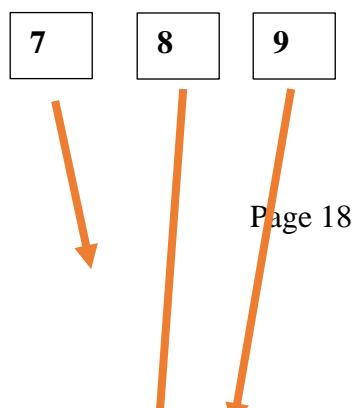
In the chart below are most common errors and resolutions

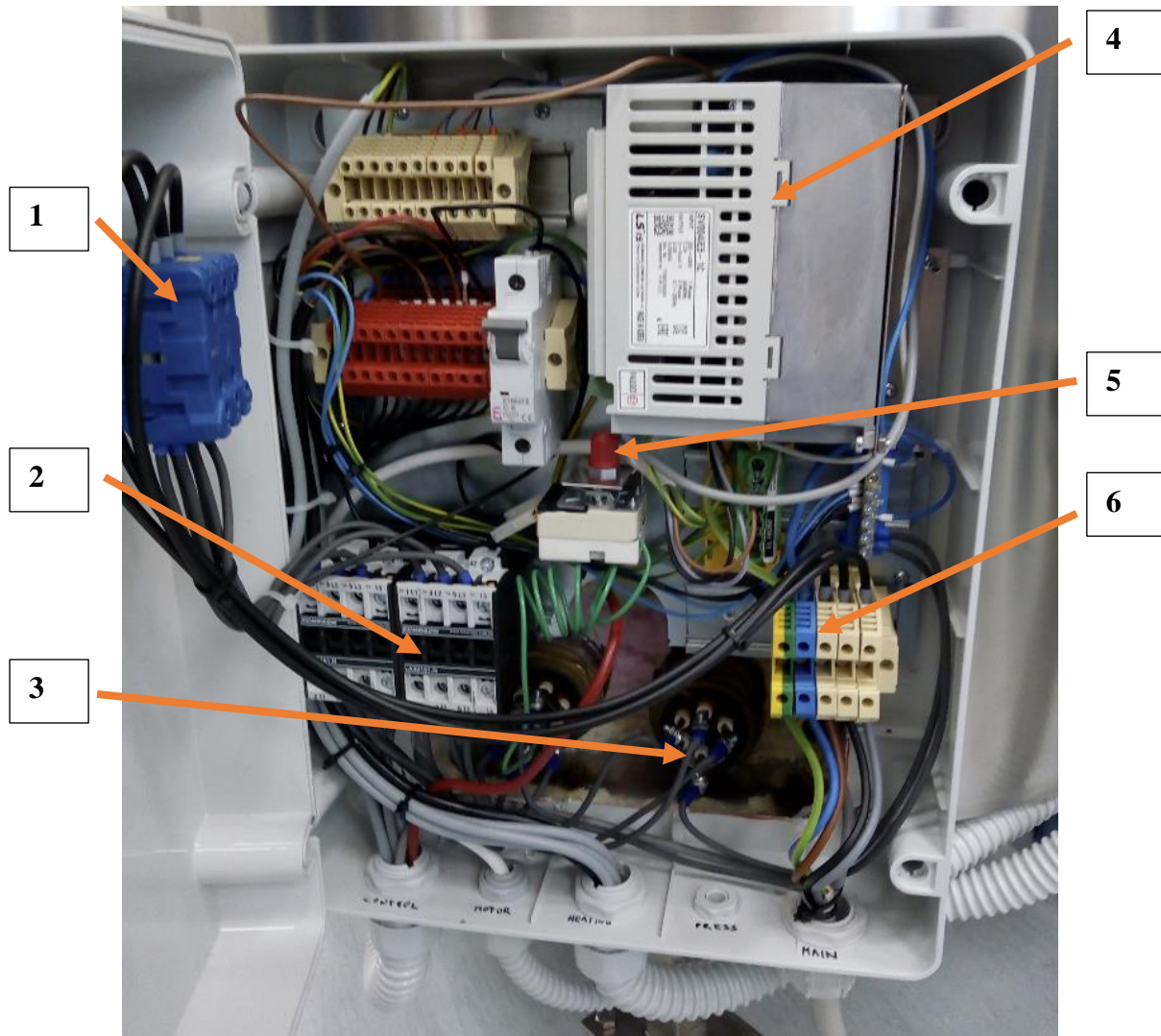
Error code	Description	Resolution
1	Device will not start, the information on display is: "Water level too low"	There is low level of heating water in system, add water.
2	Device will not start, the display is blank	<ol style="list-style-type: none"> <li>1. Check the main power supply</li> <li>2. Check the main switch position</li> <li>3. Check the safety stop switch</li> </ol>
3	Device worked, then it suddenly stopped and will not start, the display is blank	<p>Authorized personnel may open electro case and check the fuse state.</p> <p>If the fuse is activated call authorized service to check for electrical malfunctions.</p>
4	Device worked, then it suddenly stopped and will not start, the display is blank	<p>Authorized personnel may open electro case and check the thermostat state.</p> <p>If the thermostat is activated the device has overheated - call authorized service. The security switch switched off all functions on the device. (overheating protection).</p>

In the chart below are fault displays, meanings and the resolutions.

