

## OPERATION AND MAINTENANCE MANUAL FOR PELLET BURNERS ECOMAT



## **Table of contents**

<b>1. Safety of use .....</b>	<b>3</b>
1.1. Commentary .....	3
1.2. Hints and tips for fitters and users .....	3
1.3. Conditions for safe operation .....	3
<b>2. General information .....</b>	<b>4</b>
2.1. Adjusting boiler and burner heating power to central heating and usable warm water heating purposes .....	4
2.2. Burner structure and its elements .....	5
2.3. Recommended fuel and fuel storage .....	6
2.4. Short technical description and sequence of the burner's functions .....	6
2.5. Auxiliary equipment for burner and boiler .....	7
<b>3. Technical specification .....</b>	<b>9</b>
3.1. Technical parameters of the burners .....	9
3.2. Burner and feeder dimensions and conditions for installation within the boiler .....	10
3.3. Burner presets .....	16
3.4. Electric connection .....	18
3.5. Assembling, launching and adjusting the burner .....	17
<b>4. Maintenance .....</b>	<b>19</b>
4.1. Cleaning - setting burner cleaning mechanism - examples .....	19
4.2. Replacing the ignition device .....	20
4.3. Causes of faulty operation and fault removal .....	22
4.4. Burner disposal .....	23
<b>5. Declaration of conformity for the ECOMAT burners .....</b>	<b>25</b>
<b>6. Assembly report .....</b>	<b>26</b>
<b>7. Warranty card .....</b>	<b>27</b>
<b>Schedule 1 – Approximate heat demand of buildings .....</b>	<b>29</b>

# 1. Safety of use.

## 1.1. **Commentary**

This operation and maintenance manual includes important information about correct assembly and operation of the Ecomat burner which is designed to be used with a boiler. This manual is primarily intended for fitters who possess necessary knowledge and experience in operation and maintenance of heating systems. The first launch of the burner shall be done by a duly trained professional. Improper launch or assembly of the burner results in warranty loss.

## 1.2. **Hints and tips for fitters and users**

Assembly and operation should be done according to local norms and standards concerning:

- appropriate positioning of the boiler, manner of combustion air supply and flue gas discharge;
- technical and safety equipment for water heating systems.

## 1.3. **Conditions for safe operation**

Burner and boiler shall be operated in properly fitted rooms only. Since boiler with the pellet burner uses combustion air from the room (the boiler-house) which it is positioned in, thus insufficient air intake may cause flue gas emission and a threat of carbon monoxide presence. Hence, it is forbidden to downsize or close the inlet and outlet holes.

**The size of an inlet hole which supplies combustion air should be at least the same as the cross-section of the boiler's chimney. In order to illustrate importance of the above, it is worth mentioning that e.g. the Ecomat 25 burner that operates at full capacity of 25 kW burning about 5.5kg of pellet per hour requires approx. 100m<sup>3</sup> of combustion air.**

If such an irregularity occurs, it should be immediately corrected. Otherwise, further operation of the boiler must be discontinued and the fitter has to inform the user in writing about such a situation.

As far as the chimney is concerned, it is crucial to secure an appropriate flue draught. Chimney height shall be as follows:

3

- from at least 2m at a diameter of 100mm or more to maximum chimney height of about 8-9 meters which corresponds to the flue draught of less than 25Pa.

Chimneys of flue draught exceeding 25Pa should be equipped with a flue draught

limiter. The Ecomat burner can be assembled within a boiler which water heating system is secured by an expansion vessel or within a boiler which includes a cooling coil with a water valve.

Boiler with the burner assembled should be operated only by adults who are familiar with operation manuals of both the boiler and the burner. Children are not allowed to stay in the vicinity of the operating boiler without supervision of adults. Ash produced during combustion should be removed into a non-combustible container with a lid.

## **2. General information.**

### **2.1. Adjusting boiler and burner heating power to central heating and usable warm water heating purposes.**

In order to select the right burner for a boiler, it is necessary to determine the boiler heating capacity. Generally, the burner should not have a greater heating capacity than the boiler. Otherwise, when the boiler has a greater heating capacity than the burner, the condensation of flue gases may occur and boiler corrosion can be intensified. Therefore, it is a matter of principle that the Ecomat burner is connected to the boiler of the same heating capacity or a capacity within a tolerance of 10%.

Approximate boiler heating capacity can be selected on the basis of a parameter which refers to the cubic space of the rooms being heated. The parameter depends on the building thermal insulation degree. In case of very good insulation degree, the heating capacity of 40 W/m<sup>3</sup> should be assumed. In case of building with poorer thermal insulation degree, the coefficient should amount to about 60 W/m<sup>3</sup>. Another way consists in calculating heat demand of a building as a total capacity of individual heaters. In this case the heat demand should be increased by 20% in order to avoid operating burner and boiler at maximum heating capacities.

Boiler heating capacities calculated for various cubic spaces of buildings, wall insulation levels and types of applied fitting are listed in the schedule 1 to this manual.

## **2.2. Burner structure and its elements**

The Ecomat 15, Ecomat 25, Ecomat 40, Ecomat 70 burners, which burn tiny wood briquettes (pellets), are optimal devices designed to work with heating boilers of heating capacity 4-15 kW, 6-25 kW, 12-45 kW and 20-65 kW respectively. Burners can be installed into most solid fuel boilers and some oil-fired boilers, provided that the combustion chamber of the boiler allows ash aggregation and its periodical removal. The Ecomat pellet burners cannot be installed into boilers with water-cooled grate. In order to install the burner in a solid fuel boiler with a cast iron grate, it is necessary to remove the grate allowing ash to fall from the burner into the ash pit. The burner mounted above a water-cooled grate will not operate correctly because such a grate constitutes an obstacle that disables free movement of ash into the ash pit. The Ecomat burners have been designed in such a way to provide automatic operation. Thanks to a movable grate and a special skimmer, the burner head cleans automatically. The Ecomat burners are environmental-friendly and economic devices - they are characterized by low flue gas emission and low electric energy consumption (less than 40W in average).

Efficiency level of burners mounted within a boiler amounts to about 98%. When the burner is mounted within the boiler, the whole burner head is positioned in the boiler and the external surface of the burner does not excessively warm up during operation. Operation of the burner proceeds automatically, beginning from ignition, through burning and ending with cooling and cleaning the burner head off residues of ash and sinter, and then switching into the stand-by mode.

The Ecomat burners are composed of the following units:

1. the burner with a burner head and a movable grate mounted within its body as well as other elements and wiring covered with a metal housing;
2. an external conveyor system of 1.5m in length (standard);
3. electric control box with electronic burner adjuster;
4. flexible plastic feeding pipe which supplies fuel and connects the feeder with the burner.

### **2.3. Recommended fuel (pellet) parameters:**

- diameter  $\varnothing$  6 (for all burners) or 8 mm ( above Ecomat 25);
- maximum length: 4-5 times the pellet diameter;
- content of fine fractions i.e. fractions of 3mm and less (sawdust and ashes): not more than 1%;
- calorific value above 16 MJ/kg or 4.7 kW/kg;
- dust content: not more than 2%;
- moisture content: less than 10%;
- pellet must not contain any loose inclusions, such as: bark, wood chips etc.

There are no special requirements for pellet storage. However, the storage place should be roofed over and kept free of excessive moisture as pellets easily absorb moisture and crumble. It is not recommended to store larger volumes of pellet for longer periods of time. It should be used up within a single heating season.

### **2.4. Short technical description of operation of a boiler equipped with a pellet burner.**

Heating boilers with the Ecomat pellet burners operate automatically. The most important controlling unit is the controller which controls the heat source i.e. the pellet burner, fuel feeder and the central heating and usable warm water pumps.

