

**BNTET**<sup>®</sup>

## Biomass Burner Product Manual



## **ABOUT BNTET®**



Zhengzhou Bona Heat Energy Equipment Co., Ltd is an innovative technology enterprise, which is focusing on the production, R & D and technical consulting services of burners, burner accessories, hot air furnace, and boiler related products.

Zhengzhou Bona Heat Energy Equipment Co., Ltd upholds the development and innovation consciousness, produces products with high-performance combustion technology.

### **Main Products:**

Gas Burner;

Oil Burner(Diesel/Light Oil Burner, Heavy Oil Burner);

Dual Fuel Burner(Diesel/Light Oil or Gas, Heavy Oil or Gas);

Multi Fuel Burner;

Low NOx Burner;

Coal Burner;

Rotary Kiln Burner;

Asphalt Mixing Plant Burner;

Hot Air Furnace, etc.

### **Applicable Industries:**

1. Cement and Mining: rotary kiln equipment, drying application.
2. Energy: boiler equipment, hot air furnace / hot blast stove.
3. Metal: steel, aluminum, copper, forging and heat treatment equipment.
4. Petroleum and Natural Gas: petrochemical furnaces, oil refinery, oil and gas plant process equipment (tracer, industrial burner).
5. Asphalt Mixing Plant, Incinerator, Foundry Machinery, Industrial Stoves, and other thermal machinery supporting equipment.

Company qualification Obtained patent



## Characteristics of biomass pellet fuel

Biomass fuel is a cleaner environmentally friendly new energy produced by processing straw, rice straw, rice husk, peanut husk, corn cob, camellia husk, cottonseed husk, etc. and the "three remnants". The diameter of biomass particles is generally 6-10 mm.

Biomass molding fuel uses agricultural and forestry wastes as raw materials, through processes such as pulverization, mixing, extrusion, and drying, into various moldings (such as blocks, granules, etc.), a new type of clean fuel that can be directly burned.



**Particles**



**Wood chips**



**Briquetting**



**Bark**

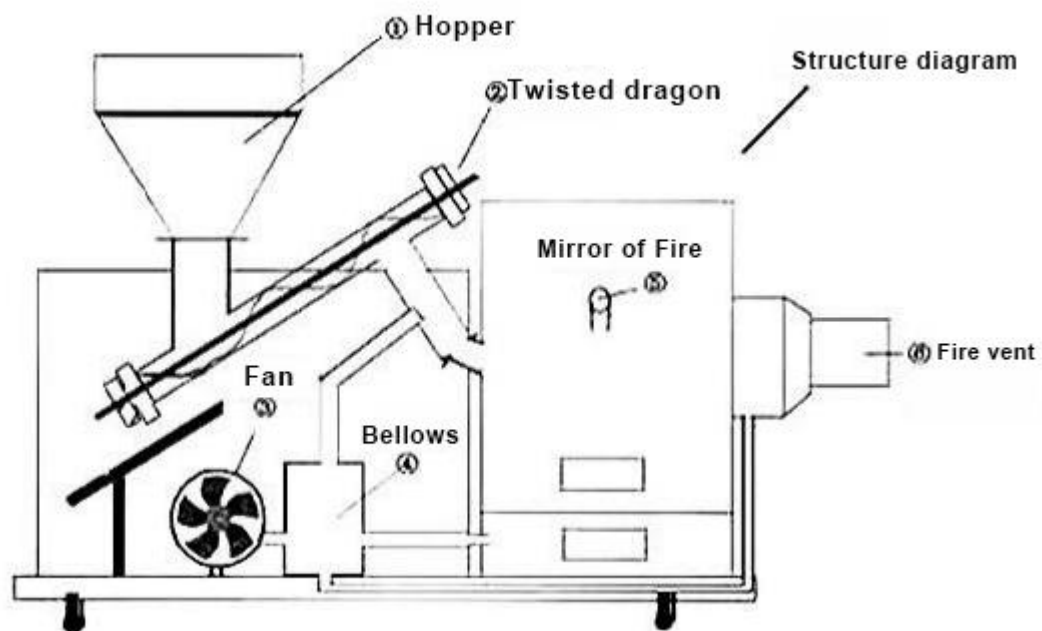
Biomass briquette fuel, mostly stem-shaped crops, peanut shells, bark, sawdust, and solid waste (furfural residue, edible fungus residue, etc.) are processed into block fuels. The diameter of biomass pellet fuel is generally 6-10 Mm, the length is 4-5 times its diameter, the crushing rate is less than 1.5%-2.0%, the dry basis water content is less than 10%-15%, the ash content is less than 1.5%, the sulfur content and the chlorine content are both less than 0.07%, and the nitrogen content Less than 0.5%.

The EU standard does not provide specific values for the calorific value of biomass pellets, but requires sellers to label them. The Swedish standard requires that the calorific value of biomass particles should generally be greater than 16.9 MJ. The calorific value of domestic biomass pellets is usually 3000~5000kcal/kg.

## Working principle of biomass burner

Biomass pellet burner is a semi-gasification automatic and intelligent operation burner device using renewable biomass pellets as fuel.

