

**RUSSIA
JSC CHUVASHTORGTEKHNICA**



**STEAM COOKERS-CONVECTIONAL
ELECTRIC KITCHEN:
PKA 6-1/1VM2-01 and PKA 10-1/1VM2-01**

OPERATION MANUAL



CHEBOKSARY

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SIGNS INTERPRETATION

	Reference information
	Danger! Situation of the immediate danger or dangerous situation, which can cause harm or death.

1 EQUIPMENT PURPOSE

Electric kitchen injection steam-convectional devices PKA6-1/1VM2-01 and PKA10-1/1VM2-01 (further combi-steamers) are intended for cooking food in various modes: "**Heating**", "**Convection**", "**Convection+Steam**" and pre-saved programs ("**Program**" mode).

Combi-steamers are used at the commercial kitchens individually and as a part of a technological line.

Only trained staff is approved for operation and maintenance of the combi-steamer.

The design of the combi-steamer is constantly being improved, therefore changes are possible that are not reflected in this passport.



This manual shall be observed by the operator, wiremen and other employers, which are responsible for storage, transportation, installation, commissioning, operation and service of the combi-steamer before the commissioning. The manual should be kept in a place accessible to the user and stored for the entire service life.

2 CONSTRUCTION AND OPERATION PRINCIPAL

The overview of the combi-steamer is presented on the picture 2.

Combi-steamers PKA6-1/1VM2 and PKA10-1/1VM2-01 have the following construction brakes:

- it is possible to put 6 GN1/1 trays into the oven of PKA6-1/1VM2-01 combi-steamer and it is possible to put 10 GN1/1 trays into the oven of PKA10-1/1VM2-01 combi-steamer;

The heating bundles of PKA10-1/1VM2-01 combi-steamer oven are more powerful;

The oven (pic.1, pos.1) is installed on the base and closed by dismountable covering and door from the outside.

The door has a double glazing. Inside glass (pic.1, pos.3) is mounted on the loops, it is possible to open and clean it.

Door handle (pic.1, pos.22) has double step opening mechanism.

The oven is separated into two zones (pic. 1, pos.10) by a partition-wall:

- technological area;
- operation area.

The following is located in the technological area:

- a fan (pic.1, pos.6) (an impeller with electric motor), which provides uniform mixing of air in the oven during operation. The fan electric motor is installed on the side wall of the oven;

- "air" heating bundles (further - air heaters), installed around of the fan;

- working cylinder of the thermo-switch (plus) 320°C. The working cylinder is connected with the thermo-switch body (pic.1, pos.20) by the capillary tube. The thermo-switch prevents the emergency situation in the case of malfunction of the control temperature system. If temperature in the oven exceeds (plus)320°C, the thermo-switch de-energizes the control circuit. The controller, analyzing the status of the contacts of the control circuits, displays a conditional error code on the control panel (see section 8).

- temperature sensor. The temperature sensor is intended for temperature control, its contacts are connected to the controller.

The following components are mounted in the operation area:

- left and right guide rails (pic.1, pos.5) (for trays);

- needle temperature sensor (further - a probe), which is intended to control temperature inside the product. The probe has three temperature sensor, which allows to control the temperature in three points simultaneously.

- Two lightening lamps are installed on the left wall, under the safety glass (pic.1, pos.23).

- "an umbrella" is installed on the upper wall of the oven. For programs with automatic washing, the washing pump (pic.1, pos.22) takes water from the tank and through the pipeline feeds it to the "umbrella". Water from the "umbrella" is sprayed on the oven walls, flows down and goes into tank.

Moisture from the door goes to the tray (pic.1, pos.4).

The oven is connected with outside environment via collectors output pipe (pic.1, pos.9). The part of steam goes into collector during the operation of the combi-steamer (pic.1, pos.13).

Steam condensed in the collector and simultaneously heats the water, which is fed into the chamber. Water from the collector goes into the drain collector (pic.1, pos.26), it is cooled and wasted into drainage. The temperature sensor (pic.1, pos.15) controls the drainage temperature. By the signal from the temperature sensor of the drainage. controller form the command for turning on the electromagnetic valve (pic.1, pos. 14) to feed cooling water.

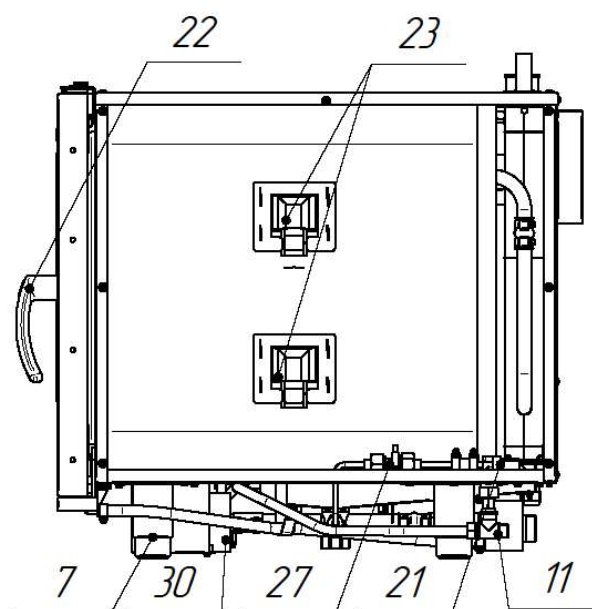
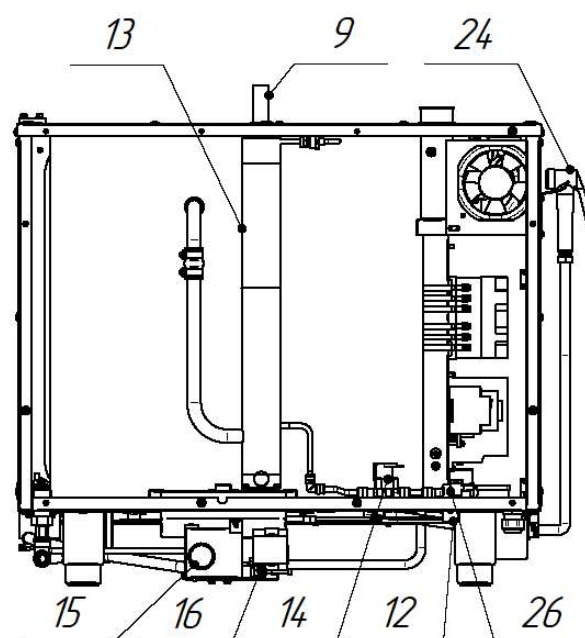
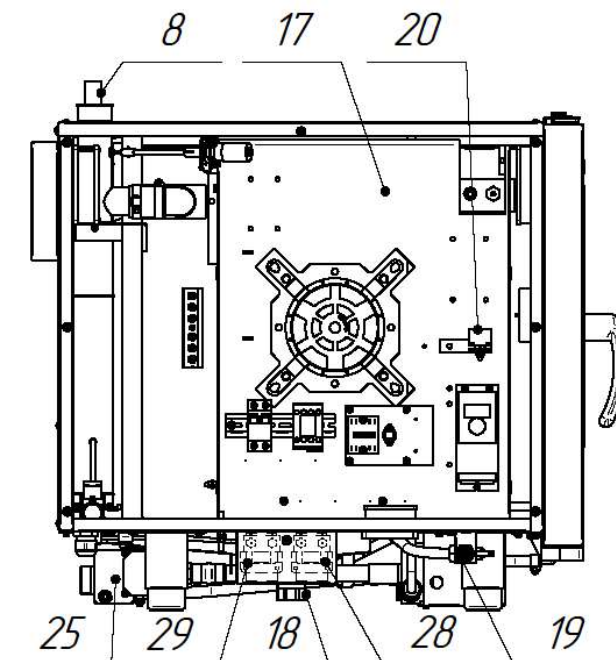
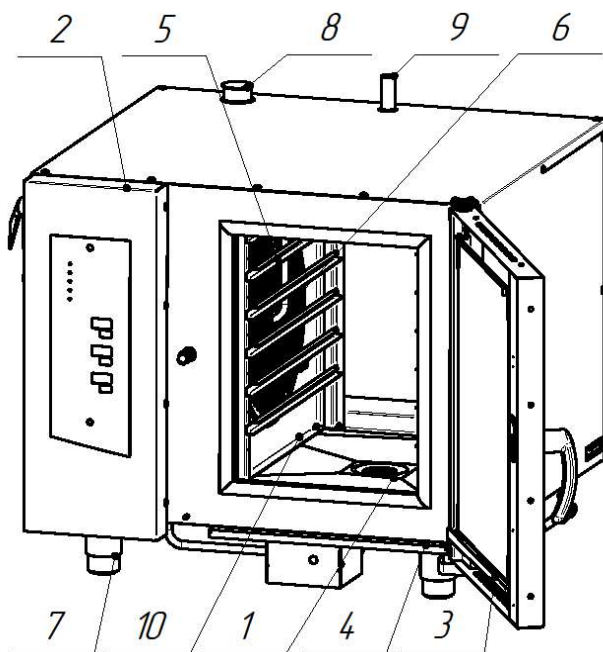
The damper (pic.1, pos.8) is intended for an additional ventilation of the oven for "Convection" mode.

Electric equipment is installed behind the left wall on the mounting panel (pic.1, pos.17).

The control of the combi-steamer is carried out from the control panel (see pic.1) The controller is located behind the control panel (pic.1, pos.2).

The combi-steamer is supplied with the shower device (pic.1, pos.24). The bracket for the shower device is mounted on the level wall. The shower device is intended for the manual washing. The tap (pic.1. pos.19) is supplied for water shutoff into the shower device.

The plug (pic.1. pos.18) is intended for decontamination and lard draw-off.



1. Oven
2. Control panel
3. Internal glass
4. Tray
5. Guide rails
6. Fan
7. Leg
8. Damper
9. Collector output pipe
10. Partition wall
11. Water supply G1/2 (shower device, cooling of the collector)
12. Water supply G3/4 (water spray into the chamber)
13. Collector
14. Electromagnetic valve for cooling "Collector"

15. Drainage temperature sensor.
16. Drainage connection
17. Mounting panel
18. Plug for lard draw-off from the oven.
19. Shower device tap
20. Thermo-switch (plus) 320° C
21. Electromagnetic valve "Injection"
22. Door handle
23. Lightening lamps of the oven
24. Shower device
25. Drainage collector
26. Pressure limiting device
27. Flowmeter
28. Soap dispenser (pump)
29. Washing-off solution dispenser (pump)
30. Oven washing pump

Pic. 1 Construction of the combi-steamer.



ВКЛ	ON
ОТКЛ	OFF
РЕЖИМЫ	MODES
КОНВЕКЦИЯ	CONVECTION
КОНВЕКЦИЯ+ПАР	CONVECTION + STEAM
РАЗОГРЕВ	WARM UP
ПАР	STEAM
ПРОГРАММЫ	PROGRAMS
ТЕМПЕРАТУРА В КАМЕРЕ	TEMPERATURE IN THE CHAMBER
ТЕМПЕРАТУРА ЩУПА / ТАЙМЕР	PROBE TEMPERATURE/TIMER
ВЛАЖНОСТЬ	HUMIDITY
ПУСК	START
СТОП	STOP
СКОРОСТЬ	SPEED

Pic.2 Control pannel appearance

3 SAFETY MEASURES

Only trained staff is allowed to work with the combi-steamer. It is necessary to provide regular staff trainings to prevent accidents and damage of the boiler.

The combi-steamer is not intended for usage by people (including kids) with limited physical, psychical and mental abilities or by people without special experience and knowledge, if they are not under control or they were not briefed on the usage of the equipment by the responsible person.

Kids should be supervised, the combi-steamer is not intended for games.

IN THE FOLLOWING CASE THE COMBI-STEAMER IS PROHIBITED

- if the power cable is damaged;
- without connection to the grounding circuit;
- close to the combustible gases, fluids and explosive atmosphere;
- if the safety glass(glasses) and illumination lamp(s) are damaged;
- if the door glass (es) is damaged;
- if the door locking device is broken;
- if the door position sensor is broken;
- if the partition wall is removed;
- with removed side and rear walls and the cover;
- with damaged capillary tube of the thermo-switch;

IT IS PROHIBITED WHILE THE OPERATION OF THE COMBI-STEAMER

- use the combi-steamer as a heating device for the room;
- use the shower device for cleaning the oven;
- warm inflammable products and objects with ignition temperature less than (plus) 270°C;
- load the tray with products over 4 kg;
- warm food products in the closed cans, preserves, dry powdery and granular products;
- use the sharp tools (forks, knives...) for pressing down buttons on the control panel;
- make a manual cleaning of the oven, if the temperature inside is higher than (plus) 100°C;
- for cleaning of the outside surface of the combi-steamer use water jet.

IT IS NECESSARY WHILE THE OPERATION OF THE COMBI-STEAMER

Control the combi-steamer operation during the operation cycle.

Take away the probe from the product before you take the tray from the oven. After removing from the product put the probe into the holder.

To clean the oven of the combi-steamer please use the solutions, which are recommended by the manufacturer and mentioned in the chapter 5 of this manual.

In order to avoid the accidents the floor near the combi-steamer should be dry.

In order to avoid damage of the door glass and injuries, please remove the trays when the door is fixed. The door is fixed when it is opened approximately at an angle of 135 °, as evidenced by increased force of rotation of the door.

When revealing the malfunction cutoff the power supply of the combi-steamer - put the differential switch into the distribution box to the position "OFF". Set the water supply tap to position "Closed" and call the electrical engineer. The combi-steamer can be turned-on only if malfunctions are repaired.

The manual sanitary treatment and cleaning shall be carried out only if the combi-steamer is turned-off - differential switch in the distribution box shall be set to position "Off";

Periodically check the absence of mechanical damages of the power cable sheath of the combi-steamer.

RISK OF INJURIES AND BURNS

In order to avoid chemical burn during the sanitary treatment with chemical solutions, please use individual protective gear (protective clothes, protective glasses and protective gloves).

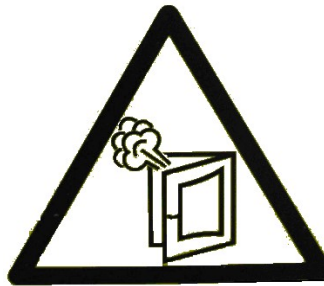
During the combi-steamer operation the oven, the guide rails, the trays, the glass, the casing, the probe and the door are heated to the high temperatures, this can cause the thermal burn upon contact. It is necessary to use individual protective gear (protective gloves and pot-holders)

It is possible to be scalded while working with the combi-steamer there is an information sticker on the panel (see pic.3.1) The risk of scalding occurs when spilling hot liquids, if the upper trays are loaded with liquid products or products which become liquid during the cooking. It is prohibited to install trays with liquid or weaken products on the guide rails, which are located above 1.6 m from the floor.

It is possible to get thermal burn while opening the door, because of hot steam going from the oven, there is an information sticker on the door (see pic.3.2) It is necessary to ensure that the door closing mechanism of the oven is in good condition.



Pic. 3.1 The "Risk of scalding" sticker



Pic. 3.2 The sticker "Be careful! Hot steam"

4 INSTALLATION PROCEDURE



After storing the combi-steamer in a cold room or after transportation in winter conditions, the combi-steamer must be kept at room temperature for at least 2 hours before being plugged into the electrical circuit.

Unpackaging, installation, commissioning and tests of the combi-steamer shall be carried out by repair and assembler of shop equipment specialists.

The combi-steamer shall be placed in well-ventilated place. In order to avoid steam accumulation in the room it is recommended to place the combi-steamer under the air-purifying (exhaust) hood or use ZVV-800 hood (manufacturer is JSC Elinoks, Cheboksary, order code - 210000080800), which can be mounted on the combi-steamer.

The combi-steamer can be placed separately or together with other kitchen equipment, but the clearance between the equipment and the combi-steamer shall be not less than 100 mm.



It is prohibited to place heating equipment (hot plates, pans, cook tops and so.) near the left side of the combi-steamer, the minimum distance should be 200 mm from the side wall.

