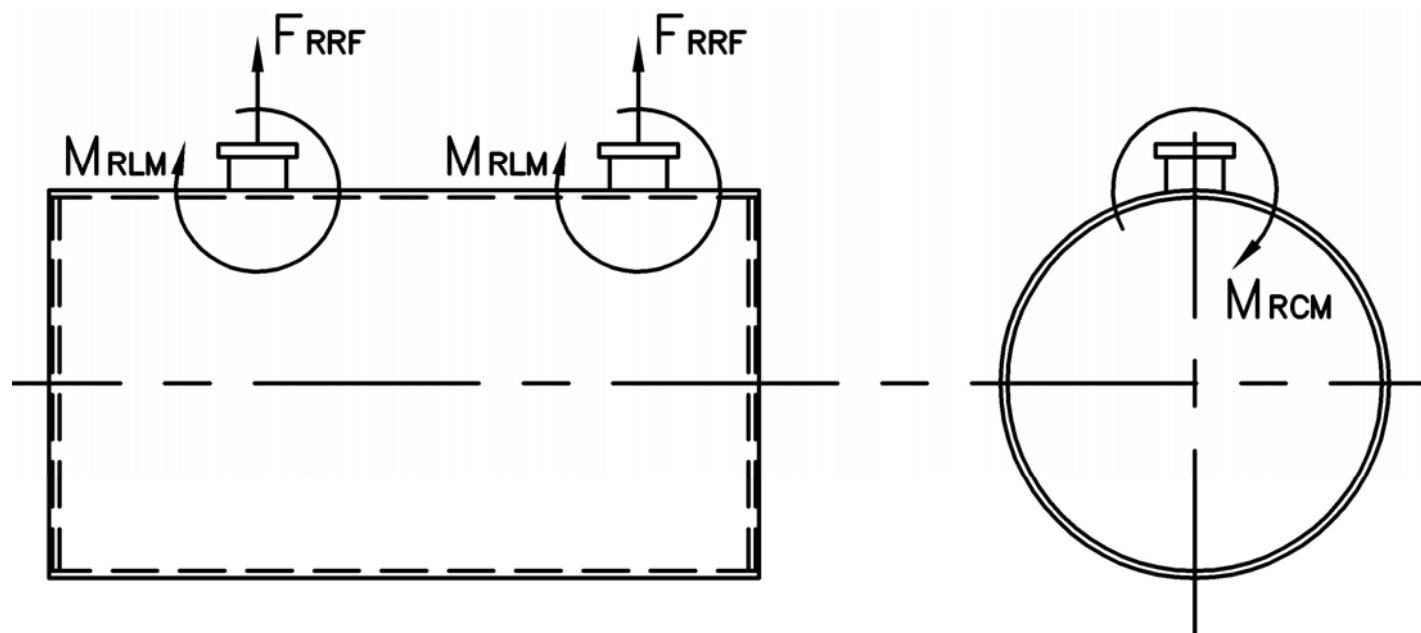


MODEL: PFTX 1000-4

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



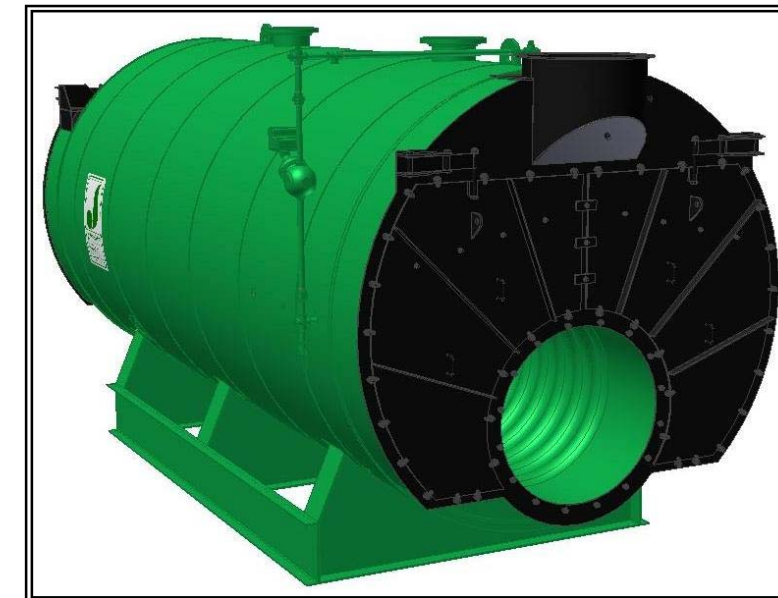
Distributed By:



