

blaze

h a r m o n y

Wood gasification



7 YEAR
WARRANTY

and combined biomass boiler



Innovative heating solution

Insulated compact hot chamber INOX for longer service life of the boiler

Slant stoking doors for comfortable stoking of wood and loose fuels

Adjustable fan EBM for easy connection to the chimney

Special mechanical turbulators for clean exchanger and high efficiency

Inclined bottom provides automatic ash removal

Integrated return water mixing protects the boiler against corrosion and saves the installation costs

PATENTED
Mechanical detection of residual fuel – ensure high comfort of operation

Lambda probe + actuator ensures optimal combustion parameters (proportion of oxygen in the flue gas)

PATENTED
The three-way air supply allows combustion of various fuel types including moist wood



Gasification boiler BLAZE HARMONY

for lump wood, briquettes, wood chips
and sawdust



1 **The first boiler on the market with mechanical detection of residual fuel**

PATENTED

This unique system provides automatic stable heat (embers), causing the fan to switch off when the level of the fuel decreases. This accurate detection maintains the hot embers layer in the combustion chamber for several hours, reducing the number of times a new fire is started in the boiler per season. If the user fails to insert more fuel, a layer of unburnt carbon (in the form of charcoal) remains in the furnace, which is ideal for the next firing of the boiler without the need to clean the furnace. Just ignite the layer with a piece of paper, and you can add big logs of wood directly. An original solution that is patented.

2 **The first boiler on the market with protection against low-temperature corrosion, without the need to install a safety configuration**

PATENTED

The built-in thermostat with a temperature setting at 60°C and a special structure for mixing inside the boiler protects the boiler. Option of gravity connection to the storage tank without pumps. Considerable savings during installation and safe operation. 7-year warranty on the boiler body, with no additional conditions. An original solution that is patented.

3 **First boiler on the market with three-way air supply to gasification chamber**

PATENTED

Which ensures uniform burning of fuel and allows to burn fuels of various dimensions (wood chips, sawdust, briquettes even lower quality). Pre-drying air, which is supplied (if necessary) into the upper part of the chamber will dry up any damp fuel in order to be able to burn it well and maintain high boiler efficiency and low emission values

4 **Corrosion protection with an insulated compact INOX hot chamber system**

Where the walls of the stoking chamber are not directly cooled by water – they are hotter, which prevents condensation. The service life of these boilers is many times longer than that of conventional gasification boilers. It also allows the combustion of moist fuel, without significantly reducing the boiler's service life. The increased temperature of the walls prevents the unpleasant deposition of tar in the stoking chamber. The compact gasification chamber is a separate element that is insulated from the walls of the water boiler. The chamber can be replaced.

5 **Voluminous stoking chamber**

With a burn time of up to 8 hours. Along with the stable heat, it can take up to 24 hours to next fuel stoking.

6 **Special mechanical turbulators**

Controlled by an external lever have an original and precise construction. They ensure consistent cleanliness of the exchanger and maximum efficiency boiler operation at all times.

7 **Inclined bottom of the gasification chamber**

Provides automatic ash removal from the combustion chamber during combustion, completely eliminating the need to clean it before firing it up again.

8 **Slant stoking door**

For comfortable stoking of wood and loose fuels (woodchips, sawdust, etc.) in the entire combustion chamber volume.

9 **Top boiler output adjustability**

Allows you to set the required boiler output in percentages and regulate the boiler with continuous operation at 50 % to 130 % output. Setting the power to 50 % will ensure a long period of combustion in the boiler, at a quality comparable to the quality at 100 % power. This solution allows the boiler to operate at a lower output (especially important in the transition period), as well as the installation of a smaller storage tank, saving expenses and space. The controller is ready for connection of extension control module for burner installation.



10 **Lambda probe**

Provides high quality combustion and low emission values, whether you burn hard or soft wood. The lambda probe is an important element that measures the residual oxygen value and then, with an actuator, controls the amount and type of incoming combustion air.

Three-way air supply control



Pre-drying a primary air are open at 100 %, secondary air is completely closed. In this position you can find the air supply curtain in case of burning damp wood or big logs.



Secondary air is open at 100 %, pre-drying and primary air are completely closed. In this position you can find the air supply curtain in case of burning dry wood or briquettes, where is a need for bigger amount of secondary air for high quality combustion.



