



SPIRAL TUBE HEAT EXCHANGER

Compact, Efficient Heat Exchanger For Severe Service

- **Optimal design for corrosive fluid/gases**
- **Pressures up to 10,000 psig (690 barg)**
- **Temperatures up to 1500°F (815°C)**
- **True counterflow and spiral pattern provide high efficiency**
- **Compact and lightweight, easy to install**
- **Spiral design protects against hydraulic and thermal shock**
- **Bolted or all welded shell**
- **Numerous flow path and connection configurations**

A spiral tube heat exchanger is a coil assembly fitted in a compact shell that optimizes heat transfer efficiency and space. Every Sentry spiral coil assembly has welded tube to manifold joints and uses stainless steel as a minimum material requirement 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 when the bundle is placed in the shell. Tube side and shell side connections on the bottom or top of the assembly allow for different flow path configurations.

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. You get the advantage of tube side enhancement without the associated potential for plugging on both the shell and tube side of the heat exchanger. Since there are no baffles or dead spots to lower velocities and coefficients, heat transfer performance is optimized. Additionally, 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 is in shell and tube designs.

The profile of a spiral is very 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 virtually eliminated.

When exotic material is required, a spiral tube heat exchanger minimizes the material used since manifolds replace the channels, heads and tube sheets 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.

TYPICAL APPLICATIONS

- Pump seal coolers
- Inter / After coolers
- Instant hot water heaters
- Reboilers
- Sample coolers
- Vent condensers
- Acid heaters/coolers
- Vaporizers
- Process condensers

SPECIFICATIONS

Materials:

Shellside - Carbon steel, stainless steel, Cupro Nickel, other alloys

Tube Bundle - Stainless steel, Hastelloy®, Inconel®, Titanium, Cupro Nickel, other alloys

Pressure Rating:

Shellside - up to 1200 psig (83 barg)

Tubeside - up to 10,000 psig (690 barg)

Temperature Rating - up to 1500°F (815°C)

Construction:

Shellside - Bolted or welded with NPT, ISO, FLG, SW or BW connections

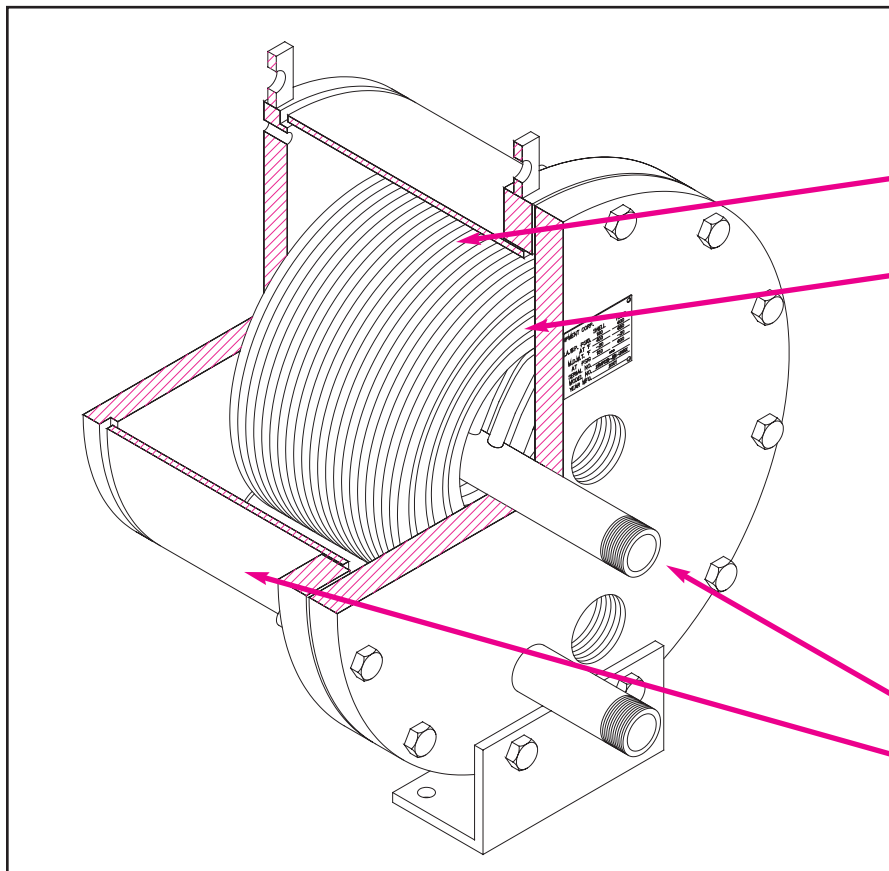
Tubeside - Welded tube to manifold joints with NPT, ISO, FLG, SW or BW connections

Surface Area:

1 to 200 Ft.² (0.1 to 19m²) larger sizes available.

ASME Code Stamp available upon request.

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.



SENTRY Equipment Corp

856 E. Armour Rd.
PO Box 127
Oconomowoc, WI 53066 USA
Phone: 262-567-7256
Fax: 262-567-4523

E-mail:
sales@sentry-equip.com

Website:
www.sentry-equip.com

For further information, contact: