

Spiral Heat Exchanger

Product Coding**P6.....**

Introduction

Spiral heat exchangers are compact and highly efficient heat transfer devices designed to handle challenging process streams, including fouling, viscous, slurry, and high solid content fluids. Unlike conventional shell and tube exchangers, the spiral design provides a continuous single channel flow path for each fluid, which significantly enhances heat transfer performance and minimizes fouling risks.

Euroslot Pars manufactures spiral heat exchangers according to international standards and customer-specific process requirements. By combining advanced fabrication techniques with precise material selection, our spiral heat exchangers deliver superior thermal efficiency, long operating life, and reduced maintenance costs across a wide range of industrial applications.

Process Overview

In a spiral heat exchanger, two flat metal plates are wound around a central core to form two separate spiral flow channels. One process fluid flows in one spiral passage while the second fluid flows counter-currently in the adjacent channel. This counter current flow pattern maximizes the temperature driving force throughout the exchanger, ensuring optimal heat recovery.

Each fluid is confined to a single continuous channel, eliminating dead zones and ensuring uniform velocity profiles. This design prevents local fouling, sedimentation, and plugging, even when processing dirty or particulate laden streams. The spiral geometry also promotes turbulence at relatively low flow velocities, resulting in higher heat transfer coefficients compared to traditional exchangers.

The exchanger is typically equipped with removable covers, allowing direct access to the channels for mechanical cleaning when required. Depending on the process, the spiral heat exchanger can be used for heating, cooling, condensation, or heat recovery services in both liquid/liquid and gas/liquid duties.

Features

- **High thermal efficiency:** Counter current flow arrangement ensures maximum log mean temperature difference and superior heat transfer performance.
- **Low pressure drop:** Optimized flow geometry allows high heat transfer with relatively low pressure losses.
- **Material customization:** Available in carbon steel, stainless steels, duplex, nickel alloys, titanium, and other corrosion resistant materials to match aggressive process environments.

Applications

- Oil and gas and petrochemical plants
- Chemical processing
- Wastewater and environmental systems
- Food & beverage industry
- Power and utility plants
- Pulp and paper industry



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