Error code	Description	Resolution
1	Water level too low	See chapter with water filling
2	Milk Temperature overload	Milk temperature exceeded the setpoint temperature
3	Heating temperature overload	Water temperature exceeded the setpoint temperature
4	Milk temperature probe fault	Milk temperature probe/unit is to be replaced
5	Water in temperature probe fault	Water temperature probe/unit is to be replaced

## Electric case contents







Picture 5

All important parts of Electric case are named and described below:

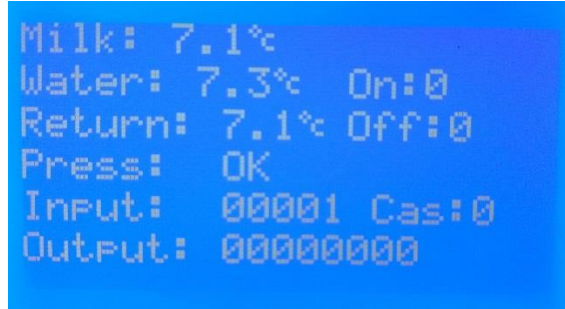
1. Main switch
2. Contactor for activating the heater
3. Electrical heater
4. Motor speed regulator (Frequency inverter)
5. Thermostat
6. Clips for main electricity
7. Clips for sensors
8. Clips for actuators
9. Fuse for electric elements

## Detailed menu

The detailed menu is available when up key  is pressed and hold until device is energized. Detailed menu is entered when up key  is pressed in the main menu.

In first page of detailed menu on the left side:

- Milk temperature is shown
- Secondary water temperature is shown
- Return water parameter does not apply to this type of device
- Pressure parameter does not apply to this type of device
- Input sensor states are displayed in binary form
- Output sensor states are displayed in binary form



```

Milk: 7.1°
Water: 7.3° On:0
Return: 7.1° Off:0
Press: OK
Input: 00001 Cas:0
Output: 00000000
  
```

Input sensors in binary form:

Digit 1- level sensor

Digit 2-

Digit 3-

Digit 4-

Digit 5-

Output sensors in binary form:

Digit 1- Heater 1

Digit 2- Heater 2

Digit 3- Circulation pump

Digit 4- Cooling solenoid valve

Digit 5- Mixing valve open (external source)

Digit 6- Mixing valve close (external source)

Digit 7-

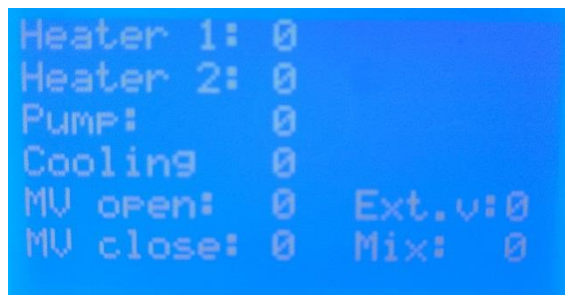
Digit 8- Motor valve open (external source)

On the right side process control parameters are calculated.

- On represents temperature of water when command is activated
- Off represents temperature of water when command is deactivated
- Cas represents the inclination of heating curve (for fast or slow process characterization)

Second page of detailed menu shows simplified state of main device components.

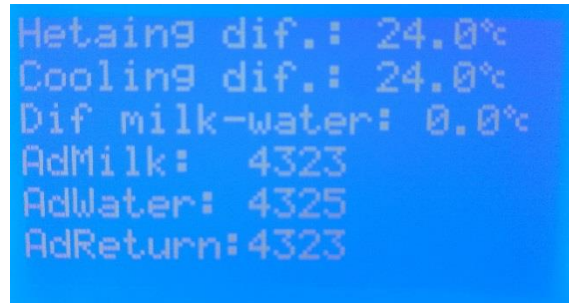
When component is active the value is 1, if component is deactivated, value is "0"



```

Heater 1: 0
Heater 2: 0
PUMP: 0
Cooling 0
MU open: 0 Ext.v:0
MU close: 0 Mix: 0
  
```

Third page of detailed menu shows calculated parameters.



Heating difference value represents the maximal heating difference between milk and secondary water.

Cooling difference value represents the maximal cooling difference between milk and secondary water.

Actual difference between milk and secondary water is calculated.

Analog value of Milk sensor is shown.

