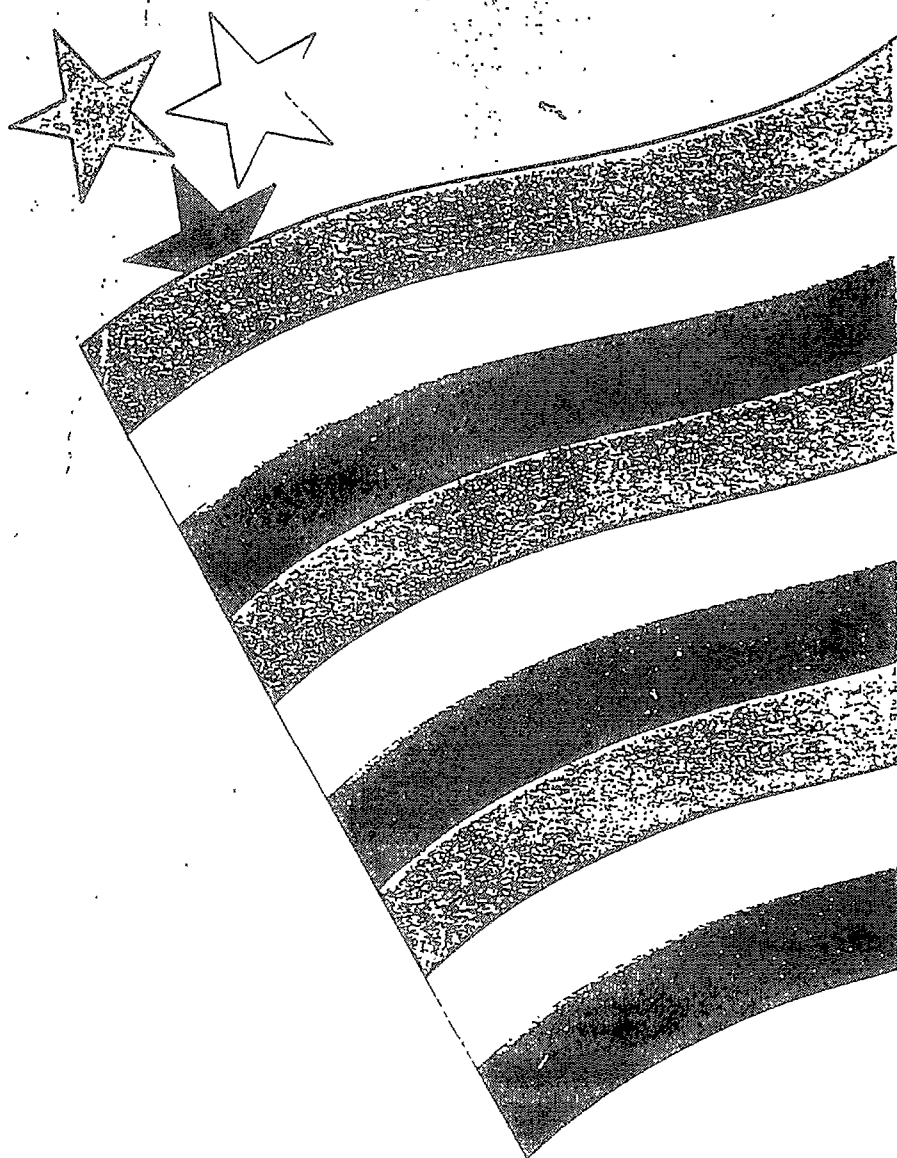




P 75/76 HI catalog

Residential and commercial
plumbing fixtures and fittings
and Church seats.

Plumbing fixtures
and fittings for hospitals
nursing homes and
geriatric institutions.



Or American Standard Inc.

AMERICAN-Standard PRODUCTS

SERVING HOME AND INDUSTRY



KEWANEE BOILERS

Catalog Group 9000

Issued to _____



AMERICAN-Standard

INDUSTRIAL DIVISION

AMERICAN BLOWER • ROSS • KEWANEE

Executive Offices: DETROIT 32, MICHIGAN

In Canada: AMERICAN-STANDARD PRODUCTS (Canada) Limited—Toronto 4, Ontario

AMERICAN RADIATOR AND STANDARD SANITARY CORPORATION

Prices and Other Data Subject
to Change Without Notice



AMERICAN Standard
INDUSTRIAL DIVISION

DETROIT, MICHIGAN

Preface

Contents of Binder

Space does not permit us to include in this binder prices and information on all our products. This particular binder includes those items and products in which you are generally interested. In the event this binder does not provide you with the desired information on a certain product or you fail to find included in this binder, items or lines of equipment in which you are interested, we will appreciate your communicating with our nearest sales office.

AMERICAN-Standard Industrial Division Sales Offices

The services of our sales office organization located in principal cities throughout the country are at your disposal so that you may obtain prompt local and personal attention.

General Conditions of Sale

We reserve the right to change prices and other data without advance notice. Such action on our part is often dictated by developments over which we have no control.

The possession of any price sheet or bulletin by any person is not to be construed as an offer to sell him or anyone else the goods listed therein at the prices stated.

Quotations subject to acceptance within 15 days from date.

All agreements are subject to acceptance and approval at our Home Office in Detroit, and are contingent upon strikes, accidents, and other delays unavoidable or beyond our control.

Our liability under any contract shall in no case exceed the price paid for goods furnished by us.

Title to goods shall remain with American-Standard Industrial Division until paid for in full.

To the prices and terms quoted add any excise, use, sales or similar tax payable on any transaction under any effective Federal, State or other statute.

No verbal understandings are to be recognized.

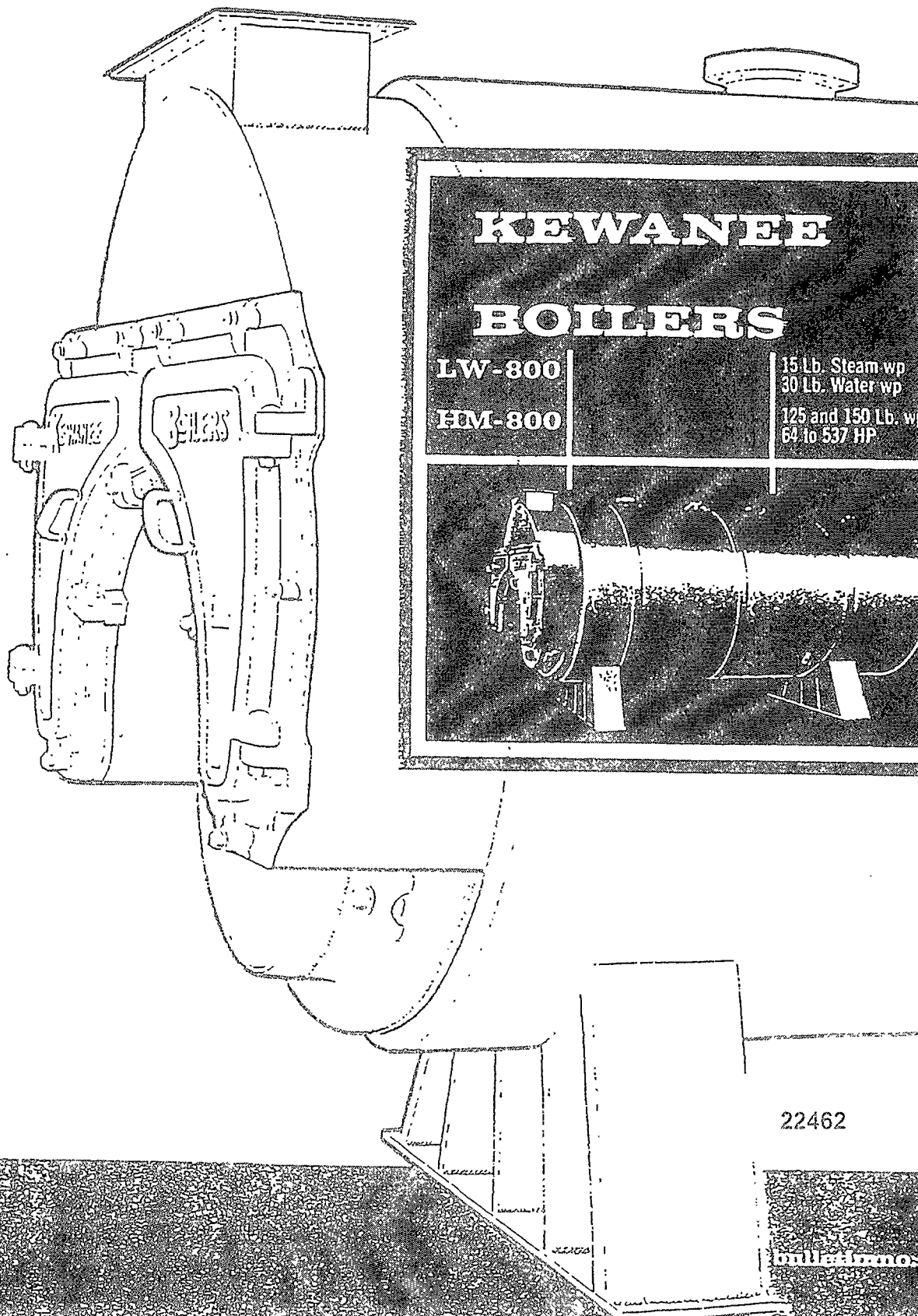
We guarantee equipment against defects in material and workmanship for a period of one year from date of shipment and agree to replace defective parts F.O.B. our Works, free of charge.

Apparatus of our manufacture can be used by the purchaser pursuant to such patents as the Company owns; the apparatus does not in and of itself infringe any unexpired U. S. patent; the Company is not responsible for any uses to which its equipment may be put as a part of any mechanism or any process covered by patents owned by others.

40 Leona
Sellers

44A Scotch
Boilers

AMERICAN-Standard



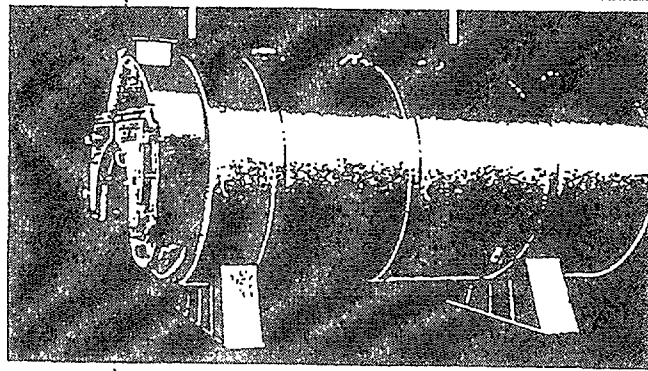
KEWANEE BOILERS

LW-800

HM-800

15 Lb. Steam wp
30 Lb. Water wp

125 and 150 Lb. wp
64 to 537 HP



22462

bulletin no. 8



STANDARD of the Industry

HIGH and LOW pressure—OIL or GAS

Both the high and low pressure boilers are of the two pass type, liberal in design, simple to maintain, dependable and efficient in operation, and sturdy in construction. These qualities have been proven in thousands of installations and have gained for Kewanee Boilers the reputation of being the standard of the industry.

Backed by nearly a century of experience in the fabrication of steel boilers, the HM and LW-800 Series have proven to be outstanding products... True Kewanee Boilers.

The finest in material, workmanship and engineering design are the plus values a Kewanee Boiler offers its owner. These values are combined to assure years of reliable and economical service on the job.

Manufactured from heavy steel plates with fields and furnace tube in the rear, this assures greater strength and longer life.

Large furnace tube—provides ample volume for complete combustion and low heat release.

Type and position of the heating surface—this boiler has the most efficient heating surface.

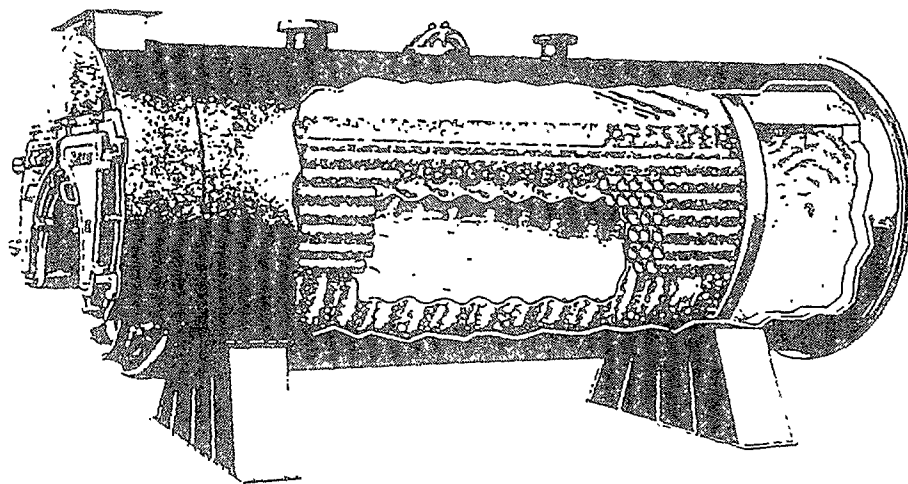
Water content in correct proportion to heating surface—guarantees complete heating and circulating loads.

Large heating area—water in steam boiler is free smooth flow without excess turbulence.

Steam space is generous and efficient, permitting storage of dry, pure steam.

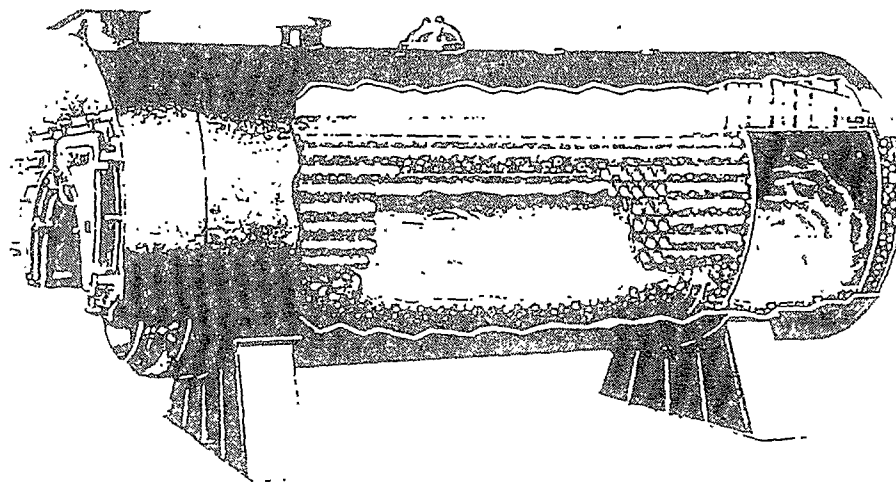
**HM-800 series
high pressure**

**LW-800 series
low pressure**

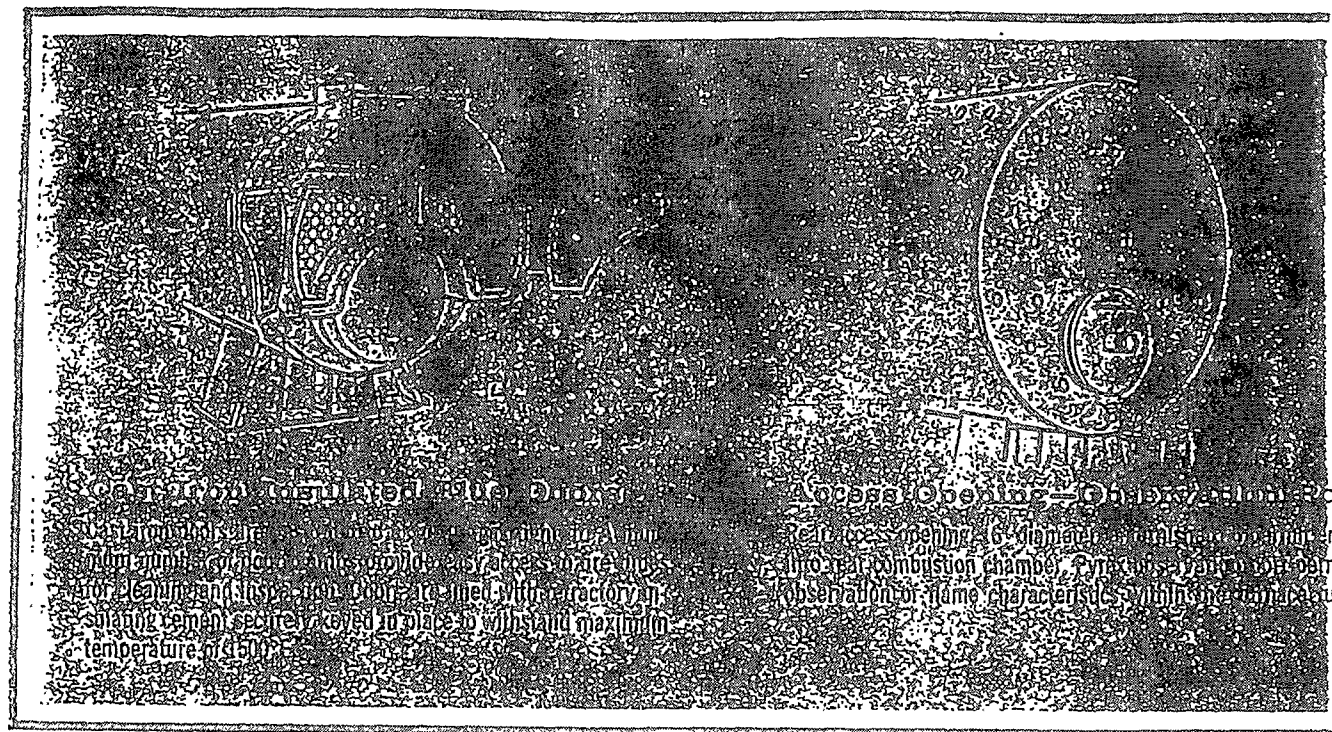


Fourteen sizes ranging from 64 to 537 hp. 125 lb. and 150 lb. steam working pressure or high temperature water above 250°F. Higher than 150 lb. working pressure on application.

Sixteen sizes ranging from 1,620,000 to 18,000,000 Btuh. 15 lb. steam and 30 lb. water working pressure. Higher than 30 lb. water working pressure on application. (250°F maximum.)



Steel insulating jacket with reinforced cat-walk area combines the excellent insulation qualities of mineral wool with a neat aluminum-painted finish casing. When jacket is required, lifting loops are provided to facilitate handling. Jacket is available as optional equipment. Jacketed boiler shown on front cover.



KEWANEE SCOTCH BOILERS

HIGH and LOW pressure

PLUS VALUES
that make the difference

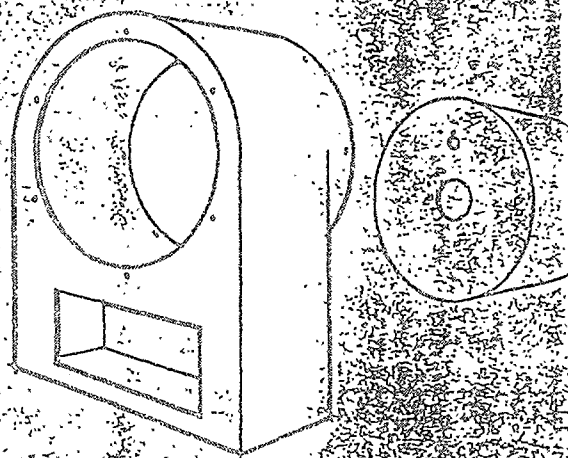
Flanged Opening in Tube Sheets

Furnace tube openings in the front and rear tube sheets are hot flanged for maximum strength at junction of tube sheets and furnace tube. In the high pressure boilers the outer edges of the tube sheets are also flanged to provide maximum efficiency of the weld joining the sheet and tube sheet.

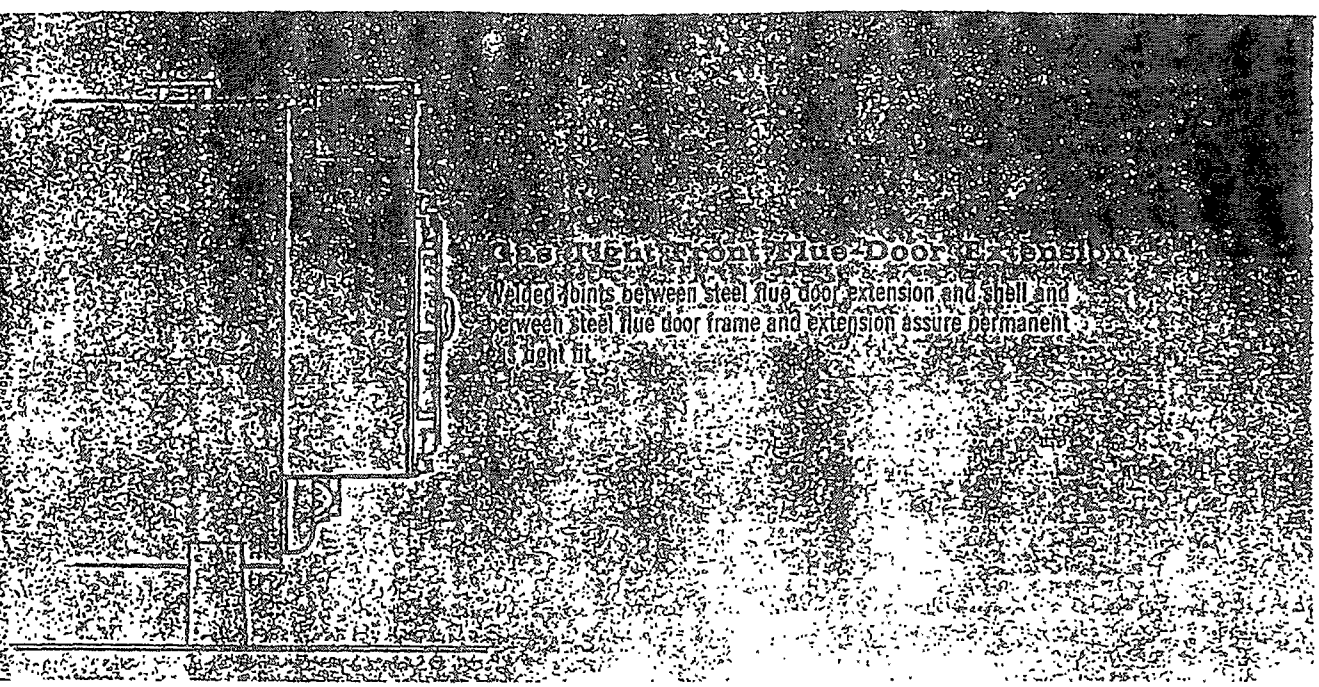
OPTIONAL FEATURES

Furnace Extensions

Either plain circular furnace extension or extension with secondary air ports (Kewanee design—less refractory) are available for burner mounting.

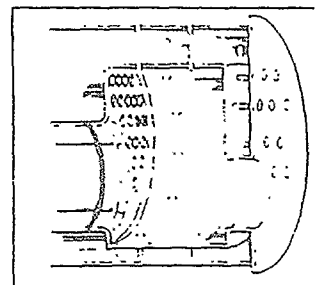
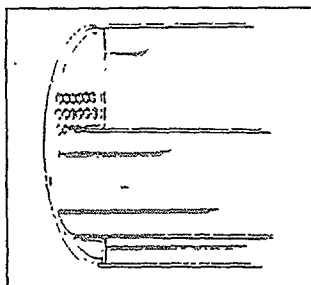
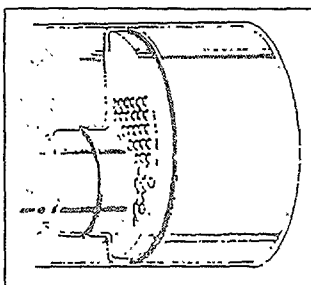
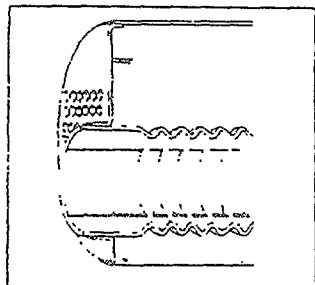


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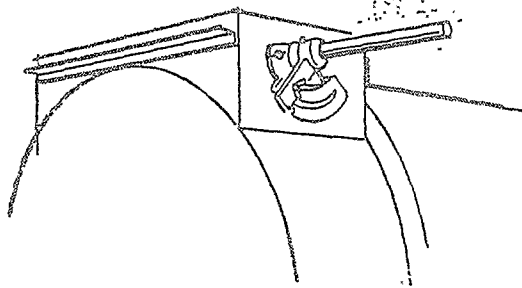
Close Tight Front Flue Door Extension

Welded joints between steel flue door extension and shell and between steel flue door frame and extension assure permanent tight fit.



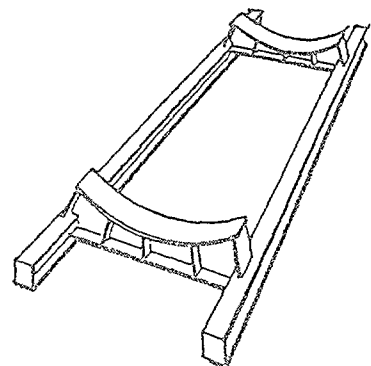
Front and rear sections of a high pressure boiler showing: weld between furnace tube and flanged opening in tube sheets; weld between flanged edge of tube sheets and shell

Front and rear sections of a low pressure boiler showing: weld between furnace tube and flanged opening in tube sheets.



Quadrant or Bearing Damper

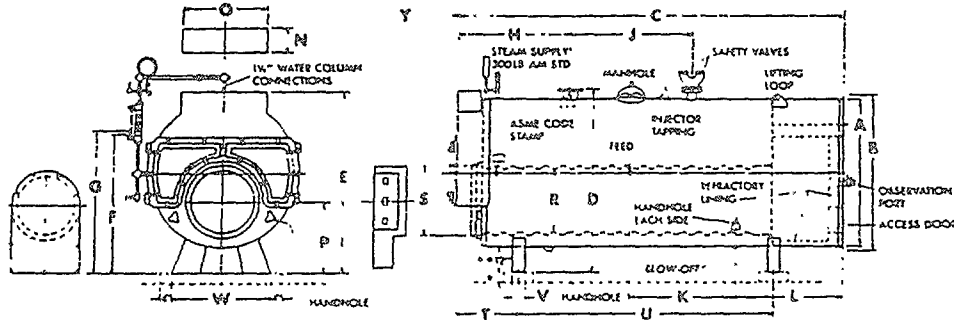
Damper with cast iron bearings permits adjustment of furnace draft conditions by manual fixed settings or by automatic control.



Steel Skids

Extra heavy steel saddle supports welded to "I" beam base form a sturdy steel skid assembly and offer ease in handling and balanced weight distribution.

HM-800 series boilers high pressure OIL or GAS

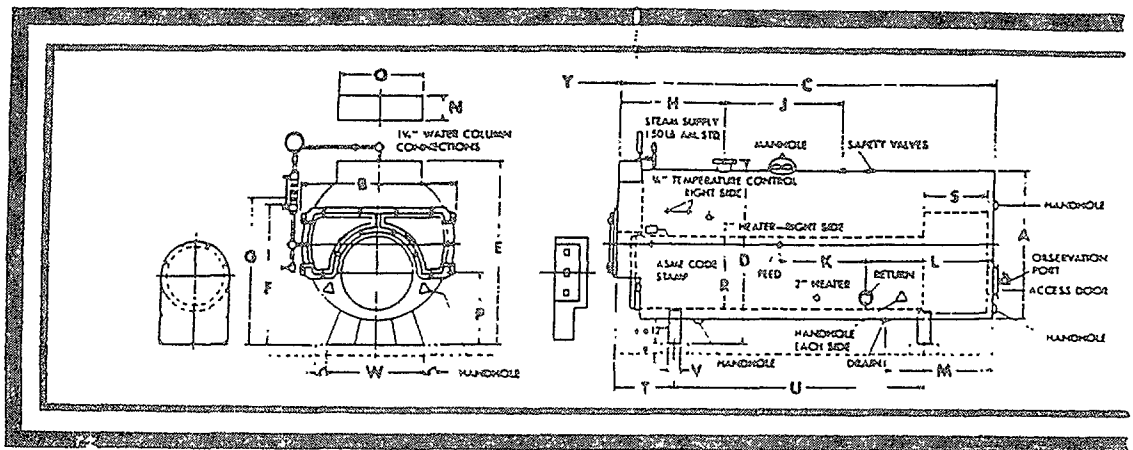


Boiler number	HM-820	HM-821	HM-822	HM-823	HM-824	HM-825	HM-826	HM-827	HM-828	HM-829	HM-830	HM-831	HM-832	HM-833
SBI gross output	sq ft	1000	10500	12750	15000	18750	22500	26250	30000	37500	45000	52500	60000	67500
—steam	sq ft	1000	10500	12750	15000	18750	22500	26250	30000	37500	45000	52500	60000	67500
—water	sq ft	1000	10500	12750	15000	18750	22500	26250	30000	37500	45000	52500	60000	67500
Steam per hour—212°F	MBh	2150	2520	3060	3500	4500	5400	6300	7200	9000	10800	12600	14400	16200
Certified output	MBh	208	2528	3140	3726	4623	5555	6486	7418	9281	1109	12972	14835	16664
Certified output	MBh	208	2528	3140	3726	4623	5555	6486	7418	9281	1109	12972	14835	16664
Firing rate—oil	MBh	208	2528	3140	3726	4623	5555	6486	7418	9281	1109	12972	14835	16664
—gas	MBh	208	2528	3140	3726	4623	5555	6486	7418	9281	1109	12972	14835	16664
Heating surface (waterside)	sq ft	1000	10500	12750	15000	18750	22500	26250	30000	37500	45000	52500	60000	67500
Heating surface (fireside)	sq ft	1000	10500	12750	15000	18750	22500	26250	30000	37500	45000	52500	60000	67500
Furnace volume (SBI min.)	cu ft	2.1	60.8	72.8	84.8	102.8	120.8	138.8	156.8	196.9	236.9	276.9	316.9	356.9
Net furnace volume	cu ft	2.1	60.8	72.8	84.8	102.8	120.8	138.8	156.8	196.9	236.9	276.9	316.9	356.9
Safety valve capacity	lb steam/hr	1432	4000	4864	5720	7144	8576	10000	11432	14288	17144	20000	22856	25712

Boiler number	HM-820	HM-821	HM-822	HM-823	HM-824	HM-825	HM-826	HM-827	HM-828	HM-829	HM-830	HM-831	HM-832	HM-833
A —Boiler inside diameter	4	6	10	12	14	16	18	20	24	30	36	42	48	54
B —Boiler width	4	6	10	12	14	16	18	20	24	30	36	42	48	54
C —Boiler length	24	36	48	60	72	84	96	108	120	144	168	192	216	240
D —Steam supply height	4	6	10	12	14	16	18	20	24	30	36	42	48	54
E —Smoke outlet height	4	6	10	12	14	16	18	20	24	30	36	42	48	54
F —Water column height	4	6	10	12	14	16	18	20	24	30	36	42	48	54
G —Water line height	4	6	10	12	14	16	18	20	24	30	36	42	48	54
H —Steam supply	4	6	10	12	14	16	18	20	24	30	36	42	48	54
J —Safety valve	4	6	10	12	14	16	18	20	24	30	36	42	48	54
N —Feed water—each side	4	6	10	12	14	16	18	20	24	30	36	42	48	54
L —Blowoff	4	6	10	12	14	16	18	20	24	30	36	42	48	54
N —Smoke outlet—outside width	4	6	10	12	14	16	18	20	24	30	36	42	48	54
O —Smoke outlet—outside length	4	6	10	12	14	16	18	20	24	30	36	42	48	54
P —Furnace—height	4	6	10	12	14	16	18	20	24	30	36	42	48	54
R —I. D. corrugation	4	6	10	12	14	16	18	20	24	30	36	42	48	54
S —I. D. at front	4	6	10	12	14	16	18	20	24	30	36	42	48	54
T —Support—location	4	6	10	12	14	16	18	20	24	30	36	42	48	54
U —center to center	4	6	10	12	14	16	18	20	24	30	36	42	48	54
V —width	4	6	10	12	14	16	18	20	24	30	36	42	48	54
W —length	4	6	10	12	14	16	18	20	24	30	36	42	48	54
Y —Tube replacement space	4	6	10	12	14	16	18	20	24	30	36	42	48	54
Breeching dia.—one boiler	24	36	48	60	72	84	96	108	120	144	168	192	216	240
Stack—diameter	24	36	48	60	72	84	96	108	120	144	168	192	216	240
—height	420	480	540	600	660	720	780	840	900	1080	1260	1440	1620	1800
Breeching dia.—two boilers	30	42	54	66	78	90	102	114	126	150	174	198	222	246
Stack—diameter	30	42	54	66	78	90	102	114	126	150	174	198	222	246
—height	480	540	600	660	720	780	840	900	960	1140	1320	1500	1680	1860
Steam supply size	4	6	10	12	14	16	18	20	24	30	36	42	48	54
Blowoff size	4	6	10	12	14	16	18	20	24	30	36	42	48	54
Feed water size	4	6	10	12	14	16	18	20	24	30	36	42	48	54
Outside surface to cover	sq ft	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300
Approximate weight	lb	1000	1100	1300	1400	1700	2000	2300	2600	3200	3700	4200	4700	5200
—125 lb. w. o.	lb	1000	1100	1300	1400	1700	2000	2300	2600	3200	3700	4200	4700	5200
—150 lb. w. o.	lb	1200	1300	1500	1600	1900	2200	2500	2800	3400	3900	4400	4900	5400

*Firing rate calculated to develop certified output Based on 150,000 Btu oil.

LW-800 series boilers low pressure OIL or GA



ratings

Boiler number	LW-878	LW-879	LW-880	LW-881	LW-882	LW-883	LW-884	LW-885	LW-886	LW-887	LW-888	LW-889	LW-890	LW-891	LW-892	LW-893
SBI gross output—steam	sq ft 6750	7500	9000	10500	12750	15000	18750	22500	26250	30000	37500	45000	52500	60000	67500	75000
—water	sq ft 10800	12000	14400	16800	20400	24000	30000	36000	42000	48000	60000	72000	84000	96000	108000	120000
MBh	1620	1800	2160	2520	3060	3600	4500	5400	6300	7200	9000	10800	12600	14400	16200	18000
Steam per hour—212°F	lb 1656	1863	2208	2588	3140	3725	4623	5555	6486	7418	9281	11109	12972	14835	16664	185
SBI net rating—steam	sq ft 5060	5620	6760	7880	9580	11260	14060	16880	19690	22510	28130	33750	39370	45000	50620	562
—water	sq ft 8110	9020	10820	12610	15330	18020	22500	27010	31500	36020	45010	54000	62990	72000	80990	899
MBh	1215	1350	1620	1890	2300	2700	3370	4050	4720	5400	6750	8100	9450	10790	12140	1350
Certified output	sq ft 50	56	67	79	96	112	139	166	193	220	281	337	393	450	506	562
Certified output	MBh 1969	2188	2625	3060	3718	4374	5464	6559	7650	8745	10929	13114	15300	17485	19671	21857
Firing rate—oil	gph 16	18	22	26	31	37	46	55	64	74	92	110	127	146	164	182
—gas	MBh 2460	2740	3280	3830	4550	5460	6840	8200	9600	10970	13670	16400	19120	21900	24600	27300
Heating surface (waterside)	sq ft 372	418	509	590	708	825	1025	1225	1425	1625	2040	2455	2870	3285	3700	4115
Heating surface (fireside)	sq ft 278	308	369	430	512	593	743	893	1043	1193	1504	1815	2125	2435	2745	3055
Furnace volume (SBI min.)	cu ft 39.1	43.5	52.1	60.8	73.2	86.8	108.5	130.2	151.8	173.5	215.9	258.3	300.6	342.9	385.3	427.6
Net furnace volume	cu ft 49.2	52.7	61.7	70.1	82.4	92.0	111.3	137.0	152.3	179.0	221.0	266.8	316.8	363.7	410.7	457.6
Safety valve capacity	lb steam/hr 1969	2188	2625	3060	3718	4374	5464	6559	7650	8745	10929	13114	15300	17485	19671	21857

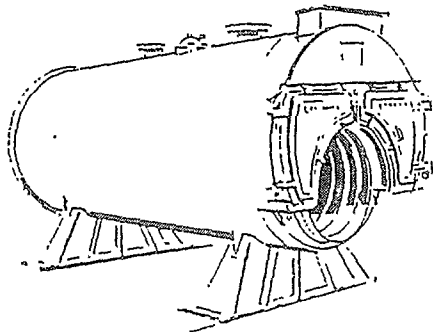
data and dimensions (inches)

Boiler number	LW-878	LW-879	LW-880	LW-881	LW-882	LW-883	LW-884	LW-885	LW-886	LW-887	LW-888	LW-889	LW-890	LW-891	LW-892	LW-893
A—Boiler inside diameter	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31
B—Boiler width	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31
C—Boiler length	158	173	200	226	252	278	304	330	356	382	408	434	460	486	512	538
D—Steam supply height	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22
E—Smoke outlet height	71	71	71	71	71	71	71	71	71	71	71	71	71	71	71	71
F—Water column height	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42
G—Water line height	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56
H—Steam supply	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36
J—Safety valve	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64
K—Feed water—each side	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28
L—Return—each side	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40
M—Drain	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36
N—Smoke outlet—outside width	11 1/4	11	12	12	13	13	14	15	15	16	16	17	18	19	20	21
O—Smoke outlet—outside length	29 1/2	29	36	36	40	40	42	47	47	55	64	67	73	77	81	85
P—Furnace—height	30	30	31	31	33	33	34	36	36	38	39	41	43	44	46	48
R—Furnace—inside diameter	26 1/2	26 1/2	29 1/2	29 1/2	32	32	34 1/2	37 1/2	37 1/2	41	43	46 1/2	52 1/2	52 1/2	54 1/2	56 1/2
S—Furnace—rear chamber	24	24	24	24	24	24	24	28	28	30	32	34	34	34	36	38
T—Support—location	27	27	28	28	29	32	33	34	34	36	37	40	43	44	46	48
V—Support—center to center	83	94	81	95	97	114	126	126	144	132	144	156	156	162	162	162
W—Support—width	9	9	9	9	9	10	10	11	11	12	13	14	15	16	16	16
Y—Support—length	48	48	53	53	58	58	63	66	66	73	78	84	90	94	98	102
Y—Tube replacement space	78	89	78	94	94	114	124 1/2	119	142 1/2	139	151 1/2	159	161	167	169	169 1/2
Breeching dia—one boiler	21	22	23	24	26	28	30	31	33	35	39	41	43	46	48	50
Stack—diameter	19	20	21	22	24	26	28	29	31	33	35	38	40	42	44	46
—height	420	480	420	480	480	540	600	600	660	660	660	660	660	660	720	780
Breeching dia—two boilers	27	28	30	31	34	36	40	41	44	47	50	54	56	60	63	66
Stack—diameter	25	26	28	29	32	34	37	38	41	44	47	50	52	56	59	62
—height	480	540	480	540	540	600	660	660	720	660	720	720	720	720	750	840
Steam supply size	6	6	8	8	8	8	8	8	8	8	10	10	10	12	12	12
Return size (two)	4	4	4	4	4	4	4	4	4	4	6	6	6	6	6	6
Drain size	1 1/2	1 1/2	2	2	2	2	2	2	2	2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2
Feed water size	1 1/2	1 1/2	2	2	2	2	2	2	2	2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2
Outside surface to cover	sq ft 163	177	186	208	233	263	308	337	378	410	470	529	572	610	650	696
Approximate weight	lb 6900	6400	7000	7900	10000	11200	13200	15200	16900	20300	24100	28200	32000	35000	38100	41300

Firing rate calculated to develop certified output.
150 lb. American Standard Flange.

