



# ORLIGNO 400

pellet boiler

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## Available types [kW]

16

24

**Do you think of a high-efficiency, low-emission automatic boiler?**

The **ORLIGNO 400** is a response to the ever-tightening of emissions and safety standards in a compromise with customer requirements, which comfort is our top priority.

**The compact set with a pellet tank** makes it easy to adapt to a small size boiler room. The solutions are easy to install and the boiler operation is simple and pleasant.

**Pellet** is a biomass fuel used to heat homes and other spaces. Due to its energy-efficiency and user-friendliness, it is one of the most energy efficient. It is also an ecological fuel - the carbon dioxide emissions during combustion are equal to the amount of carbon dioxide absorbed by the tree during its growth and the small amount of ash remaining after burning (less than 0.5% for pellets made from untreated deciduous trees).

**Pellet** is one of the most popular biomass-based fuels. It is generally produced from coniferous sawdust with a percentage of sawdust from deciduous trees. Pellet diameters range from 4 to 10mm and length **50mm**.

### Fuel



pellet

### Use



small/semi  
detached house



detached  
house



## Pellet advantages:

- Highest calorific value in biomass ( $\geq 18 \text{ MJ/kg}$ ).
- Low moisture content ( $\leq 10\%$ ).
- Low ash and sulphur content ( $S_r \leq 0,04\%$ ,  $A_r \leq 0,5\%$ ).
- High density ( $\geq 1,12 \text{ kg/dm}^3$ ).
- Pellets are efficient, low cost and ecological.

## Energy performance of pellets:

- § 2.0 kg of pellets replaces 1 liter of fuel oil,
- § 1 ton of burned pellets is about 4 kg - a change of fuel to pellets means a reduction of 2.5 kg of  $\text{CO}_2$  on every liter of fuel oil saved,
- § 2 cubic meters of wood is 5 meters spatial wood chips, and this gives 1 ton of pellets,
- § approx. 5-8 tons per year for the heating season of the pellet. Consumption depends on the size, insulation used and efficiency of the boiler.

## Energy-emission parameters:

| Factor                   | Type of boiler    | Orligno 400 16 |      | Orligno 400 30 |
|--------------------------|-------------------|----------------|------|----------------|
|                          | Unit              | 16kW           | 24kW |                |
| Useful efficiency        | %                 | 85,4           | 86,1 |                |
| Seasonal efficiency      | %                 | 81,0           | 81,4 |                |
| EEl                      |                   | 119            | 120  |                |
| Energetic class          |                   | A+             | A+   |                |
| Average fuel usage       | kg/h              | 2,25           | 3,51 |                |
| CO (10% $\text{O}_2$ )   | mg/m <sup>3</sup> | 221            | 202  |                |
| OGC (10% $\text{O}_2$ )  | mg/m <sup>3</sup> | 14             | 6    |                |
| Dust (10% $\text{O}_2$ ) | mg/m <sup>3</sup> | 14             | 16   |                |
| NOX (10% $\text{O}_2$ )  | mg/m <sup>3</sup> | 161            | 179  |                |

