

ULNO_x type burners DTPJE



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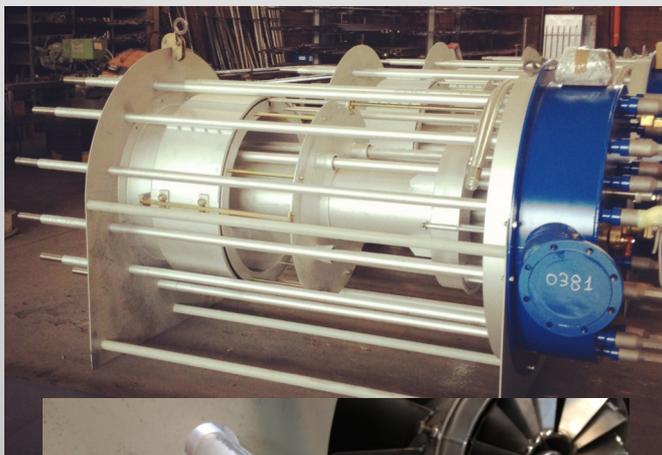
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B.C.E. Ultra Low NO_x “DTPJE” type burners are designed to satisfy the most stringent restrictions on pollutant emissions on fuel gas firing, with or without Flue Gas Recirculation (FGR) while providing high combustion efficiency and reliability with all kinds of gaseous fuels.

Thermal NO_x reduction is achieved by separating both the combustion air and the fuel gas in “primary” and “secondary” flows which ensures a “staged” combustion with less “hot spots” where NO_x formation would be critical.

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



Two air registers control combustion air flow. Each register is consisting of an axially moving drum controlling primary / secondary air rations. Strong combustion air vorticity is achieved by means of primary and secondary air swirlers whose position is set during the start – up and commissioning phases to provide the proper air turbulence which ensures optimal mixing with the gas.

In order to provide very low NO_x emissions, the fuel gas is distributed in a wide volume to provide high combustion efficiency while reducing overall flame intensity. Most of the fuel gas is injected through a fuel gas distribution plenum equipped with a set of lances. Each lance is provide with a “multi jets” nozzle which injects the fuel gas outside the refractory throat. The nozzles can be rotated without halting burner operation to optimise gas distribution, achieving low emissions and combustion efficiency.

An additional central gas lance is fed with a small portion of the fuel gas, ensuring very high flame stability over very wide burner firing ranges.



MAIN CHARACTERISTICS

- Burner designed to meet Client's specific requirements
- Highly reliable and efficient as demonstrated by a large number of installed units
- Primary and secondary air registers to control the distribution of combustion air inside the burner (manual or automatic)
- Primary and secondary air swirlers to ensure air vorticity and distribution
- Fuel gas distributed through a plenum with adjustable nozzles and a central gas lance for flame stability
- Capable of burning different kinds of gaseous fuels at the same time
- Can be operated either with fresh or pre - heated combustion air
- High flame stability over a wide turn - down range
- Can be operated with Flue Gas Recirculation (FGR) to further reduce pollutants emissions

BURNER DATA

- Firing rate up to 60 MW
- Flame dimensions(*) adjustable
- Materials carbon steel
stainless steel
- Combustion air up to 550 °C
- Turndown 7:1
- Pressure drop 200 - 250 mm wg

(*) Flame dimensions vary with firing rate

TYPICAL GUARANTEED EMISSIONS(*)

Natural gas firing w/o flue gas recirculation

- NO_x 75 mg/Nm³
- CO 30 mg/Nm³

Natural gas firing with flue gas recirculation

- NO_x 55 mg/Nm³
- CO 30 mg/Nm³

(*) ref. to 3% O₂ dry flues, combustion air @ ambient temperature; the emissions could be different depending of application and must be evaluate Job by Job

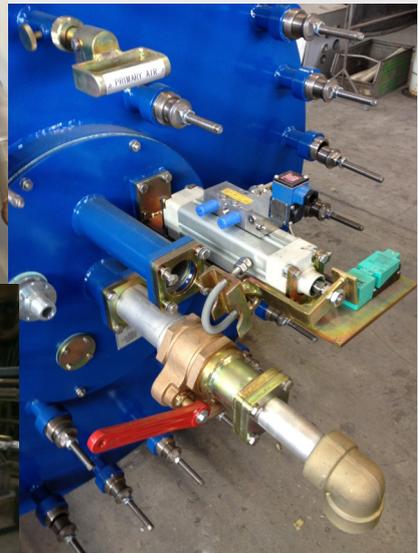
TYPICAL BCE SUPPLY

- Burner with fuel gas equipment (central gas lance, fuel gas distributor and stainless steel nozzles)
- Refractory throat design for manufacturing by Client
- 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

RAFFINERIA DI MILAZZO - Milazzo (Italy)	1 steam boiler revamping, 2 burners 50 MW each
CARTIERA BURGO - Tolmezzo (Italy)	1 steam boiler revamping, 2 burners 27 MW each
PENSOTTI FCL - Edison, Torviscosa (Italy)	1 steam boiler, 2 burners 29 MW each
BONO ENERGIA - EniPower, Bolgiano (Italy)	3 steam boilers, 1 burner each boiler, 37 MW each burner
DEMONT - Eni, Val d'Agri (Italy)	1 steam boiler, 2 burners 57 MW each
DEMONT - IREN, Reggio Emilia (Italy)	1 steam boiler, 2 burners 20 MW each
BONO ENERGIA - Singapore	1 hot oil heater, 1 burner 11,7 MW
BONO ENERGIA - Rotterdam (The Netherlands)	1 hot oil heater, 1 burner 11,7 MW



For any further information please contact:

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