

5000 series

MARCH, 1958

low pressure oil, gas or stoker

Arch type crown sheet (A) is self-draining and cleaning... not subject to accumulations of sediment and sludge.

Ample steam space (B), large unbroken disengaging area (C), wide water legs (D), and well spaced tubes (E) eliminate violent agitation of water, insure rapid circulation and constant supply of dry quality steam.

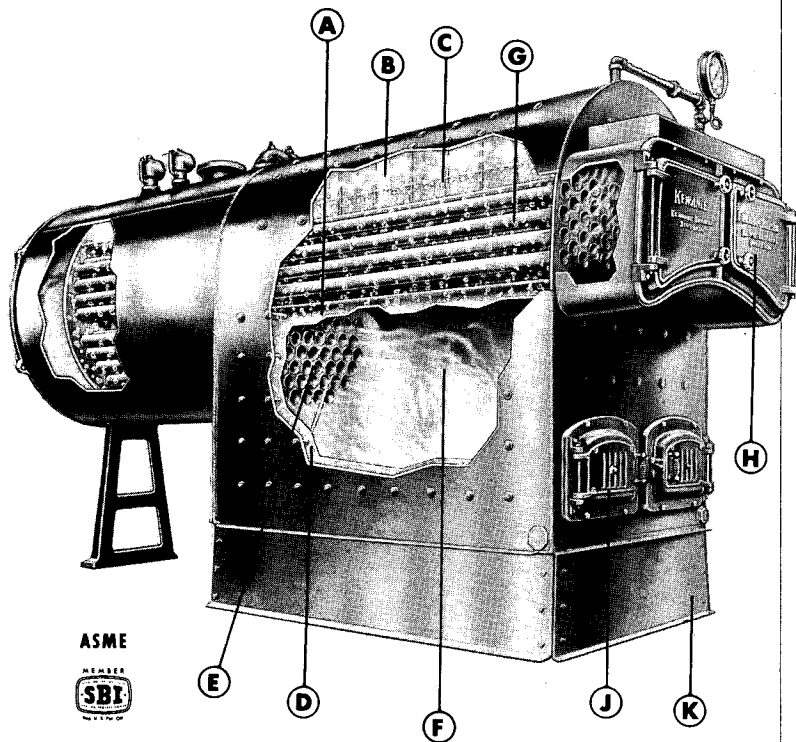
Large firebox (F) provides correct space for complete combustion without waste of fuel, and two-pass 3" diameter tubes (E) permit thorough transfer of heat from combustion gases to boiler water.

Longer gas travel from firebox, through lower bank of tubes (E) then through upper tubes (G) to exit chamber at the front assures maximum transfer of heat and lower stack temperatures.

Heavy cast iron doors (H) provide access to tubes. Cast iron firedoors (J) with liner and slotted openings for secondary air adjustment.

Heavy steel base (K) has four cast iron corner posts for boiler support and steel panels with flanges for supporting the boiler covering.

Specifications and data are shown for mechanically-fired boilers. For information regarding hand-fired coal types, consult the nearest Kewanee representative.



15 psi steam, or 30 psi water 250° F maximum
1,020,000 to 10,200,000 Btuh

The Kewanee 5000 Series boiler is popular for heating large buildings when specifications or restricted budgets require an economical boiler of unquestioned durability and efficiency.

This all-welded, compact locomotive type boiler with front smoke outlet is designed to fit in a minimum space. One piece construction insures trouble-free maintenance.