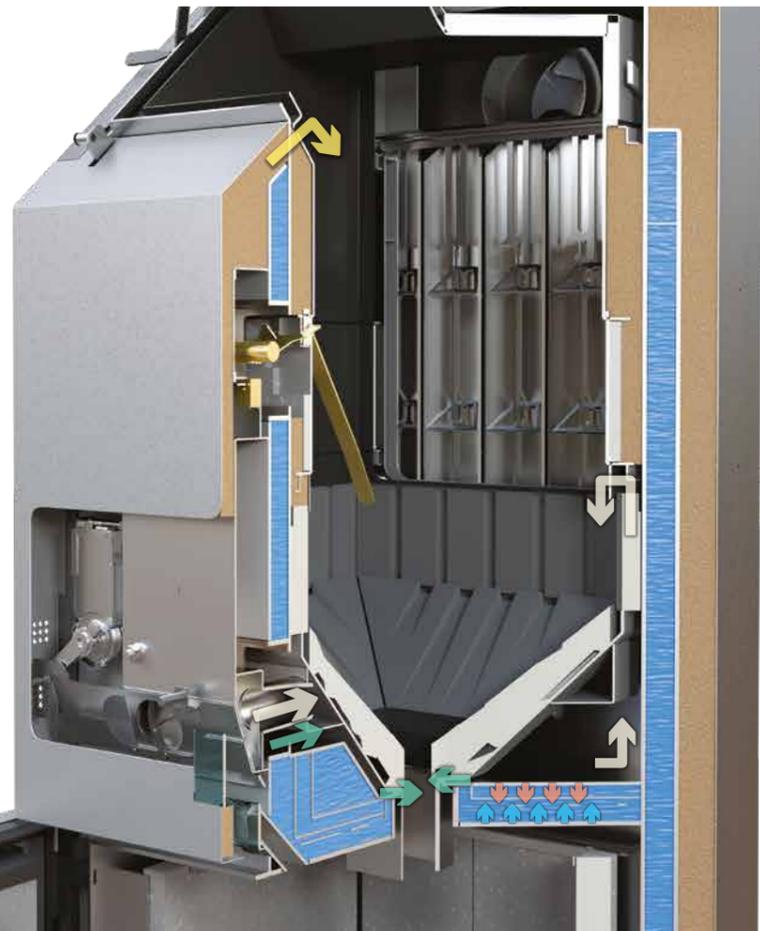
Primary and secondary air open at 50 %, pre-drying air completely closed. You can find the air supply curtain in this position during combustion of standard fuel.

In version with lambda probe the control of air is automatic. Without lambda probe manually.