The installation of the combi-steamer shall be made in the following order:

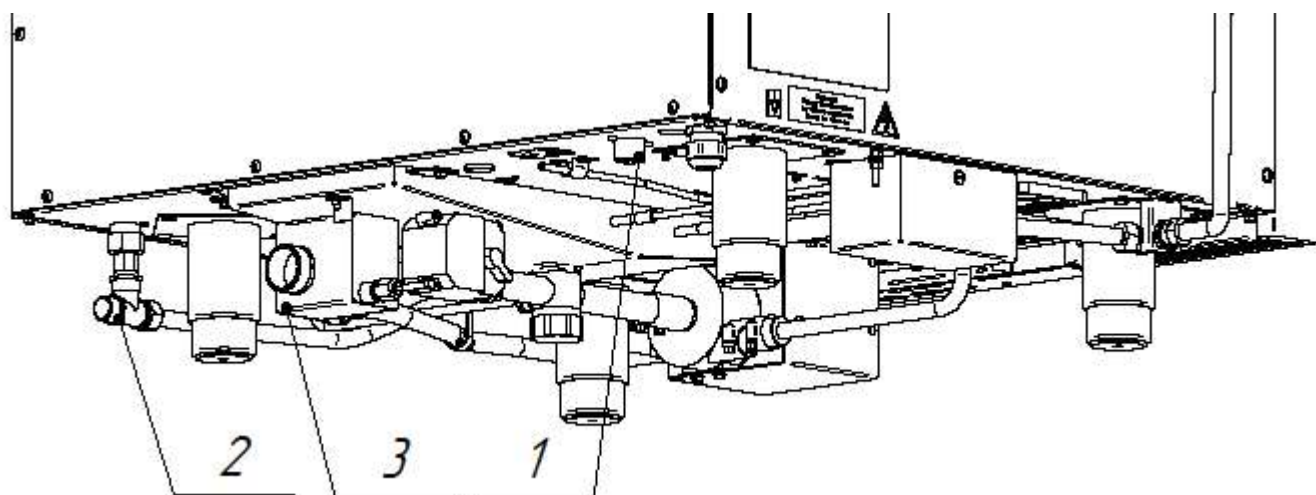
- take off the protective film from the all surfaces of the combi-steamer before the installation;

- Put the combi-steamer on the support (manufacturer is JSC CHUVASHTORGTEKHNIKA, Cheboksary) (pic.16), a table or the proving chamber (manufacturer is JSC Elinoks, Cheboksary) (pic.17)

- using the hoses (are included into the supply package), connect the combi-steamer to the water supply system. Water pressure shall be (0.2...0.6) MPa. Electrical conductivity of water shall be (100...340) mmhos/cm, chlorine concentration - not above 0.2 mg/l and chloride concentration - not above 80 mg/l. Water hardness shall not be above 7 german degrees.



It is prohibited to connect prepared water with hardness degree less than 0.9mmol/l, because such water can have aggressive corrosion characteristics and can decrease the lifetime of the equipment



Pic.4 Connection to the water supply system

The combi-steamer should be provided with water supply:

- water supply to the oven - G3/4 external thread (see pic.4, pos.1). The connection shall be made only through the water softeners (hydrogen-ion exchange). It is recommended to use BRITA PURITY C300 Quell ST filter.

- water supply to the shower device and cooling drain box (it is allowed to connect to unprepared water) - G1/2" external thread (see pic.4, pos.2).



Use only new hoses, which are supplied with the combi-steamer, the second usage of the old hoses is prohibited.

- connect the combi-steamer to the drainage system using the hose from the supply package (see pic.14). Connect the hose via the nipple with a thread of G1¼" (pic.4, pos.3). Connection to the drainage system shall be made with get brake of not less than 20 mm from the top of the intake funnel (Construction directives and rules 2.04. 01-85, p. 17.11).

- connect the standard supply cable to the three-phase electrical circuit with separated neutral and protective conductors (3N/PE 400V 50Hz) in accordance with the laws and norms in force. The device is supplied with the standard supply cable KGN 5x2.5 mm², length is 3.0 m. Connection to the power supply circuit should be carried out by the special service.

In order to avoid the wrong connection of the combi-steamer to the power supply circuit, the wires are marked and have the following information stickers:

- phase wires L1, L2, L3 (connect with phase terminals of the circuit wires);
- neutral wire - N (connect with the terminal of the neutral wire of the circuit);
- grounding wire - PE (connect with the terminal, which is connected with the grounding circuit);

Power supply to the combi-steamer shall be fed from the distribution box through the differential automat , the connection current is 25 A and leakage current is 30mA. The differential automat shall provide the assured shutdown of the all poles from the supply circuit of the combi-steamer; it should be connected directly to the supply terminals and have the gap between the terminals minimum of 3 mm at the all poles. Nominal cross section of the power cables shall be 2.5 mm minimum.

If the access to the distribution box is limited, it is recommended to place the differential box near to the combi-steamer.

Inspect all connection devices of the combi-steamer connection circuits (screw and screwless terminals), in the case of release, screw them to the normal contact pressure.

If you install the combi-steamer into the technological line, there is a terminal, which is

marked by «  » sign - equipotentiality. This terminal is used to even electric potentials. Cross section of the equipotential wire should be 10mm² minimum.



In order to avoid injuries and chemical burns during the sanitary treatment with chemical solutions, please use:

- **protective clothes;**
- **protective glasses;**
- **protective gloves;**

On the pump hose (dispenser) of detergent, rinse aid and decalcifying agent, install the mesh filters included in the scope of supply of the combi-steamer.

Put the hose with a sign "Washing solution" into the tank with washing solution.

Put the hose with a sign "Washing-off solution" into the tank with washing-off solution.

Before the first usage of the combi-steamer or after changing of the tank with solution it is required to fill the pump (dispenser) tubes with solution - and make force launch of the pumps (dispensers).

It is required for the force launch of the pumps:

- de-energize the combi-steamer - set the differential automat in the distribution box to position "OFF"

- Press and hold "Convection+Steam" mode button on the control panel, set the differential automat in the distribution box to position "ON" - enter the manual mode of control pumps and taps.

On the current parameter indicator "Chamber temperature" dt1 symbol is displayed, on the set parameter indicator 0 is displayed.

- d1 - pump of the automatic washing;
- d2 - pump(dispenser) of the washing-off solution;
- d3 - pump(dispenser) of the washing solution;

d5 - drainage system tap.

Press and release "Temperature" button, while d2 indicator is not displayed on the indicator. Press and release "▲" button, visually observe timer countdown on the indicator and fluid movement in the corresponding tube. If tubes are completely full before and after the dispenser, press and release "▼" button (forced stop).

Do the same actions with d3 parameters.

Assemble the shower device. Mount the bracket (pic.5, pos.4) at the right casing (pic.5, pos.3) and fix with screws (pic.5, pos.5). Connect the hose of the shower device (pic.5, pos.2) to the tap (pic.5, pos.3) Set the tap handle to position "Open" and visually control the leakage in the places of connections. Check the operation of the shower device.

Set the differential automat in the distribution box to position "ON"

press and release "On/Off" button on the control panel.

press and release "Convection+Steam" button on the control panel.

Select "Timer" parameter and set the value 30 min for timer.

The set temperature in the oven is (plus) 100°C.

Check the installation of the partition wall and guide rails. The partition wall and guide rails shall be mounted on the special campers.

Close the door of the combi-steamer, if it is opened.

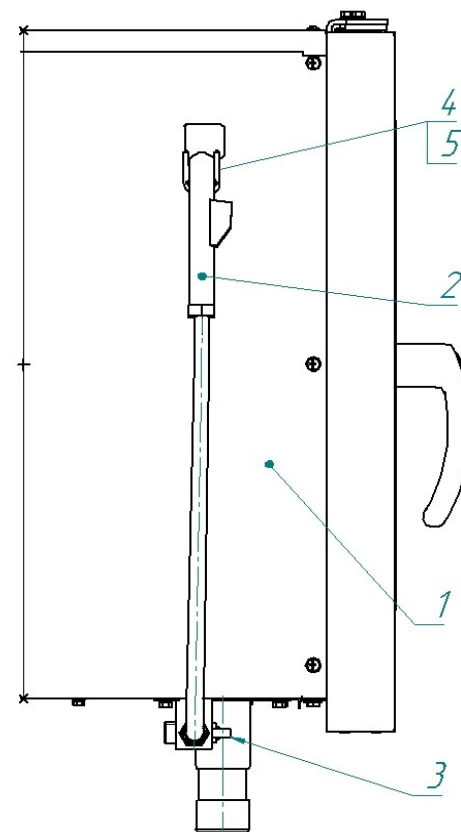
Press and release "Start/Stop" button.

During operation of the combi-steamer, visually check that there are no leaks at the joints of the hoses, the temperature set in the oven and the absence of extraneous noise during operation of the combi-steamer.

After the set time has elapsed, the operation of the combi-steamer automatically ends.

Shutdown is accompanied by an audible alarm.

The commissioning of the mounted combi-steamer is executed in the prescribed form. Get warranty coupons in the passport of the combi-steamer.



Pic.5 Connection scheme of the shower device

5 OPERATIONAL PROCEDURE

Before switching on the combi-steamer, be sure to read this operating manual and, first of all, the safety instructions, controls and labels on the combi-steamer.

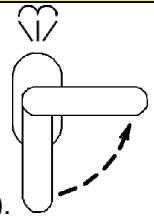
Before use, wipe the combi-steamer with a cloth dampened in soapy water and then rinse with clean water.

Check the operation of the door lock mechanism. The door opening mechanism should provide a two-stage opening:

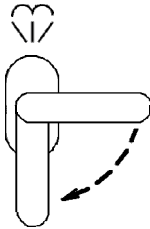
- Close the door of the combi-steamer, if it is opened.



Close the door when the handle is upright!



- To open the door, turn the door knob fully counterclockwise (steam release). With this position of the handle, the door opening mechanism blocks the possibility of a full door opening.



- Turn the door handle fully clockwise.

The door should open easily.

When revealing the malfunction in the door mechanism, call the electrical engineer, continue the operation only if the malfunction is repaired.

Verify that the partition wall and the guide rails are mounted on the special clampers in the right order. Removing of the partition wall and the guide rails is carried out as follows: Up the guide rails, move them off the walls, take them down and take the guide rails from the oven. Installation is carried out in the reverse order.

Close the door of the combi-steamer.

Set the water tap to the combi-steamer to the "Open" position.

Apply power to the combi-steamer - set the circuit breaker in the control cabinet to the "On" position.

The "On/Off" button LED on the foil-keyboard lights up, all other LEDs and indicators are off (hereinafter referred to as "standby" mode).

To turn on the combi-steamer press and release "On/Off" button:



ОТКЛ

OFF

- the "On/Off" LED blinks off;
- the lighting of the oven turns on;
- the LED of the last selected mode is lit, which was before entering the "standby" mode;



РЕЖИМЫ	MODES
КОНВЕКЦИЯ	CONVECTION
КОНВЕКЦИЯ+ПАР	CONVECTION + STEAM
РАЗОГРЕВ	WARM UP
ПАР	STEAM
ПРОГРАММЫ	PROGRAMS

When the combi-steamer is turned on, an LED lights up opposite the inscription with the name of the mode - operation by mode. And if after turning on the combi-steamer in the modes field, the LED of one of the four modes and the “Program” LED (see the right picture) are lit at the same time, this indicates that the combi-steamer will operate according to previously saved programs with the set modes and parameters (see section Cooking with using the “Program” mode).

The combi-steamer provides operation at one of the possible modes.

 - “Convection” (dry heating): heating occurs only due to “air” heaters. The set range temperature for the cooking is (plus) (30 – 270)°C;

- “Convection + steam” (combined mode):  heating occurs due to the work of air heaters with periodic supply of water to the oven. The set range temperature for the cooking is (plus) (30 – 270)°C; humidity can be set from 10% to 100 % with step of 10. For visual control of the set humidity on the foil-keyboard, there are “Humidity” LEDs;

- “Warming up”:  heating occurs due to the work of air heaters with periodic supply of water to the oven. The set range temperature for the cooking is (plus) (30 – 160)°C with fixed humidity parameter - 100 % (humidity is not changed by the user);

- “Steam”:  heating occurs due to the work of air heaters with periodic supply of water to the oven. The set range temperature for the cooking is (plus) (30 – 100)°C;

-  «**Programm**»: work on previously saved multi-step operator programs. It is possible to save up to 110 programs with the ability to perform up to 4 different stages.



or

ПРОГРАММЫ	PROGRAMS
ТЕМПЕРАТУРА В КАМЕРЕ	TEMPERATURE IN THE CHAMBER
ТЕМПЕРАТУРА ЩУПА / ТАЙМЕР	PROBE TEMPERATURE/TIMER

To select the cooking mode press and release the corresponding button. The LED of the selected mode is lit next to the button, and the LED of the previous mode should blink off.

At the same time, the parameter values for this mode are displayed on the parameter indicators.

On "large" indicators the current values of the parameters are displayed, on "small" - the last set values of the parameters.

The combi-steamer provides work with parameters "Timer" or "Probe temperature".



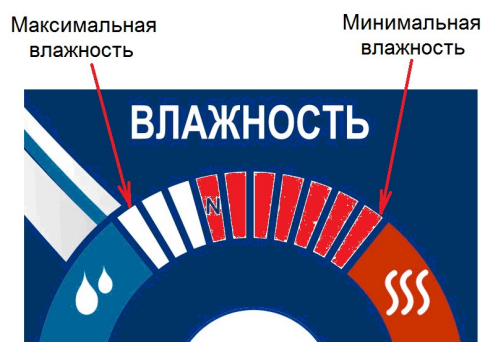
For visual control of the selected parameter, an LED is provided next to the "Timer" and "Probe Temperature" buttons.

When working with the "Timer" parameter, the work is completed after the set time has elapsed, while during cooking the temperature in the oven is maintained equal to the set value. At the end of time, an audible alarm sounds and the cooking process ends. The range of setting the "Timer" parameter is from 1 min. up to 9h. 59min.

When working with the "Probe" parameter, the work is completed upon reaching the preset probe temperature, while during cooking the temperature in the oven is maintained equal to the preset.

Simultaneous selection of the "Timer" and "Probe" parameters is not possible.

The amount of steam supplied to the oven can be controlled by the LEDs of the "Humidity" parameter :



- "Humidity" LEDs do not light - 0%
 - one LED of the "Humidity" parameter lights up - 10%;
 - all ten LEDs of the "Humidity" parameter are lit - 100%;
- The recommended value of steam supplied to the oven is marked with an "N".

ВЛАЖНОСТЬ	HUMIDITY
МАКСИМАЛЬНАЯ ВЛАЖНОСТЬ	MAX. HUMIDITY
МИНИМАЛЬНАЯ ВЛАЖНОСТЬ	MIN. HUMIDITY

The amount of steam supplied to the oven can only be adjusted in the “Convection + Steam” mode. To change the humidity press and release "Increase humidity" button or press and release "Decrease humidity" button. 

In the “Preheat” mode, all the “Humidity” LEDs light up and it is not possible to change the amount of steam in the oven.

In the “Convection” mode, the LEDs of the “Humidity” parameter do not light up and changing the parameter in this mode is not possible.

The selected fan speed is indicated by the LEDs of the “Speed” parameter.

To change the fan speed press and release "More" or "Less" buttons.  It is always possible to change the fan speed.

СКОРОСТЬ	SPEED
МАКСИМАЛЬНАЯ СКОРОСТЬ	MAX. SPEED
МИНИМАЛЬНАЯ СКОРОСТЬ	MIN. SPEED



- one LED of the “Speed” parameter lights up - the minimum first (minimum) fan rotation speed;
- all five LEDs of the parameter “Speed ” light up - the fifth (maximum) fan speed.

The recommended fan speed reference is marked with an “N”.

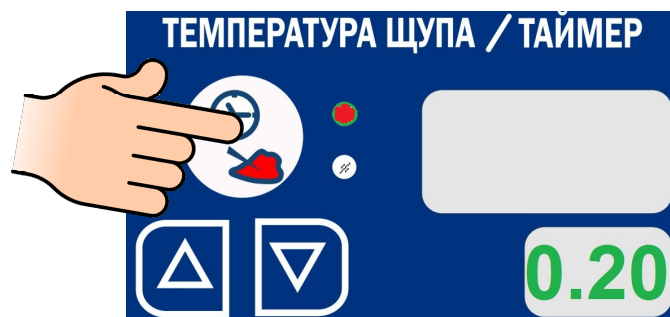
COOKING WITH "TIMER" PARAMETER

When starting work, select the desired cooking mode: press and release button of the corresponding mode, the LED of the previous mode blinks off, the LED of the selected mode turn on.



РЕЖИМЫ	MODES
КОНВЕКЦИЯ	CONVECTION
КОНВЕКЦИЯ+ПАР	CONVECTION + STEAM
РАЗОГРЕВ	WARM UP
ПАР	STEAM
ПРОГРАММЫ	PROGRAMS

Select the operation parameter - "Timer". press and release button of the corresponding parameter.

