

# OIL BURNER

## SERIES 5253

# SAIFEE COMBUSTION EQUIPMENT

**SAIFEE SERIES 5253 OIL BURNERS** are designed to give maintenance-free operation using heavy oil or light oil. There are no "frills" on this burner — it has a heavy cast iron body with a clean design that avoids clogging even when used on tough jobs such as forge furnaces fired with heavy oil.

### BURNER CAPACITY

Total air capacity of the burner is listed under Table 1 for a single blower supplying 12 osi combustion air and 14 osi atomizing air for light oil operation, and 20 osi combustion air and 22 osi atomizing air for heavy furnace oil operation. Use Table 2 and 3 when selecting separate blowers for combustion and atomizing air. For sizing of blowers or burners at other pressures, add figures from Table 2 and 3 to get total capacity.

On oil operation these capacities are increased 20% by the additional air supplied through the atomizing air connection. When burning with the shutter open, burner capacities may be doubled if furnace conditions ensure sufficient secondary air.

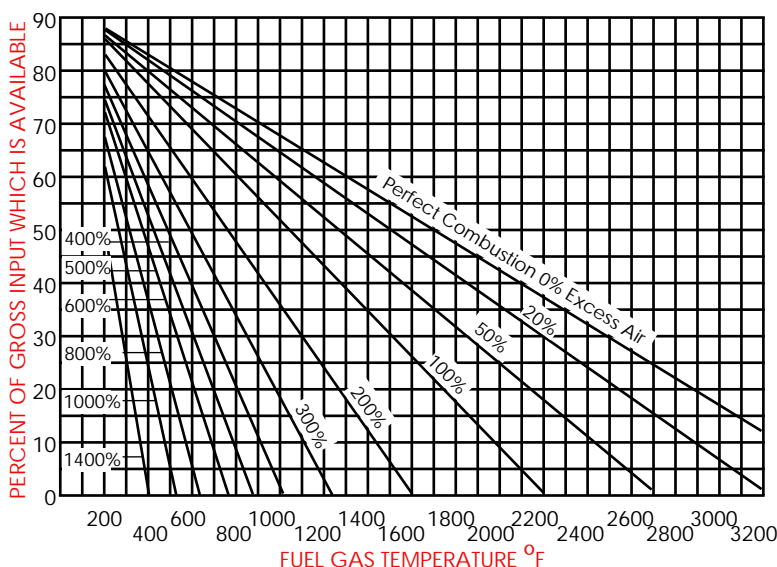


### BURNER OPERATION

Oil with viscosity of 70 to 90 Seconds Redwood 1 and a pressure between 25 and 30 psi should be supplied to an Air/Oil Ratiotrol which will deliver oil to the burner at pressure proportional to the main air pressure, thus maintaining the correct air/oil ratio at all firing rates. Atomizing air pressure at the burner may be as low as 14 osi when using distillate oil and 22 osi when using heavy oil.

### BURNER CONSTRUCTION

The heavy cast iron body can withstand rough handling. All internal parts of the 5253 burner are machined. The smooth surface stays free of oil deposits and dirt, greatly minimizing the need for cleaning. Oil is put through the burner in a straight passage with large cross-sectional area permitting visual inspection for clogging and easy clean-out if necessary. The burner oil valve is the well known Saifee sensitrol, a non-plugging V-port oil valve which produces small and uniform flow rate changes throughout the 180° sweep of the control handle.



PERCENT AVAILABLE HEAT WITH VARIOUS FLUE GAS TEMPERATURES AND VARIOUS AMOUNT OF EXCESS AIR

This chart is only applicable to cases in which there is no unburned fuel in products of combustion. The average temperature of the hot mixture just beyond the end of the flame may be read at the point where the appropriate % excess air curve intersects the zero available heat line.

TABLE 1 TOTAL AIR CAPACITIES in CFH

	Burner Designation	5253-3	5253-4	5253-5
Air Pressures at burner	Combustion 12 osi: Atomizing 14 osi	4735	5935	10630
	Combustion 20 osi: Atomizing 22 osi	6320	7670	13640

