



High Efficiency Boilers



HF/HW

Scotch Box Series Boilers

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HF/HW

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15 to 200 HP Packaged Boilers
15 psi Steam or 80 psi Hot Water

3-pass firetube boiler operates at high efficiencies due to effective heat transfer across all heating surfaces. Submerged combustion chamber improves water circulation and adds to direct heating surface.

Compact design fits through a 36" doorway and occupies a small footprint per boiler horsepower. Front and rear water legs eliminate the need for side connections.

Built, inspected, and stamped in accordance with Section IV of the ASME code. Tubes are rolled and flared to facilitate maintenance*.

U-Type Flex Joint design minimizes the destructive effects of differential stress as furnace expands at a greater rate than tubes during firing.

Structural steel skid with slots for forklift handling.

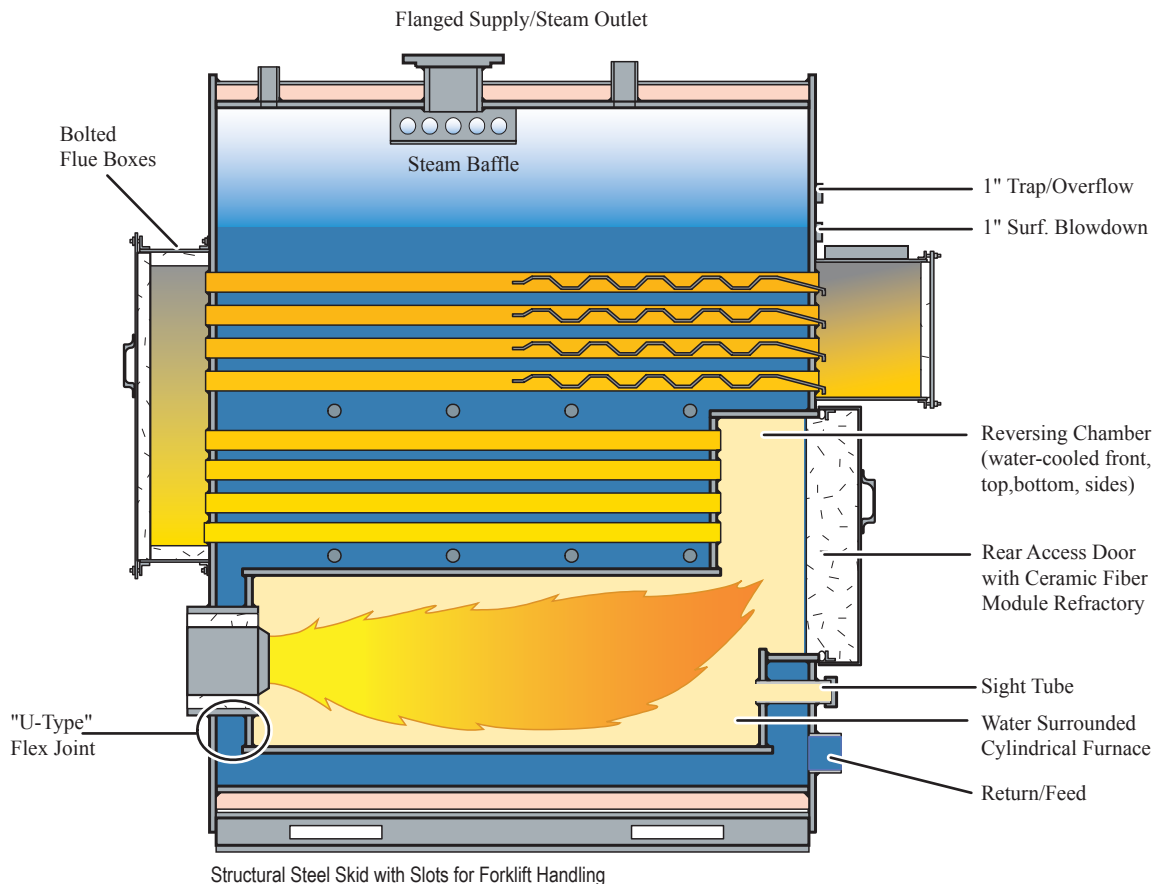
Custom fabricated bent steel turbulators insure positive furnace pressure necessary for highest non-condensing combustion efficiencies.

