

KEWANEE

Residence

TYPE R

BOILER

THE LATER STYLE
STEEL-WELDED BOILER FOR HEATING
BUNGALOWS, HOMES AND SMALLER BUILDINGS



Burns every kind of fuel
Coal—Oil—Gas

KEWANEE BOILER CORPORATION

KEWANEE, ILLINOIS

division of

American Radiator & Standard Sanitary Corporation

Kewanee Branches

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Catalog 88j

Separate Catalogs on Kewanee Fire & Boilers R. Welded, Kewanee Type C Boilers Electric Weld, Kewanee Steel Water Heating, Gas Burners, Tabasco Water Heaters and Tanks, Kewanee Power Boilers, Round R Boilers. Sent on Request.

Kewanee Type "R" Steel Boiler

THE boiler that is built of steel has many striking advantages besides extra strength over other kinds of heaters on the market.

—A steel boiler goes into the basement all in one piece, ready to set on the base assembly. —It is practically indestructible. Cast Iron equipment is made from substantial patterns and lighter parts are Malleable Iron. —In Kewanee Type R proportional balance of Grate Area, Combustion Space, Heating Surface, Water Content, Steam Space and other technical requirements for obtaining highest efficiency in a heating boiler are cleverly fulfilled. Advantage is taken of high thermal conductivity, due to the even thicknesses in Steel plates and tubes. —The firebox has the necessary height and length for complete combustion of the fuel and the Type R crown sheet is *not inverted*, it is *right-side-up* so as to shed any sediment or loose scale that might be precipitated from the water. —It is a convenience to be able to clean the heating surfaces and flues from the front of the boiler. So there need be no insulating layer of soot to obstruct the heat transfer process.

—So the Type R boiler fabricated from steel with electric-weld seams and with cast iron base complies with every consideration which makes for economy and dependability in steam generation and water heating. This later series is fashioned for the new style habitable basement. It will fit through the usual door or opening.

All the requirements for safe and sound construction comprised in the A. S. M. E. Code for low pressure heating boilers are complied with. This is the highest authority. Every Type R Boiler has to pass rigid inspections for workmanship and is subjected to hydrostatic test of 60 pounds pressure on each square inch. Each bears a registered number, also official stamp of approval of a leading Boiler Inspection and Insurance Company.

Uniform Rating

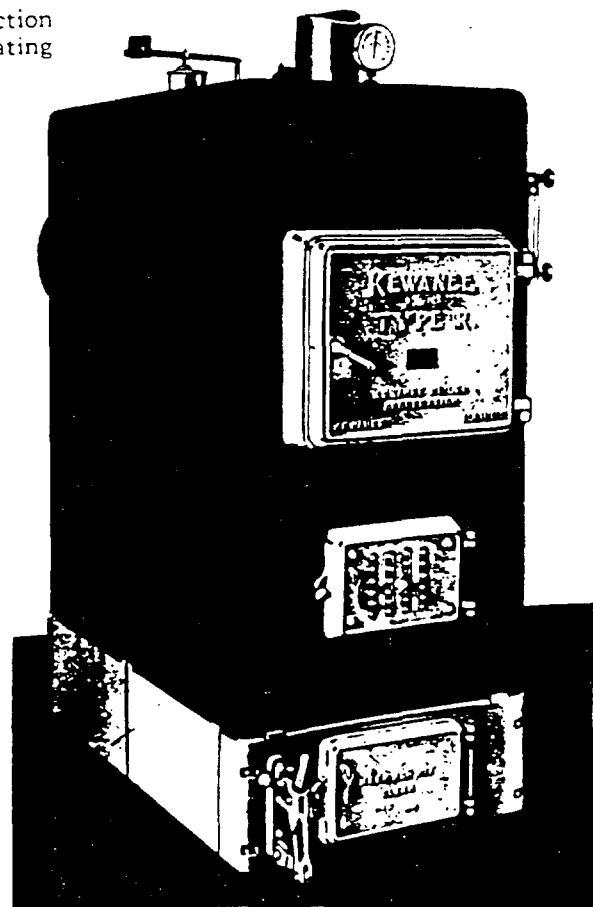
The ratings published in this catalog are in conformity with the Steel Heating Boiler Institute's Code for Rating Low Pressure Heating Boilers.

Type R rating is Total Radiation Load at boiler outlet expressed in equivalent surface of cast iron radiators emitting 240 units of heat or B.T.U.'s per square foot per hour for Steam, at 2 lbs. pressure and 150 B.T.U. for Water at 180 degrees temperature.

Total Radiation Load corresponds with the standard design load which is the sum of 3 items:

1. Surface area of exposed radiation required to heat the building in 60 degrees.
2. Maximum load required for water heaters and other appliances.
3. Heat loss in circulation and piping connections.

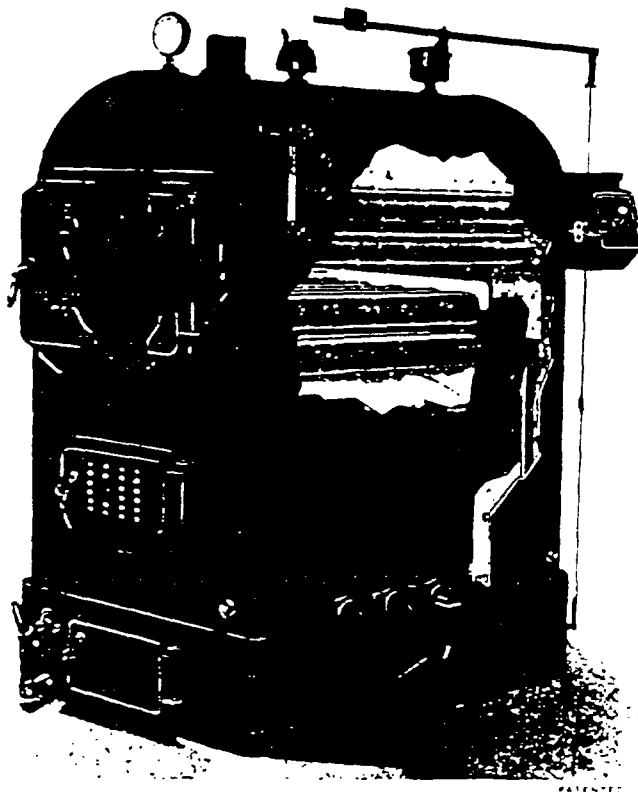
Provided the stack and breeching connections are in accordance with the manufacturer's specification, each Type R Boiler will carry all the radiation load listed as its capacity, and in addition will easily handle large overloads with long firing periods and with low stack temperatures.



KEWANEE TYPE R STEEL BOILER WITH JACKET

PATENTED

KEWANEE STEEL BOILER *Residence* TYPE R



KEWANEE TYPE R STEEL BOILER WITHOUT JACKET
NUMBERS 742 TO 748 BURNING COAL
TO HEAT 140 TO 1960 SQ. FT. STEAM RADIATION

Highly Efficient Unit for Heating
Residences and Smaller Buildings
with every kind of fuel,
Coal—Oil—Gas

This design in detail consists of a spacious Firebox in one piece with the Rear Combustion Chamber, a patented feature, other patents pending, where fuel is ignited first then the burning process is completed before the products of combustion are drawn through the bank of First Pass tubular flues.

The flow of hot gases is reversed in the Cast Iron Refractory Insulated Front Smokebox and directed back into the Second Pass bank of tubes where the rest of the useful heat is abstracted by the surrounding water which is thereby kept in active circulation.

Two Ends and a single Wrapper Sheet forming the enclosure for Water Content and Steam Space complete this simple unit. It merely has to be set down on the Cast Iron Base which comes with the Removable Rocking Grate Bars, Shaker and Doors all ready assembled. This permits the heating boiler to be piped up and placed in operation without delay.

Type R Boiler is a later Kewanee development employing characteristically sound steel construction in the compacted style of heating unit. It is designed to serve the smaller kind of building—such as garage, store, school, church, apartment, office or residence.

For every kind of solid fuel. Coke, all grades of soft or hard coals either stoker or hand-fired and their briquette or powdered forms all are burned with excellent success, also any liquid fuel oils, and natural or commercial gas are being used with high efficiency in Kewanee Type R Boilers. All as described in subsequent pages.

EQUIPMENT FOR COAL BOILER

Firedoor, Front Cleanout Door, Rear Opening, Two-way Smoke Hood, Four Cleanout Plugs, Base complete including Ash Pit Door, Rear Draft Pouch, Rocking Grate with removable Bars, Levers and Shaker Arm and Handle, Firing Tools—Hoe, Poker, Flue Brush and Soot Scraper.

