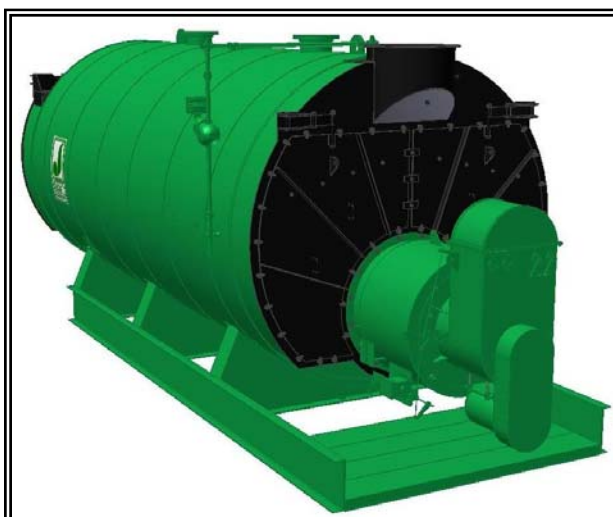




MODEL: PFTA 800-4

4-Pass Hot Water Packaged Firetube Boiler

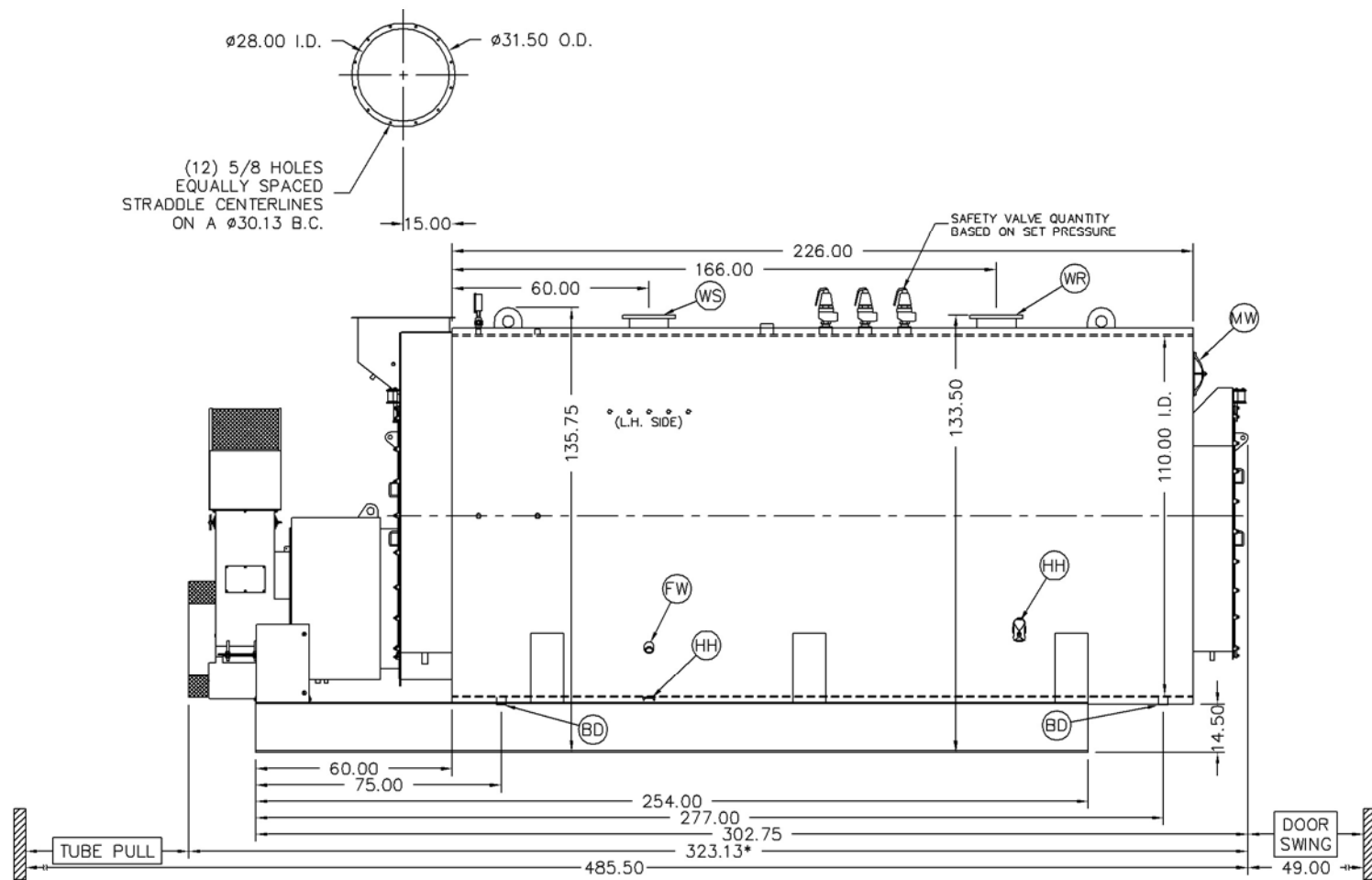
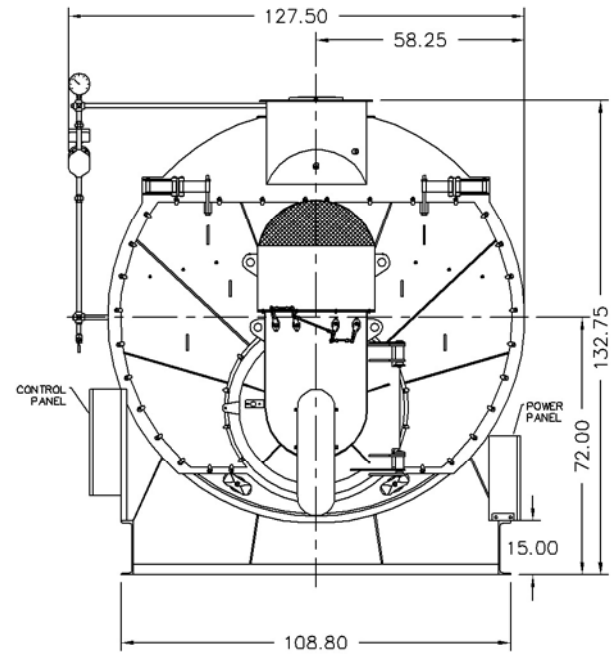