The adjuster's display shows information about current status of the automatic operation. When the boiler and the burner do not operate, the status is displayed as "stand-by" provided that the burner has been completely switched off ("STOP" status).

The "stand-by" status means that the adjuster awaits for a signal to launch central heating or usable warm water heating. Heating begins when the room thermostat is launched and it ends when temperature inside the house reaches required level. Thus, it should be obligatory to install the room thermostat. On the other hand, usable water is being heated within hours set on a separate timer (recommended auxiliary equipment).

When central heating and usable warm water heating is conducted at the same time, the user can select heating priority for the usable water on the adjuster or

continue heating both the house and the water. In the latter case, time needed to heat water to desired temperature will be appropriately longer.

In order to heat usable water only (e.g. during summer season), it is enough to switch the adjuster into the “summer” mode (central heating system is switched off, then).

When the burner and the boiler finish heating the house to desired temperature and finish heating usable water to desired temperature, the burner duty cycle concludes and the device switches into “stand-by” mode.

This solution allows saving considerable amounts of fuel because thermal energy is produced only when the central heating system demands it.

In each duty cycle, the Ecomat burners automatically ignite and then they operate at maximum power, modulated power or minimum power accordingly with varying demand for heat. Once the tasks for both central heating system and usable water heating system are accomplished, fuel feeding is stopped, the burner burns residues of fuel that remain on the grate and it automatically cleans off the ash - according to preset duty cycle. Hence, the device operates automatically.

The user is only required to replenish fuel in the fuel hopper, remove ash from the boiler's ash pit and periodically clean the boiler.

## **2.5. Auxiliary equipment for burners and boilers.**

### **- room thermostat;**

Room thermostat is an auxiliary equipment for the burners. Typically, the thermostat is installed during the last stages of assembling the burner within the boiler. By default, the burner is sold with a jumper (bridge) for GH connectors in the lowvoltage terminal block of the burner adjuster. During assembly, the bridge needs to be removed and the COM-NO clean contact of a room thermostat should be plugged.

### **- usable warm water module;**

Usable warm water module is another optional equipment for the burners. It works with all types of room thermostats that allow weekly settings and it enables the user to set times which the usable warm water is to be prepared in. Except for the set times, heating of usable water is electronically disabled which allows saving fuel. The

goal of the two auxiliary parts of equipment (i.e. room thermostat and usable warm water heating module) is to allow the central and usable warm water heating systems operate at the same time. It helps to save fuel and ensures optimal operation of the burner-boiler unit.

**- emergency stop;**

The last item of auxiliary equipment for the Ecomat 15, Ecomat 25 and Ecomat 40 burners is the so-called emergency stop, i.e. a limit switch which is mounted onto the door of a boiler which the burner was installed in. The limit switch has to be installed in such a way to ensure that the emergency stop function is launched when the door is opened (i.e. the burner stops operation).

Therefore, the burner can only operate when boiler's door remain closed. It is a kind of fire protection system which prevents from starting the burner when the door is open. It is also helpful at removing ash from the boiler because it protects against launching the burner accidentally during that operation. Suggested solution is illustrated in the image below:





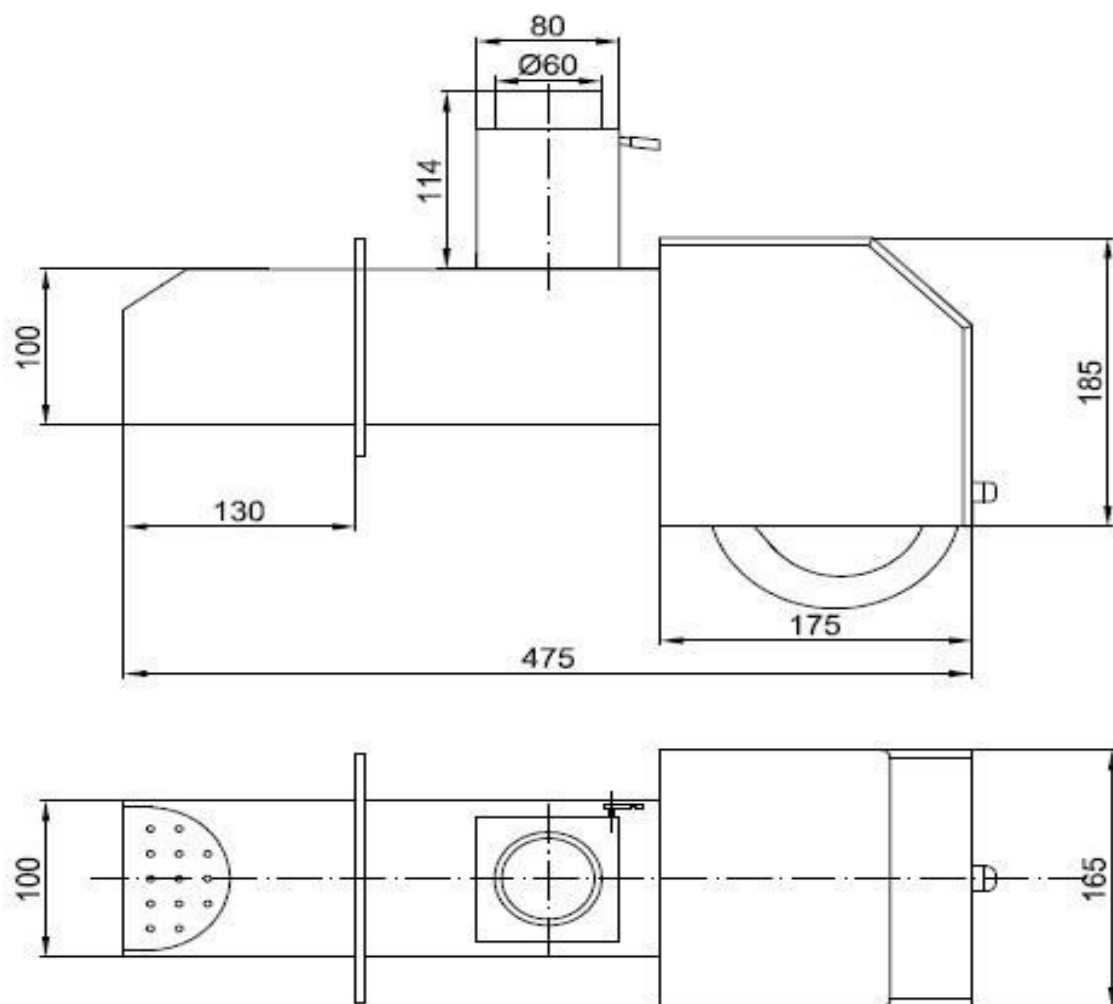
By default, the burner is equipped with a bridge installed over the X-connector (E-F). Limit switch for the emergency stop should be plugged after removing the bridge installed over the connector.

