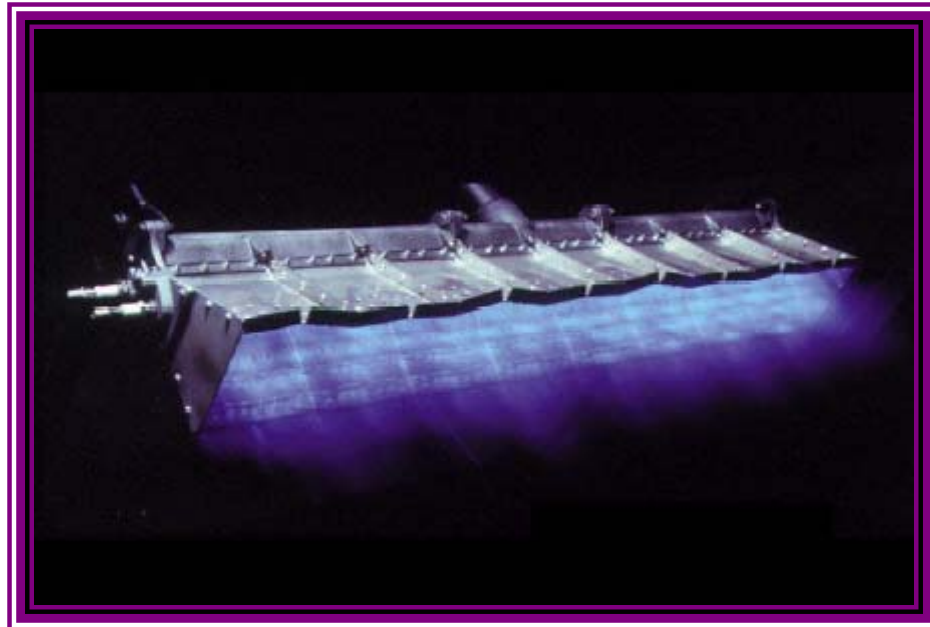
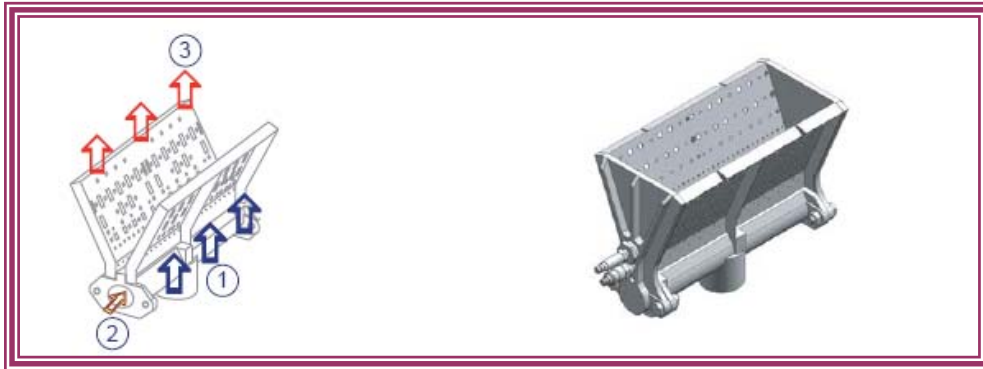


BMGD DIRECT FIRED BURNER



- For direct fired fresh air heating applications
- Operates economically (100 % thermal efficiency) and installs easily
- Burns clean and odor-free with most gaseous fuels, meeting or exceeding most known standards for direct-fired make-up air and space-heating applications
- High turndown, up to 25 : 1
- Modular design configured within your duct for optimal temperature distribution
- No need for a combustion air blower
- Extreme low maintenance cost thanks to robust design (no moving parts) and high quality materials

Product Information



1. Fresh air
2. Fuel/Gas
3. Hot Air

BMM Heaters direct burners consist of a robust cast-iron or aluminum burner-body (which serve as the gas manifold) drilled to discharge the gaseous fuel between diverging stainless steel mixing plates.

The burners are mounted directly into the air stream being heated. Gaseous fuel is injected into the process air stream. The unique designed V-shaped burner mixing plates are intimately mixing both gas and process air together.

All available heat from the gaseous fuel is released directly into the air stream.

