

# 产品手册

## Product Manual



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让燃烧完美而简约  
Make The Combustion Perfect And Simple

# COMPANY INTRODUCTION 公司介绍

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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 heavy 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.

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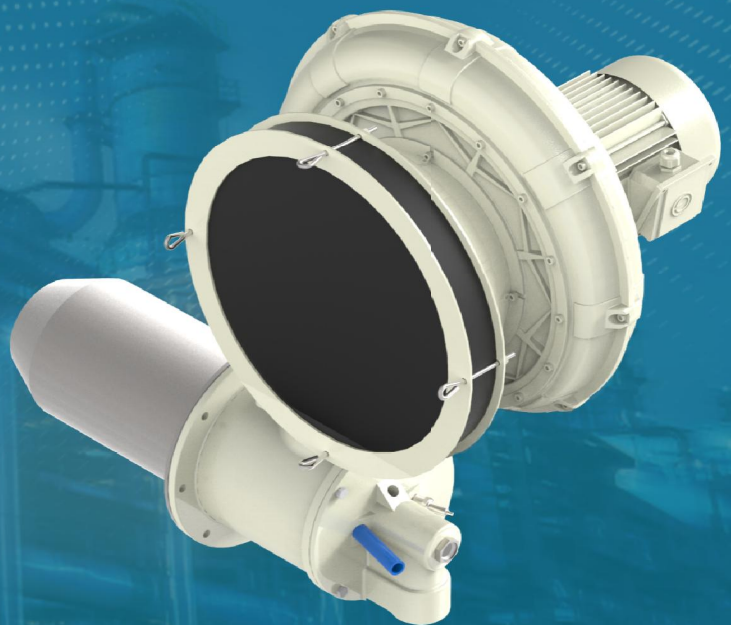


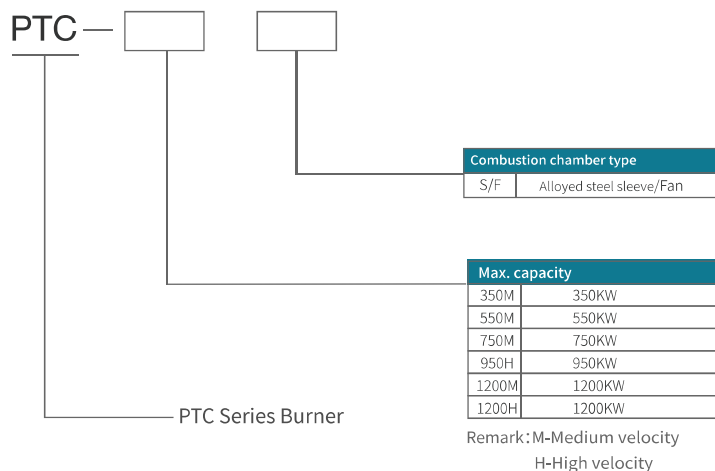


# PTC-F BURNER

PTC-F gas burner is a high-precision temperature control burner designed by DYDTEC for industrial applications. It has the characteristics of wide capacity regulation range, sufficient combustion, reliability and stability, high convective heat transfer efficiency and so on. It has a wide range of applications, such as hot air heater, drying furnace, preheating furnace, ceramic shuttle kiln, glass tempering furnace, quenching furnace, annealing furnace, RTO, thermal oxidation furnace, etc.

- Applicable maximum combustion chamber temperature 950 °C
- High convective heat transfer efficiency
- Turn down ratio 20:1
- Flexible adjustment to meet a variety of temperature control needs
- Excellent low fire performance
- Perfect for both high and low temperature applications
- Low CO and NOx emissions
- Applicable to natural gas and LPG
- Direct ignition with spark plug





## PARAMETERS

MODEL	PTC-350MS/F	PTC-550MS/F	PTC-750MS/F	PTC-950HS/F	PTC-1200MS/F	PTC-1200HS/F
Max. capacity (kW)	350	550	750	950	1200	1200
Required gas pressure (Pa)	1000	500	900	1350	550	2100
Required combustion air pressure (Pa)	1500	550	1010	2200	1600	3400
Flame length (mm) *	1000	1200	1500	1450	2500	1800
Weight (kg)	58	82	92	135	135	169
voltage of fan (V)	AC380					
Oxygen content of combustion air	21%					
Combustion chamber pressure range (kPa)	-0.5 ~ 0.5					
Maximum operating temperature (°C)	950					
NOx emission (mg)	80					

Data measurement conditions: natural gas, combustion air temperature 20 °C, combustion chamber back pressure 0Pa.

