

1200 F construction handles cover annealer preheated air with ample safety factor.

4825 Hot Air Gas Burners feature:

- ✓ Heat resistant cast iron body
- ✓ Alloy internal parts
- ✓ Lightweight vacuum-formed ceramic insulation
- ✓ Capacities 140,000 to 2,800,000 Btu/hr
- ✓ Choice of standard or thin wall tile

4825 Burners will handle 1200 F preheated combustion air firing car bottom, aluminum melting, forging, glass melting, heat treating, and other furnaces where standard 4422 or 4425 Burners would be used if combustion air were not preheated.

Burners provide stable combustion in cold tight furnaces on stoichiometric ratio, with large quantities of excess air, or on moderately fuel-rich ratios. Air is evenly distributed around the gas stream, creating uniform combustion and a well-defined flame pattern throughout a wide turndown range.

Flames are clear to semi-luminous dependent on air temperature, firing rate, and air/fuel ratio.

CONTROL

Mass flow control systems with air temperature compensation provide the most reliable fuel efficiency.

Fully metered flow control arrangements on the cold air side--such as 7288 Regulators or 8096 Combustion Controllers--are satisfactory for the vast majority of installations.

Because 4825 Burners are capable of lean starts on cold air, standard cross connected regulators can be used on many batch operations, as well as on continuous furnaces with constant preheated air temperatures.

JET AIR

The burner uses a small amount of ambient air to insure good flame thrust at low fire. Some burners lose all discharge velocity on applications that require wide turndown. Jet air on the 4825 solves that problem. Additionally, jet air cools internal parts and prevents the cracking of fuel at low fire caused by hot combustion air.

Burner sizes -2 thru -5 require jet air at 8 osi pressure while sizes -6 thru -8-A require 16 osi. Regardless of firing rate, jet air flow is constant at about 2 percent of high-fire air rate (ambient temperature) for -5 and smaller burners, and 1 percent for -6 and larger burners.

RECUPERATORS

4825 Burners are compatible with almost all recuperators, including Fives North American 8483, 8485, and 8486 units.

IGNITION/FLAME SUPERVISION

Use a 4021-12 Pilot Tip for ignition.

For higher ambient temperatures specify a Honeywell C7035A UV with an 8837-F Adapter, which includes a Honeywell heat block #136733 (R130-5849) and a ¼" fpt for 100 cfm cooling air.

