

- > Modern Technology
- > High efficiency
- > Reliability
- > High quality

## Solid fuels boilers from 18 to 4.000 kW

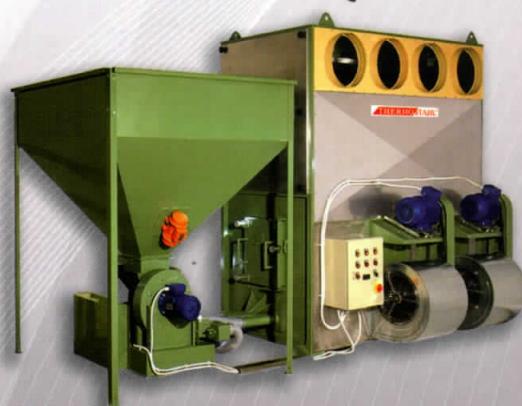
### BIOPLEX - MULTIPLEX

Pellet - Biomass - Wood - Boilers  
from 18 to 4.000 kW



### BIOCHIPS - BIOMIX

Wood-chips / Waste wood Boilers  
from 18 to 4.000 kW



### SOLIDVENT - BIOVENT

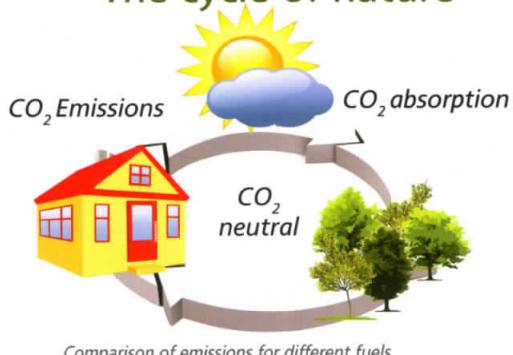
Wood - Biomass - Pellet Air-generators  
from 58 to 580 kW

- > Energy Solutions



*... the best choice*

# The cycle of nature



Comparison of emissions for different fuels

	$\text{SO}_x$ (kg)	$\text{CO}$ (kg)	$\text{CO}_2$ (tN)
Oil	200	40	200
Natural gas	10	90	160
Pellet	50	10	10

## Certifications



## Technical description

Thermostahl solid fuel boilers are constructed according to DIN 4702/EN303-5 and they produced according to ISO 9001.

The boilers are made from steel and they have fire tubes. The passes are e type. It is a combination of water cooled plates and fire tubes. That means high efficiency, easy cleaning and long life. High power boilers have fireproof lining with firebricks that emit radiation and create new paths for the exhaust gases. With this heating absorption efficiency increases and at the same works like catalyst and burns all the unburned residues of pellet or biomass.

The geometric shape of the combustion chamber, the length of the boiler and the heating surface of the boiler are designed to success quick heating and low fuel consumption.

The path of the water is opposite and interactive with the path of the exhaust gases. The paths of the fumes are four for the models up to 1160kW and seven for biggest models. Turbolators for the exhaust gases into the gas tubes increase the efficiency and reduce the temperature of the gases.

Primary and secondary air for the combustion swirls inside the metal tubes around the burner and guiding at superimposed levels in air above the fuel.

The ample combustion space, folding exhaust encircling of fire and horizontal gas tubes contribute to the perfect combustion.

The damper in the smoke chamber regulates the draught and the exhaust flow.

The boilers are suitable with every type of solid fuel, like pellet, agro-pellet, wood-chips, biomass, sawdust, shavings, grains, bark, plywood, briquettes, wood and alternative fuels.

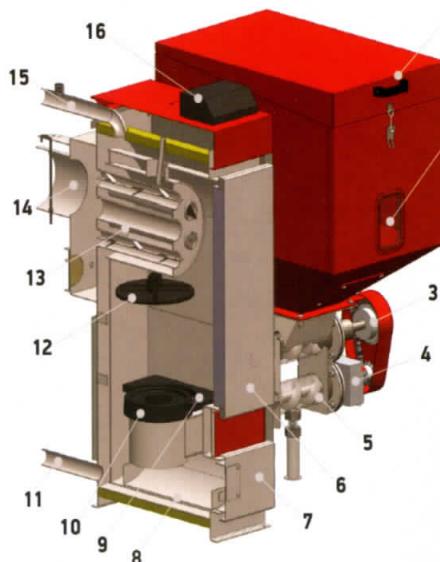
Additional appliances make automatic operation of the boiler both the feeding, the ignition, remove the ash and klinger and as well as the cleaning of the gas tubes, control of combustion, the cleaning of fumes from combustion residues and in tele-control.

All these devices work together harmoniously resulting in a thermodynamic system that contributes to saving energy and protecting the environment.

The structure of solid fuels boilers THERMSTAHL is based on Low-NOx emissions which was developed since any years and is part of advanced heating technologies.

Strong insulation of glass wool and rock wool with aluminum lining reduces heat loss by radiation to a minimum.

Metal covers with electrostatic powder coating covering the insulation and protects the boiler, giving to the boilers an impeccable appearance and a modern European design.



1. Big capacity silo
2. Inspection window for fuel level
3. Furnace transmission system
4. Furnace motoreducer
5. Feeding system BI-AX
6. Feeding door
7. Door for ash removal
8. Ash box
9. Wood grate
10. Combustion plate
11. Boiler return
12. Deflector
13. Tube heat exchanger
14. Chimney
15. Boiler outlet
16. Digital control panel

## Advantages:

- Strong construction
- Big size combustion chamber
- Big size feeding door
- Large heat exchange surface
- High efficiency – complete combustion
- Easy maintenance – quick cleaning
- Long lifespan
- Saving money
- 4 passes boiler
- Automatic feeding system
- Automatic ignition
- Automatic ash extraction
- Automatic Klinger cleaner
- Pneumatic fire-tubes cleaning
- Multicyclones for ash filtering
- Lamda regulation



## Suitable for:

- Mushroom farms
- Drying kilns
- Hotels
- Sawmills
- Swimming pools
- Schools
- Buildings
- Supermarkets
- Small - medium companies
- Small district heating
- Green houses
- Garden centers

# BIOMASS = ENERGY = LIFE

## Automatic management



### Energy-saving combustion via the lambda probe

- Due to the installed lambda probe, which continuously monitors the exhaust values and responds to different fuel qualities, it is always possible to obtain perfect combustion and the lowest emission values.
- The lambda probe corrects the necessary fuel quantity and amount of secondary air, thereby guaranteeing the cleanest combustion, even for partial load operation.
- The results are low fuel consumption and the lowest emission values even with the most diverse fuel qualities.



### Blower for automatic ignition

It is possible to automate switch-on, making use of the potentiality of the control unit, requesting the installation of the blower as an optional, which on blowing air at a very high temperature onto the biomass fuel, contained in the burner, triggers combustion.