## Description

The flame length is calculated from the outlet of the fire casing.

## Flame detection:

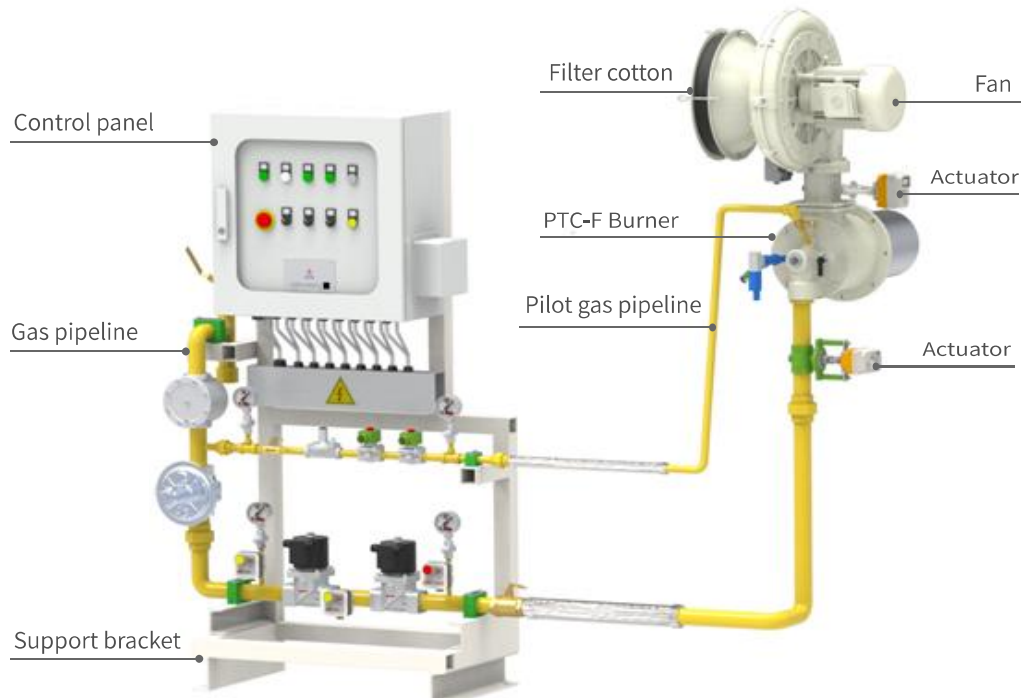
UV is suitable for all burners;

Flame rods can be used for PTC-350 only (the temperature combustion air is lower than 150 °C)

## 02

## Application

The PTC-F burner is widely used for different high temperature processes. The typical configuration of a single burner is shown below:

