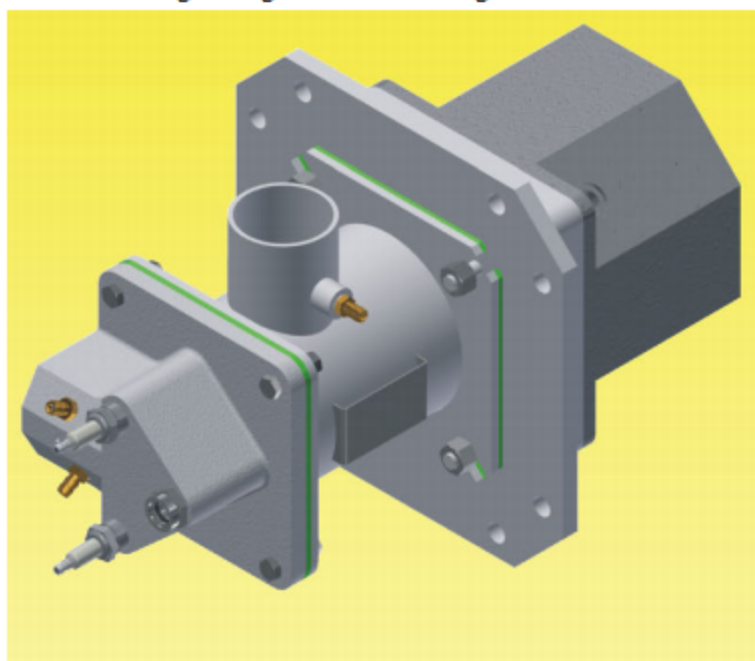




## **A-EGR-HMF**

### **Special High Momentum Ultra-Low Nitrogen Burner For Medium And High Temperature Furnace.**

Low nitrogen / high momentum / large excess air volume



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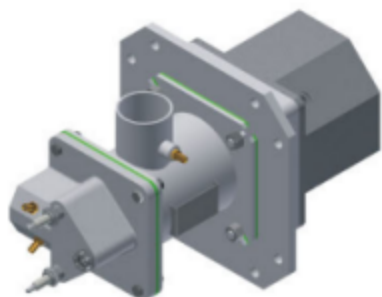
## **A-EGR-HMF Special High Momentum and Ultra-Low Ammonia Burner for Medium And High Temperature Furnace**

**Low nitrogen / high momentum / large excess air volume**

### Features

The A-EGR-HMF burner series is a nozzle hybrid burner with multiple pod air nozzles that allow the combustion of high excess air. A special gas jet is designed to produce a high momentum flame, which can achieve a very stable combustion even if the air is excessive. The high momentum flame causes strong gas stirring in the furnace, so the heating is fully homogenized.

A-EGR-HMF burner ultra-stable pneumatic flame stabilization technology allows the use of excessive air combustion, the output of low-temperature flame, can make the furnace temperature control to a lower degree. The ultra-strong air low NOX combustion technology, the Douying air nozzle pneumatic flame stabilization technology and the combustion chamber flue gas circulation combustion technology developed by the patented structure greatly restrain the production of NOx by reducing the flame temperature by returning the combustion waste gas to the flame through self-recirculation, which enables the burner to have a stable low NOx emission under different load conditions.



