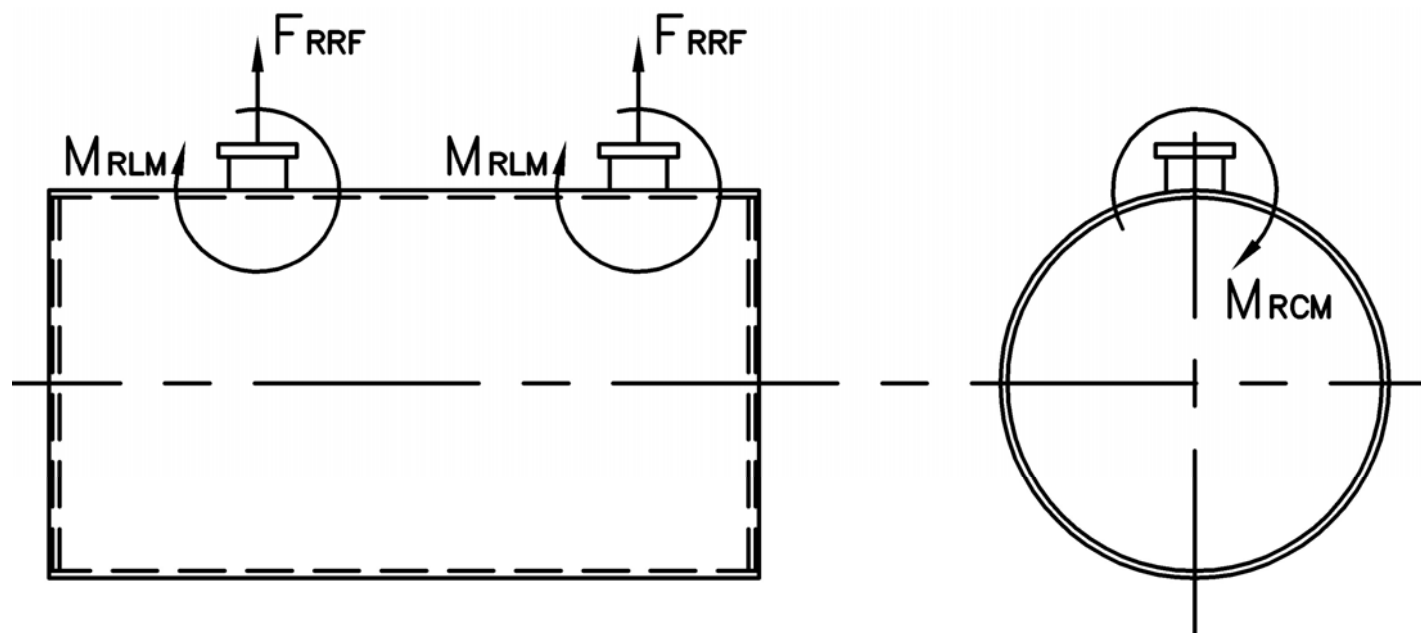


# MODEL: PFTX 400-4

## Nozzle Loadings

| Maximum Allowable Load on Outlet & Return Nozzles |            |            |             |             |
|---|------------|------------|-------------|-------------|
|   | 30# Design | 60# Design | 125# Design | 160# Design |
| $F_{RRF}$ , lb                                    | 5,487      | 4,487      | 3,099       | 5,495       |
| $M_{RCM}$ , in-lb                                 | 32,911     | 32,911     | 32,911      | 60,265      |
| $M_{RLM}$ , in-lb                                 | 46,547     | 38,063     | 26,293      | 47,425      |



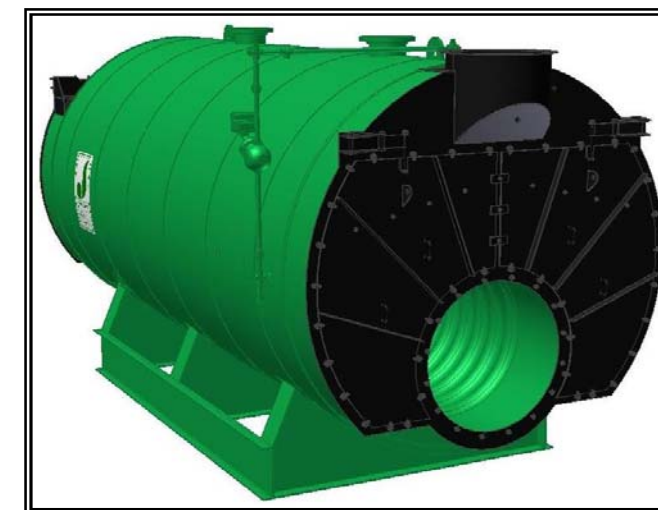
Distributed By:



