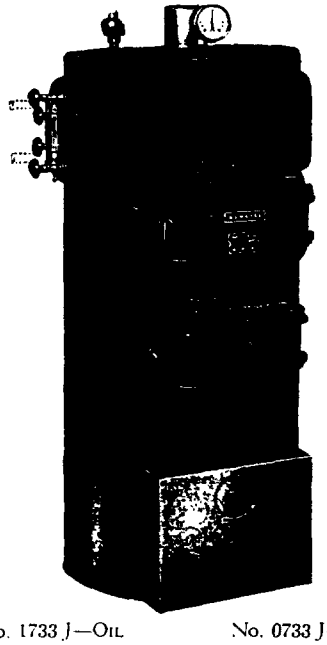
PLAINTIFF'S EXHIBIT

ASI-931

KEWANEE TYPE "R" ROUND STEEL BOILER

JACKETED OR UNJACKETED



No. 1733 J—Oil No. 0733 J—Stoker

In the new No. 1733 Type "R" Round Boiler, for oil or stoker, Kewanee engineers have developed a product that is outstanding in rugged construction, high quality and excellent efficiency. It meets the needs of the smallest home. Rated at 275 sq. ft. actual radiation for steam, and 440 sq. ft. for hot water, it is the smallest size steel boiler made. It's in a class by itself.

The No. 1733 possesses all the famous features of Kewanee craftsmanship that have given the Kewanee line the high reputation it bears for dependable performance. Its ample, correctly proportioned fire chamber absorbs a high percentage of direct heat from the fire; the Two-Pass Tubes extract usable heat from the remaining hot gases on their way to the chimney: thus an efficiency of practically 80% is attained, resulting in unusual economy and effectiveness.

The Boiler has an attractive steel jacket, with baked enamel crinkle finish in two tones of green. It is regularly equipped with an Indirect Hot Water Coil of 55 gallon capacity for storage tank. Or, an Instantaneous Hot Water Coil of 135 gallon capacity, which needs no storage tank, can be furnished at moderate cost.

This newest addition to the complete line of Kewanee Round Steel Boilers, as illustrated and described on the following pages, provides a range of capacities from 275 sq. ft. to 900 sq. ft. of steam radiation.

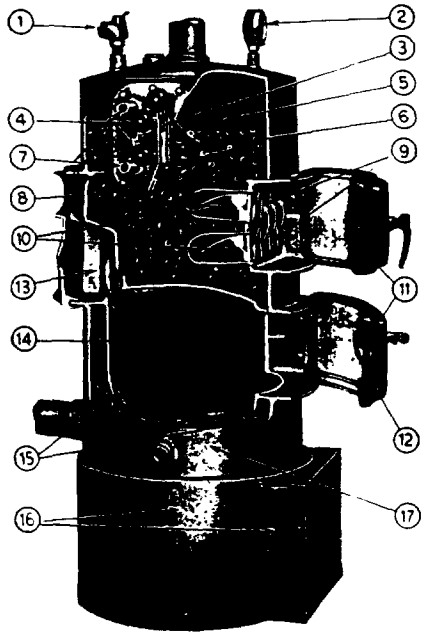
RATINGS AND DATA

BOILER NUMBER	Oil / Stoker	UNJKTD. 1733 / 0733	ROUND JACKET 1733J / 0733J
Rating Net Load (Actual Radiators plus Domestic Hot Water Load)			
Steam or Vapor	Sq.Ft.	275	275
Hot Water System	Sq.Ft.	440	440
B.t.u. per Hour	1,000's	66	66
Gallons of Oil per Hour		9	9

See Page A 36-C for ratings of larger boilers.

