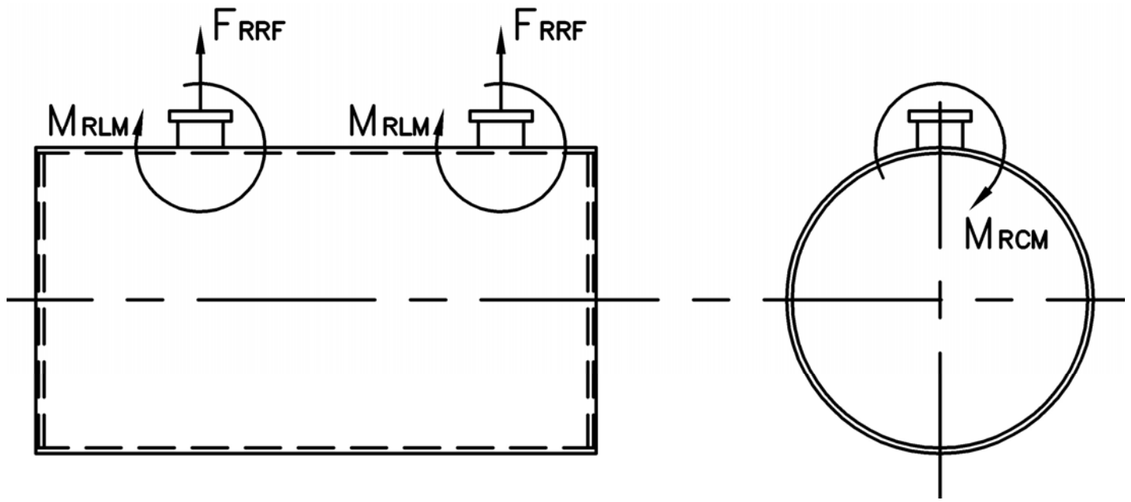
MODEL: PFTX 1800-3

Nozzle Loadings

Maximum Allowable Load on Outlet & Return Nozzles				
	30# Design	60# Design	125# Design	160# Design
FRRF, lb	6,570	4,400	10,060	24,695
MRCM, in-lb	73,145	73,145	211,650	352,760
MRLM, in-lb	104,275	69,825	168,525	451,605



Distributed By:

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Telephone: (616) 842-5050
Net: www.johnstonboiler.com

MODEL: PFTX 1800-3

3-Pass Hot Water Packaged Firetube Boiler

Ratings & Performance Data

Horsepower 1800		Natural Gas Flow, SCFH (1,000 Btu/ft^3)**	70,730
Total Heating Surface, ft^2	8,962	Combustion Air (15% Excess), SCFM***	12,942
Furnace Outside Diameter, in	66.5	Flue Gas Flow Rate, lb/hr***	61,680
Furnace Heat Release Rate, Btu/ft^3 hr**	181,000	Stack Flue Gas Velocity, ft/min***	1,708
Total Combustion Volume, ft^3	581.4	#2 Oil Flow, gal/hr (140,000 Btu/gal)**	487.9
Total Heat Release Rate, Btu/ft^3 hr**	122,000	#6 Oil Flow, gal/hr (150,000 Btu/gal)**	452.1
Water Content Flooded, gal	10,133	Flue Gas Side Pressure Drop, in. H_2O	4.8
Approx. Dry Weight 30#, lb	98,900	Approx. Operating Weight 30#, lb	185,100
Approx. Dry Weight 60#, lb	105,000	Approx. Operating Weight 60#, lb	191,200
Approx. Dry Weight 125#, lb	125,000	Approx. Operating Weight 125#, lb	211,200

Performance Data

Operating Temperature (F)	Natural Gas		#2 Oil		#6 Oil	
	Stack Temp (F)	%Eff	Stack Temp	%Eff	Stack Temp (F)	%Eff
180	261	85.6	275	88.7	286	89.3
200	280	85.2	294	88.2	305	88.9
220	299	84.7	313	87.8	323	88.4
240	318	84.3	332	87.3	342	88.0

*Based on 20°F difference in supply/return, ** Values calculated at 200°F operating temperature, ***Calculated Firing Natural Gas

