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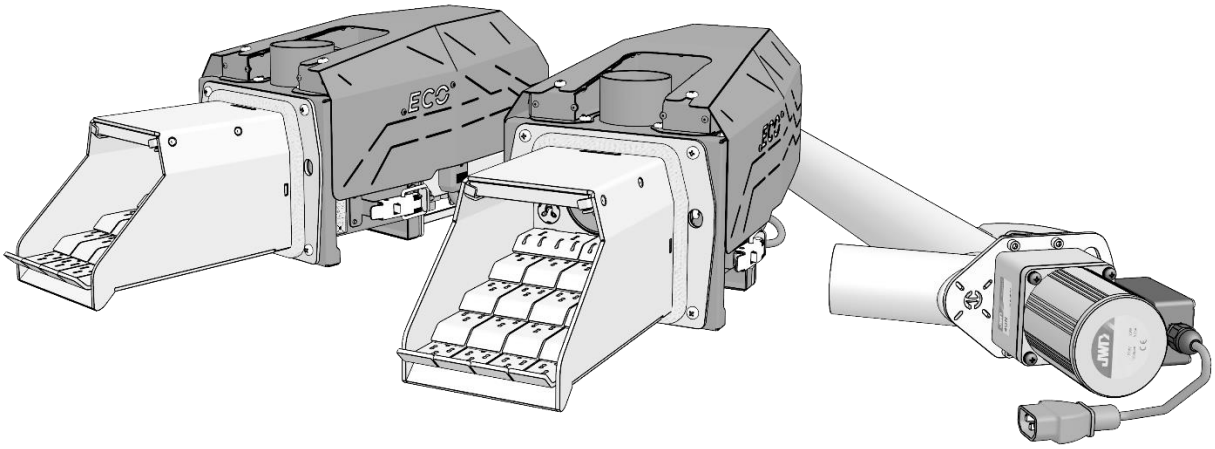
OXI

Pellet burner OXI

ECO



UA - SERVICE MANUAL FOR OPERATION, INSTALLATION AND MAINTENANCE

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1. Description and purpose

ECO series burners are designed for burning solid fuel in the form of pellet granules with different degrees of contamination and grain size (granulometric composition and other fuel requirements are described in section 2). The burner works in automatic mode and does not require constant supervision and the presence of personnel. The movable grates of the OXI burner prevent the slag formed in the process of burning pellets from sticking to the walls of the combustion chamber. The slag moves forward and exits the combustion chamber due to the cyclic translational movement of the grate group. The ceramic coating of the furnace significantly improves the combustion of both high-quality fuel and agricultural pellets. Stable combustion is ensured by the uniform supply of air from under the grill grates with a preliminary division into primary and secondary combustion air

The burner is designed to work in central heating boilers on solid fuel, as well as on some models of gas boilers, the design of which allows cleaning the boiler heat exchanger.

The burner is a device that does not disturb the ecological balance of the planet's ecosystem. Ecological neutrality is ensured by the use of fuel from renewable energy sources. At the same time, the operation of the burner does not require significant expenditure of electrical energy. The burner is controlled by a controller, which is being adjusted by the user and is responsible for optimal values of operating parameters, such as: fuel dosage, regulation of the amount of air for combustion, flame brightness, boiler temperature and many others. Controller burner specially designed to manage a heating system complex consisting of solid fuel boilers with pellet burners and basic automatic control units, for example, room thermostat The burner controller is also equipped with boiler temperature and DHW sensors.

The controller can be connected to control the pumps, as well as the notification unit by GSM or Wi-Fi modem.

The controller operation algorithm provides emergency situations such as overheating, suddenly went out flame or unplanned depletion of fuel reserves in the output hopper of the burner. Also, the automation for the burner is resistant to both short-term and long-term power supply interruptions. The design of the burner provides for the possibility of reburning the fuel dose in a de-energized furnace without consequences for both the design elements of the burner itself and the boiler equipment

Dosing and feeding of pellet granules is provided by a screw conveyor, which is included in the standard set of supplies from a special container - a pellet hopper, which in turn is purchased separately. Construction the conveyor involves installation in an arbitrary bunker with a different relative location of the boiler room. It should be considered that this may require certain modifications of the bunker. For this purpose, screws are optionally available in different lengths.

The maximum efficiency of the burner is work achieved only by using fuel pellets of proper quality by. The characteristics of such pellets are specified in section 2.

2. Fuel requirements

Effective operation of the burner is guaranteed when using the following pellet pellets from wood raw materials:

Parameters	Value
Diameter	6 – 8 ± 1, mm
Length	6 – 60, mm
Bulk density	650 ± 200 kg/m3
Specific calorific value	14.5 - 19 MJ/kg **ability** 3460 - 4540 kcal/kg
Humidity	≤ 10%
Ashiness	≤ 5%
Vigilance	≤ 3%

The nominal power of the burner is declared under the condition of operation on pellet pellets manufactured in accordance with the ENplus standard®. When using pellets with other values of caloric content, ash content, or moisture content, the rated power of the burner will, as a rule, differ.

3. Complete set of delivery

OXI burners of the ECO series are supplied in a standard configuration, which allows you to install the burner in the boiler, adjust and maintain it in normal mode. It is possible to optionally purchase elements of additional equipment, which allows you to expand the functionality of the burner.

Standard equipment

No	Component
1.	Burner OXI ECO
2.	OXI / KEY / Plum controller. With minimal equipment
2.1	Boiler temperature sensor
2.2	Connection cable (XHE20- socket/ 10-12 pin)
2.3	Auger connection cable
2.4	Power cable
3.	Screw that supplies fuel. The standard length is 1.5 m with the option optionally extend to 3 m
4.	Corrugated sleeve made of fusible polymer 1 m long. For connecting the elbow of the burner feeder with the auger
5.	Burner's knee. Rotatable 360°

Additional equipment

No	Component
6.	The fuel supply auger is necessary length and productivity
7.	Pellet bunker - storage of the required size and volume
8.	A fusible corrugated sleeve is essential length
9.	Electronics (Internet module, modules expansion, etc.)
10.	Boiler doors, both new and modification of existing ones. Transitional flanges, etc.

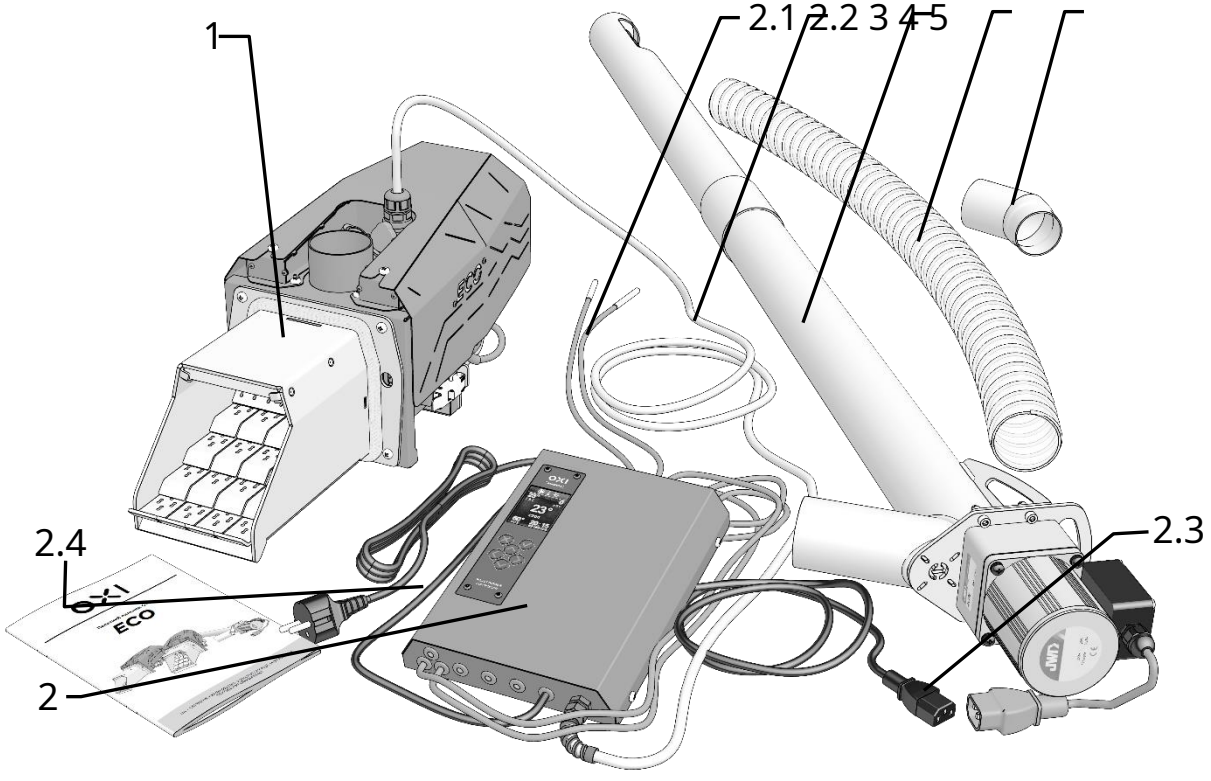


Fig. 1 Standard equipment of the burner

4. Design and features of operation

No	Element
1	Combustion chamber
2	Colanders
3	Refractory plate
4	Ceramic fuel igniter
5	Supercharging fan
6	Feeder
7	Burner body
8	Linear drive grates
9	Snail fan
10	Electrical switching unit
11	Photo sensor
12	Automation connection connector
13	Burner cover
14	The grate is stationary
15	Inspection window
16	A spiral with a feeder
17	Feeder sensor/Thermostat

