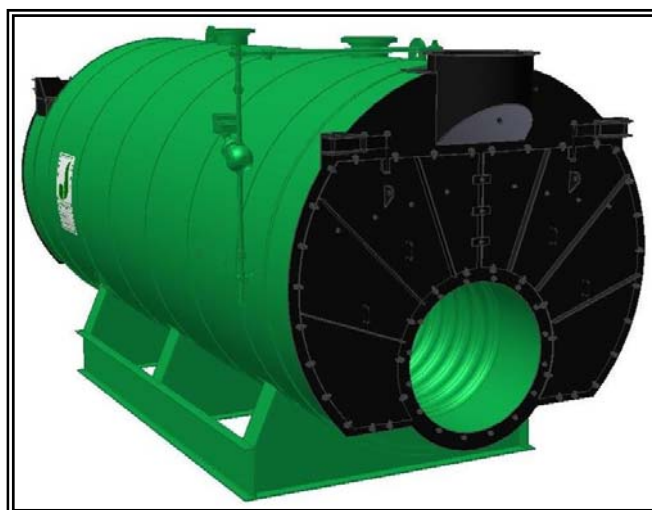


## MODEL: PFTX 1000-4

### 4-Pass Hot Water Packaged Firetube Boiler



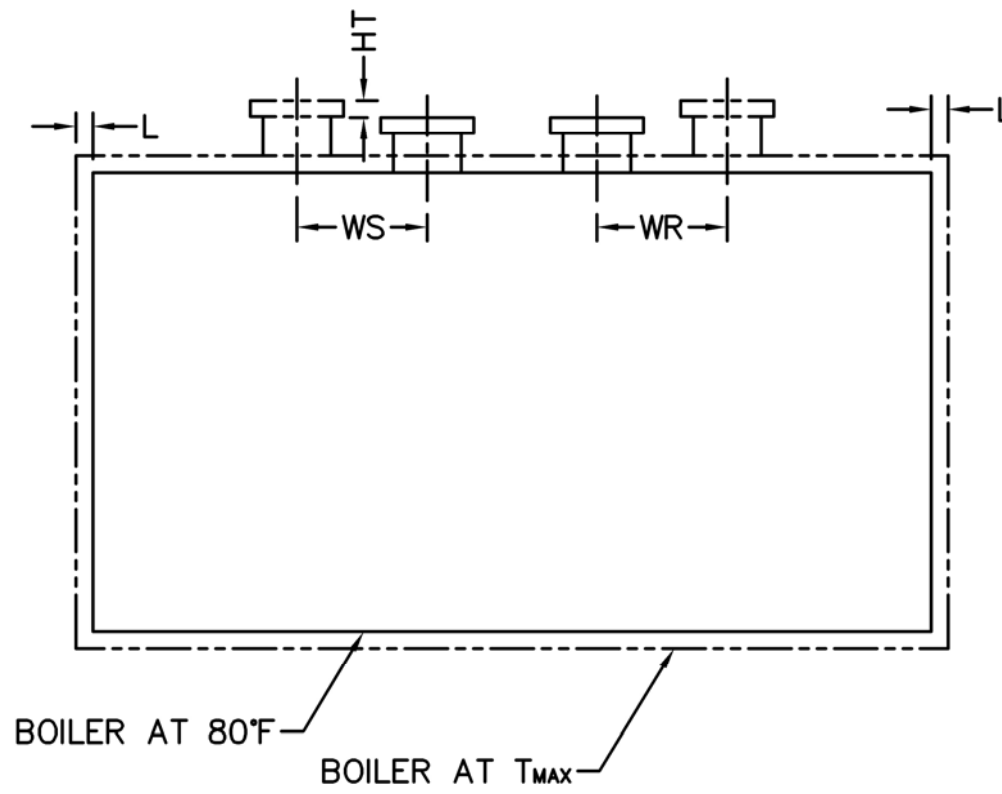
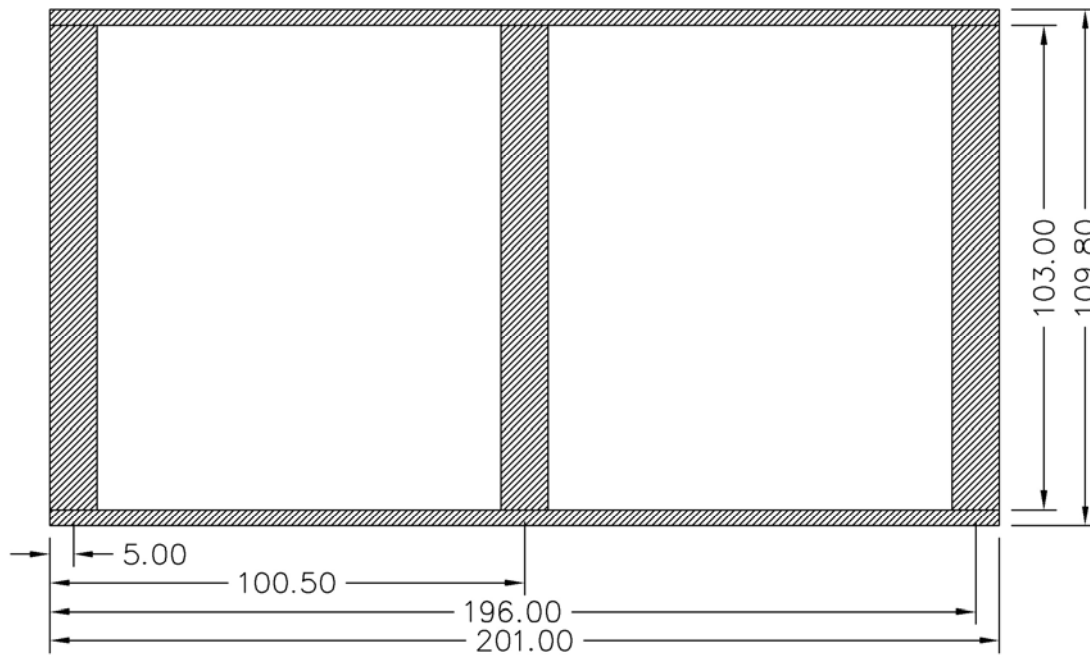
### Ratings & Performance Data

