



# SENTRY SPIRAL TUBE

## Heat Exchangers

### SAMPLE CONDITIONING

A spiral tube heat exchanger is a coil assembly fitted in a compact shell that optimizes heat transfer efficiency and space. Every Sentry® spiral assembly has welded tube to manifold joints for durability and strength. The coil assembly is welded to a head and fitted in a compact shell. The spaces or gaps between the coils of the spiral tube bundle become the shell side flow path.

Typical applications include:

- Pump seal coolers
- Sample coolers
- Inter/after coolers
- Acid heaters/coolers
- Instant hot water heaters
- Process condensers

### MODELS

Varied

### BENEFITS

The spiral shape of the flow for the tubeside and shellside fluids creates centrifugal force and secondary circulating flow that enhances the heat transfer on both sides in a true counterflow arrangement. Since there are a variety of multiple parallel tube configurations (diameter, number and length), efficiency is not compromised by limited shell diameter sizes as it can be with shell and tube designs.

The profile of a spiral is compact and fits in a smaller footprint than a shell and tube design. Since the tube bundle is coiled, space requirements for tube bundle removal are significantly reduced.

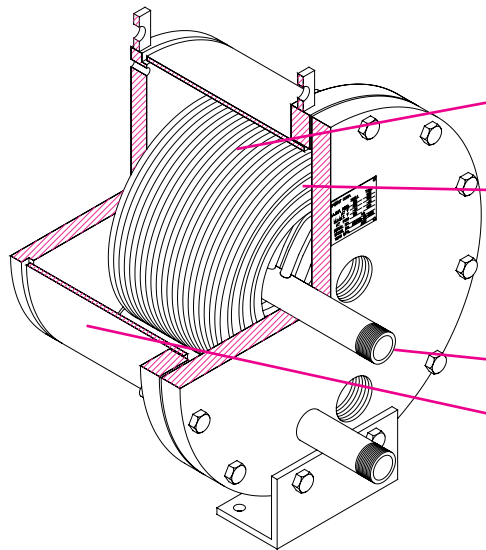
When exotic material is required, a spiral tube heat exchanger minimizes the material used since manifolds replace the channels, heads and tubesheets of a conventional shell and tube design. The shell side is usually smaller than a comparable shell and tube design and there are no requirements for tube supports or pass dividers.

### FEATURES

- Flow rates to 100 GPM (378 LPM)
- Sample conditions up to 5000 psi (345 bar) and up to 1000°F (540°C)
- Optimal design for corrosive fluid/gases
- Vapor condensing/gas stripping capabilities
- High flow in a small footprint
- Highly resistant to thermal and hydraulic shock
- Bolted or all welded shell
- Numerous flow path and connection configurations
- Compact and lightweight; easy to install



## CROSS SECTION OF A SPIRAL TUBE HEAT EXCHANGER



### OPTIMIZED PERFORMANCE

Multiple tube side parameters (diameter, length, number and material)

Variable shellside flow path gap and length

### EASY TO INSTALL

Simple piping and access

Easy to remove shell for inspection, cleaning or replacement of tube bundle – virtually no tube bundle pull requirement

## SPECIFICATIONS

	shell design	tube design
materials	carbon steel and stainless steel	stainless steel, Hastelloy, Inconel and other alloys
standard pressure rating	150 psig at 400°F (10.3 barg at 204°C)	up to 5000 psig at 1000°F (up to 345 barg at 540°C)
construction	bolted or welded with NPT, FLG, SW or BW connections	welded tube to manifold joints with NPT, FLG, SW or BW connections
surface area	1 to 177 ft. <sup>2</sup> (0.1 to 16 m. <sup>2</sup> )	

ASME code stamp available upon request

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