Based on 150,000 Btu oil

KEWANEE SCOTCH BOILERS



Standard Equipment Optional Equipment

- | | |
|--|---|
| 1. Boiler with Steel Saddle Supports | 1. Steel Skids |
| 2. Gas Tight Front Flue Door Extension | 2. Insulated Steel Jacket and Boiler Lifting Loops |
| 3. Gasketed Cast Iron Insulated Flue Doors Boilers HM-880—HM-890, Steel Doors Boilers HM-891—HM-893. | 3. Complete Set of Spinner Blades |
| 4. Refractory Lined Rear Combustion Chamber | 4. Bearing or Quadrant Damper |
| 5. Rear Cover Plate with 16" Dia. Access Opening | 5. Furnace Extension with Secondary Air Port Kewanee Design—No Refractory |
| 6. Pyrex Observation Port—2" Dia. | 6. Circular Furnace Extension Kewanee Design—No Refractory |
| 7. Flue Cleaner and Handle | 7. Special Openings |
| | 8. Wing Induced Draft Fan |
| | 9. Higher than 150 lb Steam Working Pressure |
| | 10. Stack Thermometer |

Steam Trim (Not Mounted)

- | | |
|---|--|
| 1. Safety Valve's | 1. Reliance Hi&Lo Water Alarm Column |
| 2. Steam Gauge and Cock | 2. Chain Operated Water Gauge |
| 3. Kewanee Water Column with Hand Operated Water Gauge and Try Cock Assembly Chain Operated Assembly on HM-880 and Larger | 3. Chain Operated Try Cocks |
| 4. Globe and Check Valves for Feed Line | 4. Penberthy Injector |
| 5. Quick Action and Slow Action Blow-Off Valves | 5. HM No. 150 Combination Water Column, Pump Control and Low Water Cut-Off |
| | 6. HM No. 150 Combination Pump Control, Low Water Cut-Off and Alarm Switch |

HM-800 high pressure

Typical High Pressure Specifications

The contractor shall furnish and install No. HM Kewanee Scotch Boiler(s) for (Oil) (Gas) (Combination Gas-Oil) firing. Boiler shall contain not less than sq. ft. of heating surface and shall have an SBI gross rating of hp, a certified output of hp, and a minimum of cu. ft. of furnace volume. Boiler shall be constructed in accordance with the ASME Code for (125 lb.) (150 lb.) steam working pressure.

The shell shall be of the scotch type, two pass, horizontal firetube design. The boiler shall be of the dry back type. The rear combustion chamber shall be gas-tight, lined with insulating castable refractory and provided with a bolted, gasketed steel cover. An access opening of at least 16" diameter shall be provided to permit entry into the rear combustion chamber. 2" observation port shall be provided at the rear of the boiler to permit observation of flame within the furnace tube. Steel saddle supports shall be provided.

The furnace tube openings in the front and rear tube sheets shall be hot flanged to provide maximum strength at junction of tube sheets and corrugated furnace tube. The outer edges of the tube sheets shall also be hot flanged so that the joining of the shell and tube sheets will provide maximum efficiency. The longitudinal joints shall be double welded butt type and girth joints full fillet welds, x-rayed and stress relieved in full compliance with the latest ASME Boiler Construction Code.

The fire tubes shall be 3" O.D. and tube holes shall be reamed not to exceed 1/32" greater than outside tube diameter. All tubes shall be set with a roller expander and beaded at each end. Welded tube ends will not be permitted.

The front smokebox shall be of heavy gauge steel welded to the boiler to secure a gas-tight fit. The flue doors shall be of cast iron* and gasketed to secure a gas-tight fit with a minimum number of clamps. They shall be lined with refractory insulating cement securely keyed in place and capable of withstanding a temperature of 1500° F

Boiler trimmings shall consist of the following:

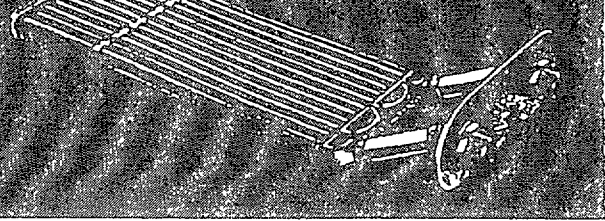
Safety valve's, steam gauge with siphon and cock, Kewanee water column with hand operated water gauge and try cock assembly—chain operated on HM-880 and larger. Globe and check valves for feed line, quick action and slow action blow-off valves.

Boiler's shall be inspected during construction by an authorized inspector and after completion shall be subjected to a hydrostatic test one and one-half times the design working pressure and stamped with all identifying markings and symbols as required by the latest edition of the ASME Boiler Construction Code

*Boilers HM-880 thru HM-890—Steel doors HM-891 thru HM-893.

OPTIONAL Boiler's shall be provided with factory installed aluminum finished jacket of 22 Ga. steel securely fastened by drawbands. Jacket shall have 2" thick insulation of lightweight mineral or glass wool material of 3 lbs. density per cu. ft. attached with adhesive. A similar material of 9 lb. density, 2" thick shall be applied at selected locations for reinforcement including the top splice where it will form a 12" catwalk area along the entire length of the boiler. Coverings shall be provided at all openings. Lifting loops shall be provided so that boiler may be handled without damage to the jacket.

Other Optional Equipment: Steel skids; furnace extension (Kewanee design) either plain circular extension or extension with secondary air port.



LW-800 Series Coil Selection Information

All Low Pressure Kewanee Boilers are built to accommodate indirect hot water heating coils, either instantaneous flow or storage tank type.

Quality copper tubing is used exclusively in the construction of Kewanee Hot Water Heating Coils . . . brazed into bronze fittings. Terminal ends with standard pipe threads, lock nuts and ring gaskets . . . steel mounting plate . . . full face sheet rubber gaskets—all are features that assure top efficiency and longer life.

Indirect heating type—storage tank operation

FAMILIES OR BATHS		2	3	4	6	8	10	12	14	16	19	22	24	28	32	36	40	44
Gallons	10" to 140°F BW 180°F	50	90	120	180	240	300	360	420	480	560	640	720	840	960	1080	1200	1320
in 3	40" to 140°F HW 212°F	100	150	200	300	400	500	600	700	800	933	1067	1200	1400	1600	1800	2000	2200
Hours	40" to 160°F BW 210°F	25	72	96	144	192	240	288	336	384	448	512	576	672	768	864	960	1096
Coil number		KT-10	KT-120	KT-180	KT-240	KT-300	KT-360	KT-420	KT-480	KT-560	KT-640	KT-720	KT-840	KT-960	KT-1080	KT-1200	KT-1320	KT-1440
Inlet and outlet dia.—inches		1	1 1/2	1 1/2	2	2	2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2
Overall length—inches		20	24	30	36	42	48	54	60	66	72	78	84	90	96	102	108	114
LW878—LW881		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
LW882—LW883		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
LW884		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
LW885—LW886		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
LW887		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
LW888—LW893		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

Indirect heating type—instantaneous flow

RESIDENTIAL RATINGS—Based on intermittent draw of hot water with short peak demands.

FAMILIES OR BATHS		1-2	4	6	15	25	35	45	52	65	75	92	105	120	130	140	150	160	170	180	190
Gallons per hour	40" to 140°F BW 180°F	50	300	390	450	600	720	840	970	1080	1240	1400	1560	1740	1850	1980	2100	2220	2340	2460	2580

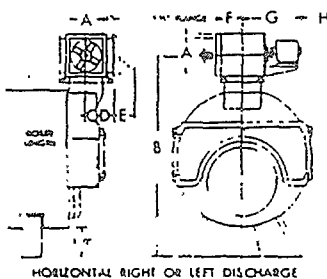
COMMERCIAL RATINGS—Based on continuous draw of hot water with long peak demands.

Gallons	40" to 140°F BW 180°F	20	225	270	350	450	540	630	690	810	930	1050	1170	1305	1395	1485	1575	1665	1755	1845	1935
per	40" to 140°F BW 212°F	300	375	450	600	750	900	1050	1150	1350	1550	1750	1950	2175	2325	2475	2625	2775	2925	3075	3225
Hour	40" to 180°F BW 210°F	144	180	216	288	350	432	504	552	648	744	840	936	1044	1116	1188	1260	1332	1404	1476	1548
Coil number		KT-10	KT-120	KT-180	KT-240	KT-300	KT-360	KT-420	KT-480	KT-560	KT-640	KT-720	KT-840	KT-960	KT-1080	KT-1200	KT-1320	KT-1440	KT-1560	KT-1680	KT-1800
Inlet and outlet dia.—inches		1	1 1/2	1 1/2	2	2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2
Overall length—inches		26	29	36	39	45	45	51	57	63	69	75	81	87	93	99	105	111	117	123	129
LW878—LW881		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
LW882—LW883		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
LW884		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
LW885—LW886		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
LW887		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
LW888—LW893		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

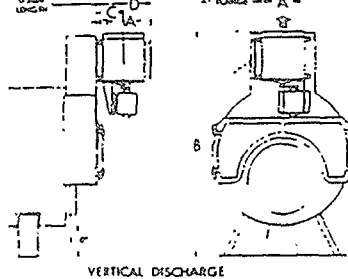
INSTRUCTIONS: Read across top section of table to find desired coil capacity. Read down column until you reach correct boiler size. If a number appears in that box coil will fit. The number represents the maximum quantity of coils boiler will accommodate.

INDUCED DRAFT FANS

DRAFT INDUCERS with variable speed drive provide precise draft control at all times . . . eliminate the need for tall stacks with Kewanee Scotch Boilers. AIR COOLED BEARINGS—pre-sealed and pre-lubricated . . . never require lubrication. SPRING MOUNTED MOTOR—dustproof, brushless . . . maintains correct fan belt tension. PERMANENT MOUNTING—furnished for either horizontal right or left, or vertical discharge as specified. Barometric dampers optional at extra cost.



HORIZONTAL RIGHT OR LEFT DISCHARGE



VERTICAL DISCHARGE

Inducers listed based on sea level elevation, sized for firing up to and including certified output. Special controls furnished as optional equipment. Orders must specify operating line voltage, cycle and phase. Stack and breeching weights must be supported independently.

Horizontal right or left discharge

(Data and dimensions in inches)

BOILER NUMBER	HM-820	HM-841	HM-842	HM-843	HM-844	HM-845	HM-846	HM-847	HM-848	HM-849	HM-850	HM-851	HM-852	HM-853
Inducer number*	140 1/4	150 1/4	160 1/4	170 1/4	180 1/4	190 1/4	200 1/4	210 1/4	220 1/4	230 1/4	240 1/4	250 1/4	260 1/4	270 1/4
Fan motor size														
—40 cycle—1 phase	hp	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2
—40 cycle—2 or 3 phase	hp	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2
—60 cycle—2 or 3 phase	hp	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2
—40 480 550V	hp	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2
A—Outlet size	14	14	14	14	14	14	14	14	14	14	14	14	14	14
B—Floor to center of outlet	47 1/2	89 1/2	89 1/2	89 1/2	89 1/2	89 1/2	89 1/2	89 1/2	89 1/2	89 1/2	89 1/2	89 1/2	89 1/2	89 1/2
C—CL fan to boiler end	4 1/2	4 1/2	4 1/2	4 1/2	4 1/2	4 1/2	4 1/2	4 1/2	4 1/2	4 1/2	4 1/2	4 1/2	4 1/2	4 1/2
D—Space requirement	5 1/2	10 1/2	9 1/2	9 1/2	9 1/2	9 1/2	9 1/2	9 1/2	9 1/2	9 1/2	9 1/2	9 1/2	9 1/2	9 1/2
E—Barometric damper	4	12	12	12	12	12	12	12	12	12	12	12	12	12
F—Boiler CL to outlet	10 1/2	14 1/2	14 1/2	14 1/2	14 1/2	14 1/2	14 1/2	14 1/2	14 1/2	14 1/2	14 1/2	14 1/2	14 1/2	14 1/2
G—Boiler CL to motor end	27 1/2	28 1/2	28 1/2	28 1/2	28 1/2	28 1/2	28 1/2	28 1/2	28 1/2	28 1/2	28 1/2	28 1/2	28 1/2	28 1/2
H—Fan removal clearance	19 1/2	27	27	27	27	27	27	27	27	27	27	27	27	27

* Fan sizes based on sea level elevation for firing up to and including 141 5/8% of S.B.I. rating with oil or gas or 120% with stoker.

(Data and dimensions in inches)

BOILER NUMBER	LW-878	LW-879	LW-880	LW-881	LW-882	LW-883	LW-884	LW-885	LW-886	LW-887	LW-888	LW-889	LW-890	LW-891	LW-892	LW-893
Inducer number*	140 1/4	140 1/4	140 1/4	140 1/4	140 1/4	140 1/4	140 1/4	140 1/4	140 1/4	140 1/4	140 1/4	140 1/4	140 1/4	140 1/4	140 1/4	140 1/4
Fan motor size																
—40 cycle—1 phase	hp	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2
—40 cycle—2 or 3 phase	hp	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2
—60 cycle—2 or 3 phase	hp	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2
—40 480 550V	hp	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2
A—Outlet size	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14
B—Floor to center of outlet	40 1/2	80 1/2	87	89 1/2	89 1/2	89 1/2	89 1/2	89 1/2	89 1/2	89 1/2	89 1/2	89 1/2	89 1/2	89 1/2	89 1/2	89 1/2
C—CL fan to boiler end	4 1/2	4 1/2	4 1/2	4 1/2	4 1/2	4 1/2	4 1/2	4 1/2	4 1/2	4 1/2	4 1/2	4 1/2	4 1/2	4 1/2	4 1/2	4 1/2
D—Space requirement	5 1/2	10 1/2	9 1/2	9 1/2	9 1/2	9 1/2	9 1/2	9 1/2	9 1/2	9 1/2	9 1/2	9 1/2	9 1/2	9 1/2	9 1/2	9 1/2
E—Barometric damper	4	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
F—Boiler CL to outlet	10 1/2	14 1/2	14 1/2	14 1/2	14 1/2	14 1/2	14 1/2	14 1/2	14 1/2	14 1/2	14 1/2	14 1/2	14 1/2	14 1/2	14 1/2	14 1/2
G—Boiler CL to motor end	27 1/2	28 1/2	28 1/2	28 1/2	28 1/2	28 1/2	28 1/2	28 1/2	28 1/2	28 1/2	28 1/2	28 1/2	28 1/2	28 1/2	28 1/2	28 1/2
H—Fan removal clearance	19 1/2	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27

Vertical discharge

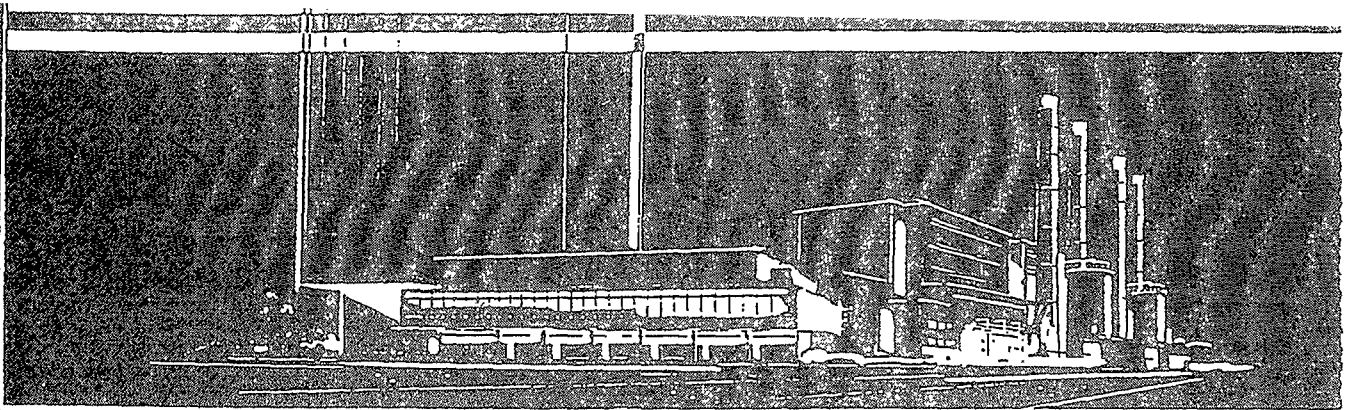
(Data and dimensions in inches)

BOILER NUMBER	HM-860	HM-861	HM-862	HM-863	HM-864	HM-865	HM-866	HM-867	HM-868	HM-869	HM-870	HM-871	HM-872	HM-873
Inducer number*	140 1/4	150 1/4	160 1/4	170 1/4	180 1/4	190 1/4	200 1/4	210 1/4	220 1/4	230 1/4	240 1/4	250 1/4	260 1/4	270 1/4
Fan motor size														
—40 cycle—1 phase	hp	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2
—40 cycle—2 or 3 phase	hp	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2
—60 cycle—2 or 3 phase	hp	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2
—40 480 550V	hp	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2
A—Outlet size	14	14	14	14	14	14	14	14	14	14	14	14	14	14
B—Floor to outlet	92 1/2	100	103 1/2	107 1/2	111 1/2	115 1/2	119 1/2	123 1/2	127 1/2	131 1/2	135 1/2	139 1/2	143 1/2	147 1/2
C—CL fan to boiler end	11	11 1/2	11 1/2	11 1/2	11 1/2	11 1/2	11 1/2	11 1/2	11 1/2	11 1/2	11 1/2	11 1/2	11 1/2	11 1/2
D—Space requirement	22	22	22	22	22	22	22	22	22	22	22	22	22	22

(Data and dimensions in inches)

BOILER NUMBER	LW-878	LW-879	LW-880	LW-881	LW-882	LW-883	LW-884	LW-885	LW-886	LW-887	LW-888	LW-889	LW-890	LW-891	LW-892	LW-893
Inducer number*	140 1/4	140 1/4	140 1/4	140 1/4	140 1/4	140 1/4	140 1/4	140 1/4	140 1/4	140 1/4	140 1/4	140 1/4	140 1/4	140 1/4	140 1/4	140 1/4
Fan motor size																
—40 cycle—1 phase	hp	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2
—40 cycle—2 or 3 phase	hp	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2
—60 cycle—2 or 3 phase	hp	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2
—40 480 550V	hp	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2
A—Outlet size	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14
B—Floor to outlet	27 1/2	87 1/2	92 1/2	100	103 1/2	107 1/2	111 1/2	115 1/2	119 1/2	123 1/2	127 1/2	131 1/2	135 1/2	139 1/2	143 1/2	147 1/2
C—CL fan to boiler end	11	11	11 1/2	11 1/2	11 1/2	11 1/2	11 1/2	11 1/2	11 1/2	11 1/2	11 1/2	11 1/2	11 1/2	11 1/2	11 1/2	11 1/2
D—Space requirement	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22

* Fan sizes based on sea level elevation for firing at certified output



Did you know...



AMERICAN-Standard

INDUSTRIAL DIVISION

SALES OFFICES IN ALL PRINCIPAL CITIES

Executive Offices: Detroit 32, Michigan

7 City 101 American-Standard Products (Canada) Ltd.

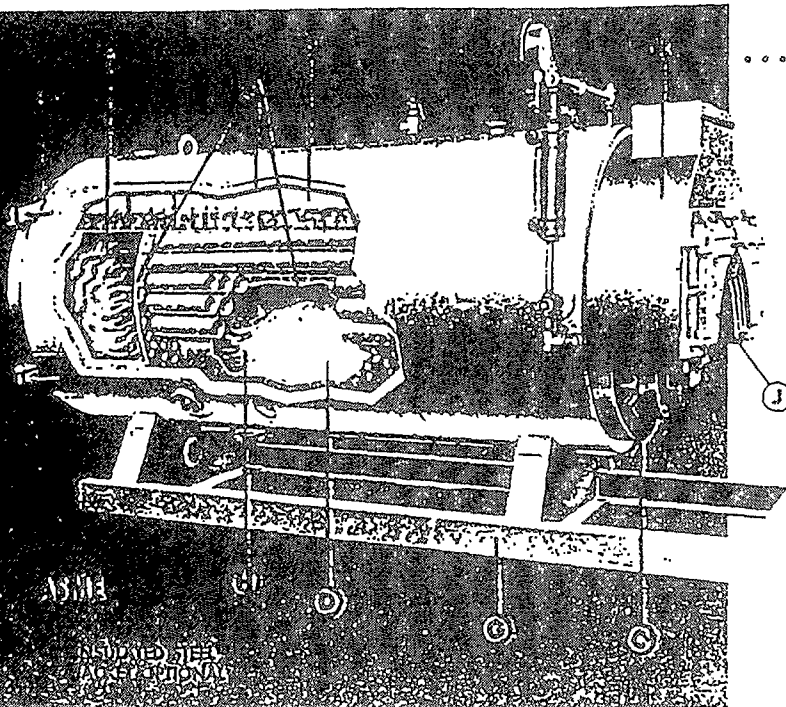
Toronto 4 Ontario

Canadian Sirocco Products

AMERICAN RADIATOR & STANDARD SANITARY CORPORATION

KEWANEE®

LM-Welded Scottie Junior



low pressure oil or gas

- A Shell, heads and furnace are fabricated from heavy irrex and flange steel. All welds in accordance with ASME Code.
- B Ample steam space, large unbroken disengaging area and well spaced tubes eliminate violent agitation of water . . . insure rapid circulation, fast pick-up and constant supply of steam or hot water.
- C Adequate washout openings give access to waterside for cleaning and inspection.
- D Plain circular furnace has sufficient volume to insure complete combustion of fuels.
- E Rear combustion chamber . . . with high temperature refractory lining installed at the factory. Designed with water back top.
- F Hinged combustion chamber door with pyrex observation port on LM-18 through LM-45; for larger sizes have bolted rear cover plate with access panel and pyrex observation port.
- G Sturdy steel skids simplify handling and installation. No special foundation is needed.
- H Long gas travel, through the lengthy combustion chamber, then back through the full length of heavy gage 3" tubes, assures maximum transfer of heat to boiler water.
- J Refractory filled cast iron flue doors, mounted on heavy-duty hinges, provide easy access to the tubes for cleaning and inspection.
- K Gas-tight smokebox of heavy gage steel . . . welded in one piece to boiler shell and gasketed cast iron flue doors and frames make the Scottie Junior adaptable to forced draft firing.

606,000 to 3,091,000 Btuh

15 psi steam—30 psi water 250° F maximum

This new addition to Kewanee's famous line of boilers incorporates many proven features found in the Scottie Junior high pressure series. Substantial steel skids, heavy flange steel shell, cast iron flue doors, and generous furnace volumes are only a few of the many quality features that are built into the low pressure Scottie Junior series.

Rear combustion chamber is heavily lined with refractory and designed with water back top; adapter mounting plate makes assembly with standard gun-type burners easy. Insulated steel jacket with lifting loops is optional.

The boiler is also available as a forced draft boiler-burner unit for oil, gas or oil-gas combination.

ratings • mechanically fired • oil or gas

Boiler number		LM-18	LM-29	LM-39	LM-45	LM-59	LM-65	LM-78	LM-92
Rating — steam . . .	sa ft	2520	4030	5480	6370	8210	9130	10940	12880
— water . . .	sa ft	4040	6450	8770	10200	13140	14610	17500	20610
— MBtuh . . .		606	967	1316	1530	1971	2191	2625	3091
— steam per hour — 212° F . . .	lb	624	926	1256	1577	2031	2258	2705	3185
Firing rate — No. 2 oil** . . .	gph	5.4	8.6	11.7	13.6	17.5	19.5	23.4	27.5
— No. 5 oil** . . .	gph	5.0	8.0	10.9	12.7	16.4	18.2	21.8	25.7
— gas . . .	MBtuh	757	1208	1645	1912	2463	2738	3281	3863
Heating surface . . .	sa ft	99	158	215	250	322	358	429	500
Furnace volume . . .	cu ft	16.5	21.7	29.9	32.7	52.5	56.0	64.8	70.6
Safety valve capacity . . .	lb steam per hr	606	967	1316	1530	1969	2188	2625	3060

*Certified output **Based on 140,000 Btu No. 2 Oil — 150,000 Btu No. 5 Oil

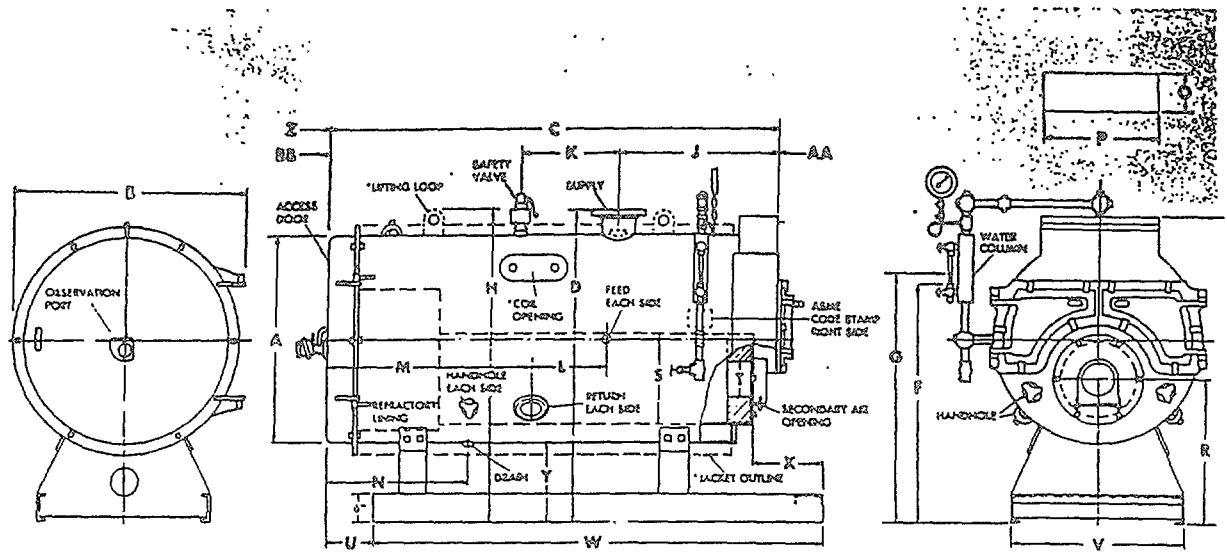
Standard equipment — Manhole in LM-59 through LM-92, factory installed rear combustion chamber. Hinged rear combustion chamber door with pyrex observation port on LM-18 through LM-45, rear cover plate with access panel and pyrex observation port on LM-59 through LM-92, flue cleaner with handle. Standard burner mounting plate with secondary air opening and standard refractory ring for oil burning. Plain burner mounting plate only (less refractory) for gas burning. Cast-iron steel iron smokebox with insulated cast iron gasketed flue doors, steel skids.

Standard equipment subject to change without notice

Standard steam trimmings — Safety valve as required by ASME Code, steam gage, 1 inch and cock, water column with water gage.

Standard water trimmings — Relief valves as required by ASME Code.

Optional equipment — Insulated jacket and lifting loops, sparger bases, combination water column and low water cut-off, combination water column pump control and water cut-off, hot water heating coil.



LM-Welded Scottie Junior low pressure • oil or gas

dimensions and data (feet—inch)

boiler number	LM-18	LM-29	LM-30	LM-45	LM-59	LM-65	LM-78	LM-90
A — boiler — inside diameter	3-6	3-6	4-0	4-0	4-6	4-6	5-0	5-0
B — width overall	4-0 1/2	4-0 1/2	4-6 1/2	4-6 1/2	4-11	4-11	5-5	5-5
C — length	6-8	9-2	9-7	10-8	11-8 1/2	12-7 1/2	11-7	12-1
D — steam supply height	4-11 1/2	4-11 1/2	5-10	5-10	6-7	6-7	7-0	7-0
E — smoke outlet height	5-2 1/2	5-2 1/2	5-8 1/2	5-8 1/2	6-6	6-6	6-11	6-1
F — water column height	3-11 1/2	3-11 1/2	4-4	4-4	5-0 1/2	5-0 1/2	5-4 1/2	5-4
G — water line height	4-1 1/2	4-1 1/2	4-6	4-6	5-2 1/2	5-2 1/2	5-6 1/2	5-6
H — lifting loop height	5-4 1/2	5-4 1/2	5-10 1/2	5-10 1/2	6-5 1/2	6-5 1/2	6-10	6-1
J — steam supply	2-3	2-9	2-11	2-11	3-0	3-6	3-1	3-1
K — safety valve	1-8	1-8	1-8	1-8	5-4	5-9	5-2	5-1
L — feed water, each side					2-4	2-9	2-2	2-4
M — return, each side	3-4	3-6	4-0	4-0	4-4	4-4	4-4	4-4
N — drain	2-6	2-6	2-9	2-9	4-0	4-0	4-0	4-0
O — smoke outlet — outside width	0-8 1/4	0-8 1/4	0-10 1/4	0-10 1/4	0-11 1/4	0-11 1/4	1-0 1/4	1-0
P — outside length	2-0 1/4	2-0 1/4	2-2 1/4	2-2 1/4	2-5 1/4	2-5 1/4	3-0 1/4	3-0
R — furnace — height	2-5 1/2	2-5 1/2	2-6 1/2	2-6 1/2	3-1	3-1	3-1 1/2	3-1
S — inside diameter	1-6	1-6	1-8	1-8	2-2 1/4	2-2 1/4	2-5 1/4	2-5
T — hole diameter — oil burner refractory	0-7	0-7	0-7 1/2	0-7 1/2	0-8	0-8	0-8	0-8
U — base — location	0-4 1/2	0-4 1/2	0-8	0-8	1-6	1-6	1-6	1-6
V — width	3-0	3-0	3-6	3-6	4-6	4-6	5-0	5-0
W — length	7-5	9-11	9-10 1/2	10-11 1/2	11-7 1/2	12-6 1/2	11-5 1/2	12-1
X — extension	1-7 1/2	1-7 1/2	1-7 1/2	1-7 1/2	2-0	2-0	2-0	2-0
Y — floor to boiler	1-4	1-4	1-4	1-4	1-7	1-7	1-6	1-6
Z — rear door clearance	3-6	3-6	4-0	4-0				
AA — tube replacement space — front	3-3	5-9	5-7	6-8	7-2	8-1	6-11	8-1
BB — rear	2-0	4-6	4-3	5-4				
broaching diameter	1-5	1-6	1-8	1-8	1-9	1-10	1-11	2-0
stock — diameter	1-2	1-3	1-5	1-6	1-7	1-8	1-9	1-1
— height	15-0	20-0	20-0	20-0	35-0	40-0	35-0	40-0
steam supply size	in. 4	4	6	6	6	6	8	8
return size (two)	in. 4	4	4	4	4	4	4	4
drain size	in. 1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	2	2
feed water size	in. 1	1	1	1	1 1/4	1 1/4	1 1/2	1 1/2
water column size	in. 1	1	1	1	1 1/4	1 1/4	1 1/2	1 1/2
**outside surface to cover	sq ft 61	88	105	119	165	180	180	200
approximate weight	lb 2800	3400	4800	5400	7000	7800	8300	9000

*150 lb American Standard Flange

**Front of boiler and smokebox NOT included

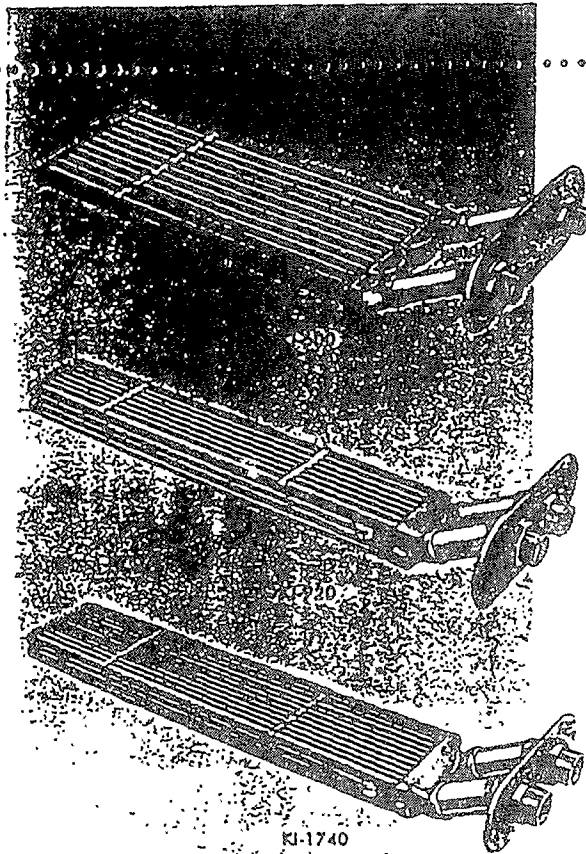
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AMERICAN-Standard
KEWANEE BOILER DIVISION
101 FRANKLIN STREET, KEWANEE, ILLINOIS

Kewanee

LM-Welded Scottie Junior

AUGUST



indirect instantaneous (tankless) hot water coils

All Kewanee boilers are built to accommodate indirect hot water heating coils... either of the instantaneous (tankless) or tank (storage) type. These hot water heaters may be installed in the boiler at the factory or after boiler has been installed and in use on the job-site.

Quality copper tubing is used exclusively in the construction of Kewanee hot water heating coils... brazed into bronze fittings. Terminal ends with standard pipe threads... lock-nuts and ring gaskets... boiler steel mounting plate... full face sheet rubber gaskets... are all features that assure top efficiency and longer life.