24559

KEWANEE TYPE "R" ROUND STEEL BOILER
NO. 1733 OIL—NO. 0733 STOKER



Cutaway View, No. 1733

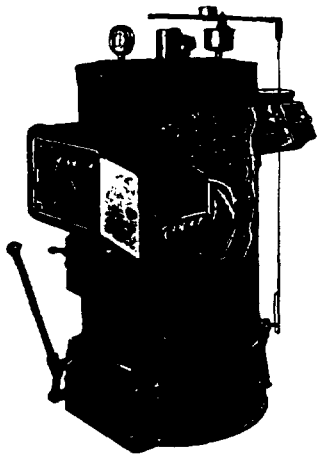
18 REASONS FOR "1733" SUPREMACY

1. Safety Valve.
2. Steam Gauge
3. Gauge Glass and Trimmings.
4. Compression Gauge Cocks
5. High Steam Space, for Dry Steam.
6. Built-in Kewanee Pure Copper Coil—heats 55 gals. of water 100° in 3 hours—regular equipment. Instantaneous coil heating 135 gals. 100° per hour also available at small extra cost.
7. Connections to Coil, ¾" pipe size.
8. Equivalent 6-inch Smoke Pipe Connection.
9. Two-Pass Tubes—of heavy gauge copper-alloyed steel, absorb maximum heat from hot gases as they pass to chimney Easily accessible for cleaning.
10. Spinner Blades (in oil boilers)—create spiral flow of hot gases to obtain greater transfer of heat to water, for extra efficiency.
11. Sturdy Flue and Fire Doors—thoroughly protected by refractory linings and gas-tight grooves sealed with asbestos rope gasket.
12. Sight Opening in fire door, with swinging cover.
13. Factory-formed Refractory Block diverts products of combustion into lower tubes and also protects smoke box cover plate.
14. Large, scientifically proportioned fire-box for complete combustion without waste.
15. Ample Waterways for rapid internal circulation and quick steaming.
16. 4-Piece Base, comes bolted together, with convenient cover plate for oil burner or stoker. Front, rear, side or angle firing by turning base.
17. Shell made of heavy steel plate to withstand all strains. One-piece welded construction. All ready to set on base.
18. (Not shown) Has all required tappings for necessary controls with automatic firing.

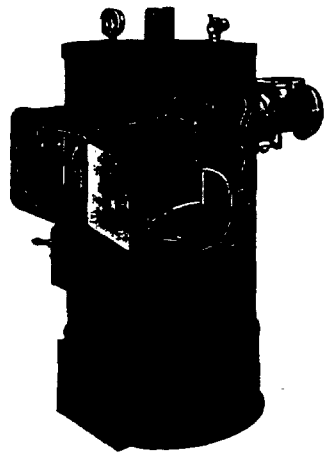
24498

KEWANEE TYPE "R" ROUND STEEL BOILER

ROUND OR SQUARE JACKETS—UNJACKETED



ROUND JACKET—Hand Fired Coal



ROUND JACKET—Oil or Stoker

For 70 years the name Kewanee has meant the best in steel heating boilers. The Type "R" line of Round Boilers carries on the tradition and embodies all the features of efficiency and dependability assured by Kewanee modern methods of fabrication and high grade materials.

One of the outstanding features of Kewanee Round Boiler design consists of the Two-Pass Tubes, the function of which is to hold the useful heat in the boiler as long as possible. These tubes are clearly shown in illustration above.

After the direct heating surface absorbs the radiant heat of combustion, the hot gases pass through the lower set of tubes, then back through the upper bank, before reaching the chimney. This gives the gases a longer travel and permits the water to absorb the maximum of the available heat, instead of wasting it up the chimney.

As a result, Kewanee Round Boilers use 80% and more of the heat in the fuel for the actual work of warming the building. Temperature readings show that the gases passing into chimney are at least 1000 degrees cooler than in many heating boilers of similar size, a saving of approximately one-third.

