



The Bigelow Company

ESTABLISHED 1860

Main Office and Works

New Haven, Connecticut

NEW YORK OFFICE—Graybar Building

Manufacturers of

Bigelow Hornsby Water Tube Boilers
 Bigelow Horizontal Water Tube Boilers
 Bigelow-Connolly Low Head Water Tube Boilers
 Bigelow Horizontal Return Tubular Boilers
 Bigelow Electric Steam Generators
 Bigelow Two Pass Boilers
 Bigelow Manning Boilers
 Bigelow Upright Boilers

The Bigelow Two Pass Boiler for Heating and Power

The requirements in considering a boiler especially for steam heating—are first cost, efficiency and maintenance, and the steel heating boiler particularly the Bigelow Two Pass type we believe meets the above desired requirements most favorably.

First Cost—The F. O. B. price of a steel boiler is often higher than for other types, but, of course, the installed cost is the correct way to figure. For the proper erection of a sectional boiler experienced and high priced men are required while the Bigelow Two-Pass Boiler is shipped practically all assembled and requires but a small amount of mason work.

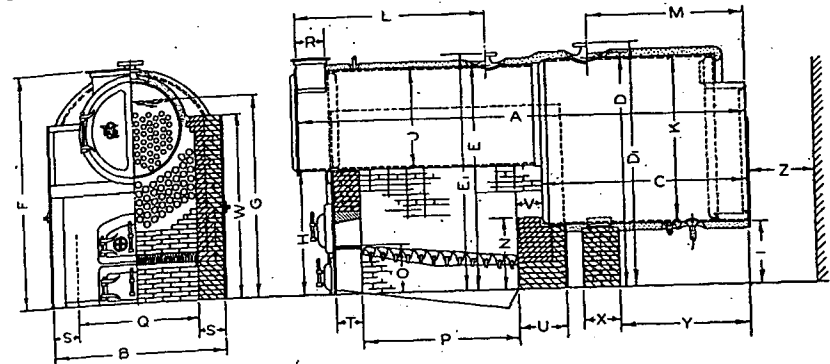
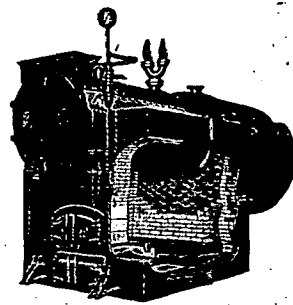
Efficiency—Correctly designed as a heat absorbing piece of apparatus, the area of the gas passage in the first pass is approximately one third greater than that of the return pass. This results in better heat transmission, due to the more uniform velocity of the gases over the heating surface as they are cooled.

The furnace is constructed of standard fire and red brick and is encased in a heavy sectional plate steel casing which adds to the neat appearance of the installation and prevents infiltration of air through cracks that may develop in the brick work.

Maintenance—The Bigelow Two-Pass Boiler is constructed without crown sheet or water legs, so there are no staybolts to break and cause leakage or danger of rupture. Being constructed of steel, there is no likelihood of cracking sections due to sudden changes of temperature, variation in thickness of material under pressure, and no unequal strains are set up in assembling. The many installations of the Bigelow Two-Pass Boiler both for heating and power, have proven it to be economical in operation and low in maintenance cost.

Features of the Bigelow Two-Pass Boiler

No Staybolts
 Easy to Install
 Quick Steamer
 Low Draft Loss
 Easy to Handle
 Long Gas Travel
 Efficient to Operate
 Low Maintenance Cost
 Ample Water Capacity
 Occupies Small Floor Space
 Low Exit Gas Temperature
 Ample Steam Storage Capacity
 Inside of Boiler Readily Accessible
 Furnace Suitable for Oil Burning
 No Cast Iron in Contact with Pressure
 Large Furnace Volume for Combustion
 Area of Gas Passes Properly Proportioned
 No Special Brick Shapes Required for Furnace
 Constructed to A.S.M.E. or Mass. State Requirements
 Fire Brick Furnace Walls, which Aids Combustion
 Built in Units of 25, 50, 75, 100, 125 and 150 hp.
 All Sizes Built as a Standard for 15 and 125 lb. W. P.
 Brick Work Easily and Cheaply Repaired when Necessary
 Boiler Rating Based on 10 sq. ft. of Water Heating Surface per hp.