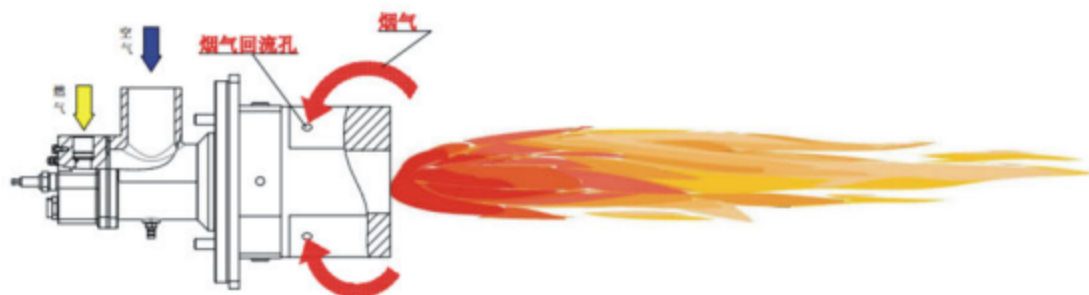
### Applications

- |                                     |                         |
|-------------------------------------|-------------------------|
| ● Metal Heat Treatment Furnace      | ● Tunnel Kiln           |
| ● Non-Ferrous Metal Melting Furnace | ● Shuttle Kiln          |
| ● Heating Furnace                   | ● Rotary Kiln           |
| ● Drying furnace trolley furnace    | ● Ceramic Fiber Furnace |

### Product Description

- |                                                           |                                             |
|-----------------------------------------------------------|---------------------------------------------|
| ● Air shell: Cast iron/45# steel                          | ● Maximum preheating air temperature: 350°C |
| ● Material of air inlet pipe: cast iron / 45# steel       | ● Power: 108~720KW                          |
| ● Applied maximum furnace temperature: 1200°C             | ● Air inlet pressure: 55mbar                |
| ● Combustion chamber: Silicon carbide/Refractory castable | ● Gas inlet pressure: 25mbar                |
| ● Combustion head: SUS 310S                               | ● Fuel: NG/LPG                              |
| ● Fixed flange: Q235                                      | ● Adjustment ratio: 1: 20                   |

## A-EGR- HMF Special High Momentum Ultra-Low Nitrogen Burner For Medium And High Temperature Furnace



### Product Advantages

#### 1. Broader air-fuel ratio operating area:

The A-EGR-HMF burner can burn stably over a wide range of air / gas ratios, ranging from large amounts of excess air to stoichiometry (chemical air / gas ratio) and even up to 50% excess fuel (as long as additional combustion air is provided to the furnace near the burner).

#### 2. Excellent low nitrogen emission performance:

The A-EGR-HMF burner can be reliably ignited under the conditions of poor, rich or correct air / fuel ratio, and can be converted to a high load state immediately after successful ignition. In this process, the A-EGR-HMF burner can ensure very low NOx emissions at all air-fuel ratio states.

#### 3. Lower gas conditions:

Another important feature of A-EGR-HMF burner is that it has lower requirements for gas types and gas supply pressure, and has a wider range of application.

#### 4. Higher furnace temperature uniformity:

Higher flame momentum can greatly improve the entrainment capacity of flue gas, eliminate the hot spots in front of the burner, improve the stratification of furnace gas by stirring furnace gas, and establish appropriate furnace pressure to eliminate cold air intrusion to improve temperature uniformity.

#### 5. Broader extreme operation of high and low furnace temperature:

High temperature furnaces with A-EGR-HMF burners (such as heat treatment furnaces at 1050 °C that burn at a reasonable air / fuel ratio) can also be used for cryogenic operations (such as drying at 320C), where the A-EGR-HMF burner can burn in a large amount of air.

### Ignition and Flame Monitoring

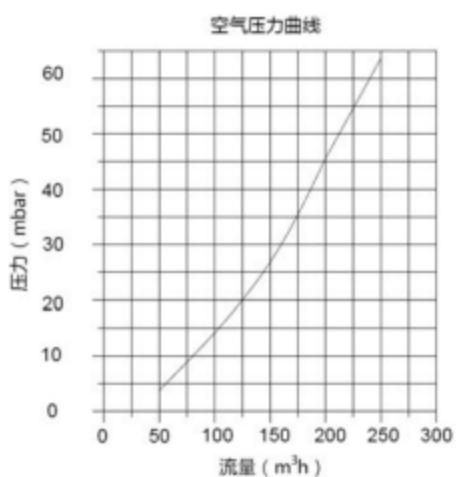
- The ignition of the burner can be realized by the ignition electrode (Model EN or WAND).
- UV ultraviolet can be used in flame detection.
- When the burner is used in the furnace where the temperature is lower than 750 ° C, it is recommended to install a flame detection system.