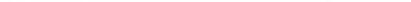
### Multicyclones for ash filtering

- Direct connection with boiler's chimney
- Separation of smoke, levitating ash and solid particles from the exhaust gases
- Separation of solid particles, efficiency 99%
- Ash collection in a bin at the base



High capacity Boilers with 6 passes

Pneumatic fire-tubes cleaning system



Wood-chips feeding screw

Automatic ash extraction system

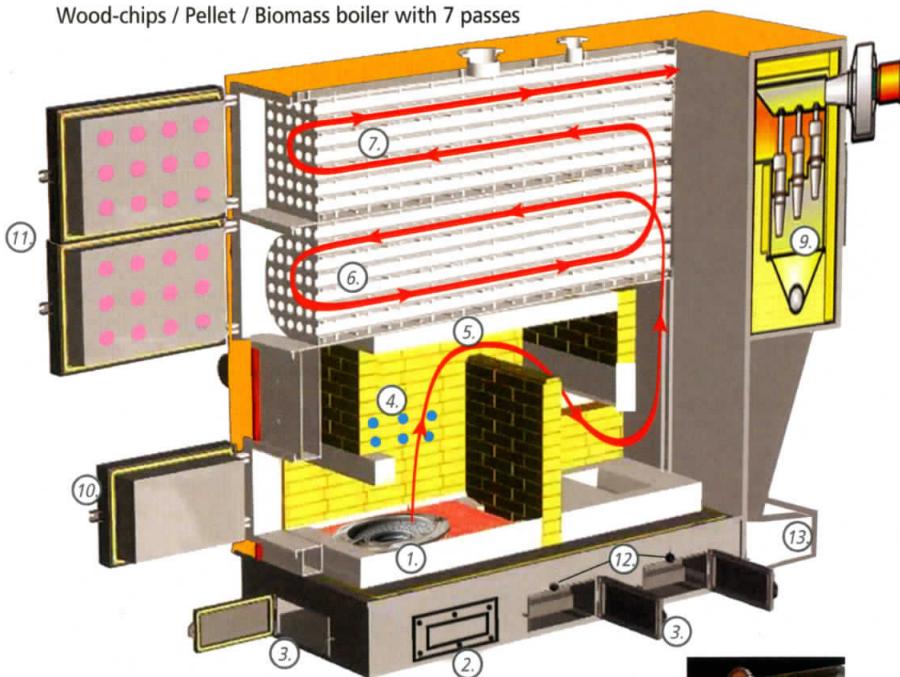




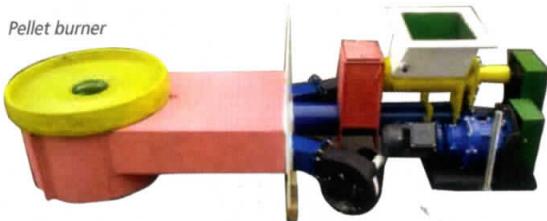
## BIOPLEX - BIOMIX - BIOCHIPS:

Wood-chips / Pellet / Biomass boiler with 7 passes

## HIGH POWER BOILERS



Pellet burner



Transmission system

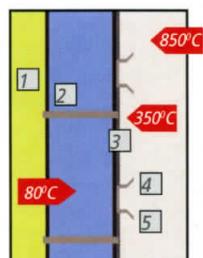
## BOILER STRUCTURE

1. Woodchip / Biomass / Pellet furnace
2. Burner connection
3. Ash cleaning doors
4. Secondary air inlets
5. Radiation roof
6. Cylindrical heat-exchanger
7. Fire tubes
8. Ventilator
9. Multi-cyclone for ash filtering
10. Inspection door to combustion
11. Front doors with automatic fire tube cleaning system
12. Ashlevers
13. Chimney ash box



## HEATING TRANSMISSION

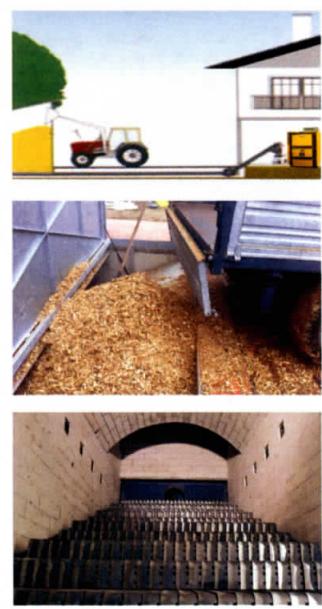
1. External insulation
2. Water jacket with anchor bolts
3. Ceramic mat
4. Heat-resistant wall anchor
5. Refractory lining 100mm



## EXTERNAL CHARGE SYSTEMS



1. Boiler
2. Mechanical burner
3. Cleaning tubes valves
4. Inspection door
5. Cyclone
6. Extractor fan
7. Chimney



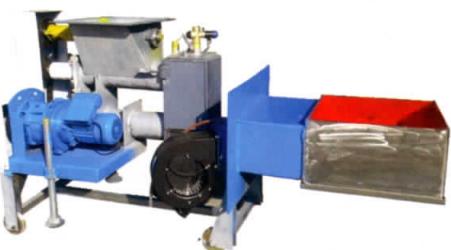
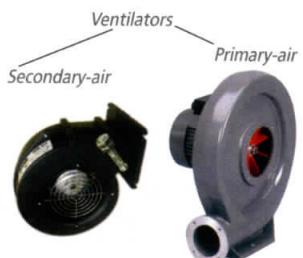
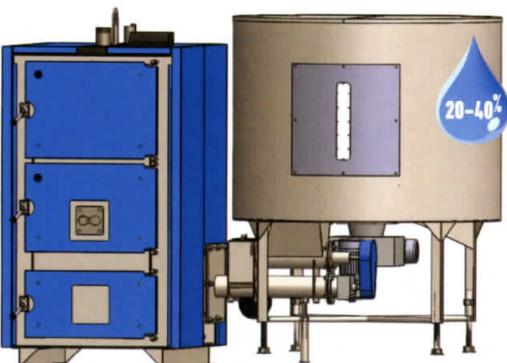
Furnace with cast iron moving elements

*... We use green energy ...we give energy solutions*

## BIOCHIP BOILER + BURNER



## BIOMIX BOILER + BURNER



Combustion technology



Cylindrical heat exchanger with fire-tubes



Fumes turbulators

## MULTIPLEX BOILER

### Function / Operation

MULTIPLEX is a solid fuel boiler (wood-coal-briquette or oil).

The use of ventilator helps the control of the combustion (the ventilator switches on/off, depending on the temperature of the hot water demanded, after command of room thermostat and hydrostat).

## SAFETY

It is necessary to install open-loop expansion tank, 2.5 bar safety valve and thermal valve. Close loop expansion tank can be used only when there is a buffer tank or an overheating protection system.



Biomass burner



Cast iron grates

- We recommend the use of hot water storage tank for better efficiency and fuel savings with a ratio of minimum 15 litres per kW.

