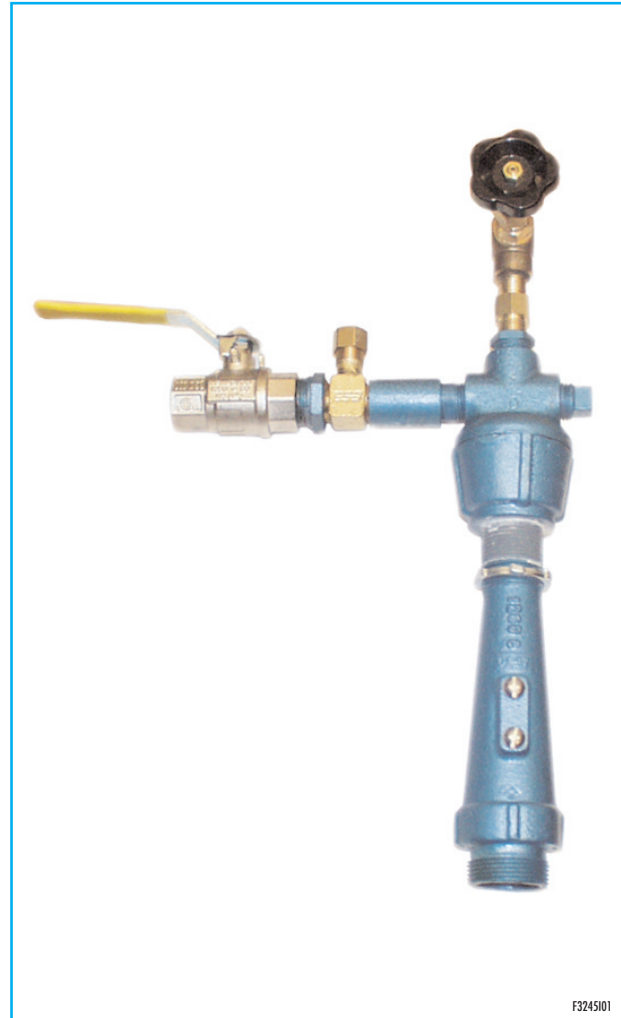


# HIGH BLAST TORCHES

## HBT SERIES

### FEATURES

- External construction: cast iron G25
- Internal pipe and orifices: AISI304
- Standard nozzle: cast iron G25
- Heat capacity: from 12 to 850 kW
- Adequate to different types of gas: CH4/L.P./propane/etc.
- Air pressure required: from 1.4 bar to 8.4 bar
- Minimum gas pressure:
  - Coke-oven gas: 13 mbar
  - Natural gas: 7.6 mbar
  - L.P., propane, butane: 2.5 mbar
- Incorporated compressed air adjuster.
- Incorporated inspired air adjuster.
- Low pressured air consumption: 10% of the quantity required for combustion



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### APPLICATIONS

- Cupola firing.
- Core drying.
- Ladle and crucible melting reheating.
- Pouring spout heating.

### DESCRIPTION

High blast torches are equipped with nozzle and venturi mixer. They use a small amount of high pressure air to pick up incoming gas at the mixer. Ten percent of the total air required is passed through a primary modified venturi which inspirates the gas flow and elevates its pressure. The suction effect allows for the use of low capacity

injectors because 90 % of the air required is inspirated from outside. The high pressure air valve and primary air shutter provide for wide ranges of adjustment. Injector type design of high pressure stage, prevents air feed back into the gas line.



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## INSTALLATION

- Make high pressure air and gas connections. These may be pipe or flexible hoses.
- The connections should not be smaller than the valve size.
- Check air and gas lines for leaks.
- Loosen locknut on body and open primary air shutter wide.
- Open air valve full.
- Hold lighting torch alongside burner nozzle and slowly open gas cock.
- After flame is lit, flame is adjusted via modulation of the gas cock.
- Opening gas wider gives a softer, longer flame. Closing it slightly produces a sharper, shorter flame.
- Adjust air valve and primary air shutter to obtain the capacity required.

## IGNITION AND FLAME DETECTION

High blast torches are usually lighted through pilot flame which is taken away from the nozzle after lighting. Factory mounted spark electrode (WAND), UV-scanner (UV-2) and flame control (ESTRO) are

also available. A slow opening gas valve is absolutely essential in case of immediate ignition.

Catalog No.	Pilot burner electrode		Ignition electrode	
	Ignition	Detection	Ignition	Detection
6 HBT	P42PBST-W/X	Wand	Wand	Wand - UV/2 *
8 HBT	P42PBST-W/X	Wand	Wand	Wand - UV/2 *
10 HBT	P42PBST-W/X	Wand	Wand	Wand - UV/2 *
12 HBT	P42PBST-W/X	Wand	Wand	Wand - UV/2 *
16 HBT	P42PBST-W/X	Wand	Wand	Wand - UV/2 *
20 HBT	P42PBST-W/X	Wand	Wand	Wand - UV/2 *
24 HBT	P42PBST-W/X	Wand	Wand	Wand - UV/2 *
32 HBT	P42PBST-W/X	Wand	Wand	Wand - UV/2 *

(\*) In most cases, we suggest you to make flame detection through UV- scanner. In some particular cases, it is possible to use continue pilot burner with detection electrode.

