DYD

岱鼎燃烧

产品手册

Product Manual

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让燃烧完美而简约

Make The Combustion Perfect And Simple

ENTERPRISE INTRODUCTION
企业介绍

DYDTEC Group is specialized in combustion industry. Our products and services include industrial burner, combustion system, flame treatment system, air heater, heat exchanger, project renovation for combustion safety, energy saving and low nitrogen, maintenance of combustion system. We see us as a solution provider in the combustion industry and can satisfy the needs from customers.

Over 10 years expanding, DYDTEC has supplied thousand of combustion systems and air heaters. We have rich application experiences in various industries including automotive, environment protection, industrial drying, light industry and heave industry.

Our product applies the European standard EN746 and American standard NFPA86.

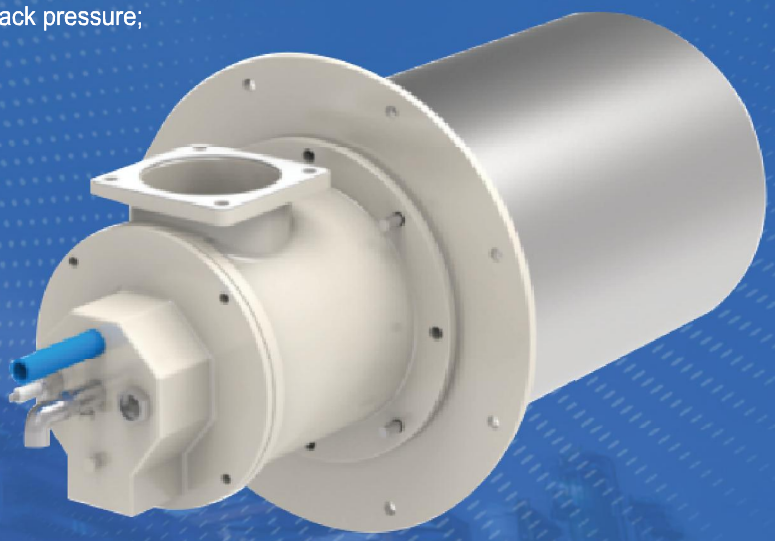
DYDTEC entered overseas market in 2016, we have successfully exported our products to the areas including US, EU, Africa, Asia and Pacific.

With our motto of faith, DYDTEC is dedicated to be excellent, honest, diligent, responsible. We have become the industrial combustion market leader in China and we are ambitious to become an outstanding brand worldwide in the field of industrial combustion in the next decade.

TINOXFG BURNER

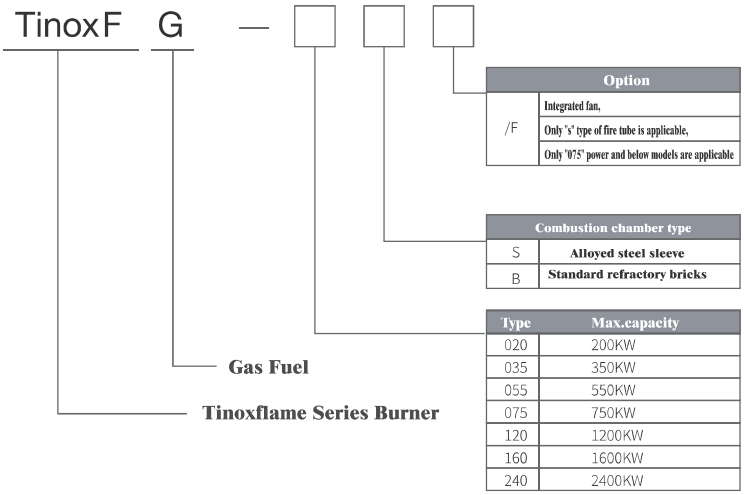
Tinoxflame is a low-NOx emission burner designed by dydtec for medium and high temperature industrial applications. It has the characteristics of complete combustion, reliability and stability, and high thermal efficiency. Tinoxflame burners are widely used, such as drying furnaces, waste gas incinerators, thermal oxidation furnaces, preheating furnaces, etc.