GENERAL INFORMATION OF BIGELOW TWO-PASS BOILER

No. of Boiler for	Heating, 15 lb. W. P.	Power, 125 lb. W. P.	240H	241H	242H	243H	244H	245H
			240	241	242	243	244	245
Total Heating Surface	sq. ft.		270	505	751	1003	1273	1501
Capacity Steam Radiation	sq. ft.		3200	6000	9000	12000	15200	18000
Capacity Water Radiation	sq. ft.		5300	10000	14800	19800	25200	29700
Grate Area	sq. ft.		12.3	16.5	20.8	28.0	31.0	33.5
Diameter stack, one boiler	in.		16	20	24	27	30	30
Diameter stack, two boilers	in.		20	27	30	34	38	42
Height stack	feet		60	60	60	60	60	60
Area breeching, one boiler	sq. ft.		1.3	2.2	3.0	3.8	4.5	5.2
Area breeching, two boilers	sq. ft.		2.2	3.8	5.2	6.3	8.0	9.4
Size of steam outlet, 15 lb. W. P.	in.		3	4	5	5	6	6
Size of safety valve outlet, 15 lb. W. P.	in.		2	2 1/2	3	4	4	5
Size of safety valve nozzle, 125 lb. W. P.	in.		3	4	5	5	6	6
No. and size pop valves, 15 lb. W. P.	in.		1-2"	1-2 1/2"	1-3"	1-4"	1-4"	1-4"
No. and size pop valves, 125 lb. W. P.	in.		1-2"	2-2"	2-2"	2-2 1/2"	2-2 1/2"	2-3"
Blow down and return conn., 15 lb. W. P.	in.		3	3	3	4	4	4
Blow-off connection, 125 lb. W. P.	in.		2	2	2	2	2	2 1/2
No. red brick required			1400	1550	1650	2100	2300	3000
No. fire brick required			550	625	700	800	900	1100
Area of shell to be insulated	sq. ft.		100	120	145	170	195	220
Weight bare boiler	lbs.		4675	8482	10732	14000	16717	18823
Weight boiler comp. catgs., trngs. and steel casing	lbs.		7993	12492	15607	19841	23133	25859
Length over all	ft. in.	A	11' 9"	13' 0"	14' 1"	16' 2"	16' 4"	18' 10"
Width over all	ft. in.	B	5' 4"	5' 11"	6' 5"	6' 11"	7' 5"	7' 5"
Length large shell	ft. in.	C	5' 8"	6' 2"	6' 8"	7' 8"	7' 8"	8' 8"
Steam outlet to floor, 15 lb. W. P.	ft. in.	D	7' 7 1/2"	8' 1 1/2"	8' 11"	9' 3"	9' 11 1/2"	9' 11 1/2"
Steam nozzle to floor, 125 lb. W. P.	ft. in.	E	7' 9 1/2"	8' 4 1/2"	9' 15 1/2"	9' 5 1/2"	10' 13 1/2"	10' 13 1/2"
Safety valve outlet to floor, 15 lb. W. P.	ft. in.	F	7' 4"	7' 10 1/4"	8' 7 1/4"	8' 11 1/4"	9' 7 1/4"	9' 7 1/4"
Safety valve nozzle to floor, 125 lb. W. P.	ft. in.	G	7' 6 1/2"	8' 17 1/2"	8' 10 1/2"	9' 2 1/2"	9' 11 1/2"	9' 11 1/2"
Flue neck to floor	ft. in.	H	7' 9 1/2"	8' 3 1/2"	8' 8 1/2"	9' 0 1/2"	10' 0 1/2"	10' 0 1/2"
Flue line to floor	ft. in.	I	6' 5 1/4"	6' 11 1/4"	7' 8 1/4"	7' 11 1/4"	8' 6 1/4"	8' 6 1/4"
Floor to shell at front of boiler	ft. in.	J	4' 7"	4' 7"	5' 0"	5' 0"	5' 4"	5' 4"
Floor to shell at rear of boiler	ft. in.	K	2' 10"	2' 4"	2' 7"	2' 5"	2' 7"	2' 7"
Diameter of small shell	in.	L	32"	38"	42"	46"	50"	50"
Diameter of large shell	in.	M	54"	66"	72"	78"	84"	84"
Front of boiler to C safety valve nozzle	ft. in.	N	3' 4"	4' 7"	5' 3"	6' 3"	6' 5"	8' 0"
Rear of boiler to C steam nozzle	ft. in.	O	4' 2"	4' 2"	4' 7"	5' 8"	5' 8"	6' 11"
Height of bridge wall	ft. in.	P	3' 3"	3' 0"	3' 1"	2' 11"	2' 11"	2' 11"
Grate to floor	ft. in.	Q	2' 1"	2' 1"	2' 1"	2' 1"	2' 1"	2' 1"
Length of furnace	ft. in.	R	4' 0"	4' 6"	5' 0"	6' 0"	6' 0"	6' 0"
Size of flue neck	in.	S	3' 1"	3' 8"	4' 2"	4' 8"	5' 2"	5' 2"
Thickness of side wall	in.	T	8" x 22"	11" x 24"	12" x 24"	13" x 26"	13" x 26"	15" x 24"
Thickness of front wall	in.	U	13 1/2"	13 1/2"	13 1/2"	13 1/2"	13 1/2"	13 1/2"
Thickness of bridge wall at bottom	ft. in.	V	9"	9"	9"	9"	9"	9"
Thickness of bridge wall at top	ft. in.	W	1' 4"	1' 4"	1' 4"	1' 4"	1' 4"	1' 4"
Floor to top of setting	ft. in.	X	6 1/2"	6 1/2"	6 1/2"	6 1/2"	6 1/2"	6 1/2"
Depth and width of rear pier	ft. in.	Y	6' 5"	6' 8"	6' 8"	7' 3"	7' 11"	7' 11"
Back of pier to rear of boiler	ft. in.	Z	1' 0" x 3' 0"	1' 0" x 3' 0"	1' 0" x 3' 6"	1' 4" x 4' 0"	1' 6" x 4' 6"	1' 6" x 4' 6"
Distance required to open rear cleanout doors	ft. in.		3' 1 1/2"	3' 7 1/2"	4' 1 1/2"	4' 9 1/2"	4' 7 1/2"	5' 7"