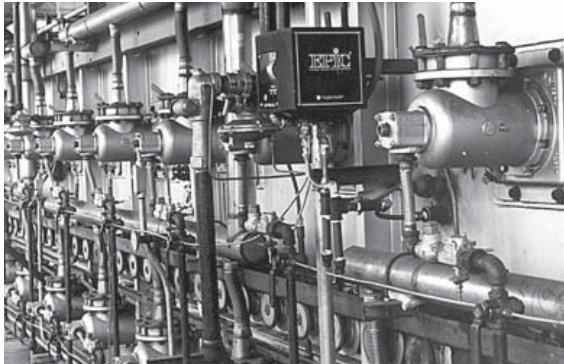


North American Hot Air Dual-Fuel™ Burners

Bulletin 6825



Continuous roller hearth furnace uses 1000 F preheated air in its (44) 4825 Gas Burners, which can be converted to 6825 Dual-Fuel. Optional (recommended) Sensitrol™ Oil Valve is not included in burner assembly, and must be ordered separately.

FEATURES

- Heat resistant cast iron burner body
- Alloy internal parts
- Lightweight vacuum-formed ceramic insulation
- Capacities 160,000 to 2,100,000 Btu/hr
- Gas or light oil operation
- Low pressure cold air atomization
- Choice of standard or thin wall tile

6825 Burners will handle 1200 F preheated combustion air firing car bottom, aluminum melting, forging, glass melting, heat treating, and other furnaces where standard 6422 or 6425 Burners would be used if combustion air were not preheated.

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

Gas flames are clear to semi-luminous dependent on air temperature, firing rate, and air/fuel ratio. Oil flames are luminous at all rates and ratios.

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 6825 Burners are capable of lean starts on cold air, standard cross connected regulators and Ratiotrols can be used on many batch operations, as well as on continuous furnaces with constant preheated air temperatures.

RECUPERATORS

6825 Burners are compatible with any recuperators, including North American's 8483, 8485, and 8486 units.

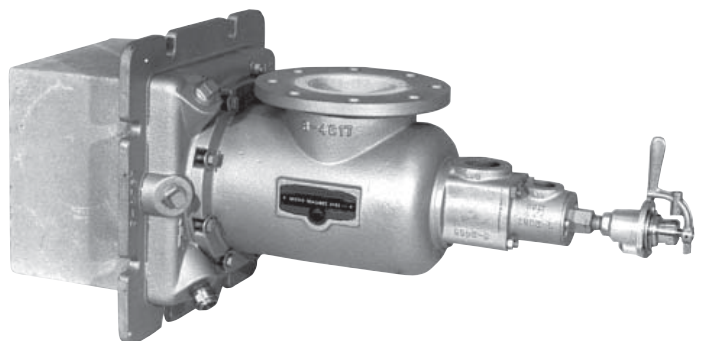
CONSTRUCTION

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 are high temperature alloy, protected by a refractory radiation shield.

IGNITION/FLAME SUPERVISION

A 4011-12 pilot set is recommended for individual burner ignition. When multiple burners share a single pilot pre-mix header, a 4021-12 pilot tip per burner with an appropriately sized air/gas mixer is recommended.

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 cfh cooling air.



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 Combustion, Inc. urges compliance with National Safety Standards and Insurance Underwriters' recommendations, and care in operation.

