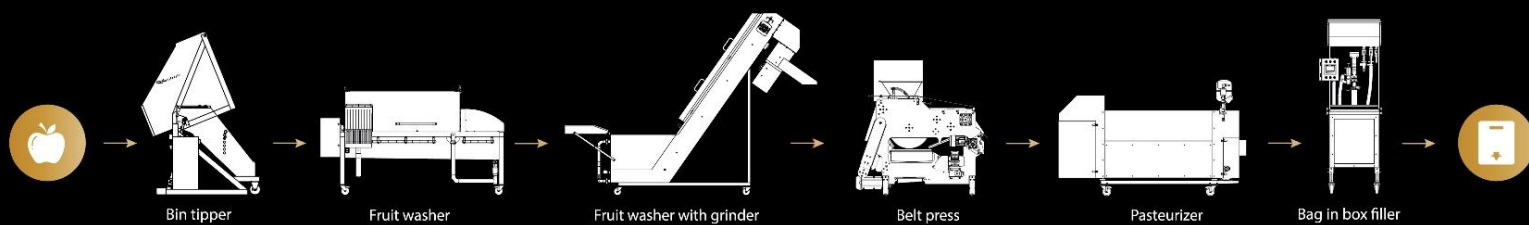


ECOHEAT 1000

Original Instruction Document



JSC/UAB PROFRUIT MACHINERY

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INFORMATION ABOUT MANUFACTURER

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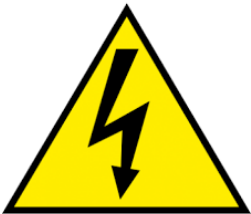
E-mail address: info@pro-fruit.com

Website: www.pro-fruit.com

1.1. Warning signs

There are special warning and prohibition signs put on the machines which are meant to inform the user about danger and keep everyone – people and machinery – safe at all situations. The meaning of each sign is described below.

2



**Control console.
High voltage**



Headset required



Work shoes required



The risk of limb injury.

It is mandatory to remain alert and protect the limbs.



The risk of limb injury.

Moving parts of the machine.



**Hot surface.
Risk of getting burned.**



**Warning. Sharp parts of machine
Risk of limb injury.**

2. GENERAL REQUIREMENTS

General instructions:

- Ambient air temperature +8...+35° C.
- Relative humidity (when temperature +25 °C) up to 70%.
- Atmospheric pressure, kPa 84-107.
- The Law on Occupational Safety and Health of the Republic of Lithuania, the General Provisions and Safety Instructions for the Use of Work Equipment and the Laws on Occupational Safety and Health of the European Union must be observed while using the machine.

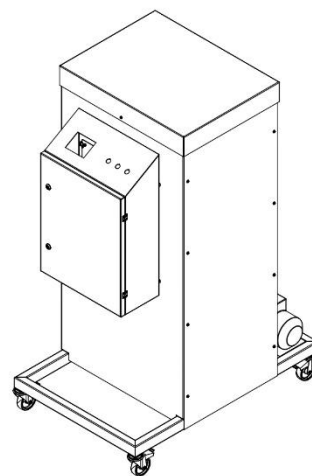
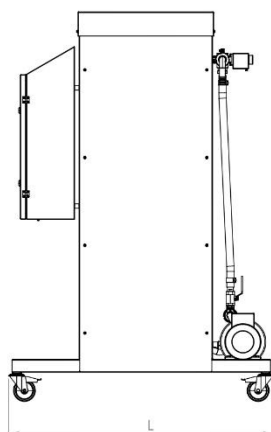
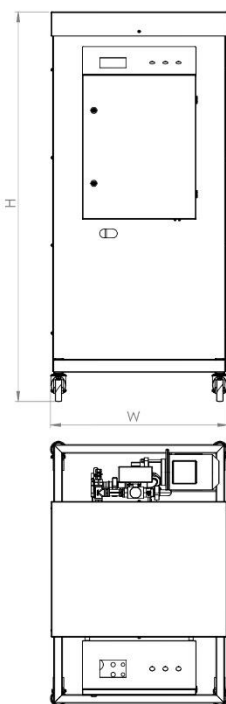
Pasteurizer ECO HEAT

Electric pasteurizer heats and pasteurizes various liquids before the filling process. Machines run on electricity and is a more ecological choice.