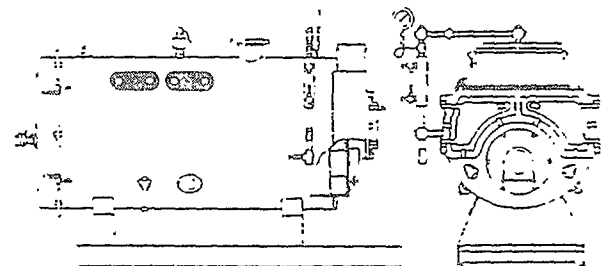
typical specification

Boiler(s) shall (each) be furnished with built-in Kewanee Instantaneous (Tankless) Hot Water Heater(s) of the following characteristics

NO OF COIL COIL UNITS : NO	RATINGS GALS / 1 HR	TEMP RISE	BOILER WATER TEMPERATURE
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Coil(s) shall be mounted in welded steel coil box(es) welded into boiler(s) at standard locations on (right) (left) hand side of (each) boiler
strike out One

Temperature control shall be provided in (each) boiler's side near coil head(s) and wired to firing device to maintain indicated boiler water temperature



coils installed thru right or left side of boiler

residential ratings —Based on intermittent drawing of hot water with short peak demands.

families or baths	1-2	4	6	15	25	35	45	52	65	78	92	105	120	130	140	150	160	170	180	19
gal. per hr.—40° to 140°F B W at 180°F.	240	300	360	480	600	720	840	920	1080	1240	1400	1560	1740	1860	1980	2100	2220	2340	2460	258

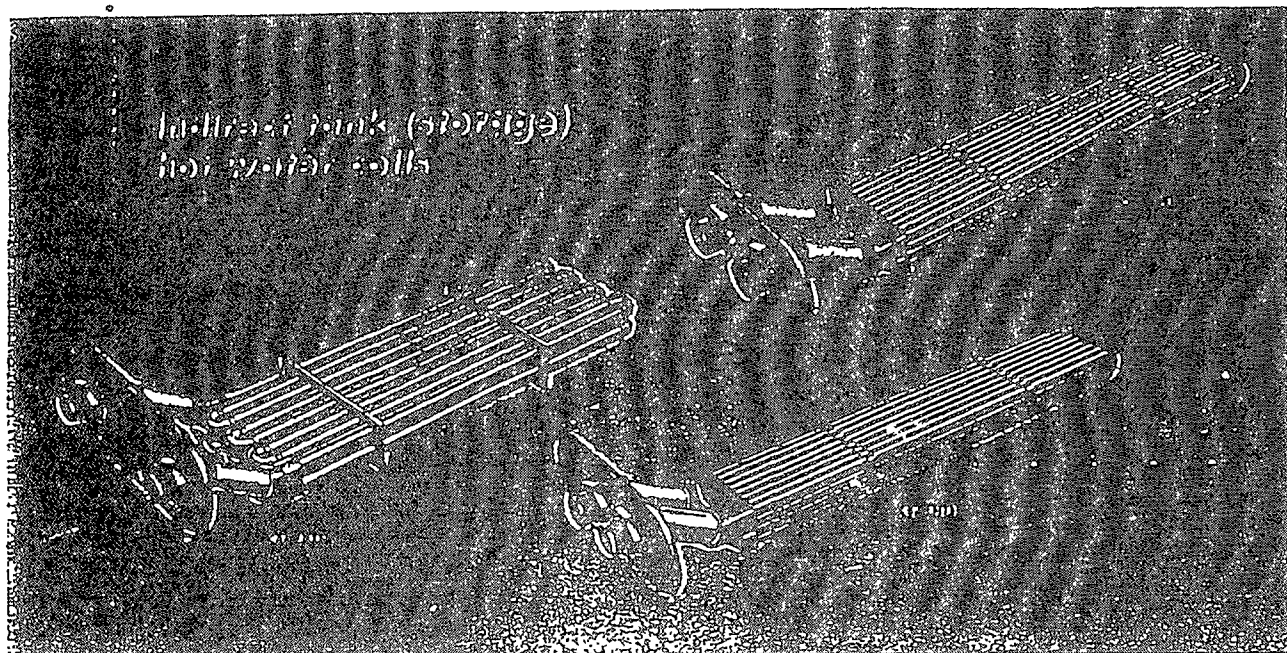
commercial ratings —Based on continuous drawing of hot water with long peak demands

gallons per hour	40° to 140°F. B.W. at 180°F.	180	225	270	360	450	540	630	690	810	930	1050	1170	1305	1395	1485	1575	1665	1755	1845	1935
	40° to 140°F. B.W. at 212°F.	300	375	450	600	750	900	1050	1150	1350	1550	1750	1950	2175	2325	2475	2625	2775	2925	3075	3225
	40° to 180°F. B.W. at 210°F.	144	180	216	288	360	432	504	552	648	744	840	936	1044	1116	1188	1260	1332	1404	1476	1548

tankless coil numbers	KI-240	KI-300	KI-360	KI-480	KI-600	KI-720	KI-840	KI-920	KI-1080	KI-1240	KI-1400	KI-1560	KI-1740	KI-1860	KI-1980	KI-2100	KI-2220	KI-2340	KI-2460	KI-258
LM-18	X	X	X	X																
LM-29	X	X	X	X																
LM-39 LM-45	X	X	X	X	X															
LM-59 LM-65	X	X	X	X	X	X	X	X												
LM-78 LM-82	X	X	X	X	X	X	X	X												

22476

Coil Selection Using Above Table — Read across table to find desired coil capacity. Then read down that column until you reach correct coil number. If "X" appears in the box below that coil will fit boiler shown at left. If greater hot water capacity is required, consult your local Kewanee representative.



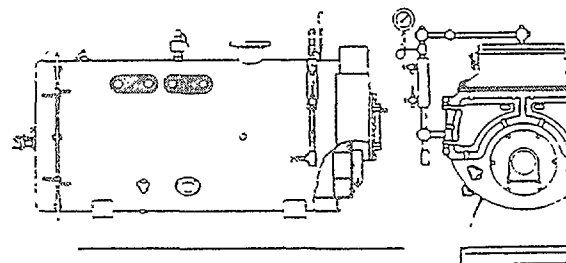
typical specification

Boiler(s) shall (each) be furnished with built-in Kewanee tank (Storage) Hot Water Heater(s) of the following characteristics:

NO. OF COIL UNITS	COIL NO.	RATINGS GALS./3 HRS	BOILER WATER TEMP RISE	TEMPERATURE
----------------------	-------------	------------------------	---------------------------	-------------

Coil(s) shall be mounted in welded steel coil box(es), welded into boiler(s) at standard locations on (right) (left) hand side of (each) boiler
strike out one

Temperature control shall be provided in (each) boiler's side near coil head(s) and wired to firing device to maintain indicated boiler water temperature.



coils installed thru right or left side of boiler

families or baths		2	3	4	6	8	10	12	14	16	18	22	24	28	32	36	40	44
gallons in 3 hours	40° to 140°F B W at 180°F	60	90	120	180	240	300	360	420	480	560	640	720	840	960	1080	1200	1320
	40° to 140°F B W at 212°F	100	150	200	300	400	500	600	700	800	913	1067	1200	1400	1600	1800	2000	2200
	40° to 180°F B W at 210°F	48	72	96	144	192	240	288	336	384	448	512	576	672	768	864	960	1080
tank coil numbers		KT-60	KT-90	KT-120	KT-180	KT-240	KT-300	KT-360	KT-420	KT-480	KT-560	KT-640	KT-720	KT-840	KT-960	KT-1080	KT-1200	KT-1320
LM-18		X	X	X	X	X	X											
LM-28		X	X	X	X	X	X											
LM-38 LM-45		X	X	X	X	X	X											
LM-58 LM-65		X	X	X	X	X	X			X								
LM-78 LM-82		X	X	X	X	X	X	X	X	X	X							

Coil Selection Using Above Table — Read across table to find desired coil capacity. Then read down that column until you reach correct coil number.
If "X" appears in the box below, that coil will fit boiler shown at left. If greater hot water capacity is required, consult your local Kewanee representative.

22477

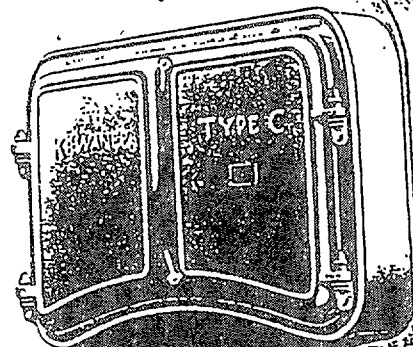


493 Firebox
Boilers

KEWANEE TYPE C BOILERS

7L series

AMERICAN Standard



15 psig STEAM

30 psig WATER
250 F°



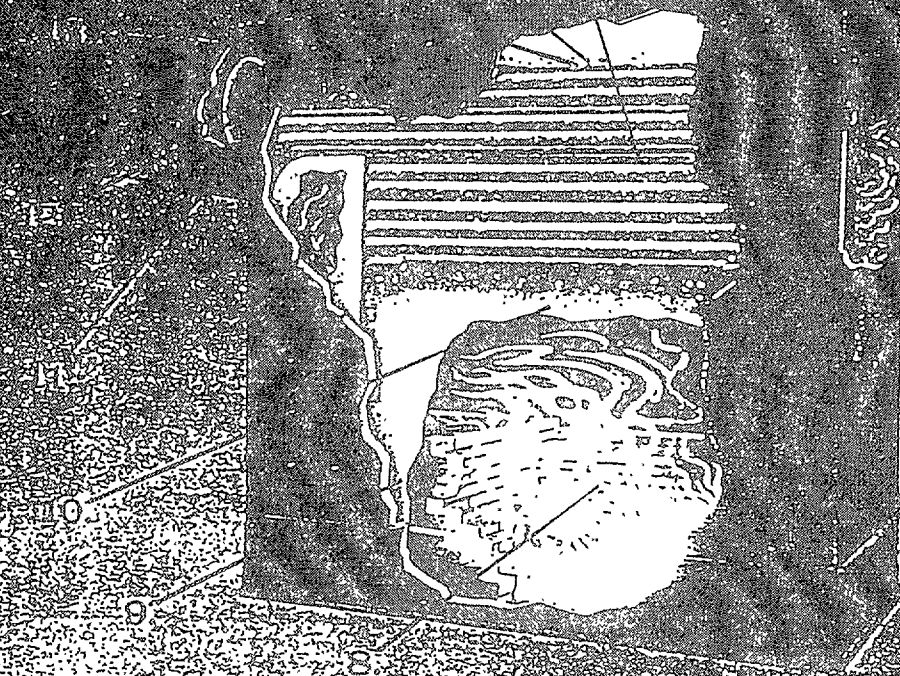
AMERICAN Standard

INDUSTRIAL DIVISION
DETROIT 32, MICHIGAN

22479

Bulletin 348
1-25 (replaces 2201-2)

Kewanee



1. 150 pound American Standard flange—accepts flanged piping and fittings.

2. Kewanee water column—hand operated cage and cocks. Chain operated on 7/16 and larger.

3. Fire tubes—rolled and beaded for light, permanent fit. No welded tube ends.

4. Cast iron flue doors—insulated; provide ready access to all fire tubes.

5. Flanged base panels—1/4 inch holes provided for securing insulation.

6. Steel base—substantially built with supporting corner posts.

7. Washout plugs—Hollow brass with rubber gaskets.

8. Large furnace volume—Extremely low heat release assures quiet and complete combustion.

9. Vaporizing logs—progressively added to top—permits free and rapid circulation.

10. 1/4 inch Green Sheet—fully effective corrosion protection on inside—soft handling and falling—no water.

11. Removable doors—one on each side of furnace.

12. Inside outlet—rear outlet standard. Other outlet locations available as optional equipment.

13. Vaporizer well above combustion chamber.

14. Service stand—arranging in place of a steady center line and prevents jamming.

15. Generous steam space—provides ample storage for dry steam.

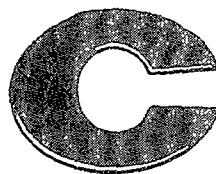
16. Ends fully protected—surfaces of furnace on inside and outside—steam—no rust.

22481

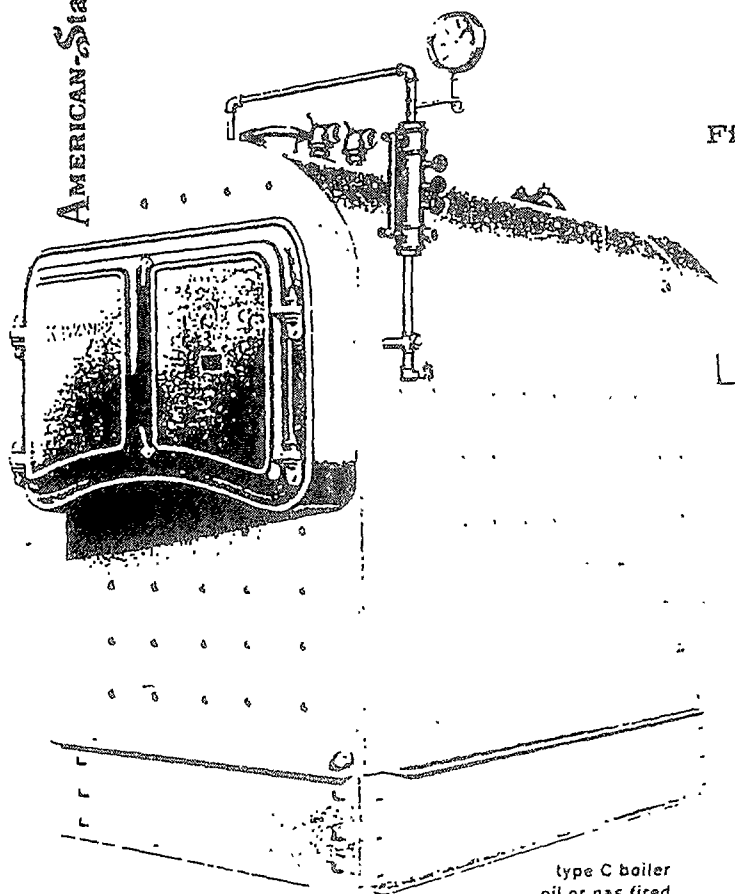
KEWANEE BOILERS

AMERICAN-Standard

type



7L series



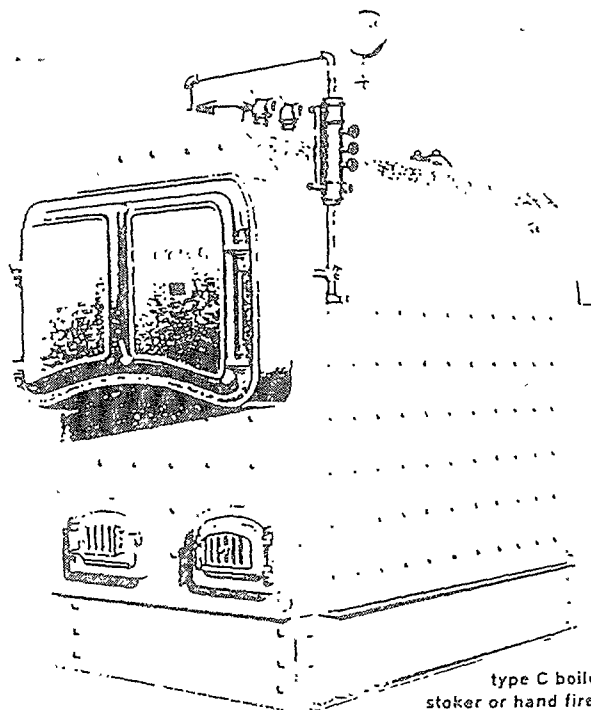
type C boiler
oil or gas fired

First choice of experienced engineers

The Type "C" Boilers are America's most popular for heating medium and large size buildings. Engineers continue to specify the Kewanee Type "C" because they are known for their dependability and efficient service. These compact boilers provide heat for many years with minimum amount of service or attention. Adaptable for front or rear firing, the versatile Type "C" fits most any boiler room. Ample proportions assure top efficiency whether oil, gas, stoker or hand fired.

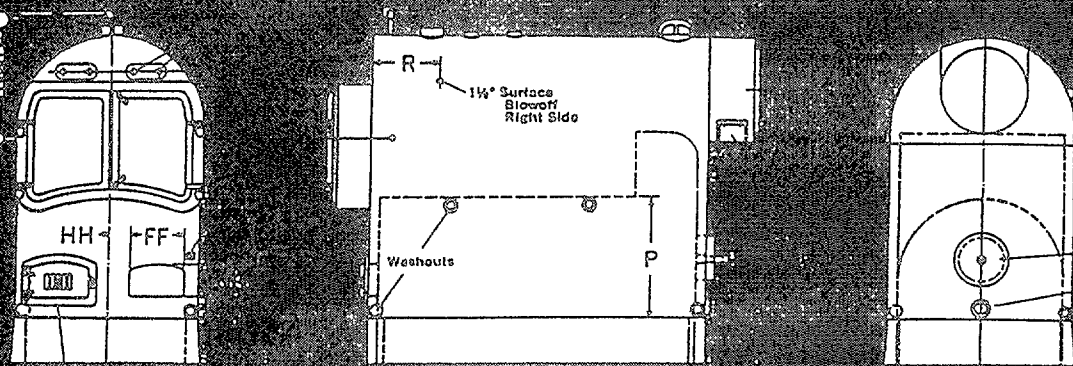
VERSATILE

Kewanee Type "C" Boilers are constructed in accordance with the ASME Low Pressure Boiler Code. Sixteen sizes range in capacity from 1,392,000 to 15,430,000 Btuh SBI Rating and are designed to develop 141.5% of this rating.



type C boiler
stoker or hand fired

22480



Ratings — Mechanically Fired — Oil, Gas or Stoker

Boiler Number		7L178	7L179	7L180	7L181	7L182	7L183	7L184	7L185	7L186	7L187	7L188	7L189	7L190	7L191	7L192	7L193
SBI Rating—Steam	Sq. Ft.	5800	6440	7720	9000	10940	12870	16070	19300	22500	25720	32150	38570	45000	51430	57850	64280
—Water	Sq. Ft.	9260	10300	12350	14000	17500	20590	25710	30880	36000	41150	51440	61710	72000	82290	92560	102850
—MBtuh	Lb.	1392	1546	1853	2160	2526	3039	3857	4632	5400	6171	7716	9257	10800	12340	13880	15430
—Steam per hour—212° F	Lb.	1430	1590	1900	2220	2700	3170	3960	4760	5540	6340	7920	9510	11090	12670	14260	15840
SBI Net Rating—Steam	Sq. Ft.	5070	5640	6760	7880	9580	11260	14060	16880	19690	22510	28130	33750	39370	45000	50620	56240
—Water	Sq. Ft.	8110	9020	10820	12610	15330	18020	22500	27010	31500	36020	45010	54000	62990	72000	80990	89980
—MBtuh	Lb.	1217	1353	1622	1890	2298	2703	3376	4052	4725	5402	6751	8100	9450	10800	12150	13500
Firing Rate—Oil	Gph	16	18	22	26	31	37	46	54	64	73	91	110	127	146	164	182
—Gas	MBtuh	2450	2740	3280	3830	4650	5460	6840	8200	9560	10920	13670	16400	19120	21900	24600	27300
—Stoker	Lb. per hr.	218	244	291	340	412	485	607	729	850	972	1215	1457	1700	1943	2186	2429
Heating Surface (SBI min)	Sq. Ft.	322	358	429	500	608	715	893	1072	1250	1429	1786	2143	2500	2857	3214	3571
Furnace Volume (SBI min)	Cu. Ft.	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	346.9	390.3	433.6
Furnace Height (SBI min)	In.	31 1/4	31 1/4	37 3/4	44	53 1/2	63 1/2	79 1/2	95 1/2	111 1/2	127 1/2	154 1/2	181 1/2	208 1/2	235 1/2	262 1/2	289 1/2
Firebox Vol. Above Bot. of Water Leg	Cu. Ft.	49.6	54.5	65.3	76.1	89.7	103.5	127.8	151.5	175.2	199.1	244.6	290.1	335.6	381.1	426.6	472.1
Safety Valve Capacity	Lb. steam per hr.	1969	2188	2625	3060	3718	4374	5464	6559	7650	8745	10929	13114	15300	17485	19671	21855

Firing Rates calculated to develop boiler output of 141.5% of SBI Rating.
Based on 150,000 Btu. Oil, 12,000 Btu. Coal.

Dimensions and Data — Inches

Boiler Number	7L178	7L179	7L180	7L181	7L182	7L183	7L184	7L185	7L186	7L187	7L188	7L189	7L190	7L191	7L192	7L193
Shell Diameter—Inside	42	42	48	48	54	54	60	66	72	72	78	84	84	90	90	96
A —Boiler Width Overall	44	44	50	50	56	56	62	68	74	74	80	86	86	94	94	100
B —Boiler Length	80	80	87	87	100 1/4	100 1/4	112	119 1/4	126 1/4	126 1/4	138 1/4	145 1/4	145 1/4	157 1/4	157 1/4	170 1/4
C —Boiler Height	87	87	91 1/4	91 1/4	104	104	113 1/4	119	125 1/4	125 1/4	136 1/4	141 1/4	141 1/4	152 1/4	152 1/4	163 1/4
D —Boiler Length Overall	104	112 1/4	113	113	126 1/4	126 1/4	140	147 1/4	148 1/4	148 1/4	159 1/4	163 1/4	163 1/4	174 1/4	174 1/4	185 1/4
E —Water Line Height	73 1/4	73 1/4	77	77	86 1/4	86 1/4	97	100	107 1/4	107 1/4	115 1/4	118 1/4	118 1/4	124 1/4	124 1/4	130 1/4
F —Water Column Height	71 1/4	71 1/4	75	75	84 1/4	84 1/4	95	98	107 1/4	107 1/4	115 1/4	118 1/4	118 1/4	124 1/4	124 1/4	130 1/4
G —Steam Supply Height	92	92	96 1/4	96 1/4	108	108	118 1/4	123 1/4	133	133	141 1/4	145 1/4	145 1/4	152 1/4	152 1/4	163 1/4
H —Smoke Outlet Height	72	72	75 1/4	75 1/4	85	85	94 1/4	95	106 1/4	106 1/4	113 1/4	116 1/4	116 1/4	124 1/4	124 1/4	130 1/4
J —Coil Connection Height	76 1/4	76 1/4	80	80	90	90	100 1/4	103 1/4	111	111	118 1/4	122 1/4	122 1/4	129 1/4	129 1/4	136 1/4
K —Steam Supply	15	15	18	18	18	21	21	21	21	21	21	21	21	24	24	24
L —Safety Valve	12	12	14	14	14	14	14	14	16	16	16	16	16	16	16	16
M —Firebox Length	23 1/4	23 1/4	28 1/4	28 1/4	34	34	37 1/4	40 1/4	43	43	49	54 1/4	54 1/4	66	66	72 1/4
N —Firebox Width	36 1/4	36 1/4	42 1/4	42 1/4	43 1/4	43 1/4	48 1/4	53 1/4	59 1/4	59 1/4	65	65	65	77	77	82 1/4
P —Firebox Height	32	32	34	34	37 1/4	37 1/4	40 1/4	43	49	49	54 1/4	54 1/4	54 1/4	66	66	72 1/4
Q —Opened Firedoor to Boiler	20	20	22 1/4	22 1/4	22 1/4	22 1/4	26 1/4	26 1/4	29 1/4	29 1/4	29 1/4	29 1/4	29 1/4	29 1/4	29 1/4	29 1/4
R —Surface Blowoff	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
S —Return Height	18	18	18	18	18	18	21	21	21	21	21	21	21	21	21	21
T —Smoke Outlet Diameter	22	22	24	24	28	28	30	31	31	31	35	39	39	41	43	46
U —Steam Supply Size	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
V —Return Size	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
W —Smokebox Depth—Front	10	10	11	11	12	12	12	12	14	14	14	14	14	14	14	14
X —Rear	14	14	15	15	15	15	15	15	16	16	16	16	16	16	16	16
AA—Base—Width	48	48	54	54	60	60	66 1/4	73	79	79	84 1/4	91 1/4	91 1/4	99 1/4	99 1/4	107 1/4
BB —Length	81 1/4	81 1/4	87 1/4	87 1/4	104	104	111 1/4	115 1/4	123 1/4	123 1/4	133 1/4	149 1/4	149 1/4	158 1/4	158 1/4	174 1/4
CC —Height	14	14	14	14	14	14	14	14	17	17	17	17	17	21	21	21
DD—Tube Replacement Space—Front	71	71	77	77	90 1/4	90 1/4	96 1/4	101	108 1/4	108 1/4	116 1/4	122 1/4	121	121	121	121
EE —Rear	67	67	73	73	86 1/4	86 1/4	93 1/4	97	104 1/4	104 1/4	110 1/4	116 1/4	115	115	115	115
FFGG—Firedoor opening in blr. width x height	One 27 1/2" x 13 1/4" Two 16" x 11" Two 20" x 12" Two 23" x 15"															
HH—Centerline blr. to firedoor opening	8 1/2	8 1/2	8 1/2	8 1/2	8 1/2	8 1/2	8 1/2	8 1/2	8 1/2	8 1/2	8 1/2	8 1/2	8 1/2	8 1/2	8 1/2	8 1/2
JJ—Height Doors from Bot. of Boiler	6 1/2	6 1/2	6 1/2	6 1/2	6 1/2	6 1/2	6 1/2	6 1/2	6 1/2	6 1/2	6 1/2	6 1/2	6 1/2	6 1/2	6 1/2	6 1/2
KK—Foundation—Width	36 1/4	36 1/4	42 1/4	42 1/4	48 1/4	48 1/4	53 1/4	59 1/4	65	65	65	65	65	65	65	65
LL—Length	67	67	75 1/4	75 1/4	87 1/4	87 1/4	94 1/4	99 1/4	106 1/4	106 1/4	116 1/4	132 1/4	121	121	121	121
Broaching Dia. One Boiler	22	22	24	24	28	28	30	31	35	35	39	41	43	46	48	50
Stack Diameter	18	18	20	20	24	24	26	28	29	31	31	36	36	40	44	48
—Height	45	45	50	50	55	55	65	70	75	75	85	90	80	100	110	120
Broaching Dia. Two Boilers	27	27	30	30	34	34	36	40	41	44	44	50	54	56	60	63
Stack—Diameter	19	19	20	20	22	22	24	26	27	28	28	32	32	36	40	44
—Height	55	55	60	60	70	70	75	75	80	80	85	100	90	110	120	120
**Outside Surface to Cover	Sq. Ft.	122	132	145	162	180	202	231	265	295	313	375	422	469	503	571
Approx. Weight	Lbs.	5400	5800	6700	7600	8800	10000	11800	13600	15300	17000	20100	23200	26100	28400	32300

*150 Lb. American Standard Flanges

**Includes Front Head and Smokebox.

†One or more valves furnished depending on required capacity.

equipment available on

Kewanee type C boilers

standard

optional

all 7L-100 boilers	Steel Bases 14" 7L-178-7L183 17" 7L184-7L188 21" 7L-189-7L193 Rear smoke outlet with clean out openings Rear 16" diameter access opening Rear Pyrex observation port Front flue doors with insulation Flue cleaner and handle Washout plug wrench Washout plugs Manhole on 7L-182 and larger	Extra base height (top) (right hand side) (left hand side) smoke outlet Structural steel supports Bearing plate brackets Insulation angles Wing induced draft fan Explosion relief door Plain steel damper for smokebox Bearing or quadrant damper Additional height firebox Sleeves through water leg Special openings in boiler Water heating coils Opening for coil other than Kewanee Kewanee boiler conditioning compound
stoker boilers	Fire door assembly	
hand fired boilers	Fire door assembly Ash pit door assembly Shaking grates Hoe, poker, and slice bar Damper regulator (Steam boiler only)	
steam boilers	Safety valve(s) Steam gage with siphon and cock Kewanee water column with hand operated water gage and try cock assembly (chain operated on 7L-186 and larger)	Hi and lo water alarm column Chain operated water gage Chain operated try cock Inclined water gage glass
water boilers	Relief valves	Higher than 30 lbs. water working pressure

typical type C 7L series boiler specifications

The contractor shall furnish and install . . . No. 7L . . . Kewanee Type C Boiler(s) for (oil) (gas) (stoker) (hand fired) firing. Boiler(s) shall contain not less than . . . sq. feet of heating surface and have an SBI steam rating of . . . sq. feet.

Boiler shall be designed to develop 141.5% of the SBI rating indicated above and shall have minimum of . . . cu. ft. of firebox volume above the bottom of the water leg. Boiler shall have arched crown sheet, shall be of three pass firebox design, and constructed in accordance with the A.S.M.E. code for (15 lb. steam) (30 lb. water). Boiler shall be inspected during construction by an authorized inspector and after completion shall be subjected to a 60 lb. hydrostatic test and stamped with all identifying markings and symbols as required by the latest edition of the A.S.M.E. code.

Boiler to be furnished with . . . in. high steel base, cast iron front flue

doors of size permitting easy access to all tubes and lined with refractory securely keyed in place.

Rear smoke box shall have cleanout openings on both sides with smoke outlet at (rear) (top) (r.h. side) (l.h. side) of smokebox. Round access opening and observation port in rear water leg.

Boiler trimmings shall consist of the following:

For Steam: Safety valve(s), steam gage with siphon and cock, Kewanee water column with hand operated water gage and try cock assembly—chain operated on 7L-186 and larger.

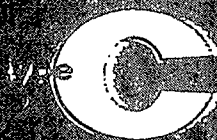
For Water: Relief valve, or relief valves and safety valves as required by A.S.M.E. code for low pressure boilers.

NOTE: When a high setting and independent supporting structure is desired, use either of the following options:

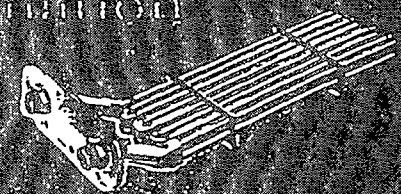
Structural Steel Supports: Boiler(s) to be furnished less steel base(s) but with structural steel supports for setting boiler(s) independently of masonry base(s). Distance from boiler room floor to bottom of water leg to be
Structural supports to consist of four H-columns with base plates, one pair each side of boiler and eight pairs of hot-formed steel brackets securely fastened to the boiler to provide lateral stability according to A.S.M.E. code

construction. Each H-column shall be securely bolted to two pairs of boiler brackets.

Bearing Plate Brackets: Boiler(s) to be furnished less steel bases but with bearing plate brackets for supporting boiler on masonry base(s). Bearing brackets to consist of two pairs of steel bearing plates, each with necessary gussets, welded to the boiler at the bottom of water leg. Each gusset to have a 1/2 in. hole for wiring insulation to the boiler.

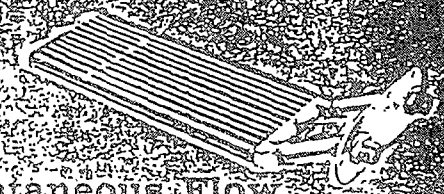


Coil Selection Information



Indirect Heating Type—Storage Tank Operation

FAMILIES OR BATHS	2	3	4	6	8	10	12	14	16	19	22	24	28	32	36	40	44
Gallons 40° to 140°F BW 120°F	60	90	120	180	240	300	360	420	480	550	640	720	840	960	1080	1200	1320
in 40° to 140°F BW 212°F	100	150	200	300	400	500	600	700	800	933	1067	1200	1400	1500	1800	2000	2200
3 Hours 40° to 180°F BW 210°F	48	72	96	144	192	240	288	336	384	448	512	576	672	768	864	960	1096
Coil Number—Std.	KT-601	KT-901	KT-1201	KT-1801	KT-2401	KT-3001	KT-3601	KT-4201	KT-4801	KT-5501	KT-6401	KT-7201	KT-8401	KT-9601	KT-10801	KT-12001	KT-13201
"C" Coil 7L-184 only												720-C1	840-C1	960-C1	1080-C1	1200-C1	1320-C1
Inlet & Outlet Diameter—Inches	1	1	1 1/2	1 1/2	2	2	2	2	2	2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2
Overall Length—Inches—Std.	29	30	24	30	29	32	38	41	44	50	55	65	75	85	95	105	115
Overall Length—Inches—"C" Coil												64	60	66	75	81	90
7L-178—7L-183																	
7L-184																	
7L-185—7L-187																	
7L-188—7L-190																	
7L-191—7L-192																	
7L-193																	



Indirect Heating Type—Instantaneous Flow

RESIDENTIAL RATINGS—Based on intermittent draw of hot water with short peak demands.

FAMILIES OR BATHS	2	4	6	15	25	35	45	52	65	78	92	125	170	190	140	150	160	170	180	190
Gallons Per Hour 40° to 140°F BW 180°F	50	100	150	400	600	700	800	900	1030	1240	1500	2000	2700	3100	1400	2100	2220	2310	2400	2500

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COMMERCIAL RATINGS—Based on continuous draw of hot water with long peak demands.

Gallons 40° to 140°F BW 180°F	2	4	6	15	25	35	45	52	65	78	92	125	170	190	140	150	160	170	180	190
Per Hour 40° to 140°F BW 212°F	21	42	63	160	240	280	320	360	408	496	592	784	1064	1216	560	840	888	924	960	1000
Hour 40° to 180°F BW 210°F	14	28	42	107	160	192	224	256	288	344	416	544	736	848	373	557	588	608	627	646
Coil No.—Std.	KT-601	KT-901	KT-1201	KT-1801	KT-2401	KT-3001	KT-3601	KT-4201	KT-4801	KT-5501	KT-6401	KT-7201	KT-8401	KT-9601	KT-10801	KT-12001	KT-13201	KT-14401	KT-15601	KT-16801
"C" Coil 7L-184 Only															720-C1	840-C1	960-C1	1080-C1	1200-C1	1320-C1
Inlet & Outlet Dia.—Inches	1	1	1 1/2	1 1/2	2	2	2	2	2	2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2
Overall Length—Inches—Std.	29	30	24	30	29	32	38	41	44	50	55	65	75	85	95	105	115	125	135	145
Overall Length—Inches—"C" Coil															64	60	66	75	81	90
7L-178—7L-183																				
7L-184																				
7L-185—7L-187																				
7L-188—7L-190																				
7L-191—7L-192																				
7L-193																				

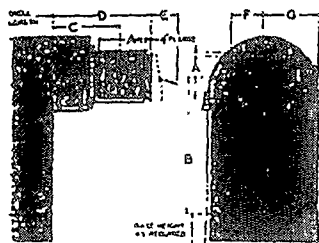
Read across top section of table to find desired coil capacity. Read down column until you reach correct coil number. The number at the bottom of the column represents the maximum quantity of coils that will accommodate the desired capacity.

induced draft fans

WING DRAFT INDUCERS with variable speed motors provide precise draft control at all times... eliminate the need for tall stacks with Kewanee Type "C" boilers. AIR COOLED BEARINGS—pre-sealed and pre-lubricated—require no lubrication. SPRING MOUNTED MOTOR—dustproof, multispeed,

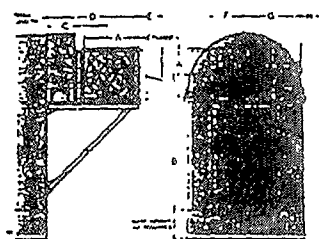
brushless... maintains correct fan belt tension. PERMANENT MOUNTING—furnished for either horizontal right or left, vertical or rear discharge as specified. Barometric dampers optional at extra cost.