A-EGR- HMF Special High Momentum Ultra-Low Nitrogen Burner For Medium And High Temperature Furnace

Model	Air Pressure(mba)	Gas Pressure( mba)	Power(350°CCombustion-supporting air)
A-EGR- HMF-108	54	35	108KW
A-EGR- HMF-160	56	35	160KW
A-EGR- HMF-250	61	35	250KW
A-EGR- HMF-550	65	35	550KW
A-EGR- HMF-720	68	35	720KW

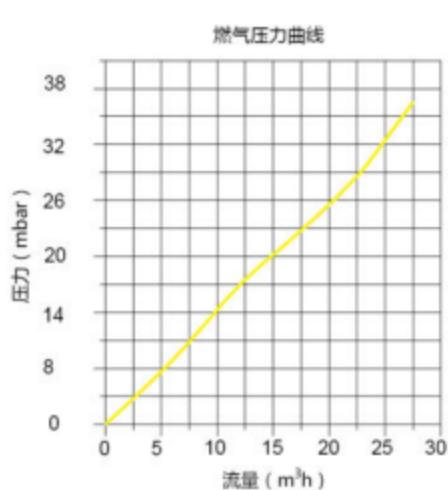
Air Pressure- Traffic Characteristics

Air Pressure curve



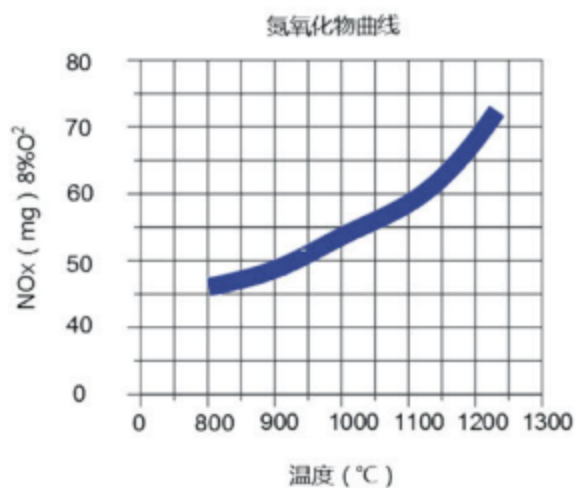
Gas Pressure—Flow characteristics

Gas Pressure curve



Emission

Nitrogen oxide curve



Combustion air temperature 350°C, Furnace temperature 1200°C, nitrogen oxides 150mg



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#### A-EGR- HMF Special High Momentum Ultra-Low Nitrogen Burner For Medium And High Temperature Furnace

- All the above parameters are tested in the laboratory based on a specific shell, the shell of different dimension and structure and the use environment will affect the data, which may deviate from the experimental results.
- The output power is based on the fuel is natural gas, and the calorific value of the fuel is low calorific value.
- The design and layout of air and gas pipelines may affect the measurement results of flow pressure. The above data is the data of A-EGR-HMF-255, if you need other models, please contact our sales.
- The company reserves the right to change the product structure or configuration at any time and has no obligation to upgrade the products that have been sold.