300 Pine Street
 P.O. Box 300
 Ferrysburg, MI 49409-0300
 Telephone: (616) 842-5050
 Net: www.johnstonboiler.com

MODEL: PFTX 1000-4

4-Pass Hot Water Packaged Firetube Boiler



Ratings & Performance Data

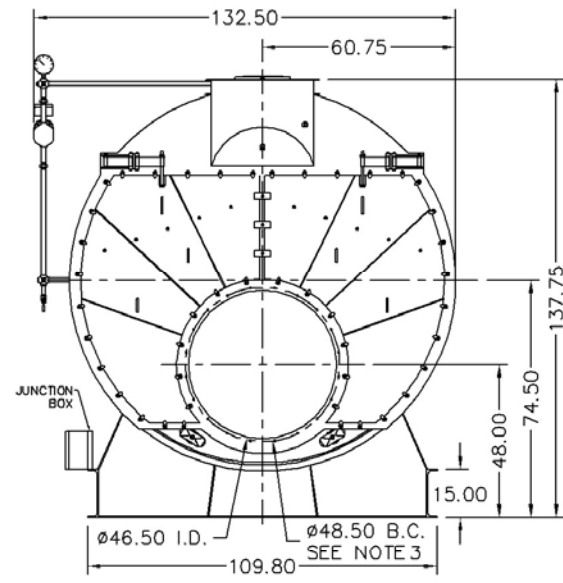
Horsepower 1000		Natural Gas Flow, SCFH (1,000 Btu/ft ³)**	38,543
Total Heating Surface, ft ²	5,081	Combustion Air (15% Excess), SCFM***	7,053
Furnace Outside Diameter, in	52.0	Flue Gas Flow Rate, lb/hr***	33,612
Furnace Heat Release Rate, Btu/ft ³ hr**	146,000	Stack Flue Gas Velocity, ft/min***	1,770
Total Combustion Volume, ft ³	343.2	#2 Oil Flow, gal/hr (140,000 Btu/gal)**	265.4
Total Heat Release Rate, Btu/ft ³ 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 ₂ 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