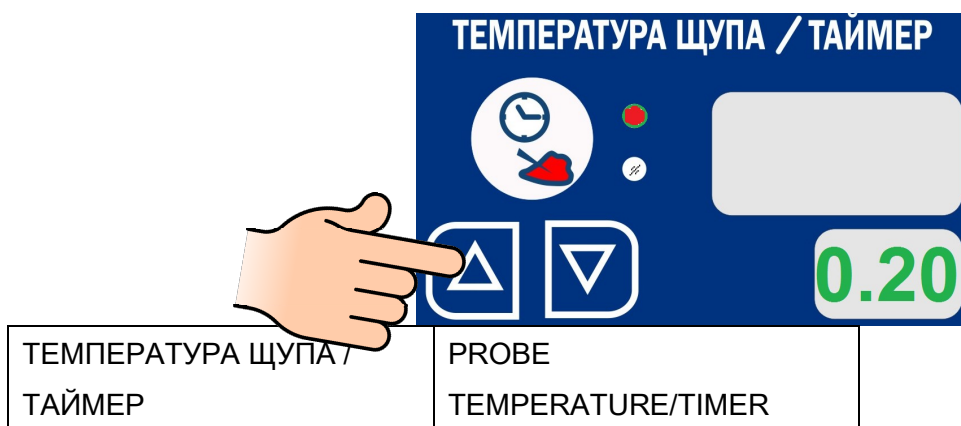


ТЕМПЕРАТУРА ЩУПА / ТАЙМЕР	PROBE TEMPERATURE/TIMER
------------------------------	----------------------------

Set the parameters value and again press and release button of the selected parameter. The value on the "small" indicator starts flashing.

Use the ▲ or ▼ button to set the new parameter value.

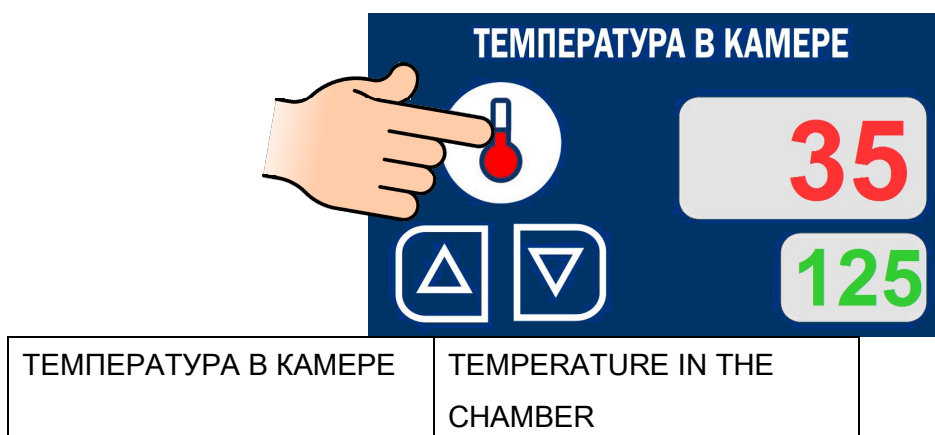
Pressing the ▲ or ▼ button once changes the display by one. If you hold down the ▲ or ▼ button for more than 1 s, the display changes to a multiple of five (for example: 22, 23, 25, 30, etc.).



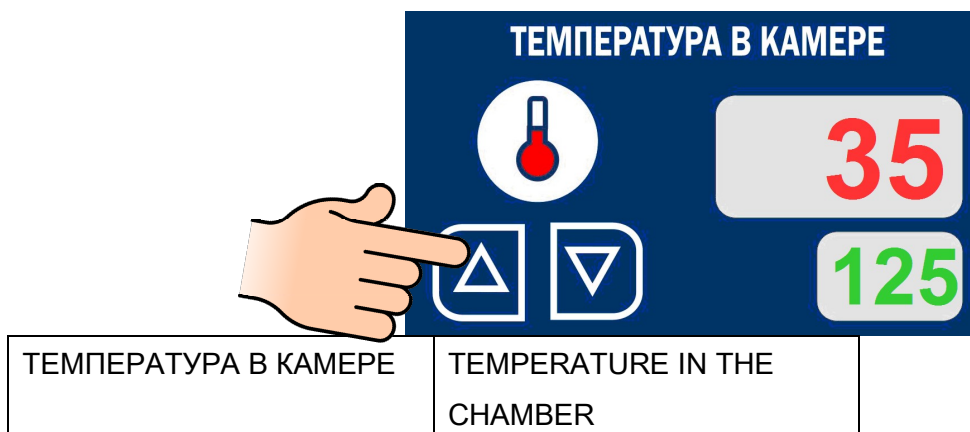
If the value of the "Timer" parameter is set to 0.00, the combi-steamer cannot be started up. Again press and release "Timer" parameter button to save the set value. The value of the parameter on the "small" indicator stops flashing.
Set the desired value for "Chamber Temperature".

To reduce the cooking time and get a good result, it is recommended to preheat the oven 20 ° C above the required temperature before loading the product. After warming up the oven, load the product and set the desired temperature in the oven

press and release the button . The value of the set parameter on the "small" indicator starts flashing.



Use the "less" or "more" buttons to set a new value for the "Chamber temperature" parameter. When you press and release the "less" or "more" button, the set value changes by one. When you hold the "less" or "more" button, the display changes to a multiple of five (for example: 22, 23, 25, 30, etc.).



Again press and release "Temperature in Chamber" parameter button to save the set value. The value of the parameter on the "small" indicator stops flashing.

Set the required values for fan speed and humidity (in "Convection + Steam" mode).

To start the combi-steamer in the cooking mode press and release "Start/Stop" button.

During cooking, it is possible to change the set value of the parameters "Temperature in the chamber", "Timer"/"Probe temperature", "Speed" and "Humidity".



It is impossible to change the mode parameter during cooking, (for example: it is impossible to change the "Convection" mode to the "Convection + Steam" mode), as well as change the "Timer" parameter to the "Probe temperature" parameter

When the door is opened during cooking, the fan stops, heating elements are switched off. The information sign "doo" is displayed on the indicator. A pulsating beep sounds. The timer countdown stops and continues after the door is closed.



Be careful when opening the door: first turn the handle up (counterclockwise) to the stop and open the door (let off steam and (or) hot air from the oven, and then turn the handle down to the stop (clockwise) and open the door completely

After closing the door, the inscription "doo" is automatically removed, the audible alarm is turned off, the fan and heating elements are turned on. Countdown timer continues from the stop.

For forced end of the cooking press and release "Start/Stop" button.

Upon completion of the cooking time, a sound signal will inform you that the cooking process is complete. At the same time, the "End" symbol is displayed on the indicator.

COOKING WITH "PROBE TEMPERATURE" PARAMETER

Using a probe allows you to reduce the risk of spoiling the product, saving time and guarantees the preparation of the product without any additional manipulations.

Work with the probe is suitable not only for large products, but also for semi-ready products with a thickness of 1 cm or more.



In order to avoid thermal burn during the probe installation into the product, please use individual protective gear (protective gloves and pot-holders)!

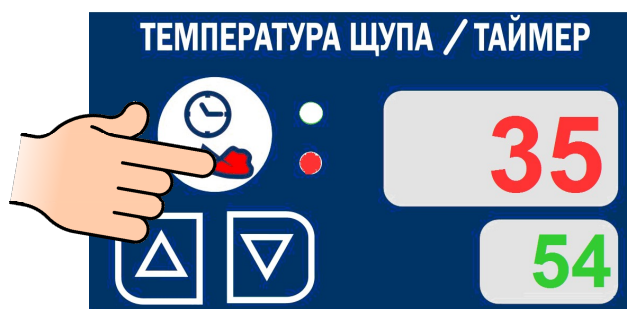
Warm the oven. It is recommended that the oven be warmed up with the "Timer" parameter.

After warming up the oven, open the door and load the product into the oven.

Remove the probe from the holder and install it in the product. Wait until the measured probe temperature drops below the desired value. The combi-steamer automatically determines the temperature in the center of the product and displays the measured temperature value on the indicator.

Close the door.

Select the "Probe Temperature" parameter - press and release the button.  Opposite the button, the corresponding LED lights up, and the LED of the "Timer" button blinks off.



ТЕМПЕРАТУРА ЩУПА /
ТАЙМЕР

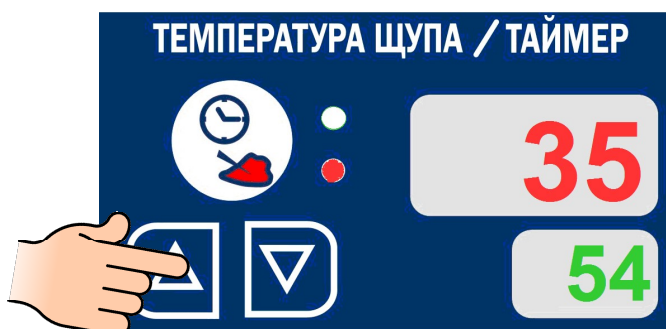
PROBE
TEMPERATURE/TIMER

If necessary, change the set point value for "Probe Temperature" parameter, press and release the button.  In this case, the value on the "small" indicator starts flashing.

Use the less or more buttons to select a new parameter value.

When you press and release the "less" or "more" button, the reading changes by one. When you hold the "less" or "more" button more than 1 sec, the display changes to a multiple of five (for example: 22, 23, 25, 30, etc.).

Press and release the "Probe Temperature" parameter button again to save the entered parameter. The value of the parameter on the "small" indicator stops flashing.



ТЕМПЕРАТУРА ЩУПА /
ТАЙМЕР

PROBE
TEMPERATURE/TIMER

Before pressing and releasing of the "Start/Stop" button. Ensure that the current temperature on the probe is less then the product temperature at the end of cooking.

Set the desired value for "Chamber Temperature".



To reduce the cooking time and get a good result, it is recommended to preheat the oven 20 ° C above the required temperature before loading the product. After warming up the oven, load the product and set the desired temperature in the oven

press and release the button . The value of the set parameter on the "small" indicator starts flashing.



ТЕМПЕРАТУРА В КАМЕРЕ

TEMPERATURE IN THE
CHAMBER

Use the "less" or "more" buttons to set a new value for the "Chamber temperature" parameter. When you press and release the "less" or "more" button, the set value changes by one. When you hold the "less" or "more" button, the display changes to a multiple of five (for example: 22, 23, 25, 30, etc.).



ТЕМПЕРАТУРА В КАМЕРЕ

TEMPERATURE IN THE
CHAMBER

Press and release "Temperature in Chamber" parameter button again to save the set value. The value of the parameter on the "small" indicator stops flashing.

Set the required values for fan speed and humidity (in "Convection + Steam" mode).

To start cooking press and release "Start/Stop" button.

During cooking, it is possible to change the set value of the parameters "Temperature in the chamber", "Timer"/"Probe temperature", "Speed" and "Humidity".



It is impossible to change the mode parameter during cooking, (for example: it is impossible to change the "Convection" mode to the "Convection + Steam" mode), as well as change the "Timer" parameter to the "Probe temperature" parameter

When the door is opened during cooking, the fan stops, heating elements are switched off. The information sign "doo" is displayed on the indicator. A pulsating beep sounds. The timer countdown stops and continues after the door is closed.

	Be careful when opening the door: first turn the handle up (counterclockwise) to the stop and open the door (let off steam and (or) hot air from the oven, and then turn the handle down to the stop (clockwise) and open the door completely
---	--

After closing the door, the inscription "doo" is automatically removed, the audible alarm is turned off, the fan and heating elements are turned on. Countdown timer continues from the stop.

For forced end of the cooking press and release "Start/Stop" button.

Upon reaching the set temperature in the product, an audible signal is turned on and the cooking process ends.

If the value of the probe temperature is set to 0, the combi-steamer cannot be started up.

With the probe, you can also check the temperature inside the product when the cooking process by the timer is already completed. To do this, set the temperature in the chamber of the combi-steamer, the required cooking time, after preheating, install the product in the chamber, place the temperature probe in the thickness of the product. After the set time has passed, switch from the "Timer" mode to the "Probe temperature" mode and familiarize yourself with the actual temperature inside the product.

	Recommendations on the selection of internal temperatures for various semi-ready products are given in the recipe book. The maximum set temperature inside the product is 120 °C.
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If the probe cable or the probe needle itself has any mechanical damage, an error code is displayed on the indicator (for example, E10, E11, E12), which will be accompanied by a sound signal. In this case, further operation of the combi-steamer with the "Probe temperature" parameter will be blocked.

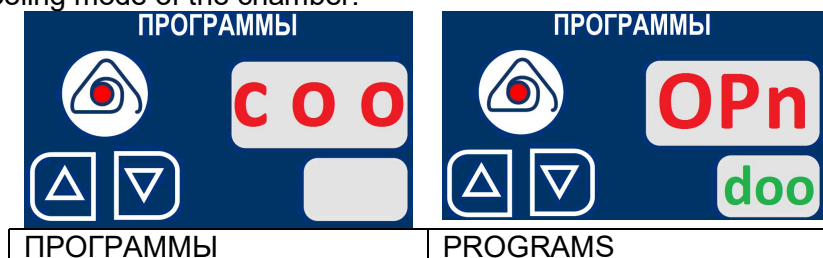
CHAMBER COOLING MODE

The chamber cooling mode shall be used if you decrease temperature to satisfy the requirements of the recipe and to avoid overheating of the product.

The combi-steamer automatically switches to cooling mode when the cooking temperature is set to 20 ° C below the current temperature in the chamber. At the same time, on the "Programs" indicator "Coo" (Cool) is displayed.

To start the cooling process:

- press "Start/Stop" button. Fan operation starts;
- "Opn Doo" (Open Door) is displayed on the "Programs" indicator. Open the door for effective cooling;
- "Coo" will be displayed again on the "Programs" indicator. The cooling process continues until the temperature in the chamber reaches the set temperature. For forced end of the cooling press and release "Start/Stop" button. Upon completion of cooling, the combi-steamer automatically exits the cooling mode of the chamber.



PROGRAM COOKING

ATTENTION! Programs stored in the combi-steamer are not password protected and can be changed by other users!

Attention! There are no factory programs for cooking in the combi-steamer memory.

To switch to the "Programs" operating mode in the "modes" field, press and release the "Program" mode button.

In the modes field, the LED of the "Program" button and the LED of the button of the set mode (for example, "Convection") light up.

Parameter indicators show the current and set parameter values.

The control panel interface is divided into several sections:

- РЕЖИМЫ (Modes):** A vertical list of five buttons with icons and labels:
 - КОНВЕКЦИЯ (Convection) - icon: three wavy lines
 - КОНВЕКЦИЯ+ПАР (Convection+Steam) - icon: wavy lines and a steam cloud
 - РАЗОГРЕВ (Warm Up) - icon: wavy lines and a flame
 - ПАР (Steam) - icon: steam cloud
 - ПРОГРАММЫ (Programs) - icon: a house with a red dot
- ТЕМПЕРАТУРА В КАМЕРЕ (Temperature in the Chamber):**
 - Current temperature: 35 (red display)
 - Set temperature: 125 (green display)
- ПРОГРАММЫ (Programs):**
 - Program number: 001 (red display)
 - Program step: St1 (green display)
- ТЕМПЕРАТУРА ЩУПА / ТАЙМЕР (Probe Temperature / Timer):**
 - Timer set value: 0.20 (green display)

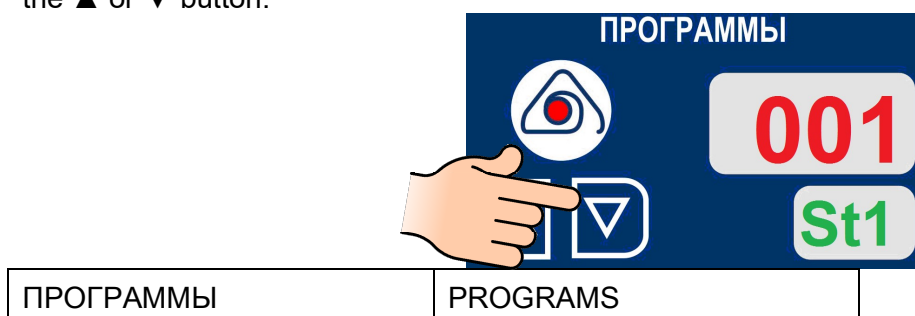
Labels on the right side of the image point to specific features:

- "Convection" mode (points to КОНВЕКЦИЯ)
- "Program" mode (points to ПРОГРАММЫ)
- Current temperature inside the oven (points to 35)
- Set temperature (points to 125)
- Program number (points to 001)
- Program step (points to St1)
- "Timer" set value (points to 0.20)

РЕЖИМЫ	MODES
КОНВЕКЦИЯ	CONVECTION
КОНВЕКЦИЯ+ПАР	CONVECTION + STEAM
РАЗОГРЕВ	WARM UP
ПАР	STEAM
ПРОГРАММЫ	PROGRAMS
ТЕМПЕРАТУРА В КАМЕРЕ	TEMPERATURE IN THE CHAMBER
ТЕМПЕРАТУРА ЩУПА / ТАЙМЕР	PROBE TEMPERATURE/TIMER

PROGRAM NUMBER SELECTION

To select a program number next to the “Programs” parameter indicator, press and release the ▲ or ▼ button.



