





BURNER IN ACCORDING TO:

NORMS: • EN 676:2020 • EN 267:2020

• EN 746-2:2011

STANDARDS EXTRA EUROPEAN: • GB/T 36699-2018

REGULATIONS AND DIRECTIVES: • 2006/42/CE • 2014/35/UE

The TBR serie features an innovative design and a highly functional and versatile layout to meet the most demanding requirements in industrial applications. The TBR combustion system consists of several functional blocks:

- Combustion head
- Ventilating unit
- Control panel
- Gas valve train (for gas aplications)
- Pumping skid (for liquid fuel applications)

ENERGY SAVING

TBR burners are equipped with an electronic control, which allows the air-fuel mixture to be regulated with maximum precision as the heat load changes, optimising energy consumption. Combustion optimisation systems (O2 and CO control kits) can be combined with TBR burners to ensure significant economic 'savings'.

COMBUSTIONE HEAD

The combustion head allows combustion and flame size to be adapted in relation to the type of combustion chamber.

For gaseous fuel versions, the 'spear' design with adjustable nozzles allows for flexible combustion systems in relation to different applications, to achieve even low NOx values with and without FGR. The design ensures easy and immediate access to the combustion head.

SUPER LOW NOx (FIR) TECHNOLOGY

(TBR 4-32)

TBR series burners from model 4 to 32 are also available with super LOW NOx emission levels, with NOx below 50 mg/kWh. The unique combustion head design of these burners is the result of an optimisation process of the gas and air flow channels with the aim of reducing NOx emissions and ensuring stability over the entire operating range of the machine.

LOW NOX WITH SYSTEM FGR (TBR 4-80)

TBR serie burners from model 4 to 80 are designed and prepared to be combined with the external combustion gas recirculation system, known as FGR.

This technology provides for the mixing of combustion air at burner intake with combustion gases taken from the chimney of the heat generator on which it is installed.

Thanks to the mixing of combustion air, flue gases (up to 40% of the total flue gas flow rate) and fuel, a flame is generated whose 'adiabatic' temperature is significantly reduced compared to that generated by a burner without FGR.

The result is a reduction in NOx values between 15 and 40 %.

TBR SERIES

ADJUSTABLE FLAME GEOMETRY

The burner is equipped with an air regulator on the combustion head, used to modify, within broad limits, the shape of the flame (diameter-length) to adapt it to the furnace geometry. Adjustment can be: manually by acting on the opening device of the register dampers, modifying the geometry of the combustion air flows. Alternatively with an actuator controlled by BMS (Burners Management System) the equipment which can automatically change the position of the register and consequently the shape of the flame according to the application of the firebox, throughout the modulation range











20° angle

High dampers inclination, strong air turbulence. Short, wide flame.

BURNER AND GAS TRAIN ORIENTATION

The burners of the TBR serie are designed to be absolutely versatile, so they can be installed on the heat generator in various orientations. For example:



FROM BELOW



FROM THE LEFT



FROM THE RIGHT



 (\Box)

FROM ABOVE

TBR SERIES

TBR G WORKING FIELDS





TBR FGR WORKING FIELDS

TBR SLX WORKING FIELDS



k∨	√ 50	00 - 8	8000	0	TBR SE	RIES					
SYMB	OLS										
	1 TBR	2 20	3 G	4 ME	5 LN4	FG	R AC	8 AIB	F	9 R	
1	TYPE (OF BURNEI The Best Re	R	-			-	-		-	
2	CAPAC 4-6-9-	CITY 12 - 16 - 20	- 26 - 32 - 38	- 44 - 50 - 56	- 62 - 70 ·	- 80		-		-	
3	FUEL G B P L LA N NA	natural gas biogas L.P.G. light oil light oil with atomisation heavy oil heavy oil wi	n compressed th compresse	air assisted d air atomisa	tion	NS GL GN GNS GNA	heavy oil wi gas/light oil gas/heavy o gas/heavy o atomisation gas/heavy o air atomisat	th steam assi combination il combinatio il combinatio il combinatio ion	sted atom n n with ste n with cor	isation am assisted npressed	
4	AIR GA ME MEV MEV O ₂	AS CONTRO with electro with electro with electro control	DL phic cams phic cams and phic cams and	inverters inverter and	0 ₂	MEV CO	D with electro control	nic cams and	inverters	and CO	
5	NATUR LN2 LN3	RAL GAS N (<120 mg/k) < 80 mg/kV	Ox EMISSIC Wh Vh	DNS		LN4 LN5	< 50 mg/kV < 30 mg/kV	/h /h		-	
6	FLUE R FGR SLX	RECIRCULA with flue ga Low NOx co	TION s recirculation ombustion hea	n system at 5 ad	0° C		-				AL RS
7	HOT A / AC	IR for combust for combust	tion air tempe tion air tempe	erature opera Prature opera	tion at 50° tion at 250	°C °C					INDUSTRI BURNE
8	AIR SU AIB AIL	air inlet fror air inlet fror	n below n left			AIT AIR	air inlet fror air inlet fror	n top n right			
9	FUEL S FR FL FB	SUPPLY* from right from left from below				FT	from top * this is the s	supply systen	n of gaseo	us fuel	