- Applicable maximum combustion chamber temperature 1000℃
- High thermal efficiency
- Turndown ratio 6:1
- Flexible adjustment to meet various temperature control requirements
- Low-NOx emissions (＜50mg/m³@3.5%O2)
- Applicable to natural gas and LPG
- Large fluctuation range of combustion chamber back pressure;
- Direct ignition with spark plug



TinoxFlame

Model Definition



Parameters

Model	Max.capacity KW	Min.capacity KW	Required gas pressure Pa	Required combustion air pressure Pa	Flame length mm	Weight kg
TinoxFG-020S	200	33	2900	3500	100	50
TinoxFG-020B						90
TinoxFG-035S	350	58	3000	3500	150	72
TinoxFG-035B						130
TinoxFG-055S	550	92	3200	4000	200	88
TinoxFG-055B						150
TinoxFG-075S	750	125	4000	5200	250	100
TinoxFG-075B						170
TinoxFG-120S	1200	200	6800	6300	300	128
TinoxFG-120B						215
TinoxFG-160S	1600	267	6800	6200	300	135
TinoxFG-160B						230
TinoxFG-240S	2400	400	7000	6500	300	185
TinoxFG-240B						300
……	For more model parameters, please consult DYDTEC.					
	Data measurement conditions:standard combustion chamber,natural gas & combustion supporting air temperature 20°C, combustion chamber back pressure 0Pa. The flame length is calculated from the outlet of the fire casing.					

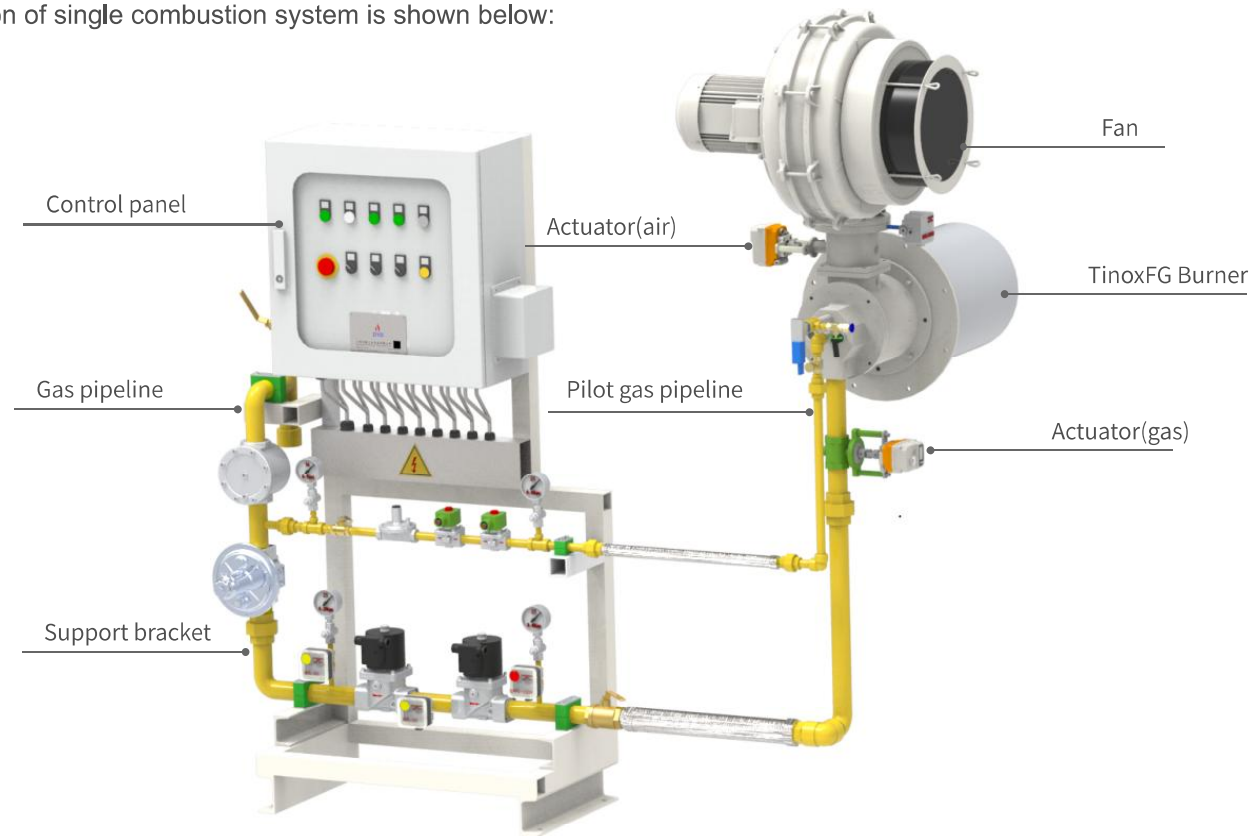
Description

- **Combustion chamber type:**
  Refractory brick: combustion chamber temperature ≤ 1000 °C
  Alloyed steel sleeve: combustion chamber temperature ≤750 °C

- **Flame monitoring type :**
  UV is suitable for all burners.