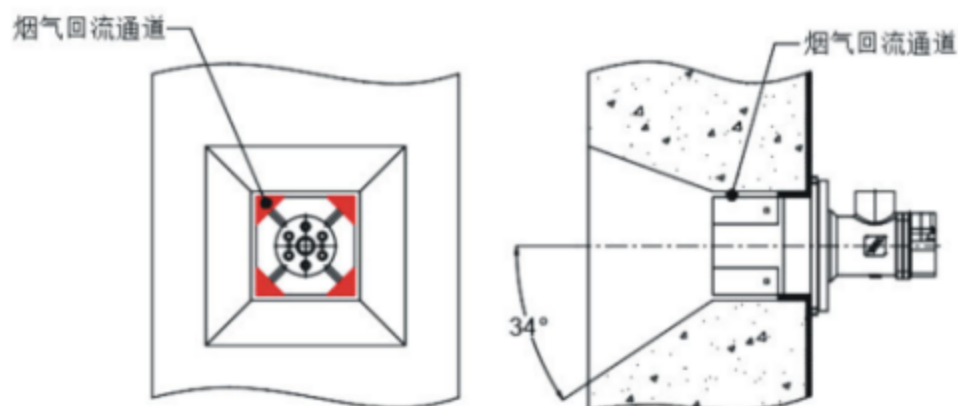
#### Installation

1. The outer surface of the burner brick, especially the lower surface, should be supported by refractory bricks and castable materials to prevent the burner brick from falling.  
\* the ceramic fiber furnace wall has no load-bearing capacity and the burner burner brick is at risk of falling. Please be sure to use refractory bricks, castable and other load-bearing structures to support and fix the burner bricks.
2. When installing the burner on the furnace body, please fill the gap between the installation port and the burner brick with refractory mortar.
3. No matter what kind of furnace wall material and structure are used, the flue gas reflux passage at the four corners of the burner brick must be guaranteed to be smooth and sufficient flow cross-section must be ensured.
4. Lengthened burner bricks are not recommended.
5. When the thickness of the furnace wall is greater than the length of the burner brick, the excess part of the installation hole of the burner brick should be chamfered above 20 °.
6. The air and gas inlet can adjust the connection direction by 90 ° according to the site conditions.
7. The air / gas pipeline connected to the burner is at least twice the diameter of the burner inlet to ensure a reliable air supply pressure in front of the burner.

The following illustrations are included:

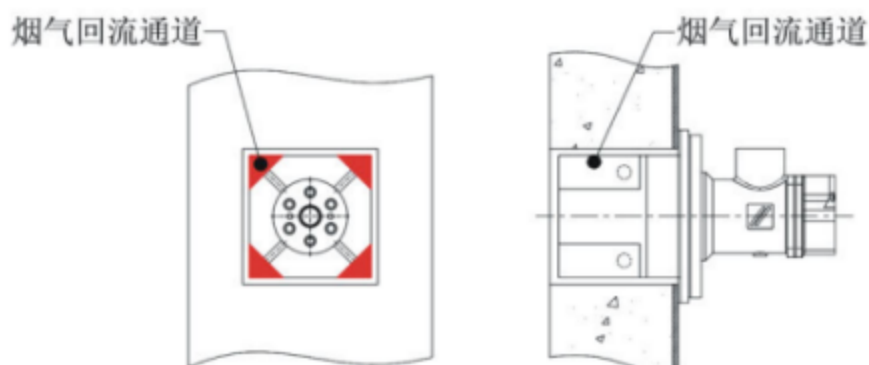
1. Installation method of burner brick (including refractory brick / refractory castable furnace wall installation method, refractory fiber furnace wall installation method).
2. Installation method of thin furnace wall and thick furnace wall

A-EGR- HMF Special High Momentum Ultra-Low Nitrogen Burner For Medium And High Temperature Furnace



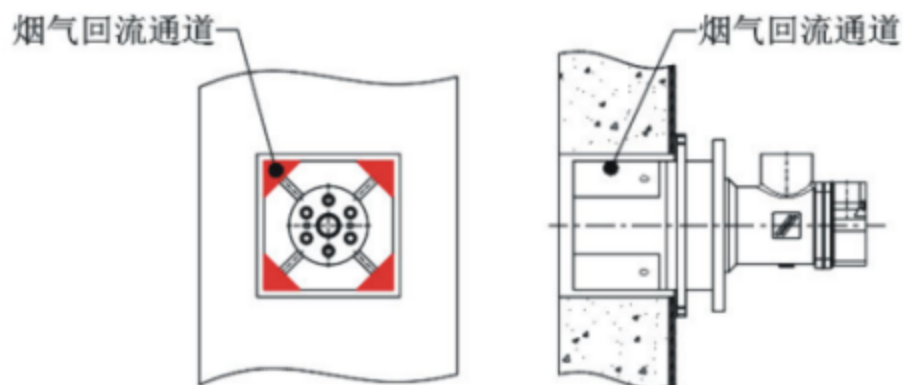
Flue gas reflux channel, Flue gas reflux channel

If the thickness of the furnace wall exceeds the length of the burner brick, the flame outlet of the installation hole should be expanded by more than 20 °.