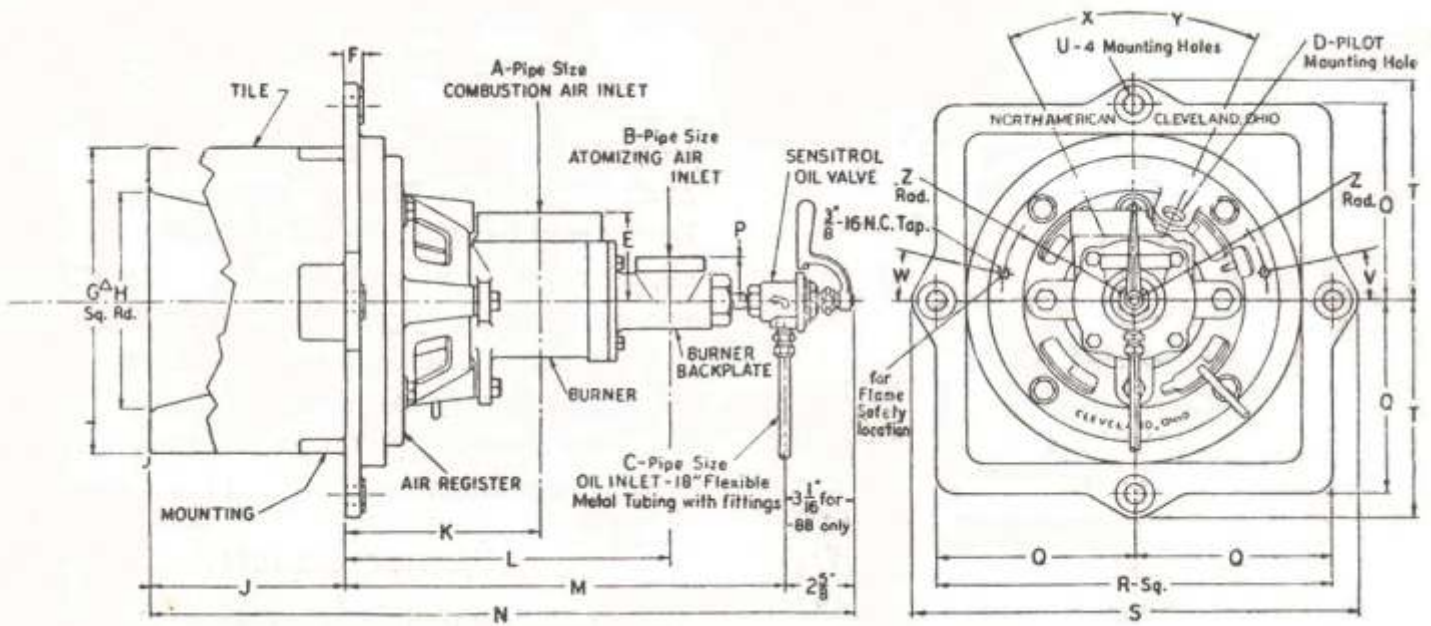
For burner holes capacity in BTU per hour multiply by 100

TABLE 2 COMBUSTION AIR CAPACITIES in CFH (not including atomizing air)

Burner Designation	Air pressure at burner in osi												
	0.25	1	2	3	4	5	6	8	10	12	14	16	20
5253-3	575	1150	1625	1900	2300	2575	2815	3250	3635	3800	4300	4600	5150
5253-4	725	1450	2050	2500	2900	3250	3525	4100	4580	5000	5420	5800	6500
5253-5	1156	2312	3270	4000	4625	5175	5660	6540	7300	8000	8650	9250	10350

TABLE 3 ATOMIZING AIR CAPACITIES in CFH

Burner Designation	Air pressure at burner in osi					
	14	16	18	20	22	24
5253-3	935	1000	1060	1120	1170	1220
5253-4	935	1000	1060	1120	1170	1220
5253-5	2630	2810	2980	3150	3290	3430



Burner Designation	Dimensions in inches and degrees																				Sensitrol oil valve	wt in kg				
	All dimensions except mounting holes are for estimating purposes only																									
	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	T	U	V	W	X	Y	Z		
5253-3	1 1/2	1	3/8	1 1/64	1 15/16	9/16	9	6 1/16	6	5 5/8	8 5/8	12 3/4	2 13/8	1 1/4	5 7/8	11 3/4	13 1/2	6 3/4	1 1/16	5°	-	20°	-	3 1/16	1813-02A	29
5253-4	2	1	3/8	1 1/64	2 13/16	9/16	9	6 1/16	6	6 3/16	10 1/8	14 1/2	2 3/8	1 1/2	5 7/8	11 3/4	13 1/2	6 3/4	1 1/16	-	12°	-	22 1/2°	3 3/4	1813-02A	35
5253-5	2 1/2	1 1/2	3/8	1 9/64	3 3/8	1 1/16	12	9 1/2	13	7 9/16	12 5/8	17	3 25/8	1 3/4	7 5/8	15 1/4	17 1/8	8 9/16	1 3/16	10°	-	35°	-	5 1/8	1813-02B	84

Δ Opening in furnace shell or outer wall must be 1/2" larger than dimension indicated to allow for mounting plate fillet and draft.

1 osi = 1.732 inch wc = 43.99 mmwc

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