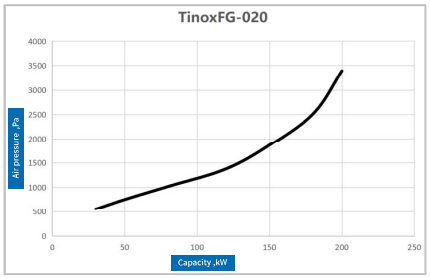
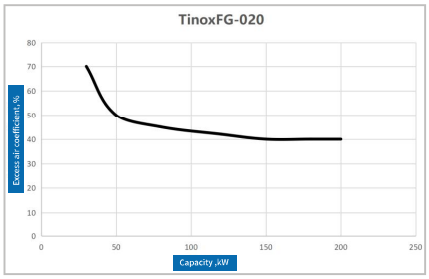
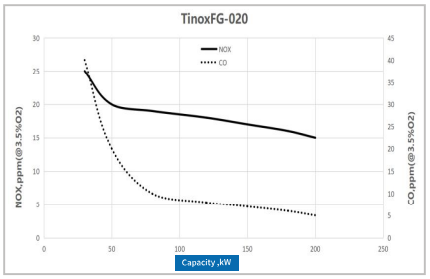
Typical system

Tinoxflame burners are widely used in various high-temperature process occasions. The typical configuration of single combustion system is shown below:



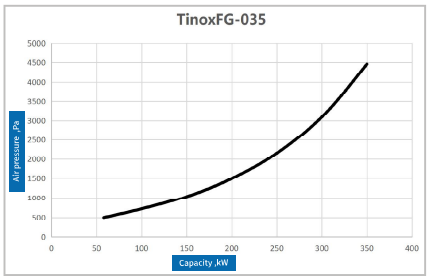
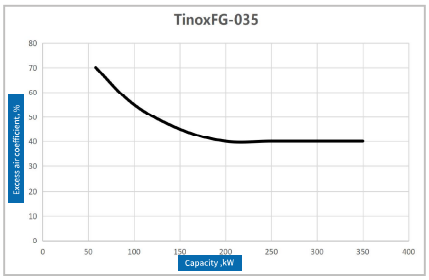
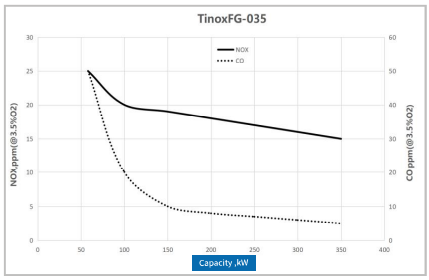
Data Curve

TinoxFG-020

Combustion air pressure difference (detection position: combustion air pressure tap)	Excess air	Emission
		

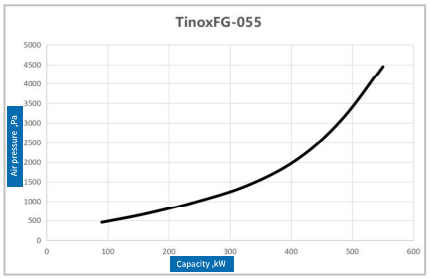
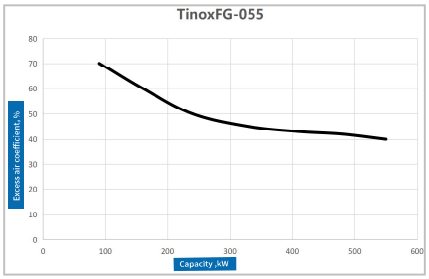
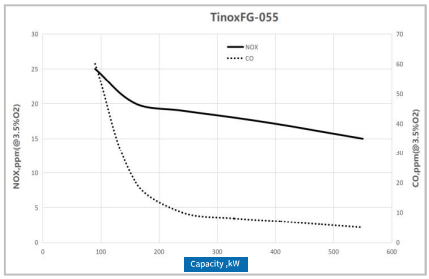
Note:
NOx emission data are tested based on 600 °C combustion chamber temperature.
NOx emission data is only for reference, because NOx emission is also affected by combustion chamber structure and other factors.