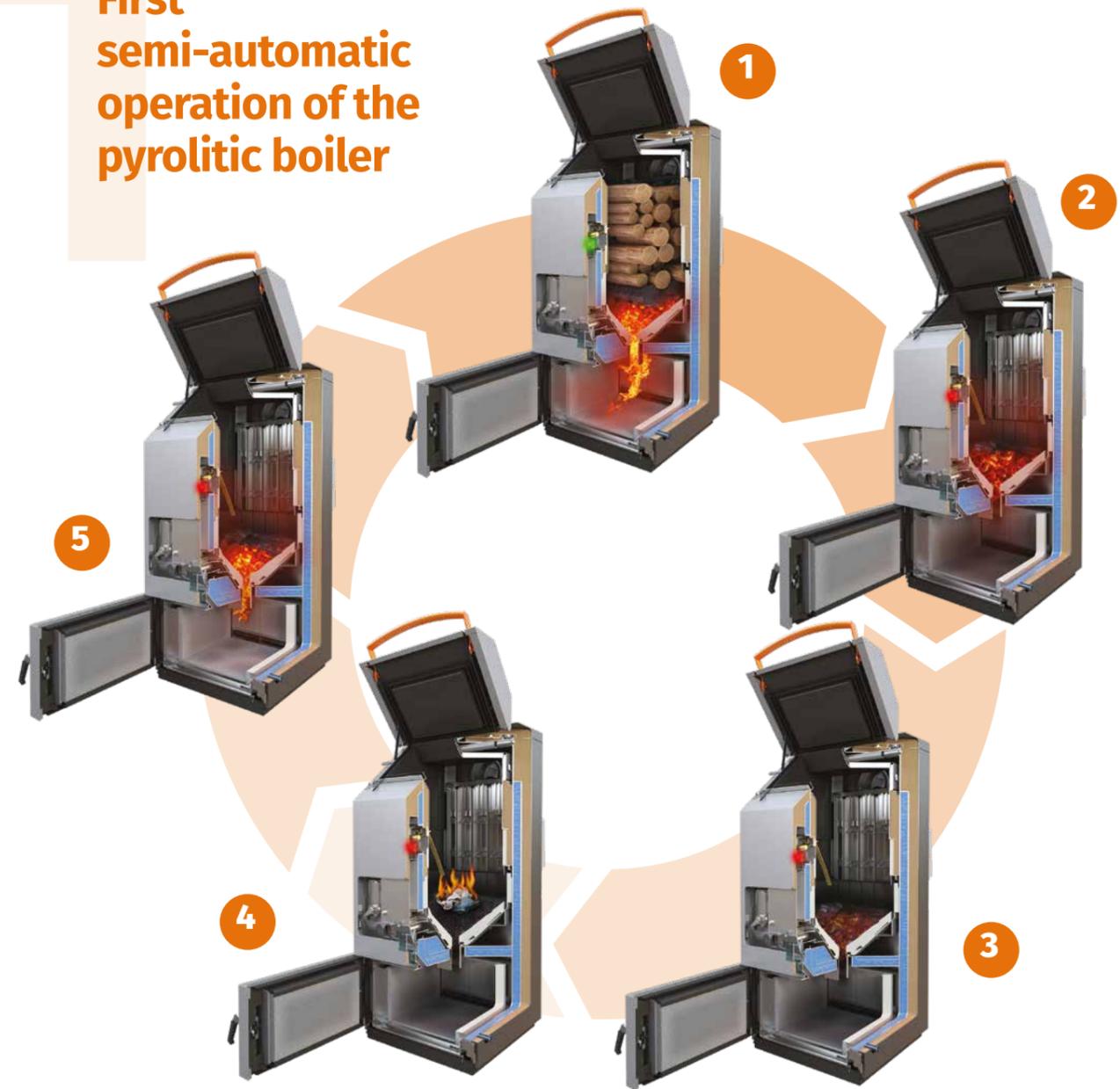
One and only boiler on the market with three-way combustion air supply

The relative air ratio is determined by the multifunctional movable curtain, which may be controlled manually or with actuator and lambda probe. Unlike other boilers, the BLAZE HARMONY boilers can easily control the distribution of the air entering the fuel (pre-drying air is supplied over the fuel). Therefore the boiler can be adapted to various fuels. This effectively burns fuel that can be easily burn (wood chips, small briquettes), but also fuels that burns hard (large logs, wet wood).

- primary air
- secondary air
- pre-drying air
- hot water
- cold water



First semi-automatic operation of the pyrolytic boiler



1 Stoking - after stoking fuel to whole volume of the stoking chamber the combustion time is up to 8 hours depends on the fuel type and pre-set boiler output.

2 After 8 hours - when the fuel level decrease under the detection threshold, then the sensor sends signal and controller switch off the fan. This stops the burning process

3 Up to 24 hours from the first fuel stoking, there are still hot coals (embers) in the chamber, so it is sufficient to add directly bigger logs, start the fan and combustion continues.

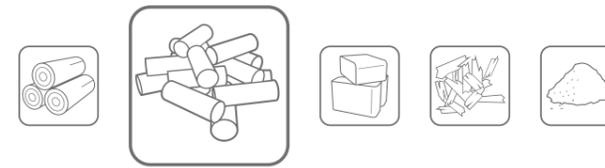
4 After 24 hours and more after first fuel stoking there will not be hot coals (embers). There will remains fuel residual in the form of charcoal. In such a case is sufficient to start

the fan and with small piece of paper fire up the layer of charcoal.

5 After short time the charcoal fires up very well. Then it is possible to add even larger pieces of wood. The residual fuel detection mechanism provides user's high operation comfort due to lack of new ignitions, when user must clean the boiler and cut small pieces of wood and wait until the boiler ignites successfully.

Boiler operation is clean and very comfortable

Conversion of gasification boiler **BLAZE HARMONY**



to combined boiler for wood and pellets **Hybrid BIOMASS**

Gasification boilers BLAZE HARMONY are prepared for later conversion to automatic combined boiler, which allows pellet combustion. This solution means for user increasing of comfort after installation of the pellet burner, when after the wood burns off, the boiler operation continues automatically with pellet combustion.



