

CBEX-2D

250-800 HP



Dimensions and Ratings

Dimensions are for reference only; certified drawings from CB are required if clearances are critical.

Figure 1. CBEX-2D Dimensions Steam

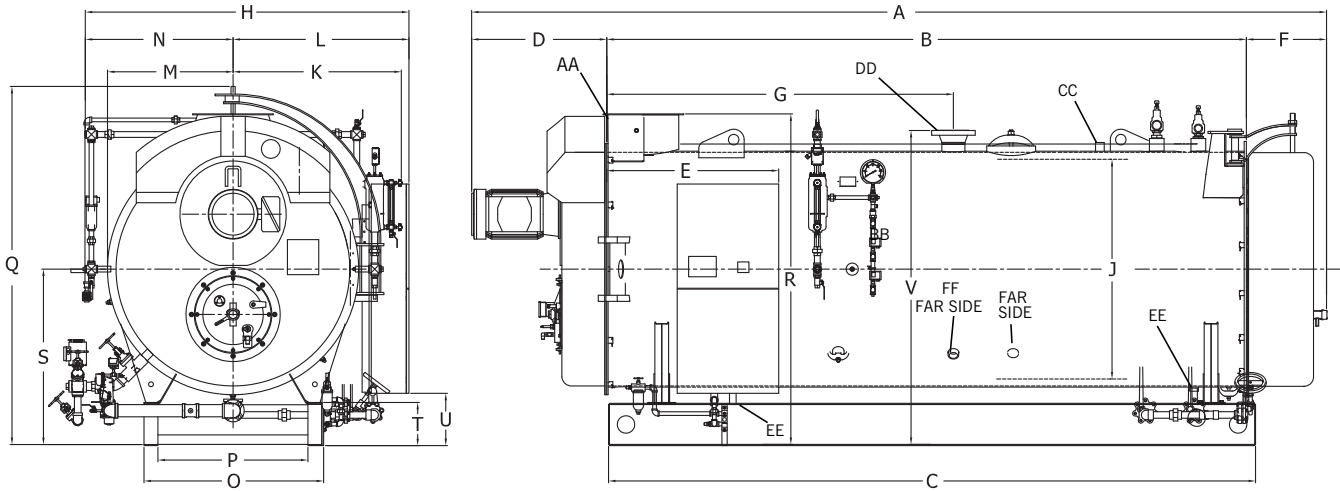


Table 1: CBEX-2D Dimensions Steam

DIMENSIONS in inches unless noted

		250	300	350	400	500	600	700	800
LENGTHS									
Overall Length (Uncontrolled)	A	227.8	236.9	250.3	257.3	257.2	282.4	284.5	296.8
Overall Length (60 PPM System)	A	227.9	239.7	251.4	257.4	260.9	288.5	288.8	298.6
Overall Length (30 PPM System)	A	230.7	241.4	253.8	259.4	260.9	288.5	290.6	300.2
Overall Length (9 PPM System)	A	230.7	241.4	253.8	259.4	263.5	288.6	290.6	300.2
Shell (with Front Smoke Box)	B	174.4	183.4	193.4	200.8	197	222	224	232
Base Frame	C	176.5	185.5	195.5	200.5	196.5	221.5	223.5	232.5
Burner Extension (Uncontrolled)	D	30.1	30.2	33.6	30.3	31.0	31.2	31.3	35.6
Burner Extension (60 PPM System)	D	30.2	33.0	34.7	30.3	34.7	37.3	35.6	37.4
Burner Extension (30 PPM System)	D	33.0	34.7	37.1	32.3	34.7	37.3	37.4	39.0
Burner Extension (9 PPM System)	D	33.0	34.7	37.1	32.3	37.3	37.4	37.4	39.0
Front Ring to Panel	E	52	52	52	52	52	52	52	52
Rear Head Extension	F	23.3	23.3	23.3	26.25	29.2	29.2	29.2	29.2
Shell Flange to Steam Nozzle	G	90.4	99.4	104.4	100.5	96.5	108.5	120.5	
WIDTHS									
Overall Width	H	93.4	93.4	93.4	104.3	110.1	110.1	110.6	110.6
I.D. Boiler	J	67	67	67	78	83	83	83	83
Center to Water Column	K	48.1	48.1	48.1	53.3	56.8	56.8	56.8	56.8
Center to Panel	L	50.4	50.4	50.4	55.6	58.6	58.6	59.1	59.1
Center to Lagging	M	36	36	36	42	44.1	44.1	44.1	44.1
Center to Auxiliary LWCO	N	43	43	43	48.7	51.5	51.5	51.5	51.5
Base Outside	O	51	51	51	64	60	60	60	60
Base Inside	P	43	43	43	56	47	47	47	47
HEIGHTS									
Base to top of Front Head Bolt	Q	103	103	103	115	118	118	118	118
Base to Vent Outlet	R	95.1	95.1	95.1	107.7	109	109	109	109
Base to Boiler Centerline	S	50.6	50.6	50.6	56.4	57	57	57	57
Height of Base Frame	T	12.1	12.1	12.1	12.2	12.3	12.3	12.3	12.3
Base to Bottom of Panel	U	15	15	15	15.5	8.75	8.75	8.75	8.75
Base to Steam Outlet	V	90.4	90.4	90.4	101.75	104.9	104.9	104.9	104.9
BOILER CONNECTIONS									
Feedwater Inlet	BB	2	2	2.5	2.5	2.5	2.5	2.5	2.5
Surface Blowoff	CC	1	1	1	1	1	1	1	1
Steam Nozzle, 150 psig Design Press. (300# Flange)	DD	6	6	6	6	8	8	8	8
Steam Nozzle, 15 psig Design Press. (150# Flange)	DD	12	12	12	12	12	12	12	12
Blowdown-Front & Rear	EE	1.5	1.5	1.5	2	2	2	2	2
Chemical Feed	FF	1	1	1	1	1	1	1	1
VENT STACK									
Vent Stack Diameter (Flanged)	AA	20	20	20	24	24	24	24	24
MINIMUM CLEARANCES									
Tube Removal - Front from Head Flange		149	158	168	174	164	194	196	204
Tube Removal - Rear from Rear Head Flange		163	172	182	188	183	208	210	218
Front Door Swing		76	76	76	88	94	94	94	94
Rear Door Swing		65	65	65	74	79	79	79	79
WEIGHTS lbs									
Dry Weight (15 psig)		16,968	17,865	19,635	25,374	29,111	31,374	34,284	35,118
Dry Weight (150 psig)		17,426	18,023	19,802	25,181	29,816	32,175	34,569	35,414
Operating Weight (15 psig)		26,346	27,779	29,466	42,300	43,477	47,768	49,007	50,419
Operating Weight (150 psig)		26,804	27,937	29,633	42,107	44,182	48,569	49,292	50,714