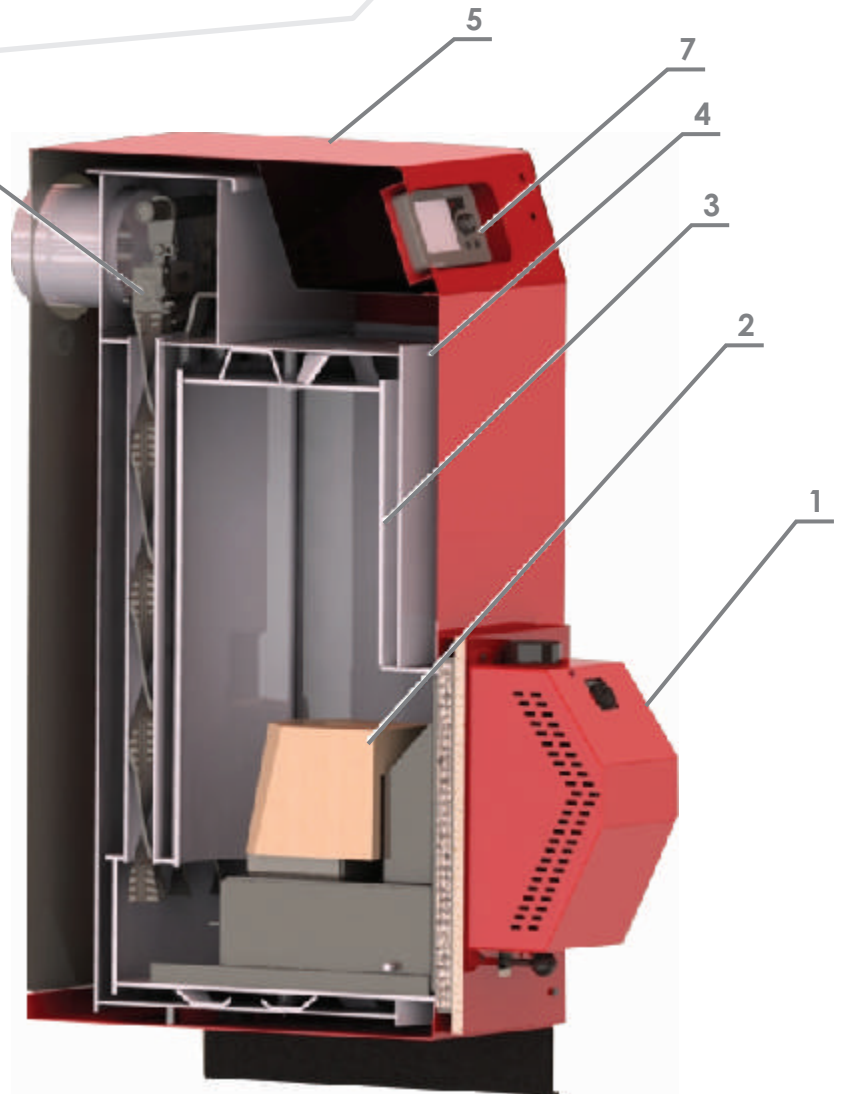


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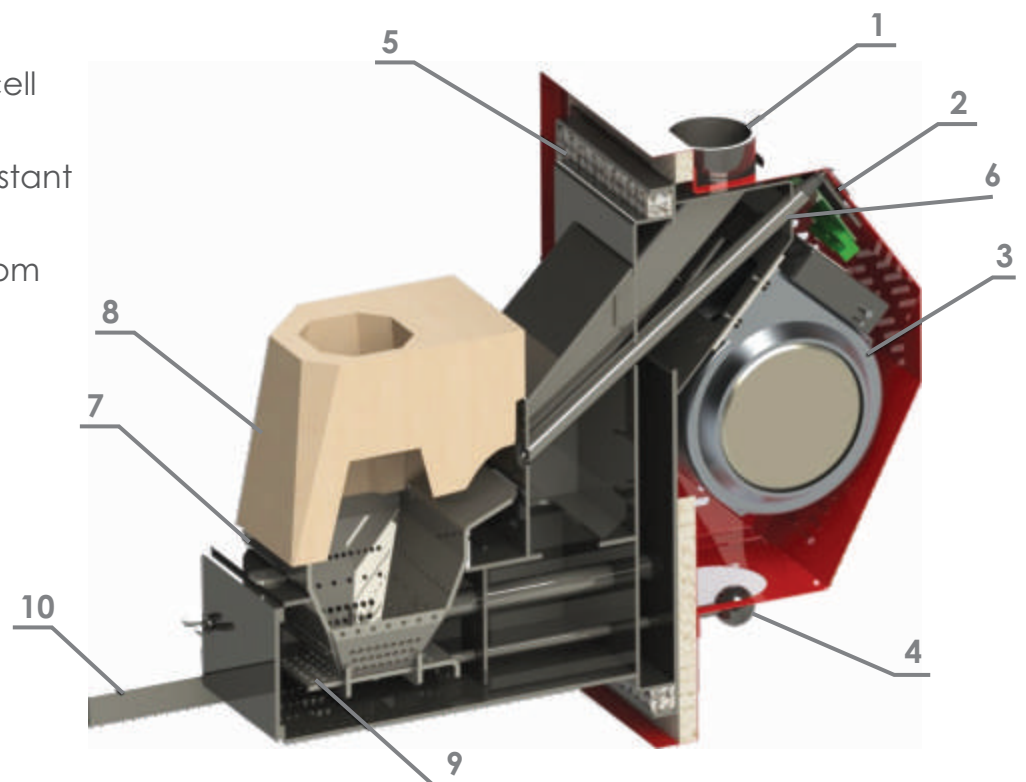
## Boiler section