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

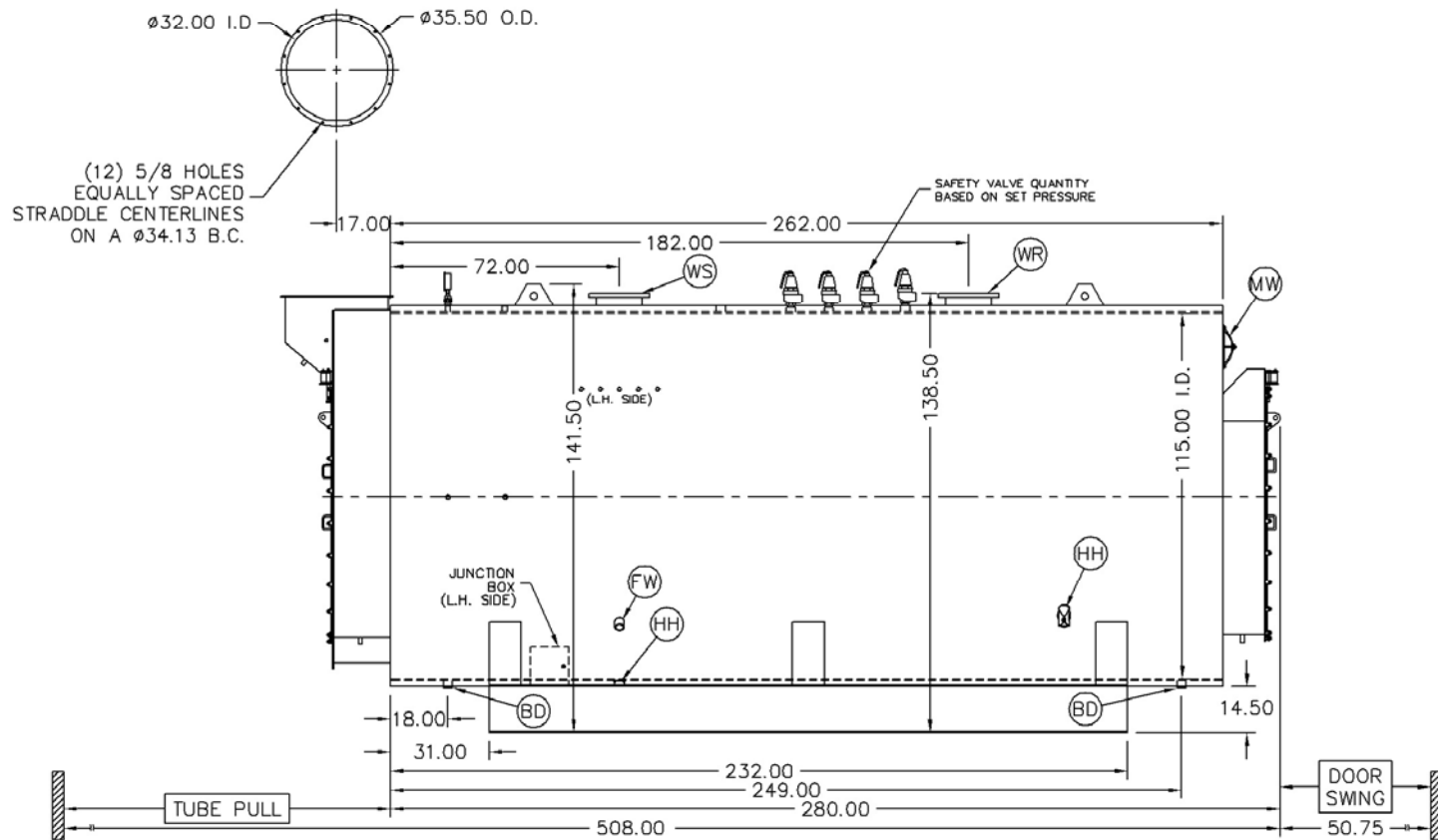
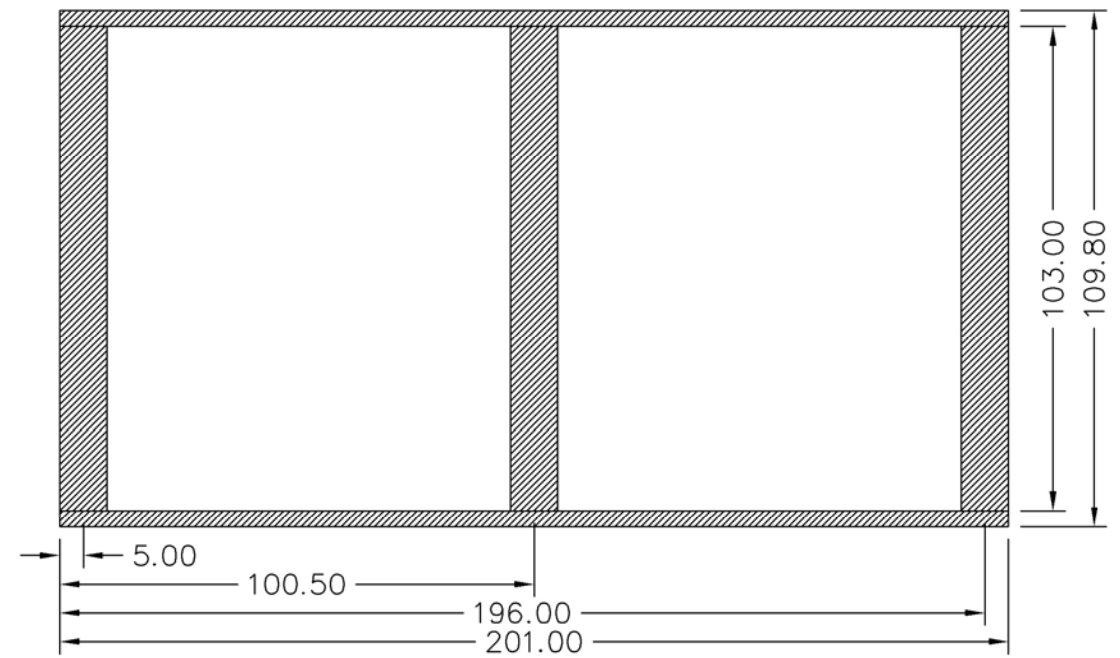
Connection & Opening Schedule			
Conn.	Description	2	Qty
FW	Feedwater Inlet	12.00 FNPT	2
WS	Water Supply	12.00 150#RF	1
WR	Water Return	12.00 150#RF	1
DO	Drain Outlet	2.00 FNPT	2
MW	Manway	12 X 16	1
HH	Hand Hole	4 X 6	7

