



Manufactured in the USA by:  
Rayes Boiler & Welding  
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## SAMPLE SPECIFICATIONS

### Firebox Series: Low Pressure 30 PSI HOT WATER Capacities From: 30 To 104 BHP 1288 to 4374 MBTU/HR

*Rayes Boiler & Welding is the manufacturer of the innovative Firebox Series on average, uses 50% less fuel to create steam or hot water for any application needs, in half the amount of time when compared to traditional boilers. Firebox line of boilers is manufactured for the use in Low Pressure 15 PSI Steam and 30 PSI Hot Water applications, providing for efficient operation and low cost maintenance. The following specifications are to provide you're customer assistance in all aspects of special code requirements and equipment standards. Please contact Rayes Boiler & Welding, Inc. for additional information.*

#### Boiler Specifications:

Rayes Boiler shall be ( ) Firebox Series, Model Number ( ), type Wetback System maximum pressure shall be 30 PSI HOT WATER. The boiler horsepower BHP will be ( ), with a Maximum MBH Input of ( ) Btu/hr, when fired with ( ) Btu/cu-ft. The Gross MBH Output shall be ( ) Btu/hr and the Radiant Heating Surface shall be ( ) Sq/ft. A Heating Surface of ( ) Sq/ft and rated 85% efficiency. The Boiler approximate shipping weight is ( ) lbs.

#### Burner Specifications:

Burner manufacturer shall be ( ), ( ) Series, Model Number ( ), and Mode of Operation shall be ( ). Maximum Input rating of ( ) Btu/hr and a Minimum Input Rating of ( ) Btu/hr. Gas Pressure required ( ) W.C. with a Vale Train Size at ( ). Electrical Power shall be ( ) Volts ( ) Phase and ( ) Hz. One bolted on 20" diameter burner nozzle plate, with ( ) opening. The Burner approximate shipping weight is ( ) lbs.

## **Hot Water Control & Trim Specifications:**

UL listed Standard Fully Automatic Operations: 30 PSI Honeywell Pressure Controls & Gauge. Water Column Connection located top rear. One ( ) size Supply Outlet located top center, one ASME rated ( ) lb Relief Valve, shipped loose. Low Water Cutoff & Auxiliary Low Water Cutoff will be included on the right hand side of boiler. Honeywell 100-240F 5-30F Aquastat Controller, Adjustable & 110-290F Manual Reset, also one Hydro Therm LWCO Probe 120V. The Controls & Trim approximate shipping weight is ( ) lbs.

**Boiler Codes & Design Standards:** *Rayes Boiler unique design of an innovative 3-Pass Down-Draft Fire-Tube Boiler, is designed for Low Pressure 15 PSI STEAM or 30 PSI HOT WATER applications. It's built in accordance with the American Society of Mechanical Engineers {ASME} Code. Hartford Steam Boiler {HSB} Inspection & Insurance Company will include a {H} stamp certification to the boiler and shall be listed by the National Board of Boilers and Pressure Vessel Inspectors. The Boiler is rated 85% efficient.*

**Packaged Boiler Include:** *All boilers are preassembled and tested at the factory before shipment. The vessels are sent ready for immediate installation at jobsite. Boilers can either be placed on floor or poured foundation and ready for all connections to be attached.*

One Skid mounted boiler shell, built in accordance with the American Society of Mechanical Engineers {ASME} Code. Boiler vessel will have a name plate in front that shall bear the {H} stamp for all certification and code requirements. All other manufacturer technical information such as temperature limits, heating surface, serial number and year built will be stamped on front name plate.

## **Standard Pressure Vessel Construction:**

Boiler shall be of the horizontal inclined water tube type design. Entire boiler shell consists of Grade SA 51670 steel. The boiler shell is made of 5/16 steel, front and rear tube sheets are 3/8" steel. The base of the boiler shell will have two mud bars 3/4" thick steel. All models include 84 2" 11-gauge rolled tubes; the Morrison tube {furnace area} located at top is 20" in diameter and 5/16" thick. Firebox shall be made of high temperature castable refractory to withstand not less than 2000°F, backed by a minimum of 3" thick Rockwool insulation. The pressured vessel is built in strict accordance with the ASME code section IV, to latest year of issues and addenda's. All boiler welds are heat-treated and quality inspected to ASME code requirements. The purchaser will be furnished with an H-2 Manufacturer's data report at time of shipment.

## **Standard Removable from Boiler:**

One bolted on 20" diameter burner nozzle plate with opening, size depending on burner model. Total of 84 straight 2" O.D., 11 gauges, rolled {ASME} Fire-Tubes, SA 178 Grade A steel. Hinged Front and Rear Doors are standard on all models. Doors are to be sealed with heat resistant gasket and fastened using lugs and brass nuts. Front and Rear flame observation ports will also be included. The bottom of the Rear Hinged Door will be the location for the exhaust connection, typically 10" on all models. Units are factory insulated with minimum 2" thick mineral wool material. The boiler jacket shall be of not less than 18 gauge steel with galvanized finish. The entire boiler base frame and other components shall be factory painted before shipment, using a heat resistant enamel coating.

**Warranty:** *All equipment is to be guaranteed against defects in materials and/or workmanship for a period of 12 months from date of shipment.*