1. Burner
2. Burner moulder
3. Internal boiler body made of 5 mm steel P265GH
4. External boiler body 3 mm
5. Cleaning mechanism lever
6. Twisted cleaning mechanism
7. Multifunctional controller



## Burner section

1. Inlet pipe
2. Burnersocket
3. Fan
4. Burner cleaning lever
5. Fibre glass sealant
6. Metal pipe for photocell
7. Steel basket
8. High temperature resistant burner moulder
9. Movable basket bottom
10. Slide





## Burner features

Thanks to the special ceramic mould, the fuel is burned with higher efficiency than other types of similar constructions. The choice of materials and the shape of the ceramics contribute to reducing CO and NOx emissions by as much as 20%.

The technology used in the burner, such as two-zone secondary airflow, cooled fuel chute, electronic fan failure protection, optimized flame retention, and easy maintenance and cleaning make the burner a unit that efficiently utilizes all the benefits of a cylindrical heat exchanger in the Origno 400. While working on the new incarnation of the Origno 400 boiler, it was not just about obtaining the best energy-emission specifications, but also increasing comfort and safety.

## Boiler features

- Fully equipped controller
- Modern and compact design
- Availability of three sizes of pellet tanks
- Innovative fire protection for the burner
- Easy installation thanks to standard EURO current connectors
- Cylindrical burning chamber provides effective heat exchange
- Technical Support (remote HELPDESK driver in Ethernet function)
- Meets most rigorous EU standards: Ecodesign, 5th class EN 303-5: 2013
- The possibility of double-sided installation of the tank and cleaning mechanism

The goal has been reached which confirms compliance with EN ISO 12100 safety standard.