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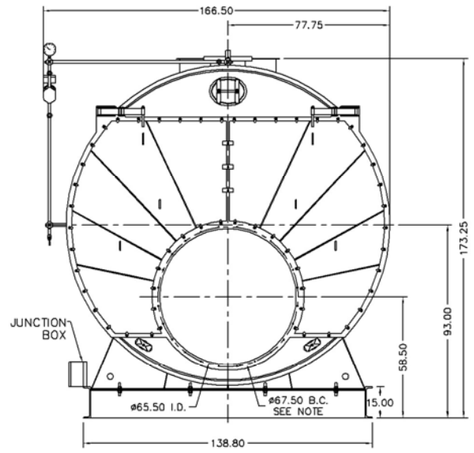
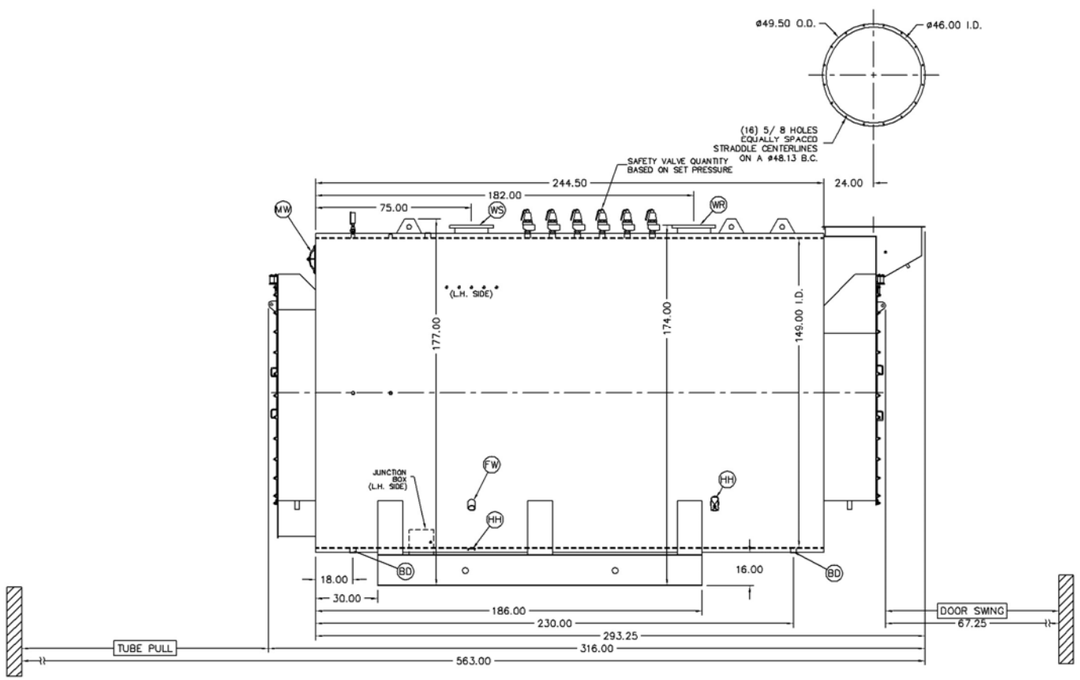
Drawings - 3-Pass Hot Water Packaged Firetube Boiler

MODEL: PFTX 1800-3

Connection & Opening Schedule			
Conn.	Description	Type	Qty
FW	Feedwater Inlet	2.50 FNPT	2
WS	Water Supply	14.00 150#RF	1
WR	Water Return	14.00 150#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			

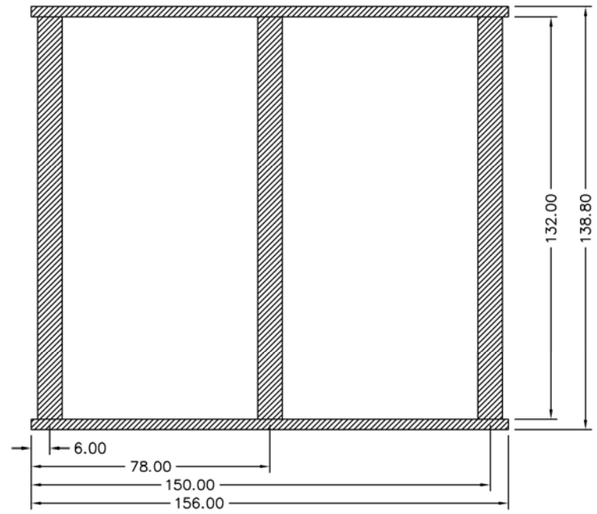


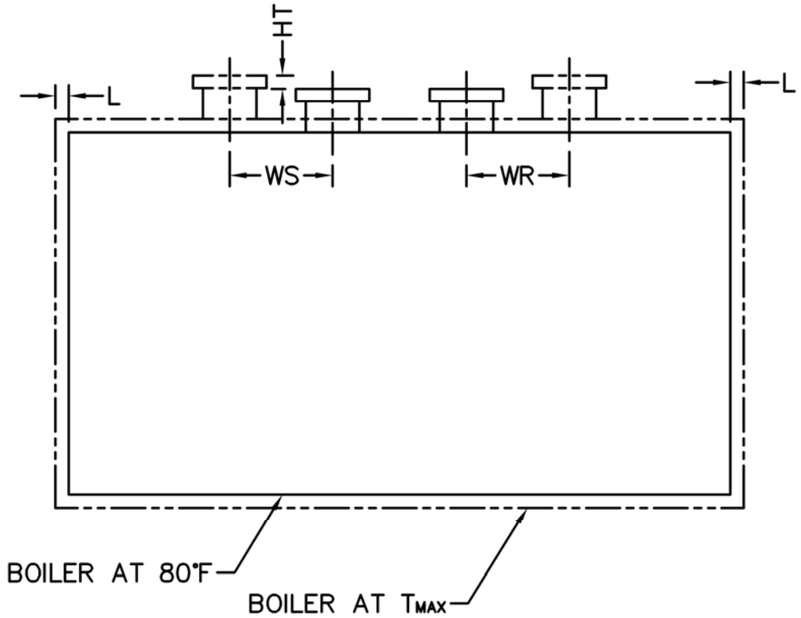
NOTE: (24) 5/8 UNC X 1.500 LONG STUDS EQUALLY SPACED STRADDLE CENTERLINES. STUDS FOR BURNER REFRACTORY (DRY OVEN) MOUNTING. REFRACTORY MUST EXTEND 22.25" MINIMUM PAST MOUNTING FLANGE.



Notes:
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.

Base Diagram





Thermal Expansion				
Metal T_{MAX} (F)	180	200	220	240
L (in)	0.073	0.088	0.103	0.117
WS (in)	0.011	0.013	0.015	0.017
WR (in)	0.053	0.064	0.075	0.085
HT (in)	0.090	0.108	0.126	0.144