

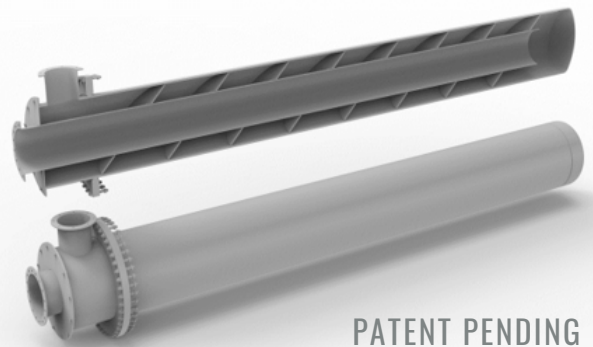
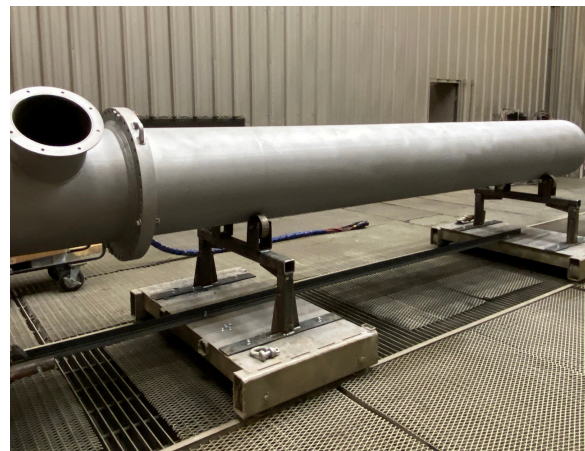
CONCENTRIC FIRETUBE DESIGN

Key Features:

- **Even Heat Distribution:**
 - Eliminates direct flame impingement on the fluid boundary, ensuring more uniform heat distribution compared to the U-tube style firetube.
 - Absence of localized "hot spots" prevents coking on the shell, enhancing operational safety.
- **Compliance with Standards:**
 - Patent Pending USSN 29/970, 805
 - Built using standard pipes, weld caps, and single-penetration concentric holes in ASME flange covers.
 - Can be constructed to and stamped as a Section VIII Div I vessel, ensuring compliance with existing design codes.
- **Enhanced Safety:**
 - Removable inner tube allows for inspection without removing the pressure-bearing shell, enabling vessel operation during maintenance.
 - Adherence to design codes makes these firetubes significantly safer than miter-joint U-tube designs.
 - Firetubes Serialized for Traceability
- **Extended Lifespan:**
 - Pressure-bearing shell can last dramatically longer, potentially matching the lifespan of the heater treater itself.
 - Inner tube serves as the primary consumable part, simplifying maintenance and replacement.

Performance Advantages:

- **Efficient Gas Flow Design:**
 - Eliminates the inefficient U-tube common path for hot gas through the center of the pipe and up the flue.
 - Larger surface area than U-tube designs for improved heat exchange efficiency.
- **Flighting Section Design:**
 - Larger chamber in the flighting section slows gas velocity, contributing to more efficient heat transfer.
- **Thermal Arc Spray Coating:**
 - Combining with the Patented (#506093131) Thermal Arc Spray Coating ensures a direct metal-to-liquid surface.
 - Offers increased heat transfer efficiency compared to traditional Epoxy protective coatings.



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