Buffer

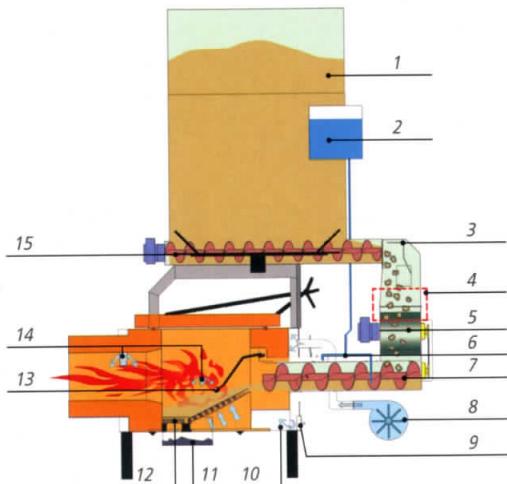
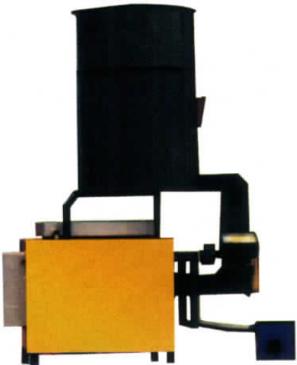
## WOOD CHIPS COMBUSTION TECHNOLOGY



Money saving   
Quick investment payback

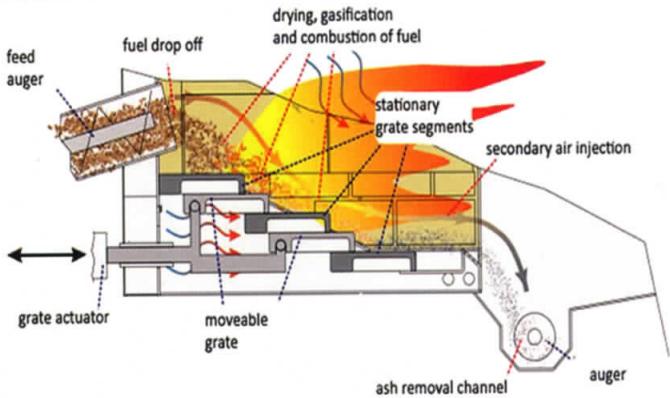


### External Combustion Biomass Boiler



1. Hopper
2. Fire suppression water tank
3. Rotary valve jam sensor
4. Motor
5. Rotary valve
6. Temperature sensor
7. Lower feeding auger
8. Air combustion blower
9. Access hatch for ash removal
10. Primary air path
11. Side access hatch for ash removal
12. Grates
13. Fuel overload sensor
14. Secondary air inlets
15. Hopper auger

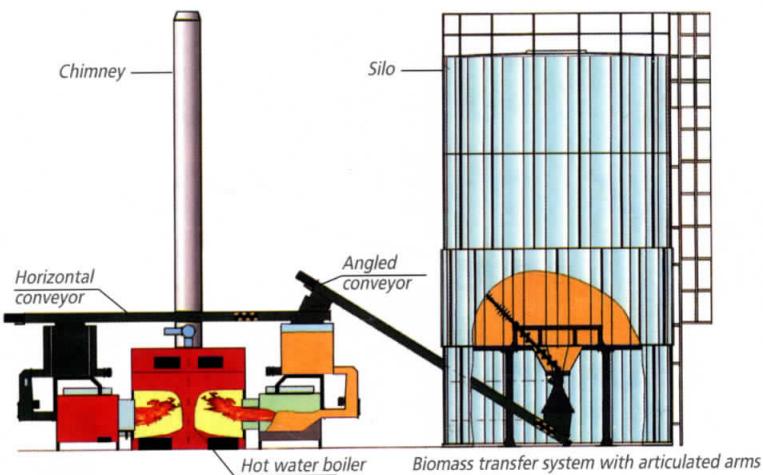
### Automated Waste-wood Combustion Set



Moveable grate system to burn special fuels (agri waste, contaminated fuel and high ash content)



External combustion wood-chips boiler+ feeding system





... In harmony with mother nature

## BIOCHIPS BURNERS

Dimensions- Technical characteristics

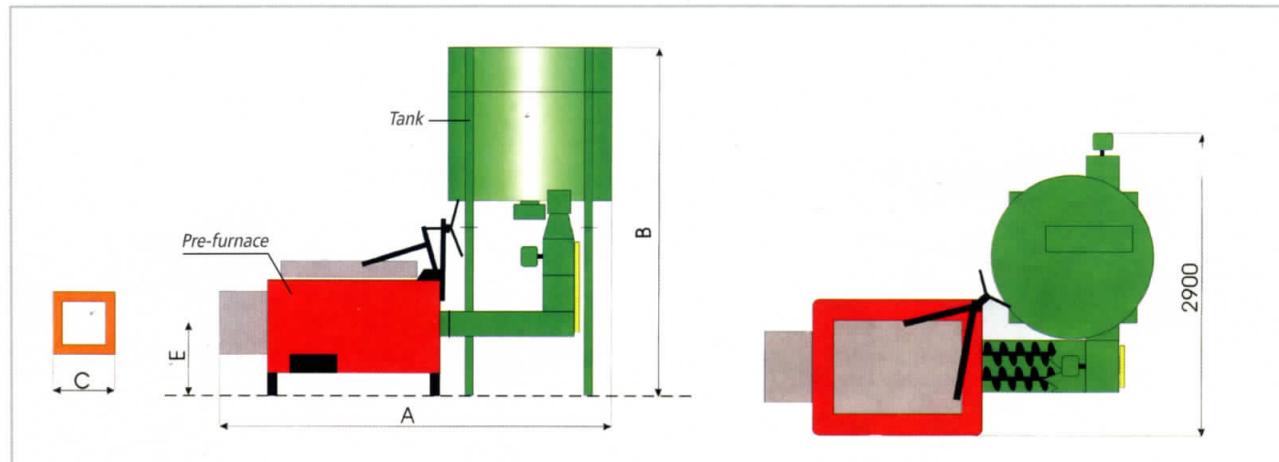
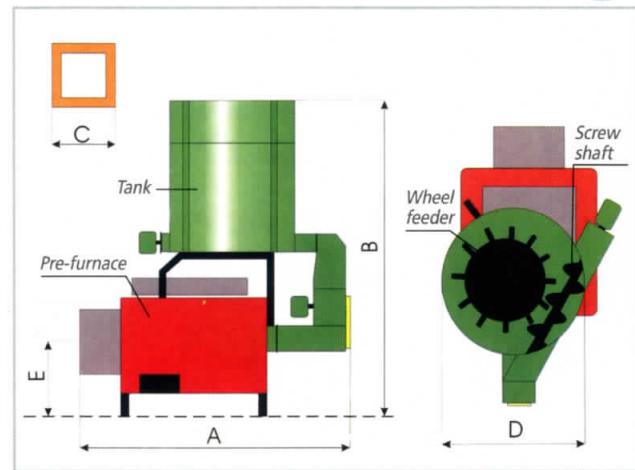
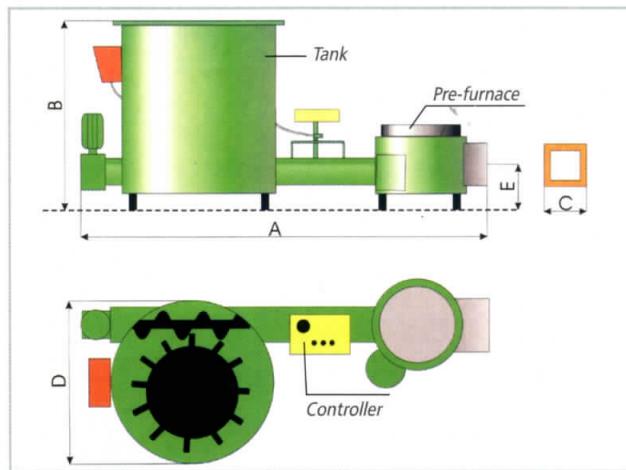
The above data is indicative and may change without warning, if it is required by new improvements.

