

ULTRA LOW NO_x CERAMIC BURNER SERIES (E-JET)

HOTWORK

COMBUSTION TECHNOLOGY

Benefits:

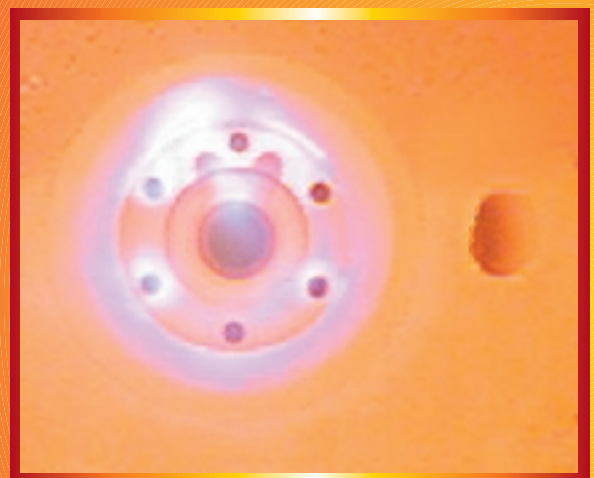
- Compliance with all international NO_x legislation
- Maximised process performance
- High fuel savings with hot air and regenerative versions
- Associated reductions in CO₂ emissions
- Robust design, easy to maintain
- Stable at all temperatures
- Designed for retrofit

Features:

- Internally Induced Fuel Dilution System (Patent pending)
- Internal flue gas recirculation
- Staged combustion
- Flameless combustion
- Hot air and regenerative versions available
- Burner sizes from 300 kW to 6000 kW
- Discharge velocities of up to 150 m/s
- Suitable for natural gas and LPG
- 10/1 turndown on stoichiometric ratio
- 1000% excess air capability
- Ignition by premix pilot
- Flame detection by UV cell
- Suitable for a wide range of applications up to 1500°C

Typical applications:

- Aluminium melting
- Forging
- Reheating
- Heat treatment
- Ladle heating
- Process heating
- Incineration
- Hot process air generation



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A unique combination of NO_x reducing features

Ultra low NO_x levels are achieved by combining a range of NO_x reducing techniques which include, in particular, an innovative feature developed by Hotwork, the Internally Induced Fuel Dilution System (Patent pending). The Hotwork E-Jet Burner also operates with internal Flue Gas Recirculation (FGR) without the need for extra refractory lined ducting or fans.

The mixing of air, fuel and recirculated gases, which incorporates staged combustion, is controlled in such a manner that flameless combustion is achieved. This lowers peak flame temperature which in turn contributes to reducing NO_x formation.

The modular design allows for optimisation of the required burner characteristics to suit a customer's particular process requirements. Internal components are designed to be modular to ensure total flexibility for the choice of fuel, level of combustion air preheat and optimised firing rate, since component variables are pre-designed for manufacture.

Excellent flame stability at all temperatures

The mixing of fuel, air and waste gases is carefully controlled in order to optimise NO_x reduction and flame stability from cold start-up to working temperature for simple, efficient and safe operation.

Ultra Low NO_x Burner Performance (at standard optimisation)

Furnace temp. °C	Comb. air temp. °C	Normal @ 3% O ₂ ppm	Normal @ 5% O ₂ ppm	Normal @ 11% O ₂ ppm	Normal @ 3% O ₂ mg/m ³	Normal @ 5% O ₂ mg/m ³	Normal @ 11% O ₂ mg/m ³	Normal @ 5% O ₂ mg/MJ	Normal @ 3% O ₂ lbs/MBTU
950	750	42	37	21	86	76	42	22	0.05
1000	800	43	38	21	88	78	43	23	0.05
1050	850	52	46	26	107	95	52	28	0.06
1100	900	60	53	29	123	109	60	32	0.07
1150	950	73	65	36	150	133	74	39	0.08
1200	1000	88	78	43	180	160	89	47	0.11
1250	1050	101	90	50	207	184	102	54	0.12
1300	1100	122	108	60	250	222	123	65	0.15

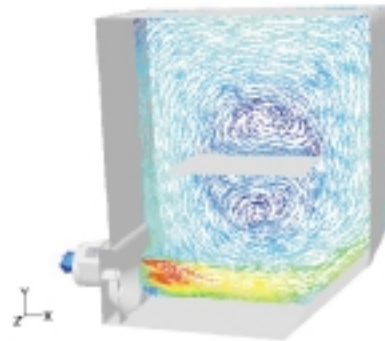
Thermal rating and combustion data

Model	EJ03	EJ06	EJ09	EJ12	EJ18	EJ30	EJ40	EJ50	EJ60
Thermal rating (kW) @1200°C furn. temp.	300	600	900	1200	1800	3000	4000	5000	6000
Air pressure (Stoich.) - Max (mb) Cold	11	11	11	11	11	11	11	11	11
Air pressure (Stoich.) - Max (mb) @1200°C furn. temp.	50	50	50	50	50	50	50	50	50
Gas Pressure @ burner (mb)	30	30	30	30	30	30	30	30	30
Max. Turndown (Stoich.)	10/1	10/1	10/1	10/1	10/1	10/1	10/1	10/1	10/1
Max. excess air (%)	1000	1000	1000	1000	1000	1000	1000	1000	1000

The data provided is for guidance only and could vary slightly due to manufacturing tolerances.

Discharge velocities of up to 150 m/s

High discharge velocities are maintained with the induced 'in chamber' dilution and recirculation. This makes the E-Jet Burner Series ideal for applications where tight temperature uniformities or flame penetration are required such as the heat treatment of steel strip and in aluminium melting.



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High fuel efficiency

The E-Jet can be used in conjunction with a recuperator or close-coupled to a compact regenerator for maximum fuel efficiency. The burner then operates like a traditional regenerative burner with the associated advantages of high fuel savings and reduced CO₂ emissions as well as ultra low NO_x levels.

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The data provided in this leaflet is for information only and does not form part of any contract. Due to our continued commitment to research and development, we reserve the right to modify specifications or dimensions without notice. The improper use of combustion equipment can result in a condition hazardous to people and property. Users are urged to comply with national and local standards.