



4824 Hot Air Burners, for combustion air preheated as high as 1000 F, are used on car bottom, aluminum melting, forging, glass melting, heat treating, and other furnaces where 4422 or 4425 Burners would be appropriate with ambient temperature combustion air.

OPERATION

Burners provide stable combustion on natural gas. A constant jet of 16 osi ambient air through a 3/8" tap in the back of the burner gives character and direction to the flame at low fire (16 osi is preferred--8 osi is acceptable).

CONTROL

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

Fully metered flow control--such as a 7288 Flow Balancing Regulator, 8196 or 8199 Combustion Controller--is satisfactory for the vast majority of installations.

Because 4824 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.

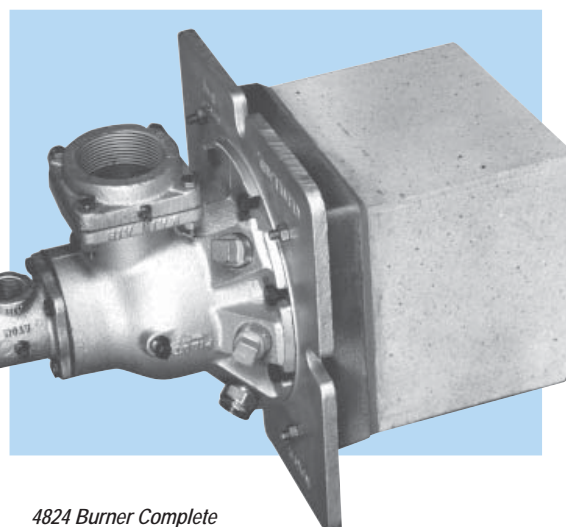
IGNITION

Use a standard 4021-12 Pilot Tip for -2 through -6 burners.

A special gas boosted 4021 Pilot is required for the -7-A and -7-B burners; specify 4-7781-1 Special Pilot Set.

FLAME SUPERVISION

For higher ambient temperatures, use a Honeywell C7035A UV mounted with an 8837-F Flame Detector Adapter, which includes a heat block (R130-5849) and a 1/4" NPT for 100 cfm cooling air.



4824 Burner Complete

CONSTRUCTION

Burner bodies are a heat-resistant cast iron. Standard tiles are 70% alumina, rated 3200° F maximum tile temperature. Self-supporting construction for fiber walls, with a 3000° F castable round tile, is available at additional cost; it is designated by the letter "Z".

Bodies are unlined: **Safety precautions must be taken.**

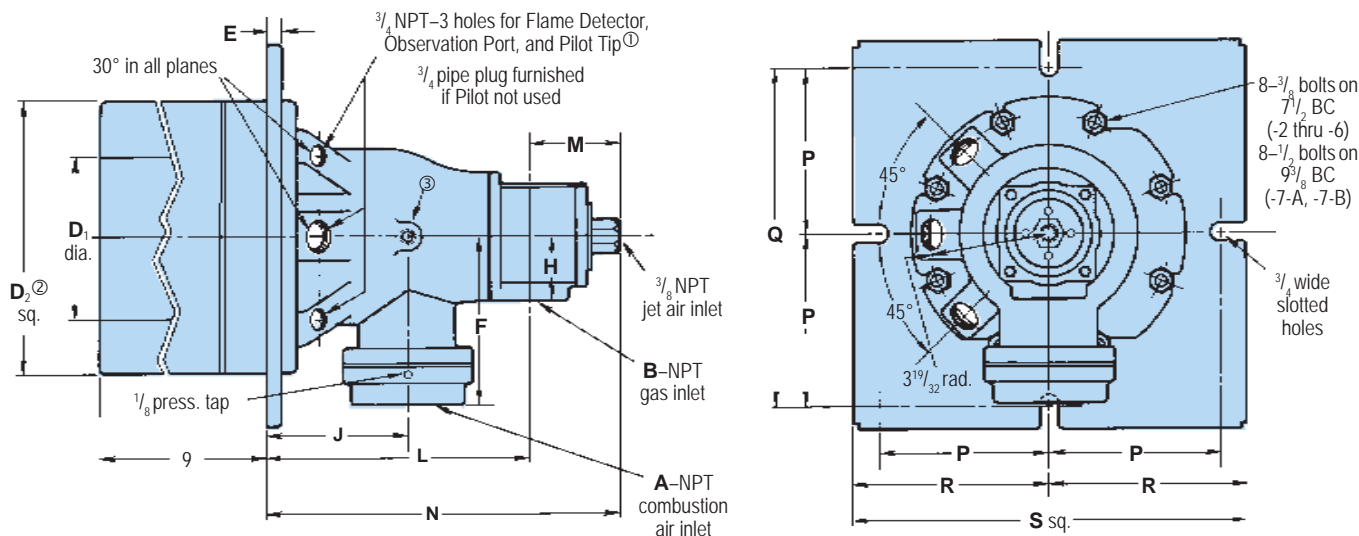
SAFETY PRECAUTIONS

Unlined 4824 body temperatures could exceed 1000 F. This was taken into account when selecting materials for the burner. However, such temperatures present obvious hazards to personnel working around the burner. Protection must be provided. External insulation or a cage-type shield is recommended.