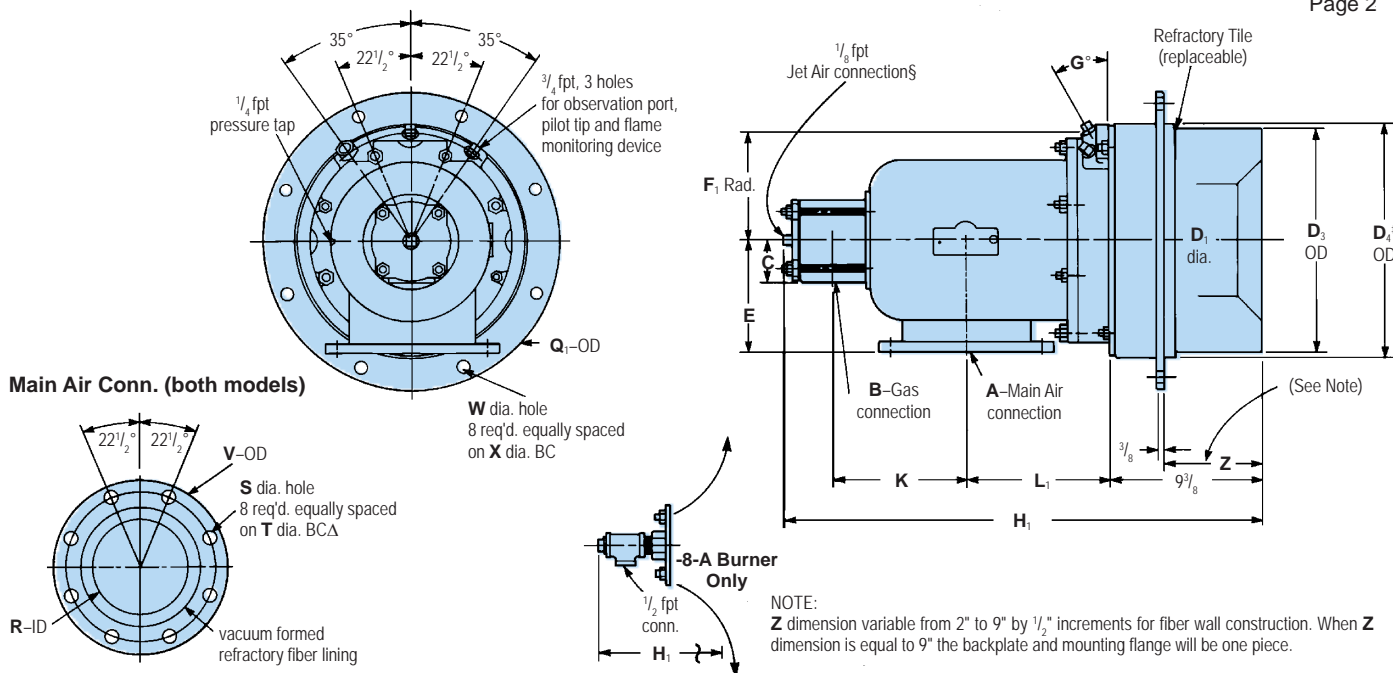
CONSTRUCTION

Heat resistant cast iron burner bodies including air connections are lined internally with vacuum-formed ceramic fiber insulation. Burner tiles are 3000 F castable with or without self-supporting construction and are easily replaceable in the field. Burner air tubes, of high temperature alloy, are protected by a refractory radiation shield.

Burner designation	Main Air pipe size†	Main Air Capacity, scfh at 16 osi		Required Jet Air‡ scfh at		Approx. Flame Lengths with 16 osi Main Air	
		Ambient	1000 F	8 osi	16 osi	Ambient	1000 F
4825-2	4"	2 560	1 420	50	—	2 1/2'	2'
4825-3	4"	3 990	2 370	70	—	2 1/2'	2'
4825-4	4"	6 150	3 930	145	—	2 1/2'	2 1/2'
4825-5	4"	10 600	6 450	165	—	2'	2 1/2'
4825-6	4"	16 700	10 050	—	155	5'	3 1/2'
4825-7-A	6"	27 400	17 100	—	175	5'	4'
4825-7-B	6"	34 100	21 000	—	275	5 1/2'	4 1/2'
4825-8-A	6"	44 200	27 900	—	450	5 1/2'	4 1/2'

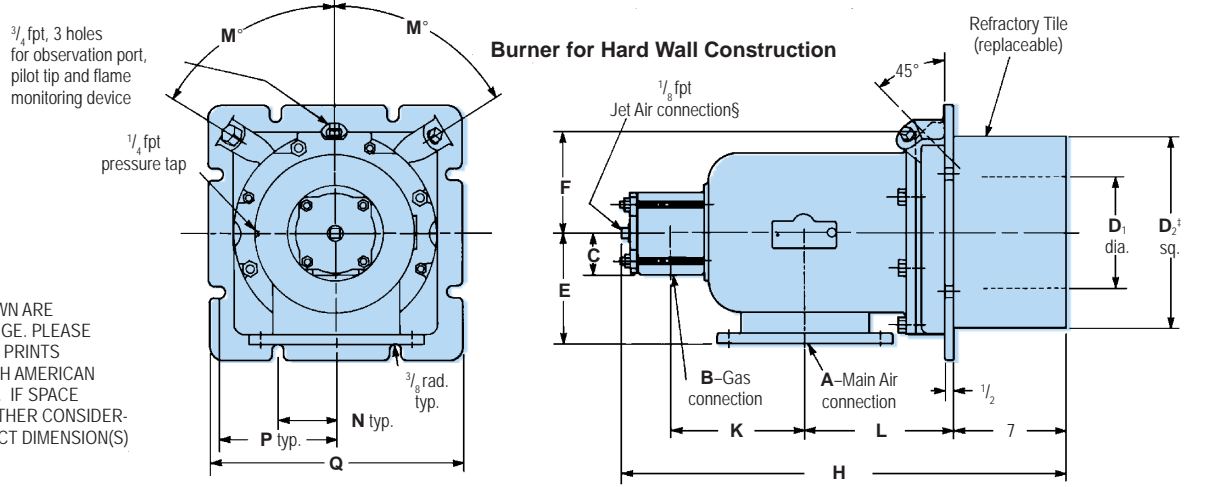
† Smaller main air piping can be used in most cases. Use standard sizing methods for air temperature and pressure available. Minimum main air pressure at the burner is 0.2 osi.
‡ Ambient temperature jet air is required at all firing rates for burner stability and flame integrity.

"Z" Burner for Fiber Wall Construction



NOTE:
Z dimension variable from 2" to 9" by 1/2" increments for fiber wall construction. When Z dimension is equal to 9" the backplate and mounting flange will be one piece.