Horizontal right or left discharge—mounted to smokebox



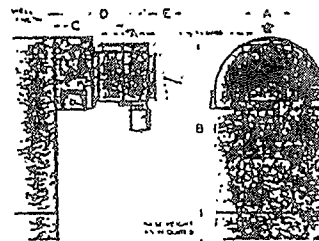
boiler number	7L178	7L179	7L180	7L181	7L182	7L183	7L184
inducer number*	140-W	140-W	190-W	190-W	190-W	190-W	190-W
fan motor size							
—60 cycle—1 phase—110-220 V	hp	1/4	1/4	1/4	1/4	1/4	1/4
—60 cycle—2 or 3 phase—208-220-250 V	hp	1/4	1/4	1/4	1/4	1/4	1/4
—60 cycle—2 or 3 phase—440-480-550 V	hp	1/4	1/4	1/4	1/4	1/4	1/4
A—outlet size	14	14	19	19	19	19	19
B—bottom boiler to center of outlet	55 1/4	55 1/4	59 1/4	59 1/4	61 1/4	61 1/4	61 1/4
C—boiler head to center of outlet	26 1/4	26 1/4	30	30	30	30	30
D—overall space requirement	37 1/4	37 1/4	43 1/4	43 1/4	43 1/4	43 1/4	44 1/4
E—barometric damper	9	9	12	12	12	12	12
F—boiler CL to outlet	10 1/4	10 1/4	14 1/4	14 1/4	14 1/4	14 1/4	14 1/4
G—boiler CL to motor end	23	23	26 1/4	26 1/4	26 1/4	26 1/4	26 1/4
H—fan removal clearance	19 1/4	19 1/4	27	27	27	27	27
I—access opening width	10	10	10	10	10	10	10
J—access opening length	24	24	24	24	27	27	29

Horizontal right or left discharge—structural mounting support



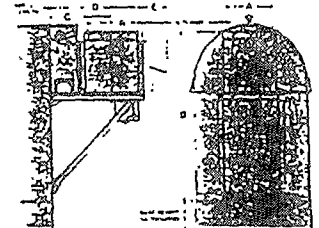
boiler number	7L185	7L186	7L187	7L188	7L189	7L190	7L191	7L192	7L193
inducer number*	28DL-W	28DL-W	28DL-W	28DL-W	28DL-W	28DL-W	28DL-W	28DL-W	28DL-W
fan motor size									
—60 cycle—1 phase—110-220 V	hp	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4
—60 cycle—2 or 3 phase—208-220-250 V	hp	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4
—60 cycle—2 or 3 phase—440-480-550 V	hp	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4
A—outlet size	28	28	28	28	28	28	28	28	28
B—bottom boiler to center of outlet	77 1/4	83	83	89	106	106	113	124 1/4	133
C—boiler head to center of outlet	35 1/4	39 1/4	39 1/4	39 1/4	39 1/4	39 1/4	43 1/4	49	49
D—overall space requirement	53 1/4	57 1/4	57 1/4	57 1/4	57 1/4	57 1/4	61 1/4	72 1/4	72 1/4
E—barometric damper	15	15	15	15	15	15	15	18 1/4	18 1/4
F—boiler CL to outlet	20 1/4	20 1/4	20 1/4	20 1/4	20 1/4	20 1/4	20 1/4	23 1/4	23 1/4
G—boiler CL to motor end	34 1/4	34 1/4	34 1/4	34 1/4	34 1/4	34 1/4	34 1/4	38 1/4	45 1/4
H—fan removal clearance	35 1/4	35 1/4	35 1/4	36	36	36	36	46	46
I—access opening width	10	12	12	12	12	12	14	14	14
J—access opening length	33	33	33	33	33	33	33	39	39

Vertical discharge—mounted to smokebox



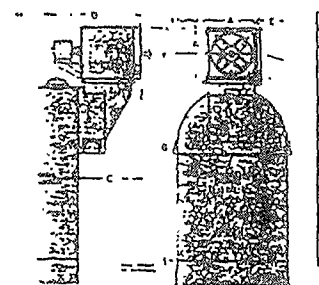
boiler number	7L178	7L179	7L180	7L181	7L182	7L183	7L184
inducer number*	140-W	140-W	190-W	190-W	190-W	190-W	190-W
fan motor size							
—60 cycle—1 phase—110-220 V	hp	1/4	1/4	1/4	1/4	1/4	1/4
—60 cycle—2 or 3 phase—208-220-250 V	hp	1/4	1/4	1/4	1/4	1/4	1/4
—60 cycle—2 or 3 phase—440-480-550 V	hp	1/4	1/4	1/4	1/4	1/4	1/4
A—outlet size	14	14	19	19	19	19	19
B—bottom boiler to center of outlet	55 1/4	55 1/4	59 1/4	59 1/4	61 1/4	61 1/4	61 1/4
C—boiler head to center of outlet	26 1/4	26 1/4	30	30	30	30	30
D—overall space requirement	37 1/4	37 1/4	43 1/4	43 1/4	43 1/4	43 1/4	44 1/4
E—barometric damper	9	9	12	12	12	12	12
F—boiler CL to outlet	10 1/4	10 1/4	14 1/4	14 1/4	14 1/4	14 1/4	14 1/4
G—boiler CL to motor end	23	23	26 1/4	26 1/4	26 1/4	26 1/4	26 1/4
H—fan removal clearance	19 1/4	19 1/4	27	27	27	27	27
I—access opening width	10	10	10	10	10	10	10
J—access opening length	24	24	24	24	27	27	29

Vertical discharge—structural mounting support



boiler number	7L185	7L186	7L187	7L188	7L189	7L190	7L191	7L192	7L193
inducer number*	28DL-W	28DL-W	28DL-W	28DL-W	28DL-W	28DL-W	28DL-W	28DL-W	28DL-W
fan motor size									
—60 cycle—1 phase—110-220 V	hp	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4
—60 cycle—2 or 3 phase—208-220-250 V	hp	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4
—60 cycle—2 or 3 phase—440-480-550 V	hp	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4
A—outlet size	28	28	28	28	28	28	28	28	28
B—bottom boiler to center of outlet	98	103 1/4	103 1/4	109	126 1/4	126 1/4	133 1/4	147 1/4	156
C—boiler head to center of outlet	35 1/4	39 1/4	39 1/4	39 1/4	39 1/4	39 1/4	43 1/4	49	49
D—overall space requirement	53 1/4	57 1/4	57 1/4	57 1/4	57 1/4	57 1/4	61 1/4	72 1/4	72 1/4
E—barometric damper	15	15	15	15	15	15	15	18 1/4	18 1/4
F—boiler CL to outlet	20 1/4	20 1/4	20 1/4	20 1/4	20 1/4	20 1/4	20 1/4	23 1/4	23 1/4
G—boiler CL to motor end	34 1/4	34 1/4	34 1/4	34 1/4	34 1/4	34 1/4	34 1/4	38 1/4	45 1/4
H—fan removal clearance	35 1/4	35 1/4	35 1/4	36	36	36	36	46	46
I—access opening width	10	12	12	12	12	12	14	14	14
J—access opening length	33	33	33	33	33	33	33	39	39

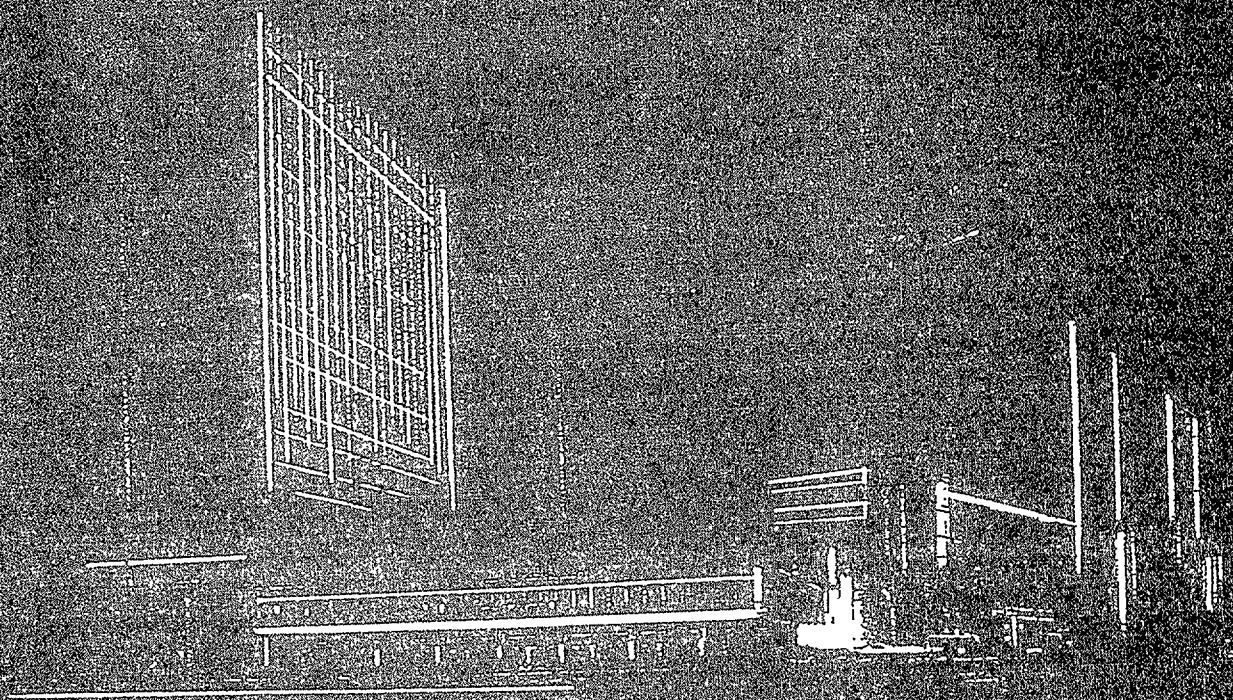
Rear discharge—mounted on top of smokebox



boiler number	7L178	7L179	7L180	7L181	7L182	7L183	7L184	7L185	7L186	7L187	7L188	7L189	7L190	7L191	7L192	7L193
inducer number*	140-W	140-W	190-W	190-W	190-W	190-W	190-W	28DL-W	28DL-W	28DL-W	28DL-W	28DL-W	28DL-W	28DL-W	28DL-W	28DL-W
fan motor size																
—60 cycle—1 phase—110-220 V	hp	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4
—60 cycle—2 or 3 phase—208-220-250 V	hp	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4
—60 cycle—2 or 3 phase—440-480-550 V	hp	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4
A—outlet size	14	14	19	19	19	19	19	28	28	28	28	28	28	28	28	28
B—bottom boiler to center of outlet	65 1/4	65 1/4	94	94	105 1/4	105 1/4	113	122 1/4	132	132	140	161	161	172	183	194 1/4
C—boiler head to center of outlet	27	27	27 1/4	27 1/4	27 1/4	27 1/4	31	31	31	31	31	31	31	31	31	31
D—overall space requirement	33 1/4	33 1/4	41	41	44 1/4	44 1/4	44 1/4	55	55	55	56 1/4	59	59	59	68 1/4	68 1/4
E—barometric damper	9	9	12	12	12	12	15	15	15	15	15	15	15	15	18 1/4	18 1/4
F—boiler CL to outlet	19 1/4	19 1/4	27	27	27	27	35 1/4	35 1/4	35 1/4	35 1/4	36	36	36	36	46	46
G—boiler CL to motor end	27	27	27	27	27	27	30	30	30	30	30	30	30	30	39	39
H—fan removal clearance	19 1/4	19 1/4	27	27	27	27	30	30	30	30	30	30	30	30	39	39
I—access opening width	10	10	10	10	10	10	10	10	10	10	10	10	10	10	14	14
J—access opening length	24	24	27	27	27	27	30	30	30	30	30	30	30	30	39	39

*Fan sizes based on sea level elevation, for lifting up to and including 161.5% of SBI rating with oil or gas, or 120% with stoker.
Note: Stock and broaching weights must be supported independently. Orders must specify line voltage, cycle and phase.

Did you know...



AMERICAN Standard
INDUSTRIAL DIVISION

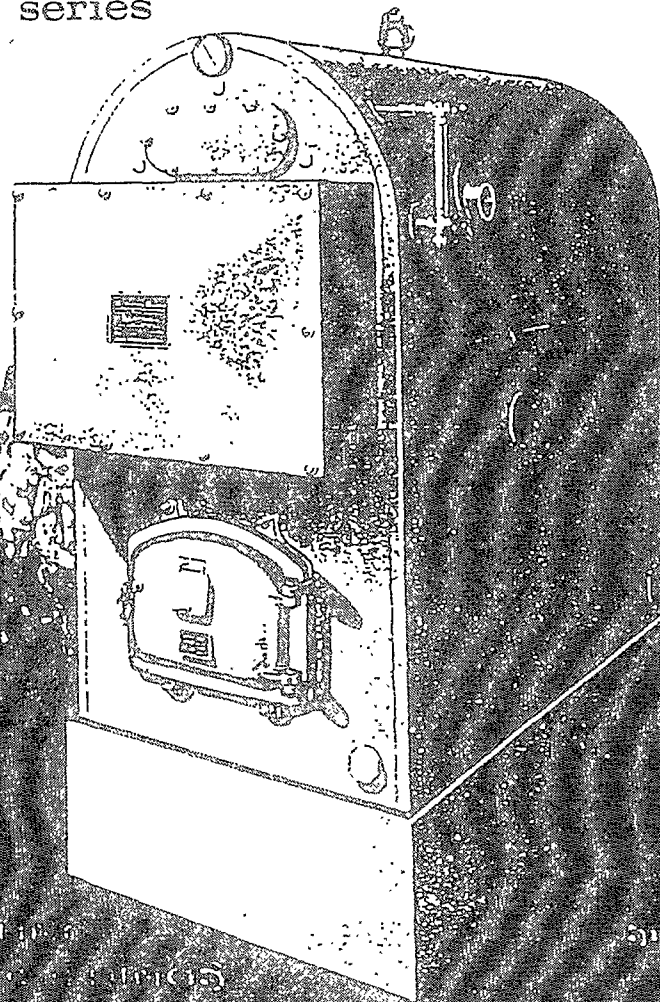
22486

KEWANEE® BOILER

square·heat

R

series



High efficiency
Low maintenance
Long life

Available in
gas or oil

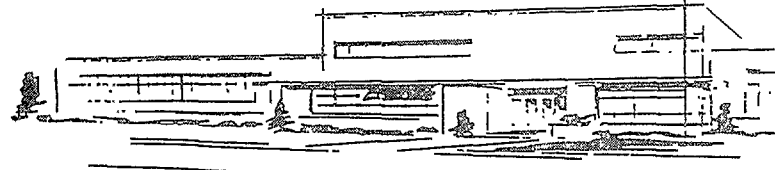
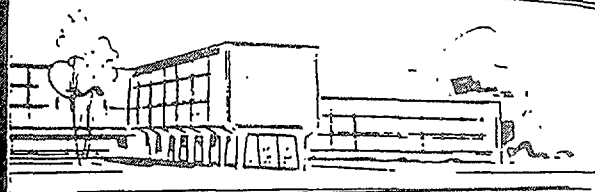
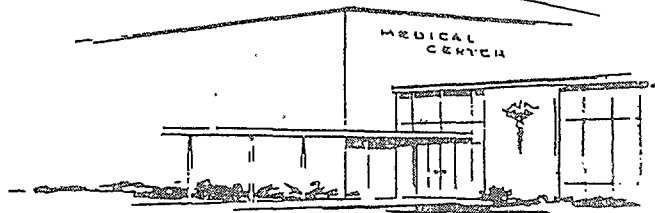


AMERICAN Standard
INDUSTRIAL DIVISION

22487



AMERICAN-Standard



square·heat type R series

12 sizes—243,000 to 1,350,000 Btu/h

R

KEWANEE BOILER

versatility... ability

to burn any fuel... ability to deliver efficiently far beyond rated capacity... makes this boiler ideal for any medium size building. Kewanee Type R Boilers are giving economical, trouble-free service in thousands of office and store buildings, schools, motels, hospitals, small factories, etc.

It operates at top efficiency with oil, gas, or coal. Coal may be hand or stoker fired. Change from one fuel to another, or from mechanical to hand firing, or back again, can be made quickly and inexpensively.

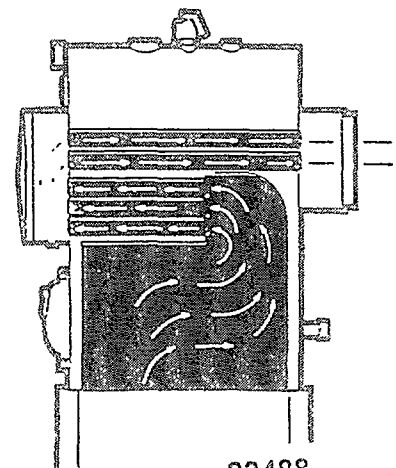
Teamed with radiant baseboards, wall, floor or ceiling coils and panels, convectors or conventional radiators, Kewanee Square Heat Type R provides a sturdy steel heart for the system. It can be pushed far beyond rated capacity yet operate at full efficiency.

The result of nearly a century of experience, this boiler offers the medium size building all the heating dependability and economy for which Kewanee Boilers have always been famous.

A.S.M.E. and S.B.I. Code requirements have been followed to the last detail. But more than that, Kewanee guarantees performance well beyond any code requirements.

three pass design

Kewanee 3 pass design assures maximum heat transfer from fuel to water. The large firebox provides complete mixing of fuel and air. Combustion is complete—all fuel burns—before the hot gases enter the fire tubes. In the first pass gases travel from front to rear in the firebox. The second pass is from rear to front in the bottom bank or direct tubes. The third pass is from front to rear in the return tubes. This longer gas travel transfers maximum BTU's to water.



22488

take a GOOD LOOK at a GOOD BOILER

Note these features.

The husky shell tells of extra sturdiness. Inside you see the many features that pack so much efficiency into comparatively small space.

At every level of rated capacity... even at loads far above nominal ratings... Kewanee Square Heat Type R operates at full efficiency.

Hydrostatically tested at 60 psi, it operates up to 15 psi steam or 30 psi hot water.

The smoke hood has two cleanout openings and a circular rear outlet that fits standard size smoke pipe.

Steel flue access cover with insulation securely keyed in place. (Stoker and hand fired boilers have cast iron flue doors and frames).

Spinner blades in oil-gas boilers 3R1 to 3R8 inclusive swirl hot gases against tube walls assuring maximum heat transfer.

Shell is extra heavy, quality steel plate for strength and dependability.

Insulated cast iron fire door. Stoker and hand fired boilers have cast iron fire doors with liners and door slides for secondary air.

Cleanout openings with hollow brass plugs and rubber gaskets located at each corner.

Coil opening provides for installation of either tank type or instantaneous water heating coil.

150 lb. American Standard flange on Nos. 3R9 thru 3R12.

High and abundant steam space assures ample reserve of dry steam.

Disengaging area at the water surface is unbroken, and large enough to prevent priming.

Longer gas travel through two passes of heavy gauge tubes is a plus value in secondary heating surface that assures greater fuel savings.

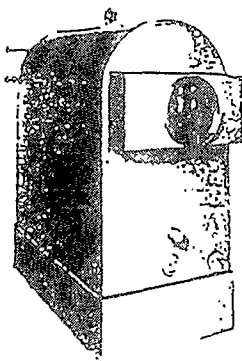
Optional—wrap-around steel jacket with mineral fiber insulation.

Rapid circulation in wide, free waterways sweeps steam bubbles up without turbulence to the unbroken disengaging area at the water line.

Large, high firebox provides plenty of space for complete, economical combustion.

Exceptionally sturdy steel base is reversible for front or rear firing.

Crown sheet arched upward affords greater height for better combustion. Also it is self training and cleaning.



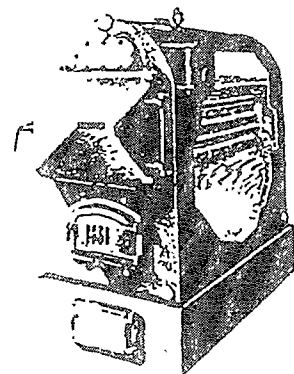
REAR VIEW SHOWING SMOKE OUTLET AND OBSERVATION OPENING

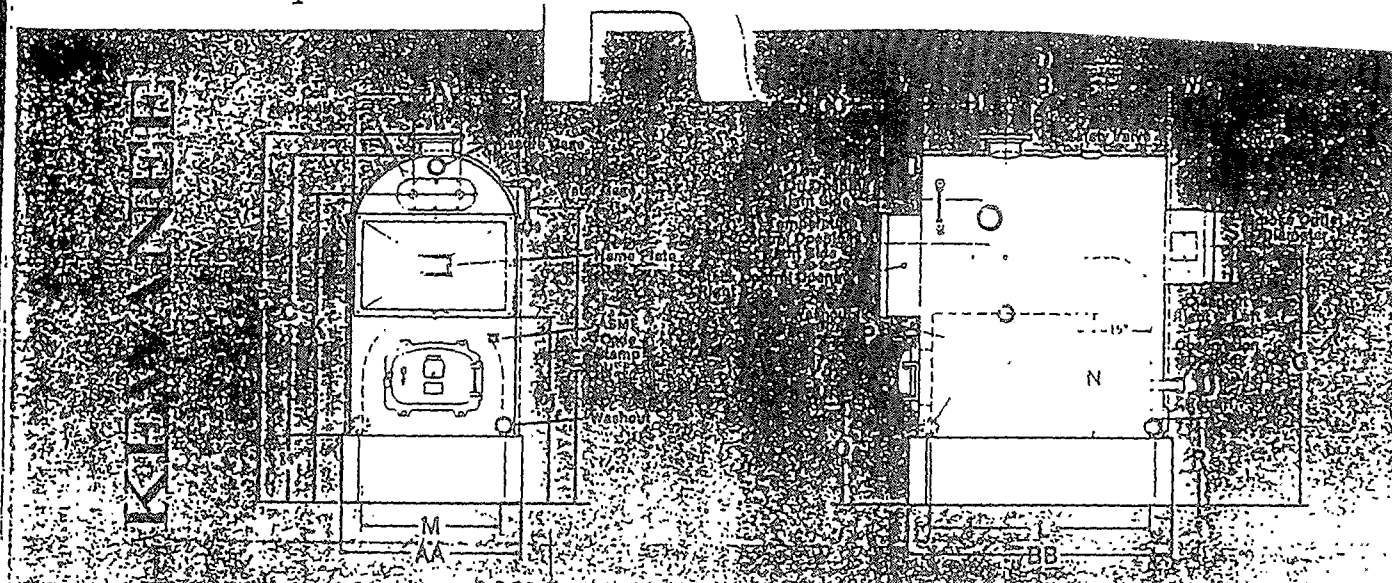
Round rear smoke outlet, in standard pipe size, provided for ease in making breeching connection. (Top outlet optional.) Cleanout furnished on side of smoke hood.

Two inch capped tube welded in rear water leg to provide observation opening. A one-eighth inch plugged opening is located in the tube for draft gauge connection.

FRONT VIEW SHOWING DOORS FOR STOKER OR HAND FIRING

Designed for top efficiency when stoker or hand fired. Type R Boilers for solid fuel firing are provided with a cast iron, latch-type flue door... cast iron fire door with liner and secondary air slides.





ratings—mechanically fired—oil, gas or stoker

BOILER NUMBER	3R1	3R2	3R3	3R4	3R5	3R6	3R7	3R8	3R9	3R10	3R11	3R12
SBI Net Rating—Steam	Sq. Ft. 1010	1240	1460	1690	2020	2480	2930	3380	3940	4500	5060	5620
Steam or Water	MBtuh 243	297	351	405	486	594	702	810	945	1080	1215	1350
Gross Output	MBtuh 324	376	458	540	648	792	936	1080	1260	1440	1620	1800
*Firing Rate—Oil	Gph 7.9	9.5	11.2	12.8	15.8	19.1	22.4	25.7	30.5	35.3	40.1	44.9
—Gas	MBtuh 405	495	595	675	810	990	1170	1350	1575	1800	2025	2250
—Stoker	Lb. per hr 35	44	52	60	72	88	104	120	140	160	180	200
Heating Surface (SBI min)	Sq. Ft. 51	65	78	98	129	153	177	206	236	265	294	324
Furnace Volume (SBI min)	Cu. Ft. 3.2	10.0	11.8	13.6	16.4	20.0	23.6	27.3	31.8	35.3	40.9	45.4
Firebox Volume above Mudring	Cu. Ft. 8.8	10.4	12.0	13.5	17.2	20.1	23.0	26.3	32.6	37.0	41.1	45.3
Safety Valve Capacity	Lb. Steam per hr. 324	296	458	540	648	792	936	1080	1260	1440	1620	1800

*Firing rates calculated to develop gross output based on 140,000 Btu Oil, 12,000 Btu Coal.

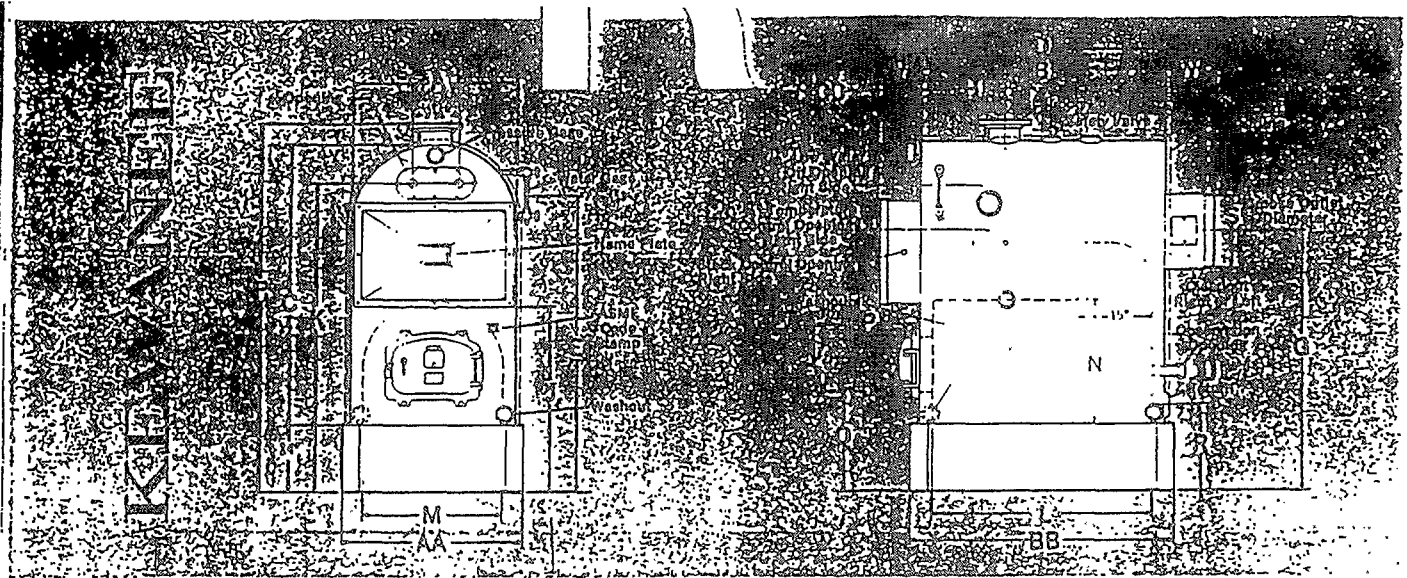
dimensions and data—inches

BOILER NUMBER	3R1	3R2	3R3	3R4	3R5	3R6	3R7	3R8	3R9	3R10	3R11	3R12
A —Boiler Width Overall	39 1/2	39 1/2	39 1/2	39 1/2	35	35	35	35	41 1/2	41 1/2	41 1/2	41 1/2
B —Boiler Length	39 1/2	35 1/2	35 1/2	35 1/2	42 1/2	50 1/2	53	57	55 1/2	61 1/2	61 1/2	61 1/2
C —Boiler Height	65 1/2	65 1/2	65 1/2	65 1/2	73	73	73	73	72	72	72	72
D —Boiler Length Overall	39 1/2	35 1/2	35 1/2	35 1/2	61 1/2	69 1/2	77	86	77 1/2	85 1/2	93	100 1/2
E —Water Line Height	55 1/2	55 1/2	55 1/2	55 1/2	62 1/2	62 1/2	62 1/2	62 1/2	70 1/2	70 1/2	70 1/2	70 1/2
F —Steam or Water Supply Height	66 1/2	66 1/2	66 1/2	66 1/2	73 1/2	73 1/2	73 1/2	73 1/2	86	86	86	86
G —Smoke Outlet Height	48	48	48	48	54	54	54	54	60	60	60	60
H —Steam or Water Supply	10	12	12	16	14	17	19	22	16	18	20	24
J —Floor to bottom of smokebox	34 1/2	34 1/2	34 1/2	34 1/2	39	39	39	39	44 1/2	44 1/2	44 1/2	44 1/2
K —Coil Connection Height	57 1/2	57 1/2	57 1/2	57 1/2	64 1/2	64 1/2	64 1/2	64 1/2	72 1/2	72 1/2	72 1/2	72 1/2
L —Firebox—Length	25 1/2	31 1/2	37 1/2	43 1/2	37 1/2	45	53	62	51	59	66 1/2	74
M ——Width	24	24	24	24	28	28	28	28	35	35	35	35
N ——Height	21 1/2	21 1/2	21 1/2	21 1/2	26	26	26	26	31	31	31	31
P —Opened Firedoor to Boiler	21 1/2	21 1/2	21 1/2	21 1/2	21 1/2	21 1/2	21 1/2	21 1/2	27	27	27	27
Q —Floor to bottom of Firedoor	19 1/2	19 1/2	19 1/2	19 1/2	21	21	21	21	21 1/2	21 1/2	21 1/2	21 1/2
R —Return Height	17 1/2	17 1/2	17 1/2	17 1/2	18	18	18	18	18	18	18	18
S —Smoke Outlet Diameter	12	12	12	12	15	15	15	15	18	18	18	18
T —Steam Supply Size	4	4	4	4	4	4	4	4	6**	6**	6**	6**
U —Return Size	3	3	3	3	4	4	4	4	4	4	4	4
V —Smokebox Depth—Front	8	8	8	8	9	9	9	9	10	10	10	10
W ——Rear	8	8	8	8	8	8	8	8	9	9	9	9
AA—Base—Width	32 1/2	32 1/2	32 1/2	32 1/2	36 1/2	36 1/2	36 1/2	36 1/2	44	44	44	44
BB— —Length	34 1/2	40 1/2	46 1/2	52 1/2	46 1/2	54 1/2	62	71	60	68	75 1/2	83
CC—Tube Replacement Space Front & Rear	31 1/2	37 1/2	43 1/2	49 1/2	43 1/2	51 1/2	59	68	57	65	73	83
Chimney—Diameter	10	11	12	12	13	14	15	16	15	17	18	18
—Height	30	35	35	40	35	40	40	45	35	40	45	50
Outside Surface to Cover	Sq. Ft. 33	43	48	53	58	65	73	82	82	90	99	107
Approximate Weight, Unjacketed	Lb. 1500	1650	1800	1950	2250	2475	2725	3000	3375	3550	3950	4200

**150 Lb. American Standard Flange, Eight 1/2 in. bolts, 9 1/2 in. bolt circle.

*For other base heights add to vertical dimensions F, K, J, E, Q, R and G.

Bases of 20, 24 and 30 in. height available for mechanical firing at additional cost.



ratings—mechanically fired—oil, gas or stoker

BOILER NUMBER		3R1	3R2	3R3	3R4	3R5	3R6	3R7	3R8	3R9	3R10	3R11	3R12
SBI Net Rating—Steam	Sq. Ft.	1010	1240	1460	1590	2020	2280	2930	3280	3940	4500	5060	5620
Steam or Water	MBtuh	243	297	351	405	486	594	702	810	945	1080	1215	1350
Gross Output	MBtuh	324	396	468	540	648	792	936	1080	1260	1440	1620	1800
*Firing Rate—Oil	Gph	2.9	3.5	4.2	4.8	5.8	7.1	8.4	9.6	11.2	12.9	14.5	16.1
—Gas	MBtuh	405	495	585	675	810	990	1170	1350	1575	1800	2025	2250
—Stoker	Lb. per hr	35	44	52	60	72	88	104	120	140	160	180	200
Heating Surface (SBI min)	Sq. Ft.	53	65	77	88	106	129	153	177	206	236	265	294
Furnace Volume (SBI min)	Cu. Ft.	3.2	10.0	13.8	13.6	16.4	20.0	23.6	27.3	31.8	36.3	40.9	45.4
Firebox Volume above Mudring	Cu. Ft.	8.8	10.4	12.0	13.5	17.2	20.1	23.0	26.3	32.6	37.0	41.1	45.3
Safety Valve Capacity	Lb. Steam per hr.	324	396	468	540	648	792	936	1080	1260	1440	1620	1800

*Firing rates calculated to develop gross output based on 140,000 Btu Oil, 12,000 Btu Coal.

dimensions and data—inches

BOILER NUMBER		3R1	3R2	3R3	3R4	3R5	3R6	3R7	3R8	3R9	3R10	3R11	3R12
A —Boiler Width Overall		30 1/2	30 1/2	30 1/2	30 1/2	35	35	35	35	41 1/2	41 1/2	41 1/2	41 1/2
B —Boiler Length		30 1/2	35 1/2	42 1/2	48 1/2	42 1/2	50 1/2	53	57	55 1/2	64 1/2	73	79 1/2
C —Boiler Height		65 1/2	65 1/2	65 1/2	65 1/2	73	73	73	73	82	82	82	82
D —Boiler Length Overall		48 1/2	54 1/2	60 1/2	66 1/2	61 1/2	69 1/2	77	85	77 1/2	85 1/2	93	100 1/2
E —Water Line Height		55 1/2	55 1/2	55 1/2	55 1/2	62 1/2	62 1/2	62 1/2	62 1/2	70 1/2	70 1/2	70 1/2	70 1/2
F —Steam or Water Supply Height		66 1/2	66 1/2	66 1/2	66 1/2	73 1/2	73 1/2	73 1/2	73 1/2	86	86	86	86
G —Smoke Outlet Height		48	48	48	48	54	54	54	54	60	60	60	60
H —Steam or Water Supply		10	12	14	16	14	17	19	22	16	18	20	24
J —Floor to bottom of smokebox		34 1/2	34 1/2	34 1/2	34 1/2	39	39	39	39	44 1/2	44 1/2	44 1/2	44 1/2
K —Coil Connection Height		57 1/2	57 1/2	57 1/2	57 1/2	64 1/2	64 1/2	64 1/2	64 1/2	72 1/2	72 1/2	72 1/2	72 1/2
L —Firebox—Length		35 1/2	31 1/2	37 1/2	43 1/2	37 1/2	45	53	62	51	59	66 1/2	74
M — —Width		34	24	24	24	28	28	28	28	35	35	35	35
N — —Height		21 1/2	21 1/2	21 1/2	21 1/2	26	26	26	26	31	31	31	31
P —Opened Firedoor to Boiler		21 1/2	21 1/2	21 1/2	21 1/2	21 1/2	21 1/2	21 1/2	21 1/2	27	27	27	27
O —Floor to bottom of Firedoor		19 1/2	19 1/2	19 1/2	19 1/2	21	21	21	21	21 1/2	21 1/2	21 1/2	21 1/2
R —Return Height		17 1/2	17 1/2	17 1/2	17 1/2	18	18	18	18	18	18	18	18
S —Smoke Outlet Diameter		12	12	12	12	15	15	15	15	18	18	18	18
T —Steam Supply Size		4	4	4	4	4	4	4	4	6**	6**	6**	6**
U —Return Size		3	3	3	3	4	4	4	4	4	4	4	4
V —Smokebox Depth—Front		8	8	8	8	9	9	9	9	10	10	10	10
W — —Rear		8	8	8	8	8	8	8	8	9	9	9	9
AA —Base—Width		32 1/2	32 1/2	32 1/2	32 1/2	36 1/2	36 1/2	36 1/2	36 1/2	44	44	44	44
BB — —Length		34 1/2	40 1/2	46 1/2	52 1/2	46 1/2	54 1/2	62	71	60	68	75 1/2	83
CC —Tube Replacement Space Front & Rear		31 1/2	37 1/2	43 1/2	49 1/2	43 1/2	51 1/2	59	68	57	65	73	83
Chimney—Diameter		10	11	12	12	13	14	15	16	15	17	18	18
—Height	Ft.	30	35	35	40	35	40	40	45	35	40	45	50
Outside Surface to Cover	Sq. Ft.	33	43	48	53	58	65	73	82	82	90	99	107
Approximate Weight, Unracketed	Lb.	1500	1650	1800	1950	2250	2475	2725	3000	3375	3550	3950	4200

**150 Lb. American Standard Flange. Eight 3/4 in. bolts. 9 1/2 in. bolt circle.

For other base heights add to vertical dimensions F, K, J, E, Q, R and G.

Bases of 20, 24 and 30 in. height available for mechanical firing at additional cost.



AMERICAN-Standard
INDUSTRIAL DIVISION

standard equipment

optional equipment

ALL 3R SERIES BOILERS

- | | |
|--|--|
| 1. 14" high steel base | 1. Extra base heights—20", 24" and 30" |
| 2. Rear smokebox with circular rear outlet | 2. Wrap-around insulating jacket |
| 3. Rear observation opening | 3. Water heating coils |
| 4. Flue cleaner with handle | 4. Water heater tapings |
| 5. Washout plugs | 5. Wing induced draft fan |
| 6. Washout plug wrench | 6. Rear smokebox with top outlet |

OIL AND GAS FIRED BOILERS

1. Steel access flue cover with insulation
2. Cast iron firedoor with insulation
3. Spinner blades for 3R1 thru 3R7—
Direct tubes only for 3R8

STOKER AND HAND FIRED BOILERS

1. Cast iron flue door with insulation
2. Cast iron firedoor with liner and slides
3. Shaking grates and ash door (hand fired only)

STEAM BOILERS

- | | |
|------------------------------------|--------------------------------|
| 1. Safety valve | |
| 2. Compound steam and vacuum gauge | 1. No. 767MM low water cut off |
| 3. Water gauge and glass | |

WATER BOILERS

- | | |
|---|--------------------------------|
| 1. Relief valve(s) | 1. No. 63BMM low water cut off |
| 2. Combination altitude gauge and thermometer | |

Typical Square-heat Type R Specifications

The contactor shall furnish and install No. 3R Kewanee Square-Heat Type R Boiler(s) for (oil) (gas) (stoker) (hand fired) firing. Boiler(s) shall contain not less than sq. ft. of heating surface and have a net SBI rating of sq. ft. Not less than cu. ft. firebox volume above mud ring.

Boiler shall be of three pass firebox design and constructed in accordance with the A.S.M.E. Code for (15 lb. steam) (30 lb. water). Boiler shall be inspected during construction by an authorized inspector and after completion shall be subjected to a 60 lb. hydrostatic test and stamped with all identifying markings and symbols as required by the latest edition of the A.S.M.E. Code.

Boiler to be furnished with in. high steel base. Front flue access cover with refractory securely keyed in place and of size permitting easy access to all firetubes. Rear smokebox

shall have a cleanout opening on the side and be provided with a circular rear outlet. Observation opening to be provided in rear of boiler.

Boiler trimmings shall consist of the following:

For steam: Safety valve, compound steam and vacuum gauge, water gauge glass assembly.

For water: Relief valve(s) as required by A.S.M.E. Code for low pressure boilers, combination altitude gauge and thermometer.

Optional: Boiler to be provided with wrap-around steel jacket with 1" mineral fiber insulation. Jacket designed so as to permit either installation or removal without disconnecting supply or return piping.