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

# MODEL: PFTX 400-4

## 4-Pass Hot Water Packaged Firetube Boiler



## Ratings & Performance Data

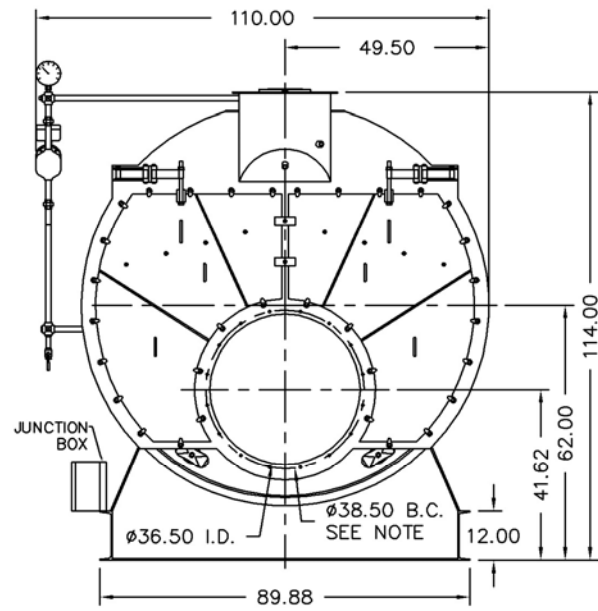
|   |         |   |        |
|---|---------|---|--------|
| Horsepower 400                                      |         | Natural Gas Flow, SCFH (1,000 Btu/ft <sup>3</sup> )** | 15,641 |
| Total Heating Surface, ft <sup>2</sup>              | 2,026   | Combustion Air (15% Excess), SCFM***                  | 2,862  |
| Furnace Outside Diameter, in                        | 42.0    | Flue Gas Flow Rate, lb/hr***                          | 13,640 |
| Furnace Heat Release Rate, Btu/ft <sup>3</sup> hr** | 154,000 | Stack Flue Gas Velocity, ft/min***                    | 1,623  |
| Total Combustion Volume, ft <sup>3</sup>            | 148.0   | #2 Oil Flow, gal/hr (140,000 Btu/gal)**               | 107.9  |
| Total Heat Release Rate, Btu/ft <sup>3</sup> hr**   | 106,000 | #6 Oil Flow, gal/hr (150,000 Btu/gal)**               | 100.0  |
| Water Content Flooded, gal                          | 2,995   | Flue Gas Side Pressure Drop, in. H <sub>2</sub> O     | 3.9    |
| Approx. Dry Weight 30#, lb                          | 27,400  | Approx. Operating Weight 30#, lb                      | 52,700 |
| Approx. Dry Weight 60#, lb                          | 27,500  | Approx. Operating Weight 60#, lb                      | 52,800 |
| Approx. Dry Weight 125#, lb                         | 29,000  | Approx. Operating Weight 125#, lb                     | 54,300 |

| Operating Temperature (F) | Natural Gas    |      | #2 Oil     |      | #6 Oil         |      |
|---------------------------|----------------|------|------------|------|----------------|------|
|                           | Stack Temp (F) | %Eff | Stack Temp | %Eff | Stack Temp (F) | %Eff |
| 180                       | 249            | 86.1 | 262        | 89.2 | 275            | 89.7 |
| 200                       | 267            | 85.6 | 282        | 88.7 | 295            | 89.2 |
| 220                       | 288            | 85.1 | 301        | 88.2 | 315            | 88.7 |
| 240                       | 308            | 84.6 | 321        | 87.7 | 335            | 88.2 |