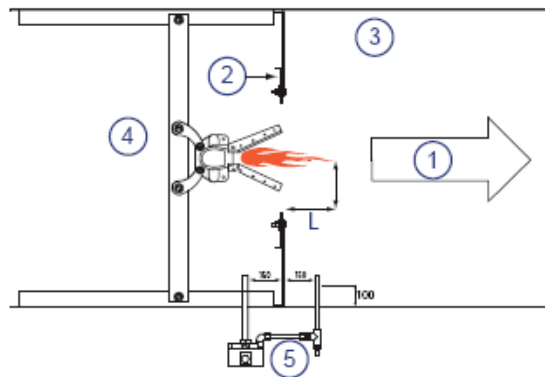
The required oxygen for the combustion is progressively drawn from the process air stream. Carefully controlled aeration patterns provide progressive mixing, superior cross-ignition, flame retention and odor-free combustion.

Air velocities across the burner (the key to successful operation) are established by the use of profile plates. Optimum performance demands that air velocities be uniform across the entire burner.

Positioning of the Burner

BMM Direct burners are used only for heating of fresh air in motion. They should be mounted so as to direct their flames parallel to and in the same direction as the movement of the air (see sketch below)

- 1) Direction of air movement
- 2) Adjustable profile plate
- 3) Fixed profile plate
- 4) Universal support bracket
- 5) Differential pressure switch



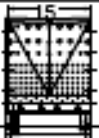















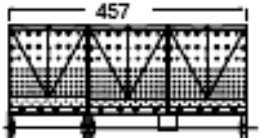





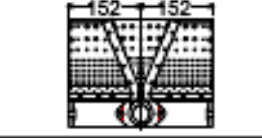



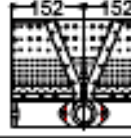
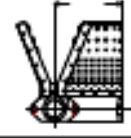
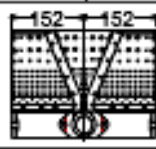
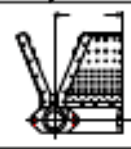
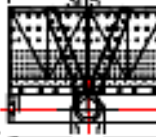

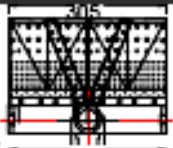
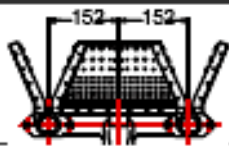

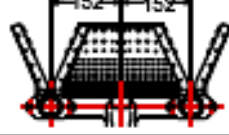
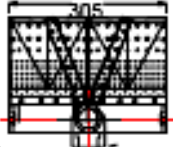
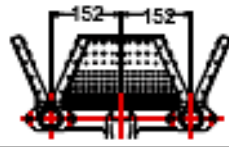


Do not mount the burner so that the movement of air is across the face of the line burner, nor should it be mounted too near to a turn in the duct which may cause air to be directed at an angle over the burner.

View Port

A view port to observe burner flame is essential to inspect flame aspect. It is recommended to locate the view port downstream of the flame, such that the entire burner front can be observed, as well as the pilot burner.

Burner Sizes

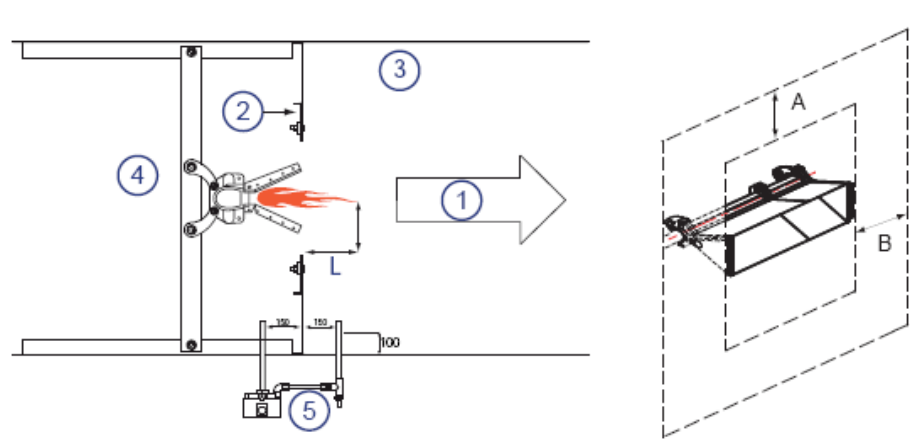
Dimensions in mm unless stated otherwise					
Burner type	A	B	C	D	E
NP-*-	178	198	27	86	56
RG-IV	222	257	27	86	56