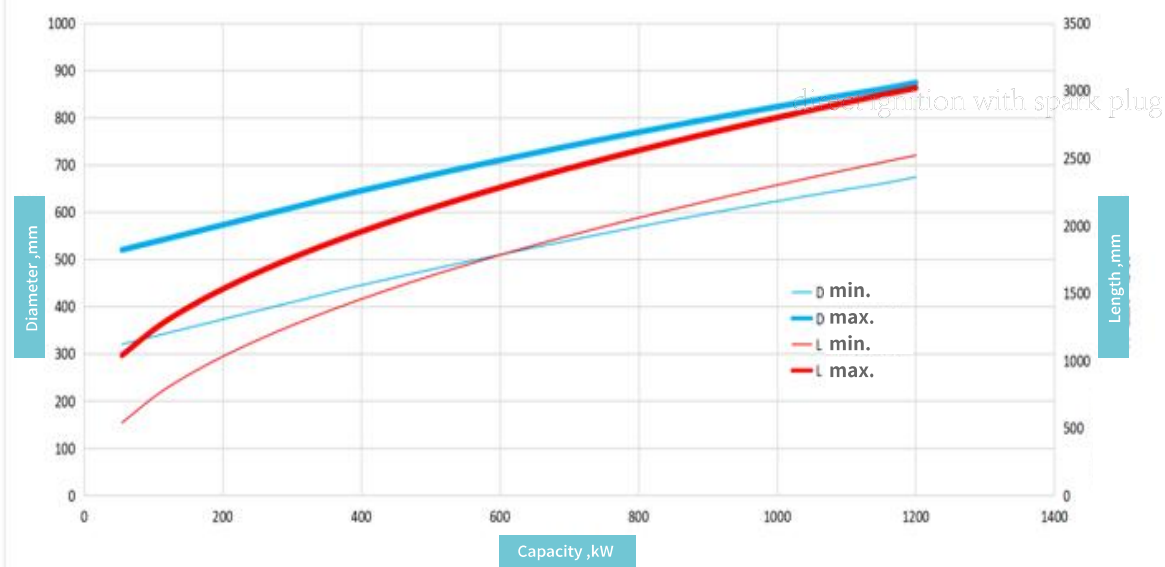


## 03

## Furnace size



Recommended furnace size of ptc-f burner



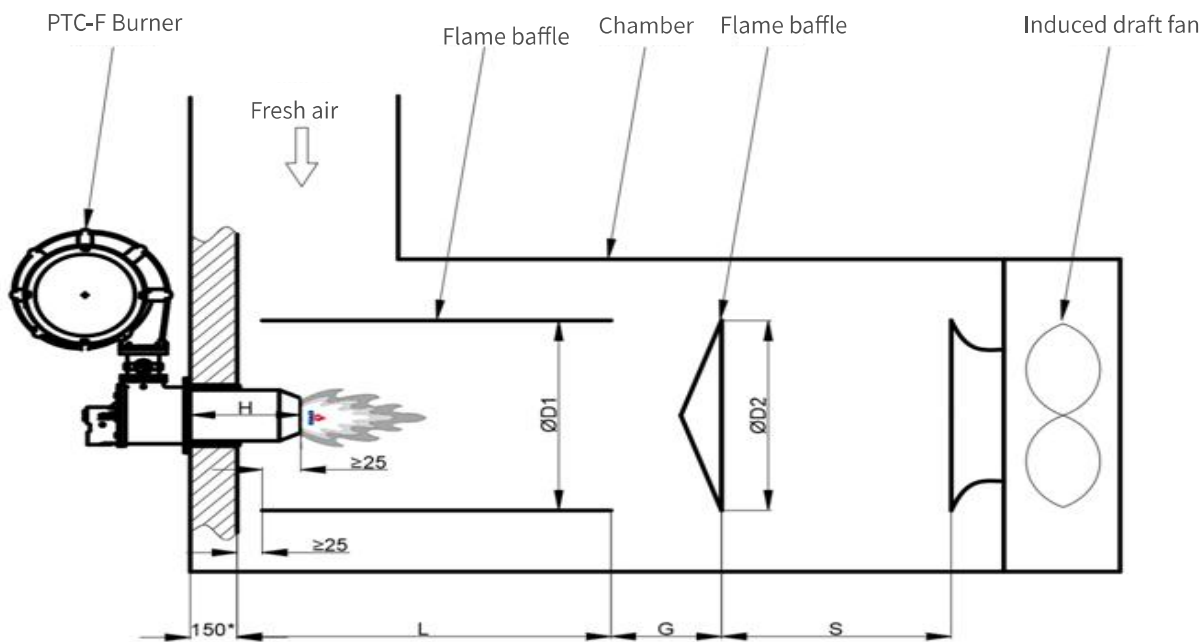
滚滚长江东逝水



04 Application

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

PROCESS DRAWING



Dimension

Type	Typical design dimensions					
	D1	D2	G	H	L	S
PTC-350M	400 ~ 600	600	300 ~ 400	291	≥1000	≥600
PTC-550M	500 ~ 700	700	300 ~ 400	354	≥1200	≥600
PTC-750M	600 ~ 800	800	300 ~ 400	354	≥1500	≥600
PTC-950H	700 ~ 900	900	300 ~ 400	395	≥1500	≥600
PTC-1200M	700 ~ 900	900	300 ~ 400	395	≥2500	≥600
PTC-1200H	700 ~ 900	900	300 ~ 400	395	≥1800	≥600

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

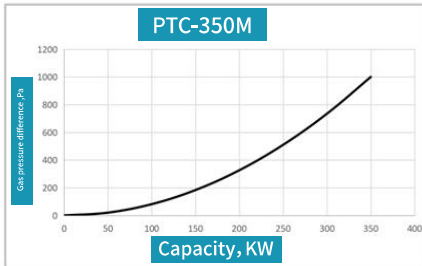
05

Data curve

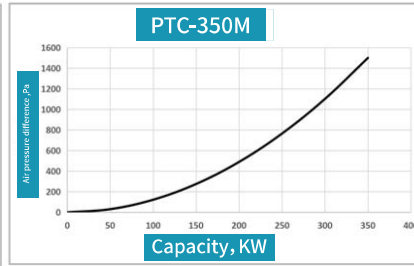


## PTC-350MS/F

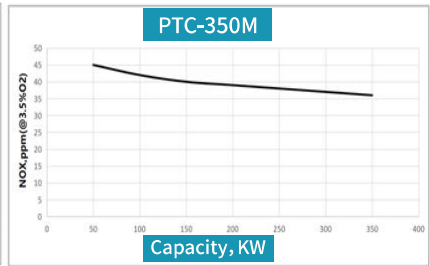