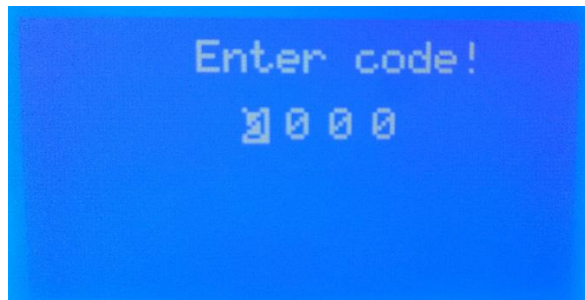
Analog value of Water sensor is shown.

Analog value of Return water sensor is shown.

### Advanced settings menu

The advanced settings menu follows the settings menu and is entered only with a service code. This menu is locked due to safety reasons and can be adjusted only by a credited service partner.

First enter the supplied code to enter the advanced settings menu.



With pressing up key, value is increased by 1 unit.



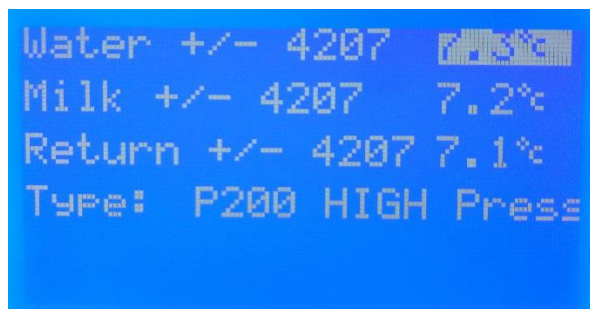
With pressing down key, value is decreased by 1 unit.



With pressing right key, you switch to another digit.



**Water sensor** offset adjustments can be made by increasing or decreasing the current temperature value. Pay attention on analog value when changing.



**Milk sensor** offset adjustments can be made by increasing or decreasing the current temperature value. Pay attention on analog value when changing.

**Return water sensor** offset adjustments can be made by increasing or decreasing the current temperature value. Pay attention on analog value when changing.

**Type of device** can be chosen:

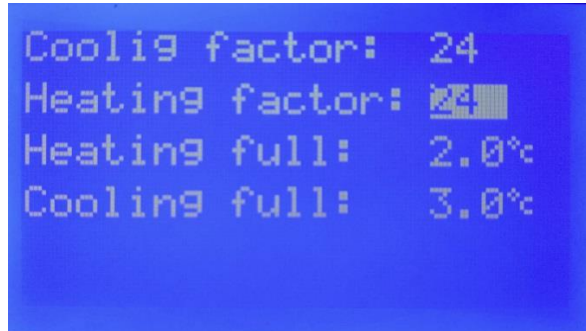
- P200 High pressure (closed type devices)
- P200 Low pressure (open type devices)

**Cooling factor** is a temperature difference between milk and secondary water when device is in cooling phase.

**Heating factor** is a temperature difference between milk and secondary water when device is in heating phase.

**Heating full** is a offset in heating phase , where according to setpoint temperature, fine regulation is applied.

**Cooling full** is a offset in cooling phase, where according to setpoint temperature, fine regulation is applied.



## 8. DEVICE ASSEMBLY AND SPARE PARTS

Device spare parts list

Pos.	Art. No.	Part name	Kg
1.2		Milk outlet valve with knee outlet	
1.3		Two part cover with handles	
1.6		Microprocessor unit	
2.18		Level sensor	

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2.19		Solenoid valve for cooling water	
3.1		Main switch 25A	
3.2		Contactora 7,5 kW	
3.3		Electro heater 6kW	
3.2		Contactora 11 kW	
3.3		Electro heater 9 kW	
3.4		Frequency inverter LS 1e5 400W	
3.5		Thermostat 125°C 16A	
3.9		Automatic Fuse C 6A	

## Spare parts ordering procedure

Fast and reliable shipment of spare parts is possible only if their description is clear enough. At the time of ordering please state clearly:

- Type of device
- Serial number printed on label plate at the rear side of device.
- Spare part name and number

## 9. WARRANTY

- In case of troubles consult with your salesman or call authorized service.



- Equipment is warranted to be free from defects in material and workmanship for a period of 12 months against faulty components and assembly. Our obligation under this warranty is limited to the repair or replacement of the instrument or part thereof, which shall within 12 months after date of shipment prove to be defective after our examination.
- Defects or damages of the device, which are result of improper assembly, use, connection or maintenance are not covered by this warranty.
- The warranty also doesn't cover:
  - Device malfunction due to water or milk inflow,
  - Mains cord,
  - Heating elements and it's actuators (contactors)
  - Repairs done by yourself or by other not authorized people,
  - Transport costs.
- Other rights, that are not mentioned in upper obligations of the manufacturer, especially responsibility for personal injury, are excluded.
- The given technical specifications are valid only when all conditions in this user`s manuals are fulfilled.

***Dear Customer!***

***We are sure, you will find that our device is a helpful tool and we believe that it will serve you for a long time without any problems. We hope you will recommend it also to your friends!***

***Thank you for buying it!***