### **3 . Technical specification.**

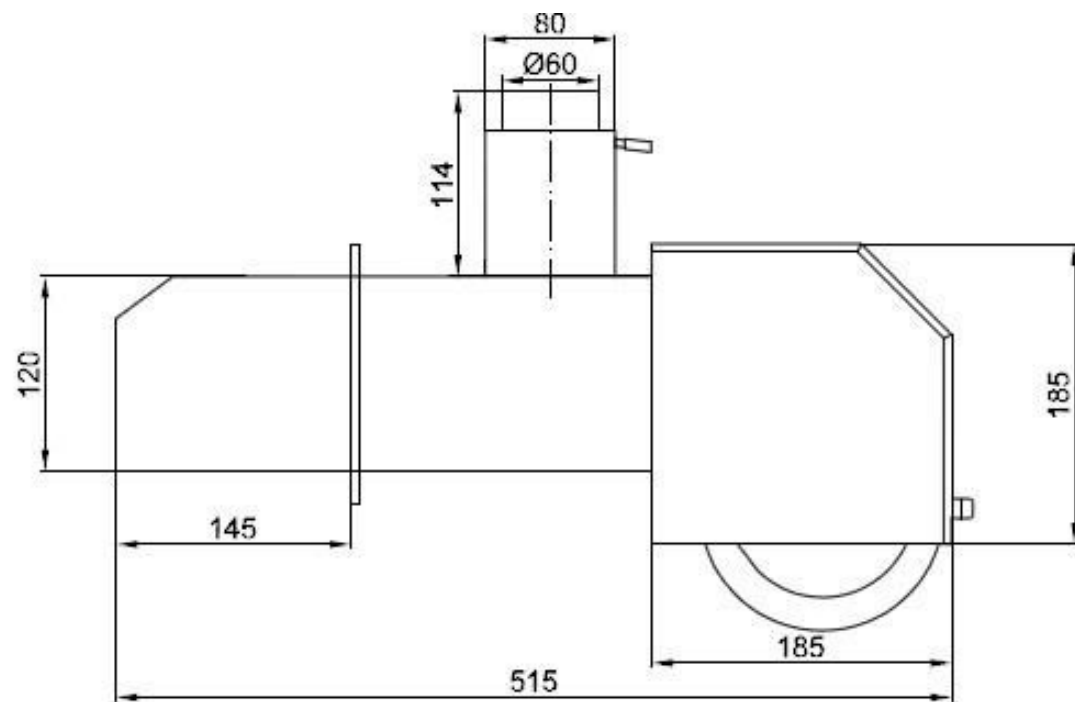
#### **3.1. Technical parameters of the burners.**

- nominal heat output for Ecomat 15 : 4-15 kW;
- nominal heat output for Ecomat 25 : 7-25 kW;
- nominal heat output for Ecomat 40 : 12-40 kW
- nominal heat output for Ecomat 70 : 20-65 kW;
- heating efficiency: 94%;
- Ecomat 15 weight: 11 kg
- Ecomat 25 weight: 11.5 kg
- Ecomat 40 weight: 15.5 kg
- Ecomat 70 weight: 25 kg
- standard feeder: length 1.5m;
- fuel: pellets ø 6 mm or ø 8 mm;
- supply voltage: 230 VAC 50 Hz;
- average power consumption: about 40 W;
- degree of protection: IP 40.

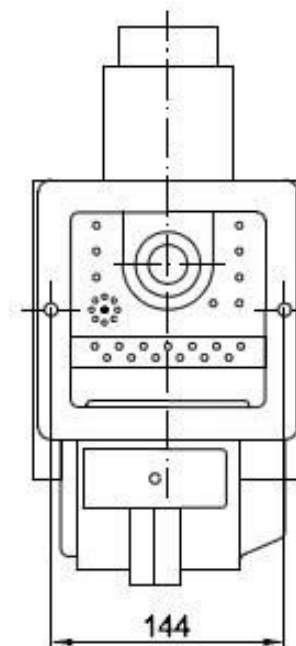
### 3.2. Burner and feeder dimensions and conditions for installation in the boiler



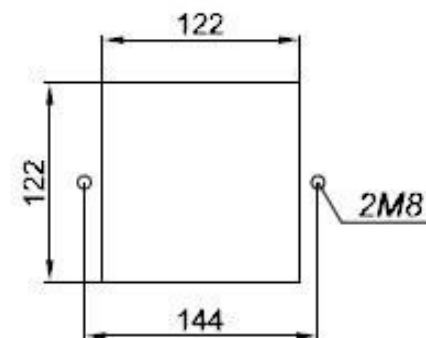
*ECOMAT15 Pellet burner*

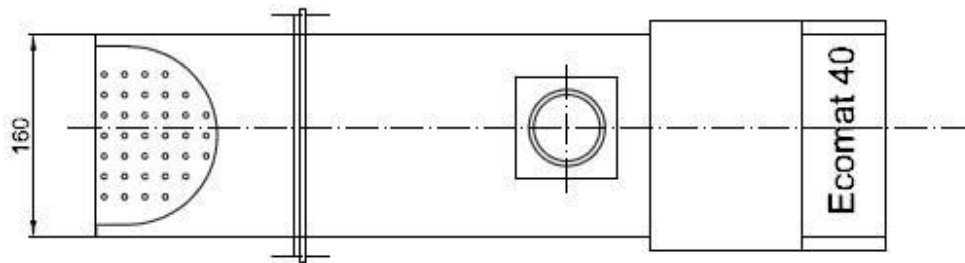
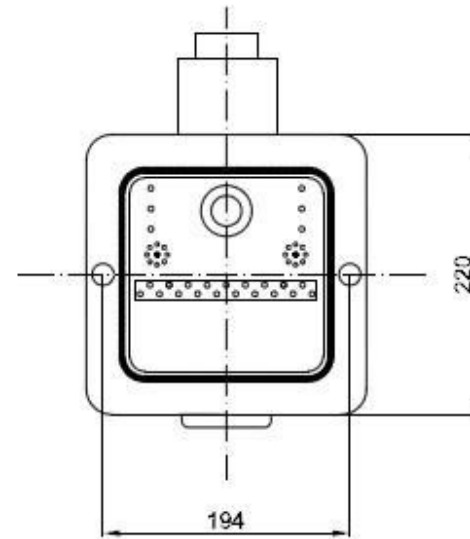
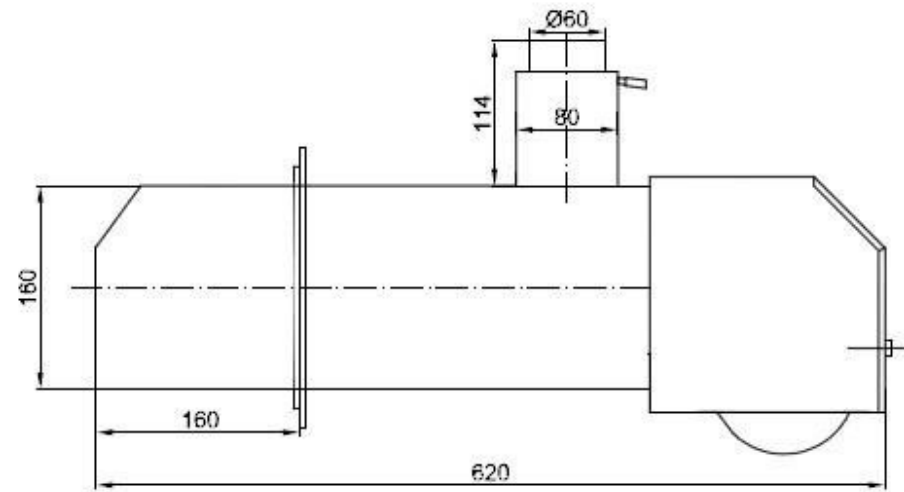