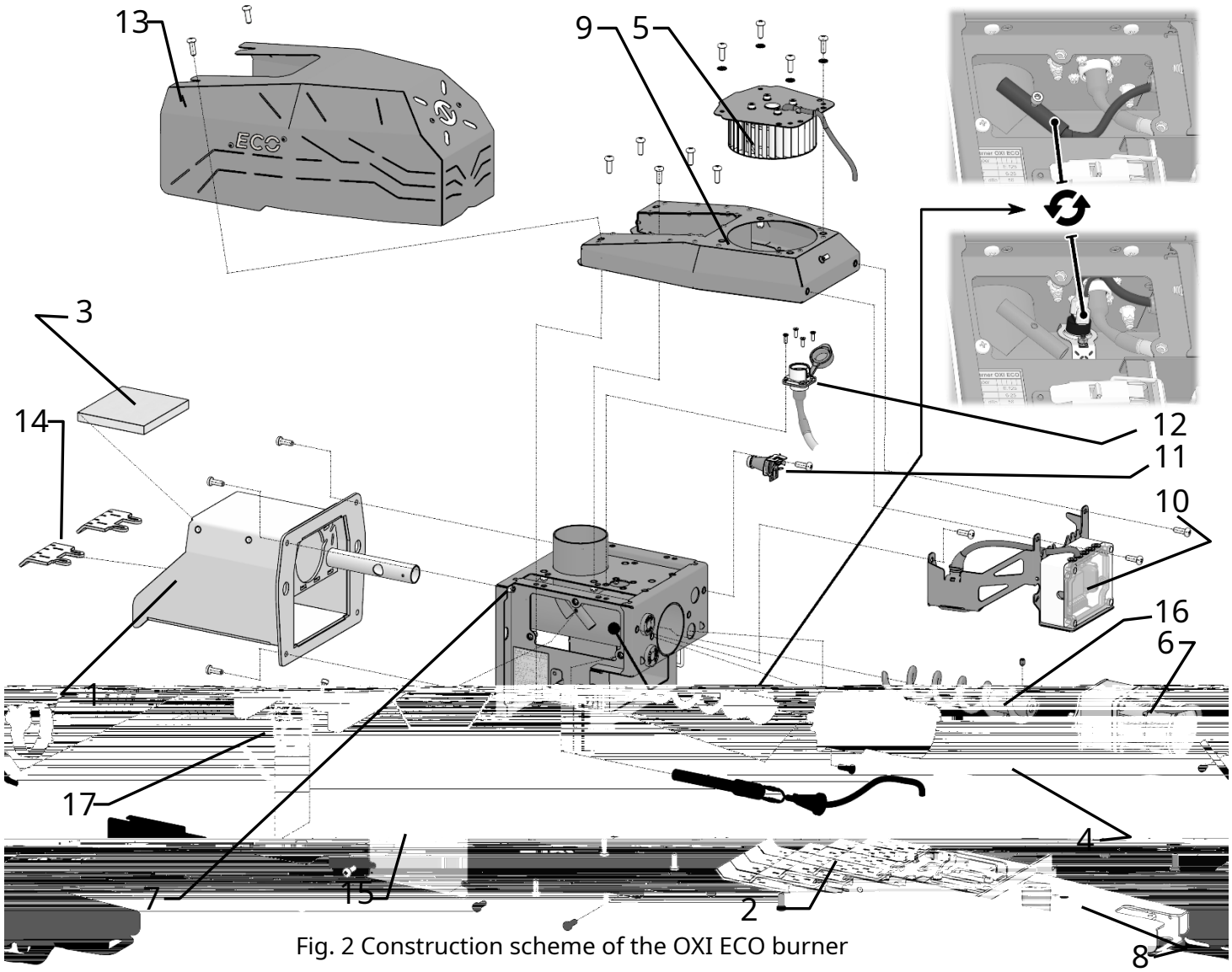


Fig. 2 Construction scheme of the OXI ECO burner

The OXI ECO burner is assembled from separate parts by moving it to the discharge opening. elements and a single modular screw drive is controlled by a controller and a multifunctional device.

The operation of the burner begins with the intake of pellet pellets by a spiral spiral from the volume of the hopper-storage. The spiral moves by the auger drive, attracting the pellet into the cavity of the auger tube and then able to work in different modes, alternating work and simple. This is how a dose of fuel of a certain mass is formed. Then the granules are freely poured. Passing through the low-melting sleeve and the knee of the burner, the granules fall into the cavity under the influence of gravity

feeder 6, which supplies a portion of fuel directly to the combustion chamber 1 on the grate 2.

After this, the ceramic igniter 4 (lighter) is activated, which works together with the fan 5. In the ignition mode, the fan supplies a small amount of air, which is quickly heated by the ignition device to high temperatures (the temperature of the working surface of the lighter is about 1000 ° C). Already heated air, affecting the pellet granules, leads to self-ignition.

When a flame of sufficient brightness is detected by the photo sensor 11, the automation switches the burner to the ignition stabilization mode. At the same time, the ceramic igniter is turned off, and the amount of air and fuel supplied to the burner gradually increases until the maximum power mode is reached.

Combustion chamber 1 is made of heat-resistant AISI 310S steel and is designed for long-term operation at temperatures up to 1150˚C. The geometric size and location of the holes on the grates 2 ensure stable burning of the burner, as well as better completeness of combustion and minimal thermal deformations of the grates.

The ceramic plate of the firebox 3 increases the efficiency of combustion, as a result of which there is a cleaner combustion compared to burners whose design uses a cooled metal body of the firebox.

However, in cases where low-quality pellets with a low melting point of ash, or agro-pellets, are used for the operation of the burner, high temperatures in the furnace of the burner can lead to the sintering of part of the ash into fairly solid formations. These formations can significantly reduce the battery life of the burner without intervention and cleaning. In order to eliminate negative ones effects, caused using low-quality pellet pellets in the burner design, a periodic linear drive 8 is installed, and part of the grate grates is made movable. Under automatic control, the cleaning linear drive sets the grates in motion with a certain regularity, which is best suited for the fuel of this quality and ensures the maximum possible autonomy of the burner, even on agricultural pellets.

In the housing 7 of the burner there is an electrical switching unit 10. The lid of the housing 13 closes the housing of the burner, protecting it from damage and external influence on the elements of the burner.

The auger provides metered fuel supply to the burner. The auger is controlled by the controller. The auger joins the burner low-melting corrugated sleeve, protecting the pellet storage from backfire.

ⓘ The burner has several successive levels of fire safety in emergency modes:

- **Movinggrills are not allowed accumulation of unburnt pellets in the furnace.**
- **The feeder forms a fuel gap jet and guarantees a rhythmic supply of the fuel dose to the combustion zone.**
- **Ona sensor is installed on the stocker tee temperature feeder/thermostat, which signals about a possible fire and stops the burning process.**
- **Melting corrugated sleeve melts and prevents the development of flames in the direction of the fuel storage, as the last line of protection.**

5. Technical characteristics of the burner

Parameter	Model
	E.125
Nominal power, kW	20
Minimum power, kW	4
Supply voltage, V/Hz	230/50
Average consumer power, W	40
Ignition consumption power, W	360
Total length, mm	547
Total height, mm (without knee)	212

Parameter	Model
	E.125
Total width, mm	202
Height of the furnace, mm	125
Width of the furnace, mm	125
Complete combustion	> 98%
Achievable boiler efficiency	<92%
Smooth power modulation	So
Complete with a fuel auger	Yes (Ø70mm)
Complete with fusible corrugated sleeve	Yes (1m)
Minimum rarefaction in the boiler, Pa	20
Weight of the EVO burner, kg	12.5
Mass of the fuel auger, kg (1.5m)	8.8|

ⓘ The nominal power of the burner is declared under the condition of operation on pellet pellets manufactured in accordance with the ENplus standard®. When using pellets with different values of caloric content, ash content or moisture content, the rated power of the burner will differ.