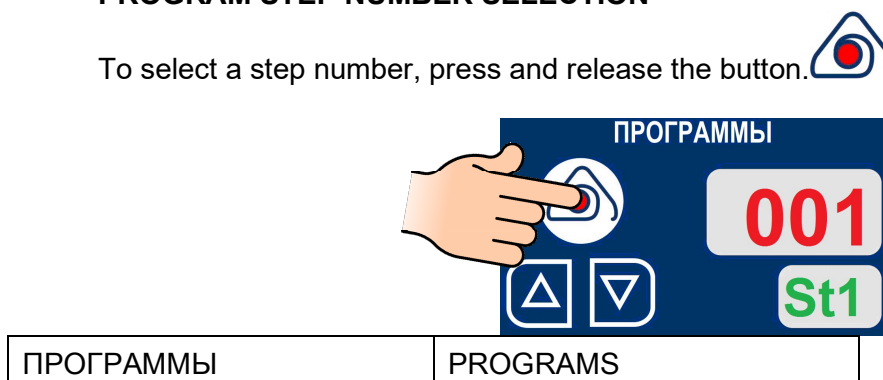
When you press and release the ▲ button, the value of the program number changes by one upward.

When you press and release the ▼ button, the value of the program number changes by one down.

Select a program number.

PROGRAM STEP NUMBER SELECTION

To select a step number, press and release the button.



The “St1” symbol starts flashing. To create a multi-step program, the modes “Convection” and “Convection + Steam” are available. Warm up mode is not available.

For each cooking step, the following can be selected:

- mode;
- **parameter "Timer" or "Probe temperature";**
- **parameter "Temperature in the chamber";**
- **"Humidity";**
- **"Speed."**

When you press and release the ▲ button, the step number value changes to +1.

When you press and release the ▼ button, the step number value changes to -1.



Set the operating parameters for all steps “Temperature in the chamber”, “Timer”/“Probe temperature” (see p. Cooking with the timer parameter and cooking with the probe temperature parameter), “Humidity” (only for the “Convection + Steam” mode) and “Speed”.

If during creation of program steps the preset value of the “Probe Temperature” or “Timer” parameter is equal to 0, then this step in the cooking process will be automatically skipped and go to the next step.

After creating the program, as necessary, check the entered values for step (s).



After entering the parameters, the changed values are automatically saved in the combi-steamer memory.

To launch the program press and release "Start/Stop" button.

After completing the last cooking step, the cooking program automatically ends. The "End" symbol is displayed on the parameter indicator.

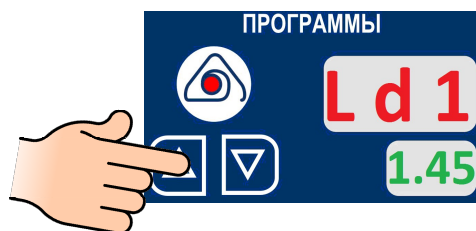
During the cooking process, as necessary, change the value of the set parameters.

To exit the "Program" mode - press and release the mode button again. 

CLEANING THE OVEN USING THE AUTOMATIC WASHING PROGRAM

To select a washing program, select the "Program" mode.

Press and hold the ▲ button until an informational message appears on the "large" indicator of the "Programs" parameter:



ПРОГРАММЫ	PROGRAMS
-----------	----------

"tb1" - washing with a tablet, "short" - 104 min.

"tb2" - washing with a tablet, "average" - 119 min.

"tb1" - washing with a tablet, "long" - 149 min.

"Ld1" - washing with liquid detergents "short" - 84 min.

"Ld2" - washing with liquid detergents "average" - 99 min.

"Ld3" - washing with liquid detergents long - 161 min.

A "small" indicator displays an information message about the washing time for the selected washing algorithm.

WASHING WITH LIQUID WASHING SOLUTION



Before starting the wash, visually check the presence of detergent, rinse aid and decalcifying agent (installed by special order) in containers and hoses from pumps (dispensers) are immersed in appropriate containers

Recommended liquid solutions:

- detergent "neodisher CombiClean", manufacturer Dr.Weigert, Germany;

- rinsing agent "Neodisher TS" (Neodisher TS), manufacturer Dr.Weigert, Germany.

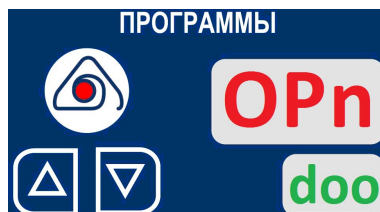
Before starting a sink, open the door of the combi-steamer and remove large food residues from the chamber. Close the door of the combi-steamer and press "Start/Stop" button.

If the temperature in the oven at the moment of washing launch is higher than 80°C, then the combi-steamer blocks the washing launch and requires to cool the oven after pressing and releasing of the "Start/Stop" button. The oven fan turns on.

On the indicator of the "Program" parameter, a message is displayed:

"Opn" - open

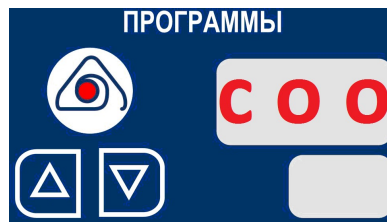
"doo" - door



ПРОГРАММЫ	PROGRAMS
-----------	----------

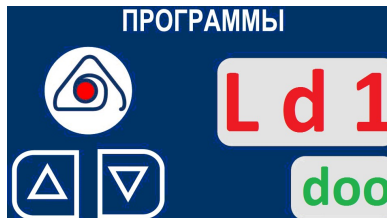
This informational message will be accompanied by a pulsating sound signal before the door is opened.

After opening the door, the combi-steamer will inform you that the oven is cooling. On the indicator of the "Program" parameter, the message "coo" - cooling is displayed.



ПРОГРАММЫ	PROGRAMS
-----------	----------

After the oven has cooled to the set temperature value, the “doo” information message is displayed on the indicator of the parameter “Temperature” - about the need to close the door to start washing.



ПРОГРАММЫ	PROGRAMS
-----------	----------

Close the door of the combi-steamer. After closing the door, the sink is turned on according to the specified algorithm.

After washing, open the door of the combi-steamer.

Wash-off the oven with the shower device.

Wipe the sealing rubber with a clean cloth - remove any chemical residues.

Leave the combi-steamer door ajar.

When all operations with the combi-steamer are finished - set the differential automat in the distribution box to position "OFF"

WASHING WITH TABLETS

Remove the tablets from the packaging and place them on the base of the oven.

Recommended tablets manufactured by Rational (Germany).

	In order to avoid shading of the oven please put the tablets on the special platform
---	--

Depending on the contamination, the number of tablets should be

“tb1” (“short” washing) - one washing tablet and one rinsing tablet;

“tb2” (“average” washing) - two washing tablets and one rinsing tablet;

“tb3” (“long” washing) - three washing tablets and one rinsing tablet;

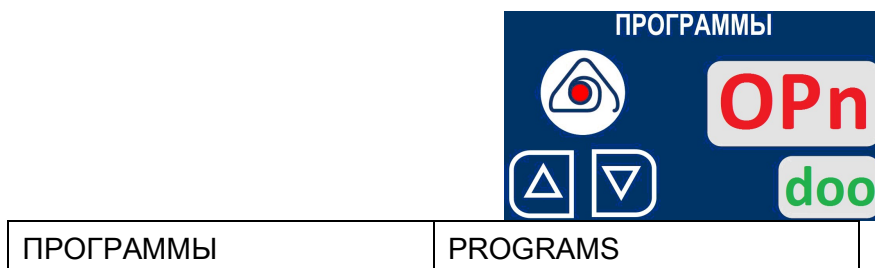
Before starting the washing operation, open the door of the combi-steamer and remove large food residues from the chamber. Close the door of the combi-steamer and press "Start/Stop" button.

If the temperature in the oven at the moment of washing launch is higher than 50°C, then the combi-steamer blocks the washing launch and requires to cool the oven after pressing and releasing of the "Start/Stop" button. The oven fan turns on.

On the indicator of the “Program” parameter, a message is displayed:

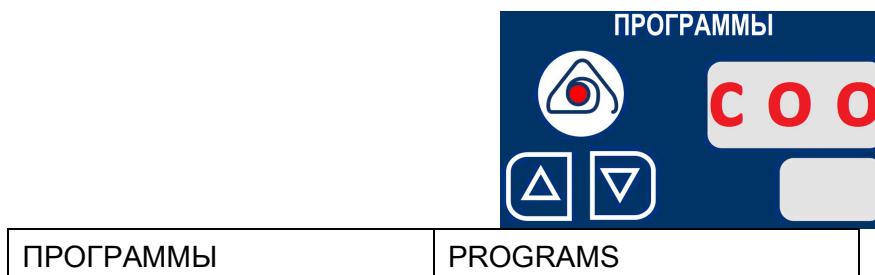
"Opn" - open

"doo" - open the door

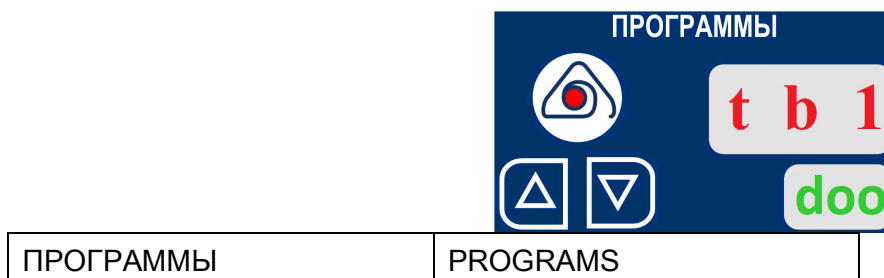


This informational message will be accompanied by a pulsating sound signal before the door is opened.

After opening the door, the combi-steamer will inform you that the oven is cooling. On the indicator of the "Program" parameter, the message "coo" - cooling is displayed



After the oven has cooled to the set temperature value, the "doo" information message is displayed on the indicator of the parameter "Temperature" - about the need to close the door to start washing.



	Before starting the wash, visually check the presence of washing, rinsing tablets in the chamber
--	--

Close the door of the combi-steamer.

After closing the door, the sink is turned on according to the specified algorithm.

After washing, open the door of the combi-steamer. Visually check for any remaining tablets. If there is any remaining tablets, remove them.

	In order to avoid chemical burn during removing of tablets remains it is necessary to use protective gloves.
--	--

After cleaning of the tablets remains wash-off the oven with the shower device.

Wipe the sealing rubber with a clean cloth - remove any chemical residues.

Leave the combi-steamer door ajar.

When all operations with the combi-steamer are finished - set the differential automat in the distribution box to position "OFF"

5.1 DAILY MANUAL OVEN CLEANING

It is necessary to clean the oven of the combi-steamer daily with the recommended fat-dissolving agents. For example: Abat Combi Cleaner, Neodisher grill, Shumanit.

Select the "Convection + Steam" mode with the "Timer" parameter. Set the parameter values:

- **"Chamber temperature" - 100 ° C;**
- "Humidity" - 100%;
- "Timer" - 20min.

press and release "Start/Stop" button. - launch "Convection+Steam" mode.

When time is up, open the door of the combi-steamer. Using oven mitts, remove large leftovers from the oven.



In order to avoid injuries and chemical burns during please use:

- **protective clothes;**
- **protective glasses;**
- **protective gloves.**

DO NOT use abrasive materials to clean the oven.

Clean the oven in the following sequence:

- pour detergent into a household spray bottle;



Do not breathe spray mist;

Avoid contact with eyes and skin.

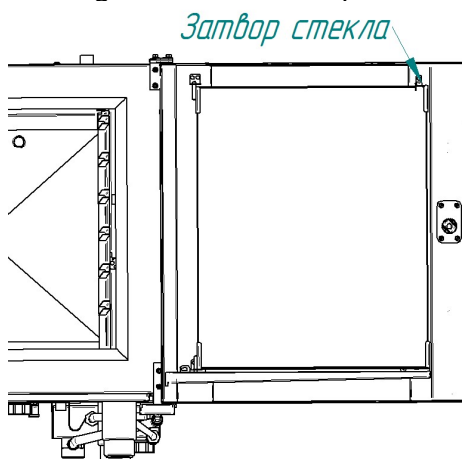
- Spray the washing solution on the fan wheel and on the walls of the oven. After spraying of the washing-solution, close the door of the combi-steamer and left for 10 min;

- after the time has elapsed, select the "Convection + Steam" mode with the "Timer" parameter. Set the parameter values:

- **"Chamber temperature" - 100 ° C;**
- "Humidity" - 100%;
- "Timer" - 15min.

- after completion of the set time, open the door and leave it in the open position for 3 min. for cooling. Then wash-off the oven with the shower device;

- as necessary, rotate the door glass shutter and open the inner glass.



Затвор стекла

Glass shutter

Using a household glass cleaner, clean the glass. Close the glass and fix it by the shutter;

- Wipe the inside of the oven and the door rubber seal with a clean cloth;
- leave the combi-steamer door ajar;
- close water supply taps;

- de-energize the combi-steamer - set the differential automat in the distribution box to position "OFF"

6 MAINTENANCE

During operation of the combi-steamer, it is necessary to carry out the following types of work in the maintenance and repair system:

- a) ETO - daily maintenance during operation - daily care of the combi-steamer;
- b) TO - regulated maintenance - a set of preventive measures carried out in order to ensure the efficiency or serviceability of the combi-steamer;
- c) TP - current repair - repair carried out during operation, to ensure or restore the functionality of the combi-steamer and consisting in the replacement and (or) restoration of its individual parts and their regulation.

Frequency of maintenance and repairs:

- | | |
|-------------------------------|-----------------|
| Operational Maintenance (ETO) | - daily; |
| - maintenance (TO) | - 1 month; |
| - current repair (TP) | - if necessary. |

Daily maintenance during the operation of the ETO is carried out by employees of public catering enterprises operating the combi-steamer. Regular maintenance and current repair is carried out by employees of specialized repair enterprises or specialists of technical services of the enterprise operating the combi-steamer, if provided for by its staffing.

Maintenance and repair should be carried out by an electrician of III - V categories, having a qualification group for safety measures not lower than third.

Maintenance and repair of the combi-steamer should be carried out with strict observance of the safety measures "Rules for Technical Operation of Consumer Electrical Installations" and "Safety Rules for Consumer Electrical Installations approved by the State Energy Supervision Authority"

In the case of the maintenance set the differential automat in the distribution box to position "OFF" and put the sign "DO NOT TURN ON!" **PEOPLE WORK!** "

The maintenance and repair of the combi-steamer are made using the following scheme of the repair cycle:

2 « TO-1 » - « TO-2 »,

where TO-1 - maintenance is carried out once a month. The list of works performed at TO1:

- visual inspection of the combi-steamer for compliance with the Safety Rules;
- measuring the ground resistance between the ground terminal and the accessible metal parts of the combi-steamer. Ground resistance should be no more than 0.1 Ohm;
- checking the integrity of the protective ground from the clamp of the ground loop to the ground clamp of the combi-steamer and checking the integrity of the potential equalization line;
- checking the integrity of the shell of the power cable. If damage to the shell is detected, replace it. The replacement procedure is described in p. 6.5.
- checking the condition of the wiring and electrical equipment of the combi-steamer;
- verification of oven lighting lamps, sealing gum. The replacement procedure is described in p. 6.6;
- check and, if necessary, replace the air filter. The replacement procedure is described in p.6.7;
- execution of broaching screw connections;
- check for leaks at the joints of flexible hoses;
- check for damage to the inner tube of the washing and rinsing pump (dispenser);
- check the order of the oven partition wall, handles and guards;
- checking the door lock;
- checking the door open sensor;
- verification of the door seal and door tightness. The adjustment procedure is described in p. 8.3 of this manual;
- if necessary, conduct additional safety training for employees during operation of the combi-steamer.

