



The Bigelow Company

ESTABLISHED 1860
Main Office and Works
New Haven, Connecticut
NEW YORK OFFICE—Graybar Building
BOSTON OFFICE—101 Milk Street

Manufacturers of

Bigelow Hornsby Water Tube Boilers
Bigelow Low Head Water Tube Boilers
Bigelow Three Drum Vertical 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.

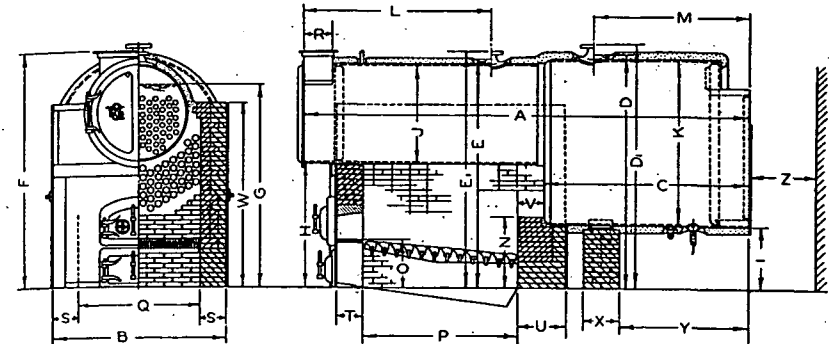
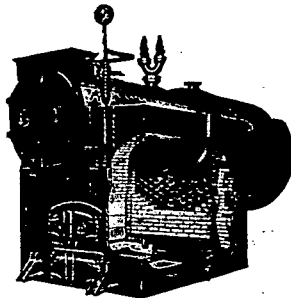
Efficiency—Correctly designed as a heat absorbing piece of apparatus, the area of the gas passage in the first pass is approximately one third greater than that of the return pass. This results in better heat transmission, due to the more uniform velocity of the gases over the heating surface as they 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
No Clearance Required at Rear for Tube Removal
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.
Special Boilers can be Constructed for Higher Pressures
Brick Work Easily and Cheaply Repaired when Necessary
Furnace readily adapted to Mechanical or Semi-Mechanical Stokers
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.	240H	241H	242H	243H	244H	245H
	Power, 125 lb. W. P.	240	241	242	243	244	245
Horse Power Based on 10 sq. ft. W. H. S.		27	50	75	100	127	150
Total Heating Surface, sq. ft.		270	505	751	1003	1273	1501
Capacity Steam Hand Fired Coal, sq. ft.		3750	7000	10500	14000	17500	21000
Capacity Steam Oil Fired, sq. ft.		4550	8550	12700	17000	21500	25500
Capacity Water Hand Fired Coal, sq. ft.		6000	11200	16800	22400	28000	33600
Capacity Water Oil Fired, sq. ft.		7250	13600	20300	27200	34400	40800
Grate Area, sq. ft.		12.3	18.7	23.3	28.0	31.0	36.1
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.		6	6	8	8	8	8
Size of steam nozzle, 125 lb. W. P., in.		3	4	4	4	6	6
Size of safety valve outlet, 15 lb. W. P., in.		2	2 1/2	3	4	4	4
Size of safety valve nozzle, 125 lb. W. P., in.		3	4	4	4	4	2-3"
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, sq. ft.		1400	1650	1750	2100	2300	3000
No. fire brick required, sq. ft.		550	675	775	800	900	1050
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 complete catgs. trmgs. 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"	6' 5"	6' 11"	6' 11"	7' 5"	7' 5"
Length large shell, ft. in.	C	5' 8"	6' 2"	6' 8"	7' 8"	8' 8"	8' 8"
Steam outlet to floor, 15 lb. W. P., ft. in.	D	7' 7 1/2"	8' 1 1/2"	8' 10 1/2"	9' 2 1/2"	9' 11 1/2"	9' 11 1/2"
Steam nozzle to floor, 125 lb. W. P., ft. in.	D 1	7' 9 1/2"	8' 4 1/2"	9' 1 1/2"	9' 5 1/2"	10' 1 1/2"	10' 1 1/2"
Safety valve outlet to floor, 15 lb. W. P., ft. in.	E	7' 4 1/2"	7' 10 1/2"	8' 7 1/2"	8' 11 1/2"	9' 7 1/2"	9' 7 1/2"
Safety valve nozzle to floor, 125 lb. W. P., ft. in.	E 1	7' 6 1/2"	8' 1 1/2"	8' 10 1/2"	9' 2 1/2"	9' 10 1/2"	9' 10 1/2"
Flue neck to floor, ft. in.	F	7' 9 1/2"	8' 3 1/2"	9' 0 1/2"	9' 4 1/2"	10' 0 1/2"	10' 0 1/2"
Water line to floor, ft. in.	F 1	6' 5 1/2"	7' 8 1/2"	7' 11 1/2"	8' 6 1/2"	8' 6 1/2"	8' 6 1/2"
Floor to shell at front of boiler, ft. in.	G	4' 7"	4' 7"	5' 0"	5' 0"	5' 4"	5' 4"
Diameter of shell at rear of boiler, ft. in.	H	2' 10"	2' 4"	2' 7"	2' 5"	2' 7"	2' 7"
Diameter of small shell, in.	I	32"	38"	42"	46"	50"	50"
Front of boiler to C safety valve nozzle, ft. in.	J	54"	66"	72"	78"	84"	84"
Rear of boiler to C steam nozzle, ft. in.	K	3' 4"	4' 7"	5' 3"	5' 8"	6' 5"	6' 0"-8' 0"
Height of bridge wall, ft. in.	L	4' 2"	4' 2"	4' 7"	5' 3"	5' 8"	6' 7"
Grate to floor, ft. in.	M	3' 3"	3' 0"	3' 1"	2' 11"	2' 11"	2' 11"
Length of furnace, ft. in.	N	2' 1"	2' 1"	2' 1"	2' 1"	2' 1"	2' 1"
Width of furnace, ft. in.	O	4' 0"	4' 6"	5' 0"	6' 0"	7' 0"	7' 0"
Size of flue neck, ft. in.	P	3' 1"	4' 2"	4' 8"	4' 8"	5' 2"	5' 2"
Thickness of side wall, in.	Q	8"x22"	11"x24"	12"x32"	13"x36"	15"x40"	15"x42"
Thickness of front wall, in.	R	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.	S	1' 4"	1' 4"	1' 4"	1' 4"	1' 4"	1' 6"
Thickness of bridge wall at top, in.	T	6 1/2"	6 1/2"	6 1/2"	6 1/2"	6 1/2"	8"
Floor to top of setting, ft. in.	U	6' 5"	6' 8"	7' 3"	7' 3"	7' 11"	7' 11"
Depth and width of rear pier, ft. in.	V	1' 0"x3' 0"	1' 0"x3' 0"	1' 0"x3' 6"	1' 4"x4' 0"	1' 6"x4' 6"	1' 6"x4' 6"
Back of pier to rear of boiler, ft. in.	W	3' 1 1/2"	3' 7 1/2"	4' 1 1/2"	4' 9 1/2"	4' 7 1/2"	5' 7"
Distance required to open rear cleanout doors, ft. in.	X	1' 10"	2' 1"	2' 4"	2' 6"	2' 10"	2' 10"