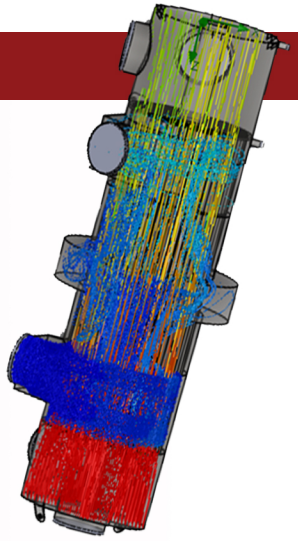
AirBTU.yPRR

High Temperature Gas-to-Gas Recuperator



Industries & Applications

- CO2 & Bioenergy Recovery
- Thermal Oxidizers
- Green Hydrogen
- Catalytic Operations
- High-Temperature Energy Storage
- Steel Mills & Foundries

Up To 1200C+

- Technology solution in heat recovery for ***high-temperature gas streams***
- Highly engineered and efficient design for ***lowest capex*** solution
- Advanced modeling ensures ***reliability*** at extreme temperatures
- Addresses ***metal dusting*** & avoids ***cold-end corrosion***
- Ideal for potentially ***corrosive process streams***
- ***2-3x*** longer reliable operating life

CGThermal
Process Technology Solutions
for Harsh and Corrosive Process Streams

cgthermal.com (330) 405-0844 Twinsburg, Ohio, USA

AirBTU.YPRR

High Temperature Gas-to-Gas Recuperator

Eliminate stress failures

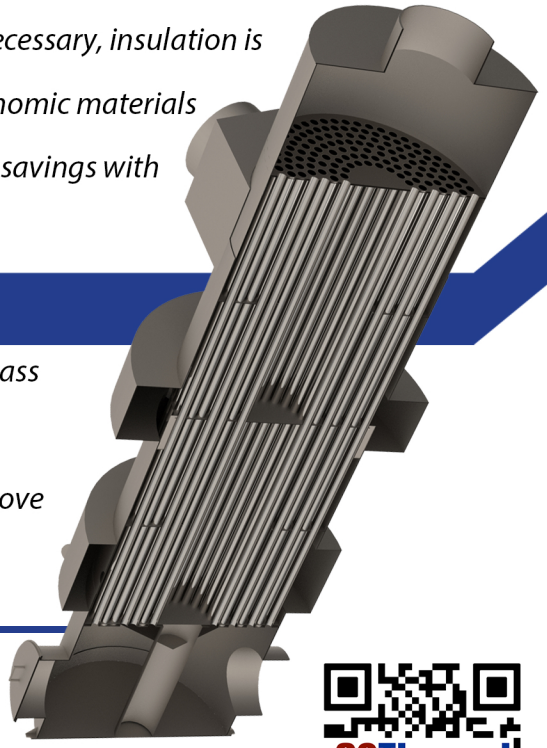
The radial flow and variable tube pitch design, along with the proprietary shell baffle and pass promote uniform and symmetrical temperatures throughout the tube bundle. Advanced ***computational fluid dynamics (CFD)*** *modeling with precise temperature and pressure profiles are used to evaluate the arrangement until desired uniformity in thermal expansion is achieved. This largely eliminates uneven stress concentrations at the tube to tube-sheet welds, and the potential for weld failures.*

Minimize pressure drops & Maximize thermal efficiency

Proprietary shell baffle and pass designs are used to ***maximize thermal efficiency while minimizing pressure drop.*** *CFD is employed to evaluate film coefficients along with associated pressure drop to determine the optimal arrangement. The result is a more efficient heat exchanger with a lower pressure drop then less engineered designs.*

Minimize material temperatures

CFD modeling is used to evaluate and ***minimize material temperatures.*** *Pass and baffle arrangements are manipulated to eliminate hot spots. When necessary, insulation is strategically utilized. As a result, the most appropriate and economic materials of construction will be chosen for design. This equates to Capex savings with extended reliability and operating life.*



Avoid cold-end corrosion & fouling

*If a potentially corrosive gas stream is involved, the baffle and pass arrangement will be designed with the aid of CFD analysis. This ensures the minimum material temperature at design is well above the dew point to r****emove the potential of corrosion failure.***

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