



MODEL: PFTX 1800-3

3-Pass Steam Packaged Firetube Boiler

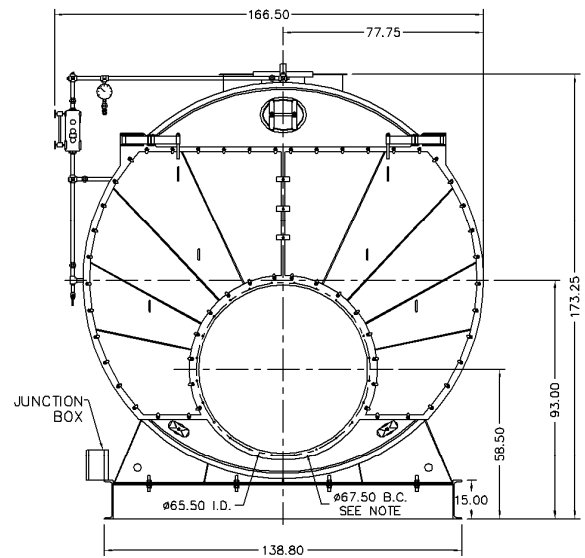


Ratings & Performance Data

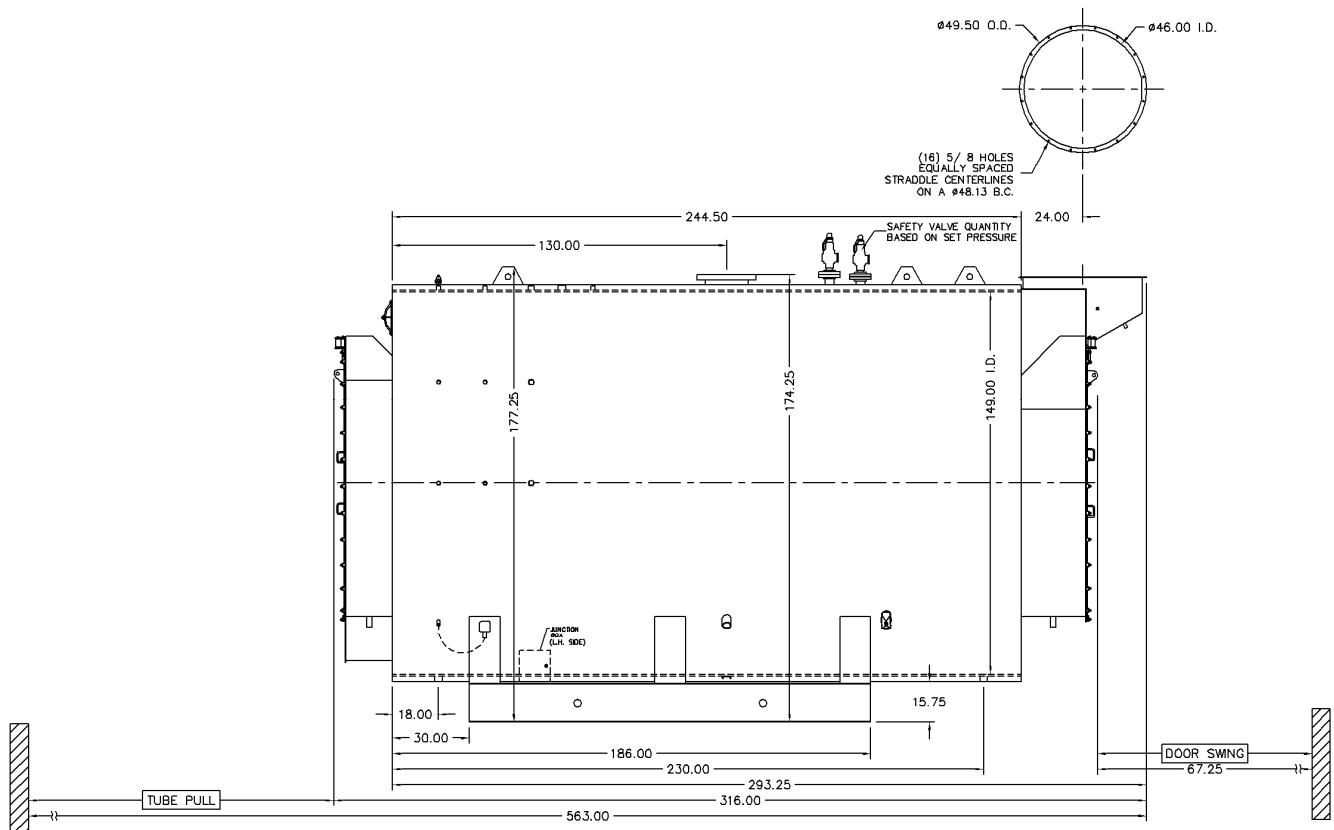
Horsepower 1800							
Steam Storage, ft ³	209.4	Natural Gas Flow, SCFH (1,000 Btu/ft ³)**		73,036			
Steam Disengaging Area, ft ²	174.4	Combustion Air (15% Excess), SCFM***		13,364			
Total Heating Surface, ft ²	8,962	Flue Gas Flow Rate, lb/hr***		63,692			
Furnace Outside Diameter, in	66.5	Stack Flue Gas Velocity, ft/min***		2,077			
Furnace Heat Release Rate, Btu/ft ³ hr**	187,000	#2 Oil Flow, gal/hr (140,000 BTU/gal)**		503.2			
Total Combustion Volume, ft ³	581.4	#6 Oil Flow, gal/hr (150,000 BTU/gal)**		465.8			
Total Heat Release Rate, Btu/ft ³ hr**	126,000	Flue Gas Side Pressure Drop, in. H ₂ O		4.8			
Water Content N.W.L., gal	8,567	Water Content Flooded, gal.		10,133			
Approx. Dry Weight 15#, lb	98,800	Approx. Operating Weight 15#, lb.		171,400			
Approx. Dry Weight 150#, lb	119,000	Approx. Operating Weight 150#, lb.		191,600			
Approx. Dry Weight 200#, lb	132,000	Approx. Operating Weight 200#, lb.		204,600			
