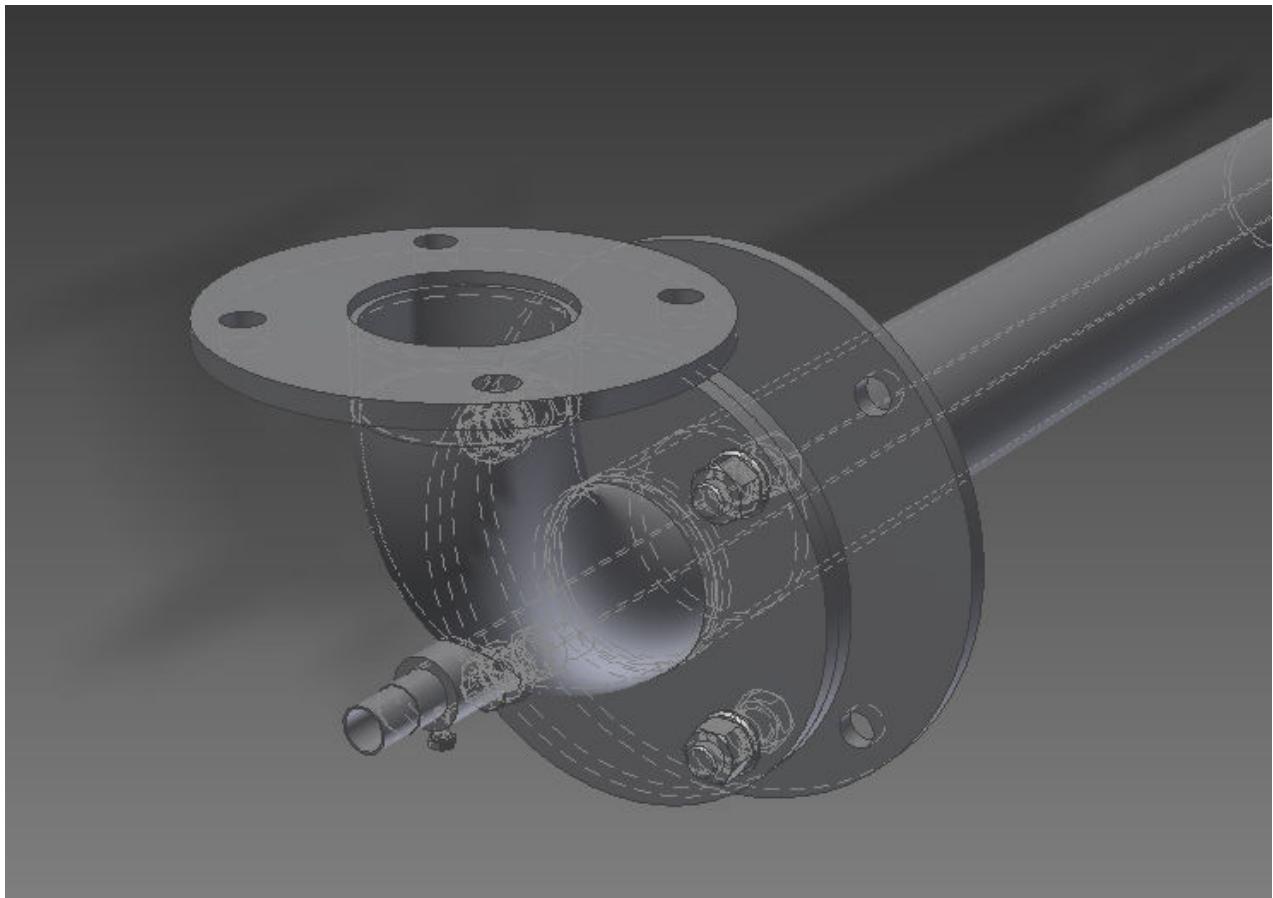


GAS BURNER FOR TUNNEL FURNACE

PPT-120



DATA SHEET

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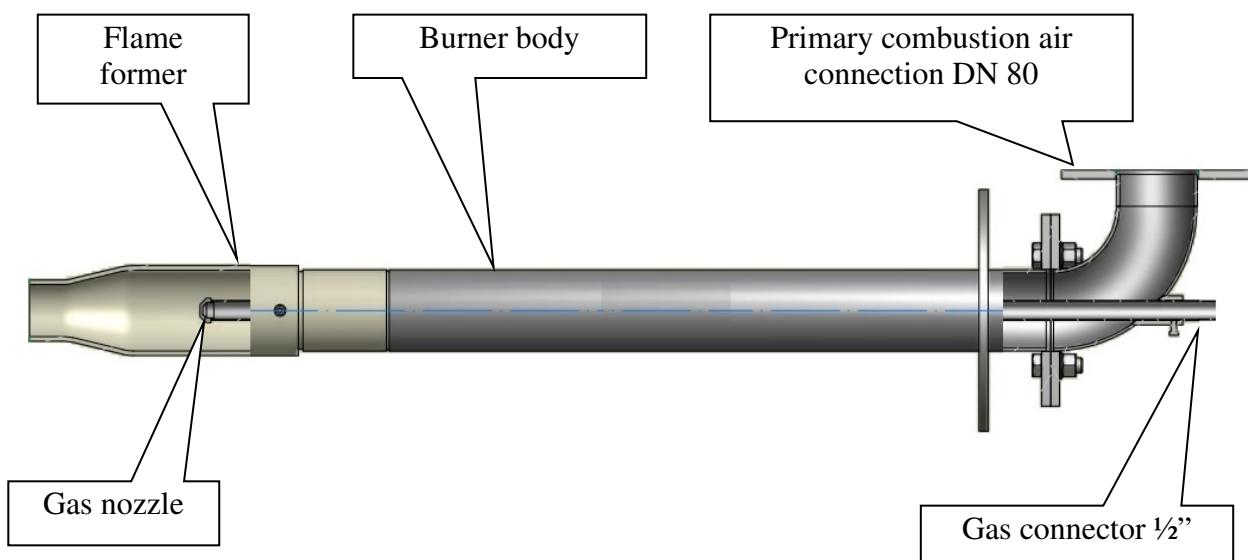
Description and Technical Characteristics of the Burner

The PPT-120 burner is designed for gas combustion with air deficiency, as occurs during heating and firing of the charge in tunnel furnaces. The nominal thermal power of the burner, for a given gas pressure, is determined by the hydraulic resistance of the lance, which consists of the connection, tube, and gas nozzle.

Due to the method of mixing the combustion substrates, the PPT-120 burner belongs to the diffusion type, since the mixing of gas and primary combustion air begins immediately behind the outlet of the ceramic burner block. If the outlet of the burner block is flush with the wall, gas combustion then takes place in the furnace heating chamber.

In tunnel furnaces where the firing temperature exceeds 1500 °C, the outlet of the ceramic burner block should be recessed into the furnace lining, so that gas combustion begins partly within the furnace wall. Complete gas combustion occurs in the secondary air, which is preheated in the cooling zone of the charge to very high temperatures.