TRIMMINGS FOR STEAM BOILER

Water Gauge, two compression Gauge Cocks, Steam Gauge, Pop Safety Valve, Automatic Air Draft Regulator with Lever Weight, Jointed Rod and Collar. Specifications in full on page 11.

FOR WATER BOILER

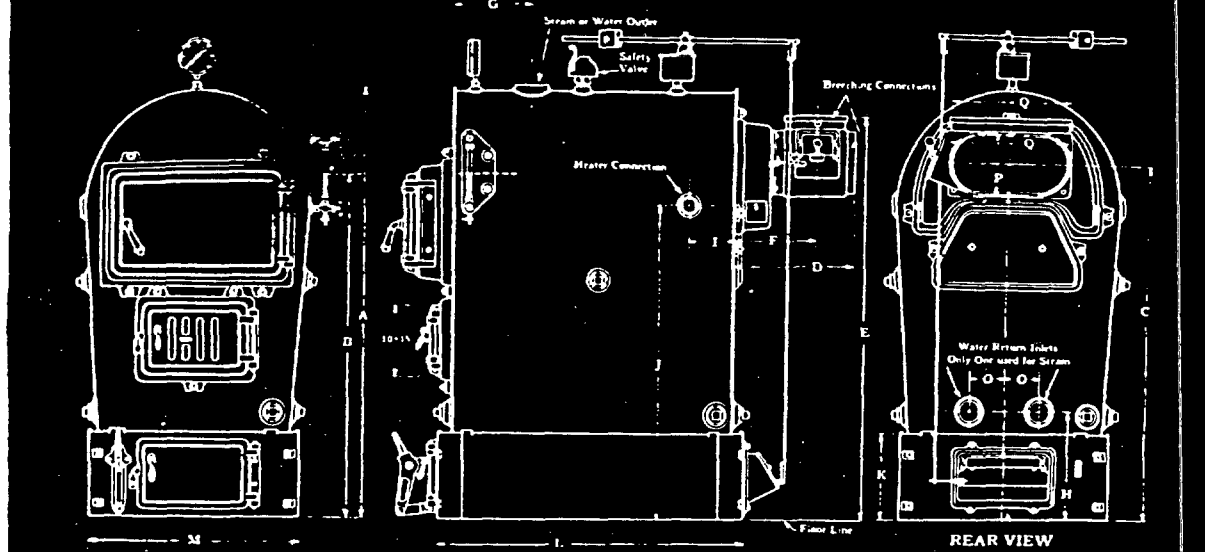
Combustion Altitude Gauge and Thermometer, and Damper Regulator only.

Type R Boilers are tapped each side for Excelsior Water Heater.

All sizes have flanged opening (not shown) so Kewanee Indirect Hot Water Coil may be installed any time.

KEWANEE STEEL BOILER *Electric-Weld* TYPE R

—For Burning Coal



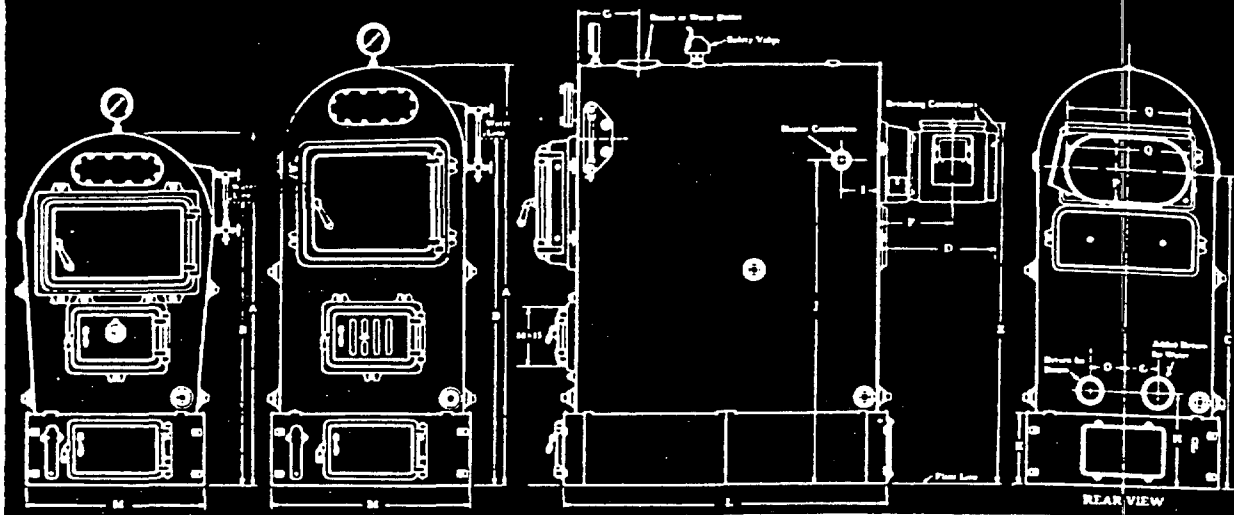
DATA AND MEASUREMENTS BOILERS 745 TO 748 HAVE STRAIGHT SIDES ALL SIZES HAVE FLANGED BOX FOR HOT WATER COIL.

Number of Boiler	Bituminous Coal	742	743	745	746	747	748
	Anthracite Coal	2742	2743	2745	2746	2747	2748
Code, Steam Boiler	Bituminous Coal	Rescu	Reset	Resew	Resin	Resol	Rest
	Anthracite Coal	Ruscu	Ruset	Rusew	Rusin	Rusol	Rust
Rated Capacity—Steam	sq. ft.	790	1000	1350	1600	1780	1960
—Water	sq. ft.	1260	1600	2160	2560	2850	3140
Heating Surface	sq. ft.	63	73	101	114	127	140
Grate Area	sq. ft.	4.8	5.6	6.7	7.8	8.8	9.9
Width of Boiler Shell	in.	31	31	30 1/2	30 1/2	30 1/2	30 1/2
Width of Boiler Overall	in.	32 1/2	32 1/2	32	32	32	32
Length of Boiler	in.	39 1/2	45 1/2	45 1/2	51 1/2	57 1/2	63 1/2
Firebox Height	in.	21	21	24	24	24	24
Firebox Width x Length	in.	21 x 32	21 x 38	25 1/2 x 38	25 1/2 x 44	25 1/2 x 50	25 1/2 x 56
Size of Steam or Water Outlet	in.	4	4	5	6	6	6
Size of Steam Return Inlet	in.	2 1/2	2 1/2	3	3	3	3
Size of Return Inlet added for Water	in.	2 1/2	2 1/2	4	4	4	4
Size of Safety Valve Opening	in.	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	2
*A—Overall Height, Floor to Top of Shell	in.	59 1/2	59 1/2	70 1/2	70 1/2	70 1/2	70 1/2
**B—Height of Water-line	in.	48	48	58 1/2	58 1/2	58 1/2	58 1/2
Chimney—Diameter, inches x Height, feet		12x35	12x35	16x40	16x40	16x40	16x40
Breaching Diameter	in.	14	14	18	18	18	18
Breaching Connection Size, P x Q	in.	8 1/2 x 17	8 1/2 x 17	11 x 22	11 x 22	11 x 22	11 x 22
C—Height of End Breaching Connection Center	in.	49 1/2	49 1/2	54	54	54	54
D—Back of Boiler to End Breaching Connection	in.	17 1/2	17 1/2	20	20	20	20
E—Height of Breaching Connection	in.	55 1/2	55 1/2	61 1/2	61 1/2	61 1/2	61 1/2
F—Back of Boiler to Top Breaching Connection Ctr.	in.	11 1/2	11 1/2	12 1/2	12 1/2	12 1/2	12 1/2
G—Steam or Water Outlet Center to Boiler Front	in.	11	11	12	12	12	12
H—Height of Return Inlet Centers	in.	15 1/2	15 1/2	16	16	16	16
O—Return Inlet Offset from Boiler Center	in.	5	5	6	6	6	6
Heater Connection Size	in.	2	2	2	2	2	2
I—Heater Connection Center from Back of Boiler	in.	6 1/2	6 1/2	6 1/2	6 1/2	6 1/2	6 1/2
J—Heater Connection Height from Floor	in.	43 1/2	43 1/2	54 1/2	54 1/2	54 1/2	54 1/2
K—Height of Base	in.	12	12	12	12	12	12
L—Length of Base	in.	43 1/2	49 1/2	49 1/2	55 1/2	61 1/2	67 1/2
M—Width of Base	in.	30	30	34	34	34	34
Outside Surface to Cover, Unjacketed	sq. ft.	43	48	60	66	71	77
Approximate Total Weight	lbs.	2150	2360	2800	3050	3300	3550

*For Jacketed boiler, add 1" to overall height. For Water add word to code, example, Ship one RESCU WATER complete. See Illustrations pp. 4, 5, 11.
**If Hot Water Coils are installed, refer to page 13 for increased Water Line Heights.