Type AZSD	50	100	180	250	500	1000	2000	
Nominal heating power kW	50	100	180	250	500	1.000	2.000	
Nominal heating power kcal/h	43.000	86.000	154.000	215.000	430.000	860.000	1.720.000	
Fuel consumption kg/h	22	43	77	108	217	430	860	
Fuel consumption mp/dob	2,10	4,12	2,3	10,30	20,80	41,20	82,40	
Tank capacity m³	0,65	0,65 / 1,5	1,7	2,3	2,3	4,4	4,4	
Fuel consumption kW/h	0,6	1,0	1,5	1,8	2,8	4,2	8,0	
Supply voltage V	220 / 380	220 / 380	220 / 380	220 / 380	220 / 380	220 / 380	220 / 380	
Gas outlet temperature °C	ca. 1000°C before the heat exchanger				ca. 200°C after the heat exchanger			
Conjugated boiler	Water boiler of similar heating power							
Weight kg	320	450	1.820	2.300	3.500	5.000	7.000	
Length (A)	2.690	2.840/3.050	2.860	2.670	2.990	3.100	3.400	
Height (B)	1.360	1.360/1.460	3.200	3.410	3.670	3.930	4.260	
Side flue width (C) mm	245	300	450	600	750	950	1.100	
Tank diameter (D)	750	750/1.310	1.310	1.310	1.310	1.750	2.000	
Dimension E	360	390	640	730	850	930	1.050	

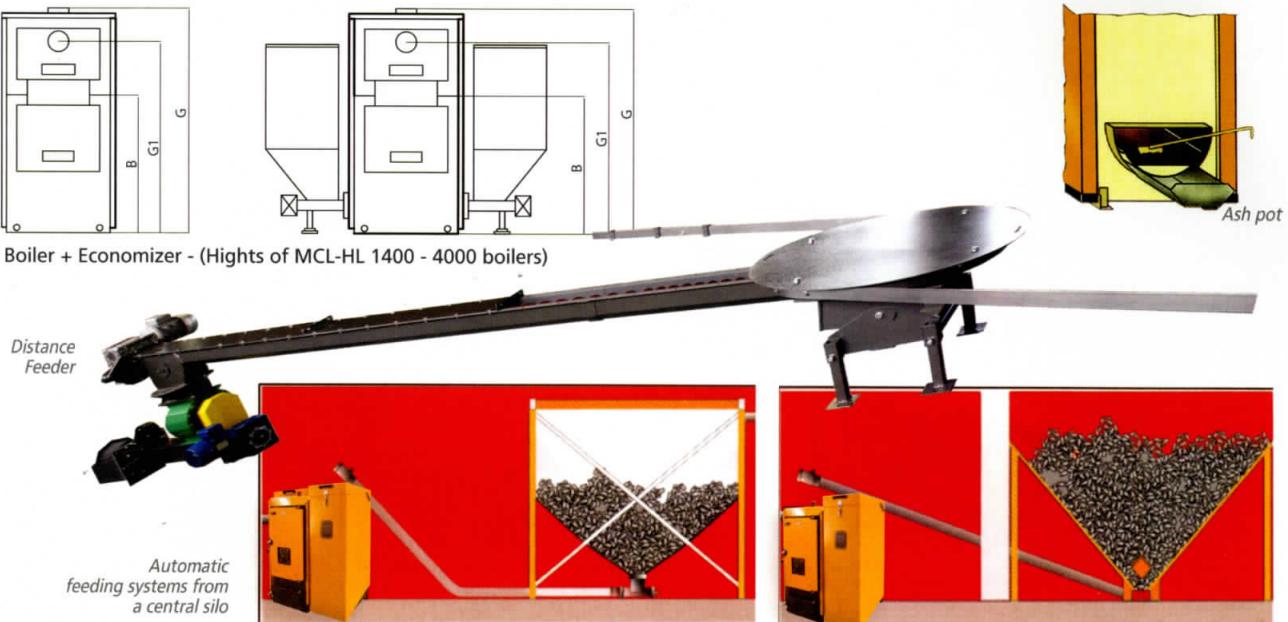
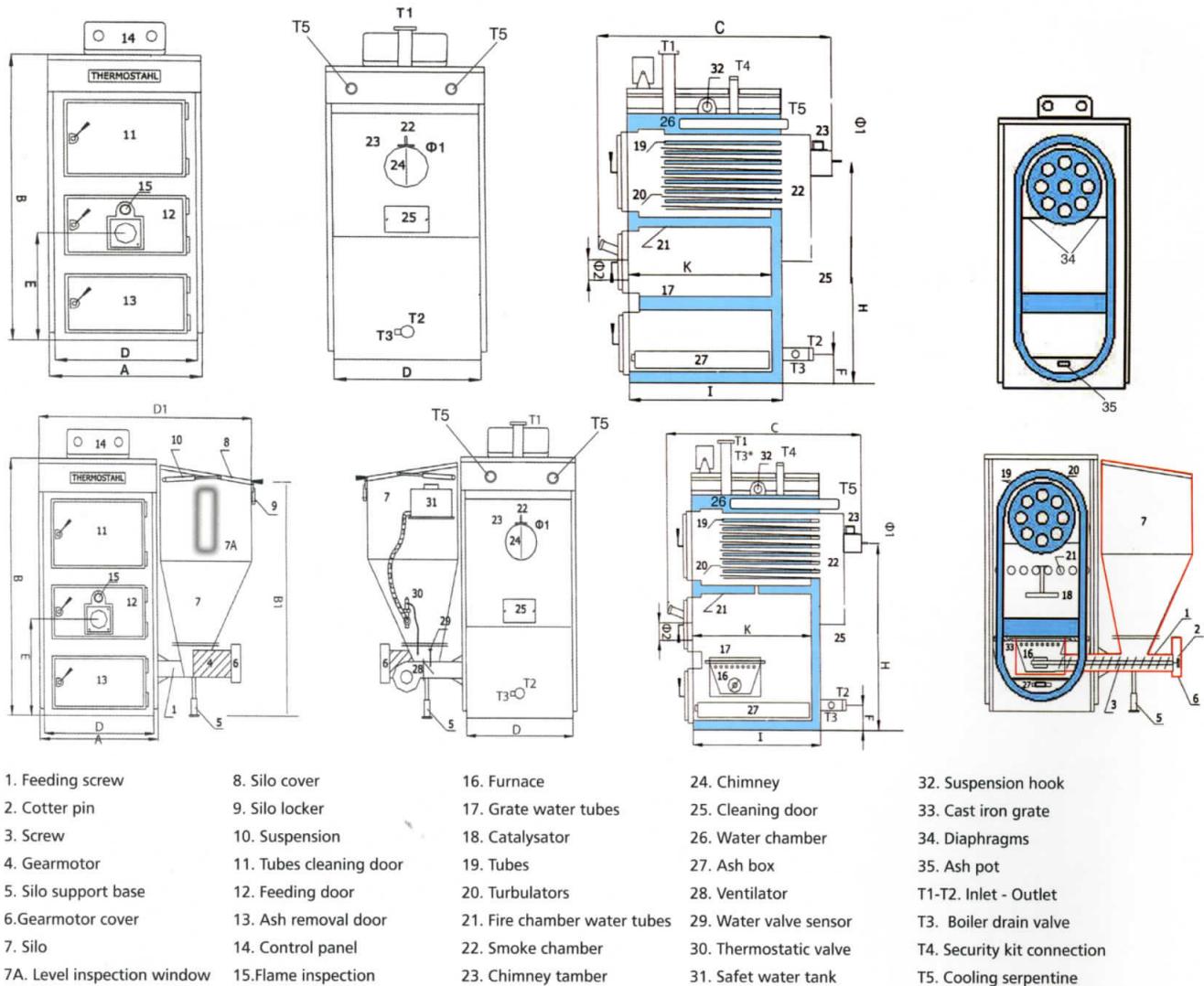
If the fuel is of other humidity (eg. too dry), sprinkle it with water or mix with humid one. Burning of excessive dry fuel causes quick wear of lining, grate and feeder. Furthermore, the Manufacturer does not agree for burning of comminuted wood if the dust content is greater than 5%. Non-observance of above-mentioned principles may cause quick wear of the device and emission of harmful combustion products for what the Manufacturer takes no responsibility.



