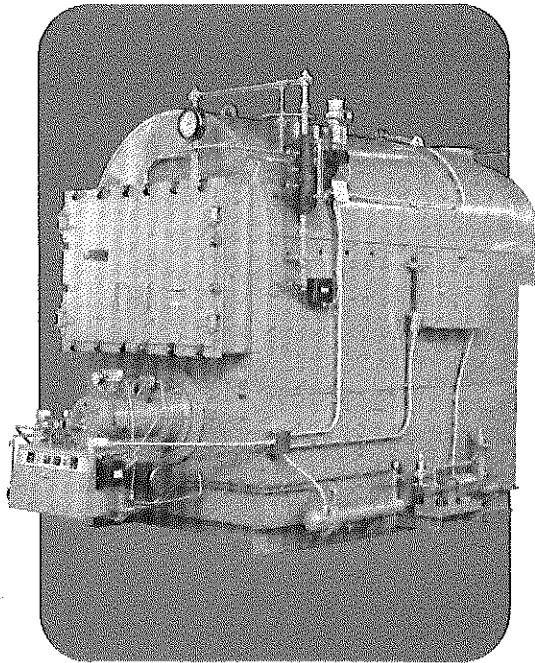


# TYPE "C"

## Packaged Firebox Boiler

### Oil, Gas, Combination Oil/Gas Fired



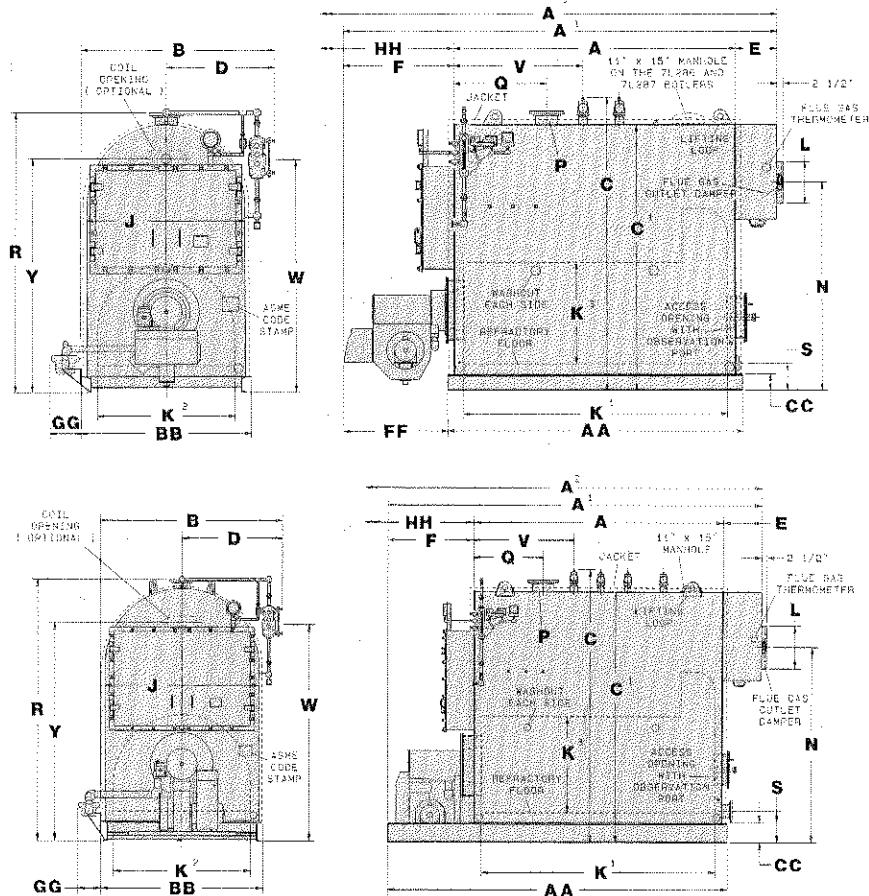
- These units, rated at 5.0 square feet of fireside heating surface per boiler horsepower, maximize efficiency and service life.
- Boiler, Burner package is UL listed.
- Type "C" Packages are offered in 14 sizes ranging from 2,658,000 to 22,328,000 Btu/Hr (79 Bhp to 667 Bhp) fired by a Kewanee gas, oil, or combination gas/oil burner.
- Meets requirements of the ASME Code for 15 psi steam or 30 psi water pressure. ASME Code 60 psi water pressure also available.
- Forced draft operation eliminates the need for tall, costly stacks or induced draft fans.
- Three Pass Wetback Design provides maximum heat transfer with low stack temperature. The large firebox with arched upright crown sheet provides an exceptionally high proportion of the primary (radiant) heating surface which is many times more efficient than secondary (indirect) heating surface. Its extra large furnace volume assures complete combustion, clean firing, unrestricted gas flow, low heat release, smooth starts, and quiet operation.
- Wetback Design has a rear water wall which becomes the most effective heating surface of the boiler.