Burner for Hard Wall Construction

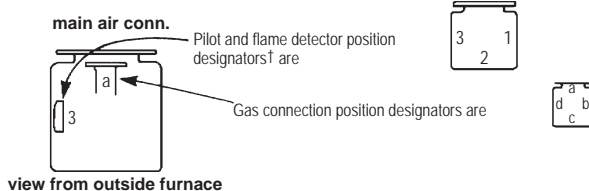


DIMENSIONS SHOWN ARE SUBJECT TO CHANGE. PLEASE OBTAIN CERTIFIED PRINTS FROM FIVES NORTH AMERICAN COMBUSTION, INC. IF SPACE LIMITATIONS OR OTHER CONSIDERATIONS MAKE EXACT DIMENSION(S) CRITICAL.

Burner Designation	Dimensions in inches and degrees																							
	A	B	C	D ₁	D ₂ †	D ₃	D ₄ ‡	E	F	F ₁	G°	H	H ₁	K	L	L ₁	M°	N	P	Q	Q ₁	R	S	T
4825-2	4	1	2	4	10	11 3/8	12	5	5 5/32	4 7/8	45	24	26 1/8	6 3/8	8 5/16	7 7/8	65	3 1/8	6 1/4	14	16	4	3/4	7 1/2
4825-3	4	1	2	4	10	11 3/8	12	5	5 5/32	4 7/8	45	24	26 1/8	6 3/8	8 5/16	7 7/8	65	3 1/8	6 1/4	14	16	4	3/4	7 1/2
4825-4	4	1 1/4	2	4	10	11 3/8	12	5	5 5/32	4 7/8	45	24	26 1/8	6 3/8	8 5/16	7 7/8	65	3 1/8	6 1/4	14	16	4	3/4	7 1/2
4825-5	4	1 1/2	2	5	10	11 3/8	12	5	5 5/32	4 7/8	45	24	26 1/8	6 3/8	8 5/16	7 7/8	65	3 1/8	6 1/4	14	16	4	3/4	7 1/2
4825-6	4	1 1/2	2	5	10	11 3/8	12	5	5 5/32	4 7/8	45	24	26 1/8	6 3/8	8 5/16	7 7/8	65	3 1/8	6 1/4	14	16	4	3/4	7 1/2
4825-7-A	6	2 1/2	2 5/8	7	12	14	14 5/8	7	6 11/32	6 25/32	30	27 3/4	29 15/16	8 3/8	9 5/16	9	58 1/2	3 11/16	7 3/8	16	18 5/8	6	7/8	9 1/2
4825-7-B	6	2 1/2	2 5/8	7	12	14	14 5/8	7	6 11/32	6 25/32	30	27 3/4	29 15/16	8 3/8	9 5/16	9	58 1/2	3 11/16	7 3/8	16	18 5/8	6	7/8	9 1/2
4825-8-A	6	2 1/2	2 5/8	7	12	14	14 5/8	7	6 11/32	6 25/32	30	31 5/16	33 1/2	8 3/8	9 5/16	9	58 1/2	3 11/16	7 3/8	16	18 5/8	6	7/8	9 1/2

Burner Designation	Dimensions in inches			Approx. Wt, lb
	V	W	X	
4825-2	9	5 5/8	14 1/2	170
4825-3	9	5 5/8	14 1/2	170
4825-4	9	5 5/8	14 1/2	170
4825-5	9	5 5/8	14 1/2	170
4825-6	9	5 5/8	14 1/2	170
4825-7-A	11	3 1/4	17	225
4825-7-B	11	3 1/4	17	225
4825-8-A	11	3 1/4	17	225

Specify order of assembly by giving arrangement designators for the pilot boss and gas inlet, relative to the main air connection located at twelve o'clock. The pilot and main air cannot have the same position since the air flange would interfere with the pilot. Two 3/8" connections on either side of the pilot boss accommodate an observation port (included with burner) and a UV detector.



† Good practice dictates that neither pilot nor flame detector be on the bottom as installed.

WARNING: Situations dangerous to personnel and property may exist with the operation and maintenance of any combustion equipment. The presence of fuels, oxidants, hot and cold combustion products, hot surfaces, electrical power in control and ignition circuits, etc., are inherent with any combustion application. Parts of this product may exceed 160F in operation and present a contact hazard. Fives North American urges compliance with National Safety Standards and Insurance Underwriters recommendations, and care in operation.

† Increase dimension 1/2" for minimum opening in furnace shell.
§ Ambient temperature jet air is required at all firing rates for burner stability and flame integrity.
Δ Companion flange by customer (ANSI). Use flat face companion flanges and full face gaskets when installing this equipment. Raised face flanges may damage mating flange.