The liquid comes into the tubular spiral surrounded by hot water which is heated by three electrical heating elements. The heat from the water heats up the liquid and eliminates the bacteria.

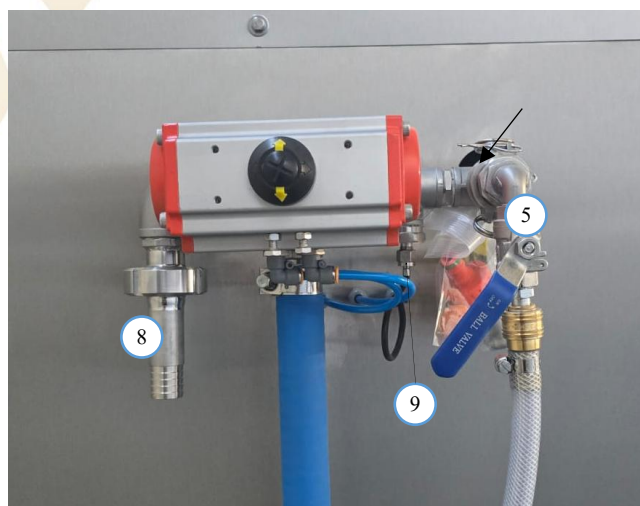
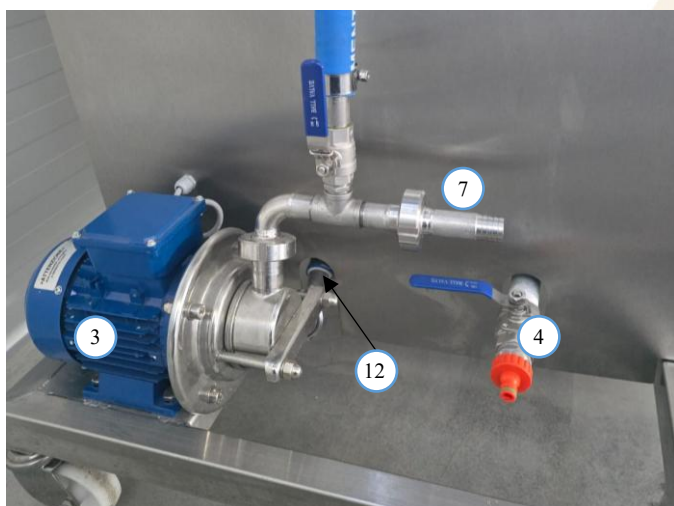
- Output: ECOHEAT 1000 - 750 -800 l/h.
- The pasteurizer is suitable to heat various liquids, including viscous liquids: juice, puree, wine, broth, milk and other.
- The maximum heating temperature of electric pasteurizer is 90 ° C (194 °F).
- Juice comes into the tubular spiral which is surrounded by hot water.
- Tubular spiral is made of stainless steel.
- The boiler has an integrated spiral. This provides saving of space and also prevention of heat loss when pumping the water into external heat exchanger. As a result, this technology saves the heating energy up to 15-20 %.
- The heating power is 60 kw.
- Electric pasteurizer has a touch-screen panel with digital thermostat which provides an automatic water temperature control.
- Automatic regulation of liquid temperature ensures an easy way to change the filling temperature on digital display.
- The pasteurizer is fast and easy to clean. It can be washed by CIP cleaning together with our Bag in Box fillers.
- Machine has pivoting wheels.
- The pasteurizer is easy to clean and maintain.

Machinery specification and drawings



	Machine	Electric Pasteurizer
	Type	EKO HEAT 1000

L	mm	1210
W	mm	810
H	mm	1777
Capacity	l/h	750 - 800
Max heating temp.	C	90
Weight	kg	320
Supply source	kW	61
Supply voltage	V	3/N/PE ~ 400 V 50Hz



1.	Central control panel
2.	Pivoting wheels
3.	Liquid pump
4.	Water inlet valve
5.	Deaeration valve and washing ball cleaning connection
6.	Three-phase el. supply cable (3/N/PE, 400V 50hz)
7.	Juice inlet connection
8.	Juice outlet connection
9.	Juice temperature sensor
10.	Pneumatic juice release and circulation valve (V1)
11.	Washing ball inlet
12.	Washing ball outlet
13.	Air Compressor connection valve
14.	Openable cover
15.	Main switch

Instructions for main control panel



- **EMERGENCY STOP** stops the machine at all times. After emergency is fixed, you have to pull the button back and start the system again.
- Switch (**JUICE PUMP STOP/START**) – JUICE PUMP START is used for priming and deaeration of the juice, it is used before starting the system to fill tubes with juice.
- **HEATING STOP/START** is used to start the heating process.
- **SYSTEM STARTED** is to show when machine is started and is on working mode.