TinoxFG-035

Combustion air pressure difference (detection position: combustion air pressure tap)	Excess air	Emission
		

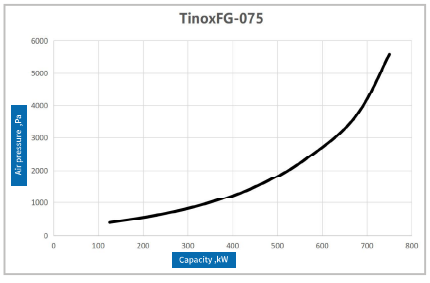
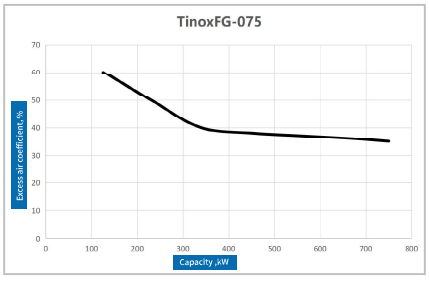
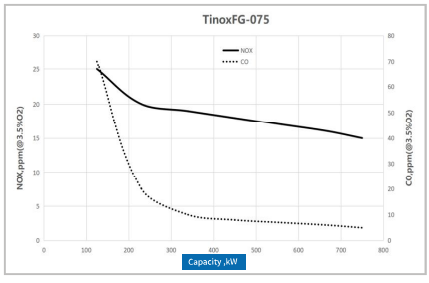
Note:
NOx emission data are tested based on 600 °C combustion chamber temperature.
NOx emission data is only for reference, because NOx emission is also affected by combustion chamber structure and other factors.

TinoxFG-055

Combustion air pressure difference (detection position: combustion air pressure tap)	Excess air	Emission
		

Note:
NOx emission data are tested based on 600 °C combustion chamber temperature.
NOx emission data is only for reference, because NOx emission is also affected by combustion chamber structure and other factors.

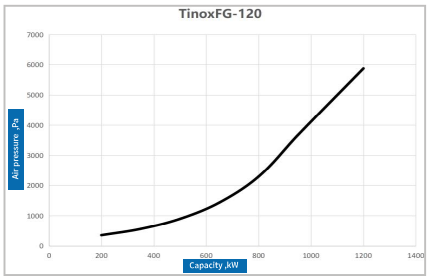
TinoxFG-075

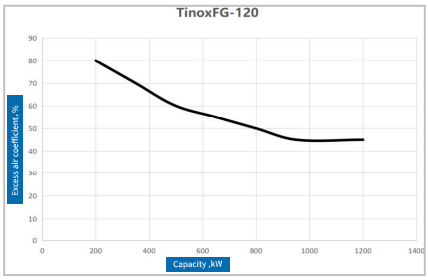
Combustion air pressure difference (detection position: combustion air pressure tap)	Excess air	Emission
		

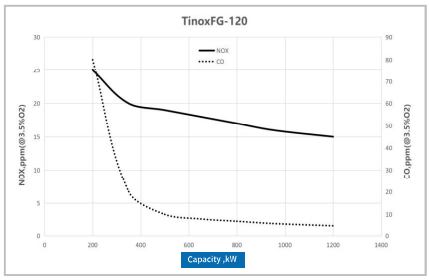
Note:
NOx emission data are tested based on 600 °C combustion chamber temperature.
NOx emission data is only for reference, because NOx emission is also affected by combustion chamber structure and other factors.

TinoxFG-120

Combustion air pressure difference (detection position: combustion air pressure tap)	Excess air	Emission

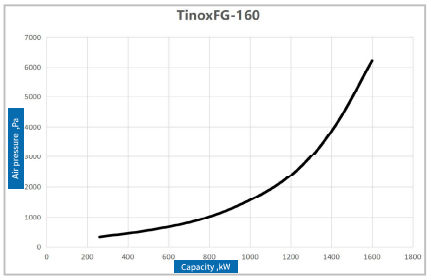


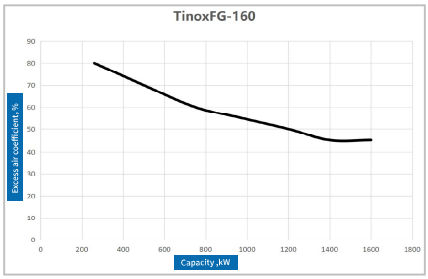


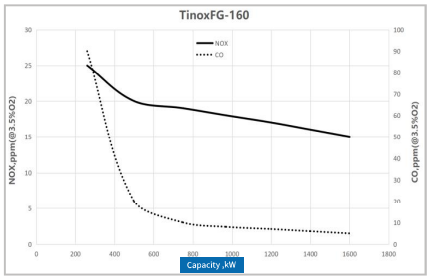


TinoxFG-160

Combustion air pressure difference (detection position: combustion air pressure tap)	Excess air	Emission

