

MODERATE AIR PRESSURE HIGH VELOCITY GAS BURNERS

MODEL :
MHG

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MHG/S BURNER is a high velocity nozzle-mix gas burner with wide applications in heat treat and melting furnaces, air heaters, dryers, galvanizing tanks, sintering furnaces, or crucible furnaces. By using this type of burners, a high level of temperature uniformity on the material being heated can be achieved. Also the NO_x emissions from a combustion system with high-velocity burners are lower compared to other burner types. It would be considered that MHG/S burner is often easier to install than a conventional burner with tile.

MHG/S burner –**S** refers to SiC (Silicon Carbide) tip- can be used for high temperatures up to 1450°C. Although these tips are more resistant to temperature shocks, they are fragile.



100 MHG/S BURNER



300 MHG/S BURNER



1200 MHG/S BURNER

FEATURES:

- a) Wide operating range (with excess-air, turn-down ratio equals to 10:1)
- b) High velocity & High/Low Excess-air
- c) Flame supervision
- d) Simplified piping
- e) Simple and reliable operation
- f) Compact size
- g) Applicable up to 1450°C

SHOLEH SANAT ENG. & MFG. CO.

MANUFACTURER OF BURNERS FOR FURNACES
FUEL CONVERSION OF BOILERS & FURNACES, DESIGN , CONSULTATION AND INSTALLATION
REV.1 of 10th Oct. 2021

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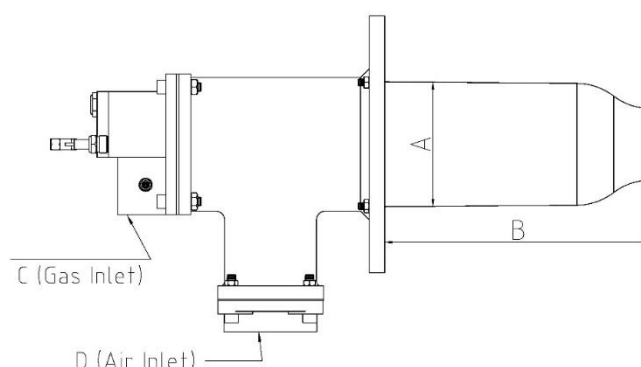
BURNER TYPES:

MHG burners are manufactured in ranges from 100,000 kCal/hr to 1,200,000 kCal/hr and in 3 different models have shown in the following table. Broadly speaking, maximum gas and air pressure needed for this burner is about 30 mbar(g).

Burner model	kCal/hr at 30 mbar (air pressure)	Flame Length(cm) with 30 mbar (air pressure)
100 MHG/S	100,000	90
300 MHG/S	300,000	110
1200 MHG/S	1,200,000	150

MHG/S DIMENSIONS:

General dimensions of MHG/S burners are as follows. For more detailed dimensions of burner or installation drawing please contact us.



Burner Design	A (ϕ ,mm)	B (mm)	C (in)	D (in)
100 MHG/S	86.7	312	1/2	1.1/2
300 MHG/S	142.6	303	1.1/2	3
1200 MHG/S	264	382	2	6

OPERATION:

These burners can be lighted at rich, lean or correct air/gas ratio then immediately turned to high fire. These burners can deliver high excess air at any temperature from 100°C to 1150°C.

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Restricted tip exit forces hot gases to leave the burner at extremely high velocity and optimization convective heat transfer. Lights readily over a wide range of pressure and it is extremely stable.

LIGHTING/FLAME SUPERVISION

A direct spark ignition of the burner is normally used to light these burners. A standard ultraviolet (UV) or flame rod can be used for monitoring flame.

EXCESS AIR

Excess air improves temperature uniformity by avoiding hot spots in front of burners, churning furnace atmosphere to reduce stratification and creating positive furnace pressure to eliminate cold air infiltration.

Excess air can give very high effective burner turn down. Thus a furnace used for high temperature work with burners firing on stoichiometric air/gas ratio can also be used for low temperature jobs with burners firing on lean ratio.