KEWANEE STEEL BOILER *Electric-Weld* TYPE R

—For Oil, Gas or Stoker



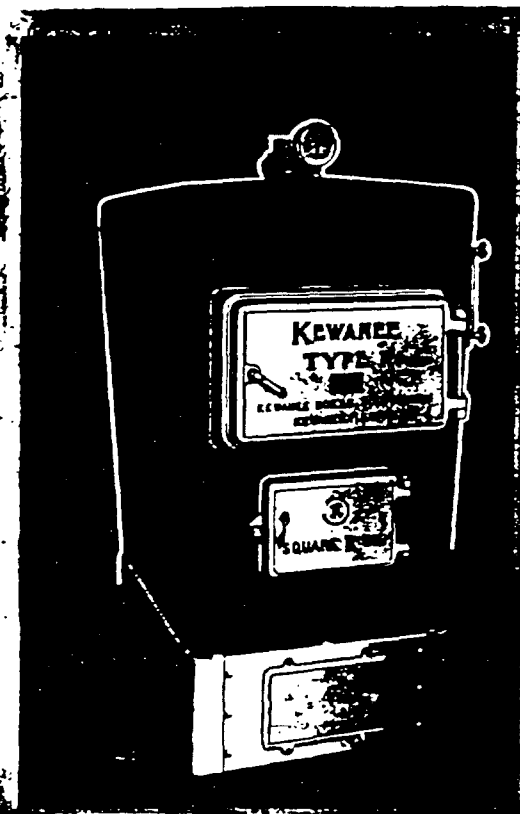
DATA AND MEASUREMENTS BOILERS 1742-1743 HAVE TAPERED SIDES. FIREDOR HAS PEEPHOLE FOR OIL. AIR SLIDES FOR STOKER.

Number of Boiler	Oil or Gas	1742	1743	1745	1746	1747	1748
Code, Steam Boiler	Oil or Gas	Roscu	Roset	Rosew	Rosin	Rosol	Rost
	Stoker	Riscu	Riset	Risew	Risin	Risol	Rist
Rated Capacity—Steam	sq. ft.	840	1120	1470	1900	2160	2380
—Water	sq. ft.	1340	1790	2350	3040	3460	3810
Heating Surface—	sq. ft.	63	73	101	114	127	140
Furnace Volume	cu. ft.	10.9	13.0	16.5	19.0	21.6	24.2
Width of Boiler Shell	in.	31	31	30 1/2	30 1/2	30 1/2	30 1/2
Width of Boiler Overall	in.	32 1/2	32 1/2	32	32	32	32
Length of Boiler	in.	39 1/2	45 1/2	45 1/2	51 1/2	57 1/2	63 1/2
Firebox Height	in.	21	21	24	24	24	24
Firebox Width x Length	in.	21 1/2 x 32	21 1/2 x 38	25 1/2 x 38	25 1/2 x 44	25 1/2 x 50	25 1/2 x 56
Size of Steam or Water Outlet	in.	4	4	5	6	6	6
Size of Steam Return Inlet	in.	2 1/2	2 1/2	3	3	3	3
Size of Return Inlet added for Water	in.	2 1/2	2 1/2	4	4	4	4
Size of Safety Valve Opening	in.	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	2
*A—Overall Height, Floor to Top of Shell	in.	59 1/2	59 1/2	70 1/2	70 1/2	70 1/2	70 1/2
**B—Height of Waterline	in.	48	48	58 1/2	58 1/2	58 1/2	58 1/2
Chimney—Diameter, inches x Height, feet		10x30	11x30	12x35	13x35	14x35	14x35
Breeching Diameter	in.	12	13	14	15	16	16
Breeching Connection Size, P x Q	in.	8 1/2 x 17	8 1/2 x 17	11x22	11x22	11x22	11x22
C—Height of End Breeching Connection Center	in.	49 1/2	49 1/2	54	54	54	54
D—Back of Boiler to End Breeching Connection	in.	17 1/2	17 1/2	20	20	20	20
E—Height of Breeching Connection	in.	55 1/2	55 1/2	61 1/2	61 1/2	61 1/2	61 1/2
F—Back of Boiler to Top Breeching Connection Ctr	in.	11 1/2	11 1/2	12 1/2	12 1/2	12 1/2	12 1/2
G—Steam or Water Outlet Center to Boiler Front	in.	11	11	12	12	12	12
H—Height of Return Inlet Centers	in.	15 1/2	15 1/2	16	16	16	16
O—Return Inlet Offset from Boiler Center	in.	5	5	6	6	6	6
Heater Connection Size	in.	2	2	2	2	2	2
I—Heater Connection Center from Back of Boiler	in.	6 1/2	6 1/2	6 1/2	6 1/2	6 1/2	6 1/2
J—Heater Connection Height from Floor	in.	43 1/2	43 1/2	54 1/2	54 1/2	54 1/2	54 1/2
K—Height of Base	in.	12	12	12	12	12	12
L—Length of Base	in.	43 1/2	49 1/2	49 1/2	55 1/2	61 1/2	67 1/2
M—Width of Base	in.	30	30	34	34	34	34
Outside Surface to Cover, Unjacketed	sq. ft.	43	48	60	66	71	77
Number of Fire Brick		80	90	95	105	115	125
Approximate Total Weight	lbs	1900	2060	2500	2730	2920	3125

*For jacketed boiler, add 1 1/2 ft. to overall height. For Water add 1/2 ft. to code, example: Ship one ROSCU WATER complete. See Illustrations pp. 4, 10, 11.
 **If Hot Water Coil is installed, refer to page 13 for increased Water Line Heights.

KEWANEE STEEL BOILER

SQUARE "R" OIL OR GAS



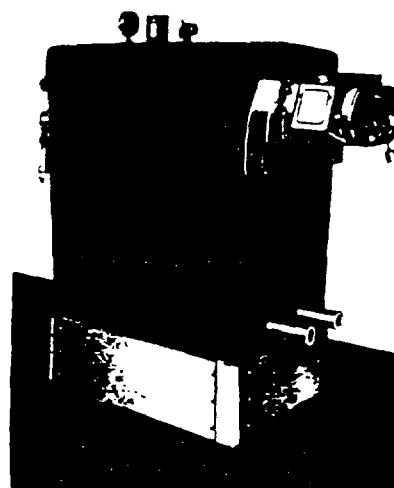
KEWANEE SQUARE "R" OIL OR GAS BOILER
SERIES 83R1 TO 83R9 WITH STEEL BASE
HOT WATER COPPER COILS PROVIDED FOR

83R Boiler Built Expressly for Oil or Gas

This Square "R" Oil or Gas Series 83R is a Jacketed Kewanee Steel Boiler. One of the later additions to the Kewanee line, filling the demand for a Residence Boiler in a larger range of sizes, designed especially for Oil or Gas, meeting closely competitive circumstances yet retaining in all respects the Kewanee Standard of Quality.

The same technically correct design, substantial steel construction and neat appearance of the Type "R" Series has been maintained. The ratio of essential proportions having been adjusted to suit the conditions for perfect combustion of oil or gas fuels. So it is obvious that this 83R Series will render the same dependable and efficient service which is always a characteristic of Kewanee.

The 83R Boiler is equipped with the Insulated Steel Jacket and a Steel Base of new and improved style. Covered Coil box welded to the front head makes it a simple matter to accommodate the customer at any time with Kewanee Indirect Hot Water Heating Coils of any capacity, either for Storage Tank or for Instantaneous service. Auxiliary Incinerator Grates can be installed in the larger sizes listed page 12. Boiler specifications in general page 11.



REAR VIEW TWO-WAY DRAFT ADJUSTER
reversible for top or end outlet.
Stackstat opening in hood 1 1/4" diameter.
The tapped openings in either side of boiler shell can be used for aquastat.

Boilers 83R1 to 83R4 have Tapered Sides
Boilers 83R6 to 83R9 have Straight Sides

EQUIPMENT Steel Base, Firedoor, Front Cleanout Door, Two-way Draft Adjuster, Two-pass Tubes with Spinner Blades, Four Washout Plugs, Stackstat and Aquastat openings. Flue Brush is only tool furnished.

TRIMMINGS for STEAM BOILER: Safety Valve, Steam Gauge, Water Gauge, Glass and Gauge Cocks. For WATER BOILER: Combination Altitude Gauge and Thermometer only.