Gas pressure difference  
(natural gas, detection  
position: gas pressure tap)



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



NOx emission

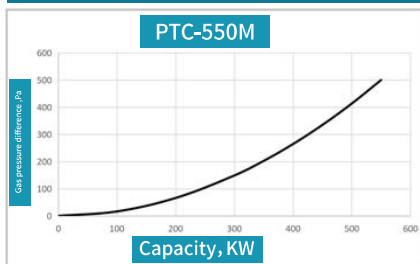


Note: NOx emission data are tested based on 600 °C combustion chamber temperature .

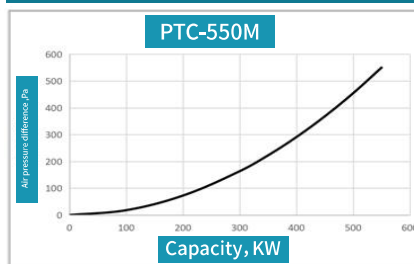
NOx emission data is only for reference, because NOx emission is also affected by combustion chamber structure, excess air coefficient and other factors.

## PTC-550MS/F

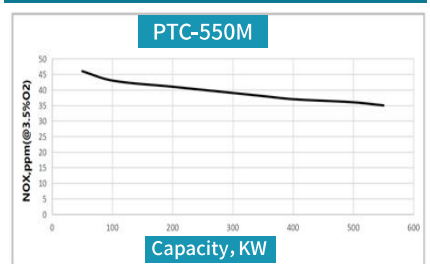
Gas pressure difference  
(natural gas, detection  
position: gas pressure tap)



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



NOx emission



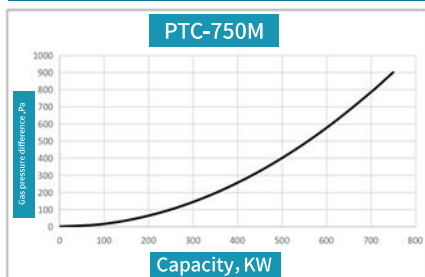
Note: NOx emission data are tested based on 600 °C combustion chamber temperature .