Instructions for touchscreen panel

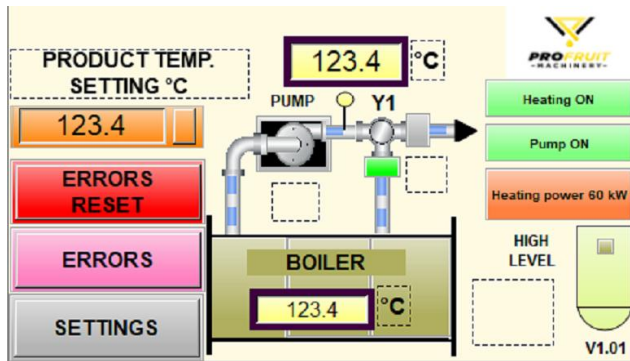
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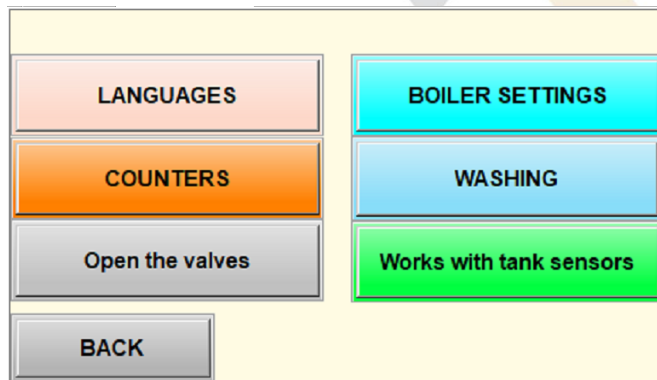
Ph. Nr. +370 633 64143

- Main screen display



1.1 Fig.

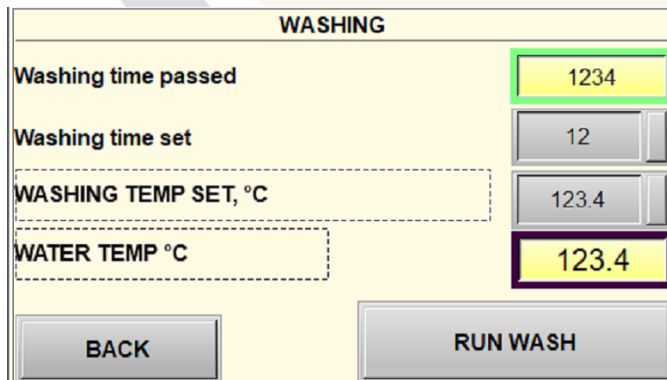
- Button PRODUCT TEMP SETTING °C. sets the liquid (product) temperature.
 - Button ERRORS RESET resets the error and let's continue the work.
 - When Button ERRORS is pressed, you can see the error history with explanations.
 - HIGH LEVEL shows the AUTOFLOW or SEMIFLOW buffer tank liquid level. (when machines are connected to each other)
- After you press button SETTINGS (1.1 Fig.), a new window opens up and it is possible to edit parameters (1.2 Fig.).



1.2 Fig.

- WASHING menu is used for washing the machine (1.3 Fig.)