SQUARE-HEAT BOILERS—horizontal right or left discharge (dimensions in inches)

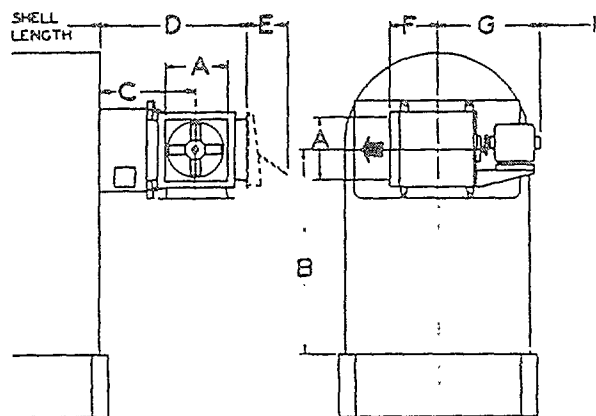
BOILER NUMBER	3R1	3R2	3R3	3R4	3R5	3R6	3R7	3R8	3R9	3R10	3R11	3R12
Inducer Number ^a												
Oil or Gas Boiler.....	10DI-1/2	10DI-1/2	10DI-1/2	10DI-1/2	10DI-1/2	10DI-1/2	10DI-1/2	14DL-1/4	14DL-1/4	14DL-1/4	14D-1/4	14D-1/4
Stoker Boiler.....	10DI-1/2	10DI-1/2	10DI-1/2	10DI-1/2	10DI-1/2	10DI-1/2	10DI-1/2	14DL-1/4	14DL-1/4	14DL-1/4	14D-1/4	14D-1/4
Fan Motor Size												
—60 Cycle—1 Phase.....	hp	hp	hp	hp	hp	hp	hp	hp	hp	hp	hp	hp
110V.....	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2	1/2
110/220V.....	hp	hp	hp	hp	hp	hp	hp	hp	hp	hp	hp	hp
A—Outlet Size.....	10 Dia.	10 Dia.	10 Dia.	10 Dia.	10 Dia.	10 Dia.	10 Dia.	14	14	14	14	14
B—Bottom Boiler to Center of Outlet.....	32 1/2	32 1/2	32 1/2	32 1/2	37 1/2	37 1/2	37 1/2	37 1/2	44	44	44	44
C—Boiler Head to Center of Outlet.....	16	16	16	16	16	16	16	20 1/2	21 1/2	21 1/2	21 1/2	21 1/2
D—Overall Space Requirement.....	24	24	24	24	24	24	24	31 1/2	32 1/2	32 1/2	32 1/2	32 1/2
E—Barometric Damper.....	9 1/2	9 1/2	9 1/2	9 1/2	9 1/2	9 1/2	9 1/2	9	9	9	9	9
F—Boiler CL to Outlet.....	9 1/2	9 1/2	9 1/2	9 1/2	9 1/2	9 1/2	9 1/2	10 3/8	10 3/8	10 3/8	10 3/8	10 3/8
G—Boiler CL to Motor End.....	15 1/2	15 1/2	15 1/2	15 1/2	15 1/2	15 1/2	15 1/2	23	23	23	23	23
H—Fan Removal Clearance.....	14	14	14	14	14	14	14	19 1/2	19 1/2	19 1/2	19 1/2	19 1/2

INDUCED DRAFT FANS

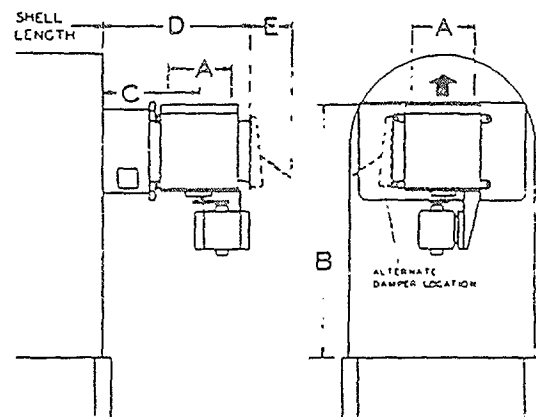
Wing Draft Inducers for Kewanee Square-Heat Type "R" boilers provide precise draft control . . . eliminate need for tall stacks. Air Cooled Bearings—pre-sealed and pre-lubricated require no lubrication. Spring Mounted Motor—dustproof, multispeed, brushless . . . maintains correct fan belt tension. Note: 10 DI-1/2 fan is equipped with constant speed motor and adjustable pitch sheave for speed regulation—no spring loaded base. Permanent Mounting—furnished for either horizontal right or left, or vertical discharge as specified. Barometric dampers at extra cost.

Inducers listed are based on sea level elevation, sized for firing up to and including 141.5% of SBI rating with oil, gas or stoker. Controls other than multispeed controller, not furnished as standard equipment. Orders must specify operating line voltage, cycle and phase. Stack and breeching weights must be supported independently.

horizontal right or left discharge



vertical discharge— mounted on smokebox



SQUARE-HEAT BOILERS—vertical discharge (dimensions in inches)

BOILER NUMBER	3R1	3R2	3R3	3R4	3R5	3R6	3R7	3R8	3R9	3R10	3R11	3R12
Inducer Number ^a												
Oil or Gas Boiler.....	10DI-1/2	10DI-1/2	10DI-1/2	10DI-1/2	10DI-1/2	10DI-1/2	10DI-1/2	14DL-1/4	14DL-1/4	14DL-1/4	14D-1/4	14D-1/4
Stoker Boiler.....	10DI-1/2	10DI-1/2	10DI-1/2	10DI-1/2	10DI-1/2	10DI-1/2	10DI-1/2	14DL-1/4	14DL-1/4	14DL-1/4	14D-1/4	14D-1/4
Fan Motor Size												
—60 Cycle												
110V.....	hp	hp	hp	hp	hp	hp	hp	hp	hp	hp	hp	hp
110/220V.....	hp	hp	hp	hp	hp	hp	hp	hp	hp	hp	hp	hp
A—Outlet Size.....	10 Dia.	10 Dia.	10 Dia.	10 Dia.	10 Dia.	10 Dia.	10 Dia.	14	14	14	14	14
B—Bottom Boiler to Outlet.....	41 1/4	41 1/4	41 1/4	41 1/4	46 1/4	46 1/4	46 1/4	48	54 1/4	54 1/4	54 1/4	54 1/4
C—Boiler Head to Center of Outlet.....	16	16	16	16	16	16	16	20 1/2	21 1/2	21 1/2	21 1/2	21 1/2
D—Overall Space Requirement.....	24	24	24	24	24	24	24	31 1/2	32 1/2	32 1/2	32 1/2	32 1/2
E—Barometric Damper.....	9 1/2	9 1/2	9 1/2	9 1/2	9 1/2	9 1/2	9 1/2	9	9	9	9	9

^aFan sizes based on sea level elevation for firing up to and including gross output rating with oil, gas or stoker.

square-heat type **R** coil selection chart

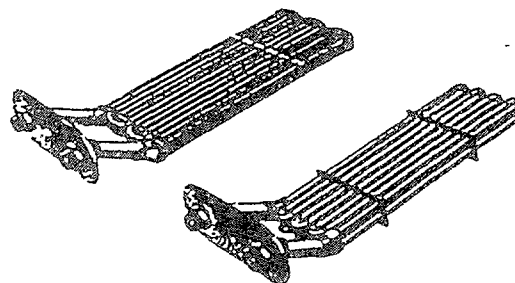
indirect heating type—storage tank operation

FAMILIES OR BATHS	2	3	4	6	8	10	12	14	16	19	22	24	28	32	36	40	44
Gallons in 3 Hours 40° to 140°F BW 180°F.	60	90	120	180	240	300	360	420	480	560	640	720	840	960	1080	1200	1320
40° to 140°F BW 212°F	100	150	200	300	400	500	600	700	800	933	1067	1200	1400	1600	1800	2000	2200
40° to 180°F BW 210°F	48	72	96	144	192	240	288	336	384	448	512	576	672	768	864	960	1096
Coil Number	KT-60	KT-90	KT-120	KT-180	KT-240	KT-300	KT-360	KT-420	KT-480	KT-560	KT-640	KT-720	KT-840	KT-960	KT-1080	KT-1200	KT-1320
Inlet & Outlet Diameter—Inches	1	1	1½	1½	2	2	2	2	2	2	2	2½	2½	2½	2½	2½	2½
Overall Length—Inches	30	30	24	30	29	32	38	41	44	50	56	45	51	57	63	69	75
3R1	1	1	1	1	1	1											
3R2	1	1	1	1	1	1	1										
3R3	1	1	1	1	1	1	1	1									
3R4	1	1	1	1	1	1	1	1	1								
3R5	1	1	1	1	1	1	1	1	1	1							
3R6	1	1	1	1	1	1	1	1	1	1	1						
3R7	1	1	1	1	1	1	1	1	1	1	1	1					
3R8	1	1	1	1	1	1	1	1	1	1	1	1	1				
3R9	1	1	1	1	1	1	1	1	1	1	1	1	1	1			
3R10	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
3R11	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
3R12	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

domestic hot water . . . all year 'round!

Every Kewanee Square-Heat Boiler is arranged for easy installation of Indirect Water Heating Coils (either tankless or storage tank type) which can be fitted at any time by simply removing coil opening cover plate and bolting coil in place.

For Gravity Circulation with storage tank, check the table above. For instantaneous Flow, see table below.



indirect heating type—instantaneous flow

RESIDENTIAL RATINGS—Based on intermittent draw of hot water with short peak demands

FAMILIES OR BATHS	1-2	4	6	13	25	35	45	52	65	78	92	105	120	130	140	150	160	170	180	190
Gallons Per Hour 40° to 140°F BW 180°F	240	300	360	480	600	720	840	920	1080	1240	1400	1560	1740	1860	1980	2100	2220	2340	2460	2580

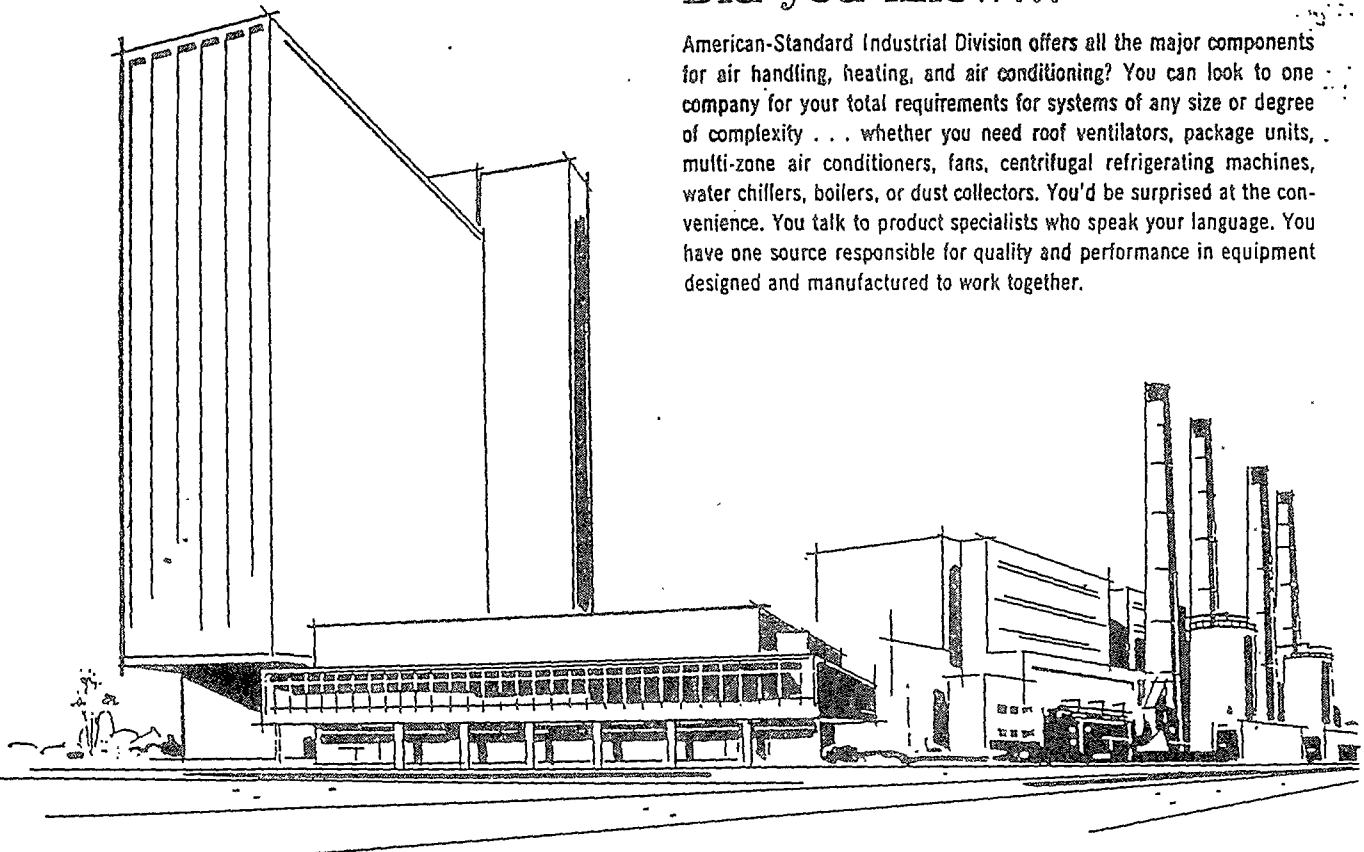
COMMERCIAL RATINGS—Based on continuous draw of hot water with long peak demands

Gallons Per Hour	40° to 140°F BW 180°F	180	225	270	360	450	540	630	690	810	930	1050	1170	1305	1395	1485	1575	1665	1755	1845	1935
	40° to 140°F BW 212°F	300	375	450	600	750	900	1050	1150	1350	1550	1750	1950	2175	2325	2475	2625	2775	2925	3075	3225
	40° to 180°F BW 210°F	144	180	216	288	360	432	504	552	648	744	840	936	1044	1116	1188	1260	1332	1404	1476	1548
Coil Number	K1-240	K1-300	K1-360	K1-480	K1-600	K1-720	K1-840	K1-920	K1-1080	K1-1240	K1-1400	K1-1560	K1-1740	K1-1860	K1-1980	K1-2100	K1-2220	K1-2340	K1-2460	K1-2580	
Inlet & Outlet Diameter—Inches	1	1	1½	1½	2	2	2	2	2	2	2	2	2½	2½	2½	2½	2½	2½	2½	2½	2½
Overall Length—Inches	26	29	26	29	36	39	45	45	51	57	63	69	55	52	61	64	67	70	73	76	
3R1	3R2	1	1	1	1																
3R3		1	1	1	1	1	1	1											1	1	
3R4		1	1	1	1	1	1	1	1										1	1	
3R5		1	1	1	1	1	1	1											1	1	
3R6		1	1	1	1	1	1	1	1	1											
3R7		1	1	1	1	1	1	1	1	1	1	1									
3R8		1	1	1	1	1	1	1	1	1	1	1	1	1							
3R9		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1					
3R10		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1				
3R11		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
3R12		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	

INSTRUCTIONS: Read across top section of table to find desired coil capacity. Read down column until you reach correct boiler size. If number appears in that box, coil will fit. The number represents the maximum quantity of coils boiler will accommodate.

Did you know...

American-Standard Industrial Division offers all the major components for air handling, heating, and air conditioning? You can look to one company for your total requirements for systems of any size or degree of complexity . . . whether you need roof ventilators, package units, multi-zone air conditioners, fans, centrifugal refrigerating machines, water chillers, boilers, or dust collectors. You'd be surprised at the convenience. You talk to product specialists who speak your language. You have one source responsible for quality and performance in equipment designed and manufactured to work together.



INDUSTRIAL DIVISION

SALES OFFICES IN ALL PRINCIPAL CITIES

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22494

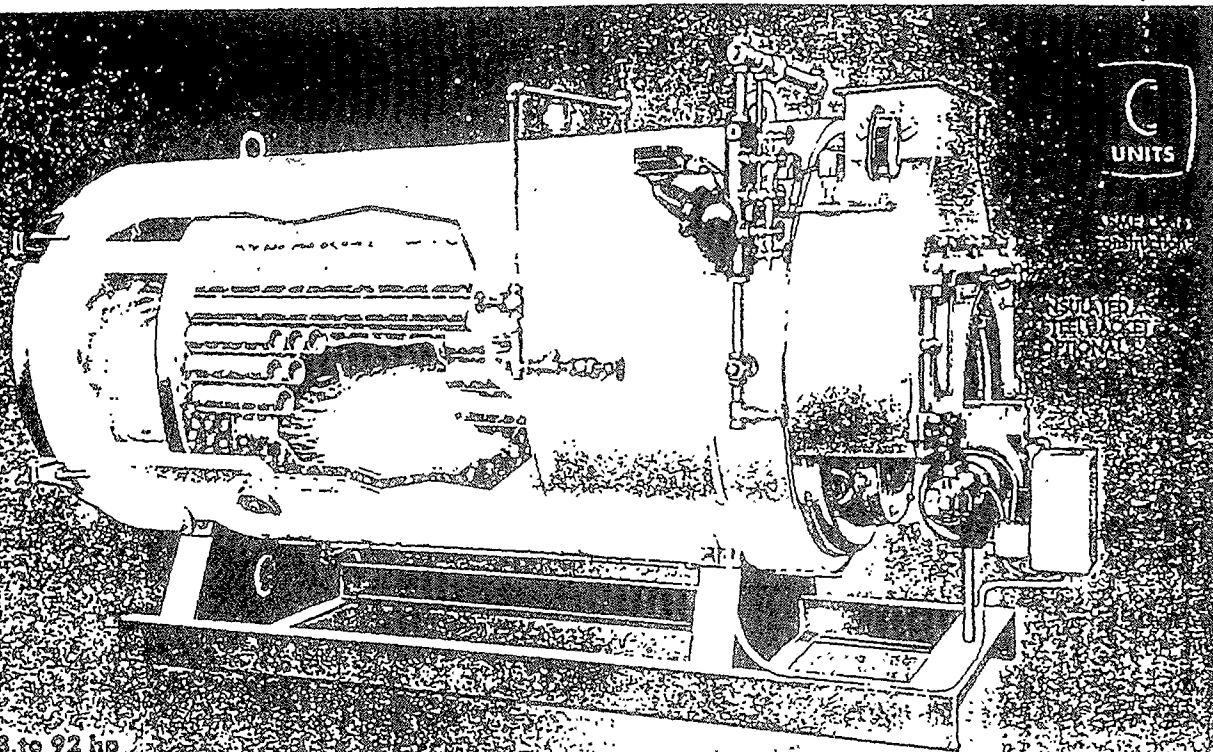
Litro in U.S.A.

49C. Nuclear
Scientific
Units



KEWANEE-IRON FIREMAN

high pressure forced draft package units • light oil, gas or oil-gas combination

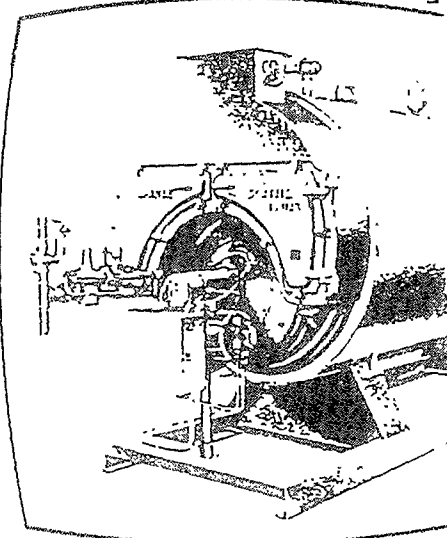


18 to 92 hp
125-150 lb wp... high temperature water above 250° F

Designed to fit the needs of today's long low buildings and limited space, these package units are compact and complete—ready for operation after making service connections. Units offer choice of light oil, L. P. or natural gas. Combination oil-gas burners also available, meet requirements in areas requiring oil standby.

Iron Fireman C-120 or C-210 burner controls are housed in an integral control panel. Units have all necessary operating controls including electronic combustion control system. Forced draft fan supplies all air for combustion under pressure. Only stub stack required. Boiler is famous Kewanee Scotch type with hinged rear door* and cast iron flue doors for easy cleaning and inspection—ample steam space and water content—generous heating surface for fast pick-up. Units are factory assembled—pre-tested, if desired. If preferred, boilers and burners can be shipped separately to job-site. For burner details, see Bulletin 3319-3.

*Hinged rear cover plate on two larger sizes



combination oil-gas unit

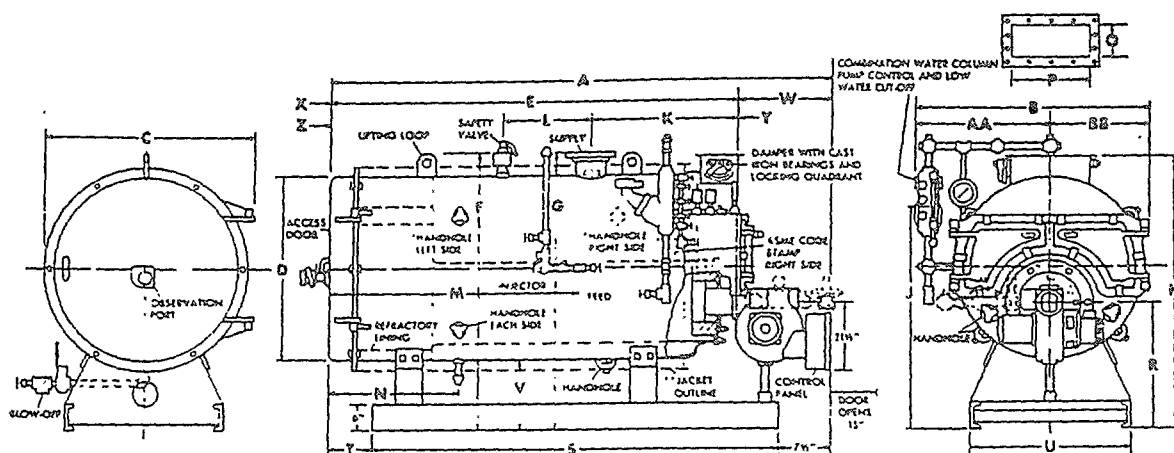
ratings

unit number		KIF-18-C	KIF-29-C	KIF-39-C	KIF-45-C	KIF-59-C	KIF-65-C	KIF-78-C	KIF-92-C
rating—horsepower		18	29	39	45	59	65	78	92
—MBtuh...		606	967	1316	1530	1971	2191	2625	3091
—steam per hour—212°F	lb	624	996	1356	1577	2031	2258	2705	3185
rating rate—No. 2 oil ²³	gph	5.4	8.6	11.7	13.6	17.5	19.5	23.4	27.5
—gas ²⁴	MBtuh	757	1208	1645	1912	2463	2738	3281	3863
heating surface...	sq ft	69	158	215	250	322	358	499	550
annular volume—plain furnace	cu ft	16.9	21.4	29.6	32.0	41.9	50.8	62.5	67.7
—corrugated furnace	cu ft								
relief valve capacity	— steam per hr	192	1264	1720	2000	2576	2864	3439	4000

²³—Certified output ²⁴—based on 140,000 Btu oil ²⁵—W.C. minimum gas pressure at inlet to burner control manifold.

KEWANEES-IRON FIREMAN

forced draft package units • high pressure
light oil, gas or oil-gas combination



NOTE: When selecting Package Unit, specify: (a) Unit Number, (b) Operating Pressure (c) Type (steam or hot water), (d) Burner Model desired (oil, gas or oil-gas combination), (e) Gas (type and pressure available) consult local utility.

*HANDHOLES FURNISHED ON EP 18-C THRU EP 45-C
HANDHOLE FURNISHED ON EP 59-C THRU EP 92-C
**OPTIONAL
NOTE: EP 18-C THRU EP 45-C ILLUSTRATED

dimensions (feet—inch)

unit number	KIF-18-C	KIF-29-C	KIF-39-C	KIF-45-C	KIF-59-C	KIF-65-C	KIF-78-C	KIF-92-C
A — length overall	8-9	11-3	11-6	12-7	13-3	14-2	13-2½	14-5½
B — width overall	4-6	4-6	5-0	5-0	5-6	5-6	6-1	6-1
C — boiler — width	4-0½	4-0½	4-6½	4-6½	5-0½	5-0½	5-5	5-5
D — — inside diameter	3-6	3-6	4-0	4-0	4-6	4-6	5-0	5-0
E — — length	6-10½	9-4½	9-9½	10-10½	11-7	12-6	11-7	12-10
F — lifting loop height	5-4½	5-4½	5-10½	5-10½	6-5	6-5	6-10	6-10
G — steam supply height	4-11½	4-11½	5-5½	5-5½	6-0	6-0	7-0	7-0
H — smoke outlet height	5-6	5-6	5-11½	5-11½	6-5½	6-5½	7-1½	7-1½
J — water line height	4-3	4-3	4-7½	4-7½	5-0½	5-0½	5-7½	5-7½
K — steam supply	2-3	2-9	2-11	2-11	3-0	3-6	3-1	3-7
L — safety valve	1-8	1-8	1-8	1-8	3-6	3-6	4-3	4-4
M — feed water, each side	4-5	6-4½	6-8	7-9	6-7	7-0	6-6	7-1
N — blow-off	2-6	2-6	2-9	2-9	3-0	3-0	4-0	4-0
O — smoke outlet — inside width	0-8	0-8	0-10	0-10	0-11	0-11	1-0	1-0
P — — inside length	0-10	0-10	1-1	1-1	1-2	1-2	1-5	1-5
R — furnace height	2-5½	2-5½	2-6½	2-6½	2-10	2-10	3-1½	3-1½
S — base — length	7-5	9-11	9-10½	10-11½	11-5	12-4	11-1	12-3½
T — — location	0-8½	0-8½	1-0	1-0	1-2½	1-2½	1-6	1-6½
U — — width	3-0	3-0	3-6	3-6	4-0	4-0	5-0	5-0
V — floor to boiler	1-4	1-4	1-4	1-4	1-4	1-4	1-6	1-6
W — burner front to boiler	1-10½	1-10½	1-8½	1-8½	1-8	1-8	1-7½	1-7½
X — rear door clearance	3-6	3-6	4-0	4-0	4-6	4-6	6-11	8-1½
Y — tube replacement space — front	3-5½	5-11	5-9½	6-10½	7-2	8-1	6-11	8-1½
Z — — rear	2-2½	4-8	4-5½	5-6½	5-8	6-7		
AA — width	2-7½	2-7½	2-10½	2-10½	3-1½	3-1½	3-5	3-5
BB — width	1-10½	1-10½	2-1½	2-1½	2-4½	2-4½	2-8	2-8

data

unit number	KIF-18-C	KIF-29-C	KIF-39-C	KIF-45-C	KIF-59-C	KIF-65-C	KIF-78-C	KIF-92-C
vent diameter	in. 8	10	12	13	14	14	15	16
steam supply size	in. 2	2	2	2	3	3	4*	4*
blow-off size	in. 1	1	1	1	1½	1½	2	2
feed water size	in. ¾	¾	¾	¾	¾	¾	1½	1½
gas inlet	in. 1½	1½	1½	2	2	2	2½	2½
**outside surface to cover	sq ft 63	90	107	121	145	158	178	197
approximate weight — 175 lb wp	lb 4150	5100	6850	7000	9000	9500	11700	12400
— 150 lb wp	lb 4250	5200	6300	7050	9100	9650	12600	13000

*300 lb American Standard Flange

**Front of boiler and smokebox NOT included.

Standard equipment—Boilers mounted on steel skids, gas-tight front steel smokebox with insulated cast iron gasketed flue door. Factory installed rear combustion chamber. Hinged rear combustion chamber door with access panel and access observation port on KIF 18-C thru KIF 65-C, rear cover plate with access panel and access observation port on KIF 78-C and KIF 92-C. Spinner blades, access panel lock damper, boiler lifting loops and flue cleaner with handle. Manhole on KIF 59-C thru KIF 92-C. Note: Refractory lined burner mounting plate furnished by burner manufacturer.

Standard steam trimmings—Safety valve(s), steam gage and cock, combination water column, pump control and low water cut-off with wheel operated gage and air cock assembly, blow-off valves, gage and check valves for boiler feed line, injector, iron piping and fittings attaching trimmings to boiler.

Standard water trimmings—Water relief valve(s), low water cut-off, blow-off valves, iron piping and fittings attaching trimmings to boiler.

Standard equipment subject to change without notice.



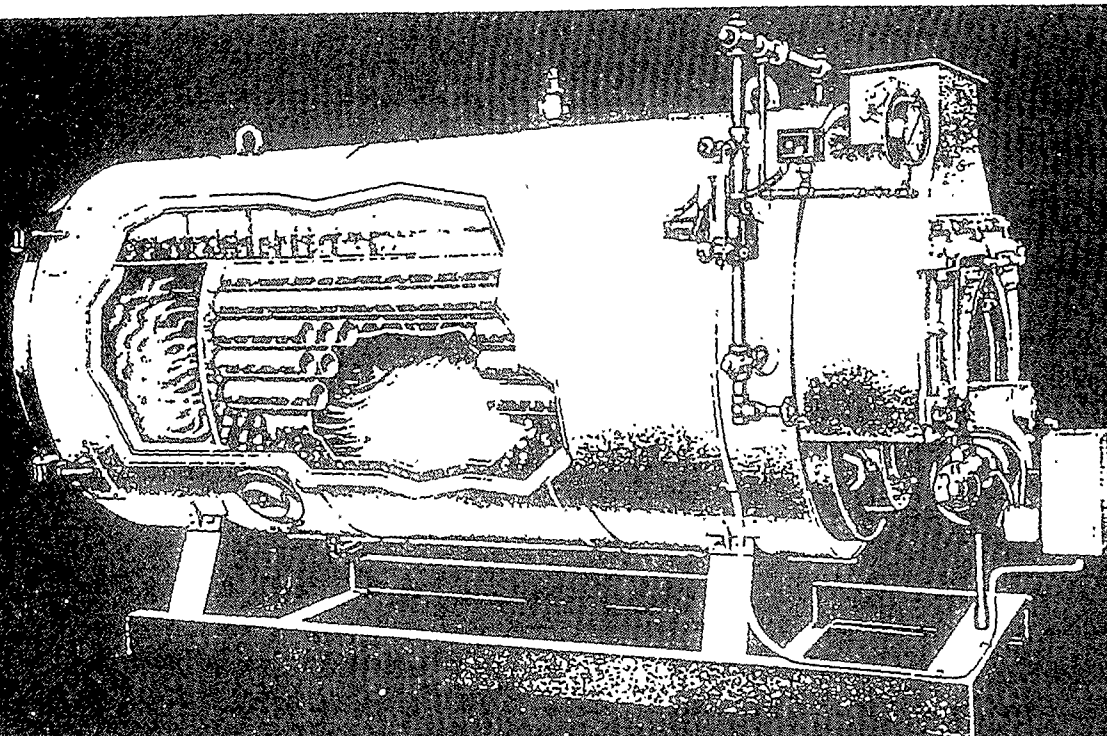
AMERICAN-Standard
KEWANEES BOILER DIVISION
101 FRANKLIN STREET, KEWANEES, ILLINOIS



KEWANEE-IRON FIREMAN

low pressure forced draft package units • light oil, gas or oil-gas combination

JAARD



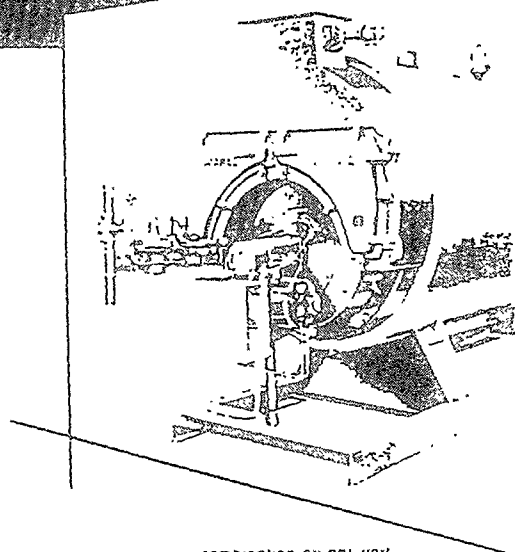
UNITS

500,000 - 1,000,000 Btu/hr.
15 to 150 psi steam pressure

Steam or hot water for heating is at its automatic best with this complete package unit. Compact in design, all controls, gauges and wiring are conveniently located. Burner controls housed in integral control panel. Electronic combustion control system is standard equipment. Forced draft fan supplies air for combustion under pressure for constant air supply with only a vent required. Owner's choice of light oil, L.P. or natural gas. Versatile combination oil-gas burner is ideal for areas requiring oil standby. For burner details, see bulletin 3319-3.

A few of the unit's outstanding features are refractory lined rear combustion chamber with water back top, hinged rear door* with observation port, hinged cast iron front flue doors, steel skids, optional insulating jacket and lifting hoists, heavy hange steel shell, generous steam space, water content and furnace volume. Units are factory assembled, pre-tested, if desired. Boiler and burner can be shipped separately to job-site, if preferred.

*Hinged rear door is on door at left side.



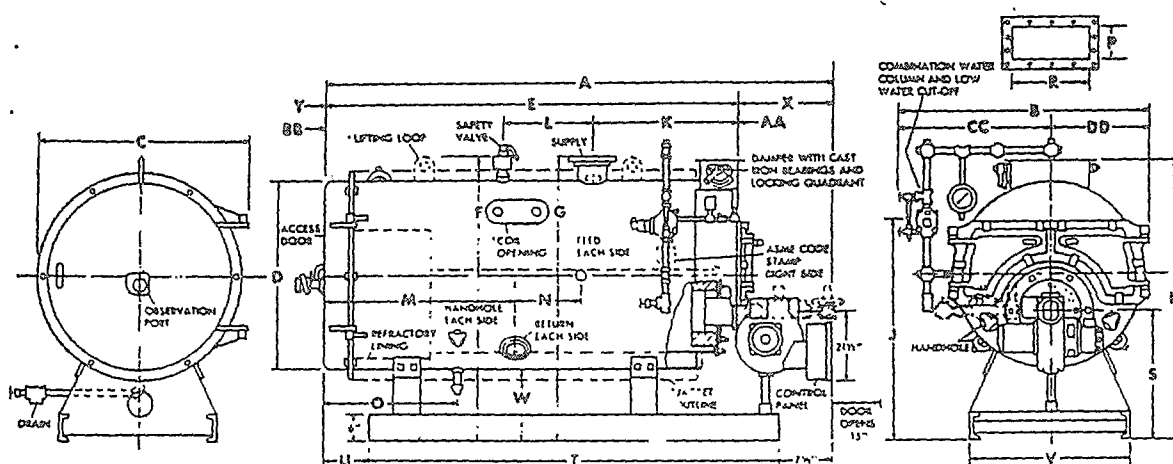
combination oil-gas unit

ratings

unit number	KIF-18-C	KIF-29-C	KIF-39-C	KIF-45-C	KIF-59-C	KIF-65-C	KIF-78-C	KIF-92-C
rating — steam	14 II 1	2520	4030	5480	6370	8710	9130	10940
— water	14 II 1	4040	6450	8770	10200	13140	14610	17500
— MBtu/h	14 II 1	206	367	516	530	771	2191	2625
— steam per hour — 212°F	14 II 1	274	496	677	777	1071	1158	1385
rating rate — No. 2 oil**	14 II 1	1.4	2.6	3.6	4.3	5.9	6.4	7.7
— "50"***	14 II 1	1.7	3.2	4.4	5.2	7.1	7.8	9.4
rating surface	14 II 1	50	158	215	250	320	358	429
— face volume	14 II 1	16.5	25.7	35.9	42.7	55.5	64.8	78.6
rated valve capacity	14 II 1	500	867	1216	1530	1969	2288	2800

*Certified output. **Based on 140,000 Btu oil. ***5" W.C. minimum gas pressure at inlet to burner control manifold.

KEWANEE-IRON FIREMAN

forced draft package units • low pressure
light oil, gas or oil-gas combination

NOTE: When selecting Package Unit, specify: (a) Unit Number, (b) Operating Pressure, (c) Type (steam or hot water), (d) Burner Model desired (oil, gas or oil-gas combination), (e) Gas (type and pressure available) consult local utility.