Figure 2. CBEX-2D Dimensions Hot Water

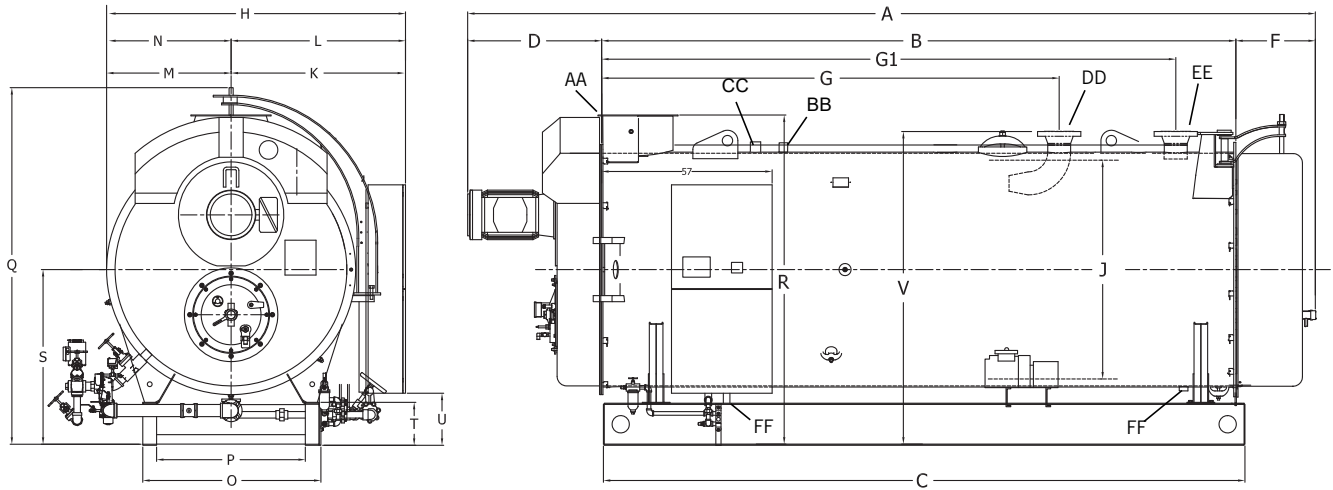


Table 2: CBEX-2D Dimensions Hot Water

DIMENSIONS in inches unless noted

		250	300	350	400	500	600	700	800
LENGTHS									
Overall Length (Uncontrolled)	A	227.8	236.9	250.3	257.3	257.2	282.4	284.5	296.8
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Overall Length (9 PPM System)	A	230.7	241.4	253.8	259.4	263.5	288.6	290.6	300.2
Shell (with Front Smoke Box)	B	174.4	183.4	193.4	200.8	197	222	224	232
Base Frame	C	176.5	185.5	195.5	200.5	196.5	221.5	223.5	232.5
Burner Extension (Uncontrolled)	D	30.1	30.2	33.6	30.3	31.0	31.2	31.3	35.6
Burner Extension (60 PPM System)	D	30.2	33.0	34.7	30.3	34.7	37.3	35.6	37.4
Burner Extension (30 PPM System)	D	33.0	34.7	37.1	32.3	34.7	37.3	37.4	39.0
Burner Extension (9 PPM System)	D	33.0	34.7	37.1	32.3	37.3	37.4	37.4	39.0
Front Ring to Panel	E	53.8	53.8	53.8	56	54	54	56	56
Rear Head Extension	F	23.3	23.3	23.3	26.25	29.2	29.2	29.2	29.2
Shell Flange to Return Nozzle	G	128.88	134.88	137.75	145.13	140.88	165.88	168	176
Shell Flange to Supply Nozzle	G1	154.88	160.88	173.75	181.13	176.88	201.88	204	212
WIDTHS									
Overall Width	H	86.4	86.4	86.4	97.6	102.7	102.7	102.7	102.7
I.D. Boiler	J	67	67	67	78	83	83	83	83
Center to Water Column	K	43	43	43	48.7	51.5	51.5	51.5	51.5
Center to Panel	L	50.4	50.4	50.4	55.6	58.6	58.6	58.6	58.6
Center to Lagging	M	36	36	36	42	44.1	44.1	44.1	44.1
Base Outside	O	51	51	51	64	60	60	60	60
Base Inside	P	43	43	43	56	47	47	47	47
HEIGHTS									
Base to top of Front Head Bolt	Q	103	103	103	115	118	118	118	118
Base to Vent Outlet	R	95.1	95.1	95.1	107.7	109	109	109	109
Base to Boiler Centerline	S	50.6	50.6	50.6	56.4	57	57	57	57
Height of Base Frame	T	12.1	12.1	12.1	12.2	12.3	12.3	12.3	12.3
Base to Bottom of Panel	U	15	15	15	15.5	8.75	8.75	8.75	8.75
Base to Top of Supply and Return	V	90.4	90.4	90.4	101.75	104.9	104.9	104.9	104.9
BOILER CONNECTIONS									
Air Vent	BB	1-1/4	1-1/4	1-1/4	2	2	2	2	2
Auxiliary Connection	CC	1-1/4	1-1/4	1-1/4	1-1/4	1-1/4	1-1/4	1-1/4	1-1/4
Return Nozzle, 125 PSIG HW Design Press. (ANSI 150 psig)	DD	8	8	8	10	10	12	12	12