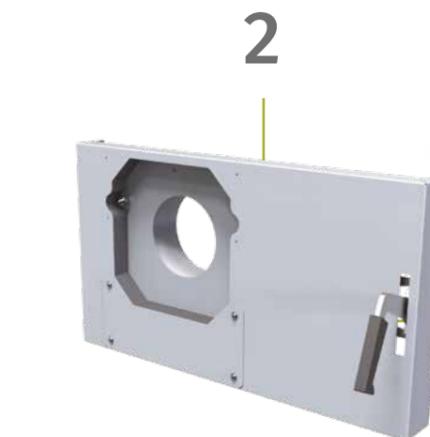
For the conversion of wood gasification boiler to combined boiler for wood and pellets is sufficient to buy conversion set which includes:

- 1 burner with pellet feeder**
- 2 lower doors with hole for the burner**
- 3 additional module for controlling the operation of the burner**

Boilers BLAZE HARMONY are equipped with controller, which after connection the additional module allows to control the pellet combustion and control the elements of burner, pellet feeder including. It is not necessary to change complete controller because of the boiler conversion.

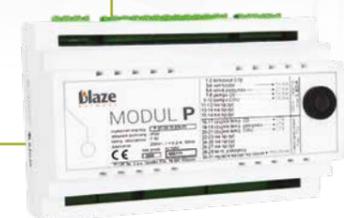


1



2

3





Hybrid
BIOMASS



Combined boiler Hybrid BIOMASS

for wood, pellets, briquettes, wood chips and sawdust



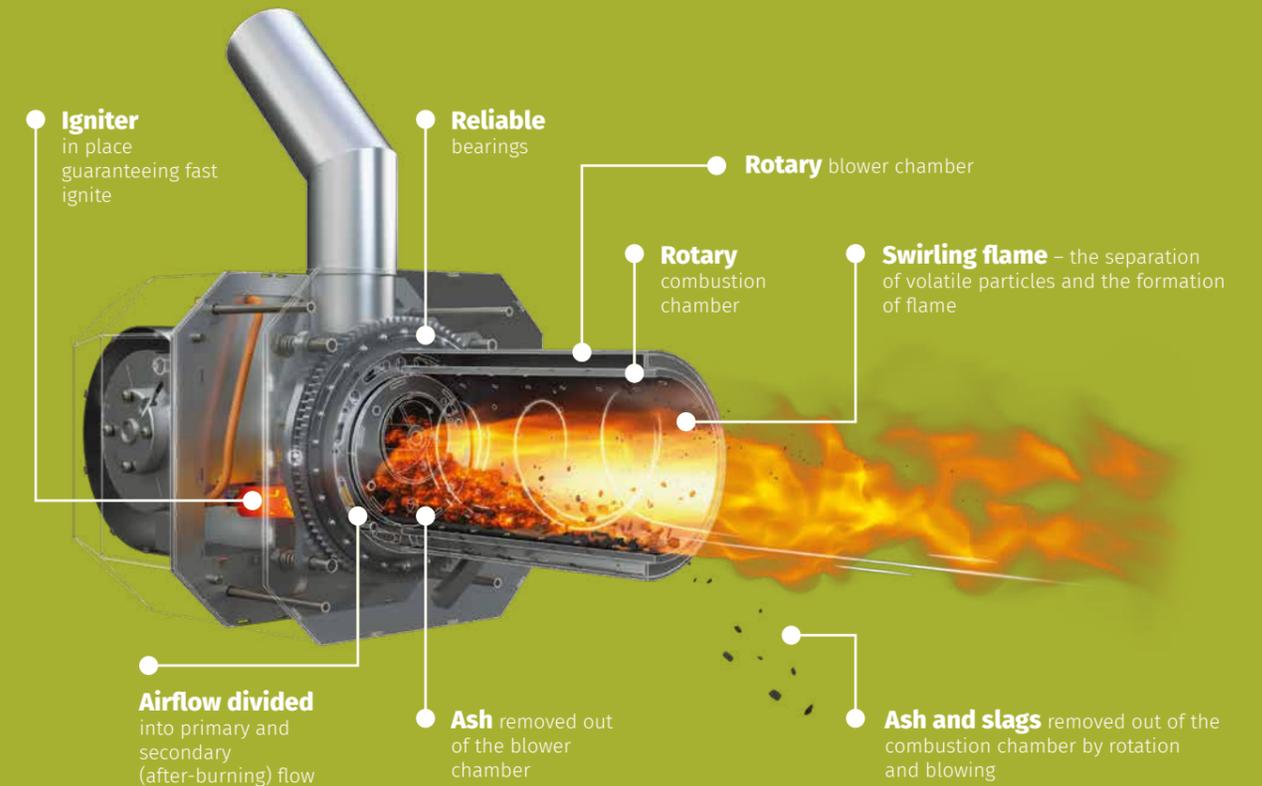
All the advantages of gasification boiler BLAZE HARMONY are extended with a rotary burner with automatic transition to pellet burning.