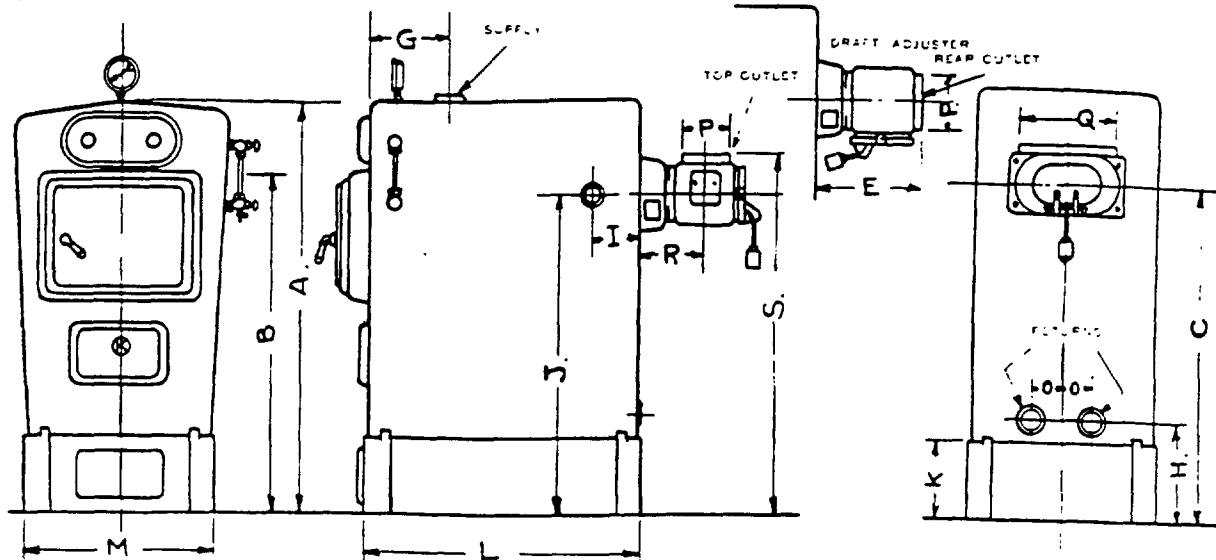
All Jacketed Boilers have indestructible baked enamel steel jacket, lined with multi-ply asbestocel insulation. Knock-out discs are provided in jackets opposite boiler openings.

AMONG MANY REASONS WHY ALL BURNERS WORK BEST IN KEWANEE 83R BOILERS—FLAMES EXPAND IN THE HIGH FIRE BOX TWO-PASS TUBES WITH SPINNER BLADES PROVIDE LONG EFFECTIVE GAS TRAVEL

TESTS OF No. 83R4 KEWANEE SQUARE "R" STEEL BOILER

Boiler Rating, Steam, Sq. Ft.	1513	Fired with
Heating Surface, Sq. Ft.	89	No. 3 Fuel Oil
Furnace Volume, Cu. Ft.	13.0	
Date of Tests	April, 1934	
Test Number	042634	042434
Duration, Hr.	3.5	3.0
Steam Pressure, Gage, Lb. Per Sq. In.	0	0.2
Feed Water Temperature, Deg. F.	88.8	107.8
Moisture In Steam, Per Cent	0.3	0.4
Gases Leaving Boiler		
Temperature, Deg. F.	260	300
CO ₂ , Per Cent	11.8	11.8
Input		
Oil Rate, Lb. Per Hr.	23.2	32.0
Oil Rate, Gal. Per Hr.	3.2	4.4
Btu Per Hr.	454970	627520
Btu Per Cu. Ft. of Furnace Per Hr.	35000	48200
Output		
Btu Per Hr.	377540	502400
Sq. Ft. of Radiation	1573	2093
Per Cent of Rating	104	138
Btu Per Sq. Ft. of Heating Surface Per Hr.	4242	5640
Overall Efficiency, Per Cent	83.0	80.0

KEWANEE STEEL BOILER 83R SERIES SQUARE "R" OIL OR GAS



DATA AND MEASUREMENTS BOILERS 83R1 TO 83R4 HAVE TAPERED SIDES. ALL SIZES HAVE FLANGED BOX FOR HOT WATER COIL

Boiler Number		83R1	83R2	83R3	83R4	83R6	83R7	83R8	83R9
Code Word—Steam Boiler		QROSA	QROSB	QROSC	QROSD	QROSF	QROSG	QROSH	QROSK
—Water Boiler		QROWA	QROWB	QROWC	QROWD	QROWF	QROWG	QROWH	QROWK
Rated Capacity—Steam	sq. ft.	901	1105	1326	1513	2091	2363	2652	2924
—Water	sq. ft.	1441	1768	2121	2420	3345	3780	4243	4678
Heating Surface	sq. ft.	53	65	78	89	123	139	156	172
Net Furnace Volume	cu. ft.	6.6	8.8	10.9	13.0	16.5	19.0	21.6	24.2
Width Boiler Overall	in.	32 $\frac{1}{2}$	32 $\frac{1}{2}$	32 $\frac{1}{2}$	32 $\frac{1}{2}$	32	32	32	32
A—Height Boiler Overall	in.	60 $\frac{1}{2}$	60 $\frac{1}{2}$	60 $\frac{1}{2}$	60 $\frac{1}{2}$	71 $\frac{1}{2}$	71 $\frac{1}{2}$	71 $\frac{1}{2}$	71 $\frac{1}{2}$
Shell Length Overall	in.	27 $\frac{1}{2}$	33 $\frac{1}{2}$	39 $\frac{1}{2}$	45 $\frac{1}{2}$	45 $\frac{1}{2}$	51 $\frac{1}{2}$	57 $\frac{1}{2}$	63 $\frac{1}{2}$
Firebox Height	in.	21	21	21	21	24	24	24	24
Firebox Width	in.	21 $\frac{1}{2}$	21 $\frac{1}{2}$	21 $\frac{1}{2}$	21 $\frac{1}{2}$	25 $\frac{1}{2}$	25 $\frac{1}{2}$	25 $\frac{1}{2}$	25 $\frac{1}{2}$
Firebox Length	in.	20	26	32	38	38	44	50	56
*B—Water Line Height	in.	48	48	48	48	58 $\frac{1}{2}$	58 $\frac{1}{2}$	58 $\frac{1}{2}$	58 $\frac{1}{2}$
C—Smoke Outlet End Height	in.	49 $\frac{1}{2}$	49 $\frac{1}{2}$	49 $\frac{1}{2}$	49 $\frac{1}{2}$	54	54	54	54
E—Smokehood Length	in.	16	16	16	16	18 $\frac{1}{2}$	18 $\frac{1}{2}$	18 $\frac{1}{2}$	18 $\frac{1}{2}$
G—Steam Supply Location	in.	12 $\frac{1}{2}$	12 $\frac{1}{2}$	12 $\frac{1}{2}$	12 $\frac{1}{2}$	13 $\frac{1}{2}$	13 $\frac{1}{2}$	13 $\frac{1}{2}$	13 $\frac{1}{2}$
H—Returns Height	in.	15 $\frac{1}{2}$	15 $\frac{1}{2}$	15 $\frac{1}{2}$	15 $\frac{1}{2}$	16	16	16	16
I—Heater Connection Location	in.	7 $\frac{1}{2}$	7 $\frac{1}{2}$	7 $\frac{1}{2}$	7 $\frac{1}{2}$	7 $\frac{1}{2}$	7 $\frac{1}{2}$	7 $\frac{1}{2}$	7 $\frac{1}{2}$
J—Heater Connection Location	in.	43 $\frac{1}{2}$	43 $\frac{1}{2}$	43 $\frac{1}{2}$	43 $\frac{1}{2}$	54 $\frac{1}{2}$	54 $\frac{1}{2}$	54 $\frac{1}{2}$	54 $\frac{1}{2}$
K—Base Height	in.	12	12	12	12	12	12	12	12
L—Base Length	in.	31 $\frac{1}{2}$	37 $\frac{1}{2}$	43 $\frac{1}{2}$	49 $\frac{1}{2}$	49 $\frac{1}{2}$	55 $\frac{1}{2}$	61 $\frac{1}{2}$	67 $\frac{1}{2}$
M—Base Width	in.	30	30	30	30	34	34	34	34
O—Returns Location	in.	5	5	5	5	6	6	6	6
P—Breeching Connection Width	in.	8 $\frac{1}{2}$	8 $\frac{1}{2}$	8 $\frac{1}{2}$	8 $\frac{1}{2}$	11	11	11	11
Q—Breeching Connection Length	in.	17	17	17	17	22	22	22	22
R—Boiler to Smoke Outlet Center	in.	9 $\frac{1}{2}$	9 $\frac{1}{2}$	9 $\frac{1}{2}$	9 $\frac{1}{2}$	11	11	11	11
S—Smoke Outlet Top Height	in.	55 $\frac{1}{2}$	55 $\frac{1}{2}$	55 $\frac{1}{2}$	55 $\frac{1}{2}$	61 $\frac{1}{2}$	61 $\frac{1}{2}$	61 $\frac{1}{2}$	61 $\frac{1}{2}$
Steam Supply Size, or Water	in.	4	4	4	4	5	6	6	6
Steam Return Size	in.	2 $\frac{1}{2}$	2 $\frac{1}{2}$	2 $\frac{1}{2}$	2 $\frac{1}{2}$	3	3	3	3
Added Return for Water	in.	2 $\frac{1}{2}$	2 $\frac{1}{2}$	2 $\frac{1}{2}$	2 $\frac{1}{2}$	4	4	4	4
Safety Valve Size	in.	1 $\frac{1}{2}$	1 $\frac{1}{2}$	1 $\frac{1}{2}$	1 $\frac{1}{2}$	1 $\frac{1}{2}$	1 $\frac{1}{2}$	2	2
Heater Connection Size	in.	2	2	2	2	2	2	2	2
Chimney Diam x Height	in. x ft.	10x35	11x35	12x35	12x40	14x40	14x40	15x45	16x50
Breeching Diameter	in.	12	13	14	14	16	16	17	18
Outside Surface to Cover, Unjacketed sq. ft.		33	38	43	48	60	66	71	77
Shipping Weight, Jacketed	lbs	1600	1800	2000	2200	2800	2900	3100	3300