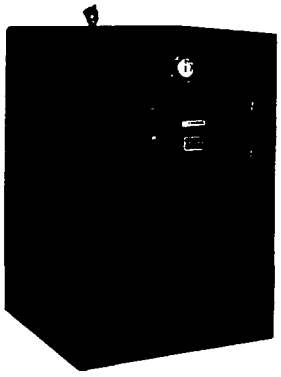
RATINGS AND DATA

BOILER NUMBER	OIL				STOKER			BITUMINOUS HAND-FIRED			ANTHRACITE HAND-FIRED		
Unjacketed	1734	1735	1736	1737	0734	0735	0736	734	735	736	2734	2735	2736
Round Jacket		1735J	1736J			0735J	0736J		735J	736J		2735J	2736J
Flush Jacket	1734M	1735M	1736M	1737M				734MC			2734MC		
Short Extension Jacket	1734MQ	1735MQ	1736MQ										
Long Extension Jacket	1734MG	1735MG	1736MG	1737MG									
Rating Net Load (Actual Radiators plus Hot Water Load)													
Steam or Vapor. Sq.Ft.	400	540	680	900	400	540	680	246	320	423	246	320	423
Hot Water System. Sq.Ft.	640	860	1090	1440	640	860	1090	392	512	677	392	512	677
B.t.u. per Hour—1,000's	96	130	163	216	96	130	163	77	98	132	77	98	132
Gals. of Oil per Hour	1.4	1.8	2.3	3.0									
Heater Rating— 100° in 3 Hours. Gals.	550	750	900		550	750	900	500	700	800	500	700	800

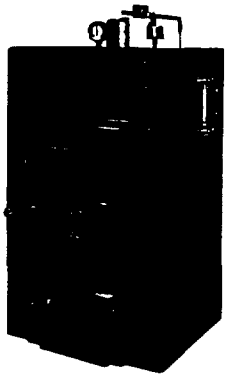
See Page A 36-A for ratings of No. 1733 Boiler.

24496

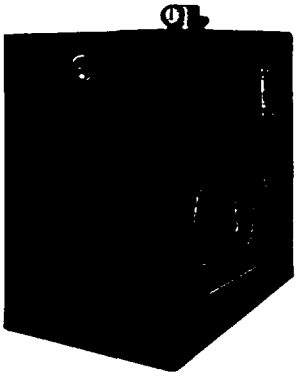
KEWANEE TYPE "R" ROUND STEEL BOILER
SQUARE JACKETED



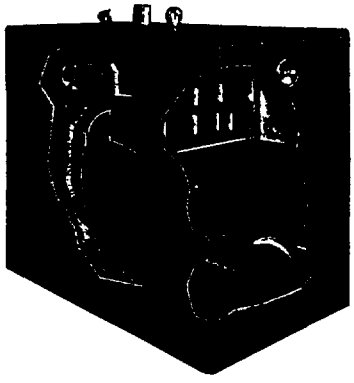
FLUSH JACKET "M"
Oil or Stoker
Nos. 1734M, 1735M, 1736M, 1737M



FLUSH JACKET "MC"
Hand-Fired Coal
Nos. 734MC, 2734MC



SHORT EXTENSION JACKET "MQ"
Oil
Nos. 1734MQ, 1735MQ, 1736MQ



LONG EXTENSION JACKET "MG"
Oil
Nos. 1734MG, 1735MG, 1736MG, 1737MG

To keep pace with the modern trend of dressing up basements and converting them into attractive rooms for work or play, we offer a choice of smartly styled and exceptionally neat Square Jackets, in addition to the conventional but good-looking Round Jacket preferred by many.

These jackets are made of sturdy steel, with a permanent baked-enamel crinkle finish in two tones of green. They make a clean-cut, sightly installation that adds greatly to the appearance and cleanliness of any basement

Regularly furnished in the following types, for boilers as listed under each illustration:

Flush Jacket "M"—For Oil or Stoker.
Flush Jacket "MC"—For Hand-fired Coal.
Short Extension Jacket "MQ"—For Oil (conceals completely any short-gun or rotary burner).
Long Extension Jacket "MG"—For Oil (conceals completely any burner).

KEWANEE TYPE "R" ROUND STEEL BOILER

SPECIAL KEWANEE FEATURES

Shell made of heavy steel plate to withstand all strains. One-piece welded construction. All ready to set on base.

Firebox Large and correctly proportioned to permit complete combustion without waste.

High Steam space for dry steam.

Two-Pass Tubes of extra thick copper-alloyed steel absorb remaining available heat from hot gases as they pass to chimney. Save fuel. Easily accessible for cleaning.

Spinner Blades in tubes on all oil boilers—create rotating flow of hot gases through tubes for greater heat transfer.

All Doors are ample size and properly insulated with refractory lining or baffle liner. Door castings have gas-tight ground joints or grooves sealed with asbestos rope gasket.