INSTALLATION

1-Requirements :

- a) Maximum allowable inlet pressure to the gas governor is 500 mbar. If greater than 500 mbar, an upstream pressure regulator must be used.
- b) Gas supply pressure to the gas governor should be at least 14 mbar greater than the high fire burner air pressure. If less, a bleeder must be installed in the impulse line.
- c) Consult your SHOLEH SANAT engineer for automatic shut off and flame supervision requirements.

2-Burner Mounting :

- a) **WARNING:** Burners cannot be rotated with respect to the mounting plate as the flame detector ports must align with notches in the plate.

3-Piping :

- a) Minimize piping pressure losses. Use a minimum of elbows. Substitute 45° elbows for 90° elbows when possible. Do not use street elbows. 1/4" tubing may be used for impulse lines up to 3 m long, 1/2" tubing or larger for longer runs.
- b) Air pipe and gas lines in a manner similar to that shown in next figure. Flexible connections are recommended in air and gas lines to minimize strain from piping and thermal expansion.
- c) Connect impulse piping as shown in next figure. These piping arrangements are designed to keep air and gas flows on desired ratio at all firing rates.
- d) Governors impulse line connections must be located between the zone control air valve and the manual burner air valve for multiple burner zones.

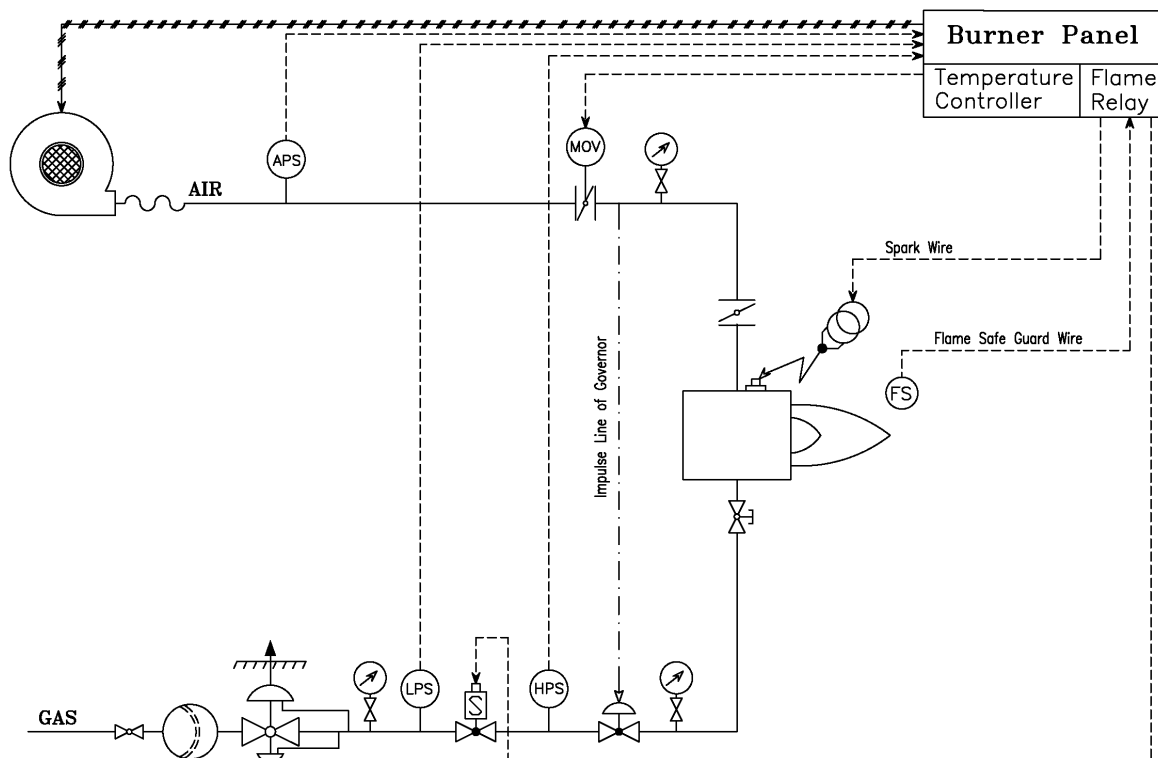
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Suggested arrangement for MHG/S burner



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