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

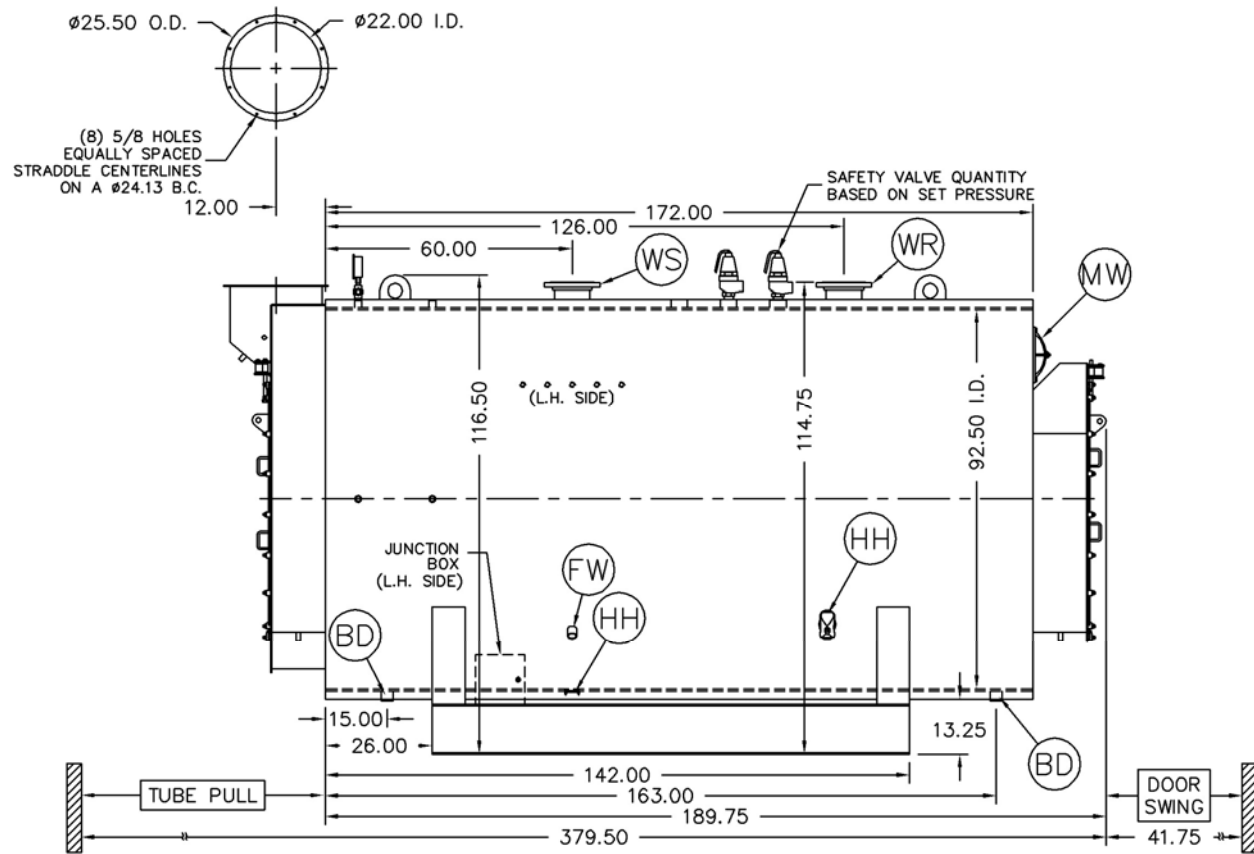
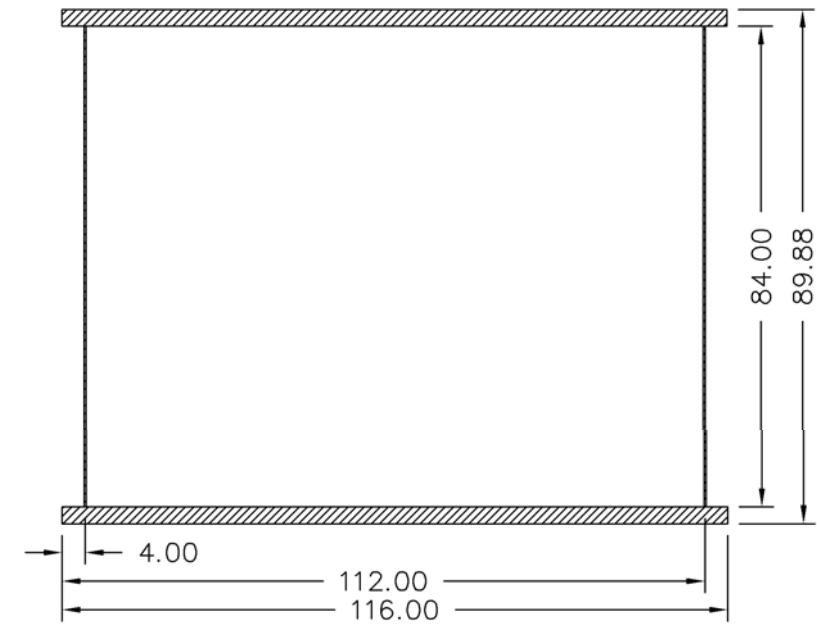
| Connection & Opening Schedule |                 |             |     |
|-------------------------------|-----------------|-------------|-----|
| Conn.                         | Description     | Type        | Qty |
| FW                            | Feedwater Inlet | 2.00 FNPT   | 2   |
| WS                            | Water Supply    | 8.00 150#RF | 1   |
| WR                            | Water Return    | 8.00 150#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

