



# TECHNICAL GUIDE

1 BHP = 33,472 BTU/HR = 34.5 3 STEAM/HR = 139.5 FT E.D.R. (STEAM)								
1 sq.ft. E.D.R.F. = 240 BTU/HR steam				1 sq.ft. E.D.R.F. = 240 BTU/HR H <sub>2</sub> O				
<b>100 HORSEPOWER =</b>  <i>Combustion Air:</i> <i>Flue Gas:</i> <i>Flue Gas Cold:</i>		28 GPH Heavy Oil		<b>THERMAL EXPANSION</b>		<b>WATER FLOW THRU PIPES</b>		
		30 GPH Light Oil		Steel = .000078"/ft/°F		<u>Pipe Size</u>	<u>Design</u>	<u>Max (20#)</u>
		4185 CF Nat Gas		Steel = .0000065 ft/ft/°F		1/8"	0.15	0.6
		6.92 GPM Feedwater		<b>ELECTRICITY</b>		1/4"	0.3	1.5
696 CFM @ 70° F		1 BHP = ka/9.8		1/2"		1.5	6	
1437 CFM @ 400°F		9.8 KW = 1 BHP		3/4"		3	12	
870.8 CFM @ 70°F		1 KW hour = 3415 BTU		1"		6	22	
				1 1/2"		20	70	
				2"		35	115	
				3"		100	350	
				4"		200	900	
				6"		650	2500	
<b>STEAM #HR TO HP</b>		<b>WATER</b>		<b>Ventilation Uniform Mechanical Code</b>		<b>1# OF STEAM =</b>		
1,000 #/HR = 29 HP		1 gallon = 8.337		7.26 sq. ft. vent high		20.0 cubic ft. @ 5#		
10,000 #/HR = 290 HP		1 cu. ft. = 62.37 @60°F		7.26 sq. ft <sup>2</sup> . vent low		15.4 cubic ft. @ 12#		
20,000 #/HR = 580 HP		1 cu. ft. = 7.481 gallon		<u>CB Ventilation</u>		6.7 cubic ft. @ 50#		
30,000 #HR = 870 HP		1 foot (wc) = .4334 psi		3.63 sq. ft. high		3.9 cubic ft. @ 100#		
40,000 #HR = 1,160 HP		1 psig = 2.307" H <sub>2</sub> O		3.63 sq. ft. low		3.2 cubic ft. @ 125#		
50,000 #HR = 1,450 HP		1 psig = 27.68" WC				2.7 cubic ft. @ 150#		
100,000 #/HR = 2,900 HP						2.4 cubic ft. @ 125#		
						2.1 cubic ft. @ 200#		
						1.0 cubic ft. @ 450#		
<b>CO<sub>2</sub> =</b>								
<b>GAS = 117.09/MMBTU Input</b>		#2 OIL = 142,000 BTU/gal						
<b>#2 Oil = 158.89/MMBTU Input</b>		#5 OIL = 149,000 BTU/gal						
		#6 OIL = 152,000 BTU/gal						
<b>Boiler HP</b>	<b>#Hr Steam</b>	<b>MBTU/HR Output</b>	<b>Therms/Hr</b>	<b>#2 Oil GPH</b>	<b>GPM Evaporated Steam</b>	<b>Continuous Feedwater (x 1.35)</b>	<b>Intermittent Feedwater (x 2.0)</b>	
5	172	117	2.10	1.50	0.345	0.465	0.69	
10	345	334	4.19	3.00	0.69	0.931	1.4	
15	578	502	6.28	4.50	1.04	1.4	2.0	
20	690	607	8.40	6.00	1.38	1.8	2.8	
30	1035	1004	12.60	9.00	2.07	2.8	4.1	
40	1880	1339	16.80	12.00	2.76	3.7	5.5	
50	1725	1674	21.00	15.00	3.45	4.7	6.9	
60	2070	2009	25.10	18.00	4.14	5.6	8.3	
70	2415	2343	29.30	21.00	4.83	6.6	9.7	
80	2760	2678	33.50	24.00	5.52	7.5	11.0	
100	3450	3348	41.90	30.00	6.90	9.3	13.8	
125	4313	4184	52.30	37.50	8.62	11.6	17.2	
150	5175	5021	62.80	45.00	10.40	14.0	20.8	
200	6900	6695	83.70	60.00	13.80	18.6	27.6	
250	8625	8369	105.00	74.50	17.30	23.3	34.6	
300	10350	10043	125.00	89.50	20.70	27.9	41.4	
350	12075	11716	146.00	104.50	24.20	32.6	48.4	
400	13800	13390	167.00	119.50	27.60	37.2	55.2	
500	17250	16738	209.00	149.50	34.50	46.5	69.0	
600	20700	20085	251.00	179.50	41.40	55.8	82.8	
700	24150	23430	292.00	210.00	48.30	65.2	96.6	
800	27600	26780	335.00	239.00	55.20	74.5	110.40	