Fire surfaces are smooth and self-cleaning.

Front, rear, side or angle firing—oil burners and stokers.

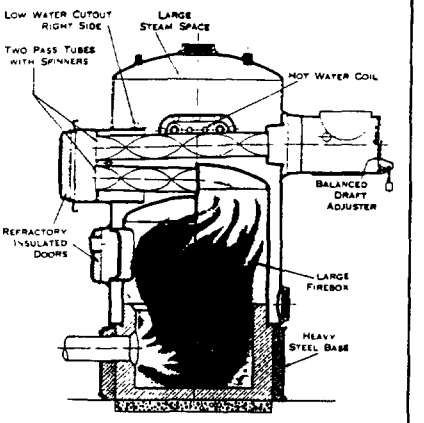
Tappings for all necessary controls.

All Plate work extra heavy and substantial for long-life.

All Boilers equipped with inbuilt coil for domestic hot water. Not an extra. Larger coils and instantaneous flow coils at slight extra cost.

Heavy Rocking Grates and Shaker on all coal boilers. Assembled so that each grate bar can be removed separately. Grates easily replaced if necessary.

Inspection Shutter in firedoor of oil fired boilers.

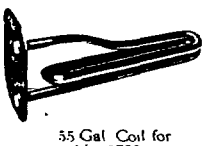


Special Kewanee Draft Adjuster (patented) for accurate draft control, on all oil and stoker boilers. (Not furnished on No. 1733.)

Two-Way Smokehood with automatic draft control on coal boilers—for convenience and reduced attention.

Quick Pick-up—rapid steaming. Reserve capacity above usual rating to care for unusual requirements in sub-zero weather.

DOMESTIC HOT WATER COILS



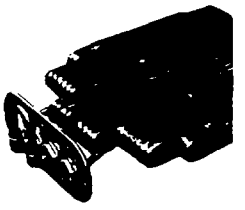
55 Gal. Coil for No. 1733



Instantaneous Flow Coil for No. 1733



65 Gal. Coil for all other Boilers



Instantaneous Coil for Larger Boilers

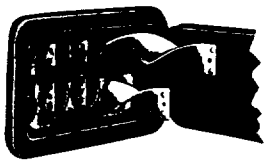
FOR AMPLE HOT WATER SUPPLY

All KEWANEE Round Boilers are equipped with an inbuilt one-piece Kewanee Pure Copper Coil for domestic hot water. It is not an extra.

The coil for the new No. 1733 heats 55 gallons of water 100° in three hours, in 212° boiler water. An Instantaneous Flow Coil, for use without storage tank, and heating 135 gallons 100° per hour in 180° water, is available at small extra cost.

On larger Round Boilers coils are furnished as follows: Regular Coil (comes with boiler, not an extra), heats 65 gallons in 3 hours. At small extra cost coils of 95 or 150 gallon capacity are available for all boilers, and 200 gallon capacity on Nos. 1736 and 1737 only. Instantaneous Flow Coils (for use without storage tank) are available at moderate cost in capacities: 170 gal.—all boilers except 1733; 210 gal. on Nos. 1735, 1736 and 1737; 250 gal. on Nos. 1736 and 1737 only.

KEWANEE TYPE "R" ROUND STEEL BOILER
SPECIAL FEATURES



SPINNER BLADES—These spinner blades are set inside the boiler tubes of all oil boilers to create a rotating flow of hot gases, compelling them to make intimate contact with walls of tubes, thus transferring more heat to boiler water. Removing these spiral baffles, which takes only a moment, also cleans the flues of accumulated soot.

TWO-WAY DRAFT ADJUSTER—To provide the smooth even control of draft required with oil or stoker boilers, the Kewanee Draft Adjuster (patented) was designed. It is set in the rear smoke outlet casting. Accurate draft control is automatically accomplished by an adjustable weight, which permits the swinging vane to open immediately at the slightest extra puff.