This ensures the continuous operation of the boiler, with the option of a simple transition back to manual stoking when the pellet burner turns off automatically.

The special design of the burner with a rotary combustion chamber enables the burning of low-quality pellets and agro-pellets.

This combination of options for burning various types of fuel in manual and automatic mode makes Hybrid BIOMASS® the most universal boiler on the market.

Rotary burner for burning pellets, lower quality pellets and agropellets



Advantages of the pellet burner with rotary combustion chamber

- 1 Sophisticated construction of the burner** allows to burn lower quality pellets and agropellets
- 2 Rotary combustion chamber.** Maintenance-free solution for burning pellets. It is sufficient to check it before heating season.
- 3 Seamless combustion chamber.** 4 mm at its thinnest point. Only the refractory tube without welded parts
- 4 Modular construction.** Very simple and fast installation and service of the burner. Quick access to all components.
- 5 Bearings placement.** Patented system. The longitudinal ball bearings transfer radial loads, ensuring smooth operation of revolutions of the burner, without any abrasion of metal/metal – load transfer at least on 50 balls (according to the size of burner). For user and service that means high service life (lower load of the bearings) and no abrasion of burner's metal parts.
- 6 Distribution of air to primary and secondary combustion.** Patented mechanism, which ensures highest efficiency of combustion and possibility to set optimal combustion of various kinds of pellets. From output 27kW, there is an option to regulate it thanks to the curtain.
- 7 Aeration chamber.** Automatic cleaning of aeration chamber is common turning of combustion and aeration chamber. This method of automatic cleaning completely eliminates the need of manual cleaning. This eliminates periodic disassembling of the burner and service
- 8 Burning of various pellets/agro pellets.** With this system all problems are eliminated, and process of combustion is optimized by distribution of primary and secondary air.
- 9 Separating curtain in combustion chamber.** There is an air curtain used in combustion chamber. This reduces the transfer of heat to burner and it means conservation of heat in the combustion chamber.
- 10 Ribbing in aeration chamber...** on which it relies the tube of fireplace – it means smaller load on whole combustion chamber.
- 11 Safety feeder's sensor.** Placed directly in feeding chamber, it guarantees high safety in case of clogging of the burner.
- 12 Full automatic.** Unattended and maintenance-free operation.

Automatic controller ecoMAX 860



All settings are made on touch screen with modern design and intuitive control

Sophisticated control software allows you to set the required boiler output in percentages and regulate the boiler with continuous operation at 50 % to 130 % of the nominal output. Setting the output to 50 % will ensure a long period of combustion in the boiler, at a quality comparable to the quality at 100 % power.

This solution allows the boiler to operate at a lower output (especially important in the transition period), as well as the installation of a smaller buffer tank, saving expenses and space.