Flue gas reflux channel, Flue gas reflux channel

Design method of installation hole with furnace wall thickness close to burner brick length

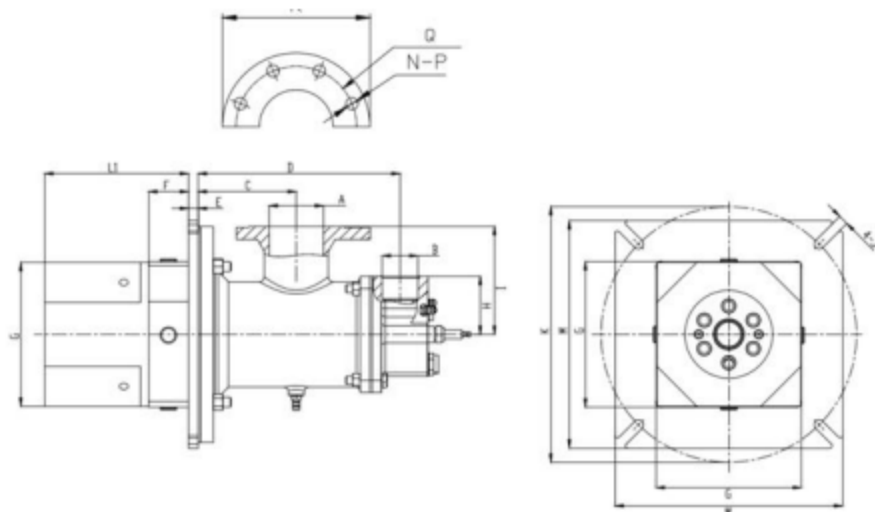


Flue gas reflux channel, Flue gas reflux channel

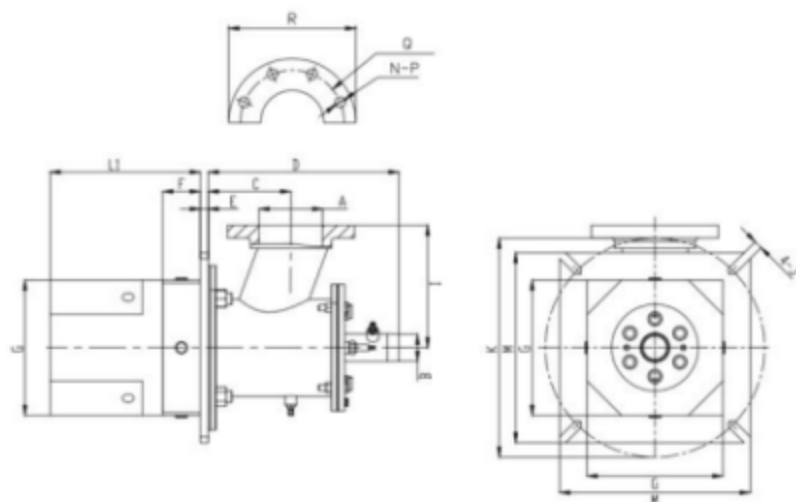
Design method of installation hole with furnace wall thickness less than burner brick length

A-EGR- HMF Special High Momentum Ultra-Low Nitrogen Burner For Medium And High Temperature Furnace

Installation Dimensions of Burner



Installation Dimensions of A-EGR-HMF-108/160/250 Burner



A-EGR-HMF-550/720烧嘴安装尺寸

Installation Dimensions of A-EGR-HMF-550/720 Burner

Model	Maximum Power/KW	Dimension/mm															
		A	B	C	D	E	F	G	I	J	K	L	M	N	P	Q	R
A-EGR-HMF-108	108	Rp2	Rp3/4	93	174	12	50	180	112	13	290	180	255	/	/	/	/
A-EGR-HMF-160	160	Rp2	Rp1	106	187	12	50	180	100	13	290	180	255	/	/	/	/
A-EGR-HMF-250	255	DN65	Rp1-1/2	123	253	12	50	180	135	13	320	180	285	4	18	145	185
A-EGR-HMF-550	550	DN100	Rp1-1/2	143	330	14	65	235	213	22	380	260	330	8	18	180	220
A-EGR-HMF-720	720	DN150	Rp2	211	438	14	65	235	232	22	380	260	340	8	22	240	285