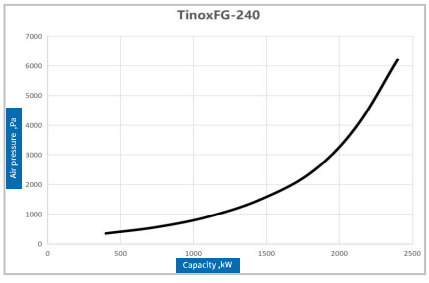


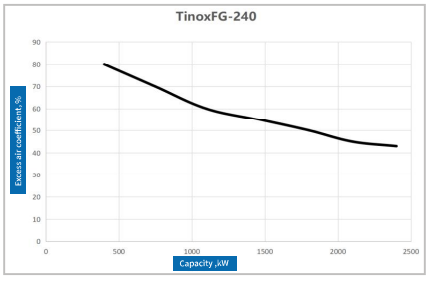


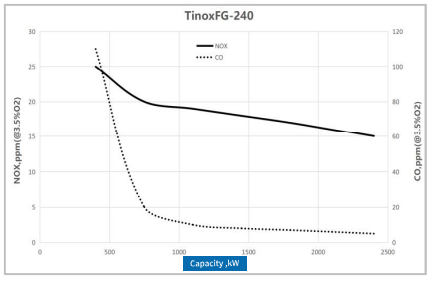


TinoxFG-240

Combustion air pressure difference (detection position: combustion air pressure tap)	Excess air	Emission

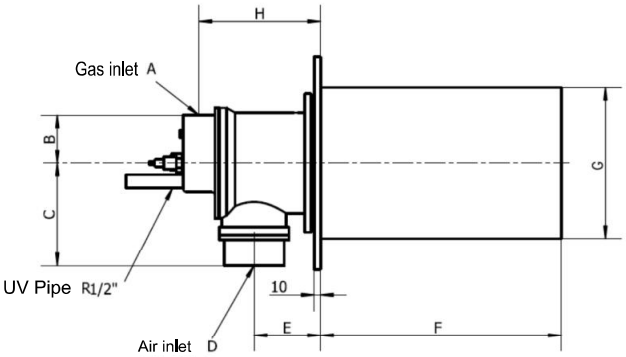


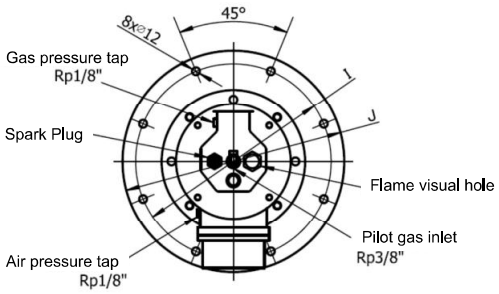




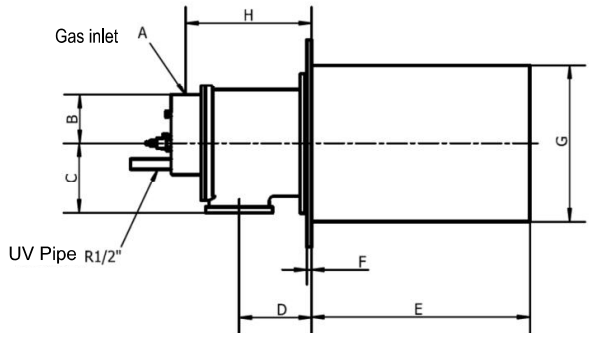
Dimension

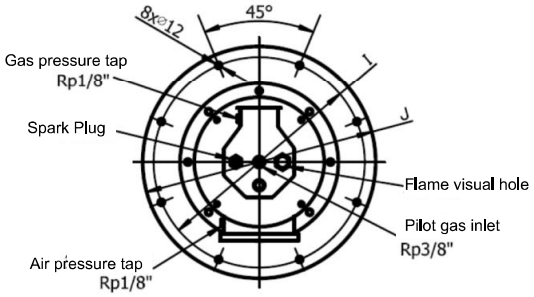
Unit: mm

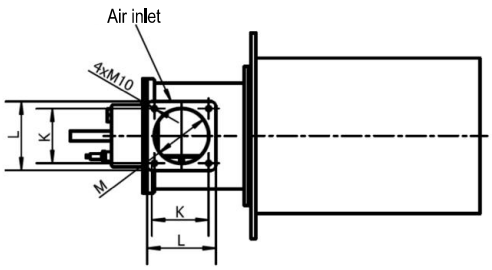




Type	A	B	C	D	E	F	G	H	I	J
TinoxFG-020S	Rp1"	76	164	Rp3"	105	380	ϕ240	192	ϕ300	ϕ340
TinoxFG-020B	Rp1"	76	164	Rp3"	105	380	ϕ334	192	ϕ400	ϕ440
TinoxFG-035S	Rp1"	76	164	Rp3"	105	430	ϕ285	192	ϕ340	ϕ400
TinoxFG-035B	Rp1"	76	164	Rp3"	105	430	ϕ380	192	ϕ440	ϕ500