Supply Nozzle, 125 PSIG HW Design Press. (ANSI 150 psig)	EE	8	8	8	10	10	12	12	12
Drain-Front & Rear	FF	1-1/2	1-1/2	1-1/2	2	2	2	2	2
VENT STACK									
Vent Stack Diameter (Flanged)	AA	20	20	20	24	24	24	24	24
MINIMUM CLEARANCES									
Tube Removal - Front from Head Flange		149	158	168	174	164	194	196	204
Tube Removal - Rear from Rear Head Flange		163	172	182	188	183	208	210	218
Front Door Swing		76	76	76	88	94	94	94	94
Rear Door Swing		65	65	65	74	79	79	79	79
WEIGHTS lbs									
Dry Weight		16,968	17,865	19,635	25,374	29,111	31,374	34,284	35,118
Flooded Weight		30,208	31,860	33,790	47,179	50,063	55,273	56,193	57,883

Table 3: CBEX-2D Ratings 250-800 HP

	Boiler HP							
	250	300	350	400	500	600	700	800
Firing Rate, BTU/h	10,205,793	12,246,951	14,288,110	16,329,268	20,411,585	24,493,902	28,576,220	32,658,537
Shell Diameter, in.	67	67	67	78	83	83	83	83

Power requirements - sea level to 700' (60 Hz)

Motor HP (Uncontrolled NOx)*	7-1/2	10	15	20	20	25	25	40
Motor HP (60 PPM system)*	10	15	20	20	30	40	40	60
Motor HP (30 PPM system)*	15	20	30	25	30	50	50	75
Motor HP (9 PPM system)*	15	20	40	25	40	60	60	75
Motor HP (5 PPM system)*	20	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Oil Pump Motor HP (No. 2 Oil only)	1/2	3/4	3/4	3/4	3/4	3/4	1	1
Air Compressor Motor HP (No. 2 Oil only)	5	5	5	5	7 1/2	7 1/2	7 1/2	7 1/2

Boiler ratings

Rated Capacity (lb-steam/hr at 212F)	8,625	10,350	12,075	13,800	17,250	20,700	24,150	27,600
Btu Output (1000 BTU/hr)	8,369	10,043	11,716	13,390	16,738	20,085	23,433	26,780
Light Oil gph (140,000 BTU/gal)	72.9	87.5	102.1	116.6	145.8	175.0	204.1	233.3
Gas CFH (1000 BTU)	10,206	12,247	14,288	16,329	20,412	24,494	28,576	32,659
Gas Therm (therm/hr)	102.1	122.5	142.9	163.3	204.1	244.9	285.8	326.6
Heating Surface sq-ft (fireside)	814	859	1121	1244	1650	1876	2375	2466

*Blower motor size for boiler operating pressures 125 psig and less; contact your local Cleaver-Brooks authorized representative for higher pressures and altitudes.



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