18 18-C THRU 45-C ILLUSTRATED
MANHOLE ON 59-C THRU 92-C
OPTIONAL

dimensions (feet—inch)

unit number	KIF-18-C	KIF-29-C	KIF-39-C	KIF-45-C	KIF-59-C	KIF-65-C	KIF-78-C	KIF-92-C
A — length overall	8-5	10-11	11-2	12-3	13-5	14-4	13-2½	14-5½
B — width	4-8	4-8	5-2	5-2	5-9	5-9	6-3	6-3
C — boiler — width	4-0½	4-0½	4-6½	4-6½	4-11	4-11	5-5	5-5
D — — inside diameter	3-6	3-6	4-0	4-0	4-6	4-6	5-0	5-0
E — — length	6-8	9-2	9-7	10-8	11-8½	12-7½	11-7	12-10
F — lifting loop height	5-4½	5-4½	5-10½	5-10½	6-5½	6-5½	6-10	6-10
G — steam supply height	4-11½	4-11½	5-10	5-10	6-7	6-7	7-0	7-0
H — smoke outlet height	5-6	5-6	5-11½	5-11½	6-8½	6-8½	7-1½	7-1½
J — water line height	4-2½	4-2½	4-7	4-7	5-3½	5-3½	5-8	5-8
K — steam supply	2-3	2-9	2-11	2-11	3-0	3-6	3-1	3-7
L — safety valve	1-8	1-8	1-8	1-8	5-4	5-9	5-2	5-10
M — return, each side	3-4	3-6	4-0	4-0	4-4	4-4	4-4	4-4
N — feed water, each side					2-4	2-9	2-2	2-9½
O — drain	2-6	2-6	2-9	2-9	4-0	4-0	4-0	4-0
P — smoke outlet — inside width	0-8	0-8	0-10	0-10	0-11	0-11	1-0	1-0
R — — inside length	0-10	0-10	1-1	1-1	1-2	1-2	1-5	1-5
S — furnace height	2-5½	2-5½	2-6½	2-6½	3-1	3-1	3-1½	3-1½
T — base — length	7-5	9-11	9-10½	10-11½	11-3½	12-2½	11-1	12-3½
U — — location	0-4½	0-4½	0-8	0-8	1-6	1-6	1-6	1-6½
V — — width	3-0	3-0	3-6	3-6	4-6	4-6	5-0	5-0
W — floor to boiler	1-4	1-4	1-4	1-4	1-7	1-7	1-6	1-6
X — burner front to boiler	1-9	1-9	1-7	1-7	1-8½	1-8½	1-7½	1-7½
Y — rear door clearance	3-6	3-6	4-0	4-0				
AA — tube replacement space — front	1-3	5-9	5-7	6-8	7-2	8-1	6-11	8-1½
BB — — rear	2-0	4-6	4-3	5-4				
CC — width	2-9½	2-9½	3-0½	3-0½	3-4½	3-4½	3-7	3-7
DD — width	1-10½	1-10½	2-1½	2-1½	2-4½	2-4½	2-8	2-8

data

unit number	KIF-18-C	KIF-29-C	KIF-39-C	KIF-45-C	KIF-59-C	KIF-65-C	KIF-78-C	KIF-92-C
vent diameter	in. 8	10	12	13	14	14	15	16
steam supply size	in. 4	4	6	6	6	6	8	8
return size (two)	in. 4	4	4	4	4	4	4	4
drain size	in. 1½	1½	1½	1½	1½	1½	2	2
feed water size	in. 1½	1½	1½	1½	1½	1½	1½	1½
gas inlet	in. 1½	1½	1½	2	2	2	2½	2½
*outside surface to cover	sq ft 61	88	105	119	165	180	180	200
approximate weight	lb 3400	4000	5400	6000	7750	8550	9150	9950

*150 lb American Standard Flange

**Front of boiler and smokebox NOT included

Standard equipment—Boiler mounted on steel skids, gas-tight front steel smokebox with insulated cast iron gasketed flue door, factory installed rear combustion chamber. Hinged rear combustion chamber door with access observation port, KIF-18-C thru KIF-45-C, rear cover plate with access panel and access observation port, KIF-59-C thru KIF-92-C. Snapper blades. Quasi-arc lock damper. Flue cleaner with handle. Manhole. KIF-59-C thru KIF-92-C. Note: Refractory tiled burner mounting plate furnished by burner manufacturer.

Standard steam trimmings—Safety valve(s), steam gage and cock, combination water column, water gage and low water cut-off. Angle drain valve. Iron piping and fittings attaching these trimmings to boiler.

Standard water trimmings—Water relief valve(s), pressure gage, thermometer, low water cut-off, iron piping and fittings attaching these trimmings to boiler. Angle drain valve.

Standard equipment subject to change without notice.

22499



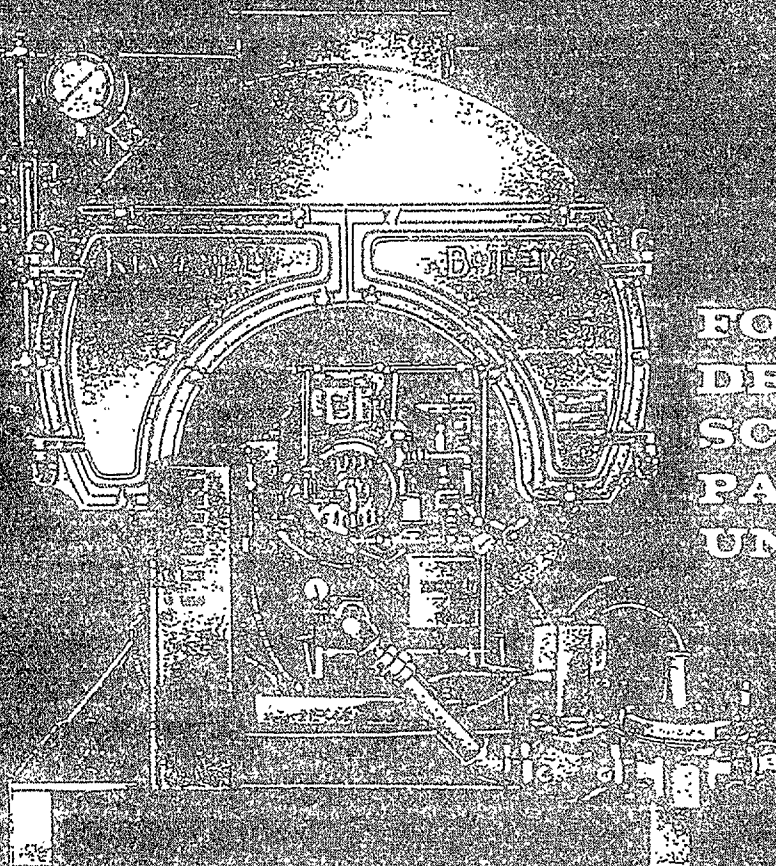
AMERICAN-Standard
INDUSTRIAL DIVISION

DETROIT 32, MICHIGAN

4918 Buckner
11-5

ENGINEERED

to give you better service longer...

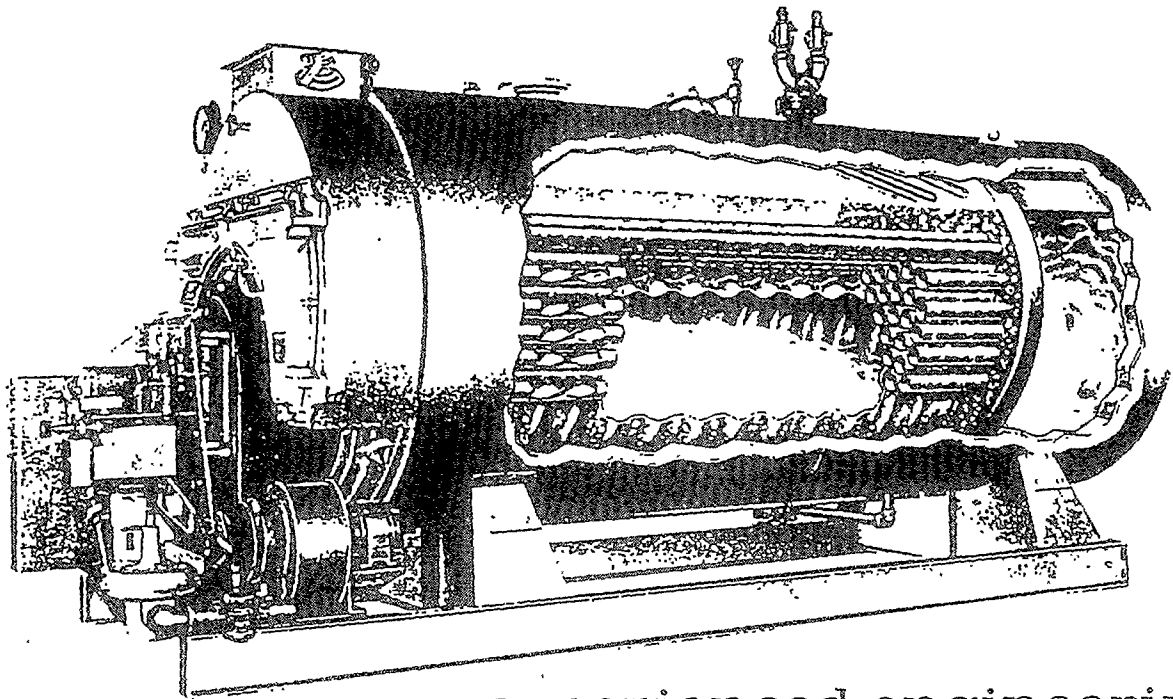


**FORCED
DRAFT
SCOTCH
PACKAGE
UNITS**

22501

INDUSTRIAL DIVISION

single
responsibility



experienced engineering
assures peak performance

HIGH PRESSURE

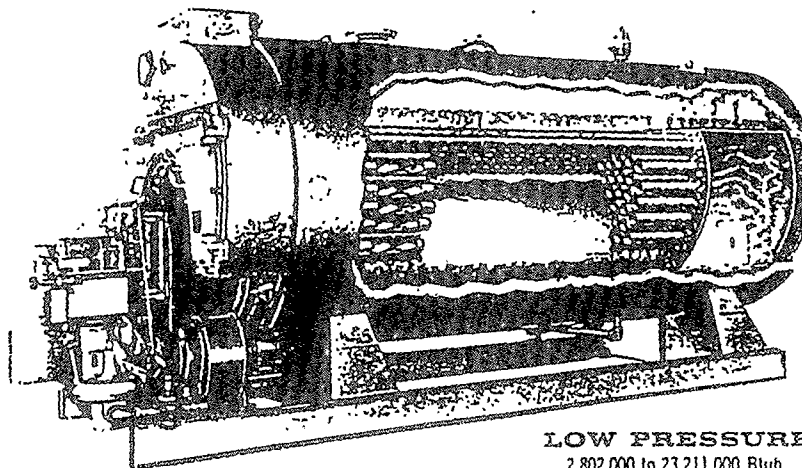
82 to 672 hp.
125-150 lb. steam wp std.
Higher pressures on application.

Certified ratings are conservative—five square feet of A.S.M.E. (fireside) heating surface per horsepower—providing adequate reserve capacity. Firing rates are carefully matched to heating surface. Flame size and shape are matched to furnace dimensions. Furnace volume is designed for efficient combustion, and direct heat absorbing surfaces are ample. Construction meets or exceeds A.S.I. Code requirements. Entire unit is listed by Underwriters Laboratories, Inc.

Kewanee Forced Draft Scotch Package Units present a combination of high quality, experienced engineering, modern concept and conservative design which assure highest efficiency, faithful performance and long time dependability. These qualities have been proved in many thousands of installations . . . Kewanee has been the leader in the steel boiler industry for nearly a century.

22502

KEWANEE FORCED DRAFT SCOTCH PACKAGE UNITS



LOW PRESSURE
2,802,000 to 23,211,000 Btu/h
15 lb. steam or 30 lb. water std.
Higher water wp (250° max.) on applicat

ane

FACTORY ASSEMBLED FIRE TESTED BEFORE SHIPMENT

FORCED DRAFT OPERATION

Assures an ample supply of combustion air for stub stack applications. Special blower assemblies are available for high altitude installations.

OVERSIZE FURNACE TUBE

Provides abundant volume for complete combustion and greater proportion of primary heating surface. The hot flanged furnace tube openings assure maximum permanent strength at junction of furnace tube and tube sheets. The high pressure unit furnace tube is corrugated for greater strength and more primary heating surface. Location near bottom of boiler affords maximum protection against low water.

TUBES

All tubes in high and low pressure units are 3" OD, set into trepanned holes by roller expander and beaded at each end. No tubes welded to tube sheets. Spinner blades in all tubes swirl hot gases against tube surfaces for longer gas travel and maximum heat transfer.

TWO PASS DESIGN

Eliminates refractory baffles that can burn out and short circuit hot gases to stack. Kewanee design avoids wasted fuel, costly shutdown and expensive repairs.

LARGE STEAM SPACE

Combined with abundant unbroken disengaging area and unusually large water content assures steady water line, dry steam and plentiful reserves.

WELDED SHELL

Flange quality plate. Heads and furnace tube are firebox steel. Exclusive head braces are one-piece forgings with ends extending through boiler shell and heads. High pressure shells are X-rayed and stress relieved.

CAST IRON FLUE DOORS

An exclusive Kewanee feature—heavily insulated—precision ground and gasketed for gas tight fit. Hinged to provide quick access to tubes without interference with firing equipment.

I-BEAM SKIDS

Rugged with extra heavy reinforced saddles. They support the unit, distribute the weight evenly and facilitate handling.

INSULATED STEEL JACKET

Factory installed heavy gauge steel jacket of drawband construction with 2" of glass fiber insulation and a 12" catwalk.

WATER HEATING COILS

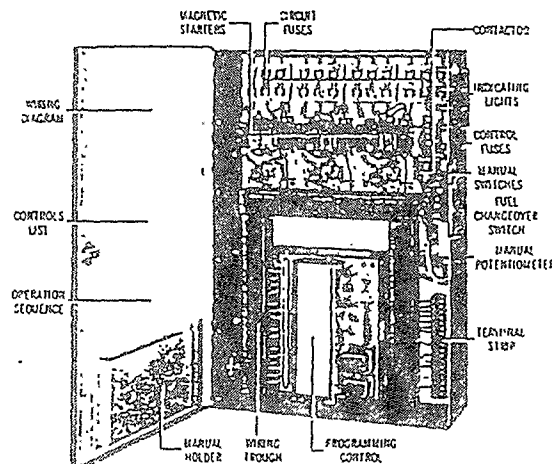
Standard Kewanee "KI" (instantaneous) and "KT" (tank) coils can be provided for all low pressure units.

burner equipment

Some features of the dependable Kewanee Burner are shown below:

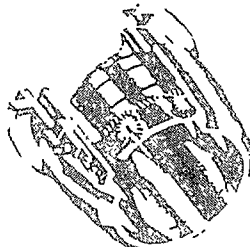
Control cabinet

Heavy gauge steel, dustproof—contains individual fuses for each circuit. Enclosed controls include magnetic motor starters with thermal overload protection . . . master programming relay, etched nameplates, indicating lights for major operations, numbered terminal strips, wiring troughs, fuel selector switch. Wiring diagram and holder for instruction manual mounted inside door.



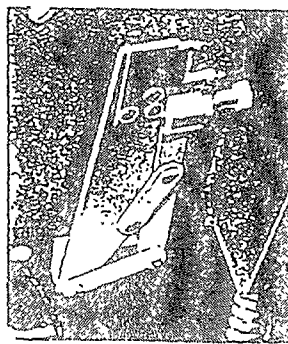
Exclusive—adjustable variable vaned air nozzle

Readily permits shaping the oil flame for different grades of fuel.



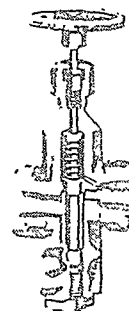
Burner latch switch

Exclusive design includes safety interlock to prevent burner operation when burner is not locked in firing position. Releases easily for maintenance service. Eliminates troublesome twist lock plugs.



Viscosity compensating valve

The ultimate in simplicity . . . no complex mechanisms . . . no moving parts to wear. A simple adjustment sets the high fire and assures an accurately proportioned supply of oil to atomizing cup.

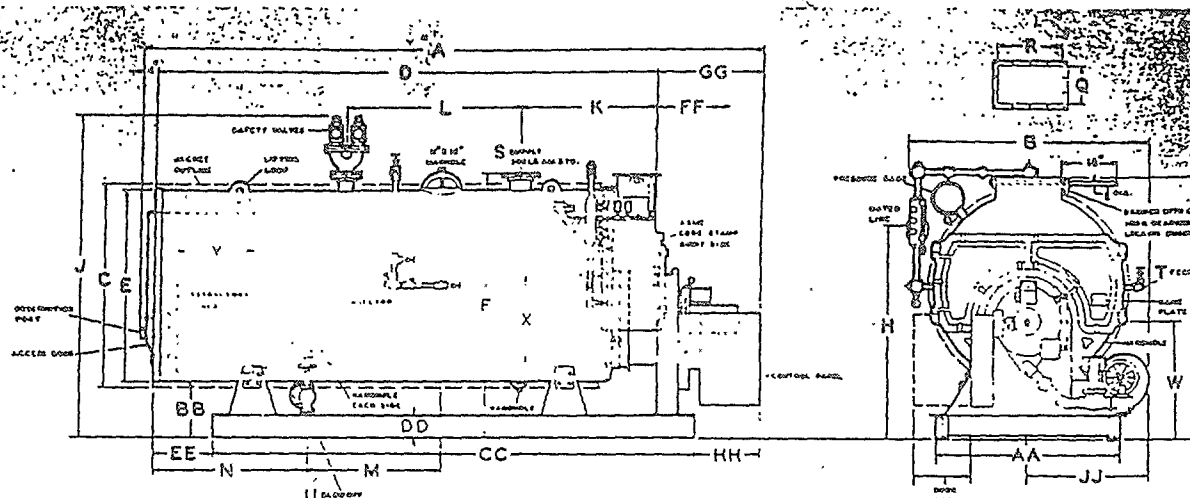


Change fuels with flip of a switch

That's all that's needed. No readjustment of linkage—no burner change.



KEWANEE forced draft package units
(high pressure)



ratings

[illegible]

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Outside surface to cover (uncontracted)	sq ft	2.8	3.2	3.6	4.0	4.4	4.8	5.2	5.6	6.0	6.4	6.8	7.2	7.6	8.0	8.4	8.8	9.2	9.6	10.0
Approximate dry weight—25 lb. G.P.		1,700	1,940	2,180	2,420	2,660	2,900	3,140	3,380	3,620	3,860	4,100	4,340	4,580	4,820	5,060	5,300	5,540	5,780	6,020
—50 lb. G.P.		3,400	3,880	4,360	4,840	5,320	5,800	6,280	6,760	7,240	7,720	8,200	8,680	9,160	9,640	10,120	10,600	11,080	11,560	12,040
—of diameter		1.0	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.0	2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8

dimensions, inches

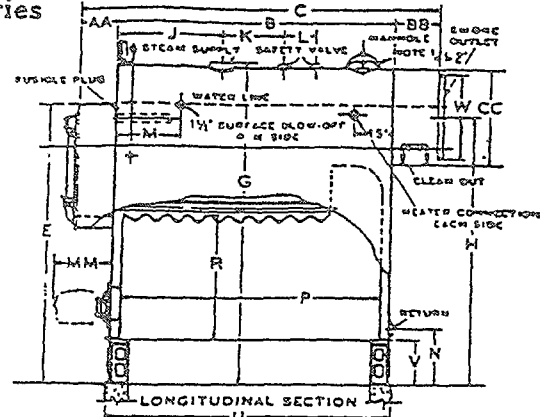
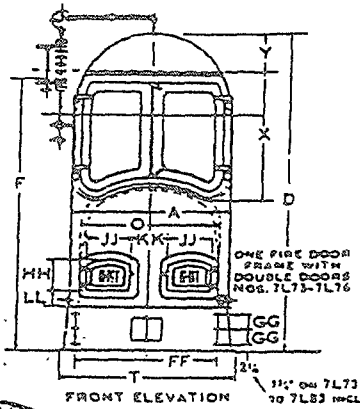
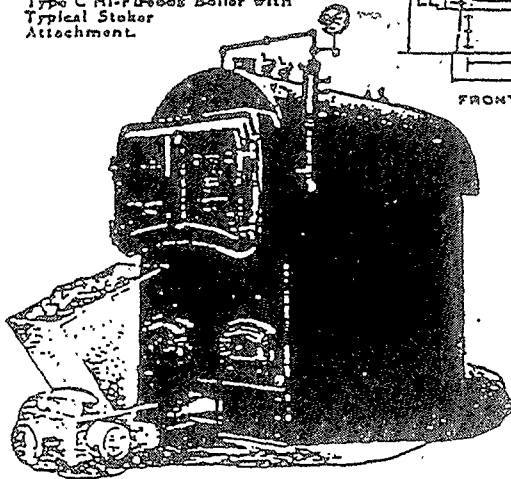
Unit number*	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100																																																																																																																																																																																																																																																																								
A —length overall	10	10 1/4	10 1/2	10 3/4	11	11 1/4	11 1/2	11 3/4	12	12 1/4	12 1/2	12 3/4	13	13 1/4	13 1/2	13 3/4	14	14 1/4	14 1/2	14 3/4	15	15 1/4	15 1/2	15 3/4	16	16 1/4	16 1/2	16 3/4	17	17 1/4	17 1/2	17 3/4	18	18 1/4	18 1/2	18 3/4	19	19 1/4	19 1/2	19 3/4	20	20 1/4	20 1/2	20 3/4	21	21 1/4	21 1/2	21 3/4	22	22 1/4	22 1/2	22 3/4	23	23 1/4	23 1/2	23 3/4	24	24 1/4	24 1/2	24 3/4	25	25 1/4	25 1/2	25 3/4	26	26 1/4	26 1/2	26 3/4	27	27 1/4	27 1/2	27 3/4	28	28 1/4	28 1/2	28 3/4	29	29 1/4	29 1/2	29 3/4	30	30 1/4	30 1/2	30 3/4	31	31 1/4	31 1/2	31 3/4	32	32 1/4	32 1/2	32 3/4	33	33 1/4	33 1/2	33 3/4	34	34 1/4	34 1/2	34 3/4	35	35 1/4	35 1/2	35 3/4	36	36 1/4	36 1/2	36 3/4	37	37 1/4	37 1/2	37 3/4	38	38 1/4	38 1/2	38 3/4	39	39 1/4	39 1/2	39 3/4	40	40 1/4	40 1/2	40 3/4	41	41 1/4	41 1/2	41 3/4	42	42 1/4	42 1/2	42 3/4	43	43 1/4	43 1/2	43 3/4	44	44 1/4	44 1/2	44 3/4	45	45 1/4	45 1/2	45 3/4	46	46 1/4	46 1/2	46 3/4	47	47 1/4	47 1/2	47 3/4	48	48 1/4	48 1/2	48 3/4	49	49 1/4	49 1/2	49 3/4	50	50 1/4	50 1/2	50 3/4	51	51 1/4	51 1/2	51 3/4	52	52 1/4	52 1/2	52 3/4	53	53 1/4	53 1/2	53 3/4	54	54 1/4	54 1/2	54 3/4	55	55 1/4	55 1/2	55 3/4	56	56 1/4	56 1/2	56 3/4	57	57 1/4	57 1/2	57 3/4	58	58 1/4	58 1/2	58 3/4	59	59 1/4	59 1/2	59 3/4	60	60 1/4	60 1/2	60 3/4	61	61 1/4	61 1/2	61 3/4	62	62 1/4	62 1/2	62 3/4	63	63 1/4	63 1/2	63 3/4	64	64 1/4	64 1/2	64 3/4	65	65 1/4	65 1/2	65 3/4	66	66 1/4	66 1/2	66 3/4	67	67 1/4	67 1/2	67 3/4	68	68 1/4	68 1/2	68 3/4	69	69 1/4	69 1/2	69 3/4	70	70 1/4	70 1/2	70 3/4	71	71 1/4	71 1/2	71 3/4	72	72 1/4	72 1/2	72 3/4	73	73 1/4	73 1/2	73 3/4	74	74 1/4	74 1/2	74 3/4	75	75 1/4	75 1/2	75 3/4	76	76 1/4	76 1/2	76 3/4	77	77 1/4	77 1/2	77 3/4	78	78 1/4	78 1/2	78 3/4	79	79 1/4	79 1/2	79 3/4	80	80 1/4	80 1/2	80 3/4	81	81 1/4	81 1/2	81 3/4	82	82 1/4	82 1/2	82 3/4	83	83 1/4	83 1/2	83 3/4	84	84 1/4	84 1/2	84 3/4	85	85 1/4	85 1/2	85 3/4	86	86 1/4	86 1/2	86 3/4	87	87 1/4	87 1/2	87 3/4	88	88 1/4	88 1/2	88 3/4	89	89 1/4	89 1/2	89 3/4	90	90 1/4	90 1/2	90 3/4	91	91 1/4	91 1/2	91 3/4	92	92 1/4	92 1/2	92 3/4	93	93 1/4	93 1/2	93 3/4	94	94 1/4	94 1/2	94 3/4	95	95 1/4	95 1/2	95 3/4	96	96 1/4	96 1/2	96 3/4	97	97 1/4	97 1/2	97 3/4	98	98 1/4	98 1/2	98 3/4	99	99 1/4	99 1/2	99 3/4	100	100 1/4	100 1/2	100 3/4
E —width overall	10	10 1/4	10 1/2	10 3/4	11	11 1/4	11 1/2	11 3/4	12	12 1/4	12 1/2	12 3/4	13	13 1/4	13 1/2	13 3/4	14	14 1/4	14 1/2	14 3/4	15	15 1/4	15 1/2	15 3/4	16	16 1/4	16 1/2	16 3/4	17	17 1/4	17 1/2	17 3/4	18	18 1/4	18 1/2	18 3/4	19	19 1/4	19 1/2	19 3/4	20	20 1/4	20 1/2	20 3/4	21	21 1/4	21 1/2	21 3/4	22	22 1/4	22 1/2	22 3/4	23	23 1/4	23 1/2	23 3/4	24	24 1/4	24 1/2	24 3/4	25	25 1/4	25 1/2	25 3/4	26	26 1/4	26 1/2	26 3/4	27	27 1/4	27 1/2	27 3/4	28	28 1/4	28 1/2	28 3/4	29	29 1/4	29 1/2	29 3/4	30	30 1/4	30 1/2	30 3/4	31	31 1/4	31 1/2	31 3/4	32	32 1/4	32 1/2	32 3/4	33	33 1/4	33 1/2	33 3/4	34	34 1/4	34 1/2	34 3/4	35	35 1/4	35 1/2	35 3/4	36	36 1/4	36 1/2	36 3/4	37	37 1/4	37 1/2	37 3/4	38	38 1/4	38 1/2	38 3/4	39	39 1/4	39 1/2	39 3/4	40	40 1/4	40 1/2	40 3/4	41	41 1/4	41 1/2	41 3/4	42	42 1/4	42 1/2	42 3/4	43	43 1/4	43 1/2	43 3/4	44	44 1/4	44 1/2	44 3/4	45	45 1/4	45 1/2	45 3/4	46	46 1/4	46 1/2	46 3/4	47	47 1/4	47 1/2	47 3/4	48	48 1/4	48 1/2	48 3/4	49	49 1/4	49 1/2	49 3/4	50	50 1/4	50 1/2	50 3/4	51	51 1/4	51 1/2	51 3/4	52	52 1/4	52 1/2	52 3/4	53	53 1/4	53 1/2	53 3/4	54	54 1/4	54 1/2	54 3/4	55	55 1/4	55 1/2	55 3/4	56	56 1/4	56 1/2	56 3/4	57	57 1/4	57 1/2	57 3/4	58	58 1/4	58 1/2	58 3/4	59	59 1/4	59 1/2	59 3/4	60	60 1/4	60 1/2	60 3/4	61	61 1/4	61 1/2	61 3/4	62	62 1/4	62 1/2	62 3/4	63	63 1/4	63 1/2	63 3/4	64	64 1/4	64 1/2	64 3/4	65	65 1/4	65 1/2	65 3/4	66	66 1/4	66 1/2	66 3/4	67	67 1/4	67 1/2	67 3/4	68	68 1/4	68 1/2	68 3/4	69	69 1/4	69 1/2	69 3/4	70	70 1/4	70 1/2	70 3/4	71	71 1/4	71 1/2	71 3/4	72	72 1/4	72 1/2	72 3/4	73	73 1/4	73 1/2	73 3/4	74	74 1/4	74 1/2	74 3/4	75	75 1/4	75 1/2	75 3/4	76	76 1/4	76 1/2	76 3/4	77	77 1/4	77 1/2	77 3/4	78	78 1/4	78 1/2	78 3/4	79	79 1/4	79 1/2	79 3/4	80	80 1/4	80 1/2	80 3/4	81	81 1/4	81 1/2	81 3/4	82	82 1/4	82 1/2	82 3/4	83	83 1/4	83 1/2	83 3/4	84	84 1/4	84 1/2	84 3/4	85	85 1/4	85 1/2	85 3/4	86	86 1/4	86 1/2	86 3/4	87	87 1/4	87 1/2	87 3/4	88	88 1/4	88 1/2	88 3/4	89	89 1/4	89 1/2	89 3/4	90	90 1/4	90 1/2	90 3/4	91	91 1/4	91 1/2	91 3/4	92	92 1/4	92 1/2	92 3/4	93	93 1/4	93 1/2	93 3/4	94	94 1/4	94 1/2	94 3/4	95	95 1/4	95 1/2	95 3/4	96	96 1/4	96 1/2	96 3/4	97	97 1/4	97 1/2	97 3/4	98	98 1/4	98 1/2	98 3/4	99	99 1/4	99 1/2	99 3/4	100	100 1/4	100 1/2	100 3/4
C —height overall	10	10 1/4	10 1/2	10 3/4	11	11 1/4	11 1/2	11 3/4	12	12 1/4	12 1/2	12 3/4	13	13 1/4	13 1/2	13 3/4	14	14 1/4	14 1/2	14 3/4	15	15 1/4	15 1/2	15 3/4	16	16 1/4	16 1/2	16 3/4	17	17 1/4	17 1/2	17 3/4	18	18 1/4	18 1/2	18 3/4	19	19 1/4	19 1/2	19 3/4	20	20 1/4	20 1/2	20 3/4	21	21 1/4	21 1/2	21 3/4	22	22 1/4	22 1/2	22 3/4	23	23 1/4	23 1/2	23 3/4	24	24 1/4	24 1/2	24 3/4	25	25 1/4	25 1/2	25 3/4	26	26 1/4	26 1/2	26 3/4	27	27 1/4	27 1/2	27 3/4	28	28 1/4	28 1/2	28 3/4	29	29 1/4	29 1/2	29 3/4	30	30 1/4	30 1/2	30 3/4	31	31 1/4	31 1/2	31 3/4	32	32 1/4	32 1/2	32 3/4	33	33 1/4	33 1/2	33 3/4	34	34 1/4	34 1/2	34 3/4	35	35 1/4	35 1/2	35 3/4	36	36 1/4	36 1/2	36 3/4	37	37 1/4	37 1/2	37 3/4	38	38 1/4	38 1/2	38 3/4	39	39 1/4	39 1/2	39 3/4	40	40 1/4	40 1/2	40 3/4	41	41 1/4	41 1/2	41 3/4	42	42 1/4	42 1/2	42 3/4	43	43 1/4	43 1/2	43 3/4	44	44 1/4	44 1/2	44 3/4	45	45 1/4	45 1/2	45 3/4	46	46 1/4	46 1/2	46 3/4	47	47 1/4	47 1/2	47 3/4	48	48 1/4	48 1/2	48 3/4	49	49 1/4	49 1/2	49 3/4	50	50 1/4	50 1/2	50 3/4	51	51 1/4	51 1/2	51 3/4	52	52 1/4	52 1/2	52 3/4	53	53 1/4	53 1/2	53 3/4	54	54 1/4	54 1/2	54 3/4	55	55 1/4	55 1/2	55 3/4	56	56 1/4	56 1/2	56 3/4	57	57 1/4	57 1/2	57 3/4	58	58 1/4	58 1/2	58 3/4	59	59 1/4	59 1/2	59 3/4	60	60 1/4	60 1/2	60 3/4	61	61 1/4	61 1/2	61 3/4	62	62 1/4	62 1/2	62 3/4	63	63 1/4	63 1/2	63 3/4	64	64 1/4	64 1/2	64 3/4	65	65 1/4	65 1/2	65 3/4	66	66 1/4	66 1/2	66 3/4	67	67 1/4	67 1/2	67 3/4	68	68 1/4	68 1/2	68 3/4	69	69 1/4	69 1/2	69 3/4	70	70 1/4	70 1/2	70 3/4	71	71 1/4	71 1/2	71 3/4	72	72 1/4	72 1/2	72 3/4	73	73 1/4	73 1/2	73 3/4	74	74 1/4	74 1/2	74 3/4	75	75 1/4	75 1/2	75 3/4	76	76 1/4	76 1/2	76 3/4	77	77 1/4	77 1/2	77 3/4	78	78 1/4	78 1/2	78 3/4	79	79 1/4	79 1/2	79 3/4	80	80 1/4	80 1/2	80 3/4	81	81 1/4	81 1/2	81 3/4	82	82 1/4	82 1/2	82 3/4	83	83 1/4	83 1/2	83 3/4	84	84 1/4	84 1/2	84 3/4	85	85 1/4	85 1/2	85 3/4	86	86 1/4	86 1/2	86 3/4	87	87 1/4	87 1/2	87 3/4	88	88 1/4	88 1/2	88 3/4	89	89 1/4	89 1/2	89 3/4	90	90 1/4	90 1/2	90 3/4	91	91 1/4	91 1/2	91 3/4	92	92 1/4	92 1/2	92 3/4	93	93 1/4	93 1/2	93 3/4	94	94 1/4	94 1/2	94 3/4	95	95 1/4	95 1/2	95 3/4	96	96 1/4	96 1/2	96 3/4	97	97 1/4	97 1/2	97 3/4	98	98 1/4	98 1/2	98 3/4	99	99 1/4	99 1/2	99 3/4	100	100 1/4	100 1/2	100 3/4
F —length	10	10 1/4	10 1/2	10 3/4	11	11 1/4	11 1/2	11 3/4	12	12 1/4	12 1/2	12 3/4	13	13 1/4	13 1/2	13 3/4	14	14 1/4	14 1/2	14 3/4	15	15 1/4	15 1/2	15 3/4	16	16 1/4	16 1/2	16 3/4	17	17 1/4	17 1/2	17 3/4	18	18 1/4	18 1/2	18 3/4	19	19 1/4	19 1/2	19 3/4	20	20 1/4	20 1/2	20 3/4	21	21 1/4	21 1/2	21 3/4	22	22 1/4	22 1/2	22 3/4	23	23 1/4	23 1/2	23 3/4	24	24 1/4	24 1/2	24 3/4	25	25 1/4	25 1/2	25 3/4	26	26 1/4	26 1/2	26 3/4	27	27 1/4	27																																																																																																																																																																																																																																																																																																					

Kewanee Type "C" Hi-Firebox Welded—7L70 Series For Oil, Gas or Stoker

The Kewanee Hi-Firebox boiler is built exactly right for stokers. This 7L70 series has long water legs providing the necessary height in firebox to comply with S.H.B.I. code for stoker firing.

Type "C" high operating efficiency insures life-long economy with any Oil, Gas or Stoker equipment. 7L70 Series Hi-Firebox is built with grates for hand-fired coal.

Type C Hi-Firebox Boiler with Typical Stoker Attachment



7L70 Series conforms to A.S.M.E. boiler construction code for 15 lbs., and for rating by the Industry Standard Practices approved by the Steel Heating Boiler Institute in cooperation with U. S. Department of Commerce Recommendation R 137.

In the Kewanee Process of Corrugating Type "C" Crown Sheets not even the slightest reduction in metal thickness is discernible by micrometer measurements.

Note 1. Manhole furnished on boilers 7L82 and larger.

Equipment: Steel base assembled with four cast iron corner posts, heavy steel flanged panels have 6 1/2 x 1 1/4 front and rear openings; insulated flue door; and flue cleaner and handle. 7L70 "C" may be fitted at factory with Kewanee Hot Water Heating Coils at extra cost.

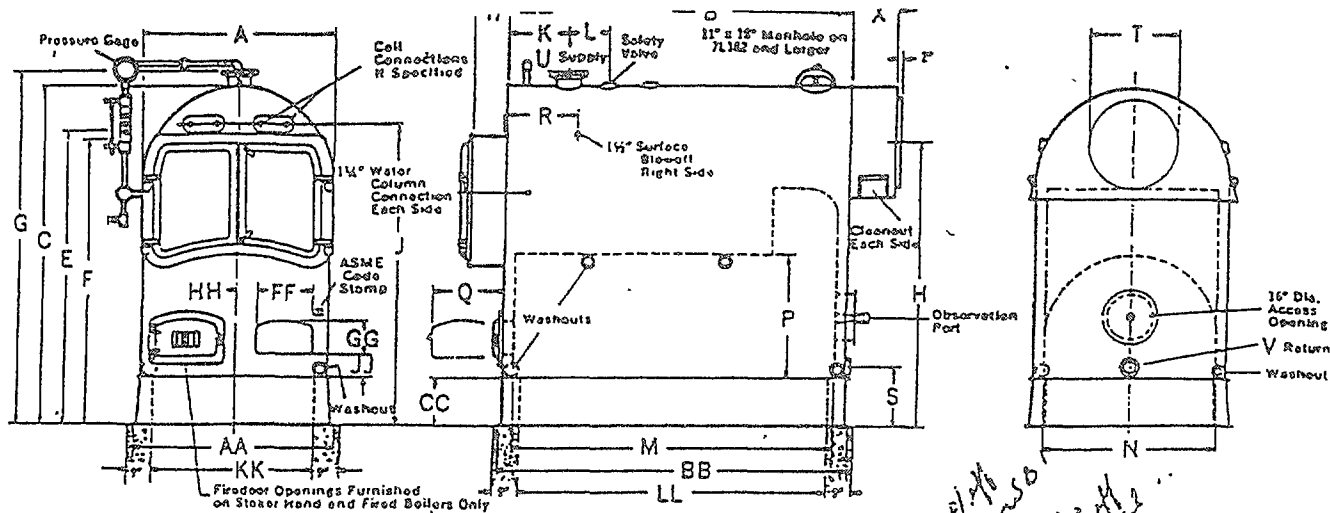
Trimming for steam only: Safety valve, steam gauge with syphon and cock; water column with water gauge, glass and cocks. All front smokeboxes have double doors.