**WOOD CHIPS - BIOMASS**  
...The fuel of the future



# MULTIPLEX - BIOPLEX - BIODROP -BIOMIX - BIOCHIPS - COMBISTAR - BOILERS



**Dimensions- Technical characteristics of BIOPLEX - BIODROP -  
COMBISTAR - MULTIPLEX - BIOMIX - BIOCCHIPs boilers**



Type	Power kW	A	B	Bf	C	D	DI	E	F	G	GI	H	I	K	Φ1	Φ2	T1-T2	T3	T4	T5	Op. Pres. bar	Man Wood's Length mm	Aliment. Door mm	Water Content MCL %	Heated Weight kg	Weight HL kg	Silos Volume m³	Motor kW	Ventilator kW	Jurnel shaft size mm	Required Fines size mm	Size of mineral ash					
<b>18</b>	<b>18</b>	<b>15.5</b>	<b>545</b>	<b>1.200</b>	<b>1.290</b>	<b>820</b>	<b>490</b>	<b>1.150</b>	<b>550</b>	<b>110</b>	-	<b>900</b>	<b>500</b>	<b>470</b>	<b>175</b>	<b>111</b>	<b>1/2"</b>	<b>1"</b>	<b>3/4"</b>	<b>2</b>	<b>400</b>	<b>710x380</b>	<b>85</b>	<b>2.9</b>	<b>230</b>	<b>350</b>	<b>0.18</b>	<b>1</b>	<b>0.10</b>	<b>250</b>	<b>1</b>	<b>20</b>	<b>80</b>	<b>2</b>	<b>25</b>	<b>4</b>	
<b>23</b>	<b>23</b>	<b>20</b>	<b>545</b>	<b>1.200</b>	<b>1.290</b>	<b>920</b>	<b>490</b>	<b>1.150</b>	<b>550</b>	<b>110</b>	-	<b>900</b>	<b>600</b>	<b>570</b>	<b>175</b>	<b>111</b>	<b>1/2"</b>	<b>1"</b>	<b>3/4"</b>	<b>2</b>	<b>500</b>	<b>710x380</b>	<b>95</b>	<b>3.2</b>	<b>255</b>	<b>335</b>	<b>0.18</b>	<b>1</b>	<b>0.10</b>	<b>250</b>	<b>1</b>	<b>20</b>	<b>120</b>	<b>2</b>	<b>30</b>	<b>6</b>	
<b>35</b>	<b>35</b>	<b>30</b>	<b>545</b>	<b>1.200</b>	<b>1.290</b>	<b>1.020</b>	<b>490</b>	<b>1.150</b>	<b>550</b>	<b>110</b>	-	<b>900</b>	<b>700</b>	<b>670</b>	<b>175</b>	<b>111</b>	<b>1/2"</b>	<b>1"</b>	<b>3/4"</b>	<b>2</b>	<b>600</b>	<b>710x380</b>	<b>105</b>	<b>3.5</b>	<b>280</b>	<b>360</b>	<b>0.18</b>	<b>1</b>	<b>0.10</b>	<b>250</b>	<b>1</b>	<b>20</b>	<b>180</b>	<b>3</b>	<b>35</b>	<b>9</b>	
<b>47</b>	<b>47</b>	<b>40</b>	<b>545</b>	<b>1.200</b>	<b>1.290</b>	<b>1.120</b>	<b>490</b>	<b>1.150</b>	<b>550</b>	<b>110</b>	-	<b>900</b>	<b>800</b>	<b>770</b>	<b>175</b>	<b>111</b>	<b>1/2"</b>	<b>1"</b>	<b>3/4"</b>	<b>2</b>	<b>700</b>	<b>710x380</b>	<b>115</b>	<b>4.0</b>	<b>300</b>	<b>420</b>	<b>0.18</b>	<b>1</b>	<b>0.10</b>	<b>250</b>	<b>1</b>	<b>20</b>	<b>240</b>	<b>4</b>	<b>40</b>	<b>12</b>	
<b>58</b>	<b>58</b>	<b>50</b>	<b>60</b>	<b>1.280</b>	<b>1.550</b>	<b>950</b>	<b>620</b>	<b>1.400</b>	<b>630</b>	<b>120</b>	-	<b>950</b>	<b>600</b>	<b>580</b>	<b>195</b>	<b>111</b>	<b>1/2"</b>	<b>1"</b>	<b>3/4"</b>	<b>2</b>	<b>500</b>	<b>730x500</b>	<b>140</b>	<b>4.5</b>	<b>330</b>	<b>450</b>	<b>0.25</b>	<b>1</b>	<b>0.10</b>	<b>350</b>	<b>1</b>	<b>23</b>	<b>300</b>	<b>5</b>	<b>45</b>	<b>15</b>	
<b>69</b>	<b>69</b>	<b>60</b>	<b>60</b>	<b>1.280</b>	<b>1.550</b>	<b>1.050</b>	<b>620</b>	<b>1.400</b>	<b>630</b>	<b>120</b>	-	<b>950</b>	<b>700</b>	<b>680</b>	<b>195</b>	<b>111</b>	<b>1/2"</b>	<b>1"</b>	<b>3/4"</b>	<b>2</b>	<b>600</b>	<b>730x500</b>	<b>160</b>	<b>5.0</b>	<b>370</b>	<b>490</b>	<b>0.25</b>	<b>1</b>	<b>0.10</b>	<b>350</b>	<b>1</b>	<b>23</b>	<b>350</b>	<b>6</b>	<b>52</b>	<b>17</b>	
<b>81</b>	<b>81</b>	<b>70</b>	<b>70</b>	<b>1.280</b>	<b>1.550</b>	<b>1.150</b>	<b>620</b>	<b>1.400</b>	<b>630</b>	<b>120</b>	-	<b>950</b>	<b>800</b>	<b>780</b>	<b>245</b>	<b>111</b>	<b>2"</b>	<b>1/2"</b>	<b>1"</b>	<b>3/4"</b>	<b>2</b>	<b>700</b>	<b>730x500</b>	<b>180</b>	<b>5.5</b>	<b>400</b>	<b>530</b>	<b>0.25</b>	<b>1</b>	<b>0.10</b>	<b>350</b>	<b>1</b>	<b>23</b>	<b>410</b>	<b>7</b>	<b>65</b>	<b>20</b>
