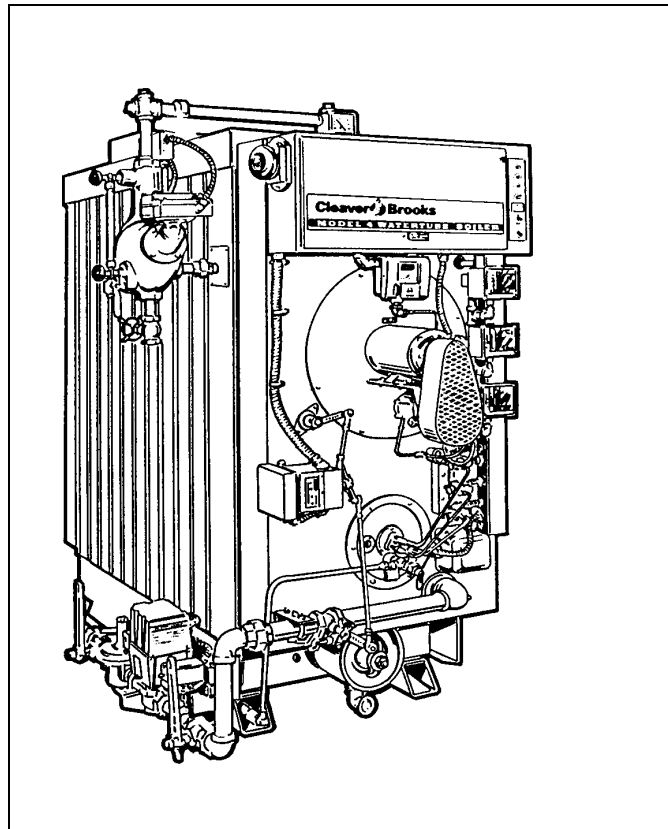


MODEL 4 BOILERS



Dimensions and Ratings

Figure 1a. Model 4 Dimensions (sheet 1 of 2)

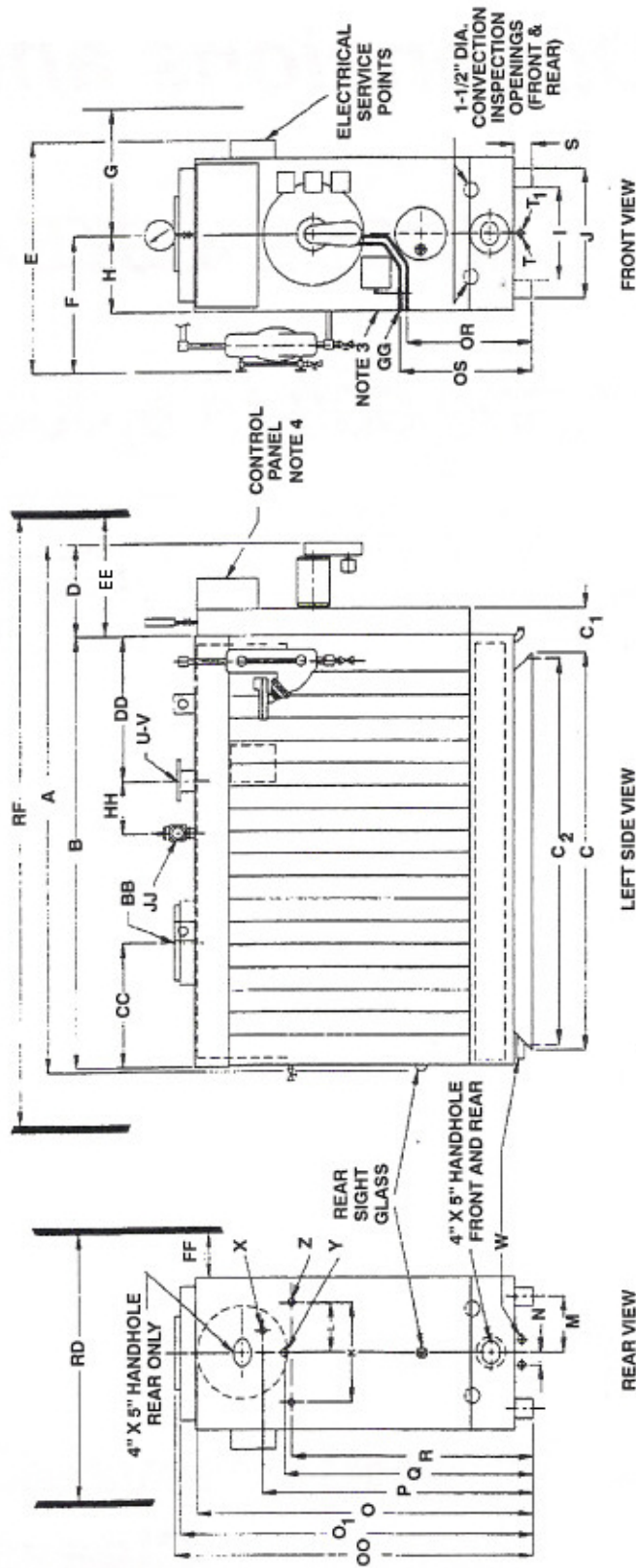


Figure 1b. Model 4 Dimensions (sheet 2 of 2)