Type	A	B	C	D	E	F	G	H	I	J	K	L	M
TinoxFG-055S	Rp1.5"	100	145	156	470	10	ϕ326	271	ϕ390	ϕ430	114	144	ϕ117
TinoxFG-055B	Rp1.5"	100	145	156	470	12	ϕ426	271	ϕ490	ϕ530	114	144	ϕ117
TinoxFG-075S	Rp1.5"	100	145	156	504	10	ϕ360	271	ϕ420	ϕ460	114	144	ϕ117
TinoxFG-075B	Rp1.5"	100	145	156	504	12	ϕ450	271	ϕ520	ϕ560	114	144	ϕ117
TinoxFG-120S	Rp1.5"	120	162	180	560	12	ϕ400	334	ϕ470	ϕ510	190	216	ϕ180
TinoxFG-120B	Rp1.5"	120	162	180	560	14	ϕ494	334	ϕ570	ϕ610	190	216	ϕ180
TinoxFG-160S	Rp1.5"	120	162	180	560	12	ϕ430	334	ϕ500	ϕ540	190	216	ϕ180
TinoxFG-160B	Rp1.5"	120	162	180	560	14	ϕ520	334	ϕ600	ϕ640	190	216	ϕ180
TinoxFG-240S	Rp2"	130	192	237	660	12	ϕ500	415	ϕ580	ϕ620	220	252	ϕ218
TinoxFG-240B	Rp2"	130	192	237	660	14	ϕ590	415	ϕ660	ϕ710	220	252	ϕ218

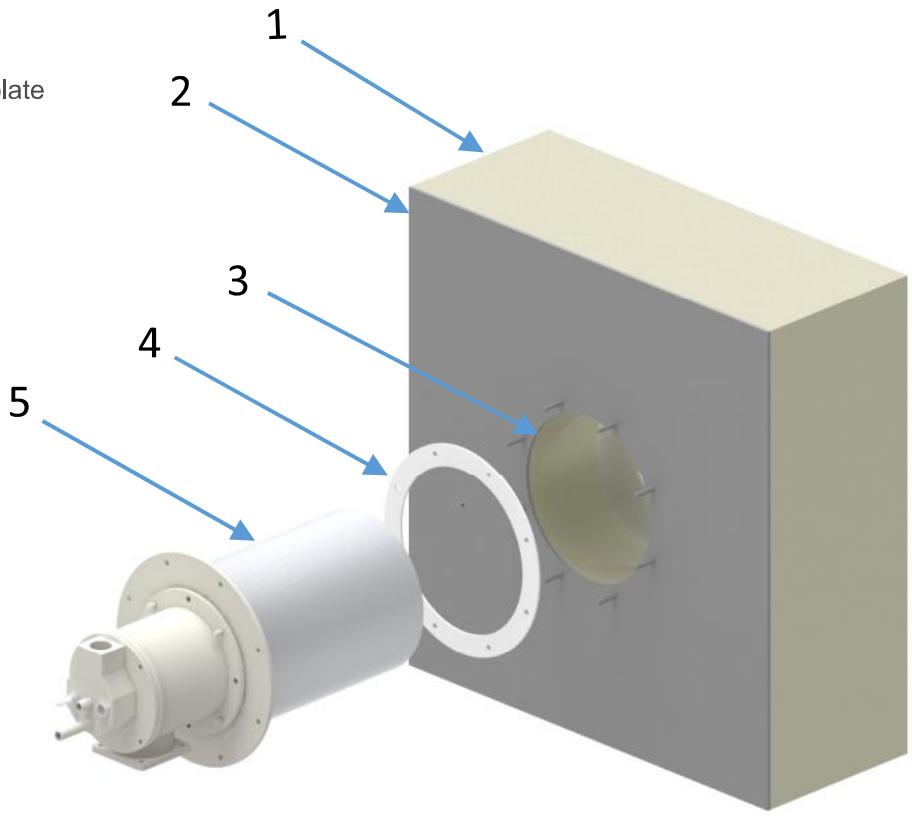
Installation Notes

Recommended size of combustion chamber

Type	Diameter,mm	Length, mm
TinoxFG-020	⩾600	⩾900
TinoxFG-035	⩾800	⩾1000
TinoxFG-055	⩾1000	⩾1100
TinoxFG-075	⩾1300	⩾1200
TinoxFG-120	⩾1600	⩾1300
TinoxFG-160	⩾1900	⩾1500
TinoxFG-240	⩾2200	⩾1700