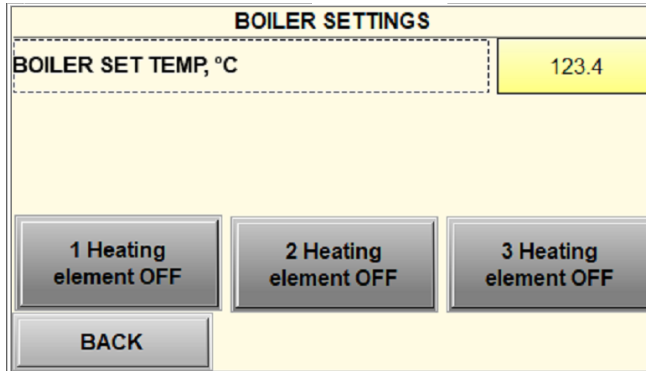
- LANGUAGES – Changes the system language and changing temperatures in degrees or Fahrenheit (**1.6 Fig.**).
- COUNTERS – Shows total working time of machine.
- OPEN THE VALVES/VALVES OPENED – manually opens the pneumatic juice release valve (V1).
- WORKS WITH/WITHOUT TANK SENSORS – If machine is connected with the given cable to the filling machine WORKS WITH TANK SENSORS has to be selected in order to work. If it works with outsourced or without filler, WORKS WITHOUT TANK SENSORS is selected.



1.3 Fig.

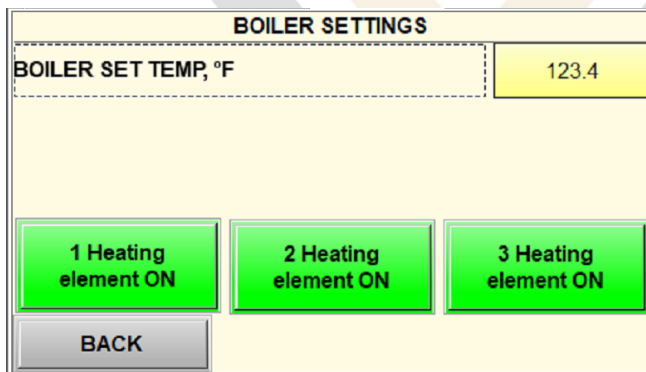
- WASHING TIME PASSED – shows how many washing time is passed.
- WASHING TIME SET – sets the washing time.
- SET WASHING TEMPERATURE, C – sets the lowest washing temperature to start the washing process. Recommended washing temperature with alkalines – 50-60C.
- WATER TEMP °C – shows current temperature of boiler.
- RUN WASH – starts the washing process.

- BOILER SETTINGS, you can adjust boiler (water) temperature and water. Recommended water temperature should be 5-7 °C higher than juice temperature.



1.4 Fig.

- 1 Heating element OFF/2 Heating element OFF/3 Heating element OFF – Each button can be used to reduce or increase the boiler power from 20 kW to 60 kW. The heating power is displayed on the main screen (1.1 Fig.).



1.5 Fig.

- 1 Heating element ON/2 Heating element ON/3 Heating element ON – All heating elements are turned on. In the main screen (1.1 Fig.) shows heating power 60 kw.

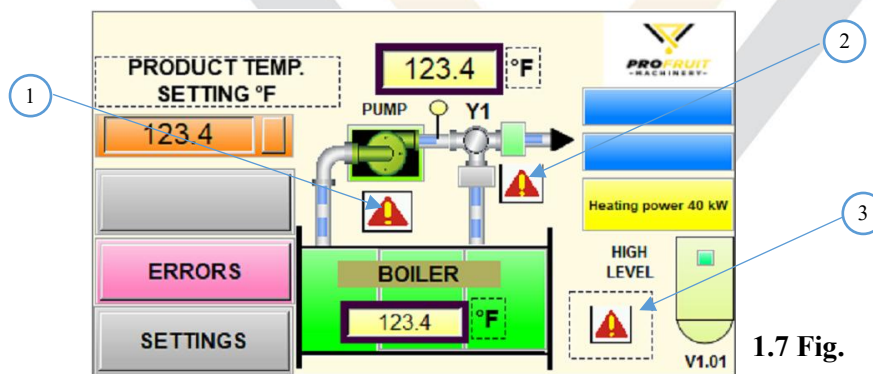
- Language menu:



1.6 Fig.

- Temperature selection in Celsius or Fahrenheit

Displaying errors on the main screen. Error meanings and troubleshooting.