Approx. Dry Weight 250#, lb	140,000	Approx. Operating Weight 250#, lb.		212,600			
Approx. Dry Weight 300#, lb	150,000	Approx. Operating Weight 300#, lb.		222,600			
Performance Data							
Operating Pressure (psig)	Steam Rate (lb/hr)	Natural Gas		#2 Oil		#6 Oil	
		Stack Temp (F)	%Eff	Stack Temp (F)	%Eff	Stack Temp (F)	%Eff
10	62,511	317	84.7	331	87.8	341	88.4
50	61,299	373	83.4	386	86.4	396	87.1
100	60,643	411	82.5	424	85.5	434	86.2
150	60,277	438	81.9	451	84.9	460	85.6
200	60,050	459	81.4	472	84.4	481	85.1
250	59,903	477	81.0	489	84.0	498	84.7
300	59,810	492	80.6	504	83.6	513	84.4
*Based on 228°F feedwater and 3% O ₂ , ** Values calculated at 100 psi operating pressure, ***Calculated Firing Natural Gas							

Drawings - 3-Pass Steam Packaged Firetube Boiler

Connection & Opening Schedule			
Conn.	Description	Type	Qty
FW	Feedwater Inlet	2.50 FNPT	2
MS*	Main Steam	12.00 300# RF	1
CB	Continuous Blowoff	1.00 FNPT	1
BD	Blowdown Outlet	2.00 FNPT	2
MW	Manway	12 X 16	1
HH	Hand Hole	4 X 6	7
*26.00 150#RF Flange on 15 psig Design			