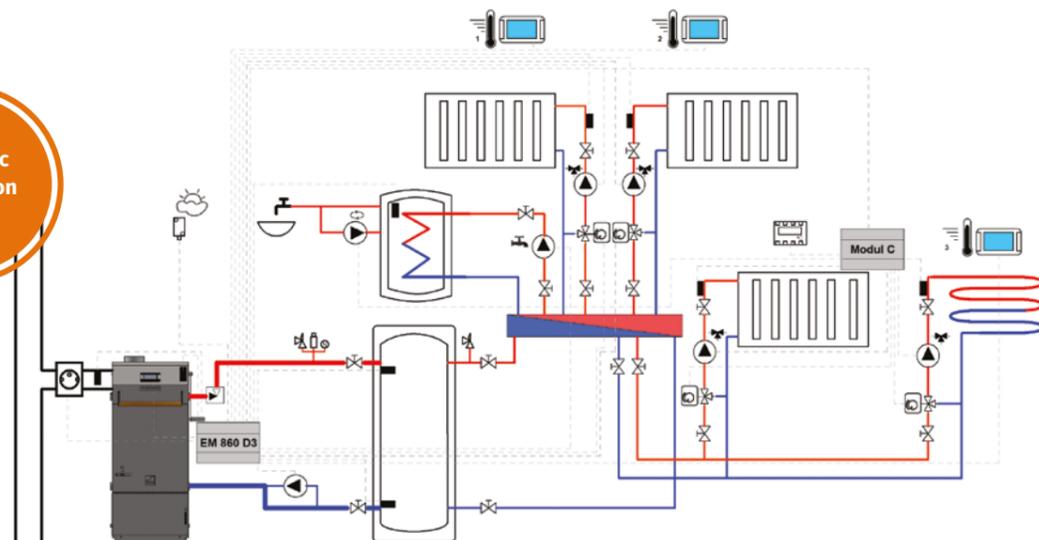
The controller also evaluates the O₂ values measured by the lambda probe and controls the actuator of the primary, secondary, and pre-drying air curtain in order to maintain the set value of residual O₂.

After connection of additional module this controller also controls the operation of the burner and pellet combustion, when it fluently modulates with burner output in whole range and thanks to that keeps required boiler temperature.

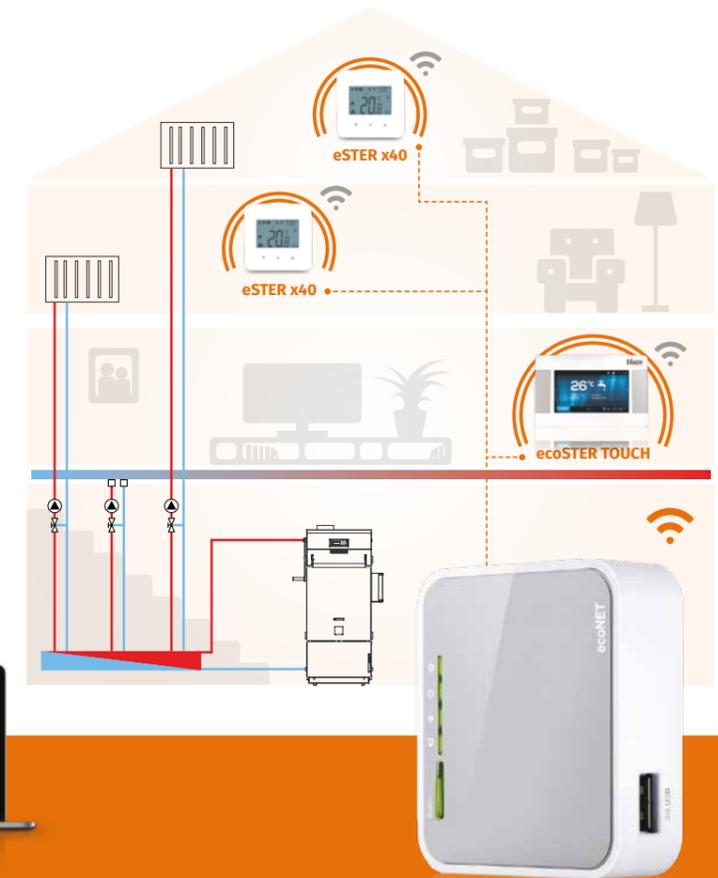
Controller's features:

- 🔥 boiler's output regulation from 50 % to 130 % of nominal output
- 🔥 exhaust fan control
- 🔥 modulating pellet burner output
- 🔥 pellet feeder control
- 🔥 boiler pump
- 🔥 HUW pump
- 🔥 HUW circulation pump
- 🔥 mixer pump
- 🔥 mixer control
- 🔥 thermostat support
- 🔥 buffer loading control
- 🔥 summer/winter mode
- 🔥 flue gas sensor
- 🔥 weather control
- 🔥 time schedules
- 🔥 STB emergency thermostat
- 🔥 reserve boiler switch
- 🔥 intelligent alarm

Hydraulic installation scheme

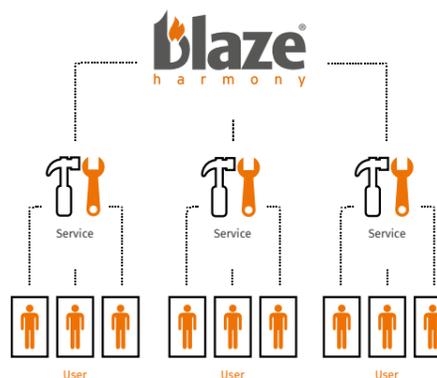


On-line boiler and heating system control



Internet system ecoNET provides to user option for remote control of the boiler and heating installation. Thanks to that user has possibility to change almost all parameters of boiler and heating system operation, but also view the history of the operation which is displayed on a clear graph.

