MODEL CBT

Vertical Tubeless Steam Boiler

Dimensions and Ratings

Figure 1. Model CBT Dimensional Views

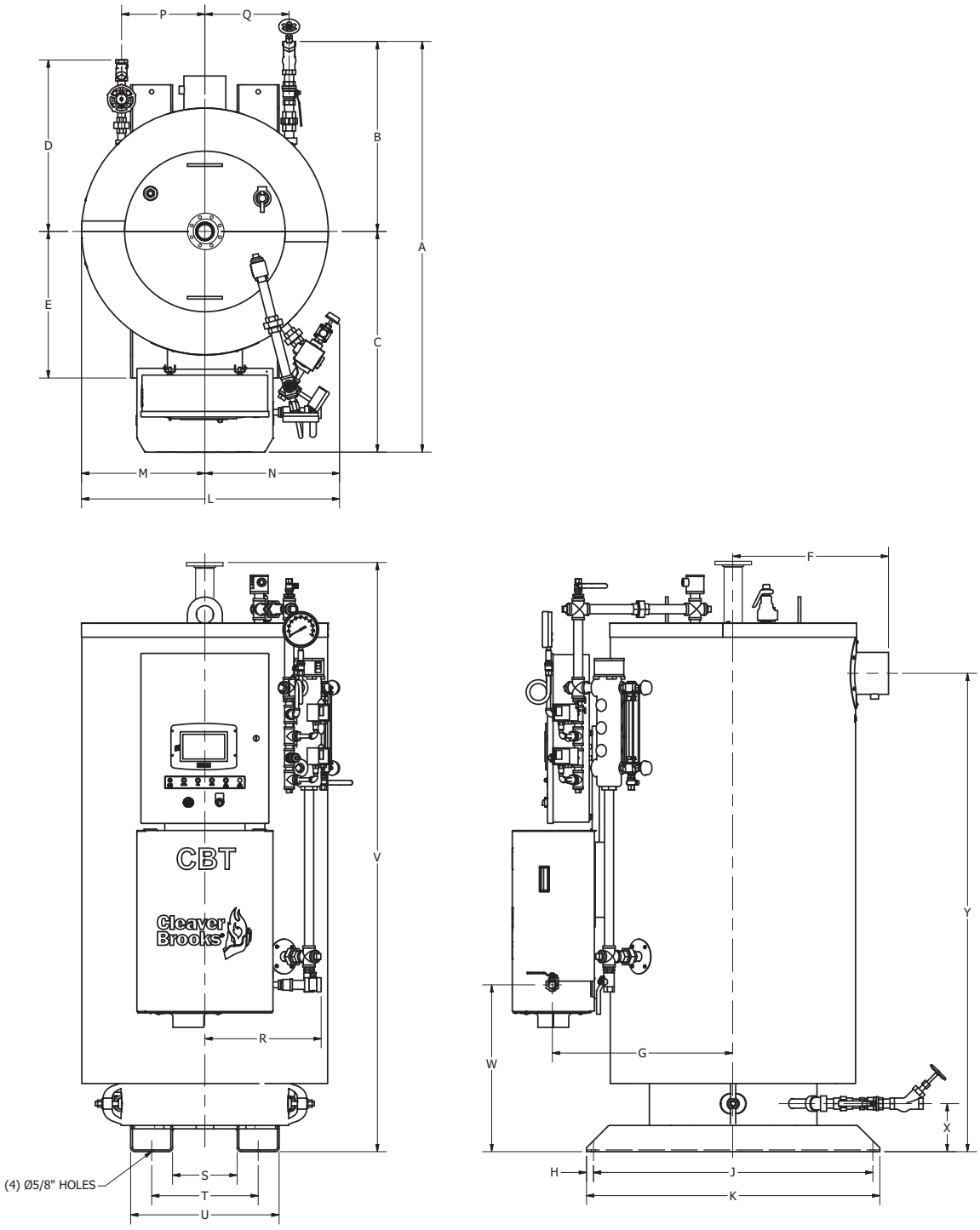

Table 1. Dimensions Model CBT Modulating

DIMENSIONS IN INCHES unless noted	Dimension	Boiler Horsepower							
		9.5	10	15	20	25	30	40	50
LENGTHS									
Overall	A	53.3	59	59	68	68	70	77.5	82
Center To Drain / Blowdown	B	24.5	27	27	31	31	32	33.5	33.5
Center To Front	C	29	32	32	37	37	38	44	48.5
Center To Feedwater	D	22	25	25	30	30	30.5	33	33
Center To Base	E	21	21	21	25	25	26.5	28.25	28.25
Center To Stack Outlet	F	18	22	22	28	28	28.5	32	32
Center To Gas Train	G	23	26	26	31	31	32.5	38	39
Base End to Bolt Hole	H	1	1	1	1	1	1	1	1
Bolt Hole to Bolt Hole	J	40	40	40	49	49	51	54.5	54.5
Base Channel	K	42	42	42	51	51	53	56.5	56.5
WIDTHS									
Overall	L	34.5	37	37	47	47	49	55.5	55.5
Center to Lagging	M	14	18	18	23	23	24.5	27.75	27.75
Center to Water Column	N	20.5	19	19	24	24	25	27.75	27.75
Center To Feedwater	P	9.5	12	12	15.5	15.5	16.5	19	19
Center To Drain / Blowdown	Q	9.5	12	12	15.5	15.5	16.5	19	19
Center To Gas Train	R	16.5	17	17	13.5	13.5	15	17	17.5
Base, Inside of Channel	S	10	9	9	19	19	22	34	34
Base Bolt Hole to Bolt Hole	T	16	15	15	25	25	28	40	40
Base, Outside of Channel	U	22	21	21	31	31	34	46	46
HEIGHTS									
Overall - Steam Nozzle	V	85.5	83	83	87	87	90.5	100	100
Base to Gas Train	W	28.5	24	24	25	25	28.5	34.25	29.5
Base to Blowdown / Feedwater	X	7.5	7	7	7	7	7	7.5	7.5
Base to Stack Outlet	Y	70.5	68	68	73	73	75.5	84	84
BOILER CONNECTIONS									
Feedwater	AA	0.75	0.75	0.75	1	1	1	1	1
Drain / Blowdown	BB	1	1	1	1	1	1	1.25	1.25
Surface Blowoff	CC	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75
Steam Outlet (150 psig only)	DD	2*	2	2	2	2	2	3	3
Steam Outlet (15 psig only)	EE		3	3	4	4	4	6	6
Combustion Air Inlet	FF	4 NOM	4 NOM	4 NOM	4 NOM	4 NOM	6 NOM	6 NOM	8 NOM
Gas Train Inlet	GG	1	1	1	1	1	1.25	1.25	1.25
Stack O.D.	HH	6 OD	6 OD	6 OD	6 OD	6 OD	8 OD	8 OD	8 OD
WEIGHTS - LBS									