Smokeboxes are easily removed for transporting boilers through existing elevators and stairwells. Bolted and gasketed construction provides convenient access to tubesheets for inspection, cleaning, and tube maintenance.

All flue gas reversing chamber surfaces except for rear access door are water-cooled, insuring maximum heat transfer efficiency and minimal thermal shock. Removable rear door provides easy access to furnace interior.

* Welded tubes available upon request.

Schematic Cutaway: Series HF Boiler



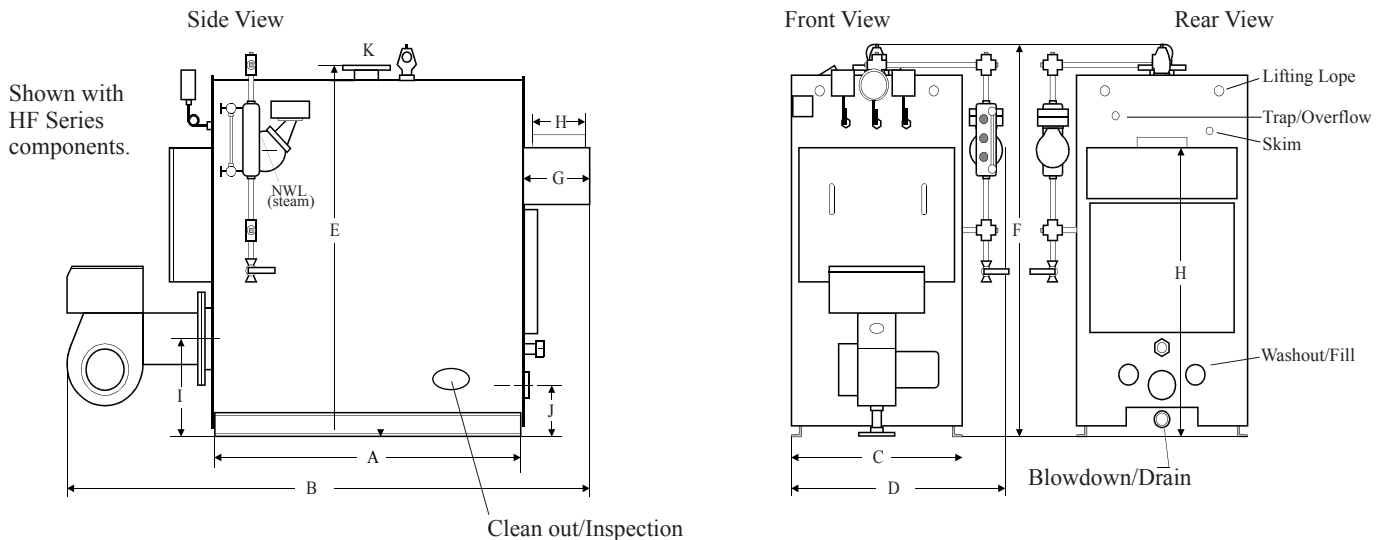
L.E.S. Series HF/HW "Scotch Box" Boilers

3-Pass Firetube • 15# Steam / 30# Water • 83% Efficiency • 4 sq.ft. Fireside Heating Surface per BHP