ADJUSTER *not supplied with No 1733 Boiler*



SPECIFICATIONS AND MEASUREMENTS

BOILER NUMBER	OIL					STOKER				*ANTHRACITE OR BITUMINOUS HAND-FIRED		
Unjacketed	1733	1734	1735	1736	1737	0733	0734	0735	0736	734	735	736
Round Jacket	1733J		1735J	1736J		0733J		0735J	0736J		735J	736J
Flush Jacket		1734M	1735M	1736M						734MC		
Short Extension Jkt.		1734MQ	1735MQ	1736MQ								
Long Extension Jkt.		1734MG	1735MG	1736MG	1737MG							
Heating Surface—Sq.Ft.	16 2	24	32	40	53	16 2	24	32	40	24	32	40
Firebox Volume—Cu.Ft.	2 8	4 4	6 4	8 9	8 9	2 2	3 7	5 4	7 4			
Grate Area—Sq.Ft.										2.2	2 9	3 7
Average Firebox Ht.—In.	17	22	24	26	26	17	22	24	26	22	24	26
Boiler Shell Diameter—In.	21	23¾	27½	30½	30½	21	23¾	27½	30½	23¾	27½	30½
Boiler Shell Height—In.	40	42½	43	47¼	48¾	40	42½	43	47¼	42½	43	47¼
Boiler Shell Inside Diam.—In.	17	20	23	26	26	17	20	23	26	20	23	26
Smoke Outlet Diam.—In.	6	7	9	9	9	6	7	9	9	7	9	9
Chimney Size—In.	8x8	8x8	8x12	8x12	10x10	8x8	8x8	8x12	8x12	8x8	8x12	8x12
Chimney Height—Ft.	30	30	30	35	40	30	30	30	35	30	30	35
Outlet and Return Size—In.	3	4	4	4	4	3	4	4	4	4	4	4
Safety Valve Size—In.	¾	¾	1	1	1	¾	¾	1	1	¾	1	1
Height All Jackets—In.	54	54¾	55¼	59½	61	54	54¾	55¼	59½	54¾	55¼	59½
Width All Square Jackets—In.		33	36	39½	39½		33	36	39½	33		
Length—Flush Jacket—In.		27½	36	39½	54		27½	36	54	27½		
Length—Short Ext. Jkt.—In.		45	50½	54			45	50½	54			
Length—Long Ext. Jkt.—In.		59½	65	68½	68½		59½	65	68½			
Jacket Clearance in Front												
Flush Jacket—In.		¼	3	3½	18½		¼	3	3½	¼		
Short Extension—In.		17½	17½	18			17½	17½	18			
Long Extension—In.		32	32	32½	32½		32	32	32½			
Base Front to Firebox—In.		3¼	4½	4½	4½		3¼	4½	4½			
Boiler Base Diameter—In.	23	26¼	29¾	32½	32½	23	26¼	29¾	32½	26¼	32¼	35
Water Line—In.	46	44	44	46	49	46	44	44	46	44	44	46
Water Line with Coils—In.	46	44	45	47	49	46	44	45	47	44	45	47
Smoke Outlet Ht., End—In.	39									39½	42½	44½
Smoke Outlet Ht., Top—In.		43¾	48	50	50		43¾	48	50	44¾	49	51
Smoke Out. to Blr. Cen.—In.	14	20	24	25½	25½	14	20	24	25½	20	24½	25¾
Water Heater Connection Height—In.	43	41½	44½	46½	46½	43	41½	44½	46½	41½	44½	46½
Rear Clearance from Jacket—In.	2¼	15	12½	13½	13½	2¼	15	12½	13½	12	16	16
Floor to Boiler Door Opening—In.	21	19½	20	20¾	20¾	21	19½	20	20¾	19½	20	20¾
Clear Opening in Base Front—In.	14¾x 12¾	10¾x 15	10x 15½	10x 15½	10x 15½	14¾x 12¾	10¾ x15	10x 15½	10x 15½	11x 13	10x 15½	10x 15¼
Outside Surface to Cover, Unjktd.—Sq.Ft.	17	24	33	40	47	17	24	33	40	24	33	40
Shipping Weight, Unjacketed—Lbs.	600	800	920	1130	1400	600	800	920	1130	880	1040	1280

*Same data applies to both Anthracite and Bituminous; Anthracite Boiler Numbers are 2734, 2735 and 2736.