<b>93</b>	<b>93</b>	<b>80</b>	<b>60</b>	<b>1.280</b>	<b>1.550</b>	<b>1.250</b>	<b>620</b>	<b>1.400</b>	<b>630</b>	<b>120</b>	-	<b>950</b>	<b>900</b>	<b>880</b>	<b>245</b>	<b>111</b>	<b>2"</b>	<b>1/2"</b>	<b>1/4"</b>	<b>2</b>	<b>800</b>	<b>730x500</b>	<b>200</b>	<b>6.0</b>	<b>430</b>	<b>570</b>	<b>0.25</b>	<b>1</b>	<b>0.13</b>	<b>500</b>	<b>1</b>	<b>26</b>	<b>470</b>	<b>8</b>	<b>80</b>	<b>23</b>	
<b>116</b>	<b>116</b>	<b>100</b>	<b>110</b>	<b>1.280</b>	<b>1.550</b>	<b>1.350</b>	<b>620</b>	<b>1.400</b>	<b>630</b>	<b>120</b>	-	<b>950</b>	<b>1.000</b>	<b>980</b>	<b>245</b>	<b>111</b>	<b>2"</b>	<b>1/2"</b>	<b>1/4"</b>	<b>2</b>	<b>900</b>	<b>730x500</b>	<b>220</b>	<b>6.5</b>	<b>460</b>	<b>610</b>	<b>0.25</b>	<b>1</b>	<b>0.13</b>	<b>500</b>	<b>1</b>	<b>26</b>	<b>590</b>	<b>9</b>	<b>100</b>	<b>29</b>	
<b>130</b>	<b>128</b>	<b>110</b>	<b>60</b>	<b>1.280</b>	<b>1.550</b>	<b>1.600</b>	<b>620</b>	<b>1.400</b>	<b>630</b>	<b>120</b>	-	<b>950</b>	<b>1.250</b>	<b>1.200</b>	<b>245</b>	<b>111</b>	<b>2"</b>	<b>1/2"</b>	<b>1/4"</b>	<b>2</b>	<b>1100</b>	<b>730x500</b>	<b>270</b>	<b>8</b>	<b>530</b>	<b>690</b>	<b>0.25</b>	<b>1</b>	<b>0.13</b>	<b>500</b>	<b>1</b>	<b>26</b>	<b>650</b>	<b>10</b>	<b>110</b>	<b>32</b>	
<b>140</b>	<b>139</b>	<b>120</b>	<b>910</b>	<b>1.600</b>	<b>1.850</b>	<b>1.400</b>	<b>810</b>	<b>1.730</b>	<b>610</b>	<b>100</b>	-	<b>1.230</b>	<b>1.000</b>	<b>980</b>	<b>295</b>	<b>130</b>	<b>2"</b>	<b>3/4"</b>	<b>1/4"</b>	<b>2</b>	<b>900</b>	<b>625x370</b>	<b>290</b>	<b>8</b>	<b>590</b>	<b>850</b>	<b>0.37</b>	<b>1</b>	<b>0.13</b>	<b>500</b>	<b>1</b>	<b>26</b>	<b>710</b>	<b>10</b>	<b>120</b>	<b>35</b>	
<b>160</b>	<b>162</b>	<b>140</b>	<b>910</b>	<b>1.600</b>	<b>1.850</b>	<b>1.500</b>	<b>810</b>	<b>1.730</b>	<b>610</b>	<b>100</b>	-	<b>1.230</b>	<b>1.100</b>	<b>1.080</b>	<b>295</b>	<b>130</b>	<b>2 1/2"</b>	<b>3/4"</b>	<b>1/4"</b>	<b>2</b>	<b>1000</b>	<b>625x370</b>	<b>330</b>	<b>9</b>	<b>670</b>	<b>930</b>	<b>0.37</b>	<b>1</b>	<b>0.17</b>	<b>780</b>	<b>1</b>	<b>29</b>	<b>830</b>	<b>12</b>	<b>135</b>	<b>40</b>	
<b>190</b>	<b>186</b>	<b>160</b>	<b>910</b>	<b>1.600</b>	<b>1.850</b>	<b>1.650</b>	<b>810</b>	<b>1.730</b>	<b>610</b>	<b>100</b>	-	<b>1.230</b>	<b>1.250</b>	<b>1.230</b>	<b>295</b>	<b>130</b>	<b>2 1/2"</b>	<b>3/4"</b>	<b>1/4"</b>	<b>2</b>	<b>1150</b>	<b>625x370</b>	<b>380</b>	<b>10</b>	<b>780</b>	<b>1.050</b>	<b>0.37</b>	<b>1</b>	<b>0.17</b>	<b>780</b>	<b>1</b>	<b>29</b>	<b>950</b>	<b>14</b>	<b>155</b>	<b>46</b>	
<b>210</b>	<b>209</b>	<b>180</b>	<b>910</b>	<b>1.600</b>	<b>1.850</b>	<b>1.900</b>	<b>810</b>	<b>1.730</b>	<b>610</b>	<b>100</b>	-	<b>1.230</b>	<b>1.500</b>	<b>1.480</b>	<b>295</b>	<b>130</b>	<b>2 1/2"</b>	<b>3/4"</b>	<b>1/2"</b>	<b>2</b>	<b>1400</b>	<b>625x370</b>	<b>440</b>	<b>11</b>	<b>880</b>	<b>1.120</b>	<b>0.37</b>	<b>1</b>	<b>0.25</b>	<b>900</b>	<b>1</b>	<b>29</b>	<b>1.070</b>	<b>16</b>	<b>180</b>	<b>52</b>	
<b>230</b>	<b>233</b>	<b>200</b>	<b>910</b>	<b>1.600</b>	<b>1.850</b>	<b>2.150</b>	<b>810</b>	<b>1.730</b>	<b>610</b>	<b>100</b>	-	<b>1.230</b>	<b>1.750</b>	<b>1.700</b>	<b>295</b>	<b>130</b>	<b>3"</b>	<b>3/4"</b>	<b>1/2"</b>	<b>2</b>	<b>1600</b>	<b>625x370</b>	<b>500</b>	<b>13.5</b>	<b>980</b>	<b>1.220</b>	<b>0.37</b>	<b>1</b>	<b>0.25</b>	<b>900</b>	<b>1</b>	<b>32</b>	<b>1.200</b>	<b>18</b>	<b>200</b>	<b>58</b>	
<b>260</b>	<b>256</b>	<b>220</b>	<b>1.100</b>	<b>2.100</b>	<b>2.000</b>	<b>1.840</b>	<b>1.000</b>	<b>2.250</b>	<b>830</b>	<b>150</b>	-	<b>1.500</b>	<b>1.250</b>	<b>1.210</b>	<b>345</b>	<b>185</b>	<b>3"</b>	<b>1/4"</b>	<b>1/2"</b>	<b>1"</b>	<b>3</b>	<b>1100</b>	<b>860x550</b>	<b>520</b>	<b>16</b>	<b>1.060</b>	<b>1.350</b>	<b>0.37</b>	<b>3</b>	<b>0.25</b>	<b>1400</b>	<b>1</b>	<b>32</b>	<b>1.300</b>	<b>20</b>	<b>250</b>	<b>64</b>