*If Hot Water Coils are installed, refer to page 13 for increased Water Line Heights

PHONE
5 2341

421 SACANDAGA ROAD
SCOTIA 2 N Y

J. H. Buhrmaster Co., Inc.

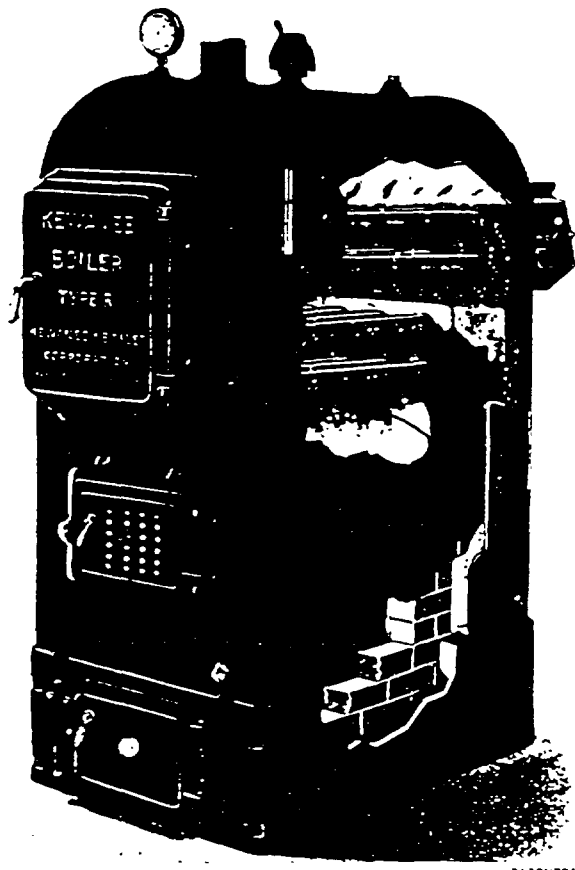
FUEL OIL - COAL - MASON SUPPLIES
HEATING AND AIR CONDITIONING EQUIPMENT

EDWARD BRINKMAN
SALES AND SERVICE

STEWART WARNER
GENERAL ELECTRIC
WINKLER
CARRIER

KEWANEE STEEL BOILER *Residence* TYPE R

For Oil, Gas or Stoker



KEWANEE TYPE R STEEL BOILER
NUMBERS 1742 TO 1748 FOR OIL, GAS OR STOKER
TO HEAT 846 TO 2380 SQ. FT. STEAM RADIATION

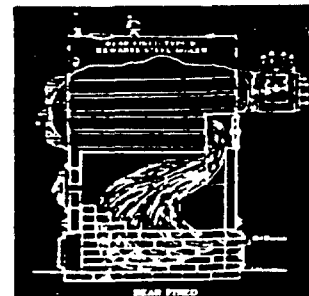
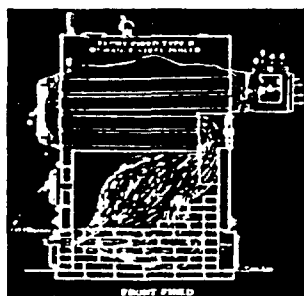
THE KEWANEE TYPE R BOILER is better adapted for oil burning service than the ordinary boiler on the market, because its steel construction will stand up under the severe stresses from highly localized blazing oil flames and from alternate cooling caused by the controlling action of the Thermostat. But this Type "R" also offers the facility for easy conversion from one fuel to another.

This *double pass* arrangement of flues gives extra length of travel so that as much available heat as practicable is transmitted from the flue gases inside to the water around the outer heating surfaces.

Through years of experience in the field, supplemented by extended laboratory tests, Kewanee is qualified to offer expert suggestions on practical setting plans for the efficient burning of oil or gas when fired from front, side, rear or below.

EQUIPMENT FOR OIL, GAS OR STOKER: Firedoor, Flue Clean-out Door, Rear Opening Cover, Two-way Draft Adjuster, Four Cleanout Plugs, Base, complete including Front and Rear Door Plates, Flue Brush. Steel base may be substituted for cast iron base for Oil, Gas or Stoker. Specifications in general on page 11.

TRIMMINGS FOR OIL, GAS OR STOKER STEAM BOILER: Steam and Water Gauges, 2 Compression Gauge Cocks, Pop Safety Valve, WATER BOILER: Combination Air-Tide Gauge and Thermometer only. Data and Measurements Oil, Gas or Stoker Boiler, see page 1.



Sections Showing Type R Oil Burning Boiler Settings—Front or Rear Fired

The same favorable conditions for complete combustion which insure success with solid fuel in the Type R boiler produce high efficiency with any commercially established oil burner.

—There is height, width and length in the firebox so that the flames can expand and swirl.

—There is a high combustion chamber where the burning process is completed before the hot gases of combustion are strained through the first and second banks of tubes.

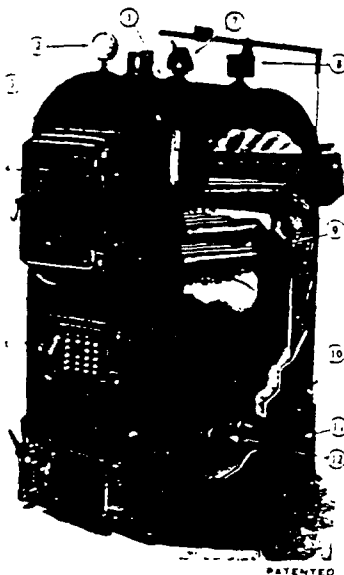
It is highly important that the water content be sufficient to absorb intense and intermittent heat—a characteristic of oil operation—as in Type R boilers, otherwise the water level in the gauge glass would be jumpy and subject to sudden disappearance or flooding. Likewise the water content must be in active circulation around the heating surfaces so as to sweep away the steam bubbles as fast as they are formed. Transmission of heat depends upon the velocity of the fluid and gases. Fast circulation of water is encouraged by the short wide water ways of the Type R boiler.

It is an axiom that any boiler that will not burn coal successfully will not burn oil successfully, so "if you burn oil and expect to get steam, you must have a boiler that steams as well with coal or any other fuel."

The Kewanee Type R Steel Boiler steams just as well with any kind of fuel: solid, fluid or gaseous, either mechanically fired with automatic regulation or hand-fired.

KEWANEE STEEL BOILER *Residence* TYPE R

SPECIFICATIONS



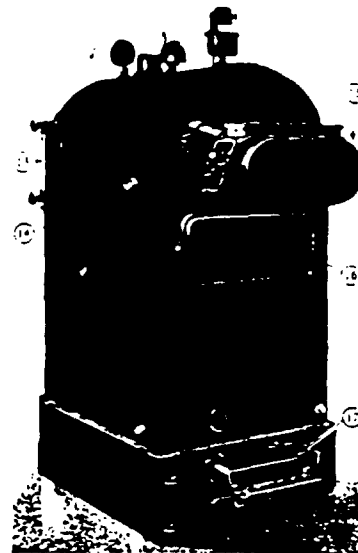
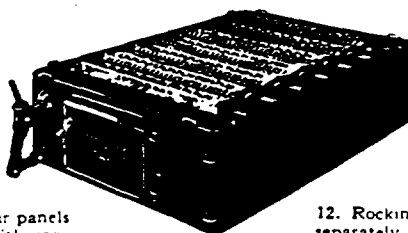
FRONT VIEW

1. Shell flange quality steel plate, low carbon with electric-metallic-arc-weld seams, all one-piece comprising Firebox with arched Crown Sheet right-side-up and integral rear Combustion Chamber, protected by short wide water legs all around.

