

Product Overview | Oil Burners

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 1813 Sensitrol™ Valve. If furnace temperatures after shutdown exceed 1900°F, pass some air through the burner to prevent overheating.

LIGHTING AND 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. 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.

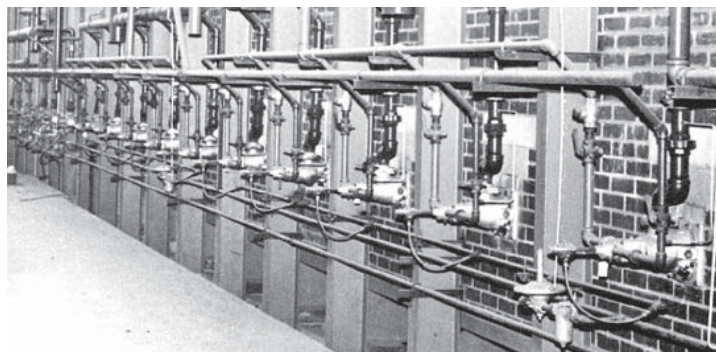


Table 1.

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/h HHV 1769-IN028, multiply by 100.)

Table 2. Maximum Excess Air Rates, %

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.