Dimensions in mm unless stated otherwise		
Designation	Dimensions	
NP-* ⁻⁶ or NP-* ^{-6P}		
RG-IV-* ⁻⁶ or RG-IV-6P		
NP-* ⁻¹²		
RG-IV-* ⁻¹²		
NP-* ^{-12B} (ANSI)		
RG-IV-12B (ANSI)		
NP-* ^{-12B} (ISO)		
RG-IV-12B (ISO)		
NP-* ⁻¹⁸		
RG-IV-* ⁻¹⁸		
NP-* ⁻²⁴		
RG-IV-* ⁻²⁴		
NP-* ^{-L}		
RG-IV-* ^{-L}		
NP-* ^{-T}		
RG-IV-* ^{-T}		
NP-* ^{-36B} (ANSI)		
RG-IV-* ^{-36B} (ANSI)		
NP-* ^{-36B} (ISO)		
RG-IV-* ^{-36B} (ISO)		

Profile Opening

- 1) Direction of process air movement
- 2) Adjustable profile plate
- 3) Fixed profile plate
- 4) Universal support bracket
- 5) Differential pressure switch

- A Minimum 150 mm
B Minimum 150 mm
L Flame length



Air-stream velocity across and through the burner's mixing plates must be kept uniform and within desired limits by use of a silhouette profile plate through which the burner fires. A 150 mm (minimum) profile plate should be installed surrounding the interior duct walls at the leading edge of the burner mixing plates.

Applications

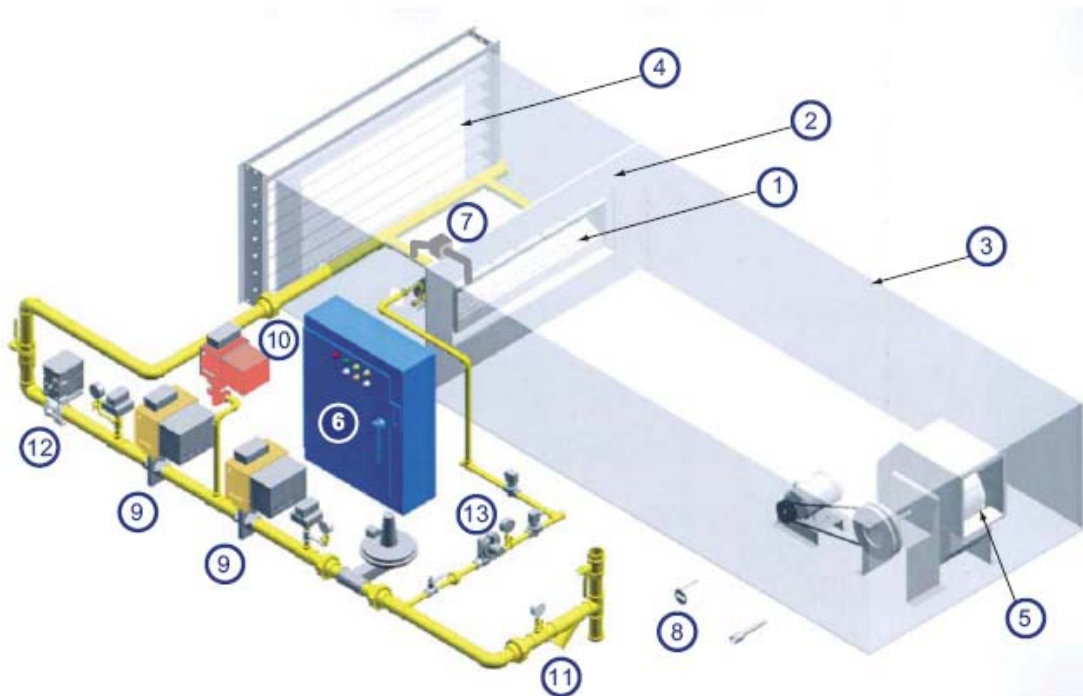
BMM Direct fired burners are designed for direct heating of fresh, clean air for low and medium temperature air heating applications.