Front and back Ends, $\frac{3}{8}$ " thick, and outside Wrapper Sheet, $\frac{5}{16}$ ", forming water and steam space.

Fiat surfaces braced with heavy stay bolts welded into countersunk-punched plates. Pipe openings in shell reinforced by heavy welding flanges

CAST IRON BASE, GOES INTO BASEMENT ALL READY ASSEMBLED



REAR VIEW

11. All Cast Iron base, front and rear panels bolted to sides, front ash pit door with non-heating grip handle, hinge and latch Steel Base for Oil, Gas or Stoker if specified

12. Rocking grate assembly, each bar removable separately, shaker arm with levers, links, locking catch and handle. For smaller sizes of Anthracite grate bars have narrower air spaces.

2. Sensitive steam gauge, Compound retard With water seal
3. Front cleanout door refractory insulated hinged on frame both cast iron, with locking handle, for easy access to clean double pass flues from front

4. Fusible low water safety plug

5. All contact surfaces on doors and plate work ground to smooth finish for dust proof construction

6. Firedoor has Battic plate and secondary Air Slide for Coal, insulated fireproof with preheated non heating grip handle, hinged on frame cast iron

7. Safety Valve, Low pressure, pop

8. Automatic Arco draft regulator with levers, adjustable weight, hinged end and collar

9. First and second pass banks of steel tubes, 4" in diameter, heavy gauge with ends expanded in flue sheets and beaded.

10. Cleanout plugs, non-corrodible brass thread liner

13. Water gauge glass, brass trimmings, two compression gauge cocks.

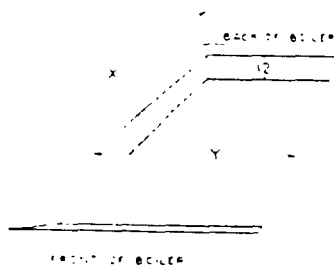
14. Right and left water heater connection, 2" diameter.

15. Two way smoke hood with cap, choke damper and self-closing check draft damper. Frame with cleanout, all cast iron. Oil, Gas and Stoker boilers have two way Draft Adjuster

16. Rear opening for access to combustion chamber and flues with cast iron cover and refractory filled liner

17. Rear Draft Pouch, cast iron, with balanced regulating flap.

SPINNER BLADES For oil, gas or stoker boilers the boiler efficiency is increased approximately five per cent by spiral baffles or spinner blades which are furnished regularly. The spinner blade also serves as a tube cleaner, by simply withdrawing it from the tube any carbon accumulation is easily removed



ASH PIT DIMENSIONS TYPE R BOILER

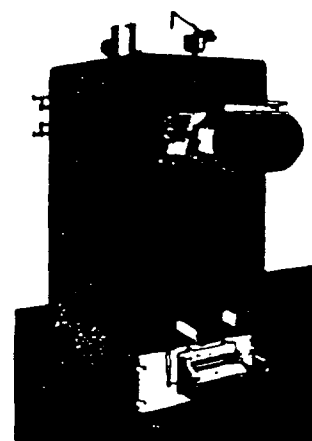
Number of Boiler	24 1/2	24 3/4	24 1/2	24 3/4	24 1/2	24 3/4
Depth of Pit	12	12	12	12	12	12
X—Length of Pit	32	38	38	44	50	56
Y—Width of Pit	21	21	21	21	21	21
Clearance to back of Rear Head	17 1/2	17 1/2	20	20	20	20



AUXILIARY AIR CASTING

In burning bituminous coal where extreme smokeless operation is desired, a grate bar extension casting can be furnished to form a pair of secondary air ports at the front end of the firebox.

These air ports provide a by pass through which an exact quantity of secondary air is diverted from the primary supply entering the damper to the upper surface of the fuel bed where this auxiliary air swirls and mingles with the products of combustion, so helping to perfect the burning process that any vestige of smoke is eliminated



REAR VIEW JACKETED

Kewanee Type "R" Boiler—an All-Purpose Boiler— for Heat, Hot Water, Incineration

IT is not always necessary to install separate equipment either for heating Domestic Hot Water or for burning up rubbish and garbage.

Because the same steel boiler that furnishes Steam, Vapor or Hot Water Heat for the Residence or Apartment can supply the **Hot Water** for domestic use.

And this same unit can also be used for putting to work the available heat units of waste material whilst disposing of the garbage that accumulates in a building.

3 Duties in 1 Boiler

The Kewanee Type "R" Boiler with supplementary Hot Water Coil and Garbage Burning Grate may be said to be a thoroughly domesticated piece of equipment, in the sense that three household cares are solved by one dependable unit.

All the fuel required for those three distinct purposes is burnt in one and the same furnace-chamber with consequent tremendous savings to the owner, so the small extra purchase price is quickly amortized.

Not only is the fuel cost kept lower, but the convenience is so very much greater in keeping just one fire going or in caring for just one burner. And there is less regulatory equipment to be bought for the automatic operation of 3 duties in 1 boiler.

For SUMMER TIME HOT WATER and INCINERATION

All that is needed is a small fire of the same cheap fuel in same boiler which furnishes heat with such economy in winter.

NO SEPARATE HEATER
No draining the boiler for summer season.

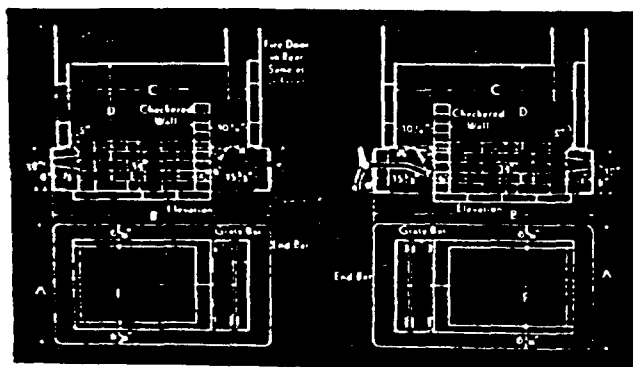
With automatic firing infrequent "on" periods will keep a supply tank full of Hot Water all day long.

As already stated, the means of serving the three-fold need for heat, Hot Water and Incineration facilities are provided by equipping the Kewanee Type "R" Steel Boiler with an internal coil and a grate attachment in a checkered chamber. Pipes of pure copper comprising the hot water coil are threaded back and forth over the top row of the two-pass tubes which carry the gases of combustion thru the boiler water. In other words an indirect heating element of high conductivity is submerged in the boiler water right at the zone of highest temperature.

The consequent fast rate of heat transfer due to the high degree-differential between the boiler water and the supply water results in a continuous flow of 'piping' hot water through the coil.

Blue Print Diagram at top of adjacent page, shows the Kewanee submerged Indirect Heating Coil assembled in our Square Type "R" Boiler. Coil connection and locating dimensions are tabulated beneath the diagram.

KEWANEE STEEL BOILER *Electric-Weld* TYPE R —With Auxiliary Incinerator



FRONT-FIRED OIL SETTING WITH GARBAGE GRATE AT REAR
REAR FIRED OIL SETTING WITH GARBAGE GRATE AT FRONT
PLANS 1743 TO 1748 & 83R4 TO 83R9

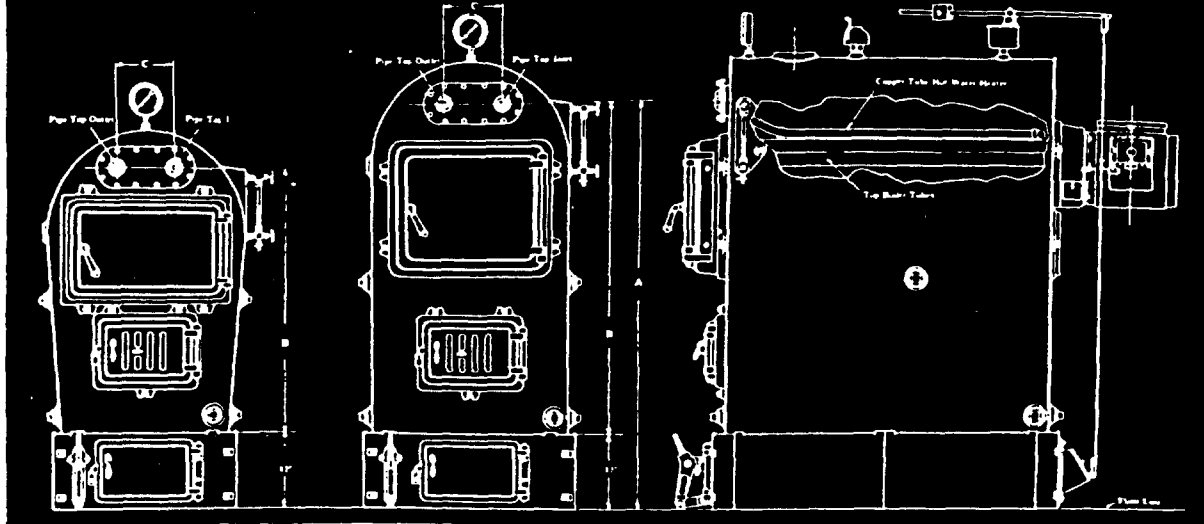
OIL BURNING SETTING. Tabulation and Diagrams illustrate this sanitary economizer consisting of garbage burning grate in checkered-wall chamber as built into front-fired and rear-fired oil or gas burning units.