*ECOMAT25 Pellet burner*

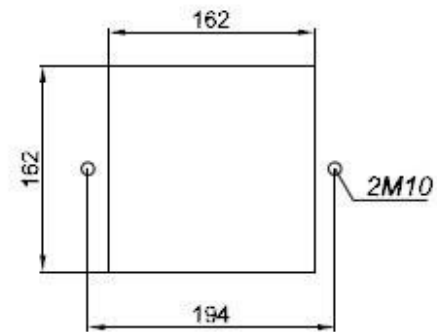


*Assembly hole dimensions*

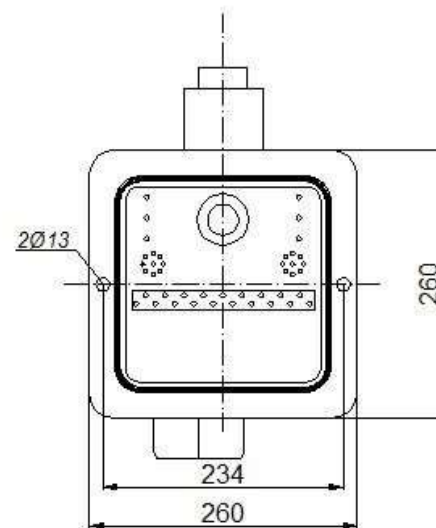
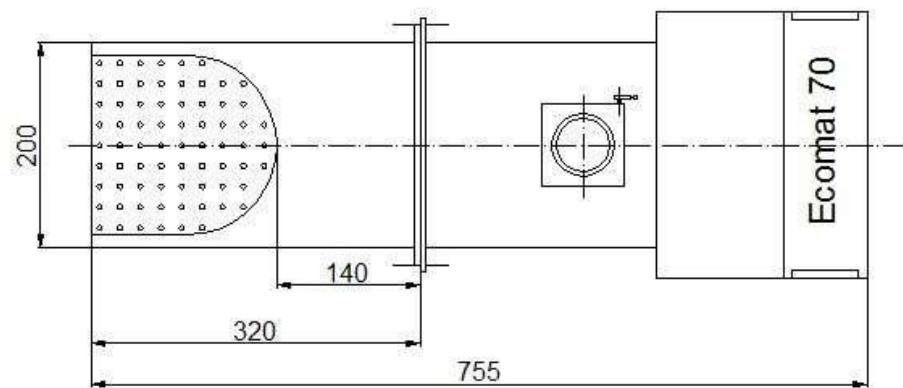
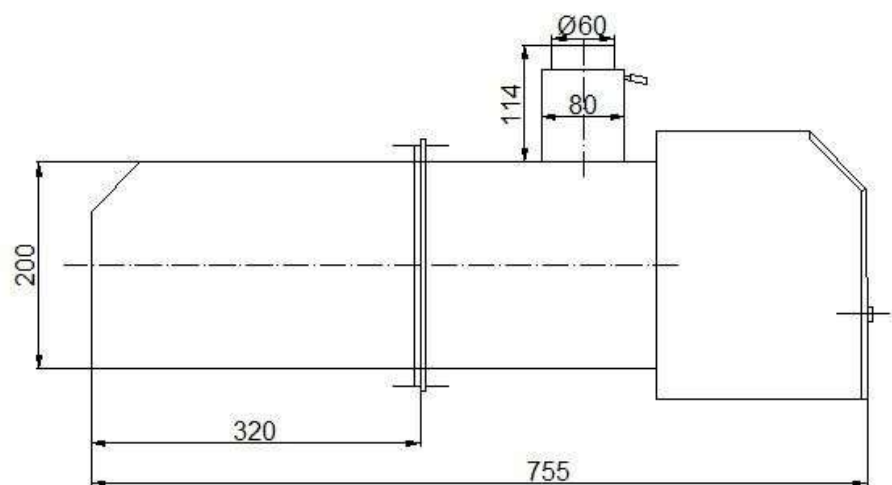




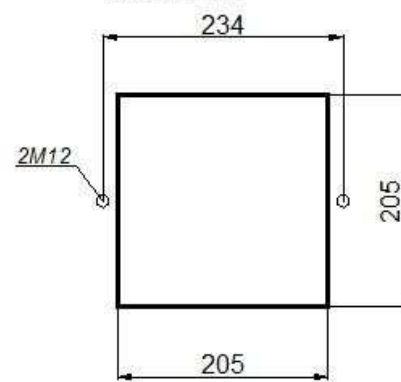
*Assembly hole dimensions*



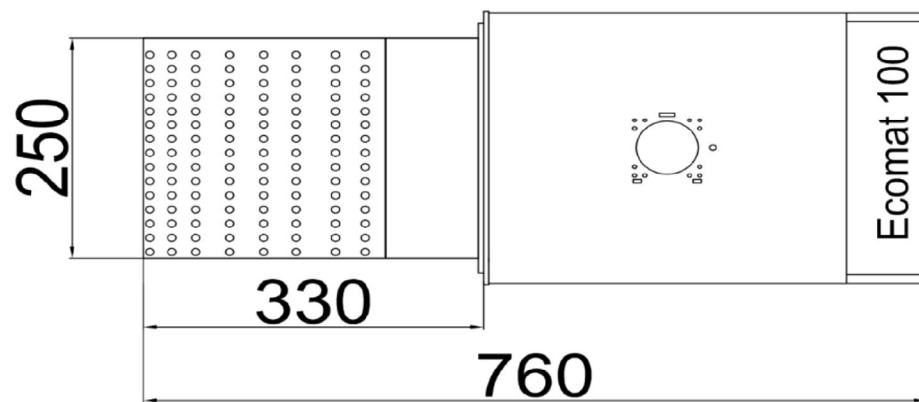
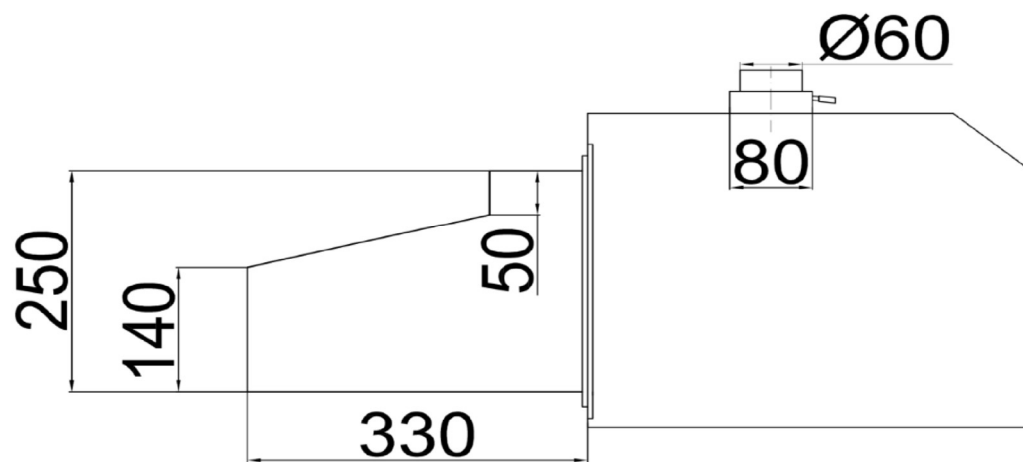
*ECOMAT40 Pellet burner*



