

# Low NO<sub>x</sub> type burners MPJE



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**B**.C.E. “MPJE” type burners are equipped with one air register suitable for any kind of liquid and/or gaseous fuel with the possibility to fire one or more fuels at the same time. These are our classic burners and we have a large number of references around the world.

They are provided with a series of gas lances made from stainless steel which can be adjusted during the operation. These lances inject the whole or larger part of fuel gas with the possibility to install a central gas lance which injects the remainder part. This solution ensures a better flame stability.

Combustion air reaches burner throat thanks to air register which can be manual or automatic.

When requested for mixed gas/oil applications, a liquid atomizer replaces the central gas gun.



**A**ir vorticity is generated and guaranteed by the vanes which formed the air register. The position of such vanes is set during the start-up phases and is important to control the flame intensity and shape which are different from one combustion chamber to another or from one fuel to another.

Fuel gas is distributed through an external plenum and a series of gas lances each of which is provided with a skew-faced “multi jets” nozzle which can be adjusted and rotated to optimize gas distribution without halting burner operation.

“MPJE” type burners are designed to meet classic emissions requirements and reach the compromise between cost and performance while providing high combustion efficiency and extreme versatility.

Typical applications of these type burners include forced or balance draft boilers as well as any kind of refinery or industrial furnace, thermal oxidizers and process heaters.



## MAIN CHARACTERISTICS

- Highly customisable: each burner is designed to meet Client's specific requirements
- Reliable and efficient as demonstrated by a large number of installations worldwide
- Single air register to control the vorticity and distribution of combustion air inside the burner (manual or automatic)
- Fuel gas distributed through a plenum with adjustable nozzles and a central gas lance or liquid fuel atomizer
- Capable of burning one or more fuels at the same time
- Can be operated either with ambient temperature or pre – heated combustion air
- Can be operated with flue gas recirculation for emissions reduction
- High flame stability over a wide turndown range

## BURNER DATA

- Firing rate up to 60 MW
- Flame dimensions<sup>(\*)</sup> adjustable
- Materials carbon steel  
stainless steel
- Combustion air up to 550 °C
- Turndown 6:1
- Pressure drop 150 - 200 mm wg

*(\*) Flame dimensions vary with firing rate*

## TYPICAL GUARANTEED EMISSIONS<sup>(\*)</sup>

### Natural gas firing

- NO<sub>x</sub> 200 mg/Nm<sup>3</sup>
- CO 30 mg/Nm<sup>3</sup>

### Heavy fuel oil firing (N content 0,2 % by weight)

- NO<sub>x</sub> 450 mg/Nm<sup>3</sup>
- CO 100 mg/Nm<sup>3</sup>
- Particulate 50 mg/Nm<sup>3</sup>

*(\*) ref. to 3% O<sub>2</sub> dry flues, combustion air @ ambient temperature without FGR; the emissions could be different depending of application and must be evaluate Job by Job*

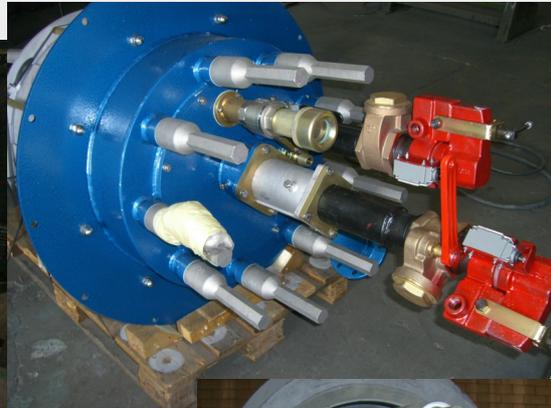
## TYPICAL BCE SUPPLY

- Burner complete with single air register and fuel equipment (central gas lance / liquid fuel atomizer, fuel gas distributor and stainless steel nozzles)
- Refractory throat (set of preformed refractory bricks made from 42 - 44% Al<sub>2</sub>O<sub>3</sub>)
- Air wind box (alternatively we can provide the lay - out drawings for manufacturing by Client)
- Combustion air isolating and balancing dampers (multi - burners application)
- Pilot igniter (High energy, high tension, premixed or non-premixed type with ionization rod)
- Flame detection system
- Burner management system (BMS)
- Piping and instrumentations trains



## SOME REFERENCE

BONO ENERGIA - TECHINT (Egypt)	1 steam boiler, 2 burners 22,8 MW each
BONO ENERGIA - SOUTH YOLOTEN GAS (Turkmenistan)	3 steam boilers, 2 burners each boiler, 28 MW each burner
EDISON - Terni (Italy)	1 steam boiler, 2 burners 29 MW each
TermoMeccanica Ecologica - S. Vittore del Lazio (Italy)	2 steam boilers, 2 burners each boiler, 21,7 MW each burner
STC - Villorba (Italy)	1 steam boiler, 2 burners 35 MW each burner
NEOTERM - Colari Malagrotta, Roma (Italy)	1 steam boiler, 1 burner 46 MW



For any further information please contact:

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