TO-2 - maintenance is carried out 1 time in 3 months. The list of works performed at TO2:

- includes all the work provided for at TO1;
- magnetic contactor screw connection broach;

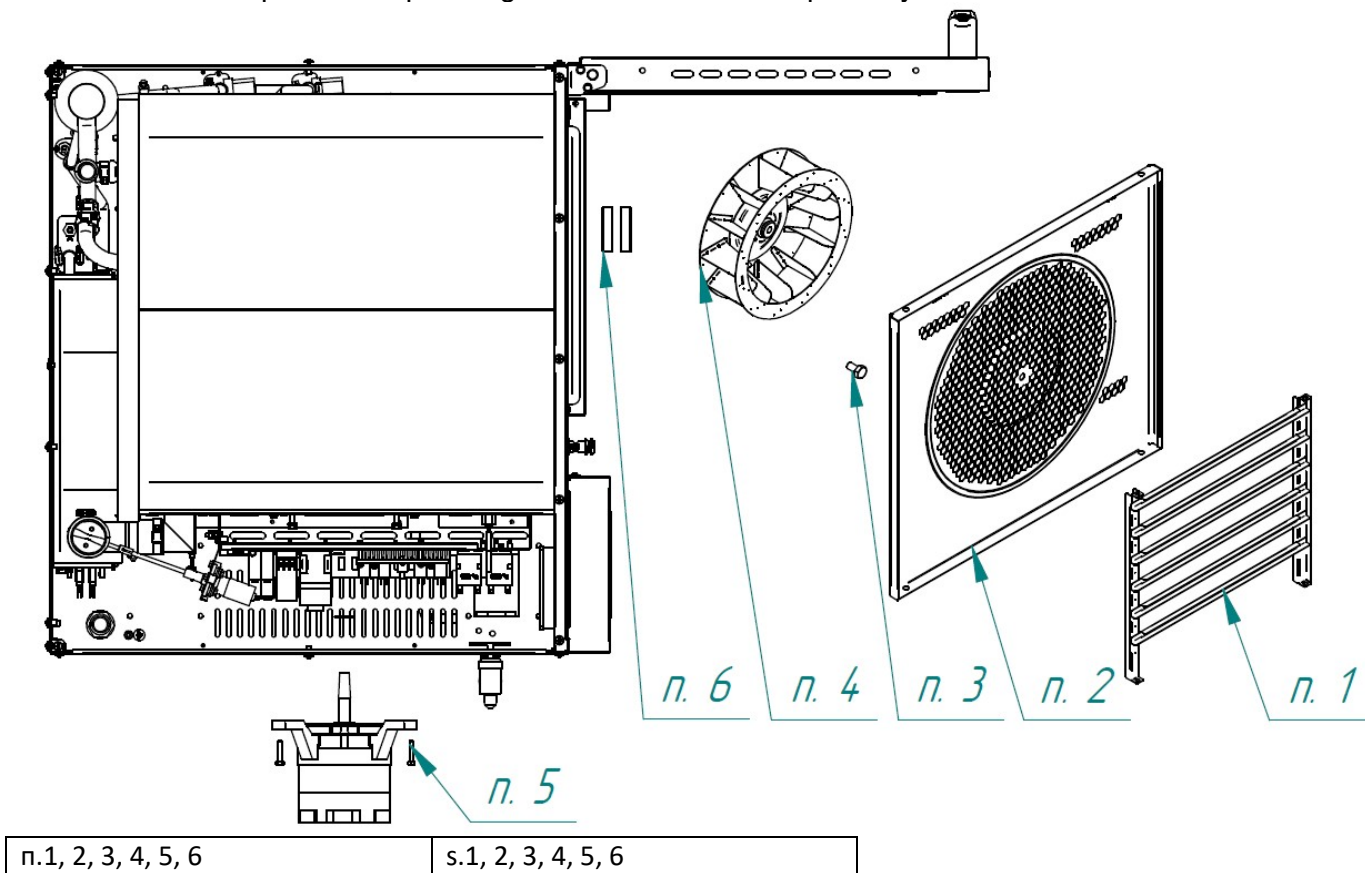
- Inspection of the grease in the cuffs.
- inspection of the impeller with an electric motor.

After completion of maintenance, it is necessary to make a record of the work performed in table 3 of the passport for the combi-steamer.

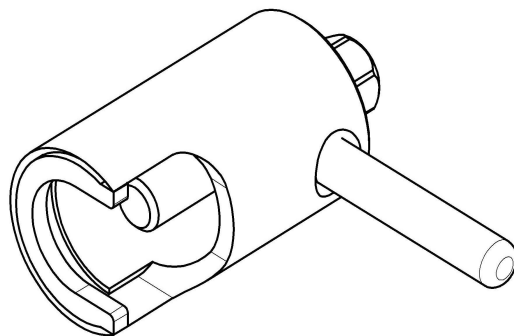
6.1 REPLACING THE CUFF

Do the following to change the cuff (see pic.6):

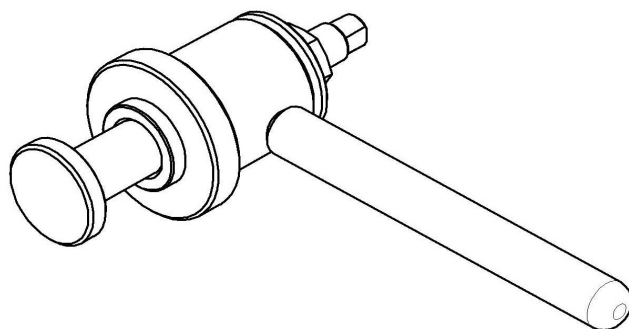
- remove the right guide rail;
 - remove the partition wall;
 - unscrew the M10x25 bolt together with the washer;
 - take of the impeller using the replacer (see pic.7);
 - unscrew 4 M6x30 bolts and remove the engine;
 - remove the retaining ring and remove two cuffs;
 - installation of the cuffs shall be made in the following order, according to the pic.9:
 - Set the cuff 1, using the special tool (see pic.8);
 - fill cavities A and B with high-temperature grease (for example, WURTH CU 800);
 - install cuff 2;
 - install the retaining ring.
 - installation of the rest assemblies is carried out in the reverse order.
- Note:** The replacer and pressing device can be order optionally.



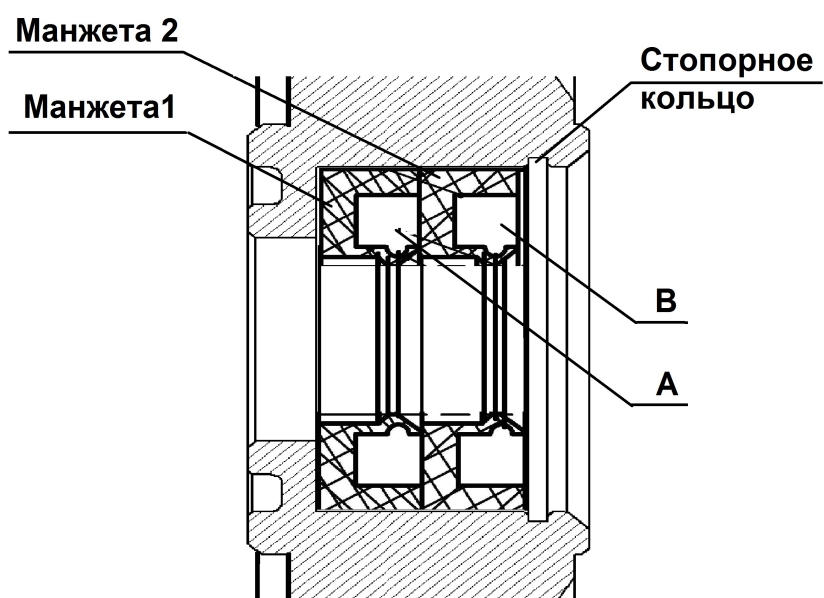
Pic. 6 Cuff changing scheme



Pic.7 Replacer of the impeller



Pic.8 The tool for cuff pressing.



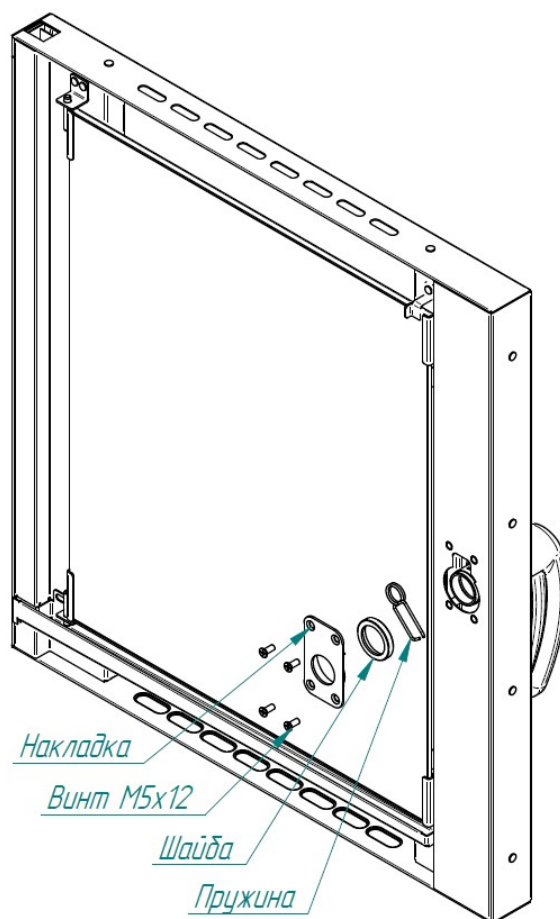
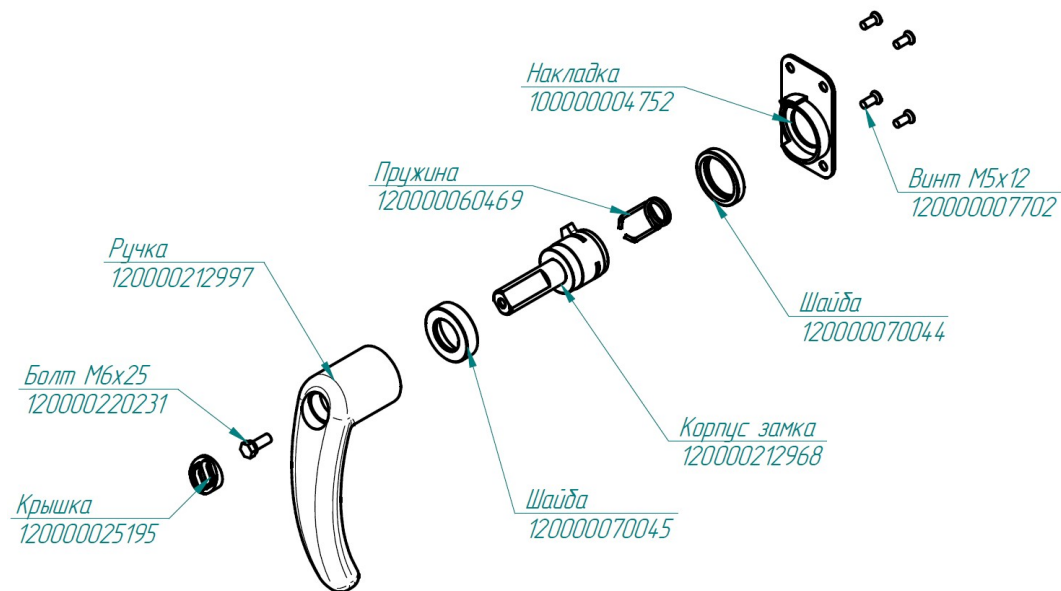
Манжета 2	Cuff 2
Манжета1	Cuff 1
Стопорное кольцо	Retaining ring

Pic.9 Cuff installation scheme

6.2 REPAIR OF THE LOCKING DEVICE

To replace the lock device spring (Pic. 10), you must:

- unscrew the screws M5x12
- remove the pad and washer;
- remove the spring;
- install a new spring;
- install the washer, pad and tighten the screws M5x12.



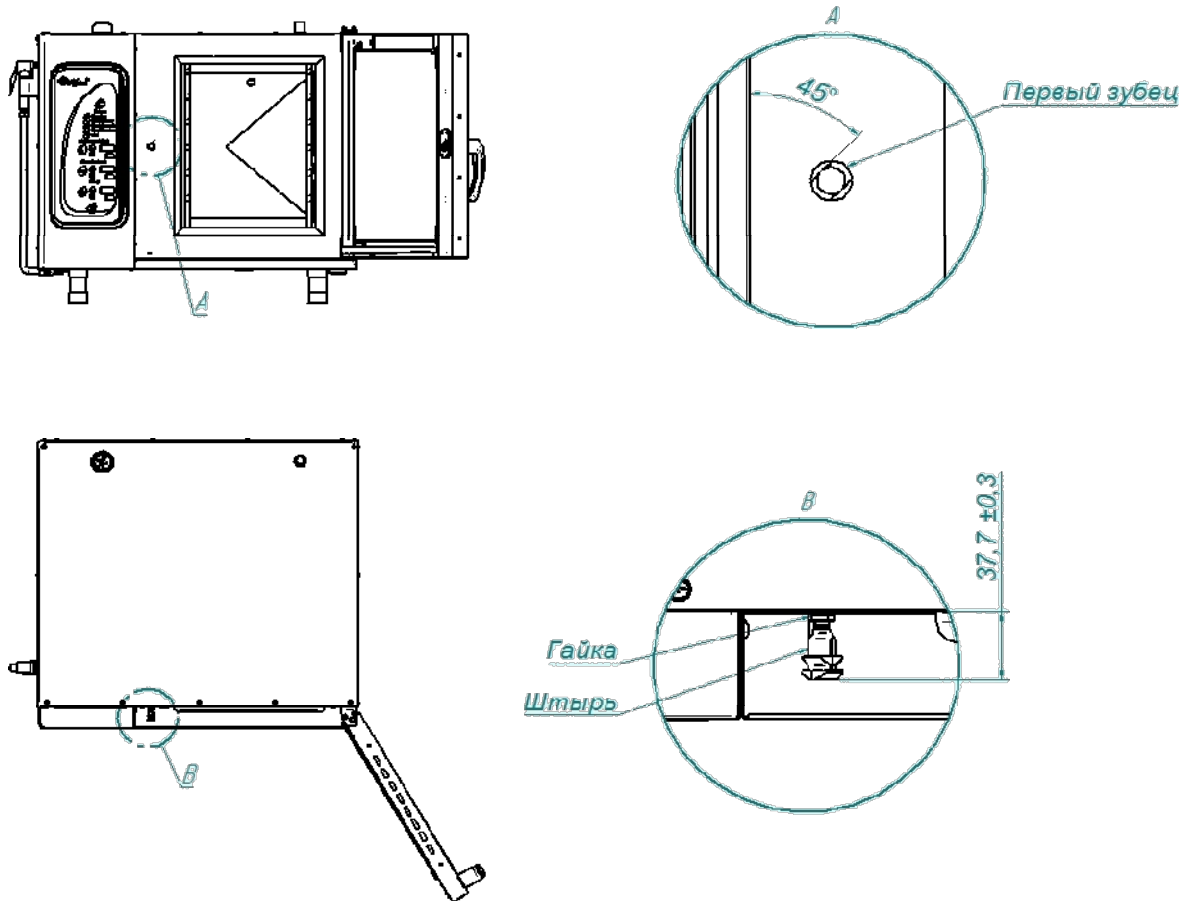
Накладка	Pad
Пружина	Spring
Ручка	Handle
Болт	Bolt
Крышка	Cover
Шайба	Washer
Корпус замка	Lock body
Винт	Screw

Pic.10 Lock device repair

6.3 ADJUSTING THE LOCKING DEVICE

If the door seal is released adjust the pins position (see pic.11) For this:

- unscrew the nut;
- Adjust the pins position according to the mentioned dimensions and gear positions (when the profile is weakened the pin should be screwed, because it is necessary to decrease the size 37.7 mm, keeping the angle of 45°(see pic.11)
- tighten the nut with the key to “13”, holding the pin.



Первый зубец	First gear
Гайка	Nut
Штырь	Pin

Pic. 11 Locking device adjustment

6.4 CHANGING THE POWER CABLE



If damage to the power cable is detected, it should be replaced with a flexible cable in an oil-resistant sheath, no lighter than a conventional cable with a sheath made of polychloroprene or other equivalent synthetic material covered with an elastomeric sheath (code designation 60245 IEC 57). The power cable must be five-wire with a wire cross section of at least 2.5 mm²

The cable must only be replaced by an organization authorized by the manufacturer.