Assembly hole  
dimensions

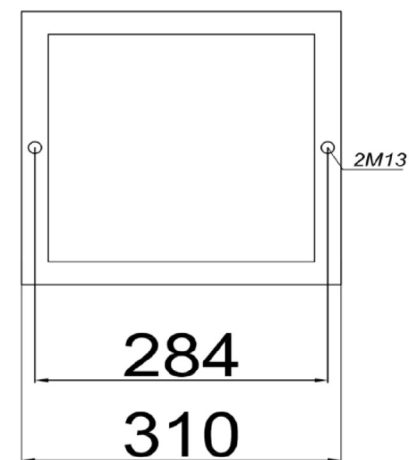


*ECOMAT70 Pellet burner*

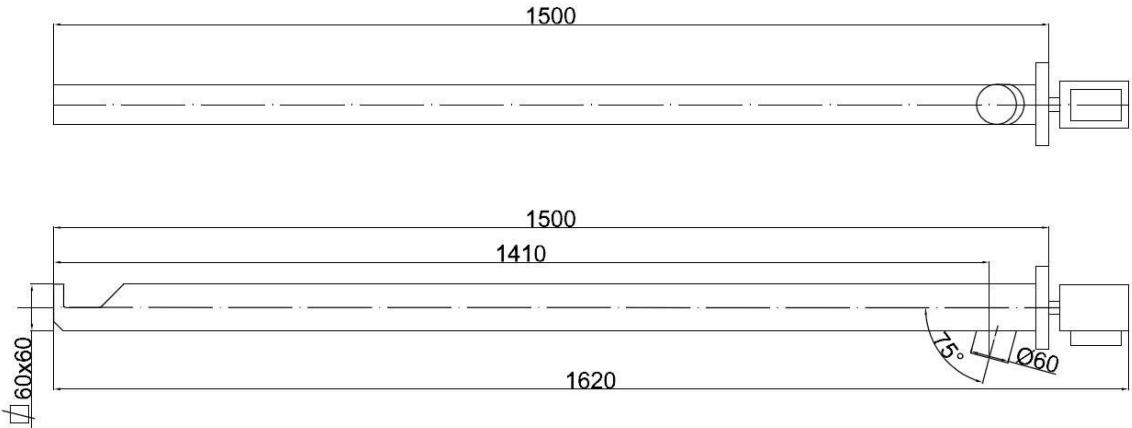


ECOMAT100 Pellet burner

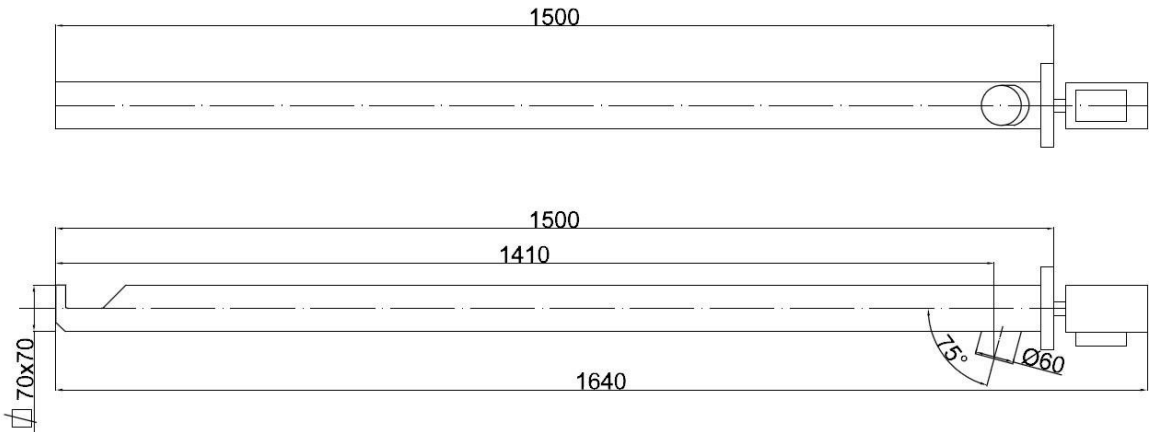
Assembly hole  
dimensions



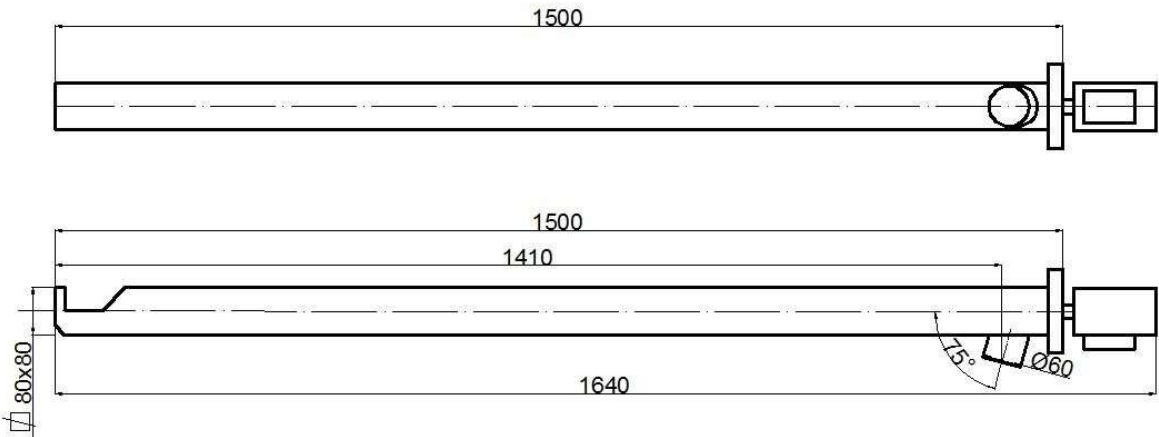
**Fuel feeder diagram for ECOMAT 15 and ECOMAT 25**



**Fuel feeder diagram for ECOMAT 40**



**Fuel feeder diagram for ECOMAT 70 and ECOMAT 100**



## **Conditions for installation within the boiler.**

The Ecomat burners have been designed in such a way that the flame burning direction in unobstructed space is at an angle of about 45 degrees. It allowed custom installation of the burner within boilers which have a narrow and at the same time a tall combustion chamber (as in the case of upper combustion boilers) as well as in the boilers with a lengthier and at the same time a low combustion chamber (as in the case of lower combustion boilers or oil-fired boilers).

Irrespectively of the above, the boiler combustion chamber for Ecomat 15 and Ecomat 25 should be characterized of the following minimum dimensions: - minimum depth: 300 mm;

- minimum space over burner combustion pipe: 100 mm (taking into account the above minimum depth);
- minimum width of the combustion chamber: 250mm;

The boiler combustion chamber for Ecomat 40 should be characterized of the following minimum dimensions: - minimum depth: 500 mm;

- minimum space over burner combustion pipe: 200 mm (taking into account the above minimum depth);
- minimum width of the combustion chamber: 400mm;

The boiler combustion chamber for Ecomat 70 should be characterized of the following minimum dimensions: - minimum depth: 600 mm;

- minimum space over burner combustion pipe: 300 mm (taking into account the above minimum depth);
- minimum width of the combustion chamber: 500mm;

When the burner is assembled (e.g. within the lower boiler door), the inside of its combustion chamber should allow ash to fall freely from the burner, favourably into an ash drawer made of metal. Minimum distance between the bottom of the



burner and the bottom of the ash pit should not be lesser than 100mm - the larger is this distance, the less often it is necessary to remove ash.

