

# FIRETUBE BOILER

Extreme-Duty Design

Up to 2,500 HP

## UPGRADE WITH SUSTAINABLE SOLUTIONS

At Victory Energy, we believe that the future of all energy must be based upon carbon reduction.

Our goal is to deliver cleaner energy solutions which truly impact the environment for today and future generations.

Call today for a free carbon reduction payback analysis showing CO2 tons reduced.



## DRYBACK DESIGN

Available in 2-pass, 3-pass and 4-pass configurations.

2 and 3-pass designs range up to 2,500 HP. 4-pass design ranges up to 1,500 HP.

- **Advanced Refractory Technology** – A special refractory utilized by Victory Energy has an expansion modulus of 0.00, from ambient to over 3,000 degrees, making the rear door impervious to expansion stress cracking, unlike our competitors.
- **Engineered for less yearly maintenance**
- **Proprietary center-fired design** provides enhanced interior water circulation.
- **Non-spalling material** makes it ideal for heavy oil applications.



The greatest benefits to vertical integration is predictable results with desired performance.



VIP - VISION Inspection Port



TITAN Water Level Equipment



Stainless steel jacket, 2-inch mineral wool insulation



Integral economizer stack expansion joints



Integral Economizer heat recovery system is available for 2 and 3-pass designs with horsepower ratings from 200 HP to 2,500 HP.

# FIRETUBE BOILER

Extreme-Duty Design

Up to 2,500 HP



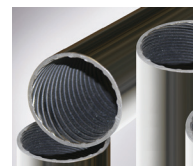
BY DESIGN, ROBUST FEATURES COME STANDARD  
WITH FRONTIER FIRETUBE SERIES



Exclusive hinged door safety cable assembly



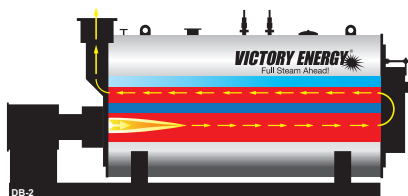
Sure-Lock ring grooves make 40% stronger joints



Rifled tubes enhances heat transfer between the fireside and the waterside

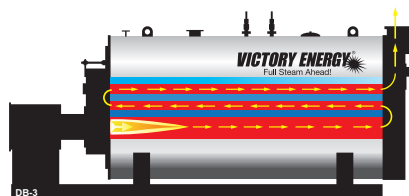


Special refractory is nearly impervious to expansion stress cracking



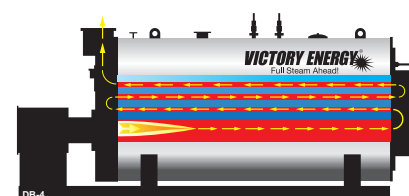
### F2-DB FEATURES / OPTIONS

- Ring groove technology
- Front davited doors
- Rear davited entry door to furnace and entry of 2nd pass
- Heavy-duty gauge tubes - 0.105" MW
- .75-inch minimum tubesheet wall thickness
- Heavy-duty steel frame
- Refractory-backed reversing chamber
- Stainless steel jacket with 2-inch mineral wool insulation
- Note: Corrugated furnace will be offered on any size if high pressure designs are required and if customer prefers over plain furnace.



### F3-DB FEATURES / OPTIONS

- Center-fired furnace
- Ring groove technology
- Front davited doors
- Rear davited entry door to furnace and entry of 2nd pass
- Large boilers come with two hinged rear doors for 3rd pass
- Heavy-duty gauge tubes - 0.105" MW
- .75-inch minimum tubesheet wall thickness
- Refractory-backed reversing chamber
- Heavy-duty steel frame
- Stainless steel jacket with 2-inch mineral wool insulation
- NOTE: Corrugated furnace will be offered on any size if pressure designs are required and if customer prefers over plain furnace



### F4-DB FEATURES / OPTIONS

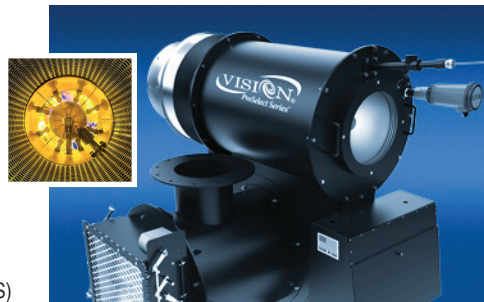
- Center-fired furnace design
- Ring groove technology
- Front davited doors
- Rear davited entry doors to furnace and inlet of 2nd pass
- Two hinged rear doors for 3rd and 4th pass
- Heavy-duty gauge tubes - 0.105" MW
- .75-inch minimum tubesheet wall thickness
- Heavy-duty steel frame
- Refractory-backed reversing chamber
- Stainless steel jacket with 2-inch mineral wool insulation
- NOTE: Corrugated furnace will be offered on any size, if high pressure designs are required and if customer prefers over plain furnace

*(Utilizes rifled and bare tubes except when firing heavy oil.)*



### MAXIMIZE EFFICIENCIES WITH VISION

- The VISION<sup>®</sup> Burner technology ensures complete and efficient combustion with very low emissions
- Durable high-tech power-coated finish
- Totally integrated combustion controls capabilities for both new and retrofit applications
- High-energy/tension SPARKMAX Igniter (HESI)/(HTS)



Engineered for high reliability and low maintenance



SPARKMAX Igniter: 25 MMBtu/hr to 40 MMBtu/hr

# FIRETUBE BOILER

Extreme-Duty Design

Up to 2,500 HP



## UPGRADE WITH SUSTAINABLE SOLUTIONS

At Victory Energy, we believe that the future of all energy must be based upon carbon reduction.