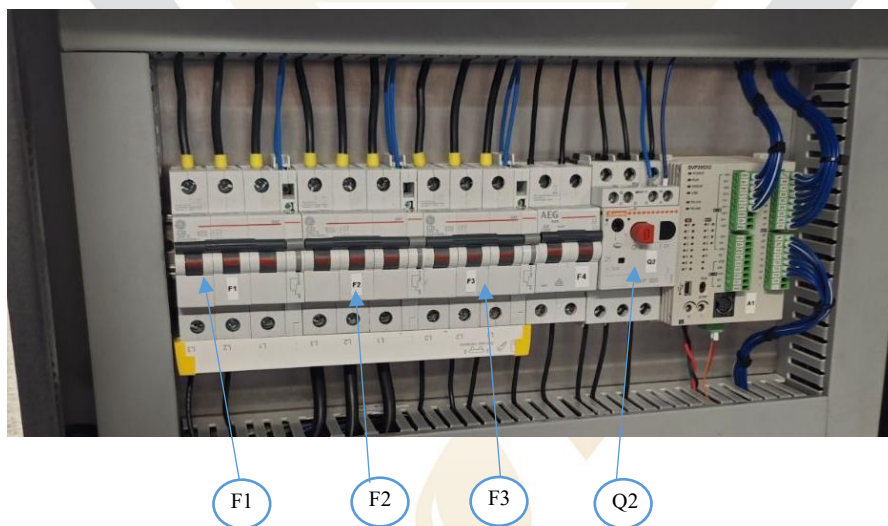


1.7 Fig.

- Heating element or main pump fault check F1, F2, F3, Q2. (1.7 Fig. – 1) – The heating elements or product pump may be switched off. Check the switches in the electrical panel (1.8 Fig.)
- Emergency Stop button pressed (1.7 Fig. – 3) – Check and turn off the emergency stop button.
- Press **RESET** – Click on the main screen **ERRORS RESET**.

- **The water level in the boiler has dropped to an unacceptable level. Add water –** There is not enough water in the boiler, top up. The machine is not working, it can be operated after adding water.
- **Refill the boiler with water –** The water level in the boiler has dropped and may need to be topped up soon.
- **The water level in bathtub is high –** The boiler is full of water.
- **Warning sign lights up (1.7 Fig. – 2) –** Indicates that the juice outlet valve is opened manually. When working in automatic mode, remember to turn off.

Electrical panel



1.8 Fig.

Assembly, connection and installation of the machine

Steps to accomplish in order to start working with the machine:

- Open the cover of boiler and fill descaling liquid inside the boiler, to descale the system. Do this everytime when water is poured out of the system entirely.

- Remove the cover (No. 14) by opening by unscrewing M6 screws:



- Unscrew the Unscrew the connector.



- Move the overflow pipe to the side.



- Screw on the descaling liquid filler cap. After adding fluid, reassemble everything in reverse order.



- Attached is a picture of the descaling additive.



- Tank is 210l. fill descaler to descale the water according to descaler manufacturer instruction. For first time descaling is added together with machine. 7,5l of descaler will be enough to descale machine two times.
- Connect water supply to the water inlet valve. Open up the valve and fill it with water until error on the screen (The water level in the boiler has dropped to unacceptable level, Add water) is gone. Instantly refill the water when you receive this error again.
- Connect the air compressor to the air compressor connection valve (No. 13). Needed air pressure – 6 bar.
- Connect the juice supply hose, which comes from the desired liquid tank, to the juice inlet connection.
- Connect the juice outlet hose to the liquid outlet connection.
- Turn the handle of the juice supply valve into the working mode – vertical position.
- Turn the handle of liquids outlet valve into the working mode – vertical position.
- Insert the power cord (3/N/PE, 400V 50hz) into the three-phase socket. It is prohibited to connect machine in lower than 62 kw el. Supply.

Instructions for using the machine

- Turn on the machine with the main switch (No. 15).
- After the control touchscreen turns on, press ERRORS RESET so the work can be started.
- Choose the required liquid temperature in the main screen (for juice the recommended temperature is 77 - 80 degrees, maximum temperature is 90 degrees Celsius).
- Choose the required boiler temperature (it should be approx. 7 degrees higher than the liquid temperature).
- Deaerate the system by opening Deaeration valve (No.5) and switching to JUICE PUMP START. When liquid is coming out evenly, without any air, from the deaeration valve, close the valve and put the Switch to JUICE PUMP STOP.
- Choose the position HEATING START with the switch (HEATING STOP/START).
- When the boiler turns on, wait until the boiler and juice reaches the set temperature.
- Pneumatic juice release valve will open and supply the liquid into the filling machine.