Ratings & Performance Data

Horsepower 800		Natural Gas Flow, SCFH (1,000 Btu/ft ³)**	30,952			
Total Heating Surface, ft ²	4,041	Combustion Air (15% Excess), SCFM***	5,664			
Furnace Outside Diameter, in	49.5	Flue Gas Flow Rate, lb/hr***	26,992			
Furnace Heat Release Rate, Btu/ft ³ hr**	152,000	Stack Flue Gas Velocity, ft/min***	1,892			
Total Combustion Volume, ft ³	267.5	#2 Oil Flow, gal/hr (140,000 Btu/gal)**	213.3			
Total Heat Release Rate, Btu/ft ³ hr**	116,000	#6 Oil Flow, gal/hr (150,000 Btu/gal)**	197.4			
Water Content Flooded, gal	5,553	Flue Gas Side Pressure Drop, in. H ₂ O	7.0			
Approx. Dry Weight 30#, lb	53,500	Approx. Operating Weight 30#, lb	98,700			
Approx. Dry Weight 60#, lb	53,600	Approx. Operating Weight 60#, lb	98,800			
Approx. Dry Weight 125#, lb	55,500	Approx. Operating Weight 125#, lb	100,700			
Performance Data						
Operating Temperature (F)	Natural Gas		#2 Oil		#6 Oil	
	Stack Temp (F)	%Eff	Stack Temp	%Eff	Stack Temp (F)	%Eff
180	214	87.0	222	90.2	228	90.9
200	234	86.5	242	89.7	248	90.5
220	254	86.0	261	89.2	267	90.0
240	273	85.6	281	88.7	287	89.5
*Based on 20°F difference in supply/return, ** Values calculated at 200°F operating temperature, ***Calculated Firing Natural Gas						