ratings • mechanically fired—oil, gas or stoker

boiler number	5176	5177	5178	5179	5180	5181	5182	5183	5184	5185	5186	5187	5188	5189	5190
SBI rating — steam.....sq ft	4250	4860	5470	6080	7290	8500	10330	12150	15180	18220	21250	24290	30360	36430	42500
— water.....sq ft	6800	7770	8750	9720	11660	13600	16520	19440	24280	29150	34000	38860	48570	58280	68000
— MBtuh.....	1020	1166	1313	1459	1750	2040	2479	2916	3643	4373	5100	5830	7286	8743	10200
— steam per hour — 212° F.....lb	1050	1200	1350	1520	1790	2100	2550	3000	3760	4490	5240	6000	7490	9000	10490
SBI net rating — steam.....sq ft	3500	4000	4500	5000	6000	7000	8500	10000	12500	15000	17500	20000	25000	30000	35000
— water.....sq ft	5600	6400	7200	8000	9600	11200	13600	16000	20000	24000	28000	32000	40000	48000	56000
— MBtuh.....	840	960	1080	1200	1440	1680	2040	2400	3000	3600	4200	4800	6000	7200	8400
*firing rate — oil**.....gph	13	15	16	18	22	26	31	37	46	54	64	73	91	110	127
— gas.....MBtuh	1910	2180	2460	2740	3280	3830	4650	5460	6840	8200	9560	10920	13670	16400	19120
— stoker***.....lb per hr	170	194	218	244	291	340	412	485	607	729	850	972	1215	1457	1700
heating surface (SBI min).....sq ft	250	286	322	358	429	500	608	715	893	1072	1250	1429	1786	2143	2500
furnace volume (SBI min).....cu ft	30.4	34.8	39.1	43.5	52.1	60.8	73.8	86.8	108.5	130.2	151.8	173.5	216.9	260.3	303.6
furnace height (SBI min).....ft-in.	2-6	2-6½	2-7¼	2-7¾	2-8¾	2-10	2-11½	3-1½	3-4¼	3-7	3-10	4-0¾	4-6½	5-0½	5-6
firebox volume above mud ring.....cu ft	44.3	44.3	49.6	54.5	60.2	66.6	90.6	103.2	117.5	123.4	137.5	144.0	197.1	222.0	235.2
additional furnace height for stoker (SBI min)****.....ft-in.															
safety valve capacity.....lb steam per hr	1530	1749	1969	2188	2625	3060	3718	4374	5464	0-3	0-5	0-10	0-6	0-10	1-4
										6559	7650	8745	10929	13114	15300

*Firing rates calculated to develop boiler output of 150% of SBI rating.

**Based on 150,000 Btu oil.

***Based on 12,000 Btu coal.

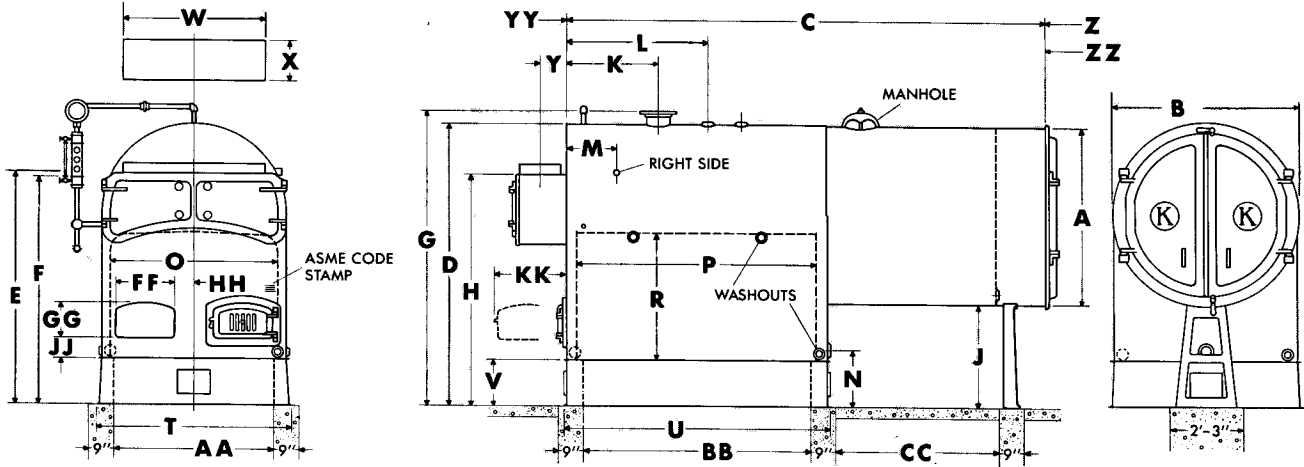
****Represents distance below bottom of water leg that hearth must be set for SBI minimum furnace volume and height.