NOx emission data is only for reference, because NOx emission is also affected by combustion chamber structure, excess air coefficient and other factors.

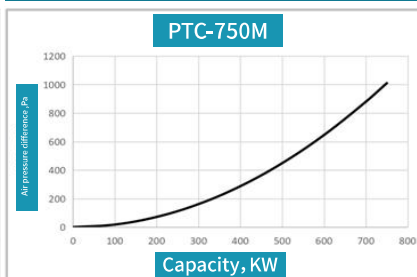


## PTC-750MS/F

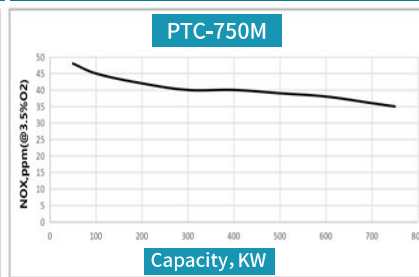
Gas pressure difference  
(natural gas, detection  
position: gas pressure tap)



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



NOx emission

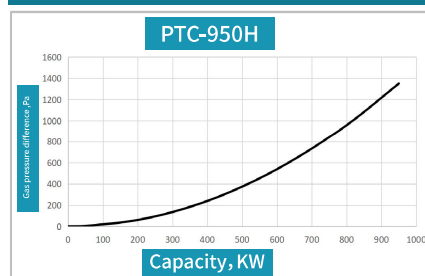


Note: NOx emission data are tested based on 600 °C combustion chamber temperature .

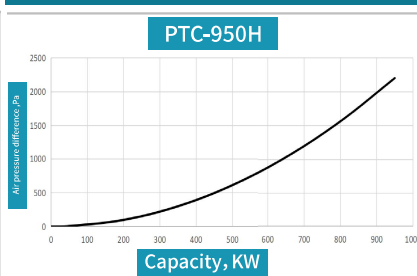
NOx emission data is only for reference, because NOx emission is also affected by combustion chamber structure, excess air coefficient and other factors.

## PTC-950HS/F

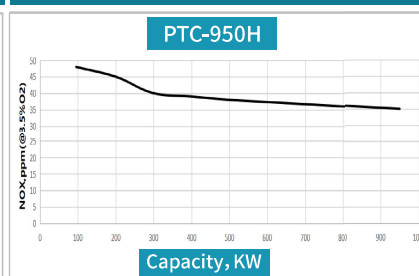
Gas pressure difference  
(natural gas, detection  
position: gas pressure tap)



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



NOx emission



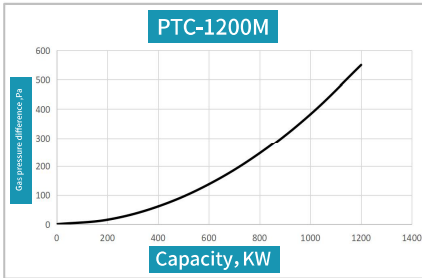
Note: NOx emission data are tested based on 600 °C combustion chamber temperature .

NOx emission data is only for reference, because NOx emission is also affected by combustion chamber structure, excess air coefficient and other factors.

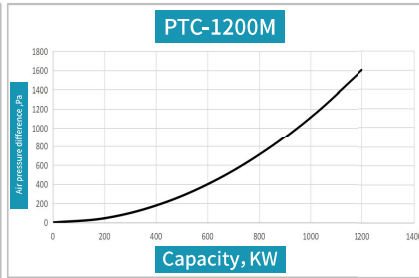


## PTC-1200MS/F

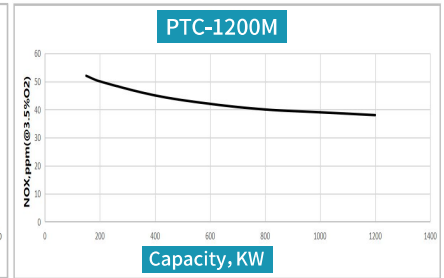
Gas pressure difference  
(natural gas, detection  
position: gas pressure tap)



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



NOx emission

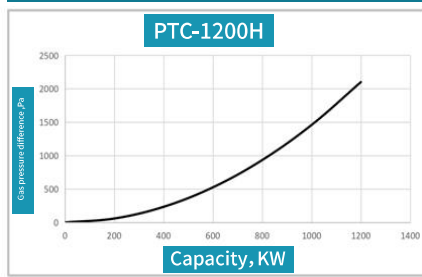


Note: NOx emission data are tested based on 600 °C combustion chamber temperature .

