

How to measure boiler thermal efficiency?

Boiler thermal efficiency refers to the ratio of the heat energy output by the boiler to the heat energy input by the fuel during the combustion process. It is an important indicator to measure the performance of the boiler. Generally speaking, the higher the thermal efficiency, the better the boiler's working performance and the lower the energy consumption. We can measure the boiler efficiency from following aspects:

1. **Thermal energy utilization rate:** When the boiler converts the heat generated by fuel combustion into steam or hot water, the energy loss is minimal and the conversion process is efficient.
2. **Heat transfer efficiency:** Whether the boiler can effectively transfer the heat generated by combustion to water through the heat exchange area of the boiler body and the heat exchanger, and convert it into high-temperature steam or hot water, also directly affects the thermal efficiency.
3. **Exhaust gas temperature:** The lower the exhaust flue gas temperature, the more heat is absorbed by the boiler, and the higher the thermal efficiency of the boiler; if the exhaust gas temperature is high, the heat loss increases and the thermal efficiency of the boiler decreases.
4. **Fuel consumption:** When the boiler generates the same amount of heat or steam, the less fuel consumption, the higher the thermal efficiency.
5. **Emissions:** Whether the combustion is sufficient is also a reflection of thermal efficiency. If the boiler burns completely and the combustible gas content in the emissions is low, it means that the boiler uses more energy and has a higher thermal efficiency.