Number of Boiler	1743 83R4	1745 83R6	1746 83R7	1747 83R8	1748 83R9
Front and Rear Fired:					
A—Base Width	in. 30	34	34	34	34
B—Base Length	in. 49½	49½	55½	61½	67½
C—Firebox Length	in. 38	38	44	50	56
D—Firebox Height	in. 21	24	24	24	24
E—Furnace Length	in. 21½	21½	27½	33½	39½
F—Furnace Width	in. 17¼	21¼	21¼	21¼	21¼
Front-Fired only:					
G—Height of Garbage Door	in. 6½	10	10	10	10

This facility for incineration is a needful adjunct to any domestic menage, making for cleanliness and health around all habitable quarters as well as for economy. It is an extra that soon pays for itself, saving fuel by burning waste matter.

KEWANEE STEEL BOILER *Electric-Well* TYPE R

—Hot Water Coil



SIZES 742 AND 743, 83R1 TO 83R4

SIZES 745 TO 748, 83R6 TO 83R9

KEWANEE INDIRECT HOT WATER COPPER COILS

FOR SQUARE TYPE "R" BOILERS

MEASUREMENTS		Number of Boiler			
		742	745	83R1	83R6
		743	746	83R2	83R7
			747	83R3	83R8
			748	83R4	83R9
A	Height of Coil Connection above Floor	in 54 1/2	63 1/2	54 1/2	63 1/2
B	Height of Coil Connection above Base	in 42 1/2	51 1/2	42 1/2	51 1/2
C	Centers of Coil Pipe Tappings	in 9	9	9	9
Water Line Heights for		in 10 1/2	10 1/2	10 1/2	10 1/2
	Storage Tank Coils	in 30 1/2	59 1/2	49	58 1/2
	Instantaneous Coils	in 31 1/2	60 1/2	50	59
	Single Coil with Storage Tank	in 30 1/2	59 1/2		
	Double Coil with Storage Tank	in 30 1/2	59 1/2	50	59
	Double Coil Instantaneous Flow	in 30 1/2	59 1/2		
	Triple Coil Instantaneous Flow	in 30 1/2	59 1/2		
Size of Pipe Inlet and Outlet		in 1	1	1	1
	Single Coil with Storage Tank	in 1	1	1	1
	Double or Triple Coil Instantaneous Flow	in 1	1	1	1
	Double Coil with Storage Tank	in 1	1	1	1

For Series 742-748, 83R1-83R9 coil measurements are same as for Series 742-748 above.

CAPACITIES

Storage Tank Coils: 60 to 720 gallons heated 100° from 40° to 140° in 3 hours with boiler water at steaming temperature.
Instantaneous Coils: 150 to 630 gallons heated 100° from 40° to 140° in 1 hour with boiler water at 180°.

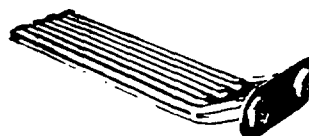
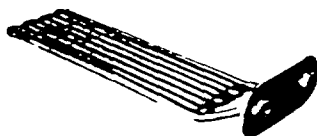
DETAILS OF COIL DATA WITH CAPACITY RATINGS AND METHOD OF SELECTION GIVEN IN SEPARATE BULLETIN

The complete range of styles available with the Kewanee Domestic Hot Water Coil is an additional advantage, permitting selection of the correct size and capacity either for Storage Tank Operation or for Instantaneous Tankless Performance. Successful results are sure whichever system is preferred, provided local water conditions permit, because every element of design has been carefully considered and weighed, methods of manufacture perfected and the working qualities tested.

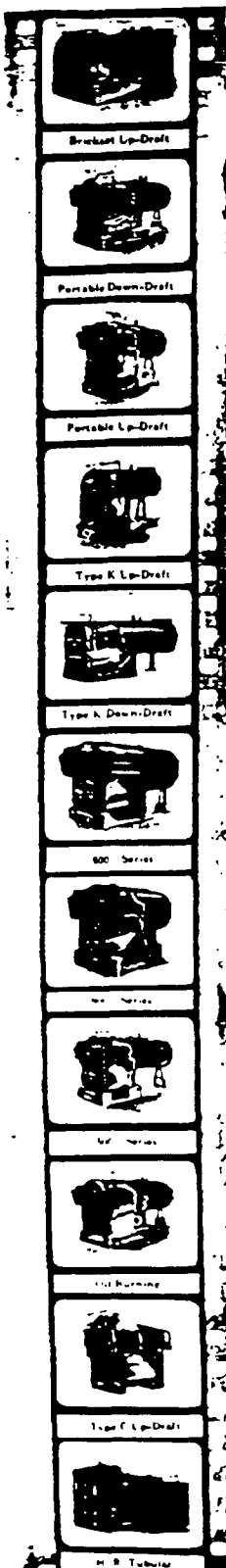
The Kewanee Coil Assembly is built integral and may be easily installed on the job in the Coil frame provided for that purpose, or usually the Coils may be installed by the manufacturer at the factory in which case there are no assembling charges. Coils are interchangeable in boilers of same Series.

Jacketed boilers are provided with removable coil cover for access to the Coil from the front.

Type "R" Boiler ratings do not include allowance for heating domestic water by indirect Coils. With STORAGE TANK operation, allow 4 sq. ft. steam radiation for each gallon capacity of Coil. For INSTANTANEOUS flow, allow 4 sq. ft. of steam radiation for each gallon capacity of Coil, except no allowance is required when water heating demand is less than 10 minutes in any hour.



The Hot Water Coil piping is arranged either in Single, Double, Triple, or Quadruple rows depending upon the output desired. Note substantial fittings and generous size piping.



For Every Radiation Listed
There's A Kewanee Built
To Carry It



TRAINLOAD SHIPMENT MAY BE MADE SAME DAY ORDER IS RECEIVED

KEWANEE STEEL BOILERS

CATALOG 88 *Steel Residence Boilers Electric-Weld*

Numbers	Sq. Ft. Radiation
742 — 748 Square Type R	Soft Coal 790 — 1960
2742 — 2748	Hard Coal 790 — 1960
1742 — 1748	Oil or Gas 840 — 2380
0742 — 0748	Stoker 840 — 2380
83R1 — 83R9	Oil or Gas 901 — 2924

ALL TYPES OF KEWANEE BOILERS MAY ALSO BE SHIPPED FROM STOCK

- CATALOG 92 *Steel Residence Boilers Round Type R*
- CATALOG 84 *Steel Boilers Electric-Weld*
- CATALOG 90 *Steel Firebox Boilers Riveted*
- CATALOG 87 *All Types for Burning Oil*

Separate Catalogs on Kewanee Steel Water Heating Garbage Burners, Tabasco Water Heaters and Tanks, Kewanee Power Boilers, Sent on Request

KEWANEE BOILER CORPORATION

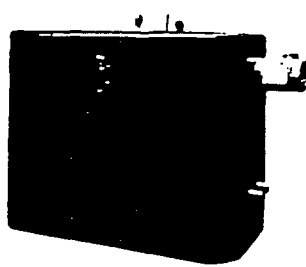
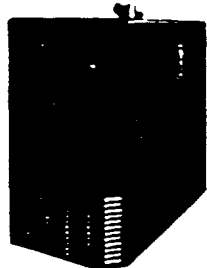
Division of American Radiator & Standard Sanitary Corporation

Head Office and Works

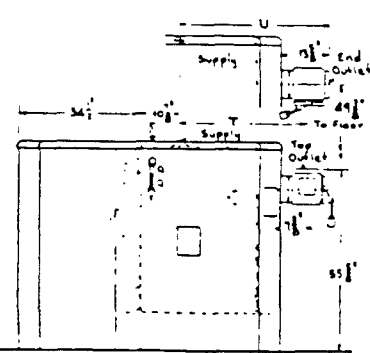
KEWANEE, ILLINOIS

MEMBER OF STEEL HEATING BOILER INSTITUTE

KEWANEE 83R SERIES
SQUARE "R" OIL OR GAS
WITH REGAL JACKET



FOR COMPLETE ENCLOSURE
WITH ANY BURNER
First Size Only 83R1-G Shown



KEWANEE 83R SERIES SQUARE "R" OIL OR GAS WITH REGAL JACKET

Boiler Number	83R1	83R2	83R3	83R4
T — Steam Outlet Center to Top Smoke Outlet Center	in 30	36	42	48
U — Rear Face of Jacket to Smoke Outlet End	in 36	42	48	54
Jacket Width Overall	in 40	40	40	40
Jacket Length Overall	in 68	74	80	80

Other dimensions on page 9



A Thousand Boilers Under Way in Kewanee Shops



The Kewanee Residence Type R Series

Random Readings from the Kewanee Archives

Bought In 1898

The boiler was purchased by the Kewanee Electric Co. in 1898. It was the first boiler of its kind in the city and was used for the first time in the city of Kewanee.