### **3.3. Burner pre-sets.**

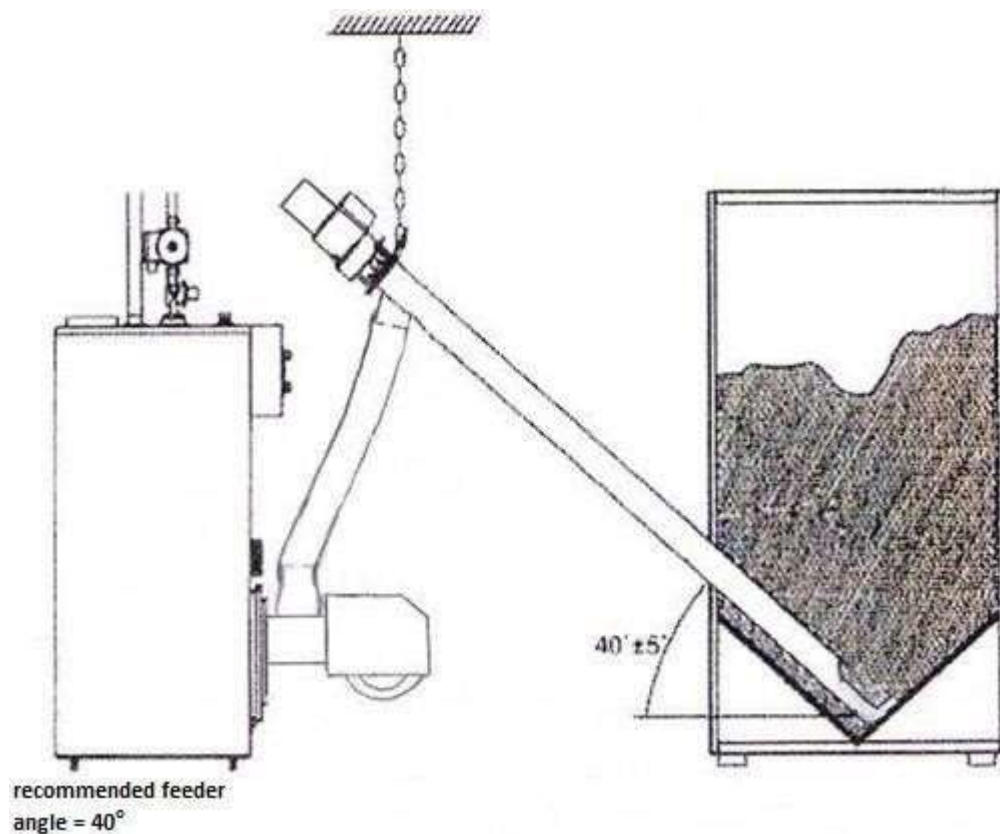
The burner pre-sets adjusted by the manufacturer are as follows:

- power is set to the nominal value, i.e. 15 kW, 25 kW, 40 kW and 70 kW respectively. Modification of power parameters needs to be done by a fitter (authorized serviceman). The user can adjust (change) power to his/her boiler by way of selecting 60% to 100% power level through settings available in the user's menu. - all parameters have been adjusted to the following types of fuel: type 1 – pellet     $\varnothing$  6 mm of average quality with up to 1% of ash content. In case of other type of pellet (e.g.  $\varnothing$  8 mm or a pellet of lower quality), it is possible to select and set parameters for fuels labelled as type 2, 3 and 4. This should be done by an authorized serviceman.
- burner cleaning parameters are appropriate for a pellet of average ash content, i.e. 1% - “automatic” mode and the burner is cleaned after each work cycle. It is possible to change cleaning mode when a pellet of increased ash content is used. In such cases it is recommended to set the “combo” cleaning mode, i.e. the mode including cyclic cleaning during regular operation of the burner as well as the final cleaning conducted after the work cycle ends. This should be done by an authorized serviceman.
- by default, the burner is set to central heating as well as usable warm water heating mode of work. However, if the burner should only heat the central heating system, then the usable warm water circuit needs to be switched off (set the usable warm water circuit parameter into “off” mode).

### **3.4      Electric connection.**

Make the electrical connection in accordance with the burner manufacturer's operating instructions.

### 3.5 Assembling, launching and adjusting the burner



**The following steps ensure correct assembly of the burner:**

- a. mount the burner within the boiler door after making an appropriate assembly hole (see point no 3.2).
- b. mount the electric control box onto selected spot (on the boiler wall, on top of the boiler, on the boiler room wall etc.) ensuring that it is not exposed to possible damage or excessive temperature;
- c. remove the burner metal housing and connect controlling cord to appropriate socket located in the burner assembly board;
- d. place the fuel hopper next to the boiler and insert feeder into the fuel hopper hole;
- e. hang the feeder to the boiler room ceiling ensuring that the feeder pipe is at an angle of about 35 - 45 degrees ( $40^\circ$  recommended);
- f. connect the central heating pump and usable warm water pump cords to appropriate sockets in the adjuster;
- g. connect the feeder to its socket located in the electric control box;
- h. fill the hopper with fuel;

- i. connect the electric control box power cord to the mains supply and fill the fuel feeder with pellet until it pours into a container or a sack - let the feeder operate for several minutes in order to stabilize the feeding flow.

In order to start the feeding mode, press and hold for about 5 seconds the START button (until the “Feeding” notice appears on the display). The first feeding takes several minutes. The feeding process can be stopped at any time by pressing the STOP button.

- j. connect the feeder outlet hole to the burner using a flexible hose, paying attention to maintain an appropriate angle which will ensure that the pellet falls into the burner freely;
- k. set the room thermostat (if connected) into working mode - this is indicated by the green indicator light which controls the room thermostat.

When the above steps are finished, the burner and the boiler are ready for the first launch. For correct and quick ignition, it is highly important to set the so-called initial fuel dose - the fitter should ensure that after feeding the initial fuel dose and moving it onto the grate, the air bubble of the ignition device is covered with fuel. It is worth mentioning here that the feeder efficiency may fluctuate depending on the feeder angle and the type of pellet used (ø6 mm or ø8 mm). Such modifications have to be made by the fitter (an authorized serviceman) who observes operation of the burner-boiler unit and makes necessary modifications to settings. Fluctuations of the device parameters can also be caused by a flue draught of the building and the type of fuel mentioned above.

Other factors are less important; however, they should be taken into consideration by a fitter who possess experience within this field.

Burner control parameters, which have been set correctly, display good combustion ratio, i.e. completely burnt fuel in the ash pit and good boiler efficiency. When there is not enough combustion air, the fuel may not burn completely and excessive smoking may occur which consequently lead to quickened pollution of the boiler's heated surfaces.

On the other hand, when there is too much combustion air, an excessive convection of small fuel fractions as well as sparking and ash sintering might be observed.

## 4. Maintenance

### 4.1 Cleaning - setting burner cleaning mechanism

Table below includes examples of cleaning algorithms:

#### **Setting burner cleaning mechanism - examples**

<b>Requirements</b>	<b>No. of duty cycles before cleaning</b>	<b>Minimum operating time without cleaning</b>	<b>Maximum operating time without cleaning</b>
<b>Cleaning after each duty cycle</b>	<b>1</b>	<b>0h</b>	<b>99h</b>
<b>Cleaning after every 5 hours of work</b>	<b>99</b>	<b>0h</b>	<b>5h</b>
<b>Cleaning after every 2 hours of work during automatic switch-off</b>	<b>1</b>	<b>2h</b>	<b>99h</b>
<b>Cleaning every 5th burner switch-off, but no sooner than after each 3 hours of operation</b>	<b>5</b>	<b>3h</b>	<b>99h</b>
<b>Cleaning every 3rd burner switch-off, but no sooner than every 2 hours of operation and no later than after 6 hours of operation</b>	<b>3</b>	<b>2h</b>	<b>6h</b>

It is recommended to clean the burner after each work cycle because this guarantees unhindered ignition in each subsequent work cycle.

It is worth emphasizing here that failure-free and automatic operation of the burner is influenced both by the automatic cleaning mechanism as well as by the conditions present in the boiler room. It is suggested to avoid excessive moisture and dusting in the boiler room as well as to keep this room in neat condition because controlling devices, particularly the central processing unit, photo sensor etc., are equipped with sensitive electronic parts.