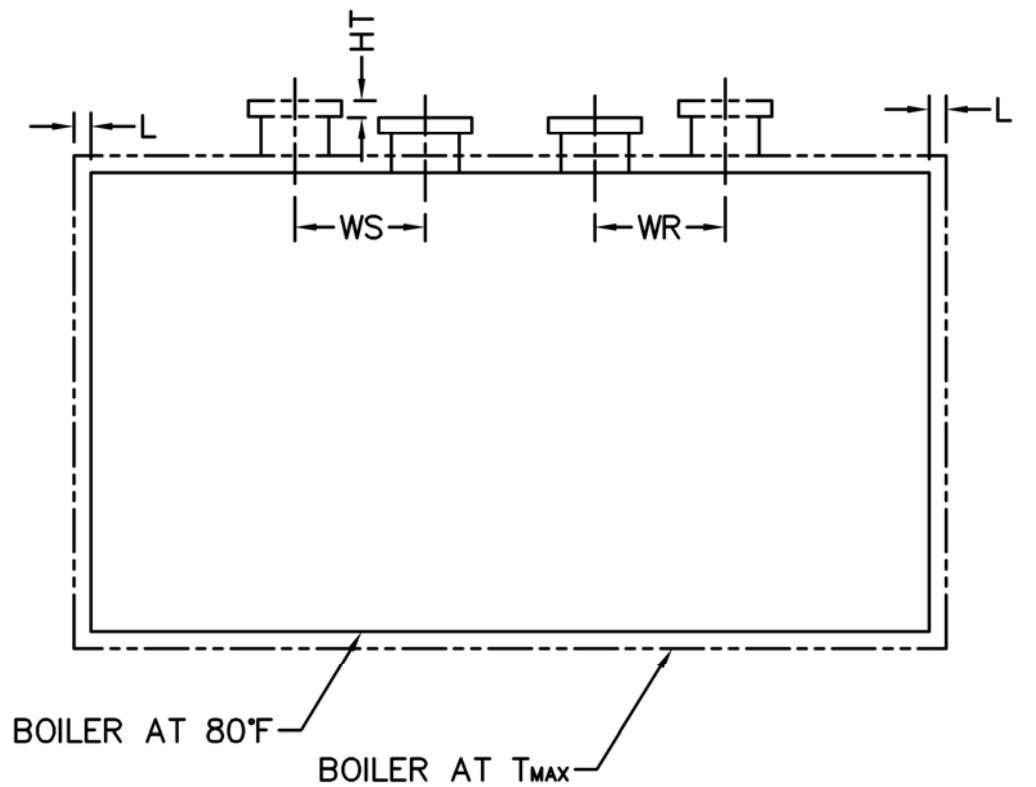


NOTE: (16) 1/2 UNC X 1.50 LONG STUDS EQUALLY SPACED STRADDLE CENTERLINES. STUDS FOR BURNER REFRACTORY (DRY OVEN) MOUNTING. REFRACTORY MUST EXTEND 17.25" MINIMUM PAST MOUNTING FLANGE.

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 <sub>MAX</sub> (F) | 180   | 200   | 220   | 240   |
| L (in)                     | 0.052 | 0.062 | 0.072 | 0.083 |
| WS (in)                    | 0.016 | 0.019 | 0.022 | 0.025 |
| WR (in)                    | 0.024 | 0.029 | 0.034 | 0.038 |
| HT (in)                    | 0.056 | 0.067 | 0.078 | 0.089 |