Remote access to controller is possible from every device which is connected to internet, as it is tablet, laptop or mobile phone. Settings can be made via a web browser on www.econet24.com or through a mobile application which is available for Android and iOS.



Online service. The internet system is not only for user. It is useful also for service company, which may have access to the boiler data and if necessary the service company can change the controller settings. The internet system lowers the costs for service intervention significantly.

Accessories for controller:



ecoSTER TOUCH / eSTER X80

Remote control panel with room thermostat function. ecoSTER TOUCH allows you to control and change the boiler's settings from the place, where is the thermostat installed, for example the living room.



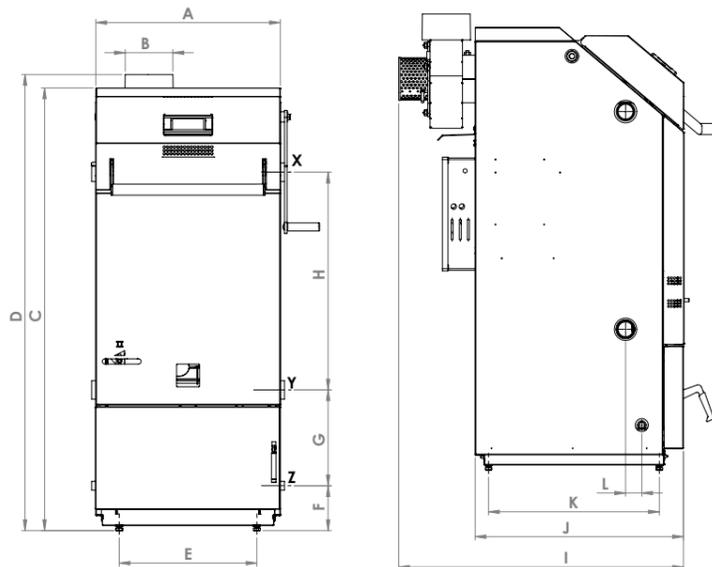
eSTER X40

Wireless remote controller with room thermostat function

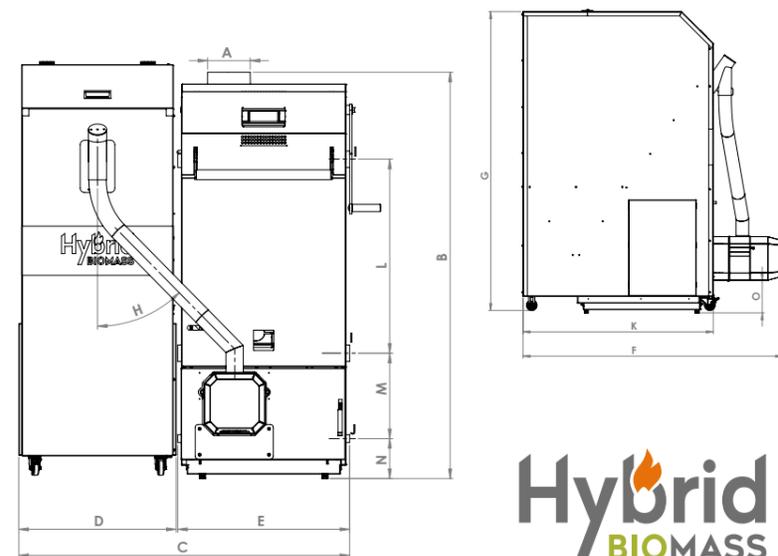


Additional module for controlling another heating circuits

Allows controlling of another two mixing circuit and their pumps. Also it allows to control circulation pump for HDW.