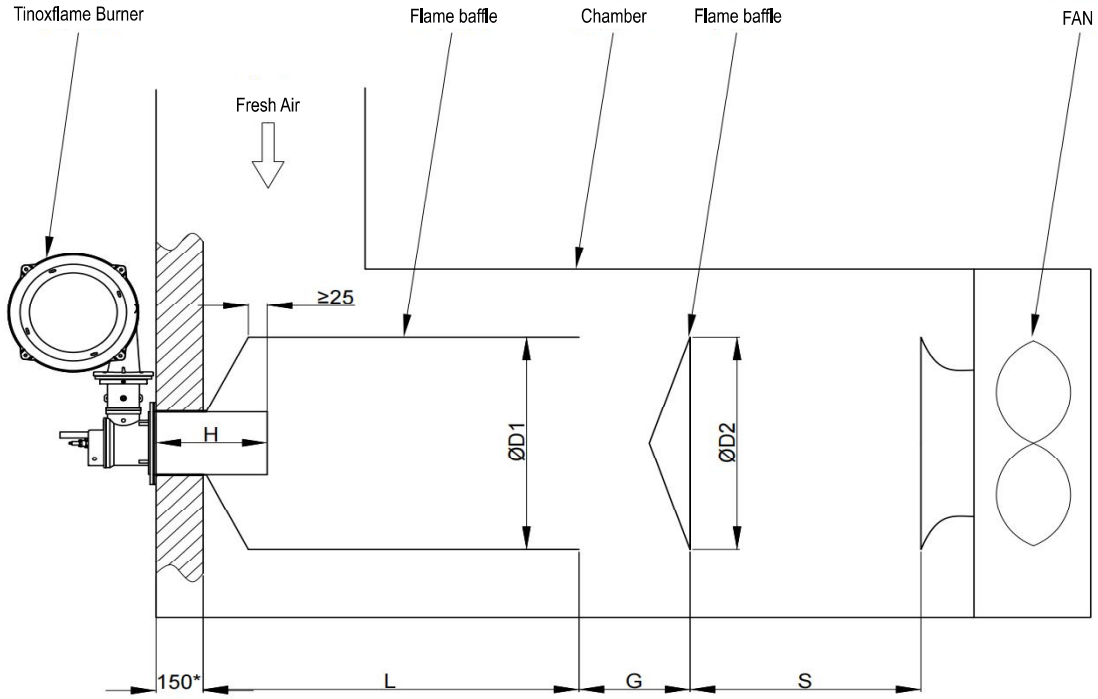
Installation direction

1-Isolation of furnace wall
2-Furance wall installation plate
3-Burner installation stud
4-Installation washer
5-Burner



Typical Application

Tinoxflame burner is suitable for various low-temperature heating applications. The typical application diagram of circulating air is as follows.



Type	Recommended design dimensions					
	D1	D2	G	H	L	S
TinoxFG-020	600 ~ 800	800	300 ~ 400	380	≥900	≥60
TinoxFG-035	800 ~ 1000	1000	300 ~ 400	430	≥1000	≥600
TinoxFG-055	1000 ~ 1200	1200	300 ~ 400	470	≥1100	≥600
TinoxFG-075	1300 ~ 1500	1500	300 ~ 400	504	≥1200	≥600
TinoxFG-120	1600 ~ 1800	1800	300 ~ 400	560	≥1300	≥600
TinoxFG-160	1900 ~ 2100	2100	300 ~ 400	560	≥1500	≥600
TinoxFG-240	2200 ~ 2400	2400	300 ~ 400	660	≥1700	≥600

* — The thickness of the installation furnace wall is recommended to be 150mm.