# ORLIGNO 400

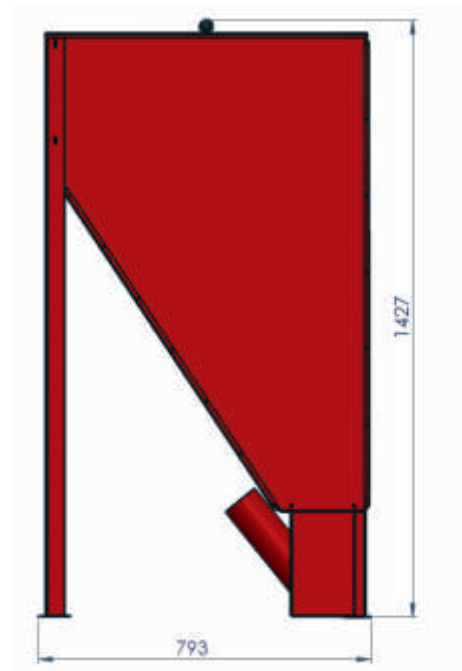
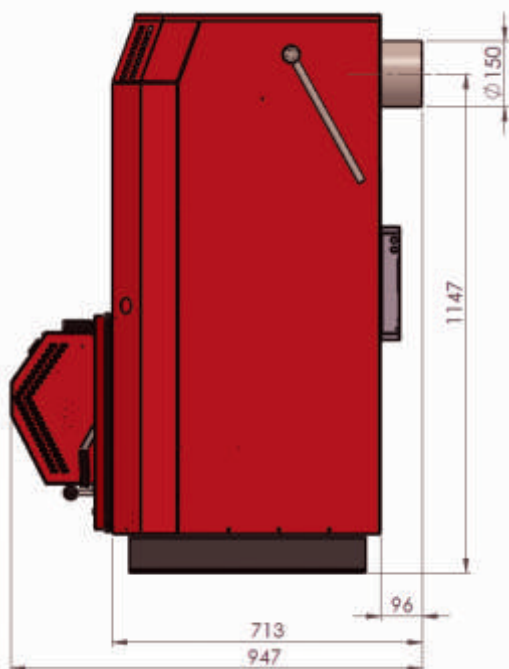
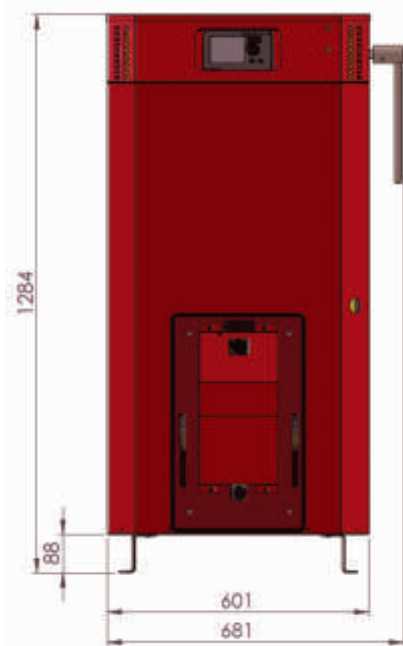
pellet boiler

