

# FIRE-ALL OIL BURNERS



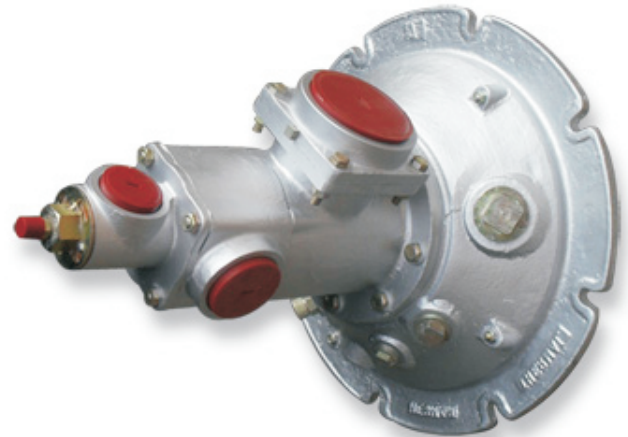
# WESMAN COMBUSTION EQUIPMENT

## SERIES 5514

**5514 FIRE-ALL OIL BURNERS** are rugged, maintenance-free sealed-in burners for burning light or heavy oil on a wide variety of applications. Capable of efficient operation throughout a wide temperature Combustion Air Inlet range, they are equally at home on low temperature ovens and high temperature, forge and melt furnaces. Sealed mountings help maintain furnace pressure, controlled atmosphere, and closer fuel/air ratio control—all contributing to better product quality.

5514 Burners are stable with 200% or more excess air. They may also be operated with excess fuel without forming carbon if additional combustion air is available in the furnace near the burner. Excess fuel limit with heavy oil is 50% as atomization deteriorates at richer ratios. 5514 Burners can be turned down to atomizing air only, but stability limits vary depending on burner size, grade of oil, and furnace ambience. Please consult Wesman regarding minimum oil rates for your specific application. For prolonged operation on atomizing air only in furnaces over 850°C, specify an alloy burner nose. Burners are suitable for some preheated combustion air applications (up to 350°C): consult Wesman. Oil viscosity at the burners should not exceed 100 SSU; oil pressure at the Ratiotrol™ should be between 25 and 30 psi. Minimum atomizing air pressure at the burner is 14 psi for light oil and 22 psi for heavy oil.

**JACKETED TILES:** 5514 Burners are available with support jackets around the tile for applications where the tile is not supported by furnace refractory. Jackets are available in three different metals and have maximum temperature ratings for each. They must be protected with sufficient insulation so as not to exceed rated temperature. Maximum temperature rating for jacket metals depends upon frequency of heat-up/cool-down cycles. As an example, batch annealing furnaces that are heated and cooled every day should use the "intermittent exposure" ratings. Continuous annealing furnaces that remain at the same temperature for months at a time, can use higher "continuous" rating.



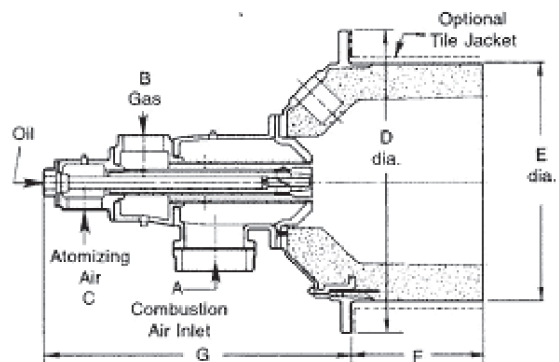
**FLAME SUPERVISION.** Purge UV with cleaning air to keep oil fog off the lens.

**USE INTERRUPTED PILOTS** with flame supervision pilots should be on only for a preset ignition period (usually 15 seconds) after which flame supervision monitors main fire only.

**TILE/INSTALLATION** Burner tiles are cast refractory rated for 1500°C furnace temperature. They should be supported securely in the furnace wall by a layer of castable refractory (not insulation) at least 9" thick all around the tile, extending back to the furnace shell and securely anchored to it. Tiles are replaceable in the field except for the 5514-10, whose mounting must be returned to the factory for tile replacement (or purchase a spare mounting plate with a tile cast onto it. 5514-10 is also available with a short tile that extends 2" past mounting plate. Remaining tile length is then field constructed. For furnace walls thicker than the length of the tile, tunnel beyond the end of the tile should be flared at least 30°, starting at the OD of tile.

MODEL	16 OSI AIR PRESSURE DROP ACROSS BURNER		24 OSI AIR PRESSURE DROP ACROSS BURNER	
	AIR-CFH	OIL GPH	AIR-CFH	OIL GPH
5514-6	17 900	13	21 900	16
5514-7	28 400	20	34 800	25
5514-8A	48 900	35	60 000	43
5514-8B	81 500	58	100 000	71
5514-9	165 000	118	202 000	144
5514-10	247 000	176	303 000	216

MODEL	CLEARANCE DIMENSIONS					
	A	B	C	D	E	F
5514-6	3	15	10 <sup>3</sup> / <sub>8</sub>	19 <sup>1</sup> / <sub>2</sub>	15	9
5514-7	4	16	11 <sup>3</sup> / <sub>8</sub>	20 <sup>1</sup> / <sub>2</sub>	16 <sup>1</sup> / <sub>2</sub>	9
5514-8A	6	17 <sup>3</sup> / <sub>4</sub>	12 <sup>3</sup> / <sub>8</sub>	22 <sup>3</sup> / <sub>4</sub>	22 <sup>1</sup> / <sub>2</sub>	10
5514-8B	6	19	13 <sup>1</sup> / <sub>2</sub>	24	23 <sup>1</sup> / <sub>2</sub>	13
5514-9	8	23	16	28	30	13 <sup>1</sup> / <sub>2</sub>
5514-10	10	27 <sup>1</sup> / <sub>2</sub>	20 <sup>1</sup> / <sub>2</sub>	32 <sup>1</sup> / <sub>2</sub>	34	13 <sup>7</sup> / <sub>16</sub>



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