TBR SERIES

PRODUCT CONFIGURATION	TBRG ME	TBRL ME	TBRGL ME	TBRN ME	TBRGN ME
Steel metal frame with sanding treatment and powder coating	•	•	•	٠	•
Stainless steel metallic diffuser	•	•	•	•	•
Stainless steel metallic diffuser with extended length	0	0	0	0	0
Combustion head extraction system	•	•	•	٠	•
Gas plenum chamber with lances provided with adjustable nozzles	•	ND	٠	ND	•
Burner closing plate provided with centring system and atomisation lance	•	•	•	•	•
Light oil atomization lance	ND	٠	•	٠	•
Throttle valve for gas flow rate modulation	٠	ND	•	ND	٠
Manual or automatic flame register with variable geometry	•	٠	•	٠	•
Lifting eyebolts	•	•	•	٠	•
Flame display	•	٠	٠	٠	•
Combustion head gas pressure port	•	•	•	•	•
Intermittent operation - 1 stop every 24h -	•	٠	•	٠	•
Continuous operation - 1 stop every 72h -	•	•	•	•	•
Intermittent operation light oil ignition pilot	0	0	0	0	0
Continuous operation light oil ignition pilot	0	0	0	0	0
Intermittent operation gas ignition pilot (GAS or LPG)	•	٠	٠	٠	•
Continuous operation gas ignition pilot (GAS OR LPG)	0	ο	0	0	0
Pilot supply with compressed air	0	0	0	0	0
Cable and ignition electrodes (for pilot)	•	•	•	•	•
Gas train for ignition pilot (GAS or LPG)	•	٠	•	٠	•
Light oil train for light oil ignition pilot	0	0	0	0	0
Adjustable flame sensor support	٠	٠	٠	٠	٠
UV flame sensor	•	٠	•	٠	•
Selective frequency flame sensor	0	0	0	0	0
Version for pre-heated combustion air up to 250°C	0	0	0	0	0
Cold air flame sensor cooling system	0	0	0	0	0
Hot air flame sensor cooling system	•	٠	٠	٠	•
Multiple air dampers with servomotor	•	٠	٠	٠	•
Air pressure port	•	•	•	•	•
Junction j-box for electrical connections	•	٠	•	٠	•
Ignition transformer	•	٠	•	٠	•
Operation with continuous ventilation	•	٠	٠	٠	•
Preset for "AIR COOLING SYSTEM" with external fan cooling	0	0	0	0	0
Supplied with the burner:	•	•	•	•	•
fumigated wood packaging	•	•	•	•	•
Use of inverter on air fan	0	0	0	0	0
Use of O_2 and CO control	0	0	0	0	0
Protection rating IP65	0	0	0	0	0
Hydraulic circuit for liquid fuel according to EN267		•	•	•	٠
Flow regulator for liquid fuel via actuator		•	٠	•	٠
Electrical heater for oil line, oil regulator and safety valve.	NA	NA	NA	•	٠

• As standard • Optional NA Not available

TBR SERIES

Model	TBR 4	TBR 6	TBR 9	TBR 12	TBR 16	TBR 20	TBR 26	TBR 32	TBR 38	TBR 44	TBR 50	TBR 56	TBR 62	TBR 70	TBR 80
Thermal power (1) kW (min-max)	500 - 4,000	750 - 6,000	1,125 - 9,000	1,500 - 12,000	2,000 - 16,000	2,500 - 20,000	3,250 - 26,000	4,000 - 32,000	4,750 - 38,000	5,500 - 44,000	6,250 - 50,000	7000- 56000	7750- 62000	8750- 70000	10000- 80000
GAS - Modulation ratio	8:1	8:1	8:1	8:1	8:1	8:1	8:1	8:1	8:1	8:1	8:1	8:1	8:1	8:1	8:1
LIGHT OIL - Modulation ratio	4:1	4:1	4:1	4:1	4:1	4:1	4:1	4:1	4:1	4:1	3:1	3:1	3:1	3:1	3:1
HEAVY OIL - Modulation ratio	4:1	4:1	4:1	4:1	4:1	4:1	4:1	4:1	4:1	4:1	3:1	3:1	3:1	3:1	3:1
Ignition system	With Gas Pilot														
Maximum temperature of the combustion air °C	250 °C														
Entry couplings pilot ramp	-	-	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"
Diameter of the ignition pilot	-	-	48 mm	48 mm	60 mm	60 mm	60 mm	80 mm	80 mm						
LIGHT OIL-HEAVY OIL inlet connections	1/2"	1/2"	1/2"	1/2"	3/4"	3/4"	3/4"	3/4"	1"	1"	1"	1"1/2	1"1/2	2"	2"
LIGHT OIL-HEAVY OIL outlet connections	1/2"	1/2"	1/2"	1/2"	3/4"	3/4"	3/4"	3/4"	1"	1"	1"	1"1/2	1"1/2	2"	2"
Power supply voltage V/Ph/Hz	230/1/50														
Electric protection rating	IP 54														
In according to	EN 676 - EN 267 - EN 746-2														

(1) Cold Air Version





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Quality System Certified UNI-EN ISO 9001 I.C.I.M. n° 202 The data given in this catalogue is to be deemed approximate and therefore not binding; Baltur reserves the right to make any changes without notice.