	BH 12 L	BH 18 L	BH 25 L	BH 33 L
A	568	568	752	752
B	Ø147	Ø147	Ø147	Ø147
C	1165	1365	1365	1365
D	1204	1404	1404	1404
E	424	424	608	608
F	138	138	138	138
G	295	295	295	295
H	470	670	670	670
I	880	880	880	880
J	640	640	640	640
K	526	526	526	526
L	50	50	50	50
X,Y	G6/4"	G6/4"	G6/4"	G6/4"
Z	G1/2"	G1/2"	G1/2"	G1/2"



	HB 13 L	HB 18 L	HB 25 L	HB 33 L
A	Ø147	Ø147	Ø147	Ø147
B	1204	1404	1404	1404
C	1262	1262	1462	1462
D	544	544	544	544
E	594	594	794	794
F	1232	1232	1253	1253
G	1417	1417	1417	1417
H	51°	51°	51°	51°
I	G6/4"	G6/4"	G6/4"	G6/4"
J	Q1/2"	Q1/2"	Q1/2"	Q1/2"
K	903	903	903	903
L	470	670	670	670
M	G6/4"	G6/4"	G6/4"	G6/4"
N	G1/2"	G1/2"	G1/2"	G1/2"
O	155	155	145	145

Basic technical parameters



Blaze HARMONY	BH 12	BH 18	BH 25	BH 33
Adjustable output (kW)	7-18	10-23	15-32	16-35
Nominal output (kW)	12	18	25	33
Efficiency (%)	92	92	92	91
Emission class	5	5	5	5
Ecodesign	yes	yes	yes	yes
Energy class	A+	A+	A+	A+
Logs length (mm)	350	350	500	500
Stoking chamber volume (l)	70	100	150	150
Weight (kg)	350	400	550	560
Maximal operation pressure (bar)	3	3	3	3
Exchanger water volume (l)	45	50	60	60

Blaze HARMONY LAMBDA	BH 12 L	BH 18 L	BH 25 L	BH 33 L
Adjustable output (kW)	7-18	10-23	15-32	16-35
Nominal output (kW)	15,5	20	25	31
Efficiency (%)	90	90	90	90
Emission class	5	5	5	5
Ecodesign	yes	yes	yes	yes
Energy class	A+	A+	A+	A+
Logs length (mm)	350	350	500	500
Stoking chamber volume (l)	70	100	150	150
Weight (kg)	350	400	550	560
Maximal operation pressure (bar)	3	3	3	3
Exchanger water volume (l)	45	50	60	60

Hybrid BIOMASS	HB 13	HB 18	HB 25	HB 33
Adjustable output wood (kW)	7-18	10-23	15-32	16-35
Nominal output wood (kW)	12	18	25	33
Adjustable output pellets (kW)	4-17	5-18	6-25	6-25
Nominal output pellets (kW)	16,7	18	25	25
Efficiency (%)	92	92	92	91
Emission class	5	5	5	5
Ecodesign	yes	yes	yes	yes
Energy class	A+	A+	A+	A+
Logs length (mm)	350	350	500	500
Pellet diameter (mm)			6-8	
Stoking chamber volume (l)	70	100	150	150
Weight (kg)	380	450	580	590
Maximal operation pressure (bar)	3	3	3	3
Exchanger water volume (l)	45	50	60	60
Fuel silo volume (l)	370	370	370	370

Hybrid BIOMASS LAMBDA	HB12 L	HB18 L	HB25 L	HB33 L
Adjustable output wood (kW)	7-18	10-23	15-32	16-35
Nominal output wood (kW)	15,5	20	25	31
Adjustable output pellets (kW)	4-17	5-18	6-25	6-25
Nominal output pellets (kW)	14	18	20	20
Efficiency (%)	90/92,4	90/92,4	90/92,4	90/92,4
Emission class	5	5	5	5
Ecodesign	yes	yes	yes	yes
Energy class	A+	A+	A+	A+
Logs length (mm)	350	350	500	500
Pellet diameter (mm)			6-8	
Stoking chamber volume (l)	70	100	150	150
Weight (kg)	380	430	580	590
Maximal operation pressure (bar)	3	3	3	3
Exchanger water volume (l)	45	50	60	60
Fuel silo volume (l)	370	370	370	370

OTHER PRODUCTS:

Automatic pellet boilers
with rotary burner

ROTARY PELL

PREMIUM



COMPACT



ECONOMIC



INDUSTRIAL



 **blaze**
h a r m o n y

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