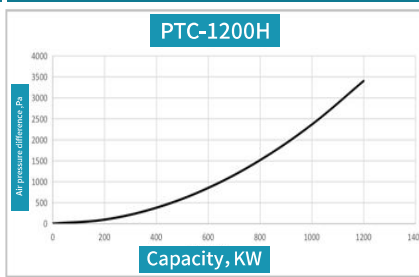
NOx emission data is only for reference, because NOx emission is also affected by combustion chamber structure, excess air coefficient and other factors.

## PTC-1200HS/F

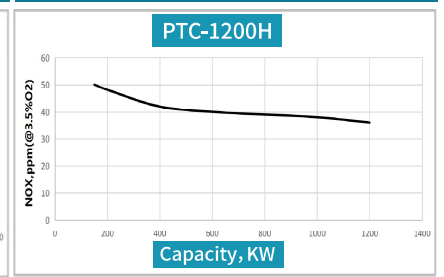
Gas pressure difference  
(natural gas, detection  
position: gas pressure tap)



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



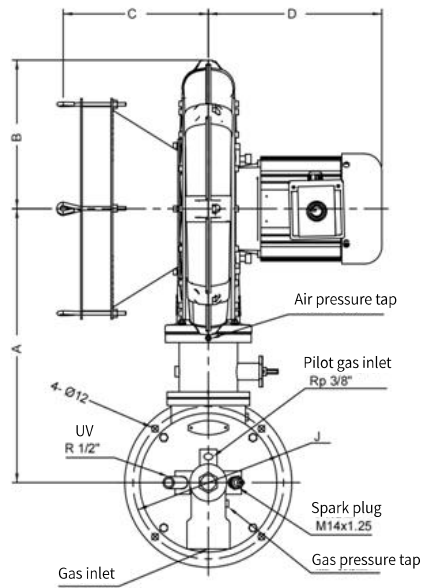
NOx emission



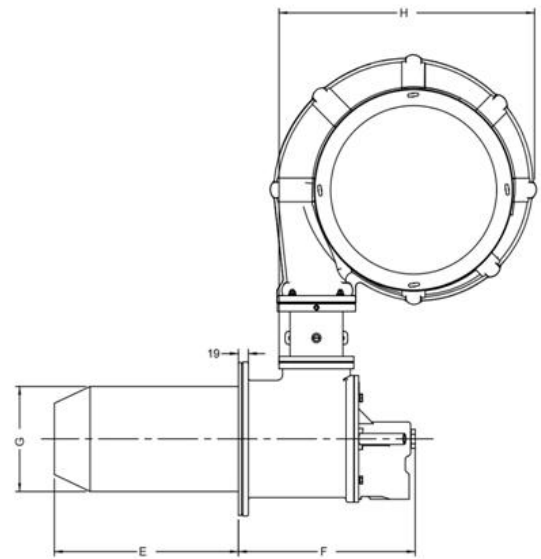
Note: NOx emission data are tested based on 600 °C combustion chamber temperature .

NOx emission data is only for reference, because NOx emission is also affected by combustion chamber structure, excess air coefficient and other factors.