CAPACITIES

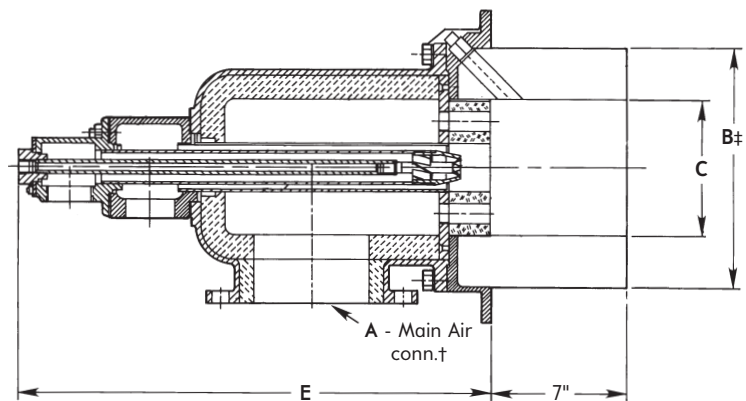
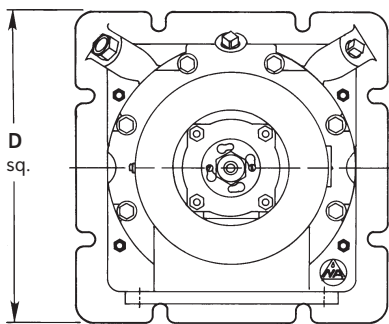
All burners are nominally sized for a high fire rate of 8 osi main air at 1000 F but can be fired at 16 osi.

Burner designation	Main air pipe size	Main air capacity scfh at 8 osi		Atomizing air capacity
		Ambient	1000 F	scfh at 14 osi Ambient
6825-2	4	2 700	1 600	400
6825-3	4	3 680	2 200	400
6825-4	4	5 000	3 000	400
6825-5	4	7 700	4 600	400
6825-6	4	11 750	7 000	400
6825-7-A	6	20 950	12 500	2400
6825-7-B	6	27 720	16 500	2600
6825-8-A	6	36 280	21 600	2700

Sheet 1148 describes manual hot air valves that can be used with -6, -7, and -8 burners.

CLEARANCE DIMENSIONS

(for details, see Dimensions 6825)

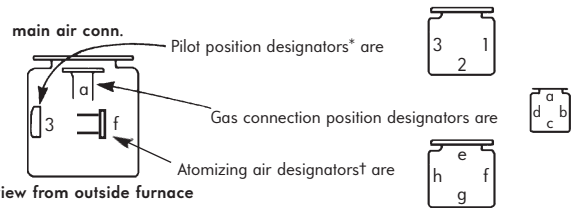


Burner designation	dimensions in inches					Approx. flame lengths (ft)	
	A†	B†	C	D	E	Ambient	1000 F
6825-2	4	10	4	14	19 ¹⁵ / ₁₆	2	2
6825-3	4	10	4	14	19 ¹⁵ / ₁₆	2-2½	2
6825-4	4	10	4	14	19 ¹⁵ / ₁₆	2-2½	2-2½
6825-5	4	10	5	14	19 ¹⁵ / ₁₆	3-4	2
6825-6	4	10	5	14	19 ¹⁵ / ₁₆	3-3½	3
6825-7-A	6	12	7	16	24 ⁵ / ₈	4½	4
6825-7-B	6	12	7	16	24 ⁵ / ₈	4½-5	4-4½
6825-8-A	6	12	7	16	24 ⁵ / ₈	5-6	4½-5

To order, specify: 6825- (code) - (A or B if applicable) Burner complete (specify Arrangement Designator--see sketch). If Z dimension is applicable, range is 2" to 9" by 0.5" increments, written as a two-figure decimal.

Examples: 6825-7-A Burner complete, Arrangement 3af
6825-5-Z Burner complete, Arrangement 1df, with Z dimension 7.5".

Specify order of assembly by giving designators for the pilot boss, gas inlet, and atomizing air inlet relative to the main air connection located at 12 o'clock. The pilot* and main air cannot have the same position since the air flange would interfere with the pilot. Two ¾" connections on either side of the pilot boss accommodate an observation port (included with burner); the other is for UV mounting.



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

† Except for -8-A, smaller main air piping can be used in most cases. Use standard sizing methods for air temperature and pressure available to determine what is economically advantageous.

‡ Furnace opening should be ½" larger than dimension B.

A "6825 Burner Complete" includes an 8790-0 Observation Port. Recommended Pilot Tip is 4021-12. Optional (recommended) Sensitrol™ Oil Valve is not included as part of the burner assembly, and must be ordered separately.



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