Article	sx mm	sd mm	sd mm	sk mm	sl mm	Power burner, kW
SHK3GN100K-70-60-1500	1430	70	60	150	1615	4-20

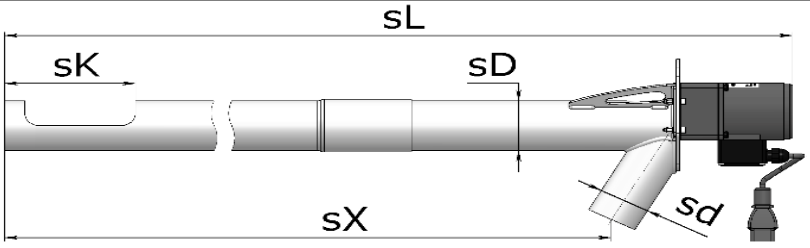


Fig. 3 Typical dimensions of the fuel auger

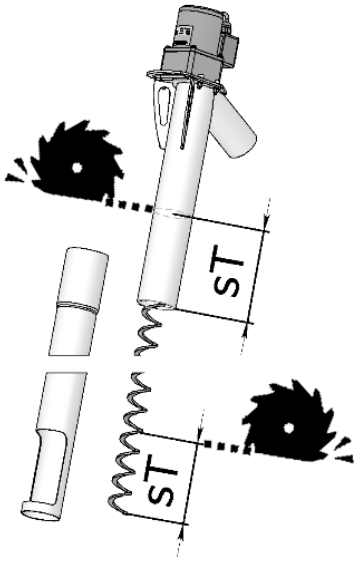


Fig. 4 Length reduction fuel screw

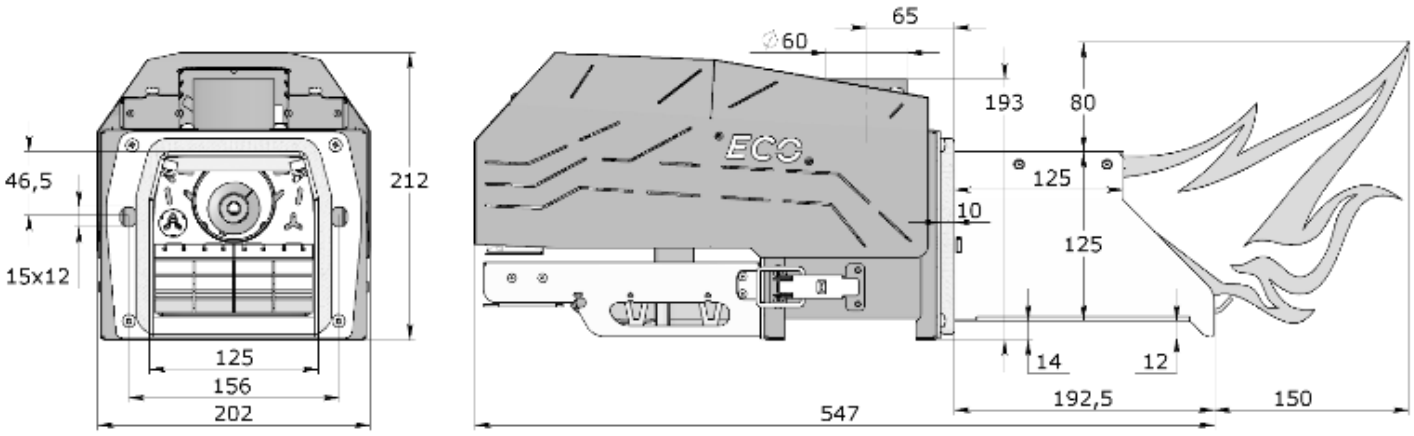
IN standard configuration, the burner is supplied complete with a 1.5 m long fuel auger. Optionally, it can be equipped with fuel screws of different lengths. With the design of any screw allows you to reduce it length in place during the installation of the burner, which allows to achieve ergonomics in the boiler room.

To reduce the length of the fuel screw, it is necessary to determine its final length.

For example, if a 1.2 m long auger (size sX) is needed for the correct installation of the burner to the unloading hole, this means that the standard auger does not suit us.

As you can see, the auger must be shortened by 230 mm. To do this, following the instructions in Fig. 4, we pull the main tube of the auger with the receiving window. The auger is connected by a telescopic connection. Next, we remove a part of the spiral and the upper tube of the auger of length sT with the cutting wheel of the angle grinder.

6. Overall and installation dimensions of the ECO burner



7. Installation of the burner

The best result of the burner is achieved when used as intended.

Usually, burner series ECO installed in the assembled boiler room on solid fuel boilers with characteristics corresponding to the parameters of the burner.

Depending on the design of the boiler, there are several options for installing the burner in the boiler firebox. The most popular installation method is cutting into the bottom door of the boiler.

The burner must be installed in a place that does not complicate maintenance and allows access to the main nodes of the burner. It is necessary to ensure the convenience of cleaning and the possibility of direct control of the combustion source.

If the burner is installed in the boiler door, not convergence of elements is allowed burner designs with boiler surfaces (when opening the door, the burner should not cling to the boiler). If the width of the door is too small, the asymmetric installation of the burner chamber in the door, closer to the hinges of the door, is allowed. If, even with such an installation, the burner still rests against the side post of the door opening, a take-out flange should be used, which pushes the burner out from the boiler furnace. In the latter case, it is convenient to make a new boiler door specially to install a burner while keeping the old ones - this will allow you to easily switch to wood heating at any time. To determine the optimal solution for installing a burner in a specific boiler, consult

with a specialist manufacturer

A pellet hopper of a certain volume must be installed in the boiler room, which allows the burner to work for a long time, during which it can be unattended. The hopper should allow installing a fuel auger with a diameter of 70 mm. Such a hopper in the assortment can be purchased from the burner manufacturer, or you can use an existing one made of non-combustible materials.

ⓘ Pay special attention to the auger intake hole at the bottom. During operation, the screw must be completely covered with pellets and protected from contact with personnel. A rotating screw can cause serious injury.

Installation of the burner must be carried out only by specialized personnel who have proven qualifications, observing the instructions given in this technical manual.

Standard installation procedure:

1. Measure the boiler door and determine and optimal point attachment of the burner and the need to install a remote flange. The burner must be installed in the boiler with

observing the dimensions and location according to the installation scheme (Fig. 5).

2. If the delivery set not provides an additional boiler door for the burner, make a hole for the burner firebox and mounting holes for attaching the burner to the boiler door (see section 6). If the door requires the installation of a remote flange, it must be installed by a qualified technician in accordance with the instructions in this manual.

If there is not enough vacuum in the boiler (less than 20 Pa), then it is necessary to install a smoke extractor.

3. Remove the burner elbow. Further install the burner in the opening of the door attached to the boiler and secure it by tightening the screws. Check that the burner door opens and closes freely. You must get free access to the combustion chamber of the burner and the ash pan of the boiler.

4. Depending on the selected option electrical connection, install the automation unit on a vertical or horizontal panel to view the information panel and manipulate the executive

elements block automation did not cause difficulties.

5. Install the adjusted length (see section 5) fuel auger into an empty hopper. If the hopper is already loaded with pellet pellets, it is possible to insert the auger with sufficient force into the landing hole of the hopper along the axis of the installation, while it is necessary to rotate the auger in the direction of winding of its spiral, as if "screwing" it into the pellet. The intake opening must be completely covered with pellets, and there must be no gaps between the auger tube and the hopper landing hole through which pellets can fall out during the operation of the auger.

6. Install the burner elbow in appropriate nipple feeder burner Adjust the length of the smooth corrugated sleeve connecting the fuel auger and the burner elbow so that it does not interfere with the free opening of the boiler door with the burner installed. At the same time, the angle between the axis of the sleeve and the horizon should form an angle of more than 35 degrees for free rolling of the granules without the formation of blockages leading to an emergency stop.

7. Connect all electrical connections according to the selected electrical scheme. In the simplest version, the main one the multi-wire controller cord must be connected to the plug on the burner body, or if it is not provided, the connector of the burner switching unit; install the boiler sensor in the temperature sleeve of the boiler, or if there is none, securely attached to the "supply" pipe of the boiler circuit; the connecting cord of the fuel auger is securely installed in the connector of the automation unit; the reliability of all connections is checked; the wires are ergonomically placed along the furnace; monitored grounding connection; check the connection and correct fit of the igniter.

Close the plastic cover of the switching unit, if it was opened during installation.

8. Connect cord feeding the controller to a grounded outlet and turn on the controller's power switch. An inscription with the firmware version of the controller will appear on the screen.