Ratings / Data / Dimensions

Model	15	20	25	30	40	50	60	70	80	90	105	120	130	140	150	175	200	
Input																		
Gas (Cubic ft/hr)	600	800	1000	1200	1610	2010	2410	2820	3220	3620	4240	4865	5243	5646	6050	7038	8044	
Oil (Gallons/hr)	4.3	5.7	7.1	8.6	11.5	14.4	17.2	20.1	23.0	25.9	30.3	34.8	37.5	40.3	43.2	50.3	57.6	
Output																		
MBH	500	670	835	1000	1340	1675	2010	2345	2680	3015	3520	4040	4352	4687	5021	5863	6700	
Boiler Horsepower	15	20	25	30	40	50	60	70	80	90	105	120	130	140	150	175	200	
Gas Burner Motor HP	.25	.33	.33	.33	.5	.75	1.0	1.0	2.0	3.0	3.0	5.0	5.0	5.0	5.0	7.5	7.5	
Oil Burner Motor HP	.33	.33	.5	.5	.75	1.0	1.5	1.5	2.0	3.0	5.0	5.0	5.0	5.0	5.0	1.0	1.0	
SQ. FT. Heating Surface																		
Primary	16.7	20.8	20.8	24.7	28.7	35.6	40.4	46.6	46.5	51.9	57.3	57.3	70.2	77.4	77.3	99.2	113.4	
Total Fireside	62	86	102	125	163	200	242	286	325	359	424	424*	518	563	583	743	873	
Total Waterside	68	94	111	137	180	221	267	316	360	397	470	470	574	624	646	816	961	
Boiler Data																		
Furnace Vol. (CU.FT.)	4.5	6.1	6.1	7.7	9.3	13.6	15.8	20.3	20.3	23.2	26.0	26.0	38.5	43.4	43.4	56.0	66.3	
Water Cap. (Gal; NWL)	89	116	111	138	160	206	237	282	270	312	344	344	392	445	439	590	694	
Water Cap. (Gal; Full)	112	146	141	176	206	275	318	363	350	404	447	447	536	608	602	756	889	
Dry Weight (LBS)	1350	1650	1725	2075	2435	3000	3450	3925	4075	4500	4975	4975	6500	7000	7000	8250	9550	
Dimensions in Inches																		
A: Skid Length	29	39	39	49	59	59	68	68	68	78	88	88	88	88	88	112	131	
B: Overall Length	64	76	76	86	96	112	121	123	128	138	154	154	156	156	156	180	200	
C: Width	28	28	28	28	28	34	34	34	34	34	34	34	42	42	42	42	42	
D: Trimmed Width (Std)	40	40	40	40	40	46	46	46	46	46	46	46	54	54	54	54	54	
E: Height	64	64	64	64	64	72	72	78	78	78	78	78	90	90	90	90	90	
F: Trimmed Height	72	72	72	72	72	79	79	86	86	86	86	86	100	100	100	98	98	
G: Rear Smokebox Depth	10	12	12	12	12	14	14	16	16	16	16	16	18	18	18	16	16	
H: Flue Connection Size	6	8	8	8	8	10	10	12	12	12	12	12	14	14	14	14	14	
Flue Connection Height	50	50	50	50	50	54	54	61	61	61	61	61	72 1/4	72 1/4	72 1/4	73	73	
I: Burner Port Height	18	18	18	18	18	20	20	20	20	20	20	20	24	24	24	24	24	
Burner Port ID	9 1/4	9 1/4	9 1/4	9 1/4	9 1/4	12 1/4	12 1/4	14 1/4	14 1/4	14 1/4	14 1/4	14 1/2	14 3/4	14 3/4	14 3/4	14 7/8	14 7/8	
J: Return Size (NPT)	2	2	2	3	3	4	4	4	4	4	4	4	4	4	4	4	4	
Return Height	8 1/2	8 1/2	8 1/2	8 1/2	8 1/2	10 1/2	10 1/2	10 1/2	10 1/2	10 1/2	10 1/2	10 1/2	10 1/4	10 1/4	10 1/4	10 3/4	10 3/4	
K: Outlet Size	3	3	3	4	4	6	6	6	6	6	8	8	8	8	8	8	8	
Height	64	64	64	64	64	72	72	78	78	78	78	78	90	90	90	90	90	

* 3 1/2 Sq. Ft. Fireside heating surface per BHP



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