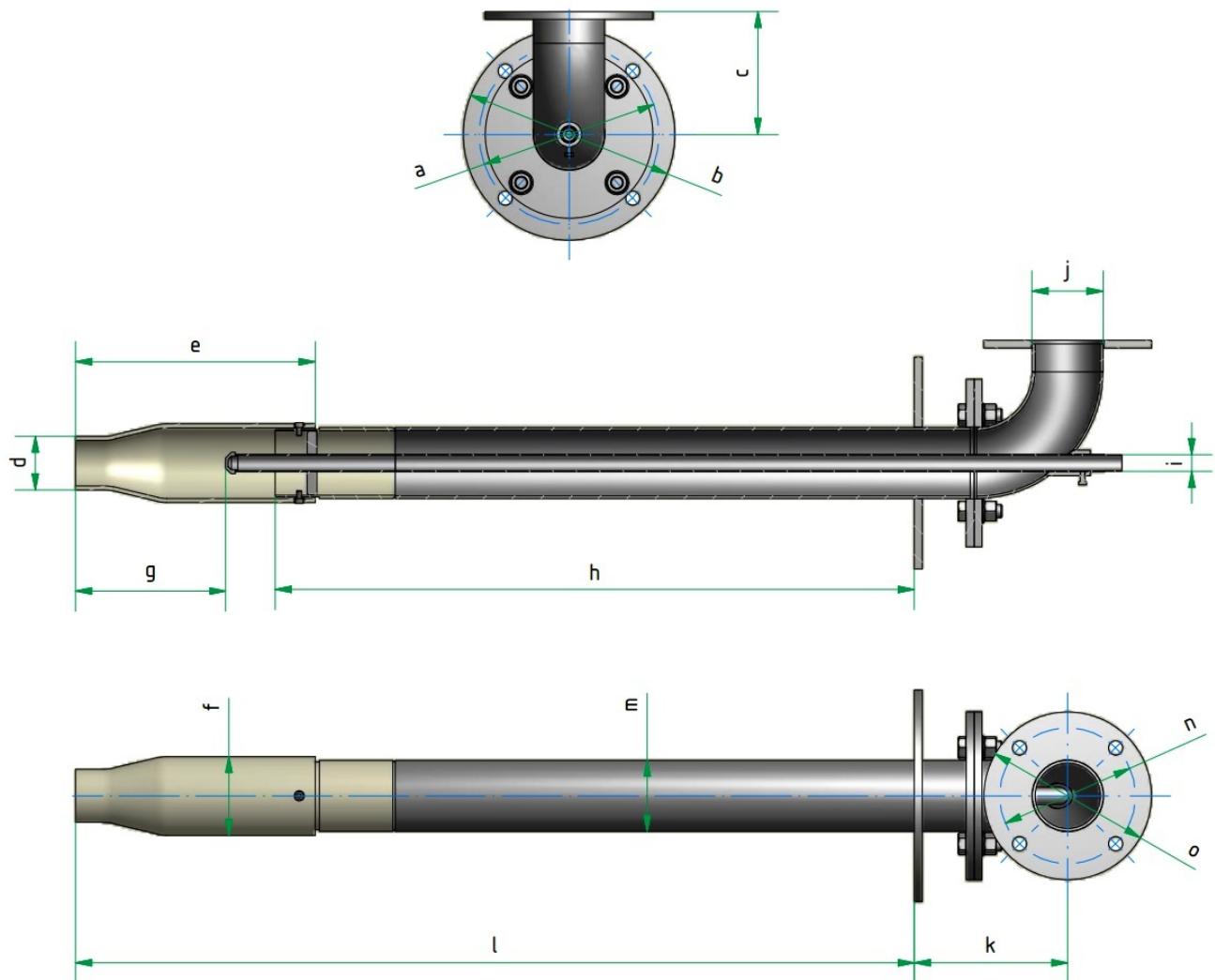
The nominal burner power is defined by the outlet diameter of the gas nozzle, the gas pressure, and the outlet diameter of the flame-shaping block. The burner components are shown in the drawing below.



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Dimensions of the PPT-120 burner are shown in the drawing below.



Burner type	Dimensions, mm													Mass kg
PPT-120	a*	b*	c	d	e	f	g	h	i	j	k	l	m	23,1
	225	265	154	67	300	99	188	800	1/2"	89	192	1050	89	

PPT -120 Burner Technical Data

Type of burner by gas combustion method:	diffusion
Nominal thermal power:	120 kW
Power adjustment range:	5÷1
Type of control:	continuous or “high”, “low”
Gas type:	coke-oven gas, natural gas, LPG
Size of gas connection:	R 1/2”
Size of combustion air connection:	ϕ 80 (inside diameter)
Burner body diameter:	ϕ 114,3 (outside)
Lenght	c.a. 1800 mm
Combustion air temparature	up to 250°C
Gas pressure at nominal (inlet):	2 kPa
Ignition:	from the hot furnace walls
Maximum temperaturę inside furnace	1600°C
Flame monitoring:	lack

Burner Operating Conditions

In the burner control system, the following electrical interlocks must be applied:

- ✓ Against loss of supply voltage to the heating system
- ✓ Against lack of furnace draft (negative pressure)
- ✓ Against improper gas pressure
- ✓ Against improper combustion air pressure

Other Requirements

- ✓ Continuous supervision of the burner flame when the furnace lining temperature is below 750°C
- ✓ Continuous monitoring of CO concentration around the furnace when the lining temperature is below 750°C and positive pressure of flue gases occurs in the combustion zone

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- ✓ Ensuring proper flow of secondary combustion air from the cooling zone of the charge
- ✓ Ensuring minimum flow of gas and primary combustion air to cool the burner outlet section
- ✓ Proper positioning of the burner outlet in relation to the surface of the refractory layer of the furnace walls

Materials

- ✓ Body on the ambient side: structural steel
- ✓ Body in the furnace wall: stainless steel
- ✓ Gas nozzle: heat-resistant steel
- ✓ Flame shaping element: SiC (silicon carbide)

Applications

Gas combustion in secondary air with deficiency of primary air for example, in the heating chambers of tunnel furnaces.