- Water units are furnished with burner controls, low water cut-off, relief valve(s), pressure gauge and thermometer, 3" flue gas thermometer, low fire hold aquastat.
- Front fluedoors have insulation securely keyed in place. All firetubes are 3" and are roller expanded.
- Rear fluebox available with top or rear outlet. Cast refractory floor retains smooth reflecting and insulating qualities in transit and operation.
- 22 gauge factory installed steel jacket with attractive smooth enamel finish.
- Like most firetube boilers, it is easy to clean and maintain. Firetubes can be cleaned with flue scrapers. Waterside can easily be flushed and inspected through generous washouts. This is in marked contrast to other types of boilers.
- Generous water content, large disengaging area, and steam space offer instant reserve capacity and high quality steam.
- Guaranteed fuel to steam or fuel to water efficiencies at 50-75 and 100% firing rates.
- Units are insulated and completely assembled with burner, accessories and skid type base. Only service connections are needed to place units in operation.
- Steam units are furnished with burner controls, combination water column, low water cut-off, pump control, safety valve(s), steam gauge, water gauge, glass and 3" flue gas thermometer.

#### RATINGS & DATA

UNIT NUMBER	7L280-K	7L281-K	7L282-K	7L283-K	7L284-K	7L285-K	7L286-K	7L287-K	7L288-K	7L289-K	7L290-K	7L291-K	7L292-K	7L293-K
Rating —														
MBh .....	2,658	3,100	3,769	4,432	5,537	6,648	7,746	8,857	11,074	13,290	15,499	17,708	20,051	22,321
Horsepower .....	79	93	113	132	165	199	231	265	331	397	463	529	599	667
Steam — 212°F .....	2,739	3,195	3,885	4,568	5,706	6,852	7,983	9,129	11,413	13,697	15,974	18,251	20,666	23,005
Steam Radiation (gross output) .....	11,075	12,915	15,705	18,465	23,070	27,700	32,275	36,905	46,140	55,370	64,580	73,780	83,550	93,000
Water Radiation (gross output) .....	17,720	20,665	25,130	29,545	36,910	44,320	51,640	59,050	73,820	88,600	103,330	118,050	133,680	148,810
Steam Radiation (net output) .....	8,325	9,710	11,810	13,885	17,345	20,825	24,265	27,750	34,690	41,630	48,560	55,480	62,620	69,930
Firing rate —														
Gas (1,000 Btu/cu. ft.) .....	3,323	3,875	4,712	5,538	6,922	8,310	9,683	11,072	13,843	16,600	19,374	22,135	25,064	27,902
Oil (140,000 Btu/gal) .....	23.7	27.7	33.7	39.6	49.5	59.4	69.2	79.1	98.9	118.7	138.4	158.2	179.0	199.3
Oil (150,000 Btu/gal) .....	22.2	25.8	31.4	36.9	46.2	55.4	64.6	73.8	92.3	110.8	129.2	147.6	167.1	186.0
Heating Surface														
Waterside .....	429	500	608	715	893	1,072	1,250	1,429	1,786	2,143	2,500	2,857	3,214	3,571
Fireside .....	397	463	563	662	827	993	1,157	1,323	1,654	1,985	2,315	2,645	2,995	3,334
Net Furnace Volume .....	59.8	68.3	81.2	93.3	118.1	139.1	173.0	195.7	231.1	270.7	314.1	363.3	418.2	479.1
Water Content —														
Steam boiler .....	3,663	4,273	5,141	6,033	7,252	8,654	9,171	10,857	12,751	15,497	20,683	23,135	25,461	32,838
Water boiler .....	5,065	5,892	7,043	8,245	9,505	11,333	12,500	14,637	17,174	20,771	26,604	29,858	30,109	38,888
Required Safety Valve Capacity														
Steam per hr .....	3,176	3,704	4,504	5,296	6,616	7,944	9,256	10,584	13,232	15,880	18,520	21,160	23,960	26,672
Minimum Vent Diameter .....	1'0"	1'0"	1'2"	1'2"	1'4"	1'4"	1'6"	1'8"	1'8"	1'10"	1'10"	2'0"	2'3"	2'3"
Jacket Insulation Thickness .....	2"	2"	2"	2"	2"	2"	2"	2"	2"	2"	2"	2"	2"	2"
Approx. dry weight .....	8,500	9,500	11,400	12,200	14,300	16,400	18,800	21,700	26,500	31,000	36,400	40,600	43,800	49,100