Our goal is to deliver cleaner energy solutions which truly impact the environment for today and future generations.

The FRONTIER series firetube boilers are designed to deliver lower carbon intensity through responsible innovation that delivers global benefits.

## WETBACK DESIGN

Available in 2-pass, 3-pass and 4-pass configurations.

Victory Energy has long been a trusted name in the manufacturing of wetback firetube boilers for use in demanding applications. The FRONTIER series is engineered to perform in virtually every industry setting.

- Up to 2,500 HP
- Up to 86,250 PPH
- Heavy-duty skids
- Ideally suited for varying steam loads
- Engineered for less yearly maintenance
- Wetback boilers utilize its own water as the heat barrier to boiler components
- Water cooled flue gas reversing chamber



The greatest benefits to vertical integration is predictable results with desired performance.



VIP - VISION Inspection Port



TITAN Water Level Equipment



Proprietary kidney-shaped return



Heavy-duty Expansion Joints



Integral Economizer heat recovery system is available for 2 and 3-pass designs with horsepower ratings from 200 HP to 2,500 HP.

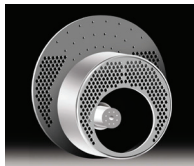
# FIRETUBE BOILER

Extreme-Duty Design

Up to 2,500 HP



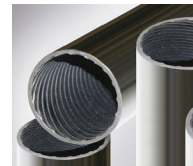
BY DESIGN, ROBUST FEATURES COME STANDARD  
WITH FRONTIER FIRETUBE SERIES



Deep turn-around for ease of maintenance and lower pressure drop



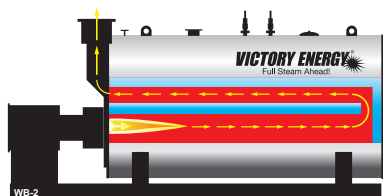
Tube sheet has Sure-Lock ring grooves



Rifled tubes

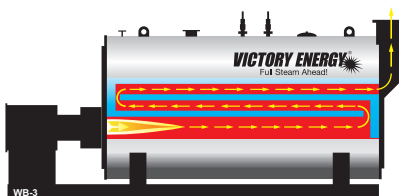


Tube ligaments are .75-inch minimum



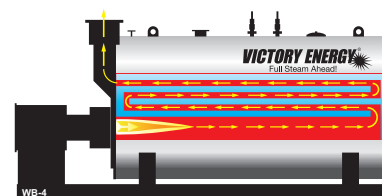
### F2-WB FEATURES / OPTIONS

- Optional: Integral Economizer
- Rifled tubes
- Ring groove technology
- Front davited doors
- 24" OD davited access door to water cooled flue gas reversing chamber and furnace section
- Heavy-duty gauge tubes - 0.105" MW
- Heavy-duty steel frame
- .75-inch minimum tubesheet wall thickness
- Water-cooled reversing chamber
- Stainless steel jacket
- 2-inch mineral wool insulation



### F3-WB FEATURES / OPTIONS

- Optional: Integral Economizer
- Ring groove technology
- Front davited doors
- Rear davited entry doors
- 24" OD davited access door to water cooled flue gas reversing chamber and furnace section
- Heavy-duty gauge tubes - 0.105" MW
- Heavy-duty steel frame
- .75-inch minimum tubesheet wall thickness
- Water-cooled reversing chamber
- Stainless steel jacket
- 2-inch mineral wool insulation
- Deep turn-around for ease of maintenance and lower pressure drop



### F4-WB FEATURES / OPTIONS

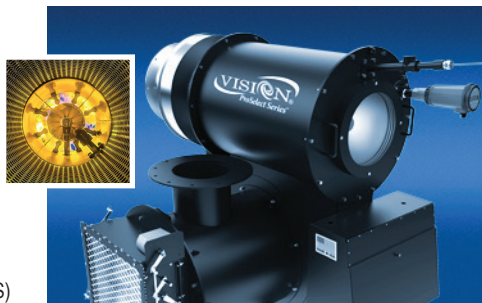
- Ring groove technology
- Front davited doors
- Rear davited entry doors
- Large diameter tubes reduce blower motor HP requirements
- 24" OD davited access door to water cooled flue gas reversing chamber and furnace section
- Heavy-duty gauge tubes - 0.105" MW
- .75-inch minimum tubesheet wall thickness
- Water-cooled reversing chamber
- Stainless steel jacket
- 2-inch mineral wool insulation
- Heavy-duty steel frame

Note: Corrugated furnace will be offered on any size if high pressure designs are required or if customer prefers.



### MAXIMIZE EFFICIENCIES WITH VISION

- The VISION<sup>®</sup> Burner technology ensures complete and efficient combustion with very low emissions
- Durable high-tech power-coated finish
- Totally integrated combustion controls capabilities for both new and retrofit applications
- High-energy/tension SPARKMAX Igniter (HESI)/(HTS)



Engineered for high reliability and low maintenance

