

Methanol low NOx burner



Introduction to methanol low NOx burner:

Methanol low NOx burner is an industrial burner which uses methanol as fuel, and adopts low NOx technology. According to NOx reducing combustion technologies, low NOx burners can be divided into the following categories:

1. Phase burner
Design on the principle of fractional combustion, the fuel and air are mixed in stages for combustion. Because the combustion deviates from the theoretical equivalent ratio, the NOx emissions reduced.
2. Self-recirculation burner
One is: use the pressure head of combustion air, suck some combustion flue gas back into the burner and mixed with air for combustion. Due to flue gas recirculation, the heat capacity of flue gas is large, the combustion temperature decreases, and NOx decreases. The other is: recycle some flue gas directly in the burner, and burns, this kind of burner has the dual effect of inhibiting nitric oxide and saving energy
3. Dense and sparse combustion burner
The principle is to make one part of the fuel for dense combustion, some other part of the fuel for sparse combustion, the overall air volume keep same. Since both parts burns at a deviation from the stoichiometric ratio, the NOx is very low, and this combustion is also known as a deviation or non-stoichiometric combustion.
4. Compartmental flame burner
Divide a flame into several small flames, because the heat dissipation area for small flame is large, the temperature of the flame is low, so that the "thermal reaction NO" has decreased. In addition, the small flame shortened the residence time of oxygen, nitrogen and other gases in the flame, so "thermal reaction NO" and "fuel NO" reduced.
5. Promote mixture burner
The residence time of flue gas in the high temperature zone is one of the main factors affecting the generation of NOx. Improving the mixture of combustion and air can reduce the thickness of the flame surface. Under the condition of constant combustion load, the residence time of flue gas in the flame surface, namely the high temperature zone, is shortened, so that the generation of NOx is reduced. The promote mixture burner is designed on this principle.
6. Low NOx pre-combustion chamber burner
Pre-combustion chamber is a kind of high efficiency and low NOx combustion technology developed by China in recent 10 years. Generally speaking, a pre-combustion chamber is consist of primary air (or secondary air) and fuel injection system. The primary air and fuel mix rapidly, and form rich fuel mixture in the primary combustion zone in the pre-combustion chamber. Due to the lack of oxygen, only part of the fuel burns. Fuel volatilizes in the poor oxygen and low temperature flame area, thereby reduces NOx.