## OVERALL



Spark plug



## DIMENSION

Unit,mm	A	B	C	D	E	F	G	H	I	J
PTC-350MS/F	441	256	254	303	291	251	141	509	Rp 1.5"	190
PTC-550MS/F	472	256	254	303	354	340	199	491	Rp 2"	263
PTC-750MS/F	506	286	260	345	354	340	199	609	Rp 2"	263
PTC-950HS/F	600	342	271	380	395	408	254	753	Rp 2"	300
PTC-1200MS/F	600	342	271	380	395	408	254	753	Rp 2"	300
PTC-1200HS/F	600	342	271	471	395	408	254	753	Rp 2"	300

## 07

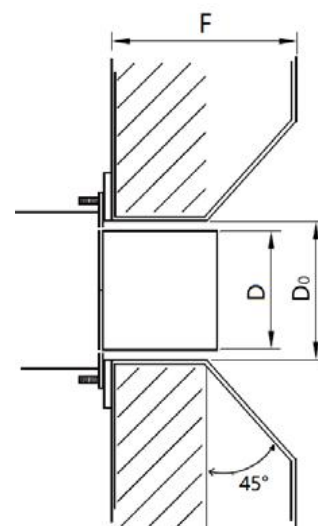
## Installation

## 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  $D_0$  range is  $(D+20)$  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.

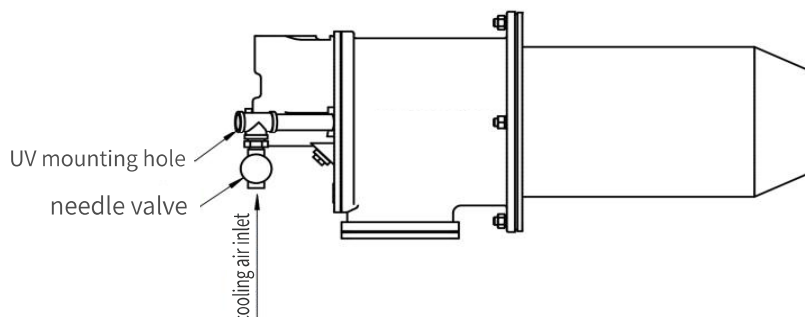
When the thickness of the furnace wall is greater than the length of the refractory brick / fire casing, the excess part shall be at the bell mouth with an included angle of  $45^\circ$  along the flame flow direction inside the furnace wall (as shown in the figure), so as to avoid the scouring of the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



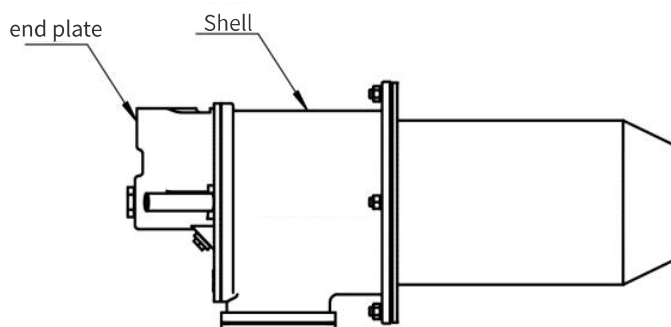
## Installation notes

- 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;
- The burner must be installed correctly as required to avoid abnormal heat transfer.

- If UV cooling air is set, the air volume shall be set with a needle valve to regulate the flow, and the cooling air flow shall not exceed 5nm<sup>3</sup>/h, so as to avoid the high temperature of the mixing cone caused by the full combustion of the flame in the mixing cone due to the excessive UV cooling air volume, which will affect the service life.



- When the burner is in normal use, the surface temperature of the burner shell and end plate is lower than 60 °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 shall 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.



Operators must wear appropriate protective clothing (shoes, safety helmet).

In order to avoid the risk of burns or high-voltage electric shock when the burner is in ignition stage or high-temperature operation stage, the operator must avoid any contact with the burner.

All simple or complex maintenance can only be allowed under shutdown status.

Product improvement and specification parameters are subject to change without notice.



NO.	Name	Type	Applicable burner	Photo
1	spark plug	RP-SE-RFG020	PTC-350M	
		RP-SE-RFG075	PTC-550M	
			PTC-750M	
			PTC-950M	
			PTC-1200M	
			PTC-1200H	
2	washer	RFG040-8	PTC350M	
		RFG075-8	PTC-550M	
			PTC-750M	
		RFG125-8	PTC-950M	
			PTC-1200M	
			PTC-1200H	

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