9. Execute service check "**exits the controller**", visually controlling the operation of the burner units according to the automation instructions**(Menu-Service-Test).**

10. Remove the corrugated hose from entrance of the feeder and lower it into a bucket or other container. Press the button "FILLING THE SCREW", the screw will start filling. Fill the auger until the pellet is evenly poured from the tee of the auger. As a rule, the filling time of the auger is 5-10 minutes. Stop

auger by pressing the «✓" or "STOP". Pour the pellet from the bucket into the hopper.

11. Determine the productivity of the screw. Lower the corrugated hose into a bucket or other container. Press "FILLING THE SCREW", the mode "Filling the screw" will turn on, and start the stopwatch at the same time. Fill the container within 6 minutes. Calculate the productivity of the screw in kg / hour. To do this, weigh the pellet in a container and multiply the resulting mass in kilograms by 10. Be sure to take into account the weight of the container!

12. Put on the corrugated hose on burner

13. Enter the user menu and set its parameters.

14. Enter the service menu of the controller, login password -**12**.

15. Set fuel parameters (chapter "FUEL"), roughly put

fan performance for all modes ("AIR" section).

16. Set hysteresis and temperature according to the parameters of the system in which the boiler is installed burner (section "OPERATING MODES").

17. Adjust the photo sensor. When the boiler door is closed and there is no flame, the parameter "PHOTOSENSOR" of the information window should be zero. If this is not the case, enter the appropriate correction (section "CORRECTION", item "FLAME SENSOR").

18. Check the position of the movable grate, it should be in the "full" position filling the space" of the firebox (Fig. 7)

19. After performing some service settings, the burner is ready for start-up.

⚠ WARNING! The combustion chamber of the burner must be installed in such a way that the grid in it is in a horizontal position. The connection between the burner and the boiler must be tight to avoid any leakage of flue gases. It is recommended to use a gas analyzer to adjust the burner.

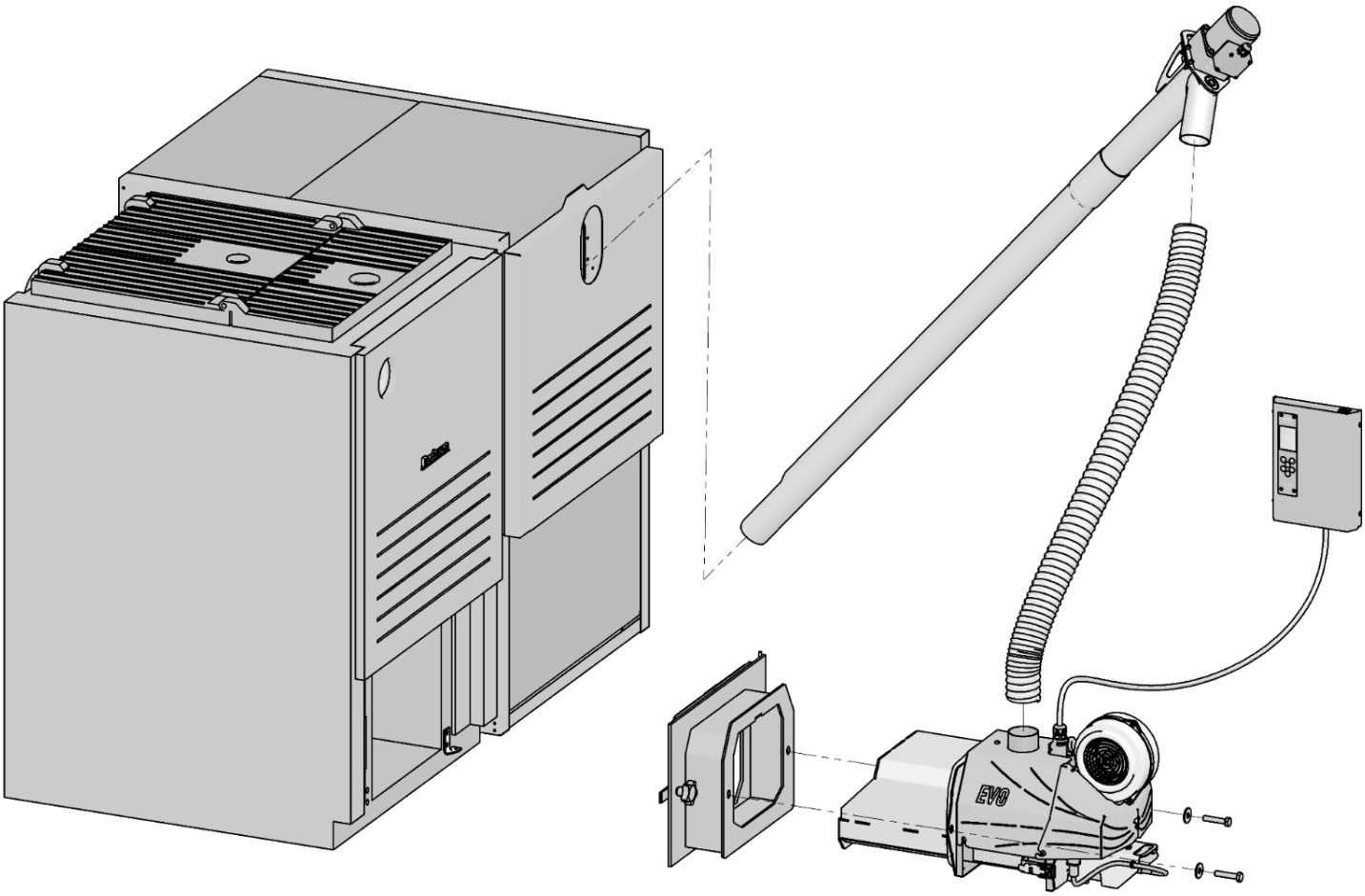


Fig. 5 Assembly diagram of the EVO kit

8. Electrical circuit diagram (V3)

Technical data of the OXI-1 controller:

Parameter	Value
Supply voltage	230 V ± 5%, 50 Hz
Energy consumption (without controlled units)	<2 VA
Temperature measurement range (KTY 81-210)	- 9 ÷ 109°C ± 1°C
Maximum load per output	400 W
Total output load	1100 W / 230 V
The fuse is fusible	5 A

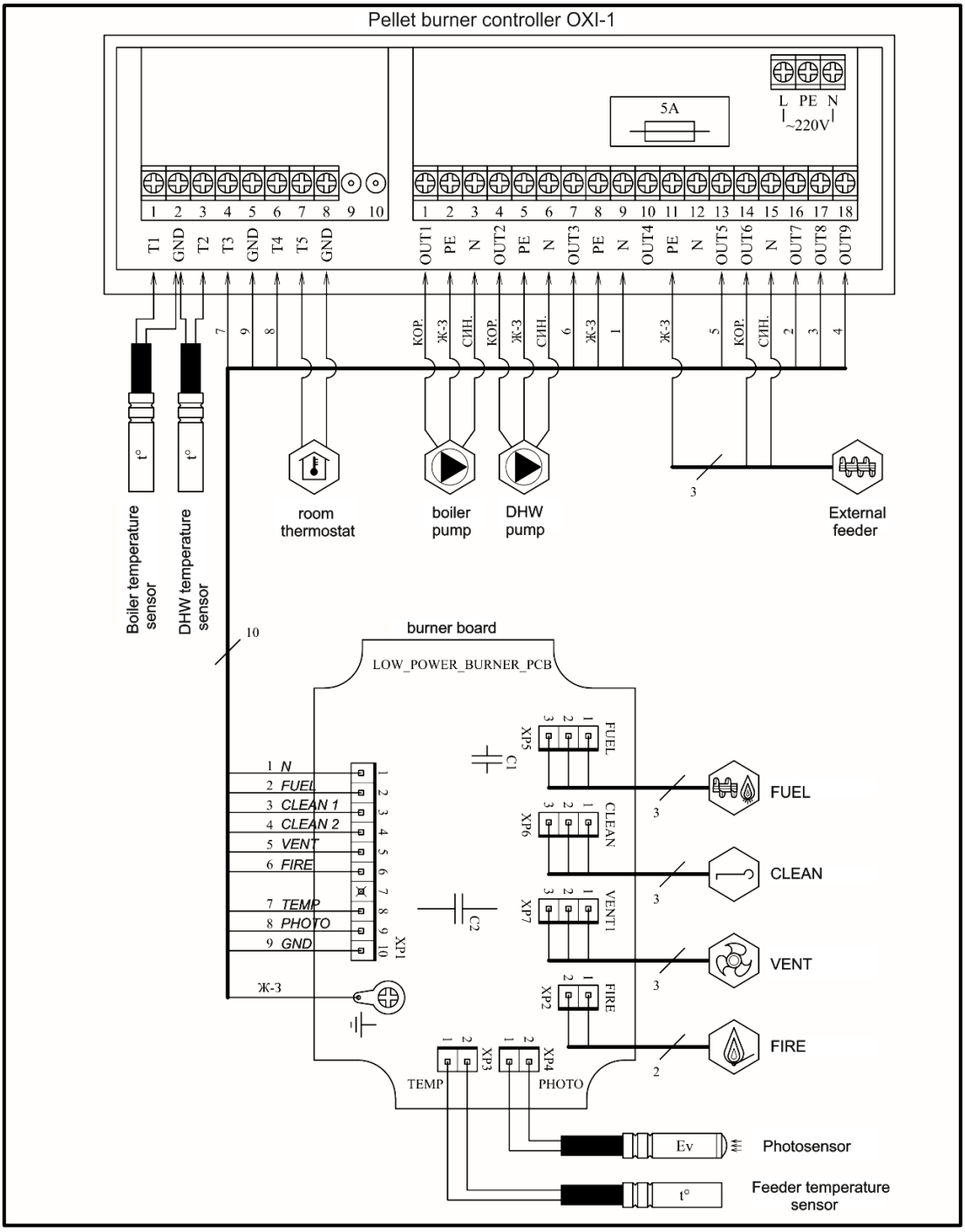


Fig. 6 Connection diagram (V3) of the OXI-1 controller to the switching unit of the ECO burner