Horsepower 1000		Natural Gas Flow, SCFH (1,000 Btu/ft <sup>3</sup> )**		38,543		
Total Heating Surface, ft <sup>2</sup>	5,081	Combustion Air (15% Excess), SCFM***		7,053		
Furnace Outside Diameter, in	52.0	Flue Gas Flow Rate, lb/hr***		33,612		
Furnace Heat Release Rate, Btu/ft <sup>3</sup> hr**	146,000	Stack Flue Gas Velocity, ft/min***		1,770		
Total Combustion Volume, ft <sup>3</sup>	343.2	#2 Oil Flow, gal/hr (140,000 Btu/gal)**		265.4		
Total Heat Release Rate, Btu/ft <sup>3</sup> hr**	112,000	#6 Oil Flow, gal/hr (150,000 Btu/gal)**		245.6		
Water Content Flooded, gal	7,031	Flue Gas Side Pressure Drop, in. H <sub>2</sub> O		9.7		
Approx. Dry Weight 30#, lb	65,400	Approx. Operating Weight 30#, lb		124,300		
Approx. Dry Weight 60#, lb	65,600	Approx. Operating Weight 60#, lb		124,500		
Approx. Dry Weight 125#, lb	67,900	Approx. Operating Weight 125#, lb		126,800		
<b>Performance Data</b>						
Operating Temperature (F)	Natural Gas		#2 Oil		#6 Oil	
	Stack Temp (F)	%Eff	Stack Temp	%Eff	Stack Temp (F)	%Eff
180	202	87.3	207	90.6	212	91.3
200	221	86.9	227	90.1	232	90.9
220	241	86.4	247	89.6	251	90.4
240	261	85.9	267	89.1	271	89.9
*Based on 20°F difference in supply/return, ** Values calculated at 200°F operating temperature, ***Calculated Firing Natural Gas						