Supply and return outlets ASME flanged drilling

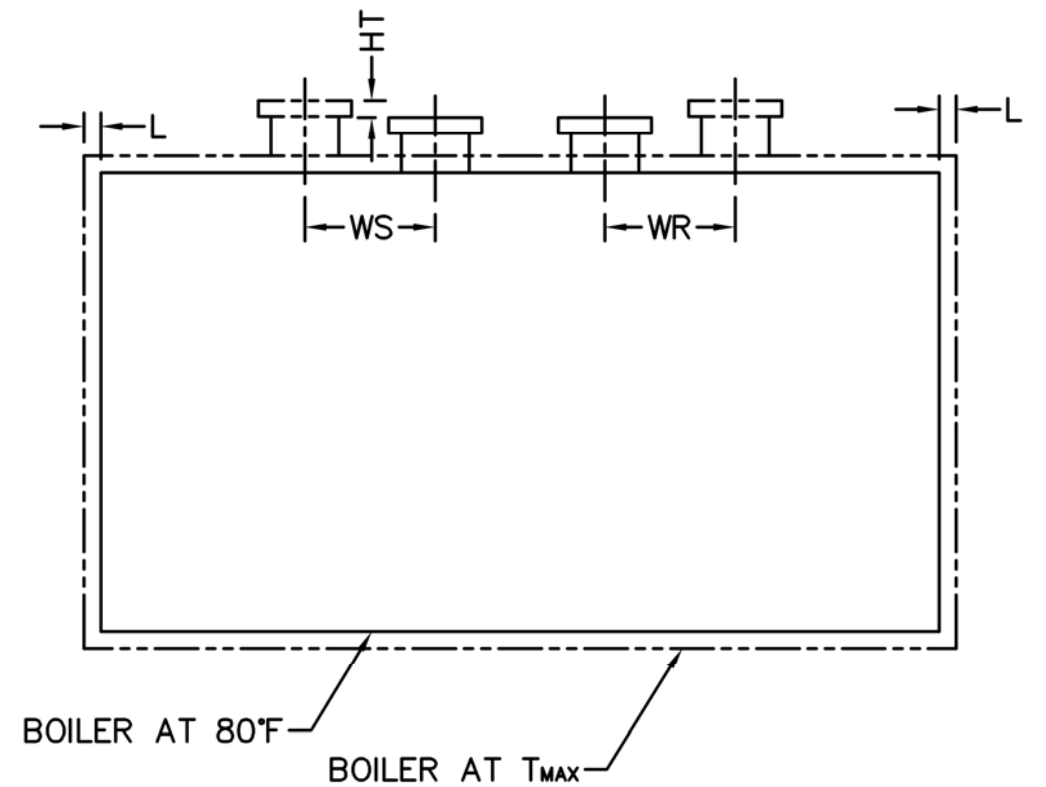


NOTE: (20) 5/8 UNC X 1.500 LONG STUDS EQUALLY SPACED STRADDLE CENTERLINES. STUDS FOR BURNER REFRACTORY (DRY OVEN) MOUNTING. REFRACTORY MUST EXTEND 22.25" MINIMUM PAST MOUNTING FLANGE.

Base Diagram



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.



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