## 4.2 Replacing the ignition device

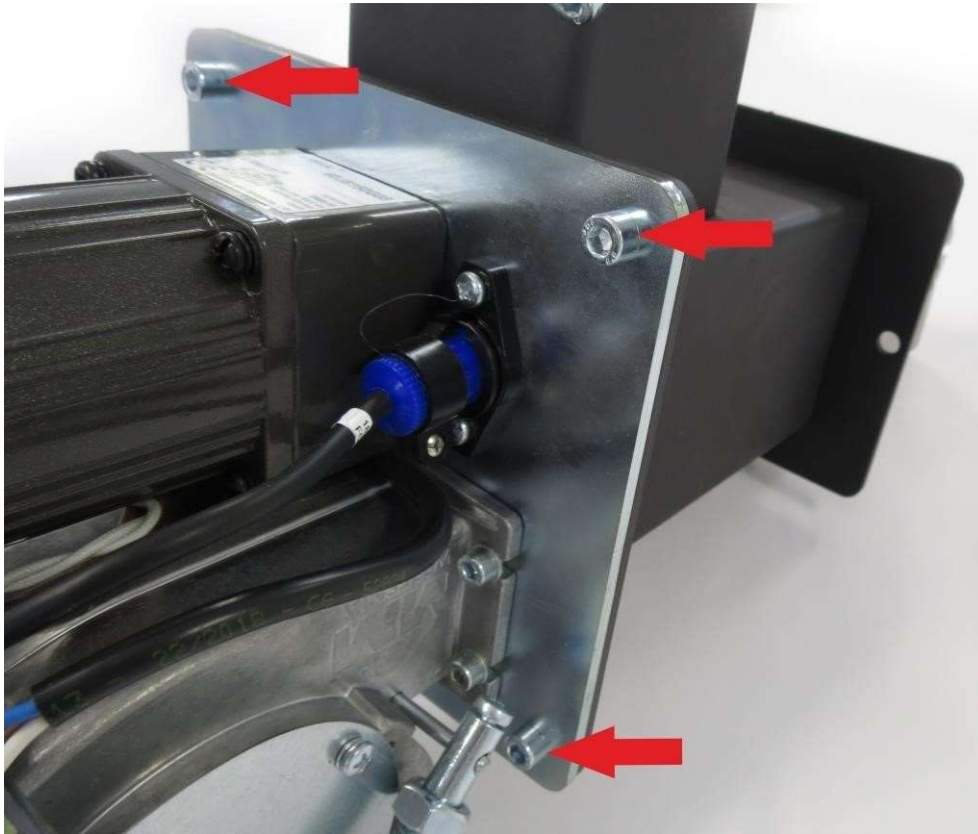
The ignition device is one of those elements which wear out mostly and which are subject to the greatest loads. It is made of ceramic elements and its nominal life-span equal not more than 10,000 ignitions. This should be enough for several years of failurefree operation.

If it is necessary to replace the ignition device, we should firstly check whether it is not enough to replace the ignition device fuse. It is located in the burner's electric control box. Except for the lack of ignition, broken fuse ceases operation of the radiator as well as the fuel feeder because those elements are protected by the same fuse.

### Instructions for replacing ignition device:

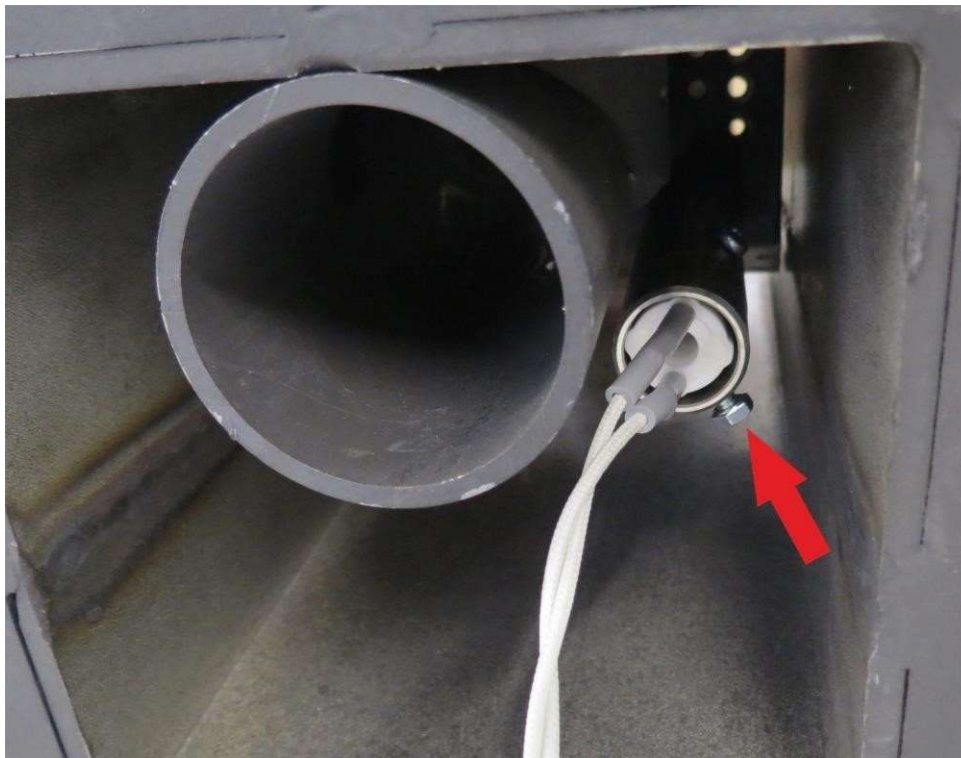


- switch off mains supply by unplugging power cord from the mains socket;
- remove the burner metal housing;
- unplug the ignition device power cords from terminal block located on the burner circuit board;
- unscrew four socket head cap screws which fix the burner components board to its flange;
- pull the components board and remove it with the grate;
- unfasten the feed actuator hook from the grate and place the board aside



- loosen the ignition device bolt (arrowed in the below picture);
- remove the ignition device from the housing and pull its cord from the stuffing box located in the burner side wall;
- place new ignition device by pushing firmly, notice the bolt located on the pipe which adjusts the ignition device longitudinally;

hold it still making sure it does not change its position and tighten the bolt carefully (caution: it's made of porcelain); the bolt should press the ignition device body within its cavity (as shown in the picture);



- proceed with remaining steps in reverse order.

### 4.3 Causes of faulty operation and fault removal

#### A. The burner does not ignite - the screen displays “no fuel”

- no fuel in the fuel hopper > replenish the fuel by filling feeder with pellet until it pours off the outlet pipe
- burnt fuse which secures electric circuit of the ignition device, radiator, feeder and stoker > replace
- damaged ignition device > replace; in case of difficulties please refer to authorized service; before the failure is removed, the fuel can be ignited manually e.g. using barbecue kindling placed onto the burner grate in a small amount of fuel
- burner damage or lockout - foreign object in the fuel, too high amount of fine fractions in the pellet (sawdust, ashes), too low pellet compression value or the pellet is wet > inspect
- damaged stoker - pellet gets stuck in the feeding pipe > inspect whether the stoker is operating, if not: refer to authorized service
- light-sensitive detector damaged or sooty - cannot recognize the flame > inspect the burner head brightness ratio if flame is present on the burner > clean or replace the light-sensitive detector
- excessive flue draught within the chimney > mount a flue draught adjuster

#### B. Burner fails to ignite - “ALARM” displayed on the screen – temperature sensor damaged > replace or inspect connection of a sensor indicated on the screen.

#### C. Burner fails to ignite - the screen displays “ALARM” – emergency stop. This alarm is displayed when the boiler door is secured by a limit switch against accidental opening. If that is the case, check whether the door is tightly closed. If it is impossible to remove the alarm, check operation of the limit switch and its connection.

#### D. Boiler overheating emergency - screen displays “boiler overheated”

- boiler water temperature set by the fitter has been exceeded - wait until the water temperature inside the boiler falls below emergency value
- turn off the alarm by pressing the STOP button > check whether the heat transfers from the boiler i.e. whether the central and usable warm water pumps operate correctly.