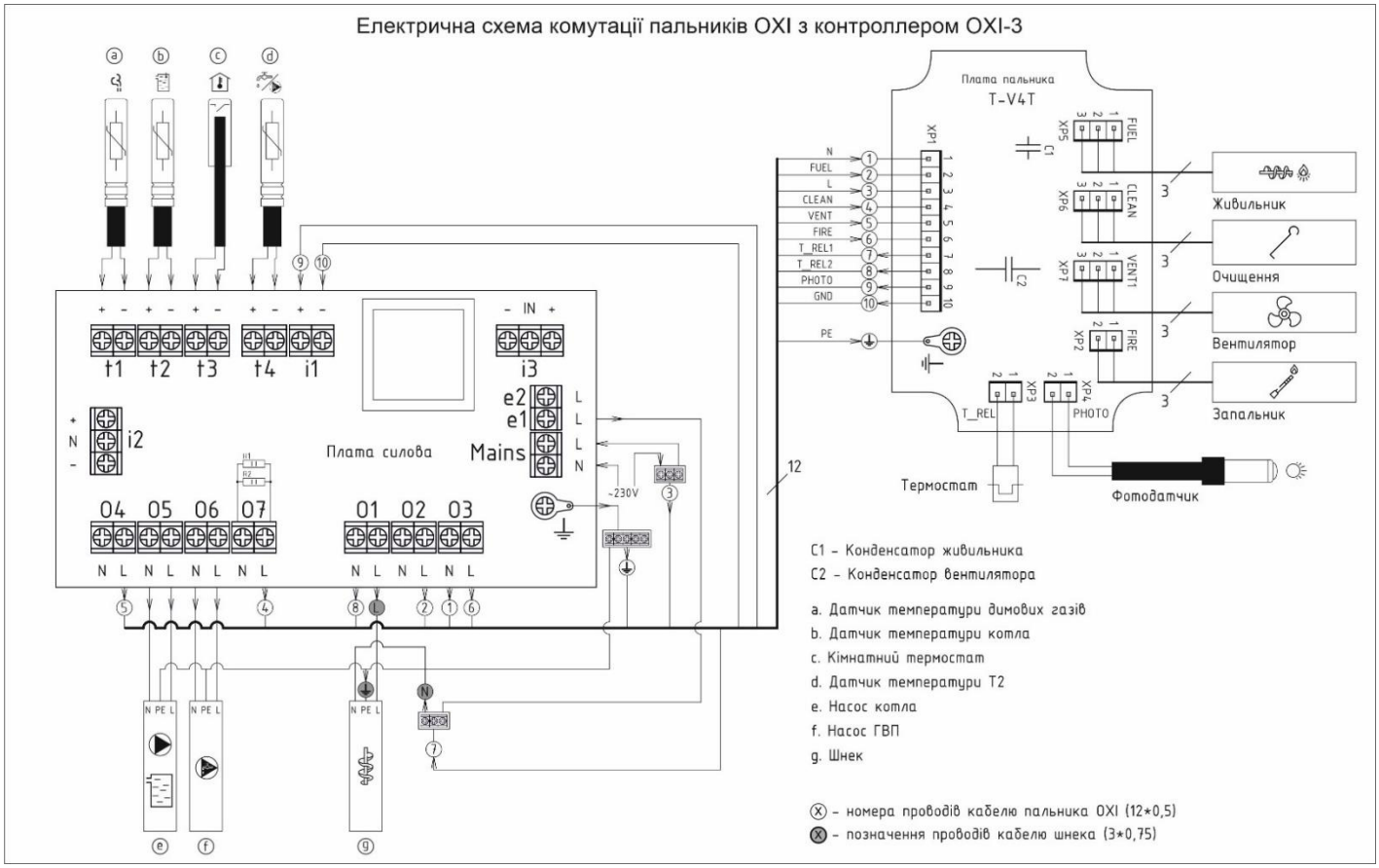


Fig. 7 Connection diagram (T-V4T) of the OXI-3 controller to the switching unit of the ECO burner

9. Factory settings. Basic parameters

Automation settings indicated in the table. are suitable for the first start of the burner and are averaged for most OXI ECO burners. However, these parameters should not be perceived as optimal. It should be understood that the final settings for a particular burner will differ from those given, and their values will be specified during the burner process by a specialist.

ⓘ The table shows only the main parameters of the controller, which cannot be started without setting them. For a complete list of parameters, see the OXI-1 controller manual.

Fuel	
Caloric content	See certificate pellets
Cycle	25 p
Maximum power	See info on nameplate burner
Minimum power	30% of Max. power
1st dose of fuel	8-10 p.m
Ignition power	10-12% of Max. power
Air	
Kindling	35-45%
Maximum power	80%
Minimum power	60%
Modulation	70%
Fading	100%

⓿ Installation and adjustment of the burner must be fulfilled only by specialized personnel who have proven qualifications, following the instructions given in this technical manual.

⓿ Not allow unwinding burner by inexperienced persons or children.

⓿ Before starting the burner for the first time, refer to the user manual of the OXI-1 controller.

10. Starting and stopping

1. Check the presence of pellet pellets in the hopper. If there is a water supply pump, turn it on.

2. In the standby mode, it is possible to change the basic settings of the burner, as well as check the readiness of the main nodes of the burner in the diagnostics menu. (Chapter 7 point #9 Output testing).

3. Before starting the burner for the first time, as well as after each preventive cleaning of the auger, it is necessary to fill the auger tube with pellets. See description in Chapter 7, point #10.

4. Press the «✓" and select "START" to start the burner. After that, the pellets will be unloaded into the receiving neck of the burner knee through the corrugated sleeve, followed by the pellets being fed into the burner furnace chamber. The igniter and supercharger fan will turn on immediately.

5. If the launch was successful, a light will appear on the display and the automation will switch to the STABILIZATION mode.

6. The burner shuts off in the following cases:

- when the STOP item is pressed by the operator;

- in the case of an unsuccessful series of ignition attempts, if there was no fixation of the given flame brightness (only 3 attempts);

- when the set temperature of the stoker tee is exceeded (*see Chapter 9 "Bonker ignition temperature*");

7. After receiving the shutdown command, on the automation implements the program: such

- the screw drive is turned off, the feeder rotates until the burner stops;

- after the flame ends in the furnace, the fan will start increasing the revolutions to the parameters set in the service menu**Air→ Fading**.

- the linear drive of the grates will start working according to the parameters in the service menu **Cleaning→ Fading**
- the burner will go out during the time specified in the service menu**Kindling→ Cooling time**

11. Basic operating modes

⓿ During the operation of the burner, when using different types and grades of fuel, it may be necessary to change the controller settings. For this, the controller provides the possibility of creating 3 different settings profiles for different types of fuel. Settings profiles are stored in the user menu under

under the name "Type of fuel": "Pellet 1", "Pellet 2", "Pellet 3". When replacing pellets in the Fuel type menu section, you must select the appropriate settings profile.