<b>290</b>	<b>291</b>	<b>250</b>	<b>1.100</b>	<b>2.100</b>	<b>2.000</b>	<b>2.090</b>	<b>1.000</b>	<b>2.250</b>	<b>830</b>	<b>150</b>	-	<b>1.500</b>	<b>1.500</b>	<b>1.460</b>	<b>345</b>	<b>185</b>	<b>4"</b>	<b>1/4"</b>	<b>1/2"</b>	<b>1"</b>	<b>3</b>	<b>1350</b>	<b>860x550</b>	<b>640</b>	<b>17</b>	<b>1.310</b>	<b>1.600</b>	<b>0.37</b>	<b>3</b>	<b>0.37</b>	<b>1400</b>	<b>1</b>	<b>32</b>	<b>1.500</b>	<b>25</b>	<b>270</b>	<b>70</b>
<b>350</b>	<b>349</b>	<b>300</b>	<b>1.100</b>	<b>2.100</b>	<b>2.000</b>	<b>2.340</b>	<b>1.000</b>	<b>2.250</b>	<b>830</b>	<b>150</b>	-	<b>1.500</b>	<b>1.750</b>	<b>1.710</b>	<b>345</b>	<b>185</b>	<b>4"</b>	<b>1/4"</b>	<b>1/2"</b>	<b>1"</b>	<b>3</b>	<b>1600</b>	<b>860x550</b>	<b>760</b>	<b>22</b>	<b>1.560</b>	<b>1.850</b>	<b>0.37</b>	<b>3</b>	<b>0.37</b>	<b>1400</b>	<b>1</b>	<b>35</b>	<b>1.800</b>	<b>27</b>	<b>290</b>	<b>80</b>
<b>400</b>	<b>407</b>	<b>350</b>	<b>1.100</b>	<b>2.100</b>	<b>2.000</b>	<b>2.590</b>	<b>1.000</b>	<b>2.250</b>	<b>830</b>	<b>150</b>	-	<b>1.500</b>	<b>2.000</b>	<b>1.960</b>	<b>395</b>	<b>185</b>	<b>4"</b>	<b>1/4"</b>	<b>2"</b>	<b>1"</b>	<b>3</b>	<b>1800</b>	<b>860x550</b>	<b>880</b>	<b>27</b>	<b>1.830</b>	<b>2.120</b>	<b>0.37</b>	<b>3</b>	<b>0.37</b>	<b>1400</b>	<b>1</b>	<b>35</b>	<b>2.100</b>	<b>30</b>	<b>310</b>	<b>100</b>
<b>460</b>	<b>465</b>	<b>400</b>	<b>1.100</b>	<b>2.100</b>	<b>2.000</b>	<b>2.840</b>	<b>1.000</b>	<b>2.250</b>	<b>830</b>	<b>150</b>	-	<b>1.500</b>	<b>2.250</b>	<b>2.120</b>	<b>395</b>	<b>185</b>	<b>4"</b>	<b>1/4"</b>	<b>2"</b>	<b>1"</b>	<b>3</b>	<b>2000</b>	<b>860x550</b>	<b>1020</b>	<b>32</b>	<b>2.060</b>	<b>2.350</b>	<b>0.37</b>	<b>3</b>	<b>0.37</b>	<b>1400</b>	<b>1</b>	<b>38</b>	<b>2.400</b>	<b>32</b>	<b>330</b>	<b>120</b>
<b>580</b>	<b>581</b>	<b>500</b>	<b>1.590</b>	<b>2.400</b>	<b>2.050</b>	<b>2.580</b>	<b>1.490</b>	<b>2.640</b>	<b>980</b>	<b>210</b>	-	<b>1.800</b>	<b>1.750</b>	<b>1.650</b>	<b>495</b>	<b>265</b>	<b>DN100</b>	<b>1/4"</b>	<b>2"</b>	<b>1"</b>	<b>3</b>	<b>1550</b>	<b>1.230x580</b>	<b>1.150</b>	<b>34</b>	<b>2.780</b>	<b>3.170</b>	<b>0.55</b>	<b>3</b>	<b>0.55</b>	<b>2600</b>	<b>1</b>	<b>38</b>	<b>3.050</b>	<b>34</b>	<b>360</b>	<b>150</b>
<b>700</b>	<b>638</b>	<b>600</b>	<b>1.590</b>	<b>2.400</b>	<b>2.050</b>	<b>2.830</b>	<b>1.490</b>	<b>2.640</b>	<b>980</b>	<b>210</b>	-	<b>1.800</b>	<b>2.000</b>	<b>1.900</b>	<b>495</b>	<b>265</b>	<b>DN100</b>	<b>1/4"</b>	<b>2 1/2"</b>	<b>1"</b>	<b>3</b>	<b>1800</b>	<b>1.230x580</b>	<b>1.350</b>	<b>41</b>	<b>3.250</b>	<b>3.620</b>	<b>0.55</b>	<b>3</b>	<b>0.55</b>	<b>2600</b>	<b>1</b>	<b>42</b>	<b>3.600</b>	<b>36</b>	<b>380</b>	<b>180</b>
<b>750</b>	<b>756</b>	<b>650</b>	<b>1.590</b>	<b>2.400</b>	<b>2.050</b>	<b>2.830</b>	<b>1.490</b>	<b>2.640</b>	<b>980</b>	<b>210</b>	-	<b>1.800</b>	<b>2.250</b>	<b>2.150</b>	<b>495</b>	<b>265</b>	<b>DN100</b>	<b>1/4"</b>	<b>2 1/2"</b>	<b>1"</b>	<b>3</b>	<b>2050</b>	<b>1.230x580</b>	<b>1.500</b>	<b>48</b>	<b>3.650</b>	<b>4.080</b>	<b>0.55</b>	<b>3</b>	<b>0.55</b>	<b>2600</b>	<b>1</b>	<b>42</b>	<b>3.900</b>	<b>36</b>	<b>410</b>	<b>195</b>
<b>800</b>	<b>814</b>	<b>700</b>	<b>1.590</b>	<b>2.400</b>	<b>2.050</b>	<b>3.330</b>	<b>1.490</b>	<b>2.640</b>	<b>980</b>	<b>210</b>	-	<b>1.800</b>	<b>2.250</b>	<b>2.150</b>	<b>495</b>	<b>265</b>	<b>DN125</b>	<b>1/4"</b>	<b>2 1/2"</b>	<b>1"</b>	<b>3</b>	<b>2250</b>	<b>1.230x580</b>	<b>1.800</b>	<b>59</b>	<b>4.250</b>	<b>4.620</b>	<b>0.55</b>	<b>3</b>	<b>0.55</b>	<b>2600</b>	<b>1</b>	<b>42</b>	<b>4.200</b>	<b>38&lt;/</b>		