Change of the supply cable shall be made in the following order:

- de-energize the combi-steamer - set the differential automat in the distribution box to position "OFF"
- disconnect the supply cable from the terminals of the differential automat in the distribution box;
- take off the screws of the right wall and de-assemble the right wall.
- release screws of the KM1:1; KM1:3 and KM1:5 contacts on the KM1 launcher and disconnect the phase wires of the supply cable;
- on the circuit breaker QF1: N, loosen the fastening screw and disconnect the neutral wire of the power cable;
- using a wrench on "10" to disconnect the ground wire of the power cable from the ground clamp on the mounting panel;
- if connection was made via the mains power filter, release screws of L1, L2, L3, N contacts on the mains power filter and disconnect the phase and neutral wires, using the 10 wrench disconnect grounding wire from the PE grounding clip;
- loose the nut of the cable entry of the power cable;
- dismantle the damaged power cable;
- lay the new cable and assemble in the reverse order.

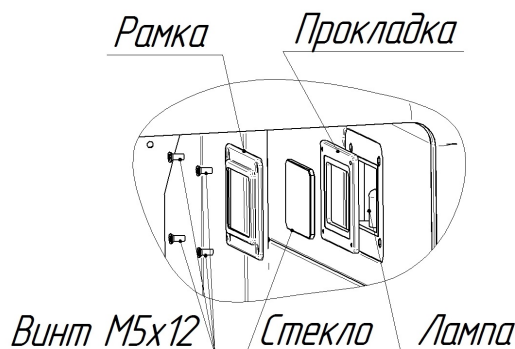
6.5. REPLACING LIGHTING LAMPS AND GASKETS

Replace the lighting lamp as follows:

- cool the oven to the temperature of (plus) (40-50)°C;
- Turn off the oven, setting the differential automat in the distribution box to position "OFF"
- open the door;
- unscrew the screws of the frame and remove the frame;
- remove the glass and gasket lamp;
- replace the bulb and gasket. The maximum power of an incandescent lamp should not exceed 25 W, cap E14.

Assemble in the reverse order.

Note: It is recommended to put high-temperature grease on the screws. WURTH CU800 grease).

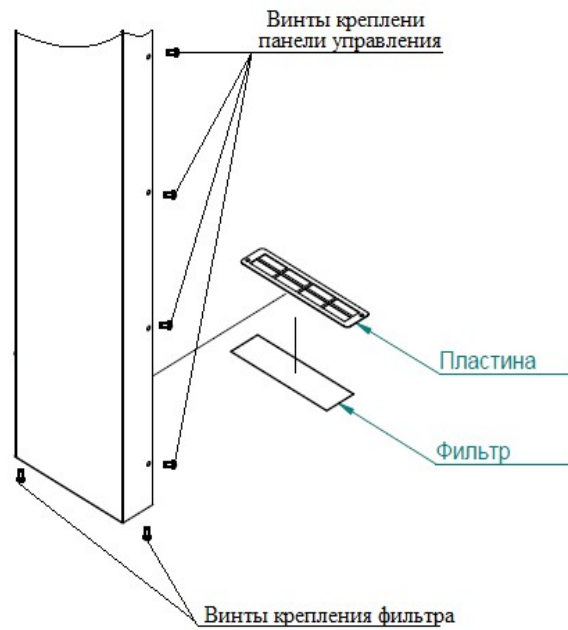


Рамка	Frame
Прокладка	Gasket
Стекло	Glass
Лампа	Lamp

6.6 REPLACING THE CONTROL PANEL AIR FILTER

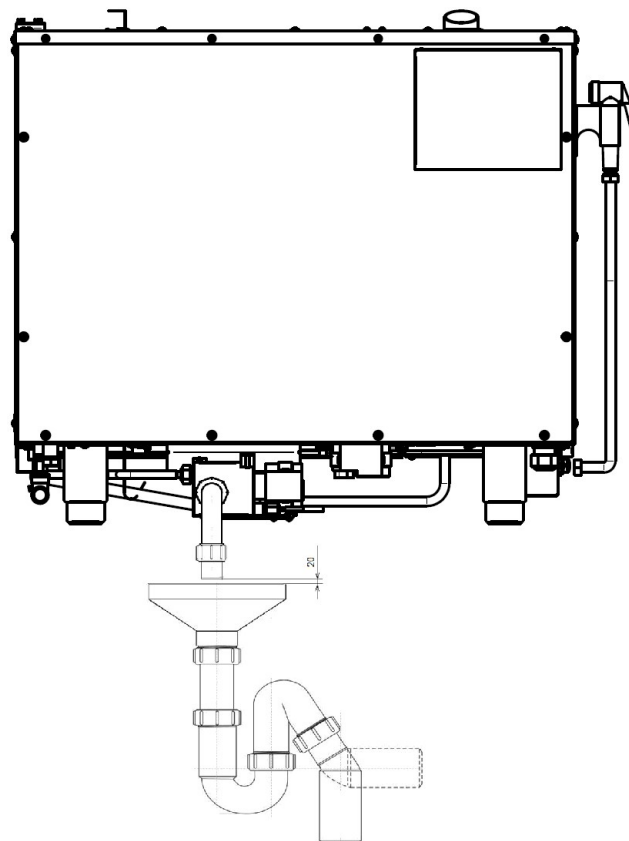
Change of the air filter shall be made in the following order:

- open the door of the combi-steamer and take off the control panel screws (see pic.13)
- take off the filters screws;
- take off the plate;
- take off the filter and change it;
- reassemble in the reverse order.



Винты крепления панели управления	Control panel screws
Пластина	Plate
Фильтр	Filter
Винты крепления фильтра	Filter screws

Pic. 13. Changing of the air filter



Pic. 14. Connection to the drainage system

6.7 CONTROLLER SETTING

To enter the controller adjustment mode, de-energize the controller (combi-steamer) -set the auto-matic switch on the mounting panel or the differential switch of the distribution panel of the building to position "OFF"



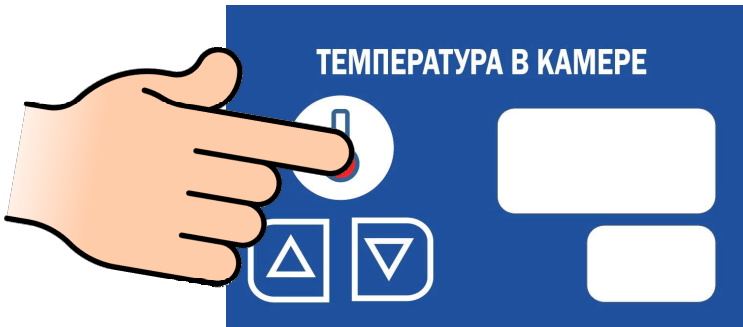
РЕЖИМЫ	MODES
КОНВЕКЦИЯ	CONVECTION
КОНВЕКЦИЯ+ПАР	CONVECTION + STEAM
РАЗОГРЕВ	WARM UP
ПАР	STEAM
ПРОГРАММЫ	PROGRAMS

For the boiler combi-steamers (PM) and injection combi-steamers (VM2-1 only) - hold the "Convection" button, set the electric voltage, setting the automatic switch on the mounting panel or the differential switch in the distribution box to

position "ON".

For the injection combi-steamers (VM, except VM2-1) - hold the "Warm-up" button, set the electric voltage, setting the automatic switch on the mounting panel or the differential switch in the distribution box to position

"ON".

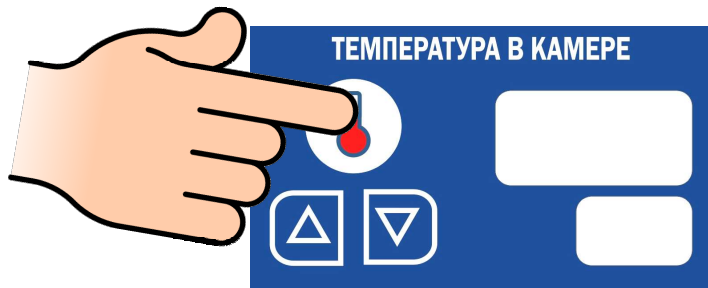


ТЕМПЕРАТУРА В КАМЕРЕ	TEMPERATURE IN THE CHAMBER
----------------------	----------------------------

On the indicator of the current parameter (large tuning indicator) "Temperature in the chamber" a symbol will appear - the setting parameter. The indicator of the parameter to be set (small tuning indicator) displays the current parameter.

Editing a parameter:

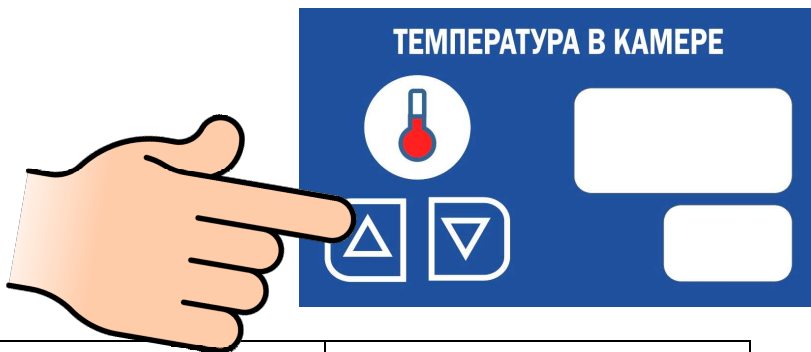
1.



ТЕМПЕРАТУРА В КАМЕРЕ	TEMPERATURE IN THE CHAMBER
----------------------	----------------------------

Press and release the button “Temperature in the chamber” - the value of the set parameter on the “small” indicator will start blinking 

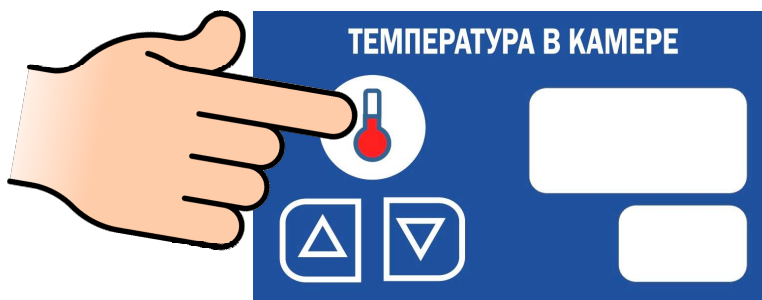
2.



ТЕМПЕРАТУРА В КАМЕРЕ	TEMPERATURE IN THE CHAMBER
----------------------	----------------------------

Press and release the button to change the parameter  

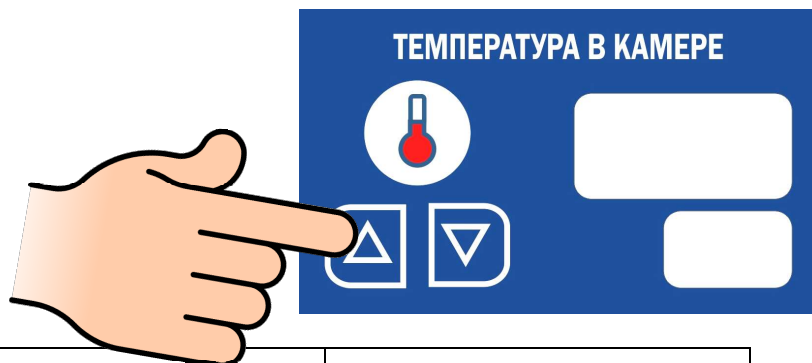
3.



ТЕМПЕРАТУРА В КАМЕРЕ	TEMPERATURE IN THE CHAMBER
----------------------	----------------------------

Press and release the “Temperature in the chamber” button to save the parameter - the value of the parameter on the “small” indicator stops blinking 

4.

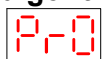


ТЕМПЕРАТУРА В КАМЕРЕ	TEMPERATURE IN THE CHAMBER
----------------------	----------------------------

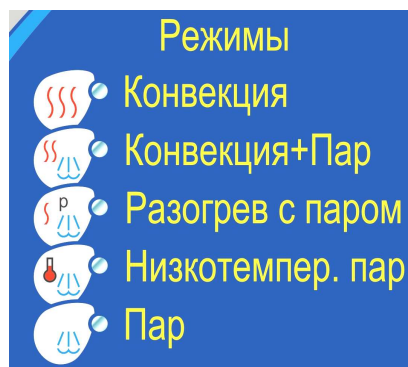
Press and release the button to edit the next setting.  

Parameter setting tables for different controller versions are given below.

1. The algorithm of work:

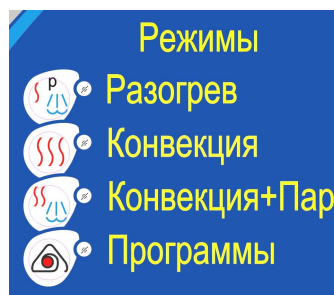


- it is installed for combi-steamers without the possibility of programming;



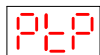
РЕЖИМЫ	MODES
КОНВЕКЦИЯ	CONVECTION
КОНВЕКЦИЯ+ПАР	CONVECTION + STEAM
РАЗОГРЕВ	WARM UP
ПАР	STEAM
ПРОГРАММЫ	PROGRAMS
Разогрев с паром	Warm up with steam
Низкотемпер. пар	Low temperature steam

- it is installed for combi-steamers with a possibility of programming.

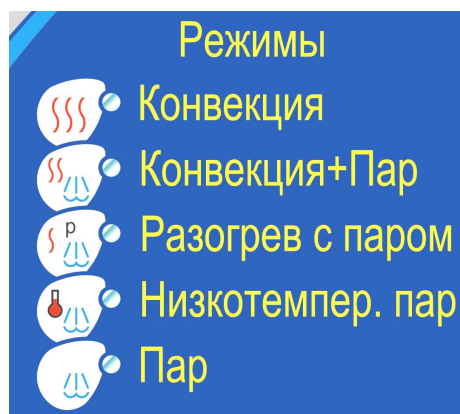


РЕЖИМЫ	MODES
КОНВЕКЦИЯ	CONVECTION
КОНВЕКЦИЯ+ПАР	CONVECTION + STEAM
РАЗОГРЕВ	WARM UP
ПАР	STEAM
ПРОГРАММЫ	PROGRAMS
Разогрев с паром	Warm up with steam
Низкотемпер. пПар	Low temperature steam

2. The algorithm of work:



- it is installed for combi-steamers of boiler type (PM) and injection type (only VM2-01);



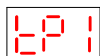
РЕЖИМЫ	MODES
КОНВЕКЦИЯ	CONVECTION
КОНВЕКЦИЯ+ПАР	CONVECTION + STEAM
РАЗОГРЕВ	WARM UP
ПАР	STEAM
ПРОГРАММЫ	PROGRAMS
Разогрев с паром	Warm up with steam
Низкотемпер. пар	Low temperature steam

 - it is installed for combi-steamers of the VM type (except for VM2-01).



РЕЖИМЫ	MODES
КОНВЕКЦИЯ	CONVECTION
КОНВЕКЦИЯ+ПАР	CONVECTION + STEAM
РАЗОГРЕВ	WARM UP
ПАР	STEAM
ПРОГРАММЫ	PROGRAMS
Разогрев с паром	Warm up with steam
Низкотемпер. пар	Low temperature steam

3. "Chamber" thermocouple type:



 - set for thermocouple type L (TXK).

 - set for thermocouple type K (TXA).

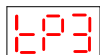
4. "Probe" thermocouple type:



 - set for thermocouple type L (TXK).

 - set for thermocouple type K (TXA).

5. "Boiler" thermocouple type:



 - set for thermocouple type L (TXK).

 - set for thermocouple type K (TXA).

6. "Collector" thermocouple type:



 - set for thermocouple type L (TXK).

 - set for thermocouple type K (TXA).

Type of thermocouples (parameter 3-6):

For thermocouples "Chamber", "Boiler", "Collector" the main type is TXK.

For the "Probe" thermocouple, the main type is TXA.
The type of thermocouple is indicated on the nameplate.

7. Type of apparatus:

6YP

6

-it is installed for the PKA-6 combi-steamer;

10

-it is installed for the PKA-10 combi-steamer;

20

-it is installed for the PKA-20 combi-steamer;

8. Temperature measuring system:

EE

E

- temperature display on the indicator in degrees Celsius ($^{\circ}\text{C}$);

F

- temperature display on indicators in Fahrenheit ($^{\circ}\text{F}$).

9. Fan operation:

fur

1

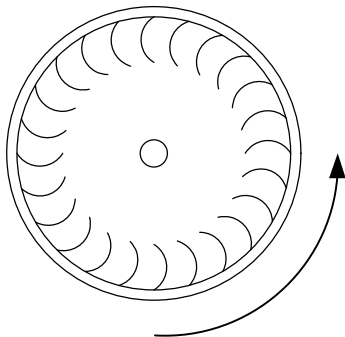
- is installed for a combi-steamer with inclined impeller blades!