Note 2. Average firebox height, computed by dividing the firebox volume by the plan area, complies with S.H.B.I. code when stoker dead plates are located at top of mud ring.

Specifications and Setting Measurements

Boiler Number	7L73	7L74	7L75	7L76	7L77	7L78	7L79	7L80	7L81	7L82	7L83	7L84	7L85	7L86	7L87	7L88	7L89	7L90
Rating—Steam Radiation..... Sq. Ft.	2680	3160	3650	4250	4860	5470	6080	6790	7500	8310	9120	10030	11040	12150	13260	14370	15480	16590
Water Radiation..... Sq. Ft.	4260	5050	5840	6800	7770	8750	9720	10690	11660	12630	13600	14570	15540	16510	17480	18450	19420	20390
Boiler per Hour..... 1000's	643	758	876	1020	1166	1313	1459	1605	1750	1896	2042	2188	2334	2480	2626	2772	2918	3064
Heating Surface (SHBI min.)..... Sq. Ft.	158	186	215	250	286	322	358	394	430	466	502	538	574	610	646	682	718	754
Furnace Volume (SHBI min.)..... Cu. Ft.	19.2	22.6	26.1	30.4	34.8	39.1	43.5	47.9	52.3	56.7	61.1	65.5	69.9	74.3	78.7	83.1	87.5	91.9
Average Firebox Height, See Note 2, In.	33.9	33.0	32.3	31.4	30.5	29.6	28.7	27.8	26.9	26.0	25.1	24.2	23.3	22.4	21.5	20.6	19.7	18.8
Firebox Vol. above Mud Ring, Cu. Ft.	25.3	28.3	31.1	36.1	41.8	47.5	53.2	58.9	64.6	70.3	76.0	81.7	87.4	93.1	98.8	104.5	110.2	115.9
Plan Area..... Sq. Ft.	9.1	10.3	11.3	13.8	15.9	17.9	19.8	21.7	23.6	25.5	27.4	29.3	31.2	33.1	35.0	36.9	38.8	40.7
Breach Diameter..... In.	19	19	19	19	22	22	22	24	24	24	24	26	26	26	26	26	26	26
Stack Diameter..... In.	15	16	16	17	18	19	20	21	22	22	22	24	24	24	24	24	24	24
Stack Height..... Ft.	35	35	40	45	40	45	50	50	50	50	50	55	55	55	55	55	55	55
Breach Diameter, Two Boilers..... In.	21	24	24	25	26	27	28	30	31	31	31	34	34	34	34	34	34	34
Stack Diameter, Two Boilers..... In.	21	22	22	23	24	25	26	28	29	29	29	32	32	32	32	32	32	32
Stack Height, Two Boilers..... Ft.	45	45	50	55	50	55	60	60	60	60	60	65	65	65	65	65	65	65
Steam Supply Size..... In.	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
Return Size..... In.	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Water Heater Connection Size..... In.	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Safety Valve Size..... In.	1 1/2	2	2	2	2	2	2	2 1/2	2 1/2	2 1/2	2 1/2	3	3	3	3	3	3	3
Shipping Weight..... LBS.	3100	3500	3900	4400	4900	5400	5900	6400	6900	7400	7900	8400	8900	9400	9900	10400	10900	11400
A—Boiler Width..... In.	36	36	36	36	42	42	42	48	48	48	48	54	54	54	54	54	54	54
B—Boiler Length..... Ft. In.	4-2	4-8	5-2	5-8	5-10 1/2	6-0 1/2	6-6 1/2	7-2 1/2	7-8 1/2	8-3	8-9	9-5 1/2	10-1 1/2	10-7 1/2	11-3 1/2	11-9 1/2	12-5 1/2	13-1 1/2
C—Boiler Length Overall..... Ft. In.	5-10 1/2	6-4 1/2	6-10 1/2	7-4 1/2	7-10 1/2	8-4 1/2	8-10 1/2	9-4 1/2	9-10 1/2	10-7 1/2	11-1 1/2	11-7 1/2	12-3 1/2	12-9 1/2	13-5 1/2	14-1 1/2	14-7 1/2	15-3 1/2
D—Boiler Height Overall..... In.	62 1/2	62 1/2	62 1/2	62 1/2	68 1/2	68 1/2	68 1/2	74 1/2	74 1/2	74 1/2	74 1/2	80 1/2	80 1/2	80 1/2	80 1/2	80 1/2	80 1/2	80 1/2
E—Water Line Height..... In.	74	74	74	74	77	77	77	81	81	81	81	87	87	87	87	87	87	87
F—Water Column Height..... In.	70 1/2	70 1/2	70 1/2	70 1/2	73 1/2	73 1/2	73 1/2	78 1/2	78 1/2	78 1/2	78 1/2	84 1/2	84 1/2	84 1/2	84 1/2	84 1/2	84 1/2	84 1/2
G—Steam Supply Height..... In.	64 1/2	64 1/2	64 1/2	64 1/2	67 1/2	67 1/2	67 1/2	72 1/2	72 1/2	72 1/2	72 1/2	78 1/2	78 1/2	78 1/2	78 1/2	78 1/2	78 1/2	78 1/2
H—Smoke Outlet Hgt. above Floor..... In.	69 1/2	69 1/2	69 1/2	69 1/2	72 1/2	72 1/2	72 1/2	77 1/2	77 1/2	77 1/2	77 1/2	83 1/2	83 1/2	83 1/2	83 1/2	83 1/2	83 1/2	83 1/2
I—Steam Supply Location..... In.	10 1/2	14	14	14	16	16	16	18	18	18	18	24	24	24	24	24	24	24
J—Safety Valve Location..... In.	8 1/2	10	10	10	10	10	10	11	11	11	11	14	14	14	14	14	14	14
K—Second Safety Valve Location..... In.	12	12	12	12	12	12	12	12	12	12	12	18	18	18	18	18	18	18
L—Return Height..... In.	18	18	18	18	18	18	18	18	18	18	18	24	24	24	24	24	24	24
M—Firebox Width..... In.	30	30	30	30	34	34	34	36	36	36	36	42	42	42	42	42	42	42
N—Firebox Length..... In.	43 1/2	49 1/2	55 1/2	61 1/2	67 1/2	73 1/2	79 1/2	85 1/2	91 1/2	97 1/2	103 1/2	109 1/2	115 1/2	121 1/2	127 1/2	133 1/2	139 1/2	145 1/2
O—Firebox Height..... In.	31	31	31	31	34	34	34	38	38	38	38	43	43	43	43	43	43	43
P—Base Width..... In.	41 1/2	41 1/2	41 1/2	41 1/2	47 1/2	47 1/2	47 1/2	53 1/2	53 1/2	53 1/2	53 1/2	59 1/2	59 1/2	59 1/2	59 1/2	59 1/2	59 1/2	59 1/2
Q—Base Length..... In.	27 1/2	30 1/2	34 1/2	38 1/2	42 1/2	46 1/2	50 1/2	54 1/2	58 1/2	62 1/2	66 1/2	70 1/2	74 1/2	78 1/2	82 1/2	86 1/2	90 1/2	94 1/2
R—Base Height..... In.	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14
S—Smoke Outlet Diameter..... In.	19	19	19	19	22	22	22	24	24	24	24	26	26	26	26	26	26	26
T—Front Smokebox Height..... In.	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34
U—Fr. Smokebox Top to Boiler Top..... In.	10	10	10	10	13	13	13	14	14	14	14	16	16	16	16	16	16	16
AA—Front Smokebox Depth..... In.	9	9	9	9	10	10	10	11	11	11	11	12	12	12	12	12	12	12
BB—Rear Smokebox Depth..... In.	11 1/2	11 1/2	11 1/2	11 1/2	14	14	14	15	15	15	15	16	16	16	16	16	16	16
CC—Rear Smokebox Height..... In.	25	26	26	26	29	29	29	31 1/2	31 1/2	31 1/2	31 1/2	33	33	33	33	33	33	33
DD—Foundation Width..... In.	48	48	48	48	54	54	54	60	60	60	60	66	66	66	66	66	66	66
EE—Foundation Length..... In.	53 1/2	59 1/2	65 1/2	71 1/2	77 1/2	83 1/2	89 1/2	95 1/2	101 1/2	107 1/2	113 1/2	119 1/2	125 1/2	131 1/2	137 1/2	143 1/2	149 1/2	155 1/2
FF—Bolt Centers in Front Plate..... In.	31 1/2	31 1/2	31 1/2	31 1/2	37 1/2	37 1/2	37 1/2	43 1/2	43 1/2	43 1/2	43 1/2	49 1/2	49 1/2	49 1/2	49 1/2	49 1/2	49 1/2	49 1/2
GG—Bolt Centers in Front Plate..... In.	4 1/2	4 1/2	4 1/2	4 1/2	4 1/2	4 1/2	4 1/2	4 1/2	4 1/2	4 1/2	4 1/2	4 1/2	4 1/2	4 1/2	4 1/2	4 1/2	4 1/2	4 1/2
HH—Firedoor Height..... In.	13 1/2	13 1/2	13 1/2	13 1/2	15	15	15	16	16	16	16	17	17	17	17	17	17	17
II—Firedoor Width..... In.	27 1/2	27 1/2	27 1/2	27 1/2	31	31	31	33	33	33	33	36	36	36	36	36	36	36
JJ—Space Between Firedoors..... In.	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
KK—Ht. of Doors from Bottom Blr..... In.	9 1/2	9 1/2	9 1/2	9 1/2	9 1/2	9 1/2	9 1/2	9 1/2	9 1/2	9 1/2	9 1/2	9 1/2	9 1/2	9 1/2	9 1/2	9 1/2	9 1/2	9 1/2
LL—Core Firedoor to Boiler..... In.	20	20	20	20	20 1/2	20 1/2	20 1/2	20 1/2	20 1/2	20 1/2	20 1/2	20 1/2	20 1/2	20 1/2	20 1/2	20 1/2	20 1/2	20 1/2
MM—Core Firedoor to Boiler..... In.	79	83	87	91	95	99	103	107	111	115	119	123	127	131	135	139	143	147
Outside Surface to Cover..... Sq. Ft.	79	83	87	91	95	99	103	107	111	115	119	123	127	131	135	139	143	147

*Front smokebox and front head below smokebox IS included.



Ratings - Mechanically Fired - Oil, Gas or Stoker

Boiler Number	7L176	7L179	7L180	7L181	7L182	7L183	7L184	7L185	7L186	7L187	7L188	7L189	7L190	7L191	7L192	7L193
SBI Rating—Steam	Sq. Ft. 4320	6440	7720	9000	10340	12670	14970	17300	22500	23720	32150	32570	45000	51430	57850	64270
—Water	Sq. Ft. 9200	10350	12750	14400	17500	20500	25710	30800	36000	41150	51440	52290	72000	82290	92560	102850
—M.B.tuh	Lb. 1392	1846	1853	2160	2626	3089	3557	4532	5400	6171	7716	8257	10000	11340	12880	14430
—Steam per hour—212° F.	Lb. 1430	1550	1900	2220	2700	3170	3660	4768	5540	6349	7920	8510	11090	12570	14260	15840
—SBI Rating—Steam	Sq. Ft. 5070	6440	6760	7850	9500	11260	14050	16800	19570	22510	28130	31750	39370	45000	50520	56240
—Water	Sq. Ft. 8110	9020	10820	12610	15130	17320	22300	27010	31620	36000	45010	50000	62990	72000	80990	89720
—M.B.tuh	Lb. 1217	1313	1622	1870	2294	2703	3376	4032	4725	5402	6791	8100	9450	10800	12150	13500
Firing Rate—Oil	Gph. 16	18	22	26	31	37	45	54	64	73	91	110	127	146	164	182
—Gas	M.B.tuh 2460	2740	3290	3830	4550	5450	6540	7700	9040	10220	12670	14500	17120	19300	21600	24000
—Stoker	Lb. per hr. 218	244	291	340	412	485	607	729	850	972	1215	1457	1700	1943	2186	2429
Heating Surface (SBI min)	Sq. Ft. 322	358	429	500	605	715	833	1072	1250	1429	1786	2143	2500	2857	3214	3571
Furnace Volume (SBI min)	Cu. Ft. 39.1	43.5	52.1	60.8	71.8	86.8	103.5	131.8	151.8	171.5	216.9	263.1	304.3	346.9	393.1	431.5
Furnace Height (SBI min)	In. 31 1/4	31 1/4	32 1/4	34	35 1/4	37 1/4	40 1/4	43	45	48 1/4	54 1/4	60 1/4	66	71 1/4	77 1/4	83 1/4
Fuebox Vol. Above Dot of Water Leg	Cu. Ft. 49.6	54.5	65.3	76.1	91.7	101.1	127.8	161.5	191.1	215.3	294.6	361.8	415.0	477.8	542.1	602.1
Safety Valve Capacity	Lb. steam per hr. 1963	2185	2623	3060	3718	4374	5464	6599	7630	8745	10929	13114	15300	17485	19671	21857

Firing Rates calculated to develop boiler output of 141.5% of SBI Rating.
Based on 150,000 Btu. Oil; 12,000 Btu. Coal.

Dimensions and Data - Inches

Boiler Number	7L176	7L179	7L180	7L181	7L182	7L183	7L184	7L185	7L186	7L187	7L188	7L189	7L190	7L191	7L192	7L193
Shell Diameter—Inside	42	42	43	48	54	54	60	66	72	72	78	84	84	90	90	96
A — Boiler Width Overall	64	64	60	60	66	66	62	68	74	74	80	86	86	94	94	100
B — Boiler Length	80	82 1/4	87	100 1/4	101	101	112	116	119 1/4	119 1/4	129 1/4	134	135	143 1/4	143 1/4	150
C — Boiler Height	87	87	91 1/4	91 1/4	101	101	113 1/4	116	123 1/4	123 1/4	136 1/4	141 1/4	141 1/4	151 1/4	151 1/4	159 1/4
D — Boiler Length Overall	104	112 1/4	111 1/4	125 1/4	134 1/4	134 1/4	140	147 1/4	148	148	163 1/4	168	168	179 1/4	179 1/4	188 1/4
E — Water Line Height	71 1/4	71 1/4	77	77	85 1/4	85 1/4	97	100	109 1/4	109 1/4	115 1/4	120 1/4	120 1/4	129 1/4	129 1/4	134 1/4
F — Water Column Height	71 1/4	71 1/4	75	75	84 1/4	84 1/4	95	98	107 1/4	107 1/4	113 1/4	118 1/4	118 1/4	127 1/4	127 1/4	132 1/4
G — Steam Supply Height	52	52	55 1/4	55 1/4	63 1/4	63 1/4	74	77	86 1/4	86 1/4	92 1/4	97 1/4	97 1/4	106 1/4	106 1/4	111 1/4
H — Smoke Outlet Height	72	72	75 1/4	75 1/4	83 1/4	83 1/4	94 1/4	97 1/4	106 1/4	106 1/4	113 1/4	118 1/4	118 1/4	127 1/4	127 1/4	132 1/4
I — Cold Connection Height	75 1/4	75 1/4	80	80	88 1/4	88 1/4	99	102 1/4	111 1/4	111 1/4	118 1/4	123 1/4	123 1/4	132 1/4	132 1/4	137 1/4
K — Steam Supply	16	18	18	18	18	21	21	21	21	21	21	21	21	21	21	24
L — Safety Valve	12	12	14	14	14	14	14	14	16	16	16	16	16	16	16	16
M — Fuebox Length	71 1/4	82	89 1/4	94	101	101	104 1/4	112	105 1/4	122	136	126	147	144 1/4	151 1/4	163
N — Fuebox Width	35 1/4	35 1/4	42 1/4	42 1/4	48 1/4	48 1/4	54 1/4	59 1/4	65 1/4	68	71	77	77	84 1/4	84 1/4	87
P — Fuebox Height	32	32	34	34	37 1/4	37 1/4	40 1/4	43	49	49	54 1/4	56	56	62	62	63 1/4
Q — Opened Firedoor to Boiler	20	20	22 1/4	22 1/4	22 1/4	24	24	24	24	24	24	24	24	24	24	24
R — Surface Blowoff	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
S — Return Height	18	18	18	18	18	18	21	21	21	21	21	21	21	21	21	21
T — Smoke Outlet Diameter	22	22	24	24	28	28	30	31	35	35	39	41	41	46	46	50
U — Steam Supply Size	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
V — Return Size	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
W — Smokebox Depth—Front	16	10	11	11	12	12	12	12	14	14	14	14	14	14	14	16
X — —Rear	14	14	15	15	15	15	16	16	18	18	18	18	18	18	18	18
AA — Base—Width	48	48	54	54	60	60	66 1/4	73	79	79	84 1/4	91 1/4	91 1/4	97 1/4	97 1/4	103 1/4
BB — —Length	11 1/4	11 1/4	14	14	14	14	14	14	14	14	14	14	14	14	14	14
CC — —Height	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14
DD — Tube Replacement Space—Front	71	79 1/4	77	79 1/4	81 1/4	81 1/4	81 1/4	81 1/4	81 1/4	81 1/4	81 1/4	81 1/4	81 1/4	81 1/4	81 1/4	81 1/4
EE — —Rear	67	75 1/4	73	75 1/4	77 1/4	77 1/4	77 1/4	77 1/4	77 1/4	77 1/4	77 1/4	77 1/4	77 1/4	77 1/4	77 1/4	77 1/4
FF — Firedoor opening in br. width x height	One 27 1/4" x 13 1/4"			Two 16" x 11"			Two 20" x 12"			Two 27" x 15"						
HH — Centerline br. to firedoor opening	8 1/4	8 1/4	8	8 1/4	8	8	8 1/4	8 1/4	8 1/4	8 1/4	8 1/4	8 1/4	8 1/4	8 1/4	8 1/4	8 1/4
JJ — Height Doors from Dot of Boiler	8 1/4	8 1/4	8	8 1/4	8	8	8 1/4	8 1/4	8 1/4	8 1/4	8 1/4	8 1/4	8 1/4	8 1/4	8 1/4	8 1/4
KK — Foundation—Width	36 1/4	35 1/4	42 1/4	42 1/4	48 1/4	48 1/4	53 1/4	59 1/4	65	65	71	77	77	82	82	87
LL — —Length	67	75 1/4	74	87 1/4	79 1/4	84 1/4	93 1/4	105 1/4	101	116 1/4	112 1/4	121	142	140 1/4	157 1/4	160
MM — Breaching Dia. One Boiler	22	22	24	24	28	28	30	31	35	35	39	41	41	46	46	50
NN — Stack Diameter	22	22	24	24	28	28	30	31	35	35	39	41	41	46	46	50
OO — —Height	45	45	50	50	55	55	60	65	70	70	75	80	80	85	85	90
PP — Breaching Dia. Two Boilers	27	27	30	30	34	34	37	38	41	41	44	47	47	50	50	54
QQ — Stack Diameter	27	27	30	30	34	34	37	38	41	41	44	47	47	50	50	54
RR — —Height	55	55	60	60	65	65	70	75	80	80	85	90	90	95	95	100
SS — Outside Surface to Cover Above Weight	Sq. Ft. 122	132	145	162	180	202	231	265	295	313	375	422	469	503	571	621
	Lbs. 5400	5800	6700	7600	8500	10000	11500	13000	15000	17000	20000	22000	25000	28000	31000	34000

—50 Lb. American Standard Flange
—Includes Front Head and Smokebox
10 or more valves furnished depending on required capacity.

Boiler by

Burner by

KEWANEE — PETRO

A SINGLE MATCHED UNIT.....

*for high and low pressure steam
and hot water heating*

The Kewanee-Petro boiler burner unit is a single matched unit, designed and engineered to produce a complete, reliable, and efficient heating system. The unit is designed to operate at high and low pressure steam and hot water heating. The unit is designed to operate at high and low pressure steam and hot water heating.

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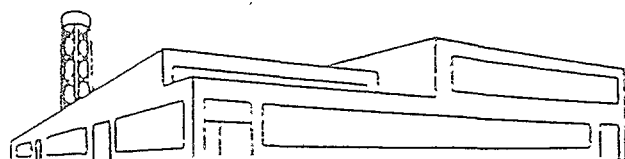
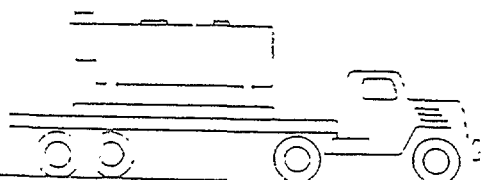
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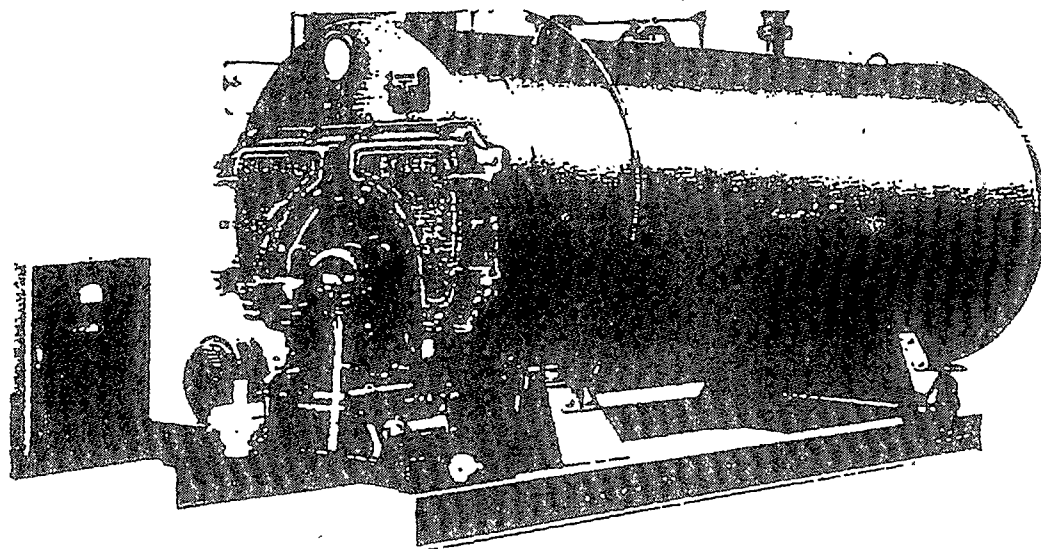
All accessories not manufactured by Petro or Kewanee were chosen from the acknowledged leaders in their fields, then tested in the complete unit to be sure that each and every part was a fitting teammate for all the others.

The Kewanee-Petro boiler burner unit is available in sizes from 10 to 150,000 Btu/hr. and 150,000 to 1,000,000 Btu/hr. for low pressure use with 15 lbs. steam or 150 lbs. water, or for high pressure use with 150 lbs. steam or 1,000 lbs. water. The unit may be fired with No. 1 or heavier fuel oils, gas, or a combination of both fuels.

maximum efficiency through entire firing range

The firing rate of the burner is automatically controlled to maintain maximum efficiency with the least amount of steam pressure under all conditions.





...carefully engineered, ready to install

*boiler and burner designed as a balanced unit
by the engineering staffs of two great companies*

The boiler and burner are designed as a balanced unit, ready to install. The boiler is a vertical, cylindrical unit with a complex burner assembly at the front. The burner is designed to burn oil or gas, and is equipped with a control system that can be adjusted to meet the requirements of the installation. The boiler and burner are designed to be installed in a variety of locations, and are capable of operating at a range of pressures and temperatures.

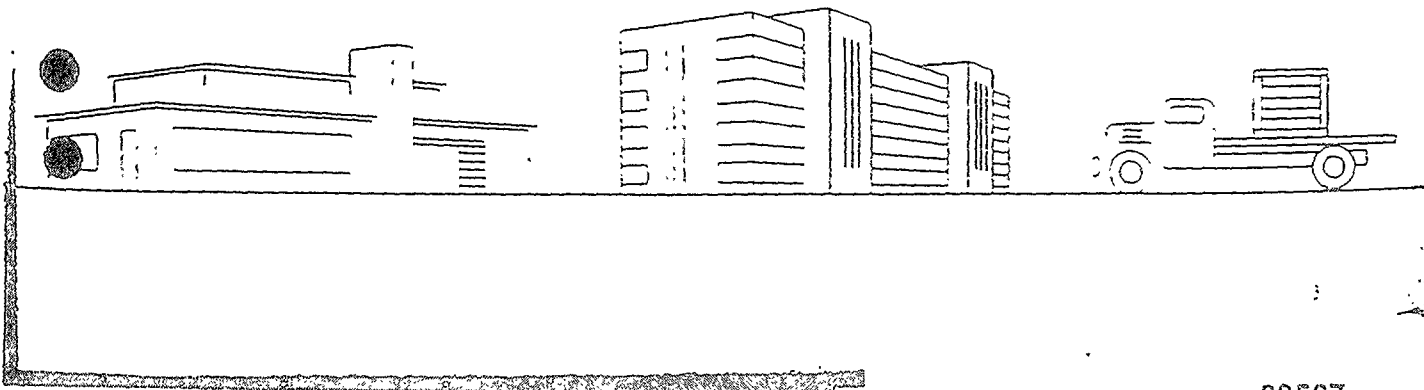
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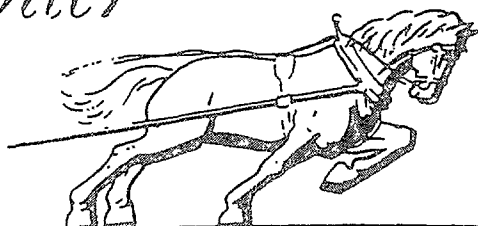
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Because of size, the boiler and burner are designed to be installed in a variety of locations, and are capable of operating at a range of pressures and temperatures. The boiler is a vertical, cylindrical unit with a complex burner assembly at the front. The burner is designed to burn oil or gas, and is equipped with a control system that can be adjusted to meet the requirements of the installation.

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*8.2 square feet of heating surface
per boiler.....horsepower*



For the most efficient use of Kewanee Boilers, operators should maintain the water level in the boiler at the normal level. This will insure the most efficient operation of the boiler.

The Kewanee Petro Unit is a compact, efficient boiler designed for the production of steam. It is a vertical, fire-tube boiler with a single pass for the combustion gases. The boiler is designed to operate at a pressure of 150 psi and has a heating surface of 8.2 square feet per horsepower. The boiler is made of mild steel and is painted with a protective paint. The boiler is easy to install and operate and is a reliable source of steam for a variety of applications.

But by far the most important factor to consider in boiler selection is their ability to provide sufficient reserve capacity to adequately handle such conditions "emergencies" as highly fluctuating peak overloads, expansion in plant operation, severe weather, temperature drops, etc.

Only boilers with adequate heating surface area provide this capacity—highest performance efficiency—lowest maintenance cost—dependability—longer life. That's why the Kewanee Petro Unit has been designed with 8.2 square feet of heating surface per boiler horsepower. This is the heating surface to capacity proportion and a concrete example of the fact that Kewanee does put more into every boiler. When selecting a boiler for your own use, select a unit that has the heating surface to capacity ratio as recommended by Kewanee. This will insure that you will obtain the greatest possible life and economy from your Kewanee Boiler.

broad range of sizes

Kewanee Boilers are available in a wide range of sizes to meet the needs of a variety of applications. The smallest boiler is 100 horsepower and the largest is 10,000 horsepower. This wide range of sizes makes Kewanee Boilers a versatile choice for a variety of applications.

choice of fuels

Kewanee Boilers can be fired with a variety of fuels, including oil, gas, and coal. This makes Kewanee Boilers a flexible choice for a variety of applications. The choice of fuel will depend on the availability and cost of the fuel in your area.

for heating

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for processing

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for power

When power is needed and limited test space or test equipment is available, the Kewanee Petro Unit is the ideal answer. Here in a complete, compact package is steam generating equipment which produces new ideas in efficiency with lowest maintenance costs.

uilt-in

workmanship
value into the

boiler built
with an experi-
ence goes "on the
only experience

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For other ex-
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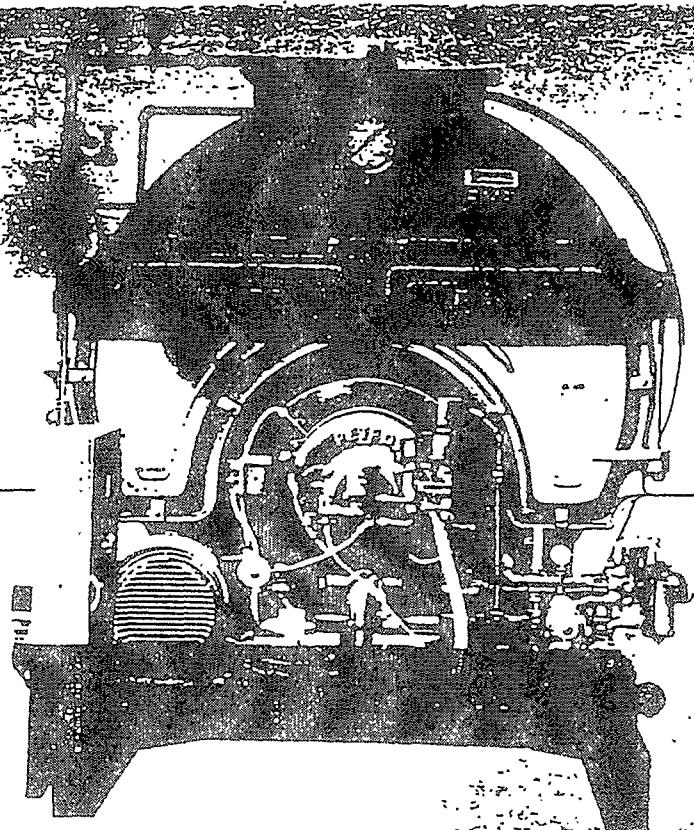
A manhole on
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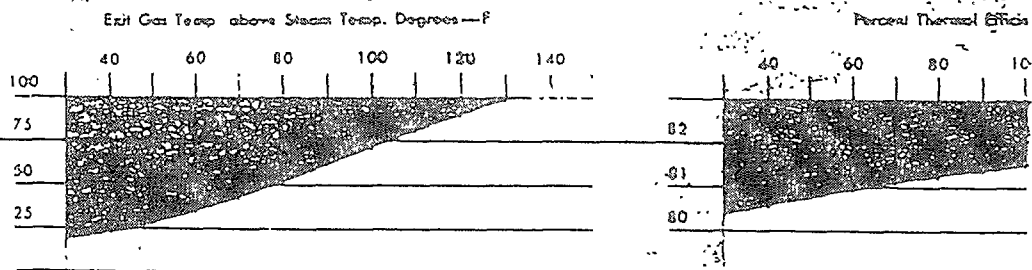
struction

tion Kewanee
exceed all the
requirements of the
City of Mechan-
as well as those
an independent
and insurance

Units are com-
e with the pro-
steel Boiler In-
vet are certified
east 50% more
capacity



80% certified efficiency



It's easy to "put your finger" on the over-all efficiency of the Kewanee-Petro Unit. Every gallon of oil or cubic foot of gas which goes into it contains a certain amount of heat. And that much heat is capable of producing a certain amount of energy... an amount accurately measured by the quantity of water evaporated into steam.

The largest part of the heat generated is absorbed by the boiler. In actual practice this amounts to 80%, which is considered excellent efficiency. The remaining 20% or less is given up by radiation from the boiler, or is vented through the stack.

The chart on the left indicates how the Petro Unit burns its fuel, without waste in the form of excess air... the perfectly burned gases) in the exit chamber. The chart at the right shows temperature of temperatures, and indicates how com-

With the Kewanee-Petro Unit a high efficiency has been proved by many tests and 80% is the normal on-the-job condition. It is a fact that efficiencies have been attained and still are being made by the Unit.

MORE MATERIAL MORE EXPERIENCE

built-in

MORE EXPERIENCE From drawing board to finished product, the experience of Kewanee engineers has been a factor in the design and proper proportioning of every part of the boiler to assure the most steam economy and safety in starting each step of construction. The boiler is built to stand up to the most exhaustive tests to make sure that the performance is intended.

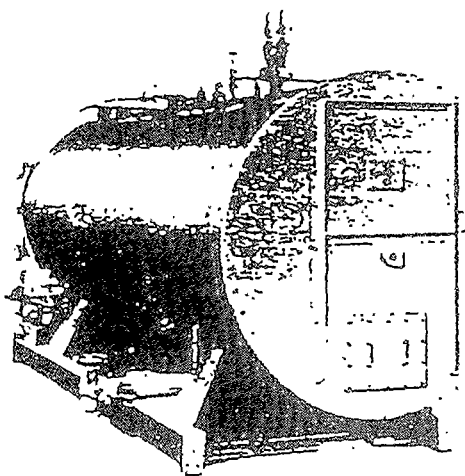
MORE MATERIAL ensures extra strength and makes possible the use of smaller parts so that even Kewanee boilers can be used in crowded spaces with no extra cost.

MORE ECONOMY is built into Kewanee boilers. The design of the boiler is such that the cost of the parts

and other evidences of unusual care and good workmanship such things require more labor but put extra value into the boilers.

MORE EXPERIENCE more than 55 years of boiler building equips Kewanee engineers and craftsmen with an experience that can't be matched. When a Kewanee goes "on the job" the owner gets all the benefits which only experience such as this can provide.

These are the things—some of them intangible—that make Kewanee boilers different and better. For other evidences of the quality that is built into every Kewanee see the three cut-aways on pages 8 and 9.



easy to clean and inspect

Every part of the Kewanee boiler is easily accessible. A manhole on top of the boiler and adequate washout openings give ready access to the waterways. Flat tubes are spaced well apart for free circulation of water and accessibility of water surfaces.

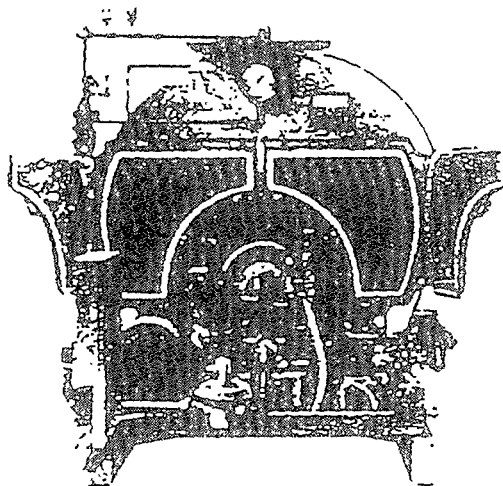
Sturdy hinged doors provide easy access to the tubes from the front. The back cover plate can be removed by access to rear combustion chamber. The rear chamber can be cleaned through the clean out at the front end of the cover plate.

A.S.M.E. code construction

In construction Kewanee Boilers meet or exceed all the rigid code requirements of the American Society of Mechanical Engineers, as well as those of a well known independent boiler inspection and insurance company.

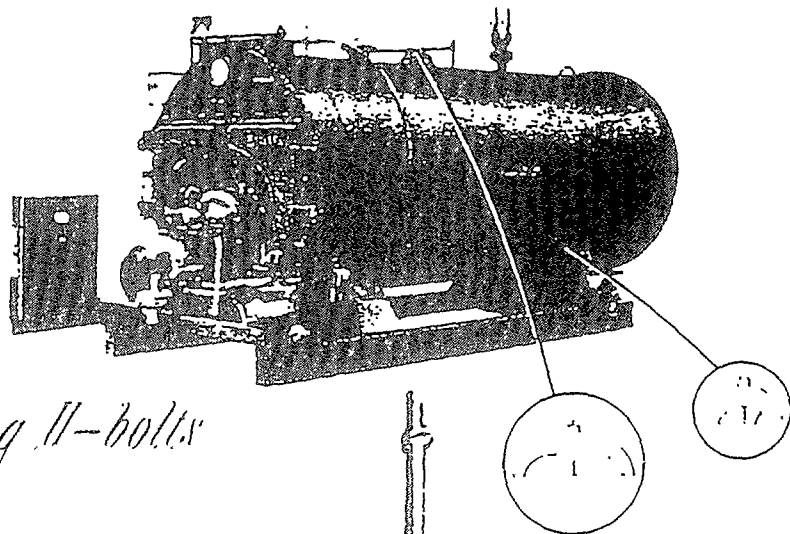
S.R.I. rated

Kewanee-Petro Units are rated in accordance with the provisions of the Steel Boiler Institute Code. They are certified to produce at least 50% more than their rated capacity.