## Technical data

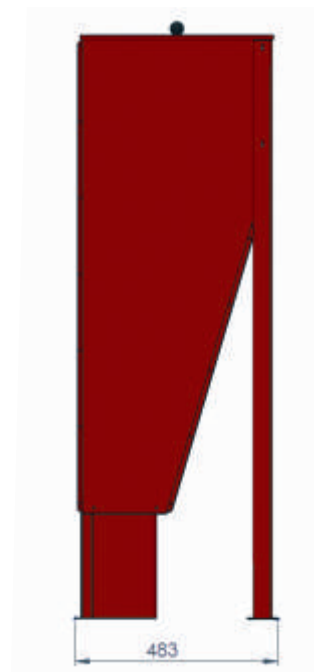
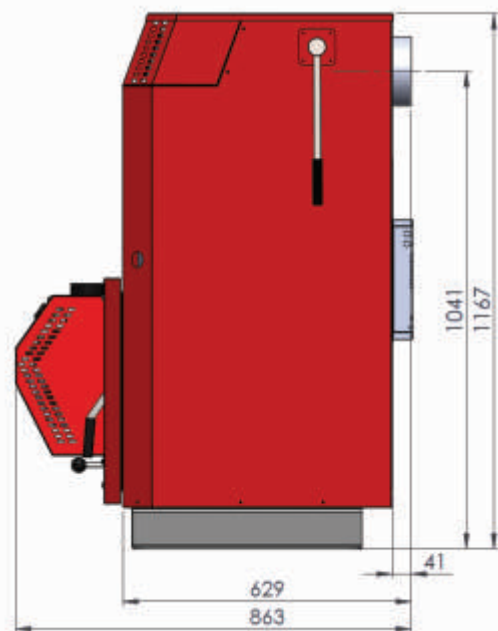
| Factor   | Unit            | Type of boiler                  |                 |
|--|-----------------|---------------------------------|-----------------|
|  |                 | Orligno 400 16                  | Orligno 400 30  |
| Nominal power                                  | kW              | 16                              | 24              |
| Minimal power                                  | kW              | 4,8                             | 7,2             |
| Efficiency for nominal power                   | kW              | 92,2                            | 92,8            |
| Efficiency for minimal power                   | kW              | 91,5                            | 91,5            |
| Boiler class (EN 303-5: 2013)                  | -               | 5                               | 5               |
| ECODESIGN                                      | kW              | Yes                             | No              |
| Boiller weight                                 | kg              | 280                             | 350             |
| Water capacity                                 | dm <sup>3</sup> | 49                              | 49              |
| Water capacity                                 | L               | 49                              | 57              |
| Fuel   | -               | wood pellets-C1                 | wood pellets-C1 |
| Fuel tank capacity                             | L               | 450                             | 450             |
| Max load height in the fuel tank               | mm              | 1405                            | 1405            |
| Charging hole diameter                         | mm              | 64                              | 64              |
| Burning period nominal power                   | h               | 105                             | 66              |
| Fuel consumption for nominal power             | kg/h            | 3,5                             | 5,6             |
| Fuel consumption for minimal power             | kg/h            | 1,05                            | 1,6             |
| Max working pressure                           | bar             | 2,5                             | 2,5             |
| Max output water temperature                   | °C              | 85                              | 85              |
| Temperature setting range                      | °C              | 60-85                           | 60-85           |
| Minimal return water temperature               | °C              | 60                              | 60              |
| Flow resistance $t = 20$ K                     | mbar            | 3,5                             | 5,6             |
| Flow resistance $t = 10$ K                     | mbar            | 1,2                             | 1,4             |
| Protection level of controller                 | -               | Ip40                            | Ip40            |
| Voltage/Frequency/Current                      | V/Hz/A          | 230/50/0,11                     | 230/50/0,13     |
| Power consumptiono at standy                   | W               | 2                               | 2               |
| Auxiliary power (Q nominal)                    | W               | 26                              | 28              |
| Auxiliary power (Q minimal)                    | W               | 15                              | 17              |
| Noisness emissions (acc.to. EN ISO 12100:2010) | dB              | < 60                            | < 60            |
| Exhaust gases temp. for nominal power          | °C              | 94                              | 111             |
| Exhaust gases temp. for minimal power          | °C              | 65                              | 75              |
| Exhaust gases stream for nominal power         | kg/s            | 0,01                            | 0,015           |
| Exhaust gases stream for minimal power         | kg/s            | 0,004                           | 0,006           |
| Required chimney draft                         | mbar            | 0,076                           | 0,09            |
| Required chimney draft                         | Pa              | 7,6                             | 9               |
| Boiler operation conditions at nominal power   | -               | underpressure / no condensation |                 |

# Dimensions

## ORLIGNO 400 16kW



## ORLIGNO 400 24kW



# Controller

- Controller handling is simple and intuitive. User interference has been minimized,
- Display information. Quick instructions are no longer needed because basic hints appear on the screen,
- Change and software update is available in all modules of MultiFun control,
- Modern internet platform for remote management of MULTIFUN controllers.



With the help of any browser you can observe the operation of the boiler and the entire heating. There are two visualizations of the heating system in the building:



In addition, it is easy to change the temperature of central heating, hot domestic water and to launch additional functions:

The "shower" function will instantly warm up the H.D.W tank.



Holidays fall in the middle of the week - no need to change the program, turn on the "comfort".



Daily ventilation does not mean heat loss, use the "air" function and the heating will be switched off for 30 minutes.



Vacation in the mountains - activate the antifreeze mode. After having fun on the slope, do not forget to turn it off so the boiler can warm up your house.



The "party" function will provide warmth during social meetings in your home.



In the event of a defect or lack of fuel, the system automatically sends an e-mail message to your mailbox.



[www.cranp-kovo.cz](http://www.cranp-kovo.cz)



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