

HOTWORK

COMBUSTION TECHNOLOGY

Minijet Burner (MJ)



The Minijet Burner has been developed to provide a cost-effective solution for applications where space is limited and thermal ratings are relatively low. Typical applications are tundish preheating station where several small burners are required to direct heat towards critical areas such as the pouring nozzles and impact pads, or continuous kilns where firing patterns and zone configuration usually require a large number of small burners. Other applications include small ladle heaters or small reheating, forging and heat treatment furnaces where high velocity cannot be used. The Minijet is also used in low temperature applications such as process drying or heating as well as ovens where they can be used in conjunction with recirculating fans.

Benefits:

- General purpose, robust, low-cost burner
- High turndown and excess air capability
- Choice of outlet velocity & material to suit application

Features:

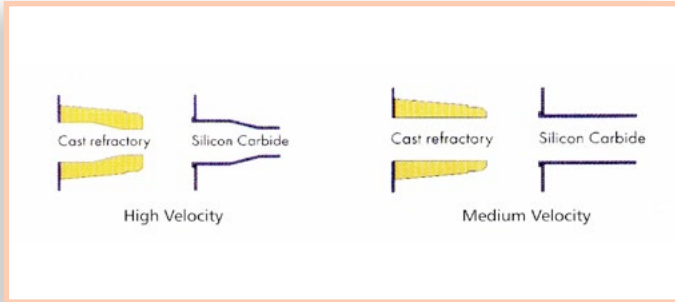
- Sizes from 60 kW to 900 kW
- Suitable for natural gas, LPG and manufactured gas
- Turndown on ratio in excess of 10/1
- 1000% excess air capability
- Velocities in excess of 150 m/s with converging outlet
- Velocities of 70 m/s with parallel outlet
- Outlet material to suit process temperature and mounting position: silicon carbide, cast refractory, vacuum formed refractory fibre or stainless steel
- Direct spark ignition
- Flame detection by UV cell or flame rod

Typical Applications:

- Heat treatment
- Forging
- Reheating
- Ladle heating
- Tundish heating
- Stress relieving
- Aluminium melting
- Refractory drying units
- Air heating
- Process heating
- Ovens
- Ceramic kilns
- Paper drying
- Fume incinerators
- Glass pots
- Crucibles

High or Medium Velocity

Depending on the process requirements, the Minijet can be fitted with a converging or parallel outlet to provide velocities of 150 m/s or 70 m/s respectively.



Choice of Outlet Material

The standard Minijet Burner is fitted with a silicon carbide outlet but a cast refractory quartz is also available. Both are suitable for process temperatures up to 1450°C. A stainless steel outlet can be used when temperatures do not exceed 1050°C. In situations where the burner is firing downwards, a lightweight vacuum-formed refractory fibre quartz can be supplied.

High Turndown and Excess Air Capability

The Minijet has a turndown in excess of 10/1 on ratio and an excess air capability of minimum 1000%.

Fuels

The Minijet Burner is suitable for natural gas and LPG.

Ignition, Flame Supervision and Automatic Start-up

The MJ Burner is ignited by means of direct spark. The burner is fitted with a sight glass and a port is provided for a UV scanner or flame ionisation probe to be installed. In order to start the burner automatically and supervise the flame permanently, Hotwork Combustion Technology can also supply flame management equipment if required.

Thermal ratings and combustion data (Natural Gas)

	Model	MJ2	MJ4	MJ8	MJ15	MJ30
	Thermal Rating - Max. (kW)	59	117	234	439	879
	Air Volume (Stoichiometric) - Max (Nm ³ /h)	57	113	227	424	850
	Turndown (Stoichiometric)	10/1	10/1	10/1	10/1	10/1
	Max. Excess Air (%)	1000	1000	1000	1000	1000
Medium Velocity	Air Pressure (Stoichiometric) - Max. (mb)	15	20	21	27	37
	Gas Pressure @ burner (mb)	2.5	2.5	2.5	3.7	3.7
	Flame Length (mm)	350	380	410	500	600
	Flame Diameter (mm)	120	130	155	197	247
High Velocity	Air Pressure (Stoichiometric) - Max. (mb)	27	30	30	37	50
	Gas Pressure @ burner (mb)	15	15	15	16	16
	Flame Length (mm)	300	330	350	450	500
	Flame Diameter (mm)	82	95	114	137	173

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

Further Information

Further details on this burner such as dimensional drawings, typical schematic diagram, spares drawings, procedures for installation, commissioning and maintenance, etc. are available on request.

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.

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