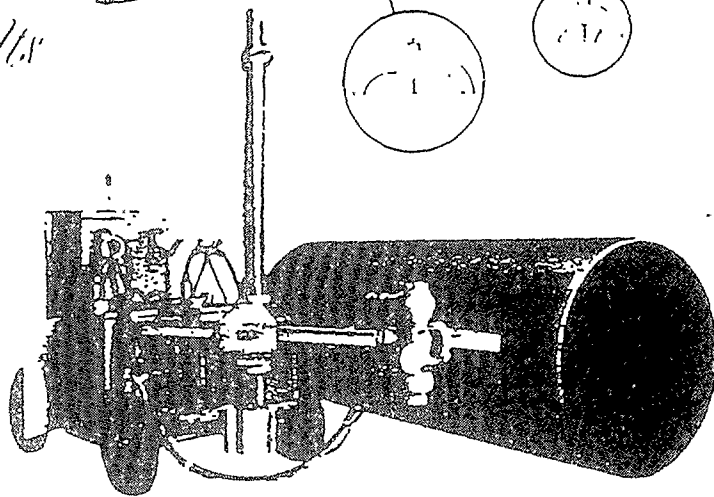
Extras in every KEWANEE *boiler*

*gas tight
flue doors
with quick opening H-bolts*



Boiler flue doors are made of heavy steel and are gas tight.

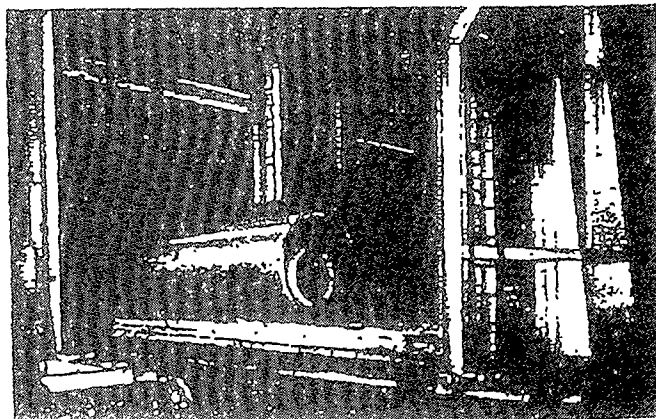
Kewanee boiler flue doors are permanently gas tight. They are made of heavy steel and are sealed by a gas tight gasket. They are made of heavy steel and are sealed by a gas tight gasket. They are made of heavy steel and are sealed by a gas tight gasket.



no. 1 weld, x-rayed and stress relieved

Boiler flue doors are welded joints. They are made of heavy steel and are sealed by a gas tight gasket. They are made of heavy steel and are sealed by a gas tight gasket. They are made of heavy steel and are sealed by a gas tight gasket.

And in a modern Stress Relieving Furnace, Kewanee boiler flue doors are heated to a temperature of 1200 degrees Fahrenheit and are gradually cooled so that the flue doors are stress relieved and are no longer stressed.



HINGED FLUE DOORS held firmly in place with quick opening U-bolts and gasketed for permanent gas tight fit. Provides easy access to tubes for cleaning and inspection.

IMMERSION IGNITION CONTROL prevents burner from attempting to fire until oil has reached proper burning temperature.

DIRECT DRIVE MOTOR—Most efficient and simplest appearance. Uses no belts to cause slip and wear.

MAGNETIC AND HIGH-LOW OIL VALVE controls oil flow to atomizing cup at closest point possible. Permits oil to circulate through heaters until stable oil temperature is attained. Opens only when oil is at proper burning temperature. High-Low valve adjusts firing rate to meet fluctuating loads. Location requires moving unit to side of furnace when burner fires.

CONTROL PANEL—All combustion controls are complete, assembled, wired and tested at the factory and is enclosed in one complete control panel as a protection from dust and damage. All wiring is done in conduits and instruments is installed and tested.

SHELL—Heavy flange quality steel in both high and low pressure units. Heads and furnace or pressure quality. All welds in accordance with A S M E Code 125 and 150 psi units stress relieved.

SPINNER BLADES in all tubes swirl the hot gases against tube surfaces providing longer gas travel and assure maximum heat transfer.

COIL HEATING VALVE reads oil temperature and controls heaters during warm up.

FUEL OIL HEATER—Steam to Hot Water Type. Preheats oil before it enters the burner. Provides constant oil temperature and prevents oil from solidifying.

FUEL OIL HEATER—Steam to Hot Water Type. Preheats oil before it enters the burner. Provides constant oil temperature and prevents oil from solidifying.

VENTURI COMBUSTION THROAT—Preheats oil before it enters the burner. Provides constant oil temperature and prevents oil from solidifying.

FUEL OIL HEATER—Steam to Hot Water Type. Preheats oil before it enters the burner. Provides constant oil temperature and prevents oil from solidifying.

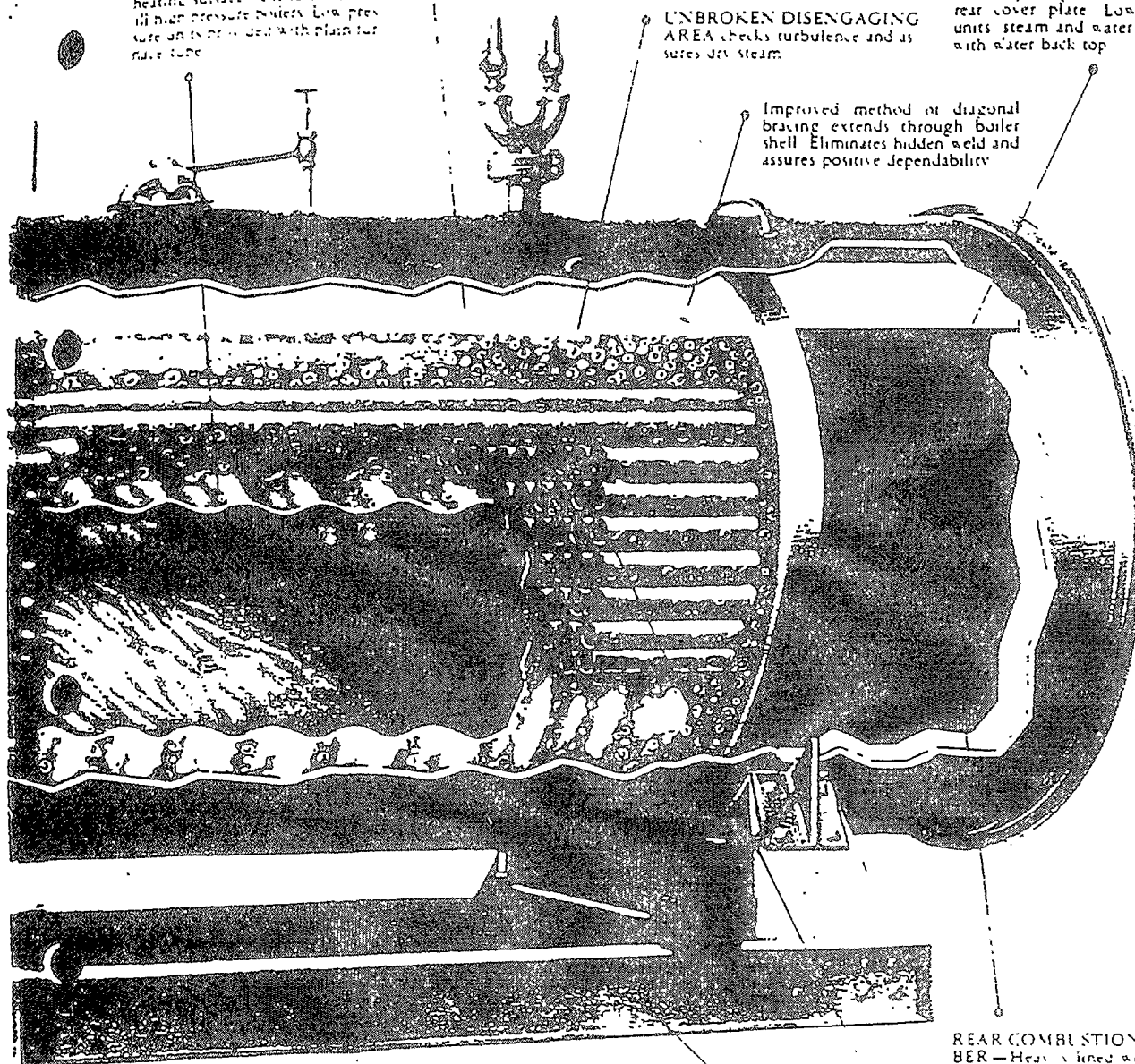
CORRUGATED FURNACE provides extra strength and added heating surface next to the fire in all high pressure boilers. Low pressure units are provided with plain furnace tube.

AMPLE STEAM SPACE assures ample reserve supply of dry steam.

UNBROKEN DISENGAGING AREA checks turbulence and assures dry steam.

Units for high pressure steam incorporate dry back design, with access opening to fusible plug in rear cover plate. Low pressure units steam and water designed with water back top.

Improved method of diagonal bracing extends through boiler shell. Eliminates hidden weld and assures positive dependability.



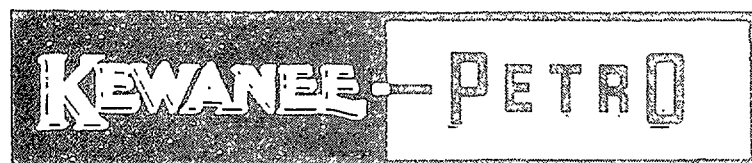
REAR COMBUSTION CHAMBER—Heavy lined with refractory, shipped in place, which aids combustion and preserves heat thereby increasing overall efficiency.

FIRE TUBES—6" diameter heavy gauge steel, expanded into holes with ends firmly rolled and beaded.

STURDY STEEL SKIDS simplify handling and installation problems. Requires no special base construction.

Furnace in low pressure boilers is now attached to flanged openings in tube sheet to provide for greater flexibility.

the integrated



boiler-burner unit

for high or low pressure heating

KEWANEE

PETRO

BOILER BURNER

Whipple

When entering the last number used, type (s) Used Numbers (last number on card number indicates Bureau file type and pressure) (d) type (t) on card number (e) Classification Pressure (f) Bureau filing Number (g) Gas type and pressure (h) (i) (j) (k) (l) (m) (n) (o) (p) (q) (r) (s) (t) (u) (v) (w) (x) (y) (z) (aa) (ab) (ac) (ad) (ae) (af) (ag) (ah) (ai) (aj) (ak) (al) (am) (an) (ao) (ap) (aq) (ar) (as) (at) (au) (av) (aw) (ax) (ay) (az) (ba) (bb) (bc) (bd) (be) (bf) (bg) (bh) (bi) (bj) (bk) (bl) (bm) (bn) (bo) (bp) (bq) (br) (bs) (bt) (bu) (bv) (bw) (bx) (by) (bz) (ca) (cb) (cc) (cd) (ce) (cf) (cg) (ch) (ci) (cj) (ck) (cl) (cm) (cn) (co) (cp) (cq) (cr) (cs) (ct) (cu) (cv) (cw) (cx) (cy) (cz) (da) (db) (dc) (dd) (de) (df) (dg) (dh) (di) (dj) (dk) (dl) (dm) (dn) (do) (dp) (dq) (dr) (ds) (dt) (du) (dv) (dw) (dx) (dy) (dz) (ea) (eb) (ec) (ed) (ee) (ef) (eg) (eh) (ei) (ej) (ek) (el) (em) (en) (eo) (ep) (eq) (er) (es) (et) (eu) (ev) (ew) (ex) (ey) (ez) (fa) (fb) (fc) (fd) (fe) (ff) (fg) (fh) (fi) (fj) (fk) (fl) (fm) (fn) (fo) (fp) (fq) (fr) (fs) (ft) (fu) (fv) (fw) (fx) (fy) (fz) (ga) (gb) (gc) (gd) (ge) (gf) (gg) (gh) (gi) (gj) (gk) (gl) (gm) (gn) (go) (gp) (gq) (gr) (gs) (gt) (gu) (gv) (gw) (gx) (gy) (gz) (ha) (hb) (hc) (hd) (he) (hf) (hg) (hh) (hi) (hj) (hk) (hl) (hm) (hn) (ho) (hp) (hq) (hr) (hs) (ht) (hu) (hv) (hw) (hx) (hy) (hz) (ia) (ib) (ic) (id) (ie) (if) (ig) (ih) (ii) (ij) (ik) (il) (im) (in) (io) (ip) (iq) (ir) (is) (it) (iu) (iv) (iw) (ix) (iy) (iz) (ja) (jb) (jc) (jd) (je) (jf) (jg) (jh) (ji) (jj) (jk) (jl) (jm) (jn) (jo) (jp) (jq) (jr) (js) (jt) (ju) (jv) (jw) (jx) (jy) (jz) (ka) (kb) (kc) (kd) (ke) (kf) (kg) (kh) (ki) (kj) (kk) (kl) (km) (kn) (ko) (kp) (kq) (kr) (ks) (kt) (ku) (kv) (kw) (kx) (ky) (kz) (la) (lb) (lc) (ld) (le) (lf) (lg) (lh) (li) (lj) (lk) (ll) (lm) (ln) (lo) (lp) (lq) (lr) (ls) (lt) (lu) (lv) (lw) (lx) (ly) (lz) (ma) (mb) (mc) (md) (me) (mf) (mg) (mh) (mi) (mj) (mk) (ml) (mm) (mn) (mo) (mp) (mq) (mr) (ms) (mt) (mu) (mv) (mw) (mx) (my) (mz) (na) (nb) (nc) (nd) (ne) (nf) (ng) (nh) (ni) (nj) (nk) (nl) (nm) (nn) (no) (np) (nq) (nr) (ns) (nt) (nu) (nv) (nw) (nx) (ny) (nz) (oa) (ob) (oc) (od) (oe) (of) (og) (oh) (oi) (oj) (ok) (ol) (om) (on) (oo) (op) (oq) (or) (os) (ot) (ou) (ov) (ow) (ox) (oy) (oz) (pa) (pb) (pc) (pd) (pe) (pf) (pg) (ph) (pi) (pj) (pk) (pl) (pm) (pn) (po) (pp) (pq) (pr) (ps) (pt) (pu) (pv) (pw) (px) (py) (pz) (qa) (qb) (qc) (qd) (qe) (qf) (qg) (qh) (qi) (qj) (qk) (ql) (qm) (qn) (qo) (qp) (qq) (qr) (qs) (qt) (qu) (qv) (qw) (qx) (qy) (qz) (ra) (rb) (rc) (rd) (re) (rf) (rg) (rh) (ri) (rj) (rk) (rl) (rm) (rn) (ro) (rp) (rq) (rr) (rs) (rt) (ru) (rv) (rw) (rx) (ry) (rz) (sa) (sb) (sc) (sd) (se) (sf) (sg) (sh) (si) (sj) (sk) (sl) (sm) (sn) (so) (sp) (sq) (sr) (ss) (st) (su) (sv) (sw) (sx) (sy) (sz) (ta) (tb) (tc) (td) (te) (tf) (tg) (th) (ti) (tj) (tk) (tl) (tm) (tn) (to) (tp) (tq) (tr) (ts) (tt) (tu) (tv) (tw) (tx) (ty) (tz) (ua) (ub) (uc) (ud) (ue) (uf) (ug) (uh) (ui) (uj) (uk) (ul) (um) (un) (uo) (up) (uq) (ur) (us) (ut) (uu) (uv) (uw) (ux) (uy) (uz) (va) (vb) (vc) (vd) (ve) (vf) (vg) (vh) (vi) (vj) (vk) (vl) (vm) (vn) (vo) (vp) (vq) (vr) (vs) (vt) (vu) (vv) (vw) (vx) (vy) (vz) (wa) (wb) (wc) (wd) (we) (wf) (wg) (wh) (wi) (wj) (wk) (wl) (wm) (wn) (wo) (wp) (wq) (wr) (ws) (wt) (wu) (wv) (ww) (wx) (wy) (wz) (xa) (xb) (xc) (xd) (xe) (xf) (xg) (xh) (xi) (xj) (xk) (xl) (xm) (xn) (xo) (xp) (xq) (xr) (xs) (xt) (xu) (xv) (xw) (xx) (xy) (xz) (ya) (yb) (yc) (yd) (ye) (yf) (yg) (yh) (yi) (yj) (yk) (yl) (ym) (yn) (yo) (yp) (yq) (yr) (ys) (yt) (yu) (yv) (yw) (yx) (yy) (yz) (za) (zb) (zc) (zd) (ze) (zf) (zg) (zh) (zi) (zj) (zk) (zl) (zm) (zn) (zo) (zp) (zq) (zr) (zs) (zt) (zu) (zv) (zw) (zx) (zy) (zz)

[illegible]

of the following information:



Widdowson

UNIT NUMBER	KP19-4	KP20-4	KP21-4	KP22-5	KP23-5	KP24-4	KP25-4	KP26-7	KP27-7	KP28-8	KP29-3/2	KP30-3/2
A -- Length of Well	16 9/16	16 0/16	17 1/8	17 6/8	17 3/4	17 3/4	17 3/4	17 1/2	22-3	24-9	35-9/16	35-9/16
B -- Width of Well	5 8	5 8	5 8	6 3/8	6 3/8	7 0	7 0	7 10/16	7-10	8-10	9-9/16	9-9/16
C -- Steam Supply Height	6 4/16	6 4/16	6 4/16	7 0	7 6/8	7 0	7 6/8	8-7	9-1 1/16	9-8	10-4/16	10-10/16
D -- Smoke Outlet Height	6 4/16	6 4/16	6 4/16	7 0	7 4	7 4	7 4	7-10 1/16	8-11	9-4/16	10-1	10-7
E -- Water Line Height	5 7/16	5 0	5 0	5-11/16	5-11/16	5-11/16	5-11/16	6-8	7-0 1/16	7-5/16	8-0/16	8-3/8
F -- Boiler Diameter -- Base Width	11 8	12 7	12 7	13 1/2	14-10	14-10	14-10	15-7	16-7	18 11	20-0	20-0
G -- Boiler Length	4 5/16	4 5/16	4 5/16	4 4/16	4 4/16	4 4/16	4 4/16	4 7	4 8 1/16	5-10	5-9/16	5-9/16
H -- Front of Unit to Boiler	11 5/16	11 5/16	11 5/16	12 9/16	13-9	13-9	13-9	15-9/16	16-10	17-2	20-3/16	20-3/16
I -- Base -- Length	0 6	0 6	0 6	0 8	0 8	0 8	0 8	0 10	1-0	1-0	1-0	1-3
J -- Base -- Height	1 1/16	1 1/16	1 1/16	1 1/8	1 1/8	1 1/8	1 1/8	1 1/8	1-3	1-3 1/2	1-9	1-9
K -- Floor to Boiler	1 1/16	1 1/16	1 1/16	1 1/8	1 1/8	1 1/8	1 1/8	1 1/8	1-3	1-3 1/2	1-9	1-9
L -- Steam Supply	1 0	1 1	1 1	1 1	1 1	1 1	1 1	1 1	1-3	1-3 1/2	1-9	1-9
M -- Safety Valve	3 6	4 1	4 1	4 5	5 0	5 0	5 0	5 4	5-5	5-5	5-6	5-6
N -- Blow off	4 0	4 0	4 0	4 4	4 8	4 8	4 8	5 2	5-4	5-4	5-5	5-5
O -- Feed Water, each side	4 1	4 1	4 1	4 5	4 9	4 9	4 9	5 3	5-4	5-4	5-5	5-5
P -- Return 15 lb. water, each side	4 4	4 4	4 4	4 8	4 9	4 9	4 9	5-3	5-4	5-4	5-5	5-5
Q -- Smoke Outlet -- Width	0 10	0 10	0 10	0 10	0 10	0 11	0 11	1 1	1-2	1-2	1-4	1-6
R -- Length	1 4	1 4	1 4	1 6	1 6	1 6	1 6	1 8	1-0	1-0	1-2	1-2
S -- Tube Replacement Space	7 3	8 1	8 1	8 1/16	9-10	10 4	10 8	12-8	13-0	13-7	13-6	13-5

[illegible]

OIL BURNERS Model and Catalog Numbers

CAPACITIES GPH	Full Automatic Operation with Hydraulic and Underdrain No. 5 Oil		Full Automatic Operation with Preheated No. 5 Oil		Full Automatic Operation with No. 6 Oil	
	Model No	Catalog No	Model No	Catalog No	Model No	Catalog No
75	FW 4A	51801	FW 4AE	51808	FW 6AH	51815
15	FW 5A	51807	FW 5AE	51809	FW 6AH	51816
50	FW 6A	51803	FW 6AE	51810	FW 6AH	51817
70	FW 7A	51804	FW 7AE	51811	FW 7AH	51818
100	FW 8A	51805	FW 8AE	51812	FW 8AH	51819
170	FW 9A	51806			FW 9AH	51820
145	FW 9A	51807			FW 9AH	51821

GAS BURNERS - Model and Catalog Numbers

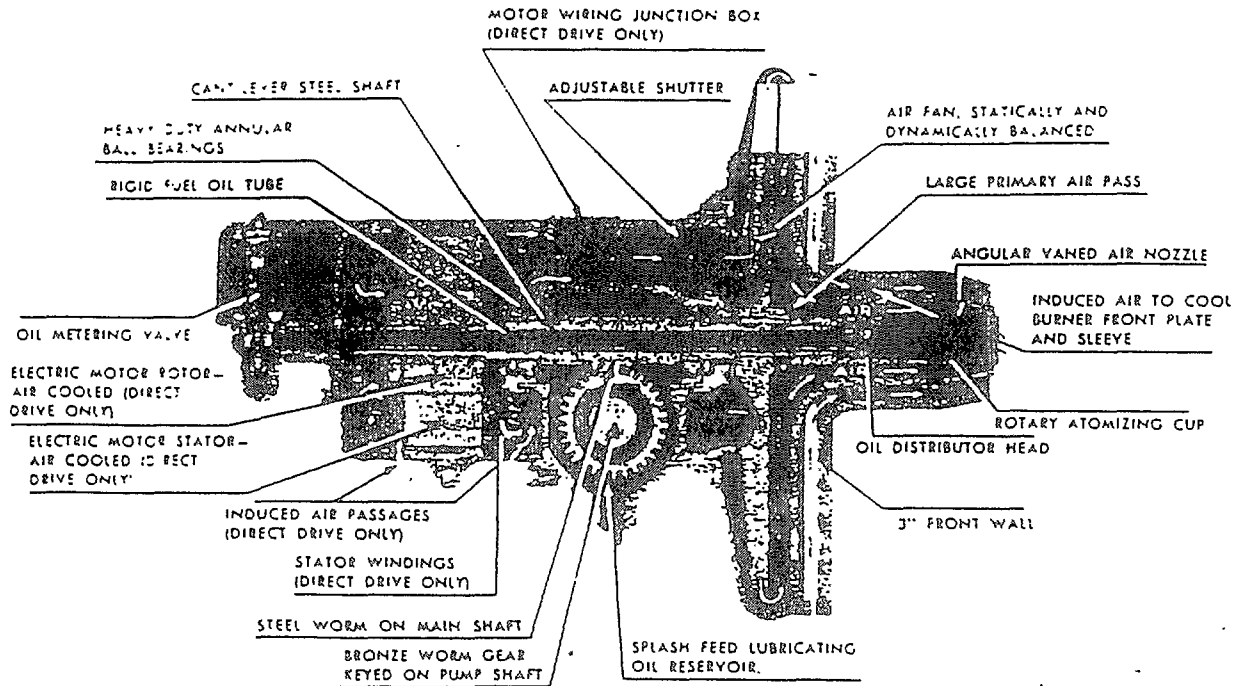
INFEET 1000'S, BLU PER TON	AUTOMATIC START		MANUAL START	
	Model No	Catalog No	Model No	Catalog No
1450	FG 9A	61777	FG 4M	61779
5550	FG 5A	61778	FG 5M	61780
7500	FG 6A	61779	FG 6M	61781
10500	FG 7A	61775	FG 7M	61782
15000	FG 8A	61776	FG 8M	61783
16000	FG 9A	61777	FG 8 1/2 M	61784
21500	FG 9A	61778	FG 9M	61785

COMBINATION OIL AND GAS BURNERS -- Model and Catalog Numbers

CH CAPACITY TYPE	GAS INPUT THRU HOUR	Full Automatic Operation with No. 7 & 8 Oil Unrated No. 5 Oil		Full Automatic Operation with No. 5 Oil		Full Automatic Operation with No. 6 Oil	
		Model No.	Cal No.	Model No.	Cal No.	Model No.	Cal No.
25	1750	FCW 4A	41701	FCW 4AE	41708	FCW 4AH	41715
35	2550	FCW 5A	41702	FCW 5AE	41709	FCW 5AH	41716
50	3500	FCW 6A	41703	FCW 6AE	41710	FCW 6AH	41717
70	4500	FCW 7A	41704	FCW 7AE	41711	FCW 7AH	41718
100	5500	FCW 8A	41705	FCW 8AE	41712	FCW 8AH	41719
120	6000	FCW 9A	41706			FCW 8V/AH	41720
175	7150	FCW 9A	41707			FCW 9AH	41721

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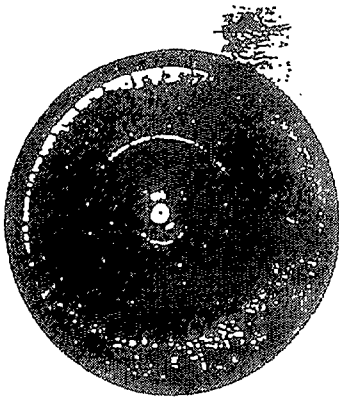
PETRO



for all grades of oil

The heart of the burning system is the Petro Model W horizontal rotary atomizing burner which is adaptable to the whole range of oil grades. It is a rotary cup type burner of proved superior design and assembly tells the mechanic that many years of patient development were put into this compact and efficient burner.

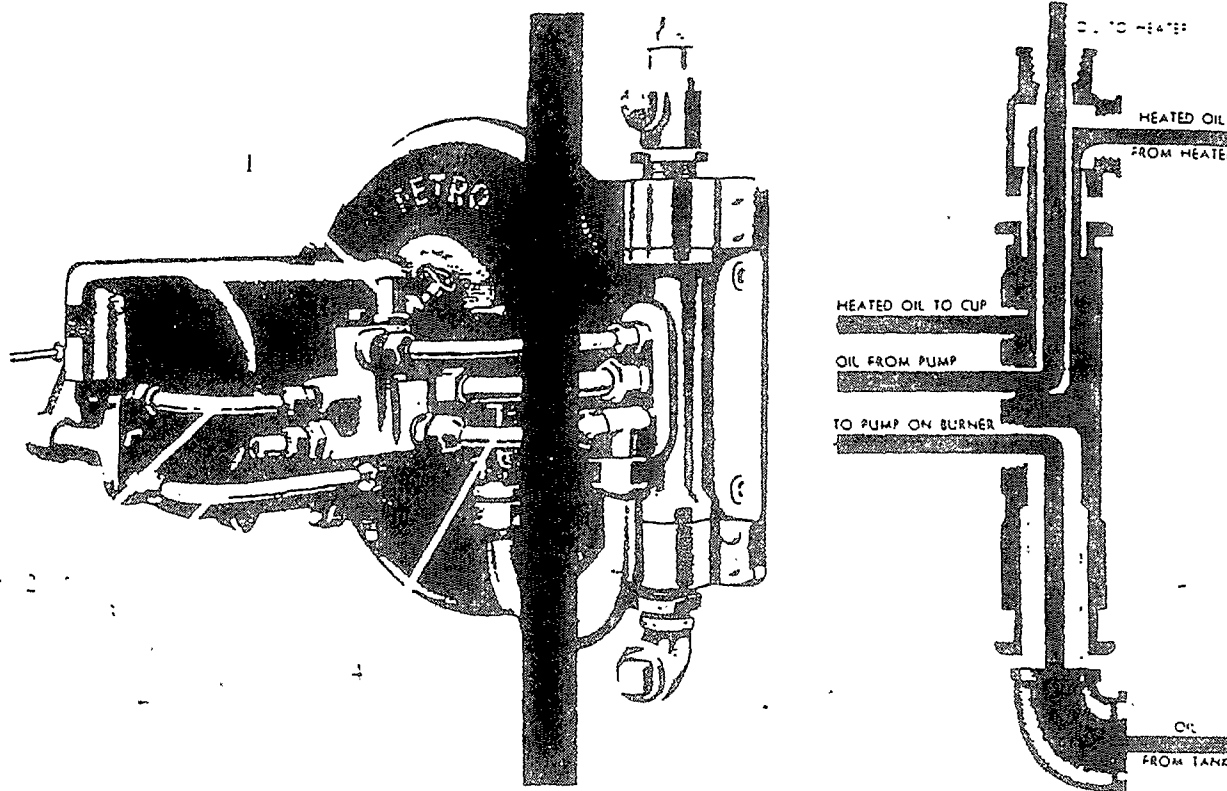
The operating efficiency of any burner, however well developed or built, depends on its proper application to the boiler. Ordinarily this vital work has to be done on the job when the burner is installed. But in the Kewanee-Petro Unit you get a perfectly balanced assembly in which boiler, burner, forced draft air supply and control system have been completely integrated and thoroughly engineered in advance by the engineering staffs of two great companies. Application consists merely of attaching the burner to the boiler.



for gas and gas-oil

The Petro gas burner is a highly efficient ring type burner which is most effective for firing Scotch type boilers. Circular arrangement of the multiple gas jets provides thorough mixing of gas and air in the burner throat ahead of the combustion zone. A simple and ingenious system of air vanes at the throat entrance regulates the air volume and distribution and the rate of flame rotation in the furnace tube. This burner is designed for use with all types of fuel gas, high or low pressure.

The gas-oil model is a combination of the two burners described above in which the oil burner is located at the center of the gas ring. Both burners are always available for use and the change from one fuel to the other takes just the few minutes needed to open and close appropriate valves and switches. The boiler operates at top efficiency with either fuel.



exclusive Petro Thermal Viscosity principle

As it is well known, oil burned in the Kewanee-Petro Unit is pumped through a nozzle. With the Petro Thermal Viscosity System, the viscosity of the oil, with Petro, assures a uniform flow of fuel to the burner at all times despite the natural tendency of the oil to flow more freely when hot than when cold. The principle is that at constant pressure a fluid of a fixed viscosity of fixed size at a constant rate of flow will flow at a constant rate.

In the Petro Thermal Viscosity System the necessary constant pressure is provided by the fuel oil pump and a pressure control valve. The required viscosity of fixed size is provided by a magnetic valve that is set at the desired burning rate. Constant viscosity is provided by heating the oil to a suitable temperature and keeping it at this temperature constant.

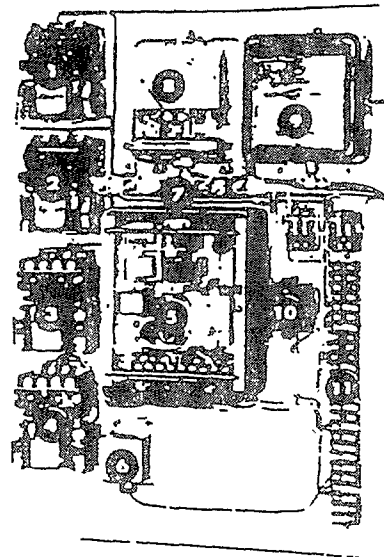
At temperatures in the range of 17°-184° F. heavy oils are almost as fluid as kerosene or water. Some are more fluid than water, but at these temperatures they tend to approach a

common viscosity. With all of them, temperature and viscosity move together. Viscosity going down as temperature goes up, and viscosity remaining constant as temperature remains constant. The Petro Thermal Viscosity System includes the necessary heaters and controls to heat the oil to the required temperature. It holds the temperature constant and prevents the burner from firing until the oil is at the proper temperature.

In the photograph above the size U-shaped tubing from the lowest hinge connection supplies oil to the pump which is mounted above the left side of the "U". Oil pressure in the burner circuit is controlled at "1" from where the oil is carried by "2" to the magnetic valve. If the oil is at the correct temperature for burning, it is fed to the atomizing cup by the magnetic valve. But if the oil is not at the correct temperature it is returned through tube "3" to be recirculated and further heated. Tube "4" is a recirculating by-pass which provides for recirculation of the fuel oil while it is being heated to the proper burning temperature.

automatic controls

*each panel is
designed for the
individual job*



*for all types of conventional
or special applications: automatic
or semi-automatic*

Magnets, starters with over-
load current protection start
and stop all motors in response
to control demands. Starters
are provided for ① Burner
motor ② Forced draft fan
motor ③ Feed water pump
(optional) ④ Advance
circulation pump (optional).

⑤ Electronic combustion con-
trol shuts down burner in-
stantly in event of flame fail-
ure—includes cycling controls
for starting combustion equip-
ment in proper sequence.

⑥ Low voltage power line
transformer—supplies electric
current to burner input mod-
ulating controls.

⑦ Indicating signal lights
working in conjunction with
indicating meter on panel door
show the operator at a glance
status of burner operating cycle.

⑧ Gauge indicates pressure of
draft existing within the boiler
burner.

⑨ Automatic draft control
(optional)—recommended on
boilers connected to stack high
enough to create draft at boiler
outlet. Not needed with
"short stack" unless atmos-
pheric pressure varies in draft
run.

⑩ Pilot control valve—
used to shut fuel burner.

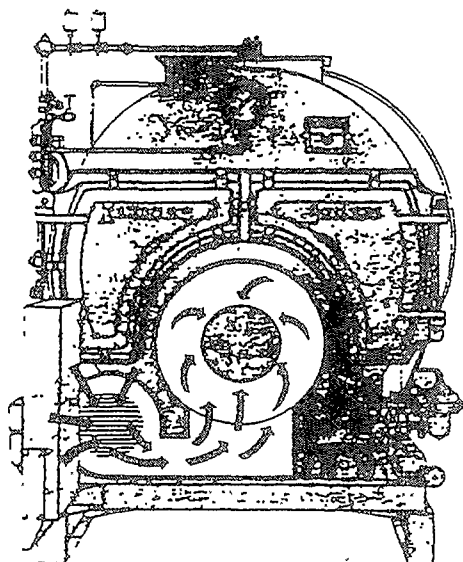
⑪ Terminal strip—allows
easy panel disassembly and
component replacement.

⑫ Pilot device—used for
safety.

⑬ Pilot control—used to
shut off fuel burner in event
of a gas leak or a low
draft condition.

⑭ Pressure switch—used to
shut off fuel burner in event
of a low draft condition or
a high pressure condition.
Provides check on condition of
vacuum tubes.

forced draft makes high stacks unnecessary

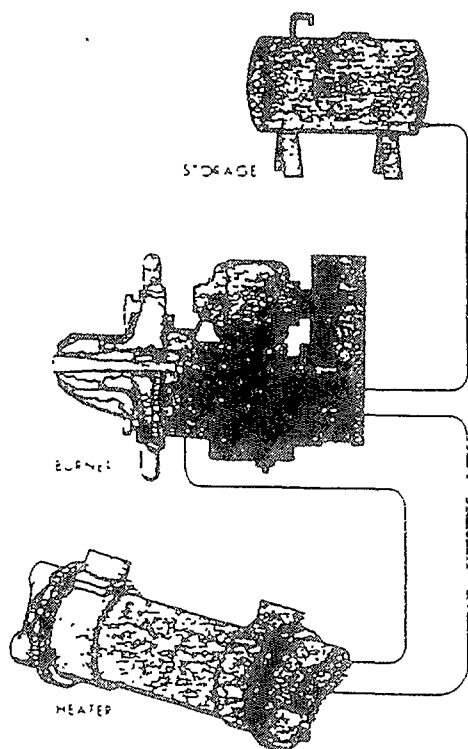


The only flue connection required for this unit is a vent pipe to convey the spent products of combustion outside the building. This important feature eliminates a major expense item.

The integral forced draft blower furnishes a regulated supply of combustion air to the burner with sufficient pressure to force it through the boiler passages at all ratings. Proper ratio of air to fuel is maintained by the automatic control system which continuously meters the secondary air volume at the inlet to the burner throat. This superior type of air control not only gives precise control of air volume but also assures uniform distribution of air around the firing tube and controls the rotation of the flame, a condition essential for maximum combustion efficiency.

Forced draft blower is ruggedly built—easily accessible. Direct drive and low speed ball-bearing motor assure long, trouble-free service.

This efficient fan combined with adequate smooth flue gas and air passages provides ample reserve capacity to operate the boiler against outlet pressure with minimum power consumption.



preheating of heavy oil is automatically controlled

All the new equipped fully automatic fuel oil heating system insures peak burner performance. Oil is kept automatically at just the right temperature for proper atomization.

Steam line heaters are regulated by a sensitive bulb type thermocouple control, which admits just the right amount of steam to the heater to maintain the desired oil temperature.

Hot water type heat exchangers are equipped with oil temperature controls which operate a hot water circulating pump to maintain the required oil temperature.

In addition, each heavy oil burner is equipped with a thermostatically controlled electric heater in the oil line to the atomizing gun. This auxiliary heater assures that the oil reaches the gun at the proper temperature, even if the line heater has not been in operation long enough to heat the oil thoroughly. A thermostat prevents the burner from firing until the oil has reached the proper temperature.

When specified, all oil heaters and their associated controls, valves, strainers and gages will be completely piped and tested at the factory.