KOCH™
HEAT TRANSFER

HAIRPIN HEAT EXCHANGERS: TAKE THE CURVE, WITH CONFIDENCE

With Koch Heat Transfer Company's BROWN FINTUBE® heat exchangers as part of your process operations, supplemented by our full-service expertise during deployment, you'll realize demonstrable value through benefits:

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.

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

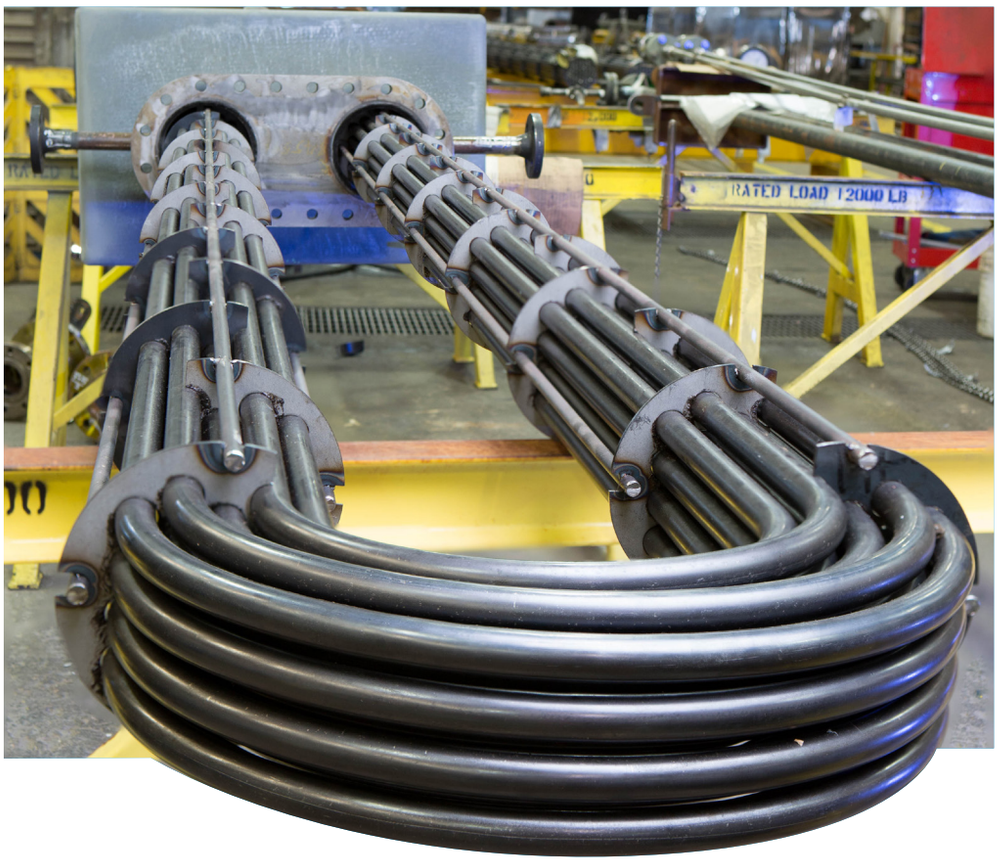
Hairpin heat exchangers are single pass shell & tubes in true counter current flow, folded into a U-shape ("hairpin") curved configuration. While multi-pass shell-and-tube designs require correction factors to account for co-current pass inefficiencies, the Hairpin design maximizes temperature differences 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.

Consider a hairpin when:

- A temperature cross exists, or close temperature approach is desired
- High-pressure applications exist
- Cycling and thermal shock conditions are present
- 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
- **Segmental baffles** are traditional baffles that can be used in conjunction with seal-strips
- **Unique tube insert technology** for vaporization and increasing heat rates



Features

- **Counter current flow in separate shell legs** eliminates the need for leaf seals, and mitigates the thermal leakage produced by shell & tube "F bundle" configurations with removable long baffles
- **No need for expansion joints or bellows,** unlike single pass shell & tube designs with large temperature differences
- **Large-radius U-bends** facilitate thermal expansion and convenient cleaning
- **Same end nozzle location** minimizes thermal stresses on piping

LEARN MORE TODAY

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

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