Call or write your local North American field engineer (or the home office) for information about such protection.

COMBUSTION AIR CAPACITIES in scfh (for Btu/hr, multiply by 100)

Burner designation	1000 F air combustion air pressure across burner, osi					ambient air combustion air pressure across burner, osi					required scfh ambient jet air at 16 osi
	0.2	1	4	8	12	0.2	1	4	8	12	
4824-2	194	416	835	1 190	1 430	215	575	1 230	1 750	2 250	27
4824-3	210	750	1 490	2 130	2 610	412	1 150	2 450	3 450	4 350	27
4824-4	510	1140	2 310	3 300	4 060	730	1 890	3 870	5 400	6 600	54
4824-5	820	2460	4 450	6 100	7 350	1380	3 190	6 750	9 700	12 200	108
4824-6	1300	3000	6 200	8 800	10 600	1920	4 480	9 400	14 100	17 000	160
4824-7-A	2600	5200	10 700	15 600	-	3920	9 150	17 700	25 200	-	245
4824-7-B	2990	6950	14 600	20 700	-	4580	11 200	22 900	32 400	-	245



Burner designation	dimensions in inches and degrees															wt, lb
	A	B	D ₁	D ₂ [Ⓜ]	E	F	H	J	L	M	N	P	Q	R	S	
4824-2	1 1/4	3/4	4	8 1/2	1/2	5 1/4	1 3/8	4 3/8	8 3/8	2 3/8	10 3/4	5 1/4	10 1/2	6	12	62
4824-3	1 1/2	3/4	4	8 1/2	1/2	5 1/4	1 3/8	4 3/8	8 3/8	2 3/8	10 3/4	5 1/4	10 1/2	6	12	62
4824-4	2	3/4	4	8 1/2	1/2	5 1/4	1 3/8	4 3/8	8 3/8	2 3/8	10 3/4	5 1/4	10 1/2	6	12	62
4824-5	2 1/2	1	5	8 1/2	1/2	5 1/4	1 3/8	4 3/8	8 3/8	2 3/8	10 3/4	5 1/4	10 1/2	6	12	62
4824-6	3	1	5	8 1/2	1/2	5 1/4	1 3/8	4 3/8	8 3/8	2 3/8	10 3/4	5 1/4	10 1/2	6	12	62
4824-7-A	4	1 1/4	7	10	9/16	6 15/16	2 1/8	5 7/8	10 7/8	2 13/16	13 11/16	6 1/8	12 1/4	6 3/4	13 1/2	120
4824-7-B	4	1 1/4	7	10	9/16	6 15/16	2 1/8	5 7/8	10 7/8	2 13/16	13 11/16	6 1/8	12 1/4	6 3/4	13 1/2	120

Ⓛ Pilot and flame detector must be in adjacent holes. If only one is used, put in center hole--if both are used, put pilot in center; except for -7-A and -7-B burners, flame detector must be in center hole.

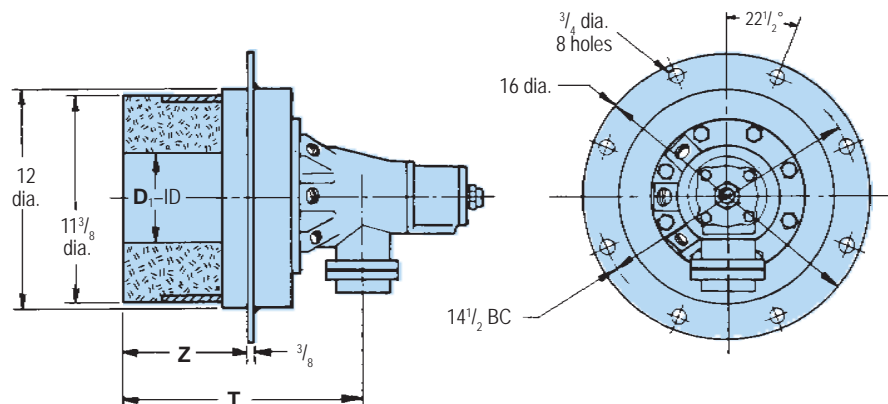
Ⓜ Opening in furnace shell should be about 1/2" larger than dimension D₂ to allow for fillets and draft on mounting plate.

Ⓝ 1/4" air pressure tap on -2, -3, -4, -5, and -6.

To order, specify: 4824-(code)-(A or B if applicable) Burner complete.

Example: 4824-7-A Burner complete

Burner for Typical Fiber Wall Construction



dimensions in inches

size designation	D	T	Z
-2 thru -4	4	13 3/8	†
-5 and -6	5	13 3/8	†
-7-A and -7-B	7	14 7/8	†

† "Z" dimension variable by half inches from 2" to 9". Customer must specify when ordering.

HOW TO ORDER (for fiber wall construction with "Z" wall thickness)

Specify 4824-(pipe code)-(A or B if applicable) Z Burner complete. Customer must supply "Z" dimension which can range between 2" and 9", written to the nearest 0.5" as a two-place figure, including the decimal point.

Example: 4824-7-AZ Burner complete. 6.5" "Z" dimension is required.

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.

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.

Fives North American Combustion, Inc., 4455 East 71st Street, Cleveland, OH 44105 USA, Phone 216.271.6000

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