Deaeration process

It is possible that some air can get stuck or withhold in the internal spiral of the pasteurizer. In this situation come troubles can occur and the flow of the liquid can be disturbed. This is why every time before using the machine the deaeration valve should be opened up and pump set on manual until the liquid starts to flow uniformly.

Safety mechanisms

- **Safety after in case of a sudden black-out** – when the power supply is suddenly cut off or a similar situation happens, the machine is turned on normally and does not cause any dangerous situations like sudden start or improper operation.
- **Safety of electronical pieces** – all the electronical pieces are installed in the internal part of the central command box and shielded with the protection lid. The protection lid that ensured IP 65, can be opened only with a special key.
- **System overheat thermostat**– a protector is built into the pasteurizer that protects the machine from overheating danger. In case of occurred error, increased pressure or temperature, the protector automatically turns the pasteurizer off and does not let continue work until the error is safely solved.

The workplace of operator

- The pasteurizer is controlled by one person.
- The workplace of an operator is in front of the control panel.

Setting the air pressure

To set the air pressure, it is necessary to complete the following steps:

- Turn on the compressor.
- Connect the compressor to the compressor inlet valve. Inlet tube diameter – 6 mm.

- The normal air pressure for the pasteurizer is around 6 Bar
- If the pressure is different, use the compressor to adjust the pressure.

The washing of machine

The washing of the machine is only internal and must be done in two ways:

1. Washing with the sponge ball

- Turn off the machine
- Unscrew washing ball outlet connection (**No.12/1.9 Fig.**)
- Close juice inlet and outlet valves.
- Open up the washing ball inlet (No. 5).
- Insert the sponge ball into the inlet and push it deeper towards the elbow branching (**1.10 Fig.**).
- Connect a special washing nozzle to the washing ball inlet. Connect the water to the washing nozzle (**1.11 Fig.**).
- Turn on the water from a water hose.
- Wait until the sponge ball is flushed out of the washing ball cleaning connection (No.12).
- Repeat this until the water coming out together with the ball is completely clean.



1.9 Fig.



1.10 Fig.



1.11 Fig.

2. CIP circulation washing

- Fill in your separate liquid tank with water. It is recommended to pour into the water some alkaline detergents that are suitable for food industry. There should be about 50 liters of water in the tank.
- Connect your separate juice outlet connection (No.8) to the filling machine. Connect the washing nozzle to the filling machine and put the other end of the hose inside your separate tank with water and alkaline.
- Set the liquid temperature in the pasteurizer washing menu to 0 degrees Celsius.
- In the pasteurizer washing screen choose the desired washing time. The recommended washing time for CIP washing is 15 min.
- Start the washing process.
- When there will be 3 minutes left until the end of the washing process, transfer the end of the washing hose from your separate liquid tank to some kind of sewer opening in such manner so the running water would not disturb or harm any people or mechanisms.
- When the washing process is done, fill in your separate liquid tank with around 50 liters of clean water.
- Connect the washing hose to the filling machine and and put the other end of the hose to some kind of sewer opening in such manner so the running water would not disturb or harm any people or mechanisms.
- In the washing screen on the filler set the required washing amount – about 50l. (**This applies If you use our filler**)
- Start the washing process.

Pasteurization process

- The liquid from your separate liquid tank enters the machine through the liquid inlet valve.
- The liquid is immediately heated by the hot water.
- The pasteurized liquid comes out through the juice outlet connection.

Conditions for using the machine

- The machine, its workplace and ground must be kept clean, neat and properly lit at all times when using it.
- A higher than 1,8 m room or using area is required.
- The area around the machine needs to be empty so machine would not be bothered with any interference.
- The machine is operated by one person who has passed his training with the machine and is familiar with all the instructions and risks.
- Flat, stable and solid ground is needed for machine, the ground must hold 600 kg weight. This stable ground is always obligatory: when using the machine, during transportation, assembly, dismantling, testing, foreseeable failure or non-usage periods.
- When transporting, lifting or storing the machinery the client is obligated to assure its safety and proper fastening.