**E. Flue gases escape through boiler door at igniting:**

- chimney's cross-section is too small;
- the chimney is too short;
- the chimney is too cold;
- the flue draught adjuster is incorrectly set;
- boiler flues clogged > clean the boiler

**F. The boiler is unable to reach desired temperature - it does not reach heating capacity:**

- sub-standard pellet quality - too high sawdust content or too low pellet compression value;
- too low burner heating capacity > adjust the burner, fuel and combustion air to maximum and minimum heating capacity, accordingly;

**G. Burner smokes, soot accumulates within the boiler** – excessive fuel feeding in comparison to air burnt - clogged air intake holes > adjust the burner as described above > inspect flow capacity of the air intake holes.

**4.4 Burner disposal**

The burner and its metal elements should be disposed of through authorized companies which collect recyclable waste or through other companies which specialize in treatment of similar devices according to the principles of environmental protection. A worn-out burner with all its elements might also be delivered to the manufacturer.



Warsaw, 1st June 2019

## DECLARATION OF CONFORMITY

Termotechnika Michał Kotelba company seated  
at Radomska 39B Góra Puławska  
24-100 Puławy

hereby declares for its sole liability that the ECOMAT burner for heating boilers  
conforms with the following directives:

**Directive 2006/42/EC**

*(Journal of Laws:  
Dz.U. no 199/2008, item 1228)  
on machinery*

**Directive 2004/108/EC**

*(Journal of Laws:  
Dz.U. no 82/2007, item 556)  
on electromagnetic  
compatibility*

**Directive 2006/95/EC**

*(Journal of Laws:  
Dz.U. no 155/2007, item 1089)  
on low voltage  
electrical equipment*

List of harmonized standards: PN EN ISO 12100:2012, PN EN ISO 14121-1:2008, PN EN 61000-63:2008,  
PN EN 60730-2-9:2011, PN EN 60335-1:2012

First name and last name of a person authorized to develop technical documentation and the declaration  
of conformity on behalf of the manufacturer:

Michał Kotelba

.....  
(The company owner)



.....  
(Signature)

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**TERMOTECNIKA MICHAŁ KOTELBA Address: Radomska 39B, Góra Puławska, 24-100 Puławy**  
NIP (tax ID): 716-230-90-85 REGON (statistical no.): 060301812  
**E: biuro@supergrzanie.pl T: +48-22-843-78-68 M: +48 602-731-531 F: +48 606-167-467**

[www.ecomat.waw.pl](http://www.ecomat.waw.pl)

## Assembly report

### Client identification data:

.....  
.....

Email:.....

Tel.....

### Parameters of assembly:

Device	Type	Serial no.	Date of production	Notices
1. ECOMAT burner				
2. Boiler which the burner was mounted into				

### Burner data and combustion parameters:

1. Measured burner 10-minute efficiency:	kg/10 min
2. Fuel presets:	Fuel volume for maximum heating capacity:  Fuel volume for minimum heating capacity:
3. Photo sensor value at cold burner:	
4. Photo sensor value at ignition:	
5. Photo sensor value at ignition device switch-off:	
6. Flue gas temperature at minimum heating capacity:	°C
7. Flue gas temperature at maximum heating capacity:	°C
8. Carbon oxide emission at minimum heating capacity:	ppm
9. Carbon oxide emission at maximum heating capacity:	ppm
10. Flue draught:	Pa
11. Excess air ratio:	$\lambda$
12. Efficiency:	%

### Device launching confirmation:

Type of work performed	Yes/No	Fitter's signature and stamp	Client's signature
The devices have been assembled according to technical documentation, they work correctly and they are ready for operation			

## WARRANTY CARD

Pursuant to conditions specified on the next page, the warranty  
for ECOMAT burner type .....

which shall be operated according to its operation and maintenance manual is hereby granted

Burner serial number: .....

Burner production date: .....

Date of purchase: .....

Date of repair	Scope of repair works performed	Signature of the serviceman

Date of assembly and first launch:

.....

(Stamp and signature of the fitter)

## **Warranty conditions**

1. The Warrantor grants the Client warranty for the purchased good pursuant to terms and conditions specified herein.
2. The warranty is granted for ECOMAT burner type ..... under condition of making full payment for the device.
3. Together with the warranty conditions, the Client shall receive operating and maintenance manual which defines principles of the burner operation, its assembly and parameters applying to chimney and fuel.
4. The warranty does not cover elements which deteriorate with time, particularly: screws, caps, handles, sealing elements.
5. The warranty period shall be calculated from the purchase date and extends for:
  - a) 24 months for the whole burner, except for elements specified in item 4.
6. The warranty does not cover events of accidental damage (flood, fire, electrostatic discharges).
7. The warranty does not cover failures arising from operation of the device which is contrary to guidelines included in the operating manual.
8. During the warranty period, the Warrantor provides free-of-charge repair works and removes physical faults of the subject hereof within the following time:
  - a) 10 days from the date of reporting the failure;
  - b) 14 days from the date of reporting the failure, if the burner is still mounted and continues operation;
9. Warranty card which lacks date, entries, signatures, stamps and serial numbers shall be deemed null and void.
10. Costs of groundless complaint shall be incurred by the Complaining Party.
11. Any repair works performed during the warranty period shall be confirmed on an appropriate repair protocol.

# Schedule 1

Surface of the building	A new building, well insulated, with a modern central heating and usable water heating systems	A building from 1980s/1990s, thermally insulated, with modern central and water heating systems	A building from 1980s/1990s, not insulated, with a traditional central and water heating systems	A building from the 1980s, not insulated, with a modern central and water heating systems	A building from the 1970s, insulated, with a traditional central and water heating systems	A building from the 1970s or older, not insulated, traditional central and water heating systems
Up to 60m <sup>2</sup>	4 kW	5 kW	8 kW	7 kW	6 kW	9 kW
70 m <sup>2</sup>	5 kW	6 kW	9 kW	8 kW	7 kW	11 kW
80 m <sup>2</sup>	6 kW	7 kW	10 kW	9 kW	8 kW	12 kW
90 m <sup>2</sup>	6 kW	8 kW	12 kW	10 kW	9 kW	14 kW
100 m <sup>2</sup>	7 kW	9 kW	13 kW	11 kW	10 kW	15 kW
120 m <sup>2</sup>	8 kW	10 kW	16 kW	13 kW	12 kW	18 kW
140 m <sup>2</sup>	10 kW	12 kW	18 kW	15 kW	14 kW	21 kW
160 m <sup>2</sup>	11 kW	14 kW	21 kW	18 kW	16 kW	24 kW
180 m <sup>2</sup>	13 kW	15 kW	23 kW	20 kW	18 kW	27 kW
200 m <sup>2</sup>	14 kW	17 kW	26 kW	22 kW	20 kW	30 kW
220 m <sup>2</sup>	15 kW	19 kW	29 kW	24 kW	22 kW	33 kW
240 m <sup>2</sup>	17 kW	20 kW	31 kW	26 kW	24 kW	36 kW
260 m <sup>2</sup>	18 kW	22 kW	34 kW	29 kW	26 kW	39 kW
280 m <sup>2</sup>	20 kW	24 kW	36 kW	31 kW	28 kW	42 kW
300 m <sup>2</sup>	21 kW	26 kW	39 kW	33 kW	30 kW	45 kW
350 m <sup>2</sup>	25 kW	30 kW	46 kW	39 kW	35 kW	53 kW
400 m <sup>2</sup>	28 kW	34 kW	52 kW	44 kW	40 kW	60 kW