Standard equipment — Fire and flue doors with frame, metal base, backstand. Flue cleaner and handle, washout plug socket wrench with extra set of gaskets. Manhole on 5182 and larger.

Standard steam trimmings — Safety valve(s), steam gage with siphon and cock, Kewanee water column with water gage and try cocks assembly — chain operated on 5188 and larger.

Standard water trimmings — Relief valves, or relief valves and safety valves as required by ASME Code for low pressure boilers.

Equipment shown subject to change without notice.



5000 series low pressure • oil, gas or stoker

dimensions and data (feet—inch)

boiler number	5176	5177	5178	5179	5180	5181	5182	5183	5184	5185	5186	5187	5188	5189	5190	
A — shell diameter inside	3-6	3-6	3-6	3-6	4-0	4-0	4-6	4-6	5-0	5-0	5-6	5-6	6-0	6-6	6-6	
B — boiler width	3-9	3-9	3-9	3-9	4-3	4-3	4-9	4-9	5-3	5-3	5-9	5-9	6-3	6-9	6-9	
C — boiler length	7-3	8-0	8-11	9-10	9-9	11-1	11-1	12-9	13-2½	15-3	14-5½	16-0½	16-8½	17-5½	19-8½	
D — boiler height	6-9	6-9	6-9	6-9	7-2½	7-2½	7-8½	7-8½	8-4½	8-4½	8-9	8-9	9-3	9-9	9-9	
E — water line height	5-10	5-10	5-10	5-10	6-1½	6-1½	6-5½	6-5½	7-0	7-0	7-2	7-2	7-9	8-0	8-0	
F — water column height	5-8	5-8	5-8	5-8	5-11½	5-11½	6-3½	6-3½	6-10	6-10	7-0	7-0	7-7	7-10	7-10	
G — steam supply height	7-1	7-1	7-1	7-1	7-7	7-7	8-1	8-1	8-9	8-9	9-1	9-1	9-7½	10-1½	10-1½	
H — smoke outlet height	5-11	5-11	5-11	5-11	6-2	6-2	6-7	6-7	7-1½	7-1½	7-3½	7-3½	7-9½	8-2½	8-2½	
J — rear stand height	3-2	3-2	3-2	3-2	3-2	3-2	3-2	3-2	3-4	3-4	3-2	3-2	3-2	3-2	3-2	
K — steam supply	1-4	1-4	1-5	1-5	1-5	1-5	2-0	2-6	2-6	10-9	9-9	11-0	12-0	12-3	13-0	
***L — safety valve	2-9	2-9	2-11	2-11	2-11	2-9	3-6	4-0	4-0	12-3	4-3	5-3	6-3	4-11	5-7	
M — 1½ in. surface blow-off	1-6	1-6	1-6	1-6	1-6	1-6	1-9	1-9	1-10	1-11	2-0	2-2	2-2	2-0	2-0	
N — return height	1-6	1-6	1-6	1-6	1-6	1-6	1-6	1-6	1-9	1-9	1-9	1-9	1-11	1-11	1-11	
O — firebox — width	3-0½	3-0½	3-0½	3-0½	3-6½	3-6½	4-0½	4-0½	4-5½	4-5½	4-11½	4-11½	5-5½	5-11½	5-11½	
P — length	4-2	4-2	4-8	5-2	4-8	5-2	6-0	6-10	6-10	7-2	7-2	7-6	8-6	8-6	9-0	
R — height	3-6	3-6	3-6	3-6	3-8	3-8	3-10	3-10	3-11	3-11	3-11½	3-11½	4-2½	4-5½	4-5½	
T — base — width	3-11½	3-11½	3-11½	3-11½	4-5½	4-5½	4-11½	4-11½	5-6	5-6	6-0	6-0	6-6	7-0	7-0	
U — length	5-0	5-0	5-6	6-0	5-6	6-0	6-10	7-8	7-9	8-1	8-1	8-5½	9-5½	9-5½	9-11½	
V — height	1-2	1-2	1-2	1-2	1-2	1-2	1-2	1-2	1-5	1-5	1-5	1-5	1-5	1-5	1-5	