		Boiler Size								
Note 1		1500	2000	2500	3000	3500	4000	4500	5000	6000
Lengths		All Dimensions are in inches								
A	Overall	84.25	84.25	100.25	100.25	117.375	117.375	136.75	136.75	152.375
B	Pressure Vessel w/casing	61	61	77	77	92.375	92.375	109	109	124.625
C	Base Frame	54	54	69.625	69.625	85.25	85.25	101	101	116.5
C ₁	Base to Burner/Windbox	9.625	9.625	9.625	9.625	9.625	9.625	10	10	10
C ₂	Base Frame Anchor Holes	51.5	51.5	67.125	67.125	82.75	82.75	98.375	98.375	114
CC	Rear Casing to Stack Connection	25.8	25.8	26.25	26.25	26.25	26.25	30.375	30.375	30.375
D	Burner/Windbox Extension	20.1	20.1	20.1	20.1	21.9	21.9	24.6	24.6	24.6
DD	Front Casing to Steam Nozzle	17.25	17.25	25.25	25.25	30.75	30.75	37.375	37.375	45.25
HH	Steam Nozzle to Safety Valve 15#	8	8	12	12	11.5	11.5	13	13	17
	Steam Nozzle to Safety Valve 150#	8	8	12	12	17	17	17	17	17
Widths										
E	Overall	53.25	53.25	53.25	53.25	53.25	53.25	53.25	53.25	53.25
F	Center to Water Column	32.4	32.4	32.4	32.4	32.4	32.4	32.4	32.4	32.4
G	Center to Opt. Aux. Water Column	26.6	26.6	26.5	26.6	26.6	26.6	26.6	26.6	26.6
H	Center to Outside Casing	16.375	16.375	17.375	16.375	16.375	16.375	16.375	16.375	16.375
I	Base Frame Inside	20	20	20	20	20	20	20	20	20
J	Base Frame Outside	28	28	28	28	28	28	28	28	28
K	Soot Washers, Center to Center	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4
L	Boiler Centerline to Soot Washer	10.7	10.7	10.7	10.7	10.7	10.7	10.7	10.7	10.7
M	Boiler Centerline to Base Centerline	12	12	12	12	12	12	12	12	12
N	Boiler Centerline to Soot Drain	5.25	5.25	5.25	5.25	5.25	5.25	5.25	5.25	5.25
Heights										
OO	Overall [Base to Stack Connection]	78.75	78.75	78.75	78.75	78.75	78.75	78.75	78.75	78.75
O	Base to Steam Nozzle 150#	74.75	75.75	74.75	74.75	74.75	74.75	78	78	78
O	Base to Steam Nozzle 15#	75	75	75	75	78.25	78.25	78.25	78.25	78.25
O ₁	Base to Stack Box.	77.8	77.8	77.8	77.8	77.8	77.8	77.8	77.8	77.8
O ₂	Base to Top of Control Panel	83.25	83.25	83.25	83.25	83.25	83.25	83.25	83.25	83.25
P	Base to Surface Blowoff	59.25	59.25	59.25	59.25	59.25	59.25	59.25	59.25	59.25
Q	Base to Feedwater Inlet	57.25	57.25	57.25	57.25	57.25	57.25	57.25	57.25	57.25
R	Base to Soot Washer Lance	55.5	55.5	55.5	55.5	55.5	55.5	55.5	55.5	55.5
S	Height of Base	4	4	4	4	4	4	4	4	4
OS	Base to Oil Supply Connection	27.75	27.75	27.75	27.75	27.75	27.75	27.75	27.75	27.75
OR	Base to Oil Return Connection	25.75	25.75	25.75	25.75	25.75	25.75	25.75	25.75	25.75
Connections										
BB.	OD Stack - Sleeve Connection	12	12	12	12	12	12	16	16	16
T	Bottom Drum Blow Down, 15# [one]	1.25	1.25	1.25	1.25	1.5	1.5	1.5	1.5	1.5
T ₁	Bottom Drum Blow Down, 150# [one]	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25
U	Steam Nozzle, 15#	4 ^A	4 ^A	4 ^A	4 ^A	6 ^B	6 ^B	6 ^B	6 ^B	6 ^B
V	Steam Nozzle, 150#	2.5 ^A	2.5 ^A	3 ^A	3 ^A	3 ^A	3 ^A	4 ^B	4 ^B	4 ^B
W	Soot Washer Drains [Two]	2	2	2	2	2	2	2	2	2
X	Surface Blow off [One]	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75
Y	Feedwater Inlet [One]	1	1	1	1	1	1	1	1	1
Z	Soot Washer [Two]	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
GG	Oil Supply and Return	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
JJ	Relief Valve, 15#	2	2	2	2	2	2.5	2.5	2.5	3
	Relief Valve, 150#	1	1.25	1.25	1.25	1.5	1.5	1.5	1.5	2
Clearances										
EE	Burner/Windbox Swing	33	33	33	33	33	33	33	33	33
FF	Tube removal each side	30	30	30	30	30	30	30	30	30
RF	Allowance for Burner/Windbox Swing and 30" Rear Aisle Space.	124	124	140	140	155	155	172	172	187
RD	Allowance for Tube Removal Each Side and Burner/Windbox Swing.	93	93	93	93	93	93	93	93	93

