

**Biogas hot-blast stove burner****Introduction to the biogas hot-blast stove burner:**

Biogas consists of 50% ~ 80% CH<sub>4</sub>, 20% ~ 40% CO<sub>2</sub>, 0% ~ 5% N<sub>2</sub>, less than 1% H<sub>2</sub>, less than 0.4% O<sub>2</sub> and 0.1% ~ 3% H<sub>2</sub>S and other gas. Biogas contains a small amount of H<sub>2</sub>S, so slightly smelly. Its properties are similar to those as natural gas. If the air contains 8.6 ~ 20.8% (by volume) of biogas, it will form an explosive gas mixture.

Methane, the main ingredient in biogas, is an ideal fuel gas. It is transparent and odorless, and burns when mixed with some amount of air. The heat generated by pure methane is 34,000kj/M<sup>3</sup>, and 20800-23,600kj/M<sup>3</sup> by biogas. That is, the heat generated by 1M<sup>3</sup> biogas is equivalent as 0.7kg anthracite. Compared with other gas, it has better anti-explosive performance and is a good clean fuel.

As a renewable clean energy, biogas can not only replace traditional biomass energy such as straw and firewood, but also commodity energy such as coal, and its energy efficiency is significantly higher than those of straw, firewood and coal. Biogas is a kind of renewable, multi-efficiency and cheap energy.

The biogas hot-blast stove burner developed by our company adopts the PLC operating system, which is controlled by microcomputer, and integrates the burner, fan, ignition, flame monitoring, ventilation door adjustment and other components. The burner can be customized with RS232 and RS485 communication interface. It has the following characteristics:

1. Reduce power consumption, environmental pollution. The small burner adopts the swirl flow and dc multiple air distribution structure, with porous device, so that the mixture of gas and air is very full, the combustion is sufficient, the combustion efficiency is 99%, the exhaust smoke is clean, and the environmental pollution is small.
2. Reasonable mechanism structure: the overall structure of the burner is compact, scientific and reasonable, the connection of various parts is well-organized and flexible adjustment, which can well meet various production conditions. The combustion head is designed with flame stabilizing device, and the flame jet is strong and stable.
3. Advanced control system: the burner is equipped with manual and automatic operation procedures for full automatic program control of purging, self-check, ignition, combustion, monitoring and protection, shutdown, restart and so on. According to the requirements of field application, users can also enter the secondary menu to modify the application parameters to achieve the ideal control process. All electrical components of the control system are imported brands, and the system runs smoothly and stably.
4. Safe and reliable operation: (1). With reasonable mechanism design structure to eliminate tempering, ensures safe operation of burner; (2). Advanced control system with self-detecting function; (3). Scientific and reasonable gas valve train design, the valve parts are connected tightly, to avoid gas leakage.
5. Easy installation and disassembly: Burner is equipped with a fixed flange. It is only necessary to fix the flange on the furnace wall, and then put the combustion head in the accurate position in the furnace. After fixing, connect the power supply and the air inlet pipe, and the burner operates.
6. Easy maintenance: The controller is equipped with a fault display system, which can quickly and accurately display the fault parts of the burner. It can be easily removed, cleaned, repaired or replaced.

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