

HAIRPIN HEAT EXCHANGERS: TAKE THE CURVE WITH CONFIDENCE

Incorporating Metalforms' specialty heat transfer solutions into your critical process equipment, combined with our full-service deployment expertise, delivers measurable, demonstrable value through the following benefits:

Benefits:

- Closure technology including pressures exceeding 10,000 psi (690 bar)
- External bolting
- Separate, independent terminal tubeside and shellside closures resulting in smaller flanges

DESIGN THAT DELIVERS

Hairpin heat exchangers are single pass shell & tubes in true current flow, folded into a U-shape ("hairpin") curved configuration. While multi-pass shell-and-tube designs require correction factors to account for co-current pass inefficiencies, the Hairpin design maximizes temperature differences between shellside and tubeside fluids. With fewer sections and less surface area, it's the most efficient solution when your process calls for a temperature cross in which the hot fluid outlet temperature is below cold fluid outlet temperature.

When the productivity and profitability of your process units are at stake, you need to be able to trust your heat exchanging equipment-and with BROWN FINTUBE® heat exchangers, we've built that trust on decades of proven performance.

Design reliability, process optimization, and configuration versatility combine with time-tested technology to provide higher heat transfer rates, efficient operation, and convenient accessibility for a variety of solutions.

Consider a Hairpin when:

- A temperature cross exists, or close temperature approach is desired
- High-pressure applications exist
- Cycling and thermal shock conditions exist
- High terminal temperature differences exist
- Seeking avoidance of an expansion joint
- The ability to clean U-tubes is required
- All external bolting is desired
- An augmentation device would improve heat transfer



ENHANCEMENT THROUGH ADAPTABILITY

Longitudinal Fintubes

can be cut-and-twisted, or used in conjunction with peripheral baffles, to provide an extended heat transfer surface with relatively low resulting pressure drop

TWISTED TUBE® Bundle Technology

simultaneously enhances both shellside and tubeside heat transfer rates and facilitates straight-through cleaning, while eliminating flow-induced vibration and minimizing shellside fouling

Low Pressure Drop LOK-BAFFLE™ Baffles

act primarily as tube supports for high shellside flow rates, low allowable pressure drops, or when the shellside coefficient doesn't limit the overall heat transfer rate

Segmented Baffles

are traditional baffles that can be used in conjunction with seal-strips

Unique Tube Insert Technology

for vaporization and increasing heat rates



Features

- 24-7 fixed equipment support
- Strip & Retube Services for shell & tube, hairpin & air cooler (ACHE) units
- Tube bundle repair & replacement
- Re-rating and modification services
- Replacement components/parts (bundles, shells, channels, and other critical parts)

Learn More Today

Contact us today to find out how our engineer partners can optimize your heat transfer solutions. Visit metalformshx.com