Safety requirements

- If some machinery failure, obstacle, accident, emergency or any other dangerous situation happens it is obligatory to stop, shut down the machinery immediately or operate equipment depending on the situation in order to avoid or eliminate dangers.
- The machinery can be operated only by person who has passed his training for machinery and is familiar with all the machinery instructions and risks. The person must also be in proper physical and mental state and not be affected by any substances that could interfere with normal functioning (such as pharmaceuticals, drugs, alcohol etc.).
- It is prohibited to do any activity with the machine during its working process (such as washing, transporting etc.).
- It is prohibited to wet or pour any liquids onto the central control box and engines.

- Every time before using the machine the operator must carefully inspect the machine, check if all the parts and electrical buttons are in place and working properly as well as examine if the equipment meets all the safety requirements and is prepared for normal work.
- The main control panel and engines can be fixed, repaired or changed only by the manufacturer or its approved repairing company. All the engineering and electrical works must also be performed by the manufacturer or its approved repairing company.

Warnings

- It is prohibited to use liquids that could damage the machine or its parts. It is prohibited to pasteurize and use any liquids that are too thick, that are not suitable for pasteurization, that are not properly processed (not filtered, contain thick particles) and are dangerous to the machine, environment and/or the other people. All the liquids that the client wants to pasteurize with this machine must be previously discussed with the manufacturer. If manufacturer advises not to pasteurize some liquid and the client still uses it, all the machinery warranty service is automatically terminated and the client takes all the responsibility for the actions and consequences.
- This electric pasteurizer is manufactured and most suitable to pasteurize apple juice. If the machine is used for other liquids, the efficiency of the machine can differ. Depending on the liquids, additional action may be required in order to ensure the smooth work process (i. e. to use slower pasteurization mode, pay closer attention to the washing of the machine, etc.)
- It is forbidden for any people to touch, lean on or have contact in any way with the working machine, its parts, the products that are being processed or other dangerous parts because of the risk of injury. Only actions that are necessary for a proper work with the machine are allowed.
- All machinery parts, buttons and operational details must be used according to their purpose.
- Any arbitrary adjustment, repair or other mechanical modification of the machine by a non-manufacturer will result in termination of the warranty service.

- It is prohibited to climb or put things on the machine at all times.
- The machine can only be washed, lifted, transported or otherwise operated after it was switched off completely.
- The cover of the burner is opened with a special key by an operator or warranty service person.
- The machine only works properly when all its parts are properly attached.
- The manufacturer produces and prepares the machine based on all machinery requirements and client's needs. Changing and mechanically adjusting any machinery settings without manufacturer or its approval is prohibited.

Residual risks

- The risk of sound and hearing damage due to the noise made by the device still remains even in compliance with all safety requirements.

Precautionary directions

- Before using the machine, the operator must inspect the machine for defects and meet all safety requirements. If discrepancies are found, do not use the machine until they have been eliminated.
- It is recommended to remain attentive around the machine and to keep a distance from the machine and its parts when it is not necessary.
- If the situation requires contact with parts of machinery that are hazardous to health or dangerous to environment, additional precautions must be taken: consultation with the manufacturer, usage of other equipment or tools, wearing protective gloves and other actions depending on the situation.
- It is recommended to wear clothing and footwear that is non-slip, water resistant and is appropriate for work. To reduce the risk of sound during work, it is recommended to use sound-insulating headphones.
- It is recommended to follow all additional safety requirements in order to stay safe and prevent any injuries.

Transportation of machine

- The machine is transported by truck.
- The machine is transported in one piece without separating its parts.
- During transportation the machine must be secured in such a way that its components are not damaged and the machine itself remains stable during transport.
- When transporting and otherwise moving or changing the position of the machine it must be done after it had been completely switched off, emptied and securely fastened.
- The machine has to be put straight on the horizontal ground during transportation.

Machine operation in case of risk

- In the event of accident or emergency operate the machine depending on the situation: stop, shut it down, return to a safe or less dangerous position immediately and eliminate the danger.
- If the machine breaks down, switch off the machine and evaluate the failure. If the failure cannot be eliminated by yourself (such as removing the dirt, other obstacles) or it is dangerous, contact the manufacturer for warranty service, if the warranty service has expired, apply for repair.
- In case of jammed machine assess the situation, inspect the jammed part of the machine and try to solve it if there is no danger. Depending on the situation try restarting the machine or contacting the manufacturer for warranty service or repair.

Adjustment and maintenance of machine

- Inspect machine parts before every use, regularly check machinery.
- Wash the machine regularly (after each shift).