Installation steps

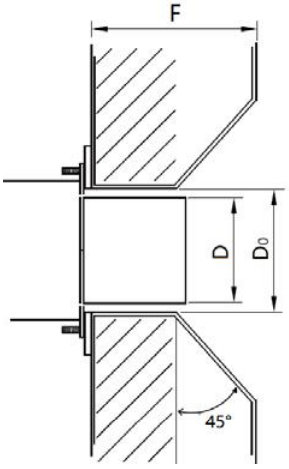
- Place the sealing gasket (No. 4) on the furnace wall;
- Position the burner (No. 5) on the mounting stud (No. 3) and fix it with nuts. When the burner brick extends into the mounting hole and moves inward, check to avoid damage to the refractory fiber insulation layer and displacement of the sealing gasket;
- Tighten the nuts on the furnace wall flange and keep them loose, so that the burner bricks of the burner can expand and contract freely during the heating process;
- Connect the fuel gas and air pipelines on the burner;
- Formulate appropriate first drying curve of kiln according to refractory materials;
- When the temperature rises to the maximum operating temperature, fully tighten the nut;
- After the first hot commissioning, repair the cracks and damaged parts immediately. In general, the cracks around the burner on the furnace wall shall be regularly detected and repaired to prevent hot gas from leaking from the cracks and causing damage to the metal parts of the furnace and burner;
- When using burner bricks with metal sleeves, appropriate measures shall be taken to isolate the high temperature in the furnace.

Mounting hole requirements

Before the installation of burner, holes shall be reserved on the furnace wall according to the size of refractory bricks. To facilitate installation, the opening size must be at least 20mm larger than the outer diameter of the refractory brick, and the recommended opening size D0 range is $(D+20)^{+8}_{0}$ mm.

An expansion gap shall be reserved between the refractory brick / fire casing and the rigid material of the furnace wall, and shall be filled and tamped with aluminum silicate fiber cotton.

When the thickness of the furnace wall is greater than the length of the refractory brick / fire casing, the excess part shall be at the bell mouth with an included angle of 45 ° along the flame flow direction inside the furnace wall (as shown in the figure), so as to avoid the scouring of the furnace wall by the high-temperature flame.



Installation notes

- The burner can be installed side mounted or top mounted, but under normal circumstances, top mounted is not recommended
- An expansion gap shall be reserved between the refractory brick / fire casing and the rigid material of the furnace wall, which shall be filled and tamped with aluminum silicate fiber cotton;
- The fiber gasket is used for sealing between the burner mounting flange and the furnace wall mounting plate;
- After the furnace is used for the first time at the design temperature, please check the shrinkage of the fiber around the refractory brick / fire casing, and refill the gap with the refractory fiber to ensure good sealing;
- Flexible compensation connecting pipe must be used in the pipeline system of combustion supporting air and gas;
- It is recommended to reserve ignition holes and flame monitoring holes on the top of burner bricks;
- The burner must be installed correctly as required to avoid abnormal heat transfer.

Operating notes

- When the burner is running, the surface temperature of the burner shell and end plate is lower than 80 °C.
- When the burner is shut down, if the temperature in the combustion chamber is higher than 500 °C, a small amount of combustion air should be reserved to reduce the temperature of the burner.
- All installation, maintenance, ignition and setting must be operated by professional technicians in strict accordance with the latest local standards and specifications. In order to avoid personal and property damage, please strictly comply with the requirements in the operation manual.
- The operator must wear appropriate protective clothing (shoes, helmet).
- When the burner is in the ignition stage or in the high-temperature operation stage, in order to avoid the risk of burns or high-voltage electric shock, the operator must avoid any contact with the burner.
- All simple or complex maintenance must be allowed under shutdown.

Accessories

NO.	Parts	Type	Applicable burner	Photos
1	Spark plug	RP-SE-LNG020	TinoxFG-020 TinoxFG-035	
		RP-SE-LNG055	TinoxFG-055 TinoxFG-075	
		RP-SE-LNG120	TinoxFG-120	
			TinoxFG-160	
		RP-SE-LNG240	TinoxFG-240	
2	Gasket	LNG020-8S	TinoxFG-020S	
		LNG035-8S	TinoxFG-035S	
		LNG055-8S	TinoxFG-055S	
		LNG075-8S	TinoxFG-075S	
		LNG120-8S	TinoxFG-120S	
		LNG160-8S	TinoxFG-160S	
		LNG240-8S	TinoxFG-240S	
		LNG020-8B	TinoxFG-020B	
		LNG035-8B	TinoxFG-035B	
		LNG055-8B	TinoxFG-055B	
		LNG075-8B	TinoxFG-075B	
		LNG120-8B	TinoxFG-120B	
		LNG160-8B	TinoxFG-160B	
		LNG240-8B	TinoxFG-240B	

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