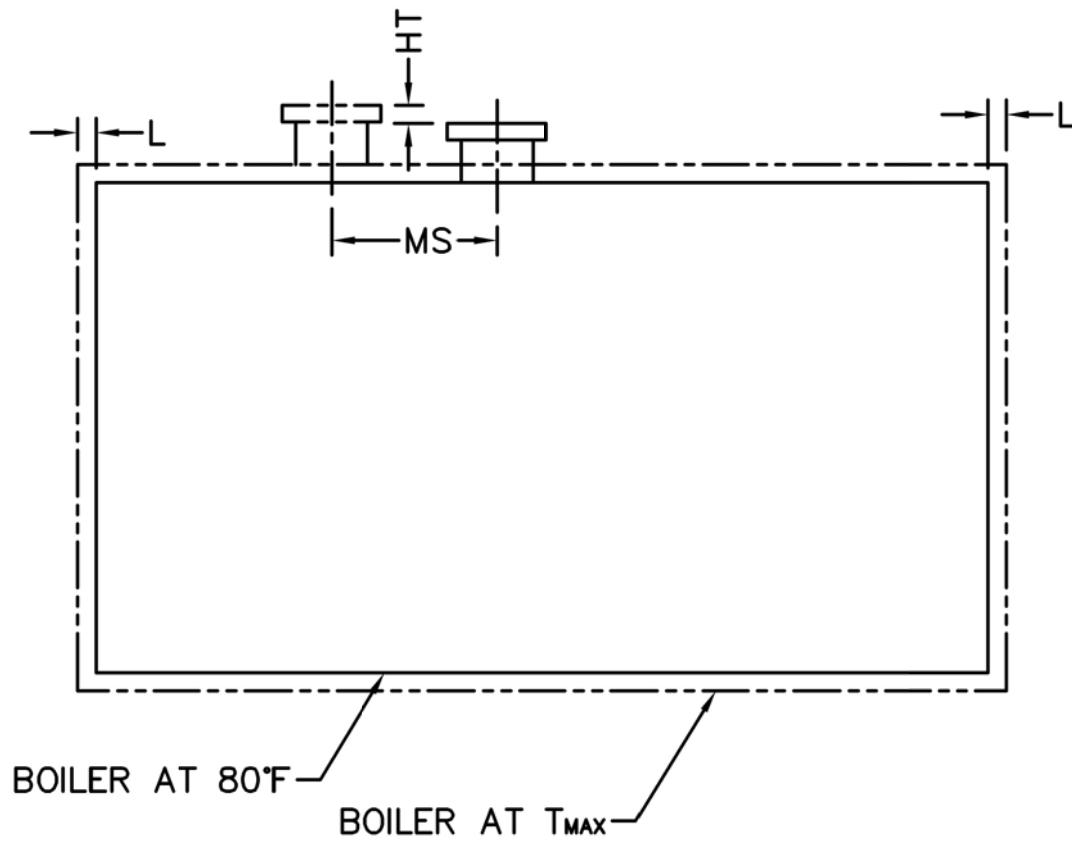
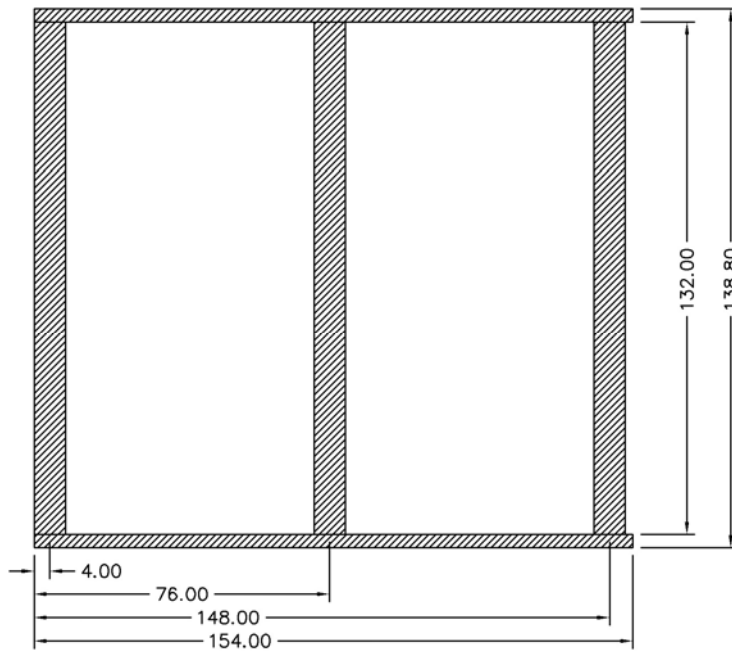
NOTE: (24) 5/8 UNC X 1.500 LONG STUDS EQUALLY SPACED STRADDLE CENTERLINES. STUDS FOR BURNER REFRACTORY (DRY OVEN) MOUNTING. REFRACTORY MUST EXTEND 22.25" MINIMUM PAST MOUNTING FLANGE.