2

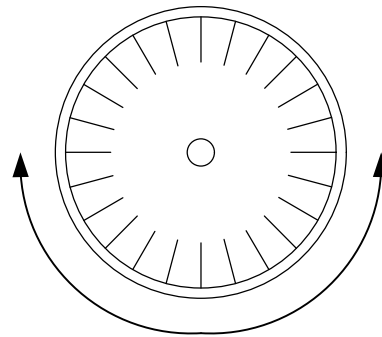
- it is installed for a combi-steamer of a fan with straight impeller blades!



Before changing the values of this parameter, make sure what type of impeller is set in the combi-steamer!



fan without reverse
(fan only rotates counterclockwise)



reverse fan
(fan alternately rotates both counterclockwise and clockwise).

10. Time "Forward":

E1

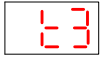
Sets the time that the fan should rotate counterclockwise (only for a fan with reverse function - parameter 7 is set to 2).

11. Time "Backward":

E2

Sets the time that the fan should rotate clockwise (only for a fan with reverse function - parameter 7 is set to 2).

12. Time "Pause":



The idle time is set between changing the direction of rotation (only for a fan with reverse function - parameter 7 is set to 2).

13. The time "Cleaning the steam generator":

0P1

The time is set, after which the information message "E21" is displayed, that it is necessary to clean the steam generator.

14. The design of the combi-steamer:

5E1

0

- combi-steamer of execution PM, VM, PM2 and VM2

1

- combi-steamer PM-01 and PM2-01

2

- combi-steamer PM-01 and PM2-01 + decalcifying dispenser

15. Last error code:

E-1

... codes of the last four errors

E-4

16. Damper sensor:

5H

0

- damper without microswitch

1

- damper with microswitch

17. Collector temperature:

Co1

85

- Recommended value 85°C (118.8°F). The parameter varies in the range of 50...85°C or 83.8...118.8°F.

It is not recommended to change the parameter value - when the parameter value decreases below 85 ° C, the water flow increases.

18. Operation time of the washing dispenser (the first washing cycle):

dt1

360

- Recommended value of the parameter. The parameter varies in the range of (1...999)

s.

During the first washing cycle.

If the washing quality is "poor" or after replacing a pump (dispenser) of a different type, change the time (flow rate) of the pump (dispenser).

19. Operation time of the washing dispenser (total time for two washing cycles):

dt2

720

- Recommended value of the parameter. The parameter varies in the range of (1...999)

s.

Operation time of the washing solution pump (dispenser) for the first and the second washing cycles.

If the washing quality is "poor" or after replacing a pump (dispenser) of a different type, change the time (flow rate) of the pump (dispenser).

20. The operating time of the washing-off dispenser:

dt3

15 - Recommended value of the parameter. The parameter varies in the range of (1...999)

s.

If the washing-off quality is "poor" or after replacing a pump (dispenser) of a different type, change the time (flow rate) of the pump (dispenser).

21. Cold shut sensor offset:

cjt

0 - Recommended value of the parameter. The parameter varies in the range of $\pm(1...5)$.

It is not recommended to change the parameter value.

Cold shut sensor offset applies when the supported operating temperature is different from the set value.

22. The operating time of the decalcifying dispenser:

dt4

15 - Recommended value of the parameter. The parameter varies in the range of (1...999) s.

If the decalcifying quality is "poor" or after replacing a pump (dispenser) of a different type, change the time (flow rate) of the pump (dispenser).

6.8 ADJUSTMENT OF THE VARIABLE FREQUENCY DRIVE.

WESPER E2-MINI-SP5-L

To enter the drive operation parameter programming mode:

press and release "Prog" button,

press and release "▲" or "▼" button to go to the program parameter.

- to watch the value of the programmable parameter press and release "Enter" button

- press and release "▲" or "▼" button to change the parameter

- to save the value press and release "Enter" button

- to exit the programming mode, press the "Prog" button

The programming parameters are shown in table 1.

Table 1

	Name	Parameter	Value	Note
1	Braking time	02	12.5	
2	Control mode	03	0	
3	Directions of rotation	04	0	
4	Frequency limitation	06	60	
		07	0	
5	Control	10	1	
6	Frequency setting	11	1	
7	Stop method	14	0	
8	Braking time	15	1.5	
9	Brake start frequency	16	1.0	
10	Braking level	17	10.0	
11	Thermal protection	18	100	
12	Reverse	22	1	

VACON 0010-1L-0002-2

Table 2

	Name	Parameter	Value	Note
1	Parameter masking	P13.1	0	
2	Signal at relay output 2	P7.2	4	
3	Signal at relay output 1	P7.1	4	
4	Braking time	P4.7	2.0	
5	Brake start frequency	P4.6	1.0	
5	Braking current	P4.4	2.0	
6	Input range	P6.1	0	
7	Maximum frequency	P3.2	60	
8	Stop mode	P2.3	1	

ALTIVAR ATV12

Table 3

	Parameter	Value	Name	Note
MyMenu - FULL				
1	nPn	0.37	Engine power	
2	Alt	10U	(0-10)V Control	
3	I_O -	OLA	Overload signal	
4	tOL	5s.	Overload Control Delay	
5	Ctd	Inom * 1.5	Motor current setpoint	1.8A*1.5=2.7A
6	bFr	50	Passport motor power frequency	
7	nPr	0.37	Nominal power	
8	CoS	0.78	Engine cos	
9	nSP	1500	Engine speed	
10	tFr	60	Maximum frequency	
11	Ctt	PUNP	Pump or fan control	
12	Frl	All	Control Channel - Terminal Block	
13	ACC	3.0	Acceleration Time	
14	dEC	3.0	Braking time	
15	Stt	FSt	Quick stop	

7 TROUBLESHOOTING

Table 4

Name of the malfunction	Probable cause	Troubleshooting
After pressing the "On/Off" button, the value "E01" is displayed on the indicator of the parameter "Temperature in the chamber", an audible alarm is activated. The controller does not respond to button presses, the oven lighting does not turn on	Temperature in the controllers zone exceeds (plus) 75°C. 1. Faulty cooling fan of electronic components. 2. The air filter is clogged. 3. The combi-steamer is installed next to other heating equipment or the room temperature is not normal. 4. The controller is broken.	1. De-energize the combi-steamer, turning off the differential switch of the fixed wiring. Remove the right casing. 2. Apply power to the combi-steamer and check the operation of the cooling fan for the units. 3. Replace the air filter located at the bottom of the control panel. 4. Separate thermal equipment from each other. 5. If during verification of item 1 ... 4 no deviations were detected - replace the controller. Clear an item 6.8 after changing of the controller.
After pressing the "On/Off" button, the value "E02" is displayed, the audible alarm is activated. The controller does not respond to button presses, the oven lighting does not turn on	1. The emergency protection system of the oven triggered (plus) 320°C. 2. The controller is broken.	1. De-energize the combi-steamer, turning off the differential switch of the fixed wiring. Remove the right casing. 2. Check the connection of the supply cables of the controller. The wire with red identification tape should be connected with "L" contact, the wire with blue - to "N" contact. 3. If the thermo-switch has triggered (plus) 320°C, check the status of outputs and outputs of the solid-state relay, which are responsible for the switching-on the air heaters, check signals from the controllers output (connector X18). 4. If during verification of item 1 ... 3 there are no deviations, replace the controller. Clear an item 6.8 after changing of the controller.
During the execution of the program, on the modes on the indicator of the current value of the parameter "Timer" or "Probe temperature" the value "E06" is displayed. The controller works in all modes, in modes with "Steam" steam does not enter the oven, but enters the atmosphere	1. Malfunction of the dampers drive. 2. The controller is broken.	1. De-energize the combi-steamer, turning off the differential switch of the fixed wiring. Remove the right casing. 2. Check the resistance of the damper sensor, the sensor resistance range should be (5.1-9.9) kOm. Check the resistance of the motor winding, resistance 32 Om. If inconsistency is detected, replace the gearmotor. 3. If during verification of item 1 ... 2 no deviations were detected - replace the controller. Clear an item 6.8 after changing of the controller.
After pressing the "On/Off" button, the value "E07" is displayed, the audible alarm is activated. The controller does not respond to button presses, the oven lighting does not turn on	1. Malfunction of the variable frequency drive. 2. The controller is broken.	1. De-energize the combi-steamer, turning off the differential switch of the fixed wiring. Remove the right casing. 2. Disconnect the wires of the variable frequency drive ("Relay"). 3. Apply power to the combi-steamer and press the "On/Off" button. 4. Visually control the error status on the indicator of the variable frequency drive. Determine the kind of the malfunction of the variable frequency drive according to the manual for the variable frequency

		drive. If it is impossible to exclude the error - change the variable frequency drive. After installation of the new variable frequency drive make the adjustment according to part 6.10. 5. If the error status is not displayed on the indicator of the variable frequency drive., control the status of outputs contacts "Relay" by the combi-tool (resistance measuring mode) - the status of the contact shall be "NO" - operation status. 6. Check the continuity to connector X10 according to the electrical circuit diagram. 7. If during the verification of item 1 ... 6 no deviations were detected - replace the controller. Clear an item 6.8 after changing of the controller.
After pressing the "On/Off" button, the "Err" value is displayed on the indicator of the current value of the "Temperature in the chamber" parameter, and "ch1" is displayed on the indicator of the set value of the "Temperature in the chamber" parameter	1. The termination of the thermocouple "Chamber" 2. The controller is broken.	1. De-energize the combi-steamer, turning off the differential switch of the fixed wiring. 2. Open the door of the combi-steamer. Take off the control panel screws. Level up and open the control panel. 3. Visually control the installation reliability of the counterpart of X2 connector "Chamber" and wire crimping of the thermocouple at the counterpart of the connector. 4. If the connector is installed securely and the wire crimping in the connector is satisfactory, disconnect the connector and use a combination device (resistance measurement mode) to check the integrity of the hot junction. If the hot junction is open - replace the thermocouple. To replace the thermocouple, disconnect the thermocouple wires from the connector, remove the right casing, unscrew the thermocouple with a wrench. Installation is carried out in the reverse order.  Observe the polarity, while connecting the thermo-couple. 5. If malfunctions were not found in i.1...4, change the controller. Clear an item 6.8 after changing of the controller.
After pressing the "On/Off" button, the "Err" value is displayed on the indicator of the current "Timer" parameter value, and "ch2", "ch3" or "ch4" are displayed on the indicator of the set value of the "Timer" parameter The modes with the "Probe Temperature" parameter do not start	1. Broken channel (s) of the thermocouple probe. 2. The controller is broken.	1. De-energize the combi-steamer, turning off the differential switch of the fixed wiring. 2. Open the door of the combi-steamer. Take off the control panel screws. Level up and open the control panel. 3. Visually control the installation reliability of the counterpart of X3 connector "Probe" and wire crimping of the thermocouple at the counterpart of the connector. 4. If the connector is installed securely and the wire crimping in the connector is satisfactory, disconnect the connector and use a combination device (resistance measurement mode) to check the integrity of the hot junction. If the hot junction is open - replace the thermocouple. To change the thermocouple, take off the left and the right casings, takes off the screws. Disconnect the wires from the connector and dismantle the strip at the cable entry into the oven. Remove the probe. Installation of the probe is carried out in the reverse order. Seal the cable exit from the chamber with a high-temperature sealant.

		 Observe the polarity, while connecting the thermo-couple. 5. If malfunctions were not found in i.1..4, change the controller. Clear an item 6.8 after changing of the controller.
After pressing the “On/Off” button, the “Err” value is displayed on the indicator for the current “Timer” or “Probe temperature” parameter and the “ch5” value is displayed on the indicator of the set parameter and the audible alarm	1. Broken channel (s) of the thermocouple of the steamgenerator. 2. The controller is broken.	1. De-energize the combi-steamer, turning off the differential switch of the fixed wiring. 2. Open the door of the combi-steamer. Take off the control panel screws. Level up and open the control panel. 3. Visually control the installation reliability of the counterpart of X5 connector "Boiler" and wire crimping of the vias. 5. If malfunctions were not found in i.1...3 change the controller. Clear an item 6.8 after changing of the controller.
After pressing the “On/Off” button, the “Err” value is displayed on the indicator for the current “Timer” or “Probe temperature” parameter and the “ch6” value is displayed on the indicator of the set parameter and the audible alarm	1. Broken channel (s) of the collector thermo-couple. 2. The controller is broken.	1. De-energize the combi-steamer, turning off the differential switch of the fixed wiring. 2. Open the door of the combi-steamer. Take off the control panel screws. Level up and open the control panel. 3. Visually control the installation reliability of the counterpart of X4 connector "Collector" and wire crimping of the thermocouple at the counterpart of the connector. 4. If the connector is installed securely and the wire crimping in the connector is satisfactory, disconnect the connector and use a combination device (resistance measurement mode) to check the integrity of the hot junction. If the hot junction is open - replace the thermocouple. To replace the thermocouple, disconnect the thermocouple wires from the connector, remove the right and rear casing. Unscrew the thermocouple from the collector with a wrench. Installation is carried out in the reverse order.  Observe the polarity, while connecting the thermo-couple. 5. If malfunctions were not found in i.1..4, change the controller. Clear an item 6.8 after changing of the controller.
After pressing the “Start/Stop” button, with the door closed, the audible alarm sounds on the indicator for the current value of the “Timer” or “Probe Temperature” parameter “doo”	1. Malfunction of the door sensor.	1. De-energize the combi-steamer, turning off the differential switch of the fixed wiring. 2. Open the door of the combi-steamer. Take off the control panel screws. Level up and open the control panel. 3. Visually control the installation reliability of the counterpart of X10 connector. 4. Disconnect X10 connector. With a combined device, the resistance measurement mode, check the integrity of the circuit and the condition of the contact with the door open and closed. With the door closed, the door sensor contacts are closed.
There is no oven lighting, controller indicators turn on.	1. Oven lighting lamps blown	1. De-energize the combi-steamer, turning off the differential switch of the fixed wiring. 2. Replace the lighting lamps and gaskets (see i.6.6).

The oven heats up for a long time.	1. Bad contact wire connection. 2. The heating element is broken. 3. The solid state relay is broken. 4. The controller is broken.	1. De-energize the combi-steamer, turning off the differential switch of the fixed wiring. Remove the right casing. 2. Open the door of the combi-steamer. Take off the control panel screws. Level up and open the control panel. 3. Visually control the installation of X18 connector. Use a combi tool to check the continuity of the controller. X18 - Relay V1. 4. Power up Select "Convection" mode Set the set temperature above the current temperature in the chamber. Press and release "Start/Stop" button Check the voltage (plus) 24 V at the X18 connector by the combi-tool (Output A and Output B). Control the voltage at +A and -A inputs of the solid state relay V1 and V2. Select "Convection +Steam" mode Press and release "Start/Stop" button Check the voltage (plus) 24 V at the X18 connector by the combi-tool (Output C and Output D). Control the voltage at +B and -B inputs of the solid state relay V1 and V2. 5. Check the solid-state relay. 6. Determine and change the damaged component. Put the KPT-8 heat-conducting grease on the relay base if you change the solid-state relay. Clear an item 6.8 after changing of the controller.
The fan in the oven does not rotate.	1. The variable frequency drive is not adjusted. 2. The controller is broken.	1. De-energize the combi-steamer, turning off the differential switch of the fixed wiring. Remove the right casing. 2. Open the door of the combi-steamer. Take off the control panel screws. Level up and open the control panel. 3. Visually control the installation of X18 and X12 connectors. Check the circuit continuity by the combi-tool. Controller X18 and X12 - the variable frequency drive. 4. Power the combi-steamer and check the settings of the variable frequency drive. (see 6.9), check the signal (0-10V) at the by the combi-tool at the X12 connector after pressing the "Start/Stop" button - during the program execution. 5. If malfunctions were not found in i.1...4, change the controller. Clear an item 6.8 after changing of the controller.
The controller does not respond on button presses	1. The foil-keypad ribbon is not connected to the controller. 2. The keyboard is broken. 3. The controller is broken.	1. De-energize the combi-steamer, turning off the differential switch of the fixed wiring. 2. Open the door of the combi-steamer. Take off the control panel screws. Level up and open the control panel. 3. Visually control the installation reliability of the foil-keypad ribbon to the X8 connector. 4. If the foil-keypad ribbon is connected in the right way and the controller does not respond on button presses, disconnect the foil-keypad from X8 and X6 terminals. Take off the controller from the control panel. Apply power to the combi-steamer, and, using the technological jumper, close the contacts, according

		to the electrical diagram in Pic. 13 - simulation of a button click. Identify the defective item and replace it. Clear an item 6.8 after changing of the controller.
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8. LIST OF OUTPUT SIGNALING ERRORS

Table 5

	Controller 38PKA3 design 85	Controller 38PKA3 design 86	Note
Errors blocking the operation of the controller			
The termination of the thermocouple "Chamber"	Err ch1	E01	
Emergency protection system (plus) 130/160°C of the steam-generator or the oven (plus) 320°C	E02	E02	
Malfunction of the cold shuts sensor or overheating of the controller.	Err	E05	
Malfunction of the frequency converter.	E07	E07	
Errors partially blocking the operation of the controller.			
Break of the first channel "Probe"	Err 1 ch2	E10	Operation with the "Probe" parameter is blocked
Break of the second channel "Probe"	Err 1 ch3	E11	
Break of the third channel "Probe"	Err 1 ch4	E12	
Lack of water in the steam generator	E04	E14	The operation with the parameter "Steam", "Washing" is blocked
Message about the need for decalcification of the steam generator	-	E20*	
Break of the damper sensor	E06	E26	
Steam generator cleaning required.	-	E21*	
The termination of the thermocouple "Boiler"	Err 1 ch5	E22	The "Washing" mode is blocked.
Information Messages			
Information message on opening the door during operation	doo	doo	
Information message about the need to open the door	-	Opn	
The termination of the thermocouple "Collector"	Err 1 ch6	E15	
Program Step Number	-	st	
Program completion information message	-	End	
Information message about the need to open the door to cool the oven	-	Coo	
Washing with a tablet, "short"	P110	tb1	
Washing with a tablet, "average"	P111	tb2	
Washing with a tablet, "long"	P112	tb3	
Washing with liquid washing solution "short"	P113	Ld1	
Washing with liquid washing solution "average"	P114	Ld2	
Washing with liquid washing solution "long"	P115	Ld3	

9. UPDATING THE SOFTWARE FROM USB FLASH

Updating the controller software improves the quality of the combi-steamer.

