

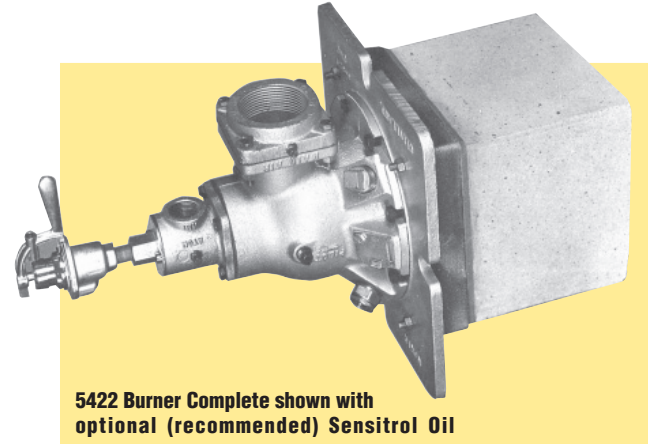
5422 Fire•All Oil Burners are ideal for heat treat and non-ferrous melting furnaces, kilns, ovens, air heaters, dryers, chemical process equipment, and other applications where superior temperature uniformity is required. (For higher temperature service, use the 5425 version.)

These sealed-in light oil burners are stable at correct ratio and with up to 50% excess fuel if additional air for combustion is in the furnace near the burner.

5422 Burners can also be operated with excess air (see Table 2) if lean operation is desirable for temperature uniformity or furnace versatility. Excess air can improve temperature uniformity by: (1) reducing hot mix temperatures to eliminate hot spots in front of the burners; (2) churning furnace atmosphere to reduce stratification; (3) creating positive furnace pressure to stop cold air infiltration; (4) increasing effective turndown.

OPERATION

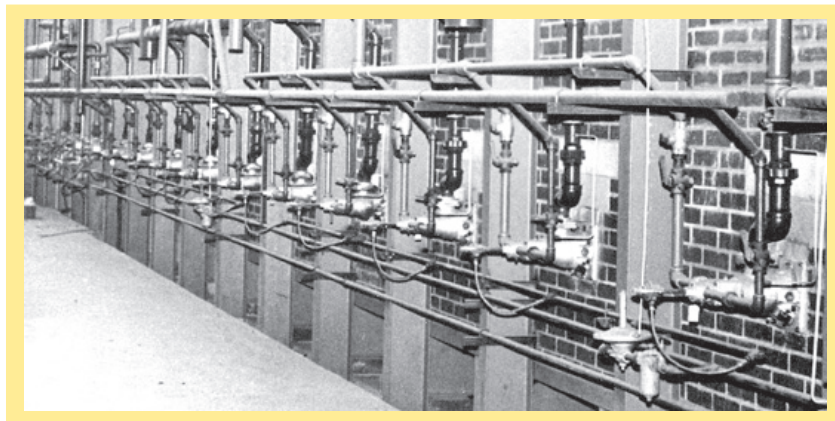
Burners can be lit at rich, lean, or correct oil/air ratio, then immediately turned to high fire. Required oil pressure at the burner is nearly zero, but a pressure drop of about 10 psi should be taken across the Sensitrol™ Valve. If furnace temperatures after shutdown exceed 1900 F, pass some air through the burner to prevent overheating.



5422 Burner Complete shown with optional (recommended) Sensitrol Oil

LIGHTING AND FLAME SUPERVISION

A 4011 Pilot Set is normally used to light 5422 Burners. A manual torch can be used in some applications. Ultraviolet (UV) detector can be installed in one of three holes in the body, using an adapter listed in Bulletin 8832. UV scanners allow igniting with up to 14 osi main air. When using flame supervision, an interrupted pilot is required--do not use constant or intermittent pilots.



Burner designation	COMBUSTION AIR CAPACITIES, scfh							ATOMIZING AIR CAPACITIES, scfh					
	Air pressure drop across the burner, osi							14	16	18	20	22	24
	0.1	1	5	6	8	12	16						
5422-2	160	520	1 160	1 270	1 470	1 800	2 100	500	520	560	600	620	650
5422-3	280	890	1 980	2 160	2 500	3 050	3 550	500	520	560	600	620	650
5422-4	460	1 450	3 240	3 540	4 100	5 000	5 800	500	520	560	600	620	650
5422-5	750	2 370	5 300	5 800	6 700	8 150	9 450	640	690	720	760	800	840
5422-6	1180	3 700	8 300	9 100	10 500	12 900	14 800	800	850	910	950	1000	1050
5422-7-A	2070	6 550	14 600	16 000	18 500	22 700	26 200	870	930	990	1040	1100	1150
5422-7-B	2580	8 150	18 200	19 900	23 000	28 200	32 600	870	930	990	1040	1100	1150
5422-8-A	3320	10 500	23 500	25 800	29 700	36 400	42 000	2650	2840	3000	3170	3320	3480

For total capacity, add combustion air and atomizing air. (For Btu/hr, multiply by 100.)