# KEWANEE® Type "C" Packaged Firebox Boiler



## DIMENSIONS (feet-inches)

UNIT NUMBER	7L280-K	7L281-K	7L282-K	7L283-K	7L284-K	7L285-K	7L286-K	7L287-K	7L288-K	7L289-K	7L290-K	7L291-K	7L292-K	7L293-K
A — Boiler length	7'3"	8'4 1/2"	7'9 1/2"	9'1"	9'1"	10'9 1/2"	10'8"	12'1"	10'10"	12'10 1/2"	12'1 1/2"	13'9"	14'2 1/2"	14'5"
**A' — Boiler overall length	11'4"	12'5 1/2"	12'2 1/2"	13'6"	13'11 1/2"	15'6"	15'6"	16'11 1/2"	16'2 1/2"	18'10 1/2"	18'1 1/2"	19'9"	20'0 1/2"	20'2 1/2"
**A'' — Overall length including tube removal	15'10 1/2"	18'1 1/2"	16'11"	19'6"	19'7"	23'0"	22'9"	25'7"	23'5"	27'6"	26'0"	29'3"	30'2"	30'7"
B — Overall width	5'5 1/2"	5'5 1/2"	5'11 1/2"	5'11 1/2"	6'5 1/2"	6'5 1/2"	6'11 1/2"	6'11 1/2"	7'11 1/2"	7'11 1/2"	8'7 1/2"	8'7 1/2"	8'11 1/2"	9'5 1/2"
C — Overall height	8'4"	8'4"	9'3 1/2"	9'1"	9'11"	9'11"	10'7 1/2"	10'7 1/2"	12'1 1/2"	12'5 1/2"	13'10"	14'3 1/2"	15'1"	16'0 1/2"
C' — Shell height	7'0"	7'0"	7'11"	7'11"	8'6 1/2"	8'6 1/2"	9'3"	9'3"	10'9"	11'1"	12'5 1/2"	12'11"	13'9"	14'8 1/2"
D — Boiler centerline to greatest width	3'2 1/2"	3'2 1/2"	3'5 1/2"	3'5 1/2"	3'8 1/2"	3'8 1/2"	3'11 1/2"	3'11 1/2"	4'5 1/2"	4'5 1/2"	4'9 1/2"	4'9 1/2"	4'11 1/2"	5'2 1/2"
E — Rear fluebox depth — rear outlet	1'3 1/2"	1'3 1/2"	1'3"	1'3"	1'4"	1'4"	1'4"	1'4"	1'8"	1'8"	1'8"	1'8"	1'8"	1'8"
— top outlet	1'3 1/2"	1'3 1/2"	1'5 1/2"	1'5 1/2"	1'7 1/2"	1'7 1/2"	1'7 1/2"	1'7 1/2"	1'8"	1'8"	1'11"	1'11"	1'11"	2'0"
F — Burner to front of boiler	2'9 1/2"	2'9 1/2"	3'2"	3'2"	3'6 1/2"	3'6 1/2"	3'6 1/2"	3'6 1/2"	3'8 1/2"	4'4"	4'4"	4'4"	4'2"	4'11"
J — Boiler inside width	4'0"	4'0"	4'6"	4'6"	5'0"	5'0"	5'6"	5'6"	6'6"	6'6"	7'2"	7'2"	7'6"	8'0"
K' — Firebox length	6'8 1/2"	7'10"	7'3"	8'6 1/2"	8'5 1/2"	10'2"	10'0"	11'5 1/2"	10'2"	12'3"	11'4 1/2"	13'0"	13'5 1/2"	13'7"
K'' — Firebox width	3'6 1/2"	3'6 1/2"	4'0 1/2"	4'0 1/2"	4'5 1/2"	4'5 1/2"	4'11"	4'11"	5'11"	5'11"	6'5"	6'5"	6'10"	7'3"
K''' — Firebox height	2'7"	2'7"	2'9 1/2"	2'9 1/2"	3'3"	3'3"	3'8 1/2"	3'8 1/2"	4'1 1/2"	4'7 1/2"	5'1"	5'6 1/2"	6'0 1/2"	6'6 1/2"
