

Low NOx and high velocity burner SFAH



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CHARACTERISTICS

- SFAH is high velocity burner with multi-stage air supply, and its flame velocity is up to 120~160 m/s. Six specifications with the capacity of 60 ~ 1500 kW.
- A multi-stage air supply structure is adopted to reduce flame temperature. And the high velocity flame recirculates a large amount of flue gas in the furnace, which effectively reduces the generation of NOx.
- The air housing of SFAH(I) is equipped with fiber lining, which is suitable for hot air up to 500 °C, and the burner capacity will not decrease due to the high air temperature.
- Excess air coefficient: 1.05~2; turndown ratio: 1:5.
- Fuel: natural gas, LPG, COG, etc.

APPLICATIONS

The SFAH is mostly used in heat treatment furnaces or directly heated furnaces that use on/off or high/low pulse control, such as: trolley furnace or roller hearth furnace heated by open flame with

centralized heat exchange. If the burner is used in a low-temperature tempering roller hearth furnace, the furnace temperature will be more uniform due to low flame temperature.

CONFIGURATION

- The burner is composed of a burner insert, an air housing, a ceramic combustion chamber and a flame guide tube.
- The burner adopts single-electrode ignition/detection, and direct ignition can be used when the capacity is below 250 kW. The ignition electrode is installed on the burner insert, and a ceramic combustion chamber is installed around the burner head of the burner insert. The combustion air is distributed into primary and secondary air through the ceramic combustion chamber, which is conducive to the stability and reliability of frequent ignition. The gas pipeline needs to be additionally equipped with an orifice plate for gas regulation.
- The air housing is welded by 304 stainless steels, and an orifice plate is installed on the air inlet by default.
- According to the furnace temperature, heat-resistant steel or SiC burner tube is available.

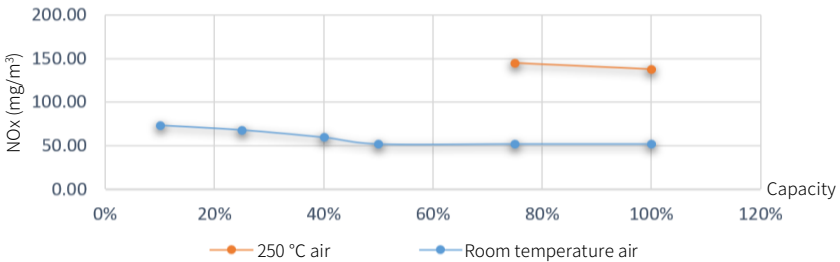
Flame tube	Max. furnace temperature/°C
Metal	1150
SiC	1350

SPECIFICATION

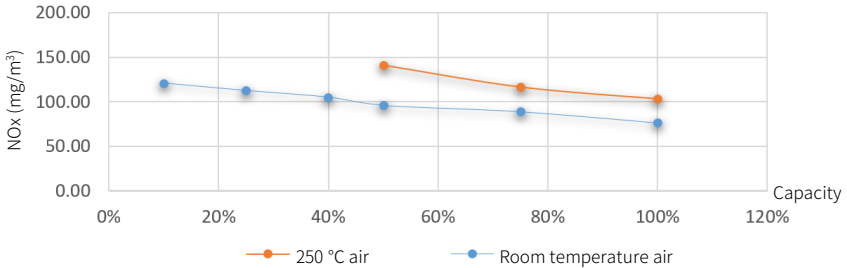
Parameters

NOx emissions

Furnace temperature: 1000 °C, ref. 8% O₂:



Furnace temperature: 1300 °C, ref. 8% O₂:



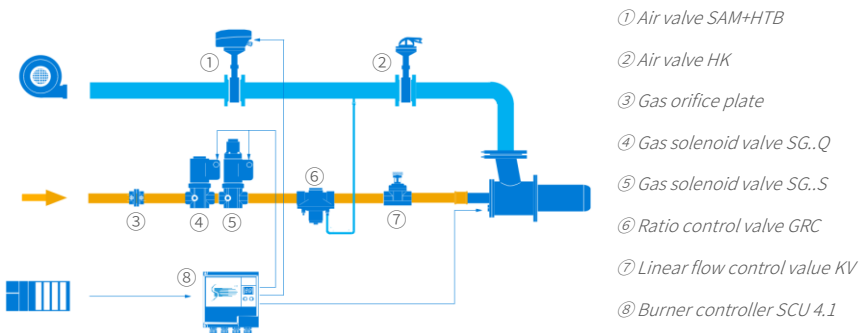
Type table

Type	SFAH	(l)	400	N	-400	C
Supplement	I: internal insulation					
Rated Capacity	60	100	160	250	400	630 800 1500
Fuel	N: natural gas		P: PLG		T: town gas	
Length	SFAH 60~800: 400mm			SFAH 1500: 470mm		
Burner tube	C: SiC ceramic		(Metal by default)			

Please contact us for the information about the burner using types of gas.

Please consult separately for the dimensions of the burner.

SOLUTIONS



- SFAH 60~250 can be directly ignited at maximum capacity, which enables it to be controlled by pulse mode.

- SFAH 400~1500 can be used with an electrical butterfly valve and a ratio control valve. The high/low fire rate pulse control could be achieved by controlling the electrical butterfly valve after igniting the burner at low capacity. In addition, it can also use a slow-open solenoid butterfly valve in air pipeline, and use solenoid valves in the high/low fire rates gas pipeline (the solenoid valve in the high fire rate pipeline is slow-open) to achieve the high/low pulse control.

INSTALLATION

- The length of burner is fixed. When installing, ensure that the distance between the burner outlet and the inner wall of furnace is ± 25 mm.

Access pressure

Access	Pressure/mbar
Air	50
Gas	50

- To ensure the accuracy of orifice plate measurement, the pipe connected to the air inlet on burner shall be straight in the length of $5 \times DN$ without other resistance elements. And the length of straight pipe section in front of and behind the gas orifice plate should be longer than $5 \times DN$.
- The pipeline must be purged before connected to the burner to prevent welding slag or other foreign matters from entering the burner and affecting the normal operation of burner. If a pipe welding is required after connection, ensure that no welding slag or molten materials falls into the pipe or the burner during welding.

OPERATION

Attention

- If the burner needs to shut off, ensure that there is about 5% of air flows in to maintain a positive pressure inside the burner to prevent the burner from being damage by the backflow of flue gas.

Maintenance

- At least once every six months. Increase the times of maintenance, as appropriate.
- Maintenance: burner tube, spark insert, and others; check the flame state regularly.