Software updates may be carried out both by the consumer and by specialists in the installation and repair of commercial and technological equipment.

To update the software you need a USB flash drive.

The amount of memory flash drive - up to 32GB.



In order that the new firmware of the controller does not lead to a breakdown or malfunction of the combi-steamer, you need to clarify the modification of the controller installed on your combi-steamer. Only then proceed with the software update!

Software update via USB drive. Software update via USB is only possible for controllers with 84th modification and higher!

9.1. PROCEDURE FOR DETERMINING THE CONTROLLER MODIFICATION

9.1.1 Set the differential switch in the control cabinet to the off position.

9.1.2 Provide access to the controller. Open the door of the combi-steamer. Using a screwdriver, remove the screws on the control panel.

9.1.3. Open the control panel.

9.1.4 Using the available silver information sticker, determine the modification of the controller. For example, the sign "38pka3_85 v65.hex 11/30/2020" indicates that the 38PKA3 controller is installed on this combi-steamer, the modification of the 85th controller, and before installing it on the combi-steamer, a program with version v65 is written to the combi-steamer.

9.2. SOFTWARE UPDATE PROCEDURE

9.2.1 Before starting the software update, write down the controller settings in the notepad (see 6.6 of the Operation Manual).

9.2.2 Copy the software to a flash drive from www.abat.ru, the "Service" section.

9.2.3 Unzip the file from the downloaded archive.



The unpacked file should be located in the root directory of the drive, and not in the folder !!!

9.2.4 Rename the unzipped file. For each modification of the controller, the file name should be renamed to:

"Pka84v05.hex" for the execution of the controller 38PKA3_84;

"pka85.hex" for the execution of the controller 38PKA3_85;

"pka86.hex" for the execution of the controller 38PKA3_86;

9.2.5. Set the differential switch in the control cabinet to the "off" position.

9.2.6 Insert the flash drive into the USB port of the controller.



9.2.7. While holding the (OFF) button, set the differential switch in the control cabinet to the "On" position

9.2.8. On the seven-segment indicators of the "Programs" parameter, the following information is displayed:

- on the "big" display - the symbol "S" - start, if the file name on the USB drive is correct;

- the figure is displayed on the "small" display:

1 - there is no USB drive (the format of the USB drive does not match FAT32);

2 - the file name is incorrect;

3 - corrupted file.

Release the "On/Off" button. Next, the software update algorithm will be performed automatically. When starting on the "big" display of the "Programs" parameter, the symbol "S" is displayed and then the symbol is replaced by the numbers 1 (10% update), 2 (20% update), etc. After the software update is completed, the controller goes into "standby mode" - the LED of the "On/Off" button lights up.

9.2.9 Set the differential switch in the control cabinet to the "off" position.

9.2.6 Take off the flash drive from the USB port of the controller.

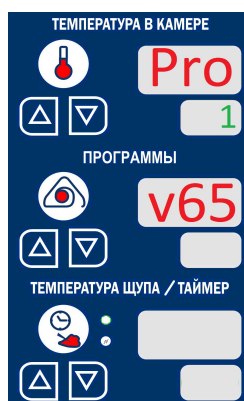
9.2.11 Check the controller software update. To do this press and hold the button on the control panel of the combi-steamer (see pic A) While holding the button, set the differential switch in the distribution cabinet to the "On" position



РЕЖИМЫ	MODES
КОНВЕКЦИЯ	CONVECTION
КОНВЕКЦИЯ+ПАР	CONVECTION + STEAM
РАЗОГРЕВ	WARM UP
ПАР	STEAM
ПРОГРАММЫ	PROGRAMS

Pic. A. Combi-steamer with the index "PM", "PM-01" and "PM2" "PM2-01";

On the big display of the parameters "Programs" (see pic B) The software version is displayed (e.g. v65). The software version must be higher than that indicated on the controller information label.

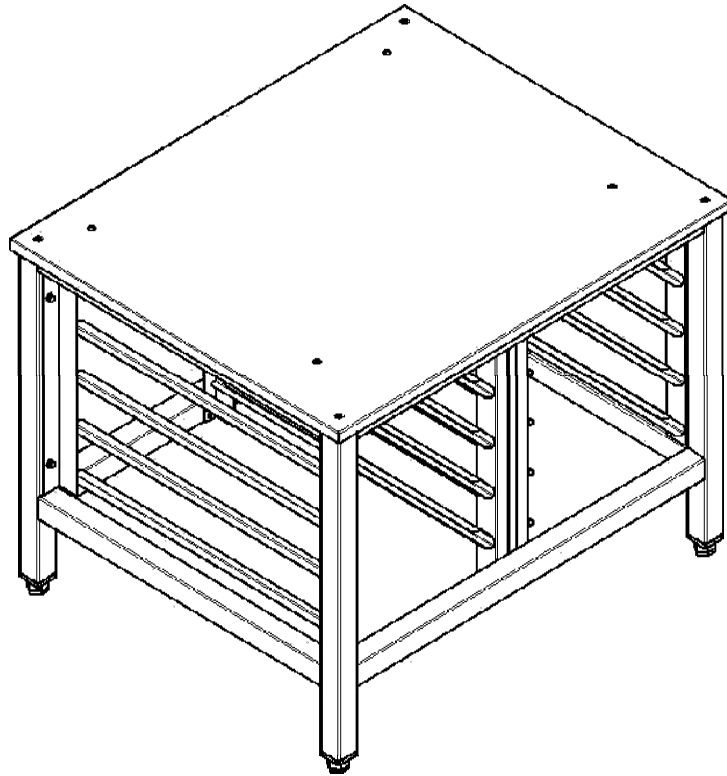


ПРОГРАММЫ	PROGRAMS
ТЕМПЕРАТУРА В КАМЕРЕ	TEMPERATURE IN THE CHAMBER
ТЕМПЕРАТУРА ЩУПА / ТАЙМЕР	PROBE TEMPERATURE/TIMER

Pic. B. Information output on the displays.

9.2.12 Set the controller settings after the update (see i.9.2.1).

9.2.13 Close the panel and install the screws.



Pic. 16 A support for combi-steamers PK-6M, order code 110000002326,
PK-10M, order code 110000002329.

PRINCIPAL ELECTRICAL CIRCUIT OF PKA6-1/1VM2-01 AND PKA10-1/1VM2-01

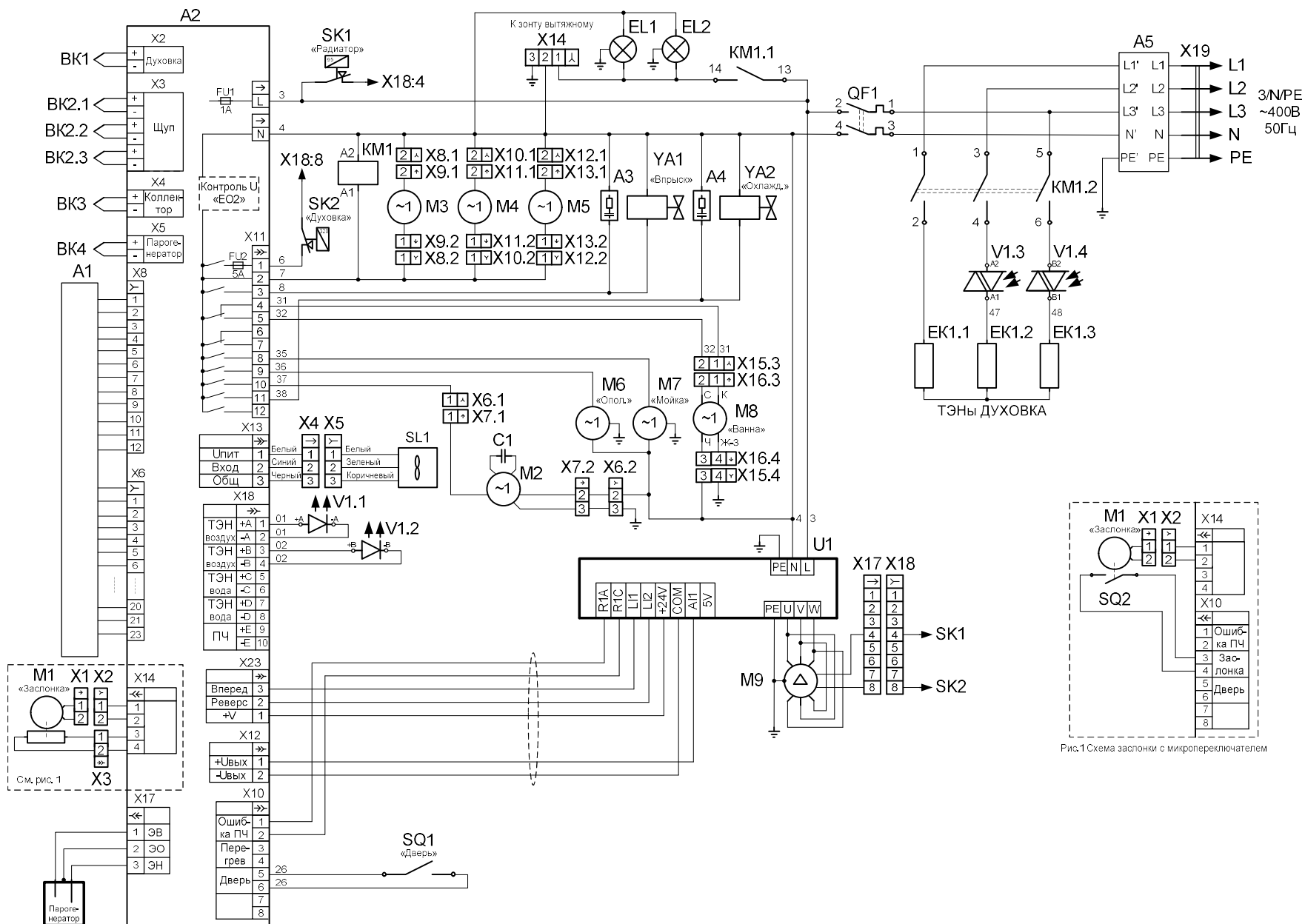


Рис.1 Схема заслонки с микропереключателем

Духовка	Oven
Щуп	Probe
Коллектор	Collector
Парогенератор	Steam generator
Контроль U "EO2"	U "EO2" Control
Радиатор	Radiator
К зонту вытяжному	To the exhaust hood
Впрыск	Injection
Охлажд.	Cooling
ТЭНы ДУХОВКА	Heating elements, OVEN
Ванна	Bath
Мойка	Washing
Опол.	Washing-off
Упит	Usup
Вход	Input
Общ	General
Белый	White
Синий	Blue
Черный	Black
Зеленый	Green
Коричневый	Brown
ТЭН	Heating element
воздух	air
вода	water
Вперед	Forward
Реверс	Reverse
Увых	Uout
Заслонка	Damper
См. рис.	See. pic
ЭВ	EV
ЭО	EO
ЭН	EN
Ошибка ПЧ	PCH Error
Перегрев	Overheat

Дверь	Door
ч	H
Ж-З	ZH-Z
Рис.	Pic.
Схема заслонки с микропереключателем	Damper with the micro-switch
С	S
К	K
В	V
Гц	Hz

LIST OF THE ELEMENTS

Pos.	Name	Q-ty	Order code
A1	"Abat-35-06" keyboard (for PKA6-11VM2-01)	1	120000061014
	"Abat-35-10" keyboard (for PKA10-11VM2-01)		120000061021
A2	38PKA3 controller	1	120000160247
A3, A4	OPN-113 Limiter	2	120000060095
A5*	FMAD-0932-2510* Filter	1*	120000025757*
BK1	TP 1799 XA-20-2300 thermoconverter	1	120000061742
BK2	TP 1740-K3-KHA-2500 thermoconverter	1	120000060786
BK3, BK4	TS1763XK-32-1500 thermoconverter	2	120000060618
C1	Capacitor 10mFd	1	supplied with M2
EK1	Heating element B3- 12kW	1	120000060113
EL1, EL2	Lamp 25 W 220 V 50 Hz, E14	2	120000060440
KM1	NC1-3210 Contactor	1	120000061052
M1	25GA-RC385-1228 motor-reducer	1	120000060714
M2	L63T10DX Electric engine	1	120000060521
M3	Fan 80x80	1	120000070779
M4	Fan 120x120	1	120000069331
M5*	Fan 120x120*	1*	120000069331*
M6	Washing-off pump G82B/A1	1	120000025553
M7	Washing pump G202/A1	1	120000025554
M8	Tap with electric drive Neptun Bugatti Pro 220V 3/4	1	120000061198
M9	Electric engine FIR 1079A6352	1	120000060635
QF1	Automatic switch VA47-29 2R 16A	1	120000061074
R1	Resistor RP1-305-3M	1	120000060703
SK1	Temperature controller TK24-03-1-95+/-2%	1	120000060698
SK2	Thermo-switch 55.13569.070	1	120000006819
SL1	Flowmeter VY1030K5HN06A4	1	120000061368
SQ1	Micro-switch MP 1107	1	120000006909
U1	Frequency converter ATV12-0.55kW	1	120000061312
V1	Solid-state relay SOB962060 2x25A/400V	1	120000035002
	Connector with a lever 4P 1Y044604	1	120000017606
X1	Chock 45 7373 9076	1	120000002535
X2	Chock 45 7373 9038	1	120000002534
X3	Chock 45 7373 9025	1	120000060512
X4	Pin-connector SP 2.5/3	1	120000060601
X5	Socket-connector SC 2.5/3	1	120000060613
X6	Chock 45 7373 9005	1	120000002722
X7	Chock 45 7373 9006	1	120000002723
X8	Chock 45 7373 9038	1	120000002534
X9	Chock 45 7373 9076	1	120000002535
X10	Chock 45 7373 9038	1	120000002534
X11	Chock 45 7373 9076	1	120000002535
X12*	Chock 45 7373 9038*	1*	120000002534*
X13*	Chock 45 7373 9076*	1*	120000002535*
X14	Chock 45 7373 9005	1	120000002722
X15	Chock 45 7373 9009	1	120000002166
X16	Chock 45 7373 9011	1	120000002181
X17	Chock 45 7373 9012	1	120000002180
X18	Chock 45 7373 9013	1	120000002167
X19	Power cable 5x2.5	1	890000026306
YA1	Valve RPE1146 BC 240VR mini	1	120000061498
YA2	Electromagnetic valve V19	1	120000060577

* - staffed by special order

Allowed replacement of elements that do not impair product specifications