43 Years Operation

The boiler has been in operation for 43 years. It has been used for the first time in the city of Kewanee. It has been used for the first time in the city of Kewanee.

Endures Kewanee

The boiler has endured the Kewanee. It has been used for the first time in the city of Kewanee. It has been used for the first time in the city of Kewanee.

40 Odd Years Ago

The boiler was built 40 odd years ago. It has been used for the first time in the city of Kewanee. It has been used for the first time in the city of Kewanee.

Best Boilers Most Economical Run

The boiler is the best boiler most economical run. It has been used for the first time in the city of Kewanee. It has been used for the first time in the city of Kewanee.

New Boilers

The boiler is a new boiler. It has been used for the first time in the city of Kewanee. It has been used for the first time in the city of Kewanee.

Three Days Ago

The boiler was built three days ago. It has been used for the first time in the city of Kewanee. It has been used for the first time in the city of Kewanee.

First Steam Heat

The boiler was the first steam heat. It has been used for the first time in the city of Kewanee. It has been used for the first time in the city of Kewanee.

No Two Days Ago

The boiler was built no two days ago. It has been used for the first time in the city of Kewanee. It has been used for the first time in the city of Kewanee.

When New Boilers

The boiler was built when new boilers. It has been used for the first time in the city of Kewanee. It has been used for the first time in the city of Kewanee.

In 1883

The boiler was built in 1883. It has been used for the first time in the city of Kewanee. It has been used for the first time in the city of Kewanee.

Used New Kind of Steel

The boiler was built using a new kind of steel. It has been used for the first time in the city of Kewanee. It has been used for the first time in the city of Kewanee.

Repairs Hardly Worth Mentioning

The boiler has hardly worth mentioning. It has been used for the first time in the city of Kewanee. It has been used for the first time in the city of Kewanee.

Since 1879

The boiler has been in operation since 1879. It has been used for the first time in the city of Kewanee. It has been used for the first time in the city of Kewanee.

All and More

The boiler is all and more. It has been used for the first time in the city of Kewanee. It has been used for the first time in the city of Kewanee.

Uses Hard Coal

The boiler uses hard coal. It has been used for the first time in the city of Kewanee. It has been used for the first time in the city of Kewanee.

No Repairs

The boiler has no repairs. It has been used for the first time in the city of Kewanee. It has been used for the first time in the city of Kewanee.

Repairs Three Dollars

The boiler has repairs three dollars. It has been used for the first time in the city of Kewanee. It has been used for the first time in the city of Kewanee.

Heats Enlarged House

The boiler heats an enlarged house. It has been used for the first time in the city of Kewanee. It has been used for the first time in the city of Kewanee.

One in a Lifetime

The boiler is one in a lifetime. It has been used for the first time in the city of Kewanee. It has been used for the first time in the city of Kewanee.

Written 24 Years Ago

The boiler was written 24 years ago. It has been used for the first time in the city of Kewanee. It has been used for the first time in the city of Kewanee.

In 1879

The boiler was built in 1879. It has been used for the first time in the city of Kewanee. It has been used for the first time in the city of Kewanee.

When House Was Built

The boiler was built when the house was built. It has been used for the first time in the city of Kewanee. It has been used for the first time in the city of Kewanee.

Installed in 1877

The boiler was installed in 1877. It has been used for the first time in the city of Kewanee. It has been used for the first time in the city of Kewanee.



Oil Country Boiler



Type D Garbage Burner



Tobacco Sifter Burner



Tobacco Magazine Feed



Extra Heavy Tank



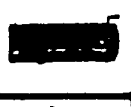
C Series



Round H Series Boiler



Blow-Off Tank



Air Receiver

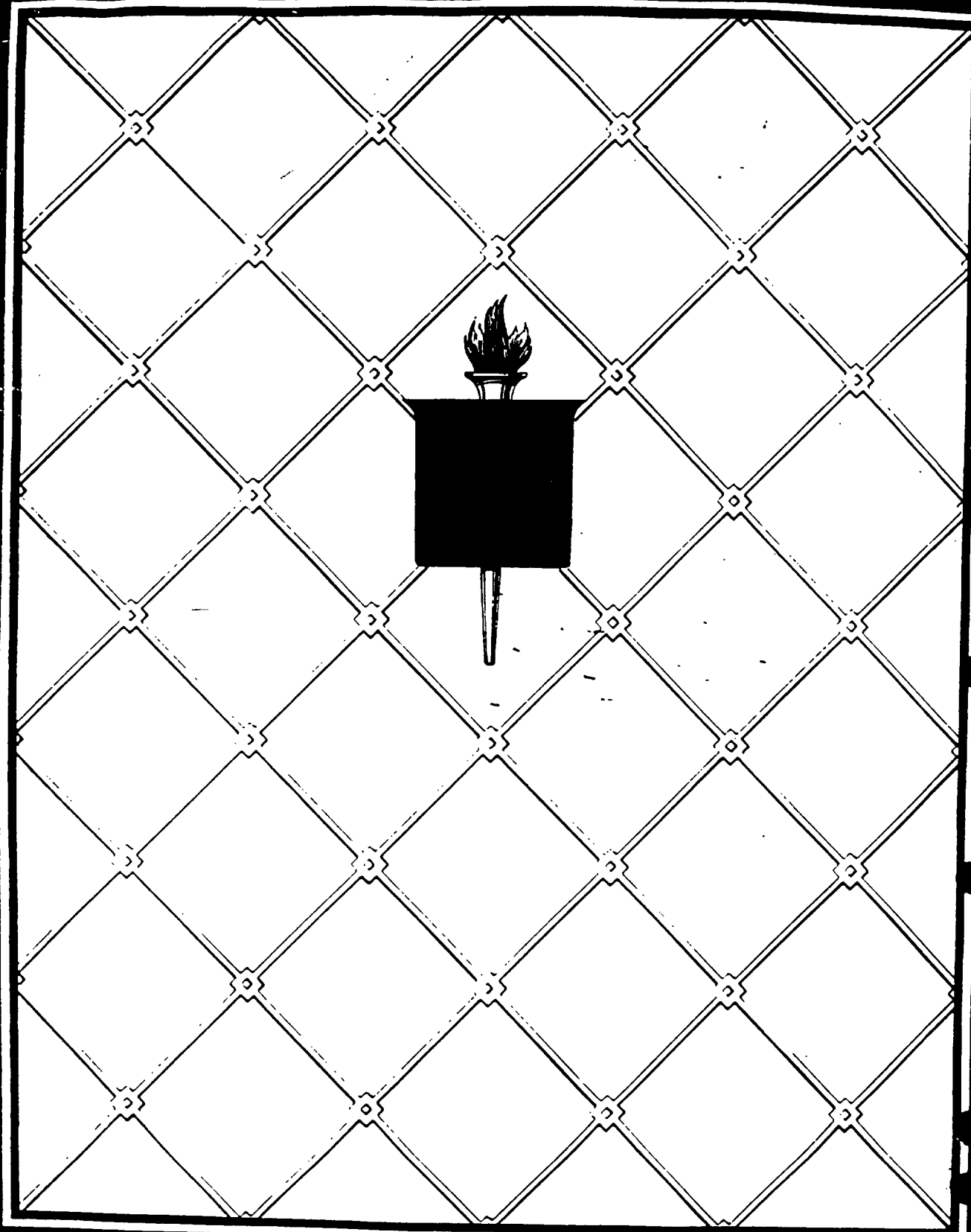


Type A Garbage Burner



Type H Garbage Burner

The Kewanee Line Includes Every Size Steel Heating Boiler



24118