Drawings - 4-Pass Hot Water Packaged Firetube Boiler

Connection & Opening Schedule			
Conn.	Description	Type	Qty
FW	Feedwater Inlet	2.00 FNPT	2
WS	Water Supply	10.00 150#RF	1
WR	Water Return	10.00 150#RF	1
DO	Drain Outlet	2.00 FNPT	2
MW	Manway	12 X 16	1
HH	Hand Hole	4 X 6	7
Supply and return outlets ASME flanged drilling			

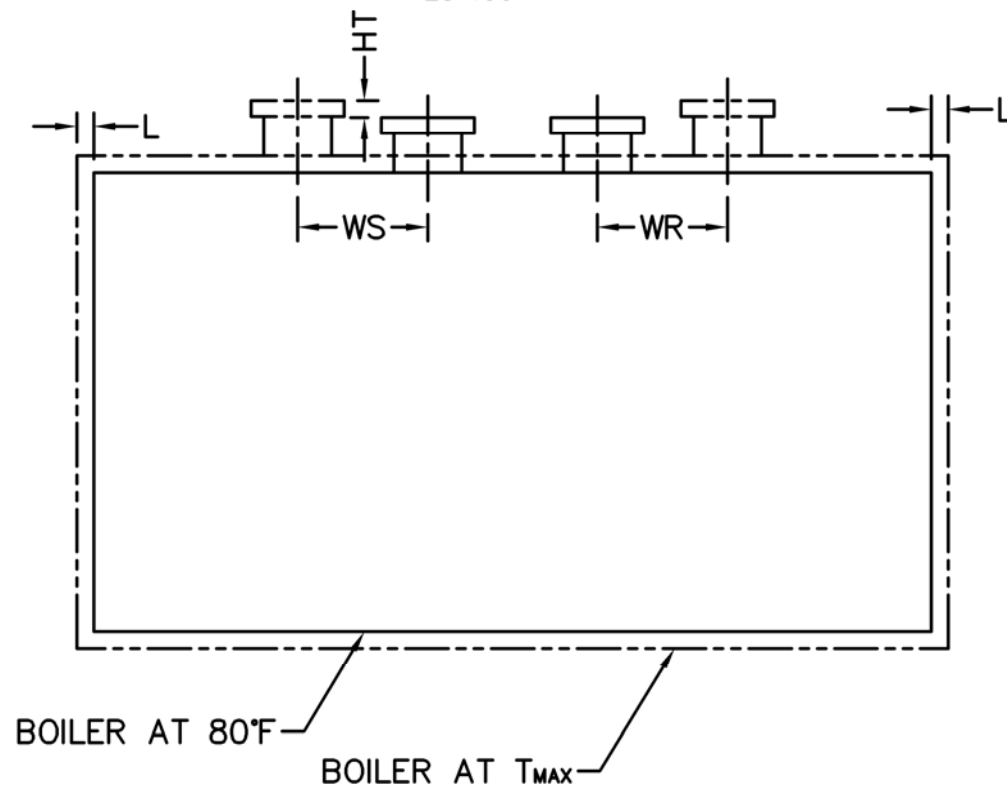
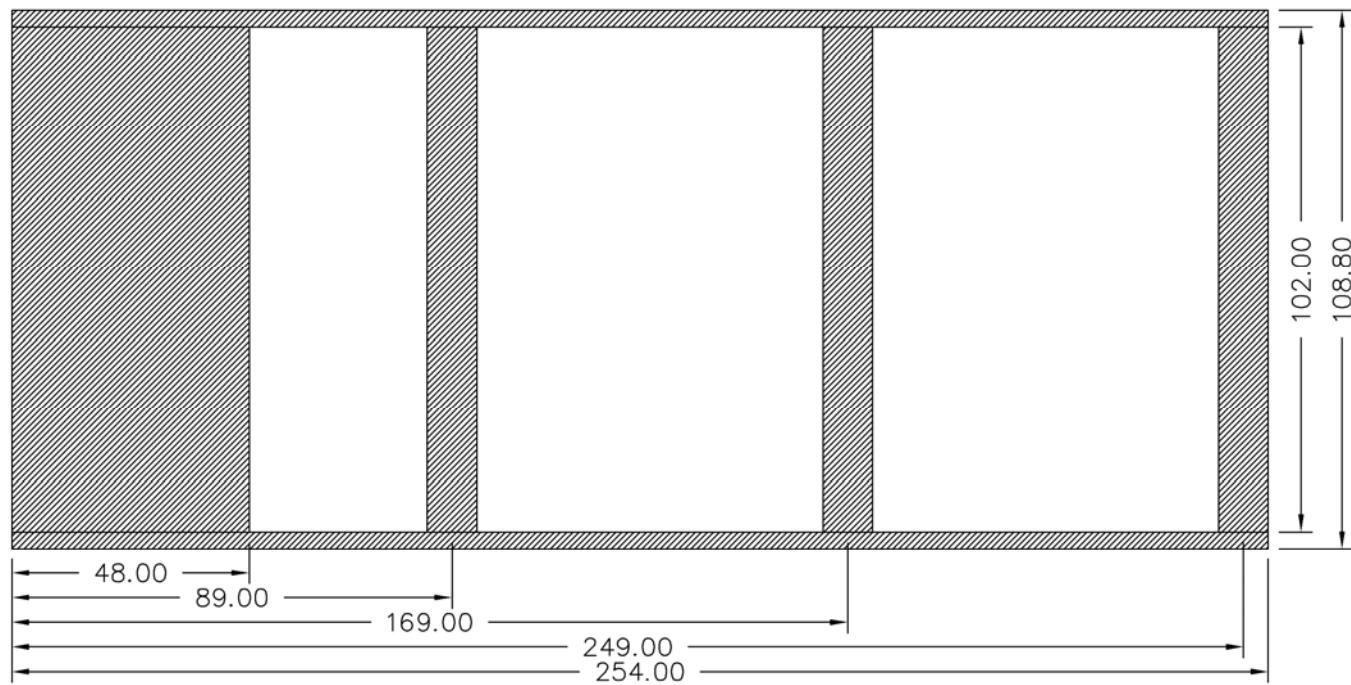