Notes:
 150# Steam 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

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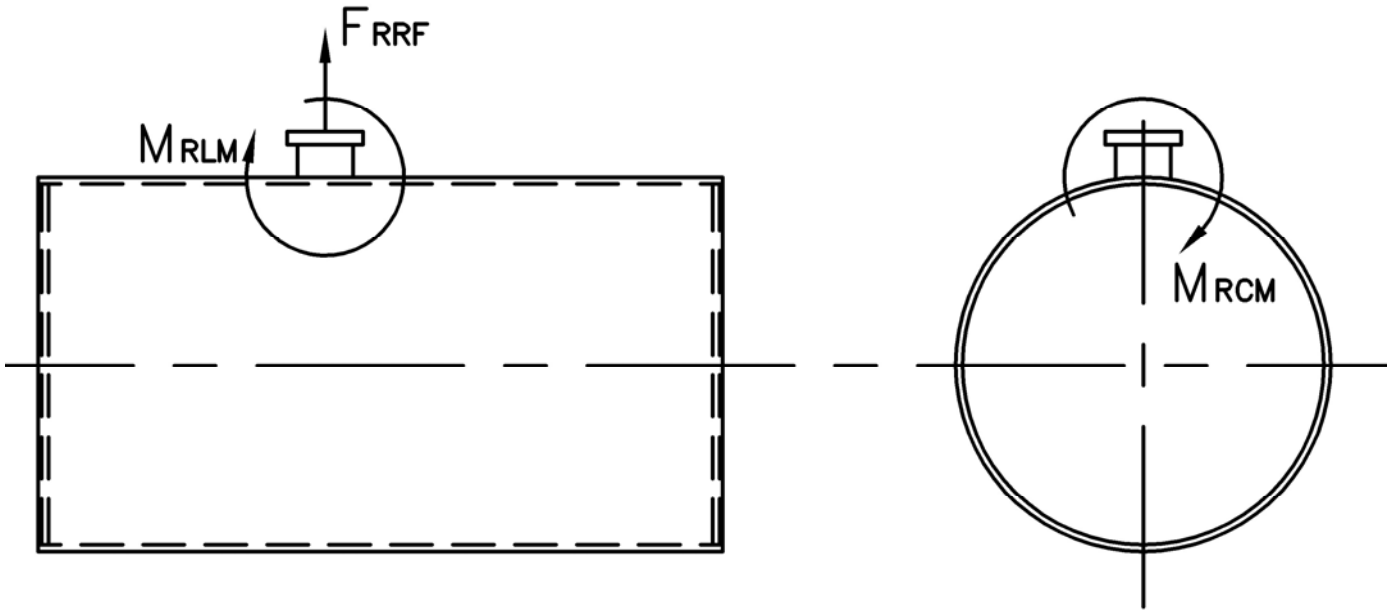
Base Diagram



Thermal Expansion					
psig	15	150	200	250	300
Metal T_{MAX} (F)	250	366	388	406	422
L (in)	0.125	0.210	0.226	0.239	0.251
MS (in)	0.038	0.063	0.068	0.072	0.076
HT (in)	0.153	0.257	0.277	0.293	0.307

Nozzle Loadings

Maximum Allowable Load on Boiler Steam Nozzle			
	15# Design	150# Design	200# Design
F_{RRF} , lb	14,680	6,429	11,515
M_{RCM} , in-lb	164,830	119,077	233,345
M_{RLM} , in-lb	382,145	96,100	169,885



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