## CAPACITY TABLE

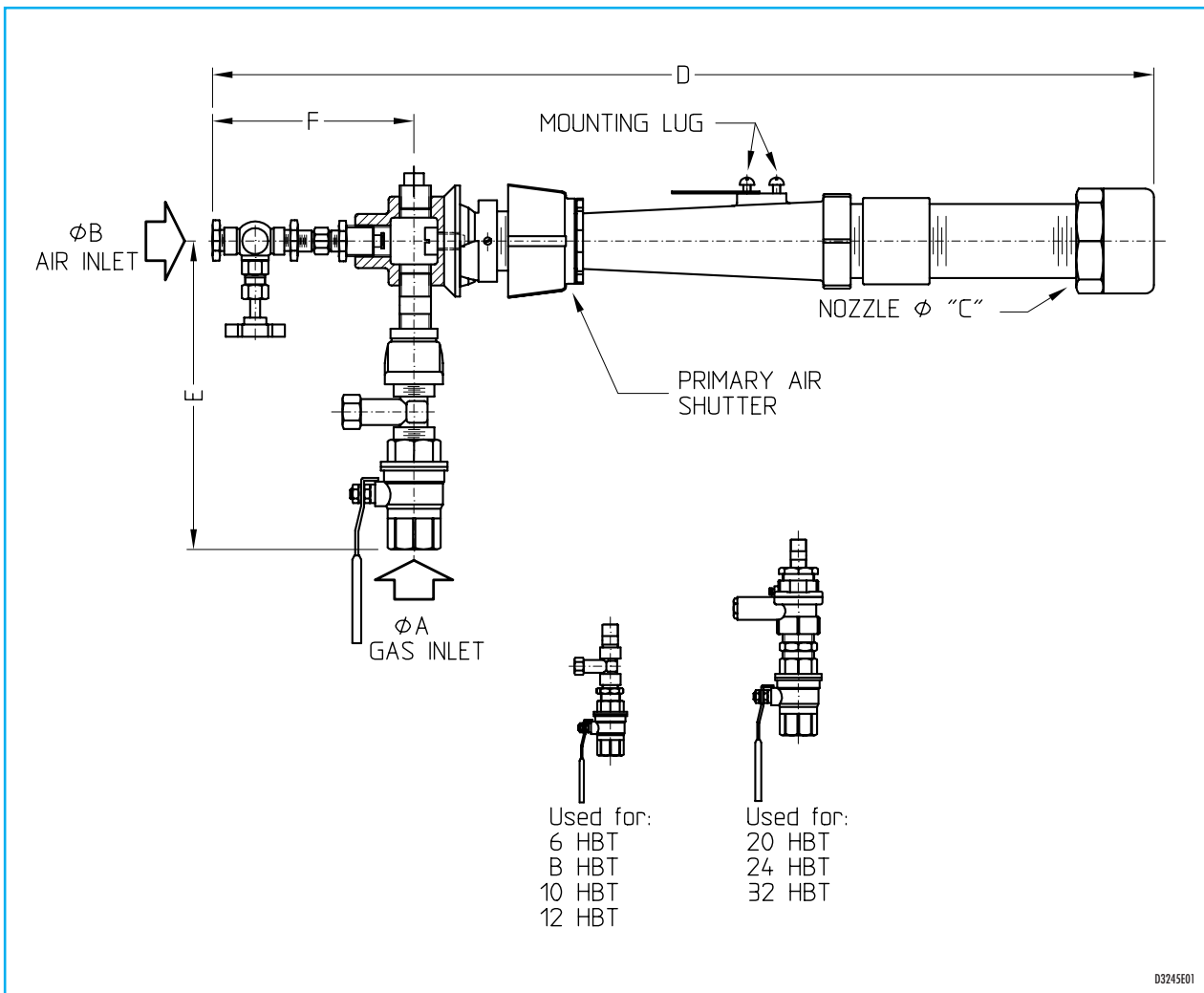
Catalog no.	Capacity kW	Air flow Nm <sup>3</sup> /h 2,8 bar	Flame length (*) mm
6 HBT	16	2	200 ÷ 300
8 HBT	25	4	250 ÷ 350
10 HBT	60	9.3	350 ÷ 400
12 HBT	90	12.4	450 ÷ 500
16 HBT	160	17	600 ÷ 650
20 HBT	220	23.5	750 ÷ 800
24 HBT	270	29.4	900 ÷ 1.000
32 HBT	480	49	1.200 ÷ 1.300

Air pressure bar	1.4	1.76	2.1	2.46	2.8	3.16	3.5	3.86	4.2	4.56	4.9	5.6	6.7	7	8.4
Factor	0.71	0.79	0.87	0.94	1.00	1.06	1.12	1.18	1.23	1.28	1.32	1.42	1.50	1.58	1.73

Multiply gas and air capacities by factor for air pressure.

(\*) Flame length are approximate, referred to burner feeded with natural gas, free air, working at stoichiometric ratio and at nominal capacity.

## DIMENSIONS



Catalog no.	A npt	B npt	C npt	D mm	E mm	F mm	Mass kg
6 HBT	1/2"	3/8"	3/4"	375	130	85	2.3
8 HBT	1/2"	3/8"	1"	470	130	85	3
10 HBT	3/4"	3/8"	1.1/4"	570	150	90	4.3
12 HBT	3/4"	3/8"	1.1/2"	600	150	90	4.6
16 HBT	1"	3/8"	2"	715	190	100	9
20 HBT	1"	3/8"	2.1/2"	760	190	100	11.3
24 HBT	1.1/4"	3/8"	3"	970	200	110	18
32 HBT	1.1/4"	3/8"	4"	1190	220	110	27



NOTE: Based on the company's policy aimed at a continuous improvement on product quality, ESA-PYRONICS reserves the right to bring changes to the technical characteristics of this device without previous notice. Our catalog updated to the latest version is available on our web site [www.esapyronics.com](http://www.esapyronics.com) and it is possible to download modified documents

WARNING: When operating, this combustion system can be dangerous and cause harm to persons or damage to equipment. Every burner must be provided with a protection device that monitors the combustion. The installation, adjustment and maintenance operations should only be performed by trained and qualified personnel.