# MODEL: PFTX 1000-4

## Base Diagram

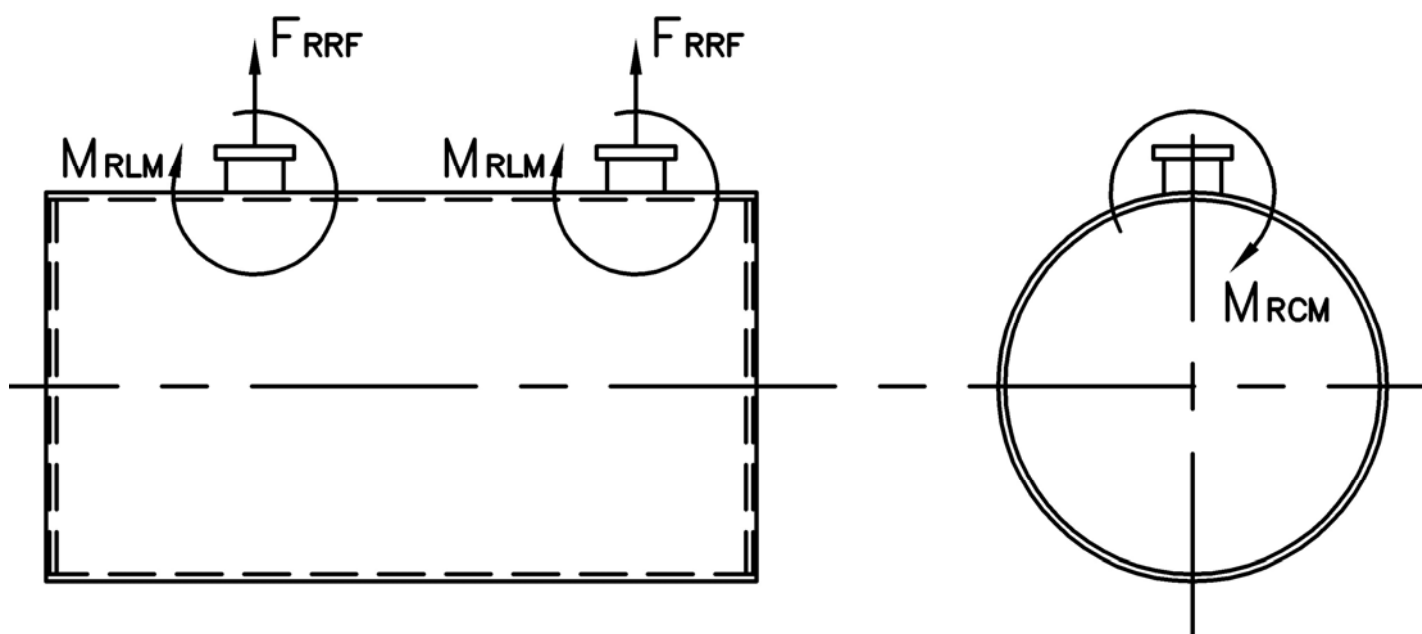


Thermal Expansion				
Metal $T_{MAX}$ (F)	180	200	220	240
L (in)	0.079	0.094	0.110	0.126
WS (in)	0.035	0.042	0.050	0.057
WR (in)	0.031	0.037	0.043	0.049
HT (in)	0.069	0.083	0.097	0.111

# MODEL: PFTX 1000-4

## Nozzle Loadings

Maximum Allowable Load on Outlet & Return Nozzles				
	30# Design	60# Design	125# Design	160# Design
$F_{RRF}$ , lb	4,850	3,700	4,790	7,595
$M_{RCM}$ , in-lb	40,330	40,330	64,670	115,985
$M_{RLM}$ , in-lb	52,165	39,795	51,500	86,200



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