After following all the instructions in Section 10, the burner can operate continuously. Uninterrupted operation is possible if there is fuel in the pellet hopper and the correct operation of the heating system. During the operation of the pellet burner on the OKHI-1 controller, the following operating and emergency states of the burner are possible:

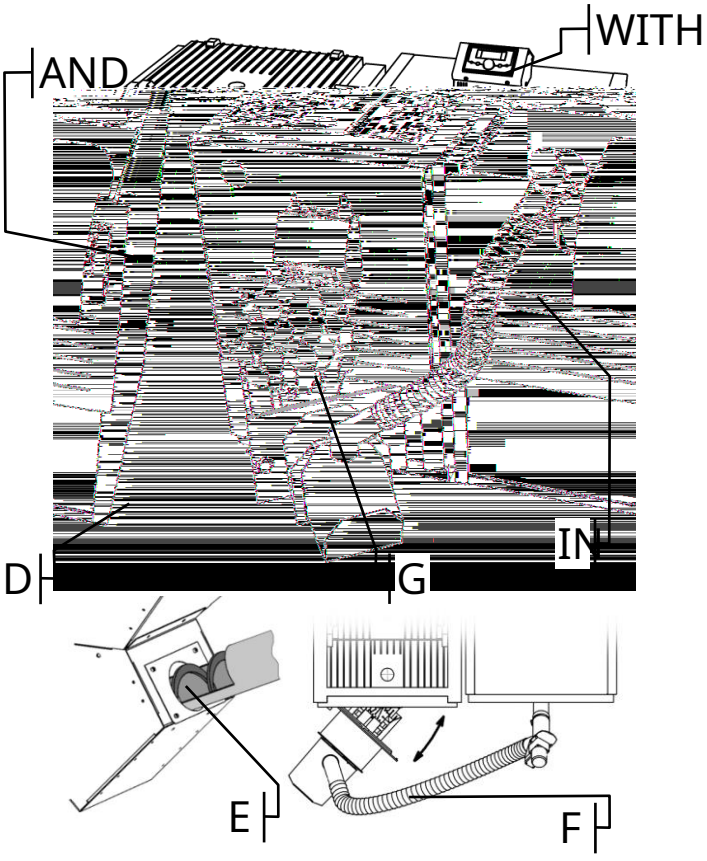
Regime	Description
Stop	Management boiler stopped Management the pumps work actively, but automatic kindling by temperature not is conducted
Expectation	Management work pumps actively. At achievements minimal temperature happens automatic kindling
Kindling	Automatic kindling burner
Stabilization	Smooth increase in fuel and air supply to

	achievement mode MAXIMUM POWERS.
Maximum power	Constant supply of fuel and air with control dynamics set temperature at constant burner power.
Modulation	Preventive smooth reduction of fuel and air supply, and hence power burner, with purpose increase temperature boiler to specified without exceeding, and support systems heating in given range temperatures The main purpose of modulation is to reduce number ignited and attenuation by changes power burner
Minimal power	Permanent presentation fuel and air to support combustion without set temperature
Blowing	Removal clogging sharp short-term increase productivity fan to 100% (Service installation)
Fading	Activates regime constant blowing for cooling structures burner for absence flame.
Filling auger	Auger filling mode. The burner is not active at this time.
Alarm signal	Information about the problem is displayed on the display. Additionally, also is included internal audio signaling device For details, see section 12.

12. The main problems that may arise

Problems caused by installation errors:

No	Problem
A.	Automation may be damaged flames and smoke when opening the boiler door. The location of automation is not convenient for inspection and management.
B.	Automation is installed conveniently for inspection, but will be damaged during the loading of pellets from the bag into the hopper.
C.	Automation is not conveniently installed for inspection and may be damaged by the hopper lid.
D.	Poor sealing between the burner and doors Gases enter the furnace.
E.	The auger is not installed deep and tight enough in the hopper, the granules are falling out.
F.	The relative location of the hopper and the direction of door opening are incorrectly selected. The corrugated sleeve is stretched.
G.	Insufficient angle of inclination of the corrugated arm. It gets clogged with dust and pellets.



No	Signal	Reason	actions
1.	"no fuel"	• In a pellet bunker ran out of pellets	• Fill the hopper with pellets. • Restart automation. • Fill the auger.
		• Fuel auger jammed. • Screw drive failure.	• Unlock the auger. • If necessary, clean. • Perform a "test" of auger output. • If necessary, replace the auger. • Replace the starting capacitor on the auger drive, if it works in the "Test", it stops working within some time after being turned on. • Fill the auger.
		• The igniter does not work, or there is no electrical contact on it.	• Perform a "Test" of the outputs lighter • Visually monitor the glow lighter • If necessary, replace igniter. • Control the correct one installation in the sleeve and the absence of clogging on the lighter and in the sleeve.
		• Drive failure feeder (corrugated sleeve completely packed with pellets)	• Perform the Exit "Test". lighter • If necessary, replace the starting capacitor on the switching board on square C1. • If necessary, replace the motor reducer • Check the fastening of the spiral to bonks Tighten the screw.
		• Slagging of the furnace. • Boiler ash pan is full to the level of the burner.	• Clean the furnace. • Clean the ashtray of the boiler.
		• Damaged or contaminated photosensitive element photo sensor	• Control the promotion values of the photo sensor when shining a flashlight into the furnace (if there was a STOP mode, then when the light appears, the DAMPING algorithm will work). • If necessary, clean photosensitive element photo sensor, or replace the photo sensor.
2.	"Overheating feeder"	• Due to improper operation burner housing too got very hot.	• Eliminate the defects that caused it housing heating.
		• Significantly decreased rarefaction in the boiler furnace	• Check traction. • Clean the boiler, chimney, check the chimney flaps, check draft ventilation.
		• Due to seasonal change trajectories of the sun through the window, the furnace light heats the burner housing.	• Use non-flammable curtain on the window.

No	Signal	Reason	actions
		• Boiler ash pan is full to the level of the burner.	• Clean the ashtray of the boiler.
3."Overheating of the boiler"		• In the settings installed too low boiler temperature.	• Check the settings hysteresis • Replace the preset setting temperature
		• Maximum exceeded boiler temperature.	• Wait for the decline temperature • Use modulation power
		• Forced has stopped coolant circulation through the boiler.	• Check the boiler pump, maybe it crashed.. • Be sure to find out and eliminate cause of overheating.
4.The burner is always on is located in "Fading" mode		• Photo sensor contact damaged • Damaged elements on controller board.	• Repair or replace photo sensor • Send the controller for service.
5."Sensor Error"		• Open or short circuit sensor contacts temperature	• Look in the information section menu, which sensor is damaged, opposite it will be the symbols "---" • Identify the causes of failure sensors • Replace sensors.
6."HVP error"		• Exceeded the permissible limit hot heating time water in the boiler or sensor shorting GWP temperature.	• Call the service department.
7.The burner is strong smokes		• The fan is damaged. • Fan inlet blocked	• Check the “Test” of the fan, review. Replacement is possible fan • The starter has failed the capacitor, which is on the switching board in square C2. • Clear the inlet fan from clogging.
8.Too much ash. The existing one is not burnt pellet		• Low-quality pellet. • The mechanism is damaged cleaning Maybe jammed the grate. • Cleaning drive unlocked with a magnetic key fob (for linear drives of the Belimo series CH230A100.	• Change pellet supplier. • Carry out a "Test" of outputs for cleaning mechanism. Perform cleaning, inspection. • Remove the magnetic key fob.

Any manipulations with the elements of the burner, the fuel auger, or automation must be carried out on a de-energized burner that has cooled down. Failure to observe safety precautions may result in serious injury.

13. Requirements for safe operation.

A pellet burner is a high-power thermal machine, to ensure the safe use of the burner, the basic rules of its operation should be observed.

1. During the operation of the burner, it is not allowed to open the boiler door with the burner installed in it.
2. In case of ignition of granules or dust on the surface of the burner, it is necessary to immediately disconnect it from the power supply network and only then extinguish the fire with special means.
3. The boiler room must be clean, do not allow storage of combustible materials in the furnace room.
4. The burner must be operated by adults who have been instructed and read the user manual.

5. The boiler, boilers and hot water heating elements must be in good condition.
6. Pay special attention to sources of moisture located near the burner. Getting water on the burner construction elements significantly increases the risk of electric shock.

7. The burner feeder and fuel auger are equipped with rotating elements and drives that have significant power. Pay maximum attention to keeping fingers and other objects out of the rotation zone.

8. Categorically not is allowed independent modification structures burner or installing additional electrical consumers not provided by the manufacturer and connecting them to the electrical circuit of the burner.
9. The burner is a device with high heat output, some elements of the burner have a high temperature. For example, the ceramic lining of the furnace can heat up to 1200°C. Be careful when handling the burner.

10. It is prohibited exploit burner, installation whose did not pass acceptance by an authorized service specialist.
11. It is not allowed to install and operate the burner in boilers that are not suitable for this purpose.
12. The burner cannot function as a source of open flame.
13. It is not allowed to leave any objects on the surfaces of the burner.
14. It is not allowed to use other ignition methods, in particular flammable liquids.

15. The burner must be operated with the cover in place. All sensors must be set to their standard positions at all times during burner operation.

Remember, only intelligent use of aggregates can be safe. It is impossible to predict all possible freelance situations.