Notes:

- 30# Hot Water design shown, all dimensions given in inches.
- Fuel piping and/or optional boiler trim may increase overall width.
- Specifications subject to change to incorporate engineering advances.
- *May vary on low-NO_x designs.

MODEL: PFTA 800-4

Base Diagram

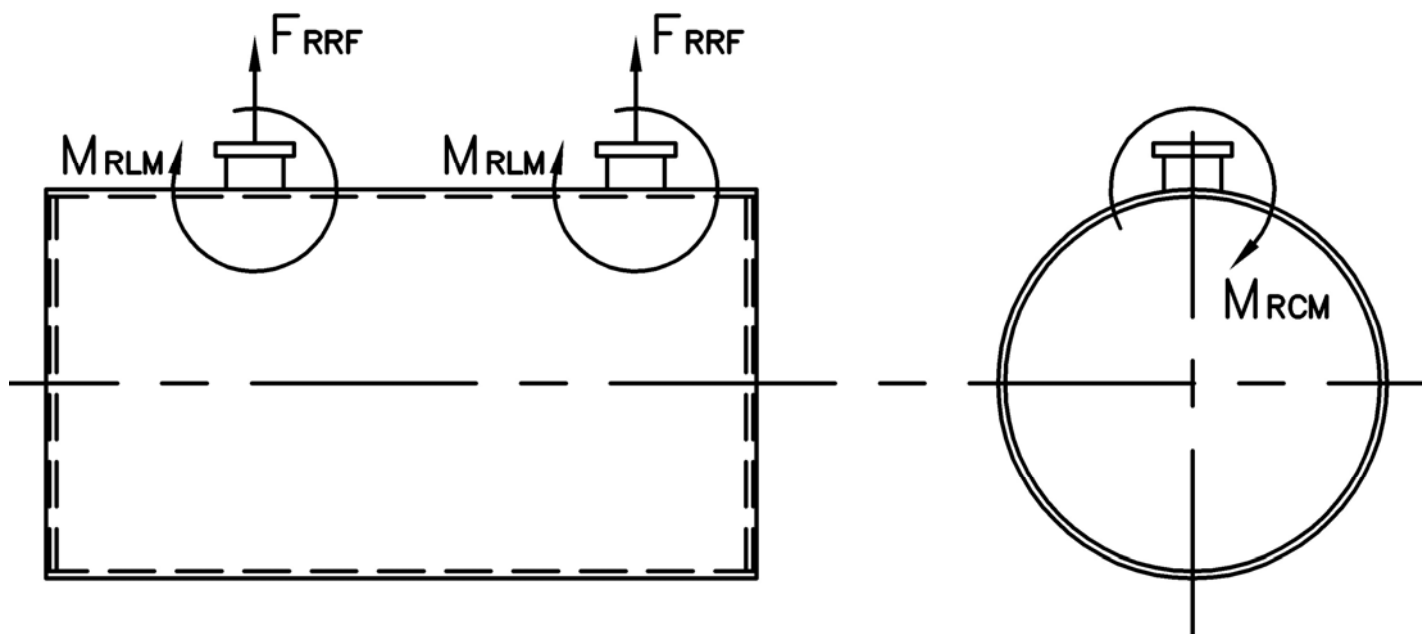


Thermal Expansion				
Metal T_{MAX} (F)	180	200	220	240
L (in)	0.068	0.081	0.095	0.108
WS (in)	0.032	0.038	0.045	0.051
WR (in)	0.032	0.038	0.045	0.051
HT (in)	0.066	0.080	0.093	0.106

MODEL: PFTA 800-4

Nozzle Loadings

Maximum Allowable Load on Outlet & Return Nozzles				
	30# Design	60# Design	125# Design	160# Design
F_{RRF} , lb	4,985	3,865	5,260	6,590
M_{RCM} , in-lb	36,915	36,915	73,425	92,710
M_{RLM} , in-lb	48,235	37,405	58,470	70,870



Distributed By:



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Net: www.johnstonboiler.com

Stack Emissions-Natural Gas (1,000 Btu/CF)				
	PPMv (Corr to 3% O ₂)	lb/MBtu	lb/hr @ Full Rate	Ton/Yr @ Full Rate
NO _x *	110	0.131	4.053	17.753
	30	0.036	1.105	4.842
	9	0.011	0.332	1.453
CO	50	0.037	1.14	4.981
CO ₂	2.55 lb/lb fuel	119.76	3,707	16,236
H ₂ O	2.03 lb/lb fuel	106.16	3,286	14,392
Stack Emissions-#2 Oil** (140,000 Btu/gal)				
NO _x	128	0.174	5.198	22.767
CO	50	0.037	1.097	4.804
CO ₂	3.20 lb/lb fuel	168.53	5,031	22,038
H ₂ O	1.12 lb/lb fuel	71.20	2,126	9,310

* 110 ppm "A" Burner, 30 ppm A-FGR Burner, 9 ppm FIR Burner
**0.02% fuel bound Nitrogen

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