Figure 2. Model 4 Steam Ratings

Boiler SIZE	1500	2000	2500	3000	3500	4000	4500	5000	6000
Ratings [Note A]									
Rated Capacity - Steam (lbs. steam/hr from & at 212° F.)	1,237	1,649	2,062	2,474	2,887	3,299	3,711	4,124	4,949
Rated Steam Capacity [kg/hr from and at 100 C]	461.7	615.5	769.6	923.4	1,077.5	1,231.3	1,385.0	1,539.2	1,847.2
Output Btu/hr [1,000 Btu/h]	1,200	1,600	2,000	2,400	2,800	3,200	3,600	4,000	4,800
Output Kcal/Hr [1,000 Kcal/h]	302	403	504	605	706	806	907	1,007	1,210
Output KW	348	464	580	696	812	928	1,044	1,160	1,392
Approximate Fuel Consumption At Rated Capacity [Input - Note B]									
Natural Gas [ft ³ /hr] - 15# Steam	1,511	1,538	2,500	3,038	3,487	4,025	4,494	5,050	6,052
Natural Gas [ft ³ /hr] - 150# Steam	1,572	2,133	2,597	3,117	3,590	4,155	4,657	5,194	6,233
Natural Gas [m ³ /hr] - 15# Steam	42.8	43.5	70.8	86	98.7	114.0	127.0	143.0	171.4
Natural Gas [m ³ /hr] - 150# Steam	44.5	60.4	73.5	88.3	101.6	117.6	131.8	147.0	176.5
Propane Gas [ft ³ /hr] - 15# Steam	604	615	1,000	1,215	1,395	1,610	1,798	2,020	2,421
Propane Gas [ft ³ /hr] - 150# Steam	629	853	1,039	1,247	1,436	1,662	1,863	2,078	2,493
Propane Gas [m ³ /hr] - 15# Steam	17	17.4	28.3	34.4	39.5	45.6	51	57.2	68.5
Propane Gas [m ³ /hr] - 150# Steam	17.8	24.1	29.4	35.3	40.7	47	52.7	58.8	70.6
No.2 Oil Fuel - 15# Steam, gph	10	14	17	21	24	28	31	35	42
No.2 Oil Fuel - 150# Steam, gph	11	15	18	22	25	28.9	32	36	43
No.2 Oil Fuel - 15# Steam, liters/hour	38	53	64	79	91	106	117	132	159
No.2 Oil Fuel - 150# Steam, liters/hour	41	56	68	82	95	109	121	136	163
Power Requirements - 3 Phase 60 Hz Standard [Note C]									
Blower Motor HP - Gas Firing	3/4	1	1-1/2	2	2	3	3	3	5
Blower Motor HP - Oil or Combination	1-1/2	1-1/2	2	2	3	5	3	3	5
Oil Pump for Oil or Combination	← Belt Driven from the Blower Motor →								
Minimum Ampacity									
Blower Motor - Gas Firing Only, 230V	1.53	3.3	4.7	6	6	9	9	9	15
Blower Motor - Gas Firing Only, 460V	0.77	1.7	2.4	3	3	4.5	4.5	4.5	7.5
Blower Motor - Oil or Combination, 230V	4.7	4.7	6	6	9	15	9	9	15
Blower Motor - Oil or Combination, 460V	2.4	2.4	3	3	4.5	7.5	4.5	4.5	7.5
Control Circuit	1.7	1.7	1.7	1.9	1.9	1.9	2.4	2.4	2.4
Weights									
Operating Weight, lbs.	3,758	3,758	4,566	4,566	5,175	5,175	5,991	5,991	6,900
Operating Weight, kg	1,399	1,399	1,704	1,704	1,932	1,932	2,236	2,236	2,575
Water Content Normal, gallons	79	79	104	104	130	130	156	156	181
Water Content Normal, liters	299	299	394	394	492	492	591	591	685
Water Content Flooded, gallons	109	109	145	145	177	177	213	213	245
Water Content Flooded, liters	413	413	549	549	670	670	806	806	927
Shipping Weight, approximate lbs.	3,100	3,100	3,700	3,700	4,100	4,100	4,700	4,700	5,400
Shipping Weight, approximate kg	1,157	1,157	1,381	1,381	1,530	1,530	1,754	1,754	2,015

Notes:

- A. Ratings shown for elevation to 1000 Feet. For ratings above 1000 Feet, contact your local Cleaver-Brooks Representative.
- B. Input calculated with Nat. Gas @ 1000 Btu/ft³. Propane @ 2500 Btu/ft³ and Oil @ 140,000Btu/gal.
- C. For altitudes above 1000 Feet, contact your local Cleaver-Brooks authorized representative for verification of capacity rating.