Water Weight (150 psig Normal Level)		270*	450	450	1190	1190	1515	2550	2550
Water Weight (15 psig Normal Level)			475	475	1135	1135	1475	2490	2490
Approx. Dry Weight (150 psig)		2,000*	2,350	2,350	3850	3850	4350	5150	5150
Approx. Dry Weight (15 psig)			2,150	2,150	3675	3675	4175	4850	4850

*9.5 HP is 100 psig design pressure

Table 2. Clearances (inches)

FRONT	36
BACK	18
SIDES	18
ABOVE BOILER	18

Table 3. CBT Steam Boiler Ratings

Boiler H.P.	9.5	10	15	20	25	30	40	50
Ratings								
Rated Capacity - Steam (lbs-steam/hr from & at 212°F)	328	345	518	690	863	1,035	1,380	1,725
Output (1000 Btu/hr)	318	335	502	669	837	1,004	1,339	1,674
Approximate Fuel Consumption At Rated Capacity								
Natural Gas Input (cfh) - 15 psig Steam[A]		398	598	797	996	1,195	1,594	1,992
Natural Gas Input (cfh) - 150 psig Steam[B]	397[C]	413	620	826	1,033	1,240	1,653	2,066
Power Requirements	**(Single Phase, 115 VAC, 50/60 Hz)**							
Blower Motor Size (Watts)[D]	240	335	335	335	335	335	750	1,200
Minimum overcurrent protection	10A	10A	10A	10A	10A	10A	15A	20A
Heating Surface								
Total Waterside (ft2)	25	39	39	60	60	73	98	98
Total Waterside (m2)	2.3	3.6	3.6	5.6	5.6	6.8	9.1	9.1
Total Fireside (ft2)	41	61	61	94	94	107	155	155
Total Fireside (m2)	3.8	5.7	5.7	8.7	8.7	9.9	14.4	14.4

Notes:

A. Input calculated at nominal 84% efficiency for 1000 Btu gas content.

B. Input calculated at nominal 81% efficiency for 1000 Btu gas content.

C. 9.5 HP is 100 psig design pressure.

D. For altitudes above 1500 ft, contact your local C-B authorized representative for derates.

Table 4. CBT Steam Boiler Safety Valve Outlet Size

	VALVE SETTING			
	15 PSIG STEAM		150 PSIG STEAM	
BOILER HP	NO. OF VALVES REQ'D	OUTLET SIZE (IN.)	NO. OF VALVES REQ'D	OUTLET SIZE (IN.)
9.5			1*	3/4*
10	1	1-1/2	1	3/4
15	1	1-1/2	1	3/4
20	1	1-1/2	1	3/4
25	1	2	1	1
30	1	2	1	1
40	1	2-1/2	1	1
50	1	2-1/2	1	1-1/4

Valve manufacturers are Kunkle, Consolidated, or Conbraco, depending on availability.
*9.5 HP is 100 psig steam