L — Flue outlet diameter — rear output	1'0"	1'0"	1'2"	1'2"	1'4"	1'4"	1'8"	1'8"	1'10"	1'10"	2'3"	2'3"	2'3"	2'6"
— top output	1'0"	1'0"	1'2"	1'2"	1'4"	1'4"	1'8"	1'8"	1'10"	1'10"	2'3"	2'3"	2'3"	2'6"
N — Flue outlet height — Rear outlet	5'4 1/2"	5'4 1/2"	6'2"	6'2"	6'8"	6'8"	7'2 1/2"	7'2 1/2"	8'4 1/2"	8'8 1/2"	9'11"	10'4 1/2"	10'11"	11'10"
— top outlet	7'3 1/2"	7'3 1/2"	8'3"	8'3"	8'10 1/2"	8'10 1/2"	9'7"	9'7"	11'1"	11'5"	12'9 1/2"	13'3"	14'1"	15'0 1/2"
P — Supply size	8"	8"	8"	8"	8"	8"	8"	8"	10"	10"	10"	10"	10"	10"
Q — Supply location	3'0"	3'0"	3'0"	3'0"	3'0"	3'0"	3'0"	3'0"	3'0"	3'0"	3'0"	3'0"	2'0"	2'0"
R — Supply height	7'5"	7'5"	8'4 1/2"	8'4 1/2"	9'0"	9'0"	9'8"	9'8"	11'3"	11'5"	12'11 1/2"	13'5"	14'3"	15'2 1/2"
S — Return location	1'0"	1'0"	1'0"	1'0"	1'0"	1'0"	1'0"	1'0"	1'4"	1'2"	1'2"	1'2"	1'2"	1'2"
— Return size	4"	4"	4"	4"	4"	4"	4"	4"	6"	6"	6"	6"	6"	6"
V — Safety valve location	4'2"	4'6"	4'6"	4'6"	4'2"	4'4"	4'4"	4'4"	4'4"	4'4"	4'4"	4'4"	4'0"	4'3"
W — Normal waterline	5'10 1/2"	5'10 1/2"	6'8"	6'8"	7'4"	7'4"	7'10 1/2"	7'10 1/2"	9'2 1/2"	9'6 1/2"	10'7 1/2"	11'1"	12'0"	12'9 1/2"
Y — Coil connection height (Optional)	6'0 1/2"	6'0 1/2"	6'10"	6'10"	7'6"	7'6"	8'0 1/2"	8'0 1/2"	9'4 1/2"	9'8"	10'9"	11'1"	12'2"	12'11"
AA Base length	7'8"	8'9 1/2"	8'2 1/2"	9'6"	9'6"	11'2 1/2"	11'1"	12'6"	14'9"	17'5 1/2"	16'8"	18'3 1/2"	18'7"	18'9"
BB Base width	4'6"	4'6"	5'0"	5'0"	5'6"	5'6"	6'0"	6'0"	7'0"	7'0"	7'8"	7'8"	8'0"	8'6"
CC Base height	6"	6"	6"	6"	6"	6"	6"	6"	10"	8"	8"	8"	8"	8"
FF Burner front to base	2'7"	2'7"	2'11 1/2"	2'11 1/2"	3'4"	3'4"	3'4"	3'4"	—	—	—	—	—	—
GG Standard gas train to base	0'11"	0'11"	0'11"	1'3"	1'3"	1'3"	1'3"	1'3"	1'3"	1'3"	1'3"	1'8"	1'8"	1'8"
HH Tube removal space	7'4"	8'5 1/2"	7'10 1/2"	9'2"	9'2"	10'10 1/2"	10'9"	12'2"	10'11"	12'11 1/2"	12'2 1/2"	13'10"	14'3 1/2"	14'6"

\* 150 lb. ANSI Flange \*\* Top outlet not shown. For top outlet increase A', A'' by difference in E dimensions  
 † One or more safety valves furnished depending on required capacity.

DIMENSIONS, DATA SUBJECT TO CHANGE WITHOUT NOTICE



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