14. Maintenance. Setting the burner

Before carrying out maintenance work burner should to cool down Necessarily necessary disconnect the burner from the electrical network.

General recommendations

For trouble-free operation of the burner and in order to extend the service life as much as possible, follow the following rules:

1. Clean the furnace regularly. The frequency of cleaning depends on the quality of the fuel, its ash content and humidity, as well as the mode of operation of the movable grate. On average, such cleaning is required once a week. Use high-quality, certified fuel.

2. Do not burn fuel containing impurities in the burner. Use only wood and agricultural pellets.

Be careful granules woodworking, chipboard contains poisonous toxic substances.
3. Boiler room must provide sufficient air flow and ventilation. ***Cleaning settings.***

In the design of the pellet burner of the ECO series, cascade cleaning of the grate is implemented.

The full stroke of the grates in the ECO models is 55 mm, the distance between A and B (fig.?).

In the controller settings, the stroke length is equalized in seconds. You need to look at the model of the linear drive and thanks to the following tables and calculate maximum stroke.

Model reason	Speed	Full course, sec
Belimo UH230	**1.2 sec = 1 mm**	**70**
Belimo LH230	1.5 sec = 1 mm	85
Siemens GDB	1.5 sec = 1 mm	85

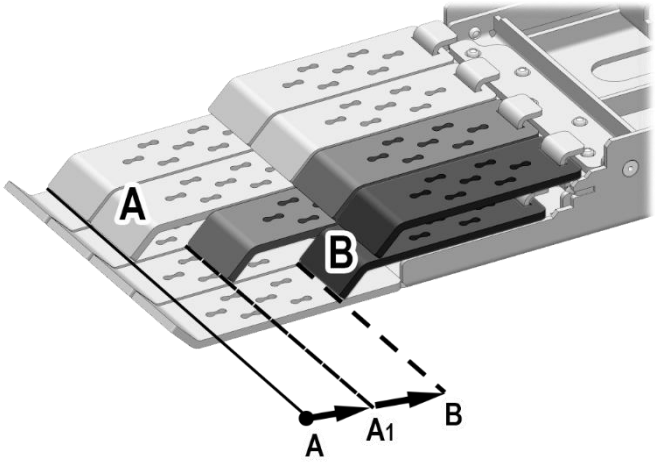


Fig. Cleaning settings ***Replacing***

the thermostat

On OXI burners with a T-V4T circuit, a thermostat is used instead of a temperature sensor (V3 circuit). The electric circuit of the burner depends on the control controller with which it is equipped. The thermostat is fixed on a clamp that tightens the stoker pipe. Access to it is from the left and right revisions

hatches

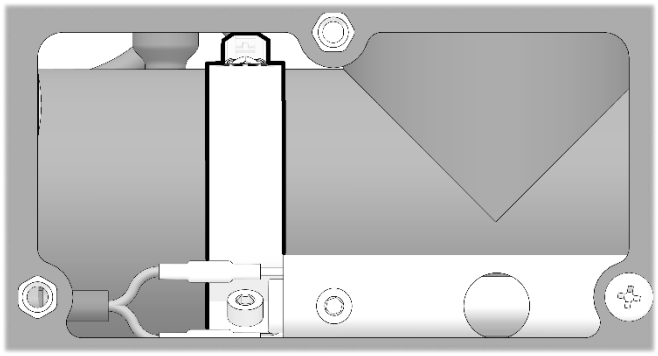
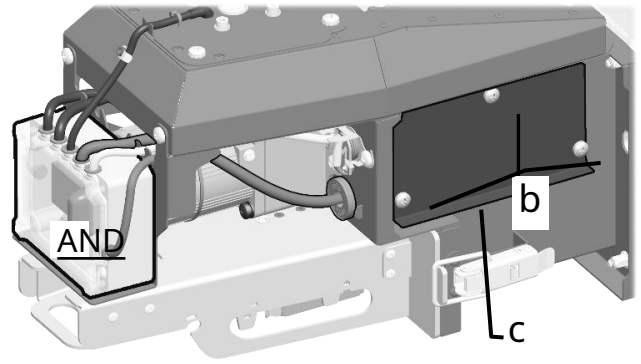


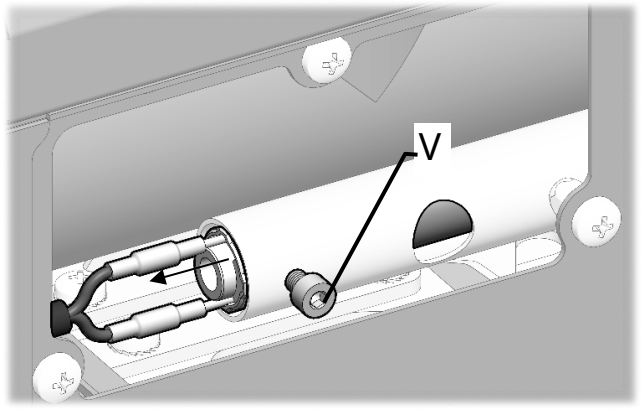
Fig.. Access to the thermostat

Replacing the igniter.

The flammable device can be replaced by the manufacturer's service representative, or a person who has undergone training and has a permit to work with a voltage of up to 1 kV.

1. De-energize the burner after cooling.
2. Remove the cover of the switching unit**AND**fig.? and disconnect the igniter (FIRE) terminal.
3. Unscrew the screws**b**fig.?.
4. Remove the viewing window**c**so that open the hole completely. Loosen the screw **V**, which fixes the lighter.
5. Without exerting much effort, pull the lighter by the wire along the axis to the exit of the hermetic duct**G**from his landing hole.
6. Installation of the lighter is carried out in reverse order. The lighter should sit tightly in the burner sleeve and reach the stop.





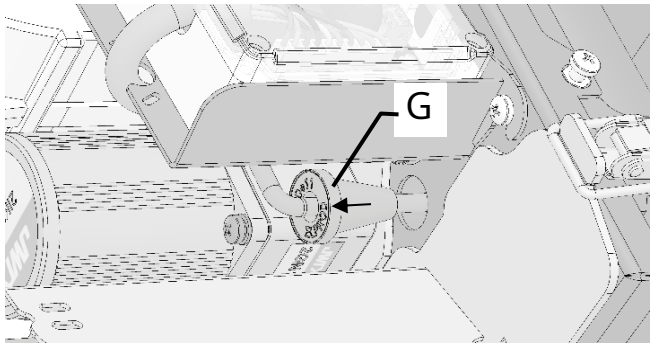


Fig. Replacing the igniter

Cleaning the space under the grill.

To dismantle the grates, turn off the power to the burner that has cooled down.

Remove ash from the surface with a special brush colanders in advance a prepared non-flammable container or into the boiler ash pan.

Next, disconnect the grate drive connector**T** and unfasten the retaining locks**F**from both sides Fig. 14. Now pull the grill block by the handle**P**until the grate is completely released block from the burner.

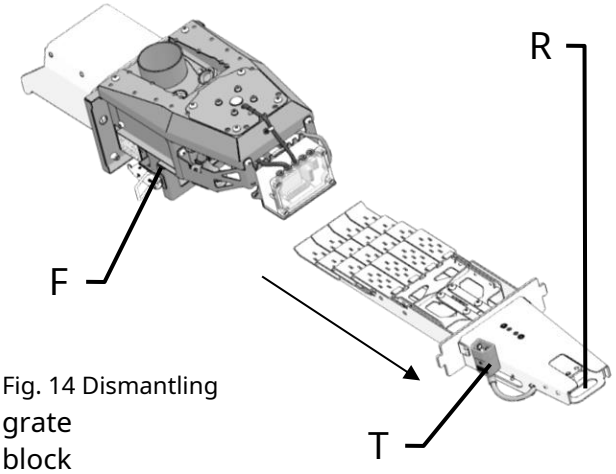


Fig. 14 Dismantling grate block

Execute cleaning firebox burner, removing all ash and slag. Install the grill block in the reverse order.

If the grate holes are clogged with ash, they need to be cleaned. Failure to clean the holes of the grates can lead to deterioration of pellet combustion, as well as deformation of the grates.

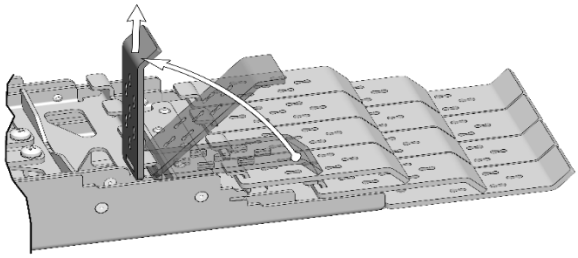


Fig. 15 Removing grates

Importantly! After removing the grates, they need to be installed in place in the reverse order. Operation of the burner without grates is not allowed.