Typical low temperature applications include humidity-controlled dual stage paint spray booths, general make-up air applications, packaged units, door heaters, grain drying, malt drying, etc.

Typical high temperature process air applications include spray dryers, chemical dryers, fresh air oven heating, drying, baking and curing operations, metal parts finishing and all fresh air heating applications up to 650° C.

These burners can also be mounted downstream of a steam or hot water coil thus bringing the air to a higher temperature. This can boost the capacity of an existing installation.

System Components



- 1) BMM Direct burner
- 2) Profile plate
- 3) Combustion chamber
- 4) Intake louvers
- 5) Main volume fan
- 6) Sequencing control panel
- 7) Differential air pressure switch
- 8) High temperature protection
- 9) Safety shut-off valves
- 10) Vent valve
- 11) Gas filter
- 12) Control valve
- 13) Pilot gas train

BMM Direct-Fired Advantages

Are you getting a complete system?	BMM DIRECT SERIES	DIRECT-FIRED MAKE-UP AIR UNIT	INFRA-RED VENTED (1) (2)	INFRA-RED UNVENTED (1) (2)	INDIRECT-FIRED AIR ROTATION (3)	HYDRONIC UNIT HEATERS (3)	INDIRECT GAS-FIRED UNIT HEATERS (3)	DIRECT-FIRED UNIT HEATERS (2)
PERFORMANCE FACTORS								
Maximum Efficiency	ALWAYS 100%	100%	50 TO 70%	100%	50 TO 70%	50 TO 60%	50 TO 70%	100%
Track building heat loss (Precise Burner Modulation)	Yes	Yes	No	No	No	N/A	No	No
Worker comfort and productivity	Yes	No	No	No	No	No	No	No
Energy management feedback	Yes	No	No	No	No	No	No	No
Heating capacity control	Modulating	Modulating	On/Off	On/Off	Steps	On/Off	On/Off	On/Off
Pressurized ventilation	Yes	No	No	No	No	No	No	No
Controlled make-up air	Yes	No	No	No	No	No	No	No
Automatically adjusts to changing conditions	Yes	No	No	No	No	No	No	No
Minimize stratification	Yes	No	No	No	Yes	No	No	No
Filtration available	Yes	Yes	No	No	Yes	Yes	No	Yes
Flexible equipment arrangement	Yes	Yes	No	No	No	No	No	Yes
Fast temperature recovery	Yes	Yes	No	No	No	No	No	No
Warm floors	Yes	Yes	In Spots	In Spots	Yes	In Spots	No	In Spots
Summer economizer ventilation	Yes	Yes	No	No	No	No	No	No
Reduce and control humidity	Yes	Yes	No	No	No	No	No	Some
Building contaminant purge	Yes	Yes	No	No	No	No	No	No
Reduce smoke, odor, and oil mist	Yes	Yes	No	No	No	No	No	No
Combustion flue required (4)	No	No	Yes	No	Yes	No	Yes	No
Engineering flexibility	Yes	Yes	No	No	No	No	No	Yes
Can rearrange plant layout without affecting performance	Yes	Yes	No	No	No	No	No	Yes
Low installed cost	Yes	Yes	No	No	No	No	No	Yes
Operating cost (5)	Lowest	Moderate	Moderate	Moderate	High	High	High	Moderate
Maintenance cost	Low	Low	Moderate	Moderate	Moderate	High	Moderate	Low
A complete heating and ventilating system	Yes	No	No	No	No	No	No	No

NOTES

- 1** A ventilation system (compromised of both make-up and exhaust) should supplement the use of Infra-Red to achieve an acceptable level of indoor quality (IAQ).
- 2** Required 4 CFM of ventilation air per 1000 BTU of capacity to conform to ANSI Standards.
- 3** Any building requires make-up air to control infiltration and ensure IAQ. These systems do not provide this feature.
- 4** Some states require annual permits and inspections.
- 5** An accurate operating cost assessment considers all aspects of the systems and building requirements, including equipment maintenance, building ventilation requirements and equipment operating efficiencies.