W — smoke outlet — length	2-8	2-8	2-8	2-8	2-10	2-10	3-4	3-4	3-8	3-8	4-3	4-3	4-6	5-0	5-0	
X — width	0-9	0-9	0-9	0-9	0-11	0-11	1-0	1-0	1-2	1-2	1-3	1-3	1-7	1-6	1-6	
Y — location	0-6½	0-6½	0-6½	0-6½	0-7½	0-7½	0-8	0-8	0-9	0-9	0-9½	0-9½	0-11½	0-11	0-11	
Z — rear door clearance, min.	3-6	3-6	3-6	3-6	4-0	4-0	2-6	2-6	2-9	2-9	3-0	3-0	3-3	3-6	3-6	
AA — foundation — width	3-0	3-0	3-0	3-0	3-6	3-6	3-11½	3-11½	4-4½	4-4½	4-10½	4-10½	5-4	5-10	5-10	
BB — length	3-7	3-7	4-1	4-7	4-1	4-7	5-5	6-3	6-4	6-8	7-0½	7-0½	8-0½	8-0½	8-6½	
CC — rear stand			2-6	2-11	3-3	4-0	3-2	4-0	4-3	6-0	5-0	6-3	6-0	6-6	8-3	
firedoor style	single frame & double drs				right and left single frame and door											
FF x GG — firedoor opening in boiler width x height	one 2-3½ x 1-1½				two 1-4 x 0-11				two 1-8 x 1-0				two 1-11 x 1-3			
HH — centerline blr to firedoor opg.	0-8½	0-8½	0-8½	0-8½	0-3½	0-3½	0-6	0-6	0-4½	0-4½	0-7½	0-7½	0-6½	0-10	0-10	
JJ — height doors from bottom boiler	1-8	1-8	1-8	1-8	0-8	0-8	0-8	0-8	0-8	0-8	0-8	0-8	0-8	0-10	0-10	
KK — opened firedoor to boiler	1-8	1-8	1-8	1-8	1-10½	1-10½	1-10½	1-10½	2-2½	2-2½	2-2½	2-2½	2-5½	2-5½	2-5½	
YY — tube replacement space — front	6-4	7-1	8-0	8-11	8-8	8-8	10-0	10-0	11-8	11-11½	14-0	13-0½	14-7½	15-11½	18-1½	
ZZ — rear	5-4	6-1	7-0	7-11	7-6	8-10	8-10	10-6	10-7½	12-8	11-6½	13-1½	13-5½	14-2½	16-5½	
breaching diameter — one boiler	1-7	1-8	1-9	1-10	1-11	2-0	2-2	2-4	2-6	2-7	2-9	2-11	3-3	3-5	3-7	
stack — diameter	1-5	1-6	1-7	1-8	1-9	1-10	2-0	2-2	2-4	2-5	2-7	2-9	3-0	3-2	3-4	
— height	40-0	40-0	45-0	50-0	50-0	55-0	50-0	60-0	65-0	80-0	70-0	85-0	85-0	90-0	105-0	
breaching diameter — two boilers	2-1	2-2	2-3	2-4	2-6	2-7	2-10	3-0	3-4	3-5	3-8	3-11	4-2	4-6	4-8	
stack — diameter	1-11	2-0	2-1	2-2	2-4	2-5	2-8	2-10	3-1	3-2	3-5	3-8	3-11	4-2	4-4	
— height	50-0	50-0	55-0	60-0	60-0	65-0	60-0	70-0	75-0	90-0	80-0	95-0	95-0	100-0	115-0	
*steam supply size — in.	6	6	6	6	8	8	8	8	8	8	8	8	10	10	10	
return size — in.	4	4	4	4	4	4	4	4	4	4	4	4	6*	6*	6*	
water column size — in.	1	1	1	1	1	1	1¼	1¼	1¼	1¼	1¼	1¼	1¼	1¼	1¼	
**outside surface to cover — sq ft	115	125	135	145	160	180	202	227	257	290	305	332	375	420	466	
approximate weight — lb	4500	5000	5400	5800	6600	7400	8500	9600	11100	12800	14400	16000	19200	22300	25200	

*150 lb American Standard Flange.
**Includes front head and smokebox.
***One or more valves furnished depending on required capacity.