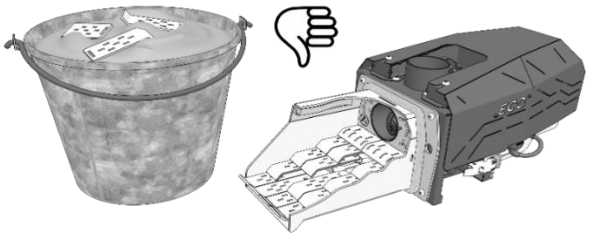


Fig. 16 Inadmissible work without grates

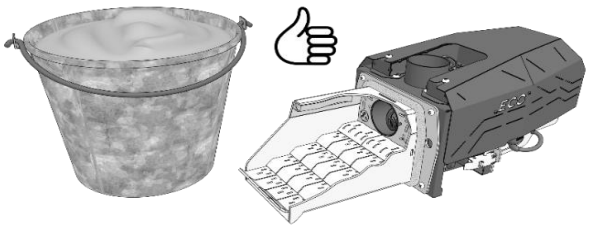
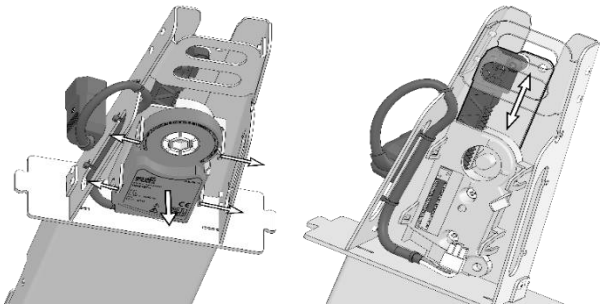


Fig. 17 All grates are in place

The Belimo UH series linear drive is used on the ОХИ ESO burner. The difference between this drive is that it does not have a clutch release button. It is possible to move grates
use the control controller or disconnect the drive from the housing as shown in the figure.



15. Disposal of the burner at the end of its service life

Burners that have become unusable due to improper operation, due to accidents or in connection with the production of their resource, are subject to disposal. Burners do not contain materials and components that pose a danger to others, and are subject to disposal in the general order adopted at the enterprise or in accordance with general environmental regulations.

16. Transportation

The standard delivery set of the ECO burner is placed in one box made of 5-layer cardboard measuring 830x350x250 mm, which reliably protects all components in it.

17. Certificates

OXI

ТОВ «ОКСІ ТРЕЙД»

61004, вулиця Катериниська 46,
місто Харків, Україна

Декларація відповідності
№ 29Ж21/01

Дана декларація підтверджує, що пелетні пальники OXI серії EVO моделей E14, E16, E18, EC14, EC16, EC18, потужністю 18-82 кВт.
які виготовляються компанією ТОВ «ОКСІ ТРЕЙД»
відповідають вимогам наступних норм:

ČSN EN 60730-1 ed. 4:2017, ČSN EN 60730-2-5 ed. 3:2015
ČSN EN 61000-6-3 ed. 2:2007, ČSN EN IEC 61000-3-2 ed. 5:2019,
ČSN EN 61000-3-3 ed. 3:2014, ČSN EN 55014-1 ed. 4:2017, ČSN EN 55014-2 ed.2:2017
EN 15270:2008

а також відповідають основним вимогам наступних директив:

2006/42/EU
2014/35/EU (Low voltage)
2014/30/EU (Electromagnetic compatibility)

На виробі нанесено маркування CE

CE

Директор ТОВ «ОКСІ ТРЕЙД» В.О. Шашков

18. Information about the manufacturer

• Oxy Trade LLC,61004, str. 46 Kateryninska St., Kharkiv, Ukraine.
• Tel: +380(67) 623-23-11
• Email:info@oxi-burners.com.ua
• Pellet burnerOXI series ECO ser. No _____kW, _____,
Model E.125, manufactured according to TU U 25.3- 42427268-002:2020 "Pellet burners torch type OXI ECO series. Specifications"

• Release date ___._____. 202 ___p.

VTK controller _____

M.P.

19. Table of service menu settings of the OXI-1 controller

In this table, the service engineer must fill in the setting values.

Menu item		Range	Factory value	Unit ex.	Fuel		
					Type 1	Type 2	Type 3
Modes work	Boiler temperature min	30-69	57	°C			
	Boiler temperature max	70-90	85	°C			
	T° boiler accident	90-99	90	°C			
	T° accident feeder	20-75	45	°C			
	Lower hysteresis	1-20	6	°C			
	Upper hysteresis	1-20	3	°C			
	Hysteresis modulation	0-20	4	°C			
	T° of switching on boiler pump	10-60	40	°C			
	Antifreeze	Off/On	off				
	Antifreeze t°	0-15	5	°C			
Fuel	Screw feed	0-600	0	kg/h			
	Caloric content	3200-6000	4000	kcal/kg			
	Cycle	10-45	25	with			
	Maximum power	0-90	20	kW			
	Minimal power	0-35	10	kW			
	1st dose of fuel	0-30	10	with			
	Ignition power	0-30	10	kW			
Air	Kindling	15-100	35	%			
	Maximum power	15-100	70	%			
	Minimal power	15-100	40	%			
	Modulation	15-100	55	%			
	Fading	15-100	100	%			
Kindling	Threshold of kindling	8-100	10				
	Cooling time	5-60	10	min			
	Time to lose the flame	0-70	10	with			

Menu item		Range	Factory value	Unit ex.	Fuel		
					Type 1	Type 2	Type 3
HVP	On/Off	Off/On					
	Increase in t°	2-20					
	Heating time of hot water	10-250					
	Disinfection T°	60-75					
	Stabilization	Hid-1					

manufacturer of OXI burners, which does not have a certificate and service contract.

• In case of violation of the provisions set forth in Product installation and operation manual or Passport.

• In the absence of a Warranty card or inconsistencies between the information in the Warranty card and the accounting parameters of the product: name, serial number, date and place of sale.

• Ifthere can be no malfunction demonstrated

• For grates, refractory ceramics, heat resistant cord, corrugated sleeve, lighter, fuses, connectors, terminal blocks.

• If the equipment is working normally can be restored by properly tuning it and regulation, restoring the original information in the controller menu, cleaning the product from dust and dirt, conducting technical product maintenance.

• If the malfunction is due to ingress of foreign objects, substances, liquids, under the influence of household factors (humidity, low or high temperature, dust, insects, etc.), failure to meet the requirements for the power supply network, natural disaster, improper installation, operation, transportation and storage.

• When detected on or inside the product it has traces of impacts, careless handling, natural wear and tear, external intervention (disclosure), mechanical, corrosion and electrical damage, independent changes in the design or appearance of the product.

• In case of using the wrong fuel type

• If the equipment malfunction occurred in as a result of the use of inappropriate (non-original) replacement parts, or natural wear and tear of products and parts with a limited service life, as well as when using the product not for its intended purpose.

• V case damage because of malfunctions or structural defects of the systems in which the equipment is operated.

• In compliance with all the rules of the Manual of installation and operation, the service life of the equipment is 10 years.

• The warranty does not apply in any case for compensation and (or) compensation for any losses (including, but not limited to, direct or indirect losses due to bodily injury, loss of income from economic activity, forced interruptions in economic activity or infliction of other types of property damage) arising

with the use of or impossibility of using the supplied equipment.

21. Warranty card

• Pellet burnerOXI series EVO _____kW,

sir No _____, Model E 1, __ ____

produced according to TU U 25.3-42427268-002:2020 "Pellet burners of the torch type OXI series EVO. Specifications"

• Date of shipment: ___._____202 __p.

• Controller (seller) of VTK _____

M.P.

Commissioning mark Organization:

_____

M.P.

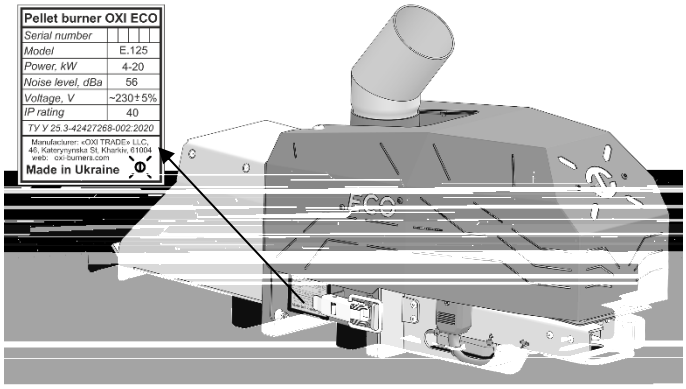
Commissioning date:

_____._____202 ____p.

Service engineer

_____

Signature _____



22. For notes

OXI

BURNERS

www.oxi-burners.com