## BIODROP

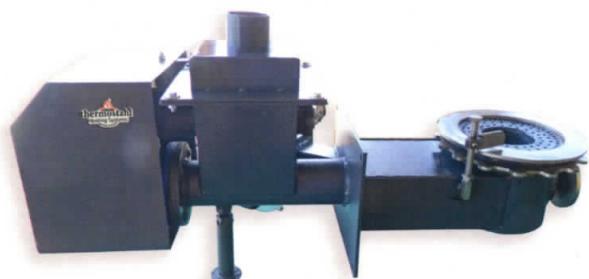
PELLET - BIOMASS - WOOD BOILERS from 18 to 580 kW with vertical flame

### Function/Operation

BIODROP boiler has two main characteristics:  
A) The reduced width of the unit, which is necessary for small boiler rooms and B) the advanced feeding screw, which combines all the advantages of a combustion system, forwarding and forfeiture, with high safety.

The screw of BIODROP is a combination of pellet dropping and forwarding.

Two motoreducers forward the fuel. The first one forwards biomass from the silo to the screw and the second one forwards it to the combustion chamber. These systems operate independently and they are controlled by the control panel and work simultaneously.



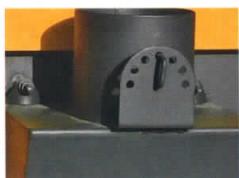
ESL-2-axis burner



Vertical flame



ESL - 3-axis burner



Draught regulation tamper



Feeding screw



Klinger Ash



Screw



Transaction system

## COMBISTAR

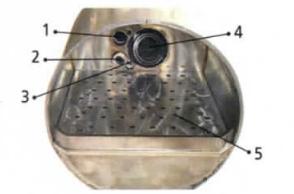


Horizontal flame

Complete wood-briquette heating system with integrated automatic pellet burner - horizontal flame

It combines the combustion of woods and fully automated pellet combustion with European burner. The silo offers an autonomy for 4-6 days. The boiler's efficiency with the pellet burner rises up to 90%. The feeding of the woods is being done through the middle door.

## WOOD - PELLET BOILERS



1. Hole photocell control
2. Hole superheated air outlet
3. Eyelet export pellets to the combustion chamber
4. Protective cover unburned pellets



Pellet burner  
Revo-Pellas



Pellet Burner Ecostahl TLA



Suction pot



## BIOVENT

### Biomass Hot Air Generator



#### Advantages

- AISI430 stainless steel combustion chamber
- Heat exchanger with gas tubes and exhaust gas chambers from St37-2. Insulated cover.
- Electronic controlled biomass burner (PLC). AISI430 stainless steel furnace.
- 1000 kg silo for biomass- olive stones or pellet
- High efficiency fans
- Complete electric-electronic control panel with specialized software
- Silo vibrator (integrated)
- Inverter fuel supply
- Adjustable feeding screw
- Control panel
- Feeder with motor and combustion air ventilator
- Feeder and combustion furnace
- 3m feeding screw, 0.37 kW motor
- Suitable for pellet, coal, corn, olive stones, wood chips



Ideal for burning: pellet, coal, corn, olive stones, wood chips.

*Solvent Air-boiler*

#### Technical characteristics

Type		BIOVENT 58	BIOVENT 69	BIOVENT 93	BIOVENT 140	BIOVENT 190	BIOVENT 230	BIOVENT 300	BIOVENT 350	BIOVENT 460	BIOVENT 580
Power	kW	58	69	93	140	186	232	290	350	465	580
	Kcal/h	50.000	60.000	80.000	120.000	160.000	200.000	250.000	300.000	400.000	500.000
Δt	°C	40	40	40	40	40	40	40	40	40	40
Ventilator supply	m³/h	4500	5500	7.000	8.500	10.000	12.000	15.000	20.000	26.000	32.000
Ventilator power	kW	0,56	0,75	1,1	2,25	3,0	4,5	5,25	7,5	2 x 4,5	2 x 5,25
Combustion air ventilator power	kW	0,10	0,10	0,17	0,17	0,25	0,37	0,55	0,75	0,75	1,50
Silo volume	lit	500	600	850	850	850	1.000	1.000	1.000	1.300	1.300
Boiler Dimensions	Width mm	750	750	900	900	900	1.100	1.100	1.100	1.100	1.100
	Length mm	950	1.150	1.000	1.150	1.250	1.250	1.500	1.800	2.200	2.600
	Height mm	2.000	2.200	2.200	2.400	2.400	2.560	2.560	2.560	2.560	2.560
Exhaust outlet	mm	200-230	200-230	200 - 250	200 - 250	200 - 250	200 - 250	200 - 250	200 - 250	200 - 250	200 - 250
Voltage	V	380	380	380	380	380	380	380	380	380	380
Weight	kg	310	390	460	650	780	1.000	1.200	1.300	1.500	1.800



*Control panel*



*- Feeder with motor and combustion air ventilator*



*Feeder and combustion chamber*





Economy



Ecology



Safety



Comfort

## The perfect combination

*- Heating system and Domestic Hot Water*

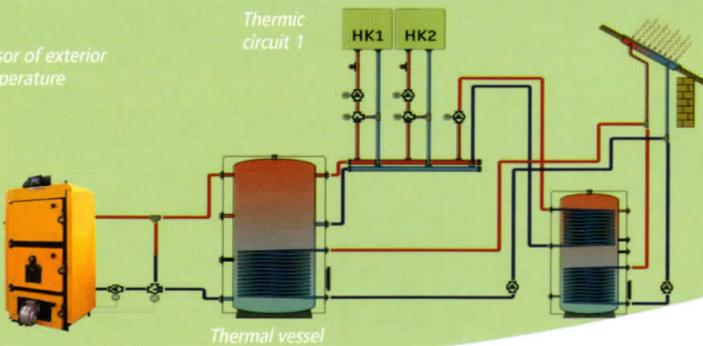
All devices cooperate perfectly together and offer high efficiency, eco-friendly performance, reliability, comfort and safety. They combine different energy sources (biomass, oil, solar energy) in order to save energy and reduce the emissions.



*Solid-fuel-boilers' installation scheme*

Sensor of exterior temperature

Thermic circuit 1



Modern  
Technology  
Equipment



Representative :