Combustion Air Pressure at Burner	5422-2	5422-3	5422-4	5422-5	5422-6	5422-7-A	5422-7-B	5422-8-A
1 osi	280	200	500	250	150	150	150	200
8 osi	400	500	800	400	400	300	700	280
14 osi	500	650	900	600	550	450	800	350

Above excess air rates with 9" long tile, with 14-22 osi atomizing air at the burner, and without pilot.

Mounting plates are cast iron. Standard tiles are 9" long. † In furnace walls thicker than the tile length, tunnel beyond end of tile should be flared at least 30° included angle, starting at the tile OD.

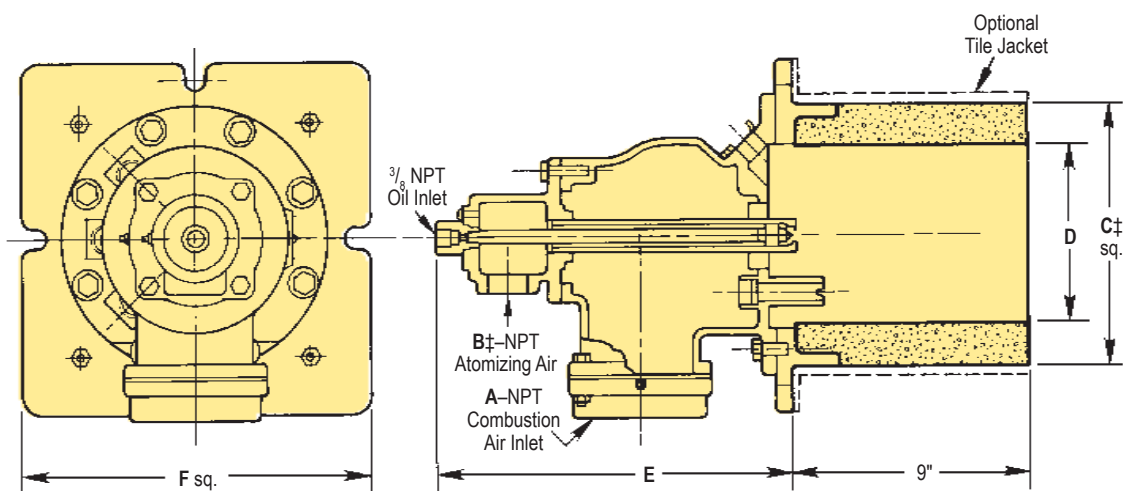
Jacketed Tiles. 5422- -LC Burners have a carbon steel jacket around the tile for furnace walls with no refractory to support the tiles--maximum combustion chamber temperature: 800 F. For higher temperatures, specify -L4 for 304 or -L9 for 309 SST jackets.

Air inlets can be rotated in 90° increments, but air pipes should be brought in from top or side to prevent oil dripping into them.

An observation port is furnished with all burners.

The 5422 oil atomizer can be easily withdrawn to allow for inspection and/or cleaning of the oil nozzle.

CLEARANCE DIMENSIONS, inches (for details, see Dimensions 5422)



Burner designation	A	B†	C	D	E	F	Approx. flame lengths with 16 osi Main Air (in open furnace)
5422-2	1 1/4	3/4	8 1/2	5	10 11/16	12	2'
5422-3	1 1/2	3/4	8 1/2	5	10 11/16	12	2'
5422-4	2	3/4	8 1/2	5	10 11/16	12	2 1/2'
5422-5	2 1/2	1	8 1/2	5	10 11/16	12	2 1/2'
5422-6	3	1	8 1/2	5	10 11/16	12	4'
5422-7-A	4	1 1/2	10	7	13 5/8	13 1/2	6'
5422-7-B	4	1 1/2	10	7	13 5/8	13 1/2	6'
5422-8-A	6	1 1/2	10	7	13 5/8	13 1/2	6'

† See Dimensions 6422 for ceramic fiber wall installation recommendations.

‡ 5422- -L metal jackets add about 1" to tile OD--see Dimensions 5422.

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 a 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.

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