Its working principle: the biomass pellet fuel enters the high-temperature gasification chamber through the automatic feeding system for cracking. After the cracking reaction, sensible heat and intermediate products  $H_2$ ,  $C_nH_m$ ,  $Co$ ,  $CH_4$  and other high-temperature gas components are generated. The air supply system is supplied from the bottom of the furnace. The fuel gas components directly enter the high-temperature combustion chamber with sufficient oxygen through the gas nozzle for complete combustion and release latent heat.



### Biomass burner advantages:

1. High-efficiency and energy-saving: Renewable biomass pellet fuel is used as energy source, with low cost, and fuel (gas) reduces operating costs by 30%-60%.
2. High thermal efficiency: semi-gasification suspension combustion plus tangent a swirling air distribution design, low-temperature segmented combustion, burnout rate of over 98%, and furnace temperature of over  $1200^{\circ}C$ .
3. Stable and reliable: micro-positive pressure operation, silo isolation transportation method, no backfire and off-fire phenomenon, has applied for national invention patent.
4. Low-carbon and environmentally friendly: low smoke, sulfur and nitrogen emissions, and close to zero carbon dioxide emissions, which meets the GB12371 smoke and dust emission requirements.
5. Simple operation: easy installation, automatic feeding, simple operation, small workload, large silo capacity (large-capacity silo can be customized). Feeding can run for 3-12 hours at a time, just fill up the silo in a timely manner, and you can be on duty alone.
6. Frequency conversion control automatic feeding, automatic control of fan inlet, PLC touch screen control system, visual management.



Model	Heating Power (kcal/h)	Motor Power (kW/h)	For Boiler (Ton)	Fuel Consumption (Kgs/h)	Oversize (mm)	Weight (Ton)
BNBP 20	200,000	2.05	0.2-0.3	50	1670X670X1700	0.5
BNBP 45	450,000	2.05	0.5-0.75	100	1900X850X2100	0.9
BNBP 90	900,000	3.75	1-1.5	200	2280X920X1850	1.5
BNBP 120	1,200,000	6.8	2	266	2450X1020X1980	1.86
BNBP 180	1,800,000	7.5	3	400	2700X1190X2100	2.64
BNBP 240	2,400,000	10	4	533	3050X1400X2300	3.1
BNBP 300	3,000,000	12	5	667	3200X1600X2600	4.3
BNBP 360	3,600,000	14	6	800	3850X1785X2720	4.8
BNBP 480	4,800,000	19.5	8	1066	4100x1800x3900	7
BNBP 600	6,000,000	22	10	1335	4500x2200x4300	9
BNBP 900	9,000,000	37	15	2000	5800x2600x4600	11

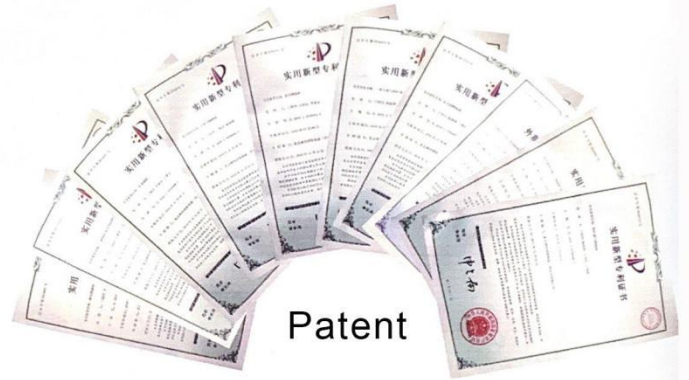
## PLC Touch Screen Control System



**Why choose us?**

**What honors and qualifications have we obtained?**

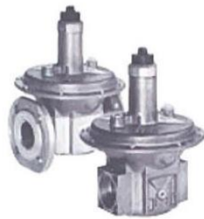
Obtained the national high-tech enterprise, energy-saving emission reduction technology innovation demonstration enterprise  
8 invention patents, 22 utility patents, 35 model type test report certificates



**HIGH-QUALITY ACCESSORIES GUARANTEE QUALITY**



SIEMENS SERVO MOTOR



GERMANY DUNGS PRESSURE REGULATOR



GERMANY DUNGS SOLENOID VALVE



SIEMENS PROGRAM CONTROLLER



CERAMIC CRAFT IGNITION ROD



GERMANY DUNGS FILTER



GERMANY DUNGS PRESSURE SWITCH



SIEMENS ELECTRIC EYE



GERMAN DUNGS TWO-STAGE VALVE



GERMAN FIDA IGNITER



GERMAN DUNGS LEAK DETECTION DEVICE



GERMAN PROCESS CONNECTION



**Project case**



12 million kcal matching hot blast stove



900,000 kcal matching hot blast stove



1.2 million kcal supporting water heater



10 tons hot water boiler



8 tons biomass steam boiler



10 ton coal-fired boiler transformation



Biomass burner tunnel drying



600KG Biomass Burner



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The data in this manual is just for reference, not strictly customized.

BNTET can customize products with special specification as your needing.