



# Customized Spiral Plate Heat Exchanger (SPHE) 1 Liquid/Liquid applications

Nexson team : 20 years experience in designing and manufacturing Spiral Plate Heat Exchangers



## Conception

**The main benefits are:**

- Self cleaning
- Compact size
- No dead zone in the channels
- Robustness (high pressure and temperature)
- Work in difficult operational conditions of fatigue, erosion and able to handle fouling fluids
- Low lifetime costs

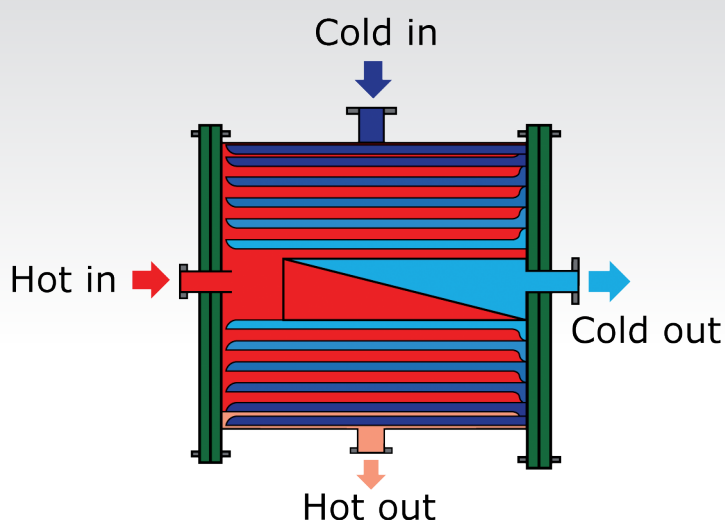
Principle of the Spiral Plate Heat Exchanger : the two fluids circulate in countercurrent flow through the channels, providing possibility of medias temperatures cross and approach around 3°C. Thanks to its specific design, the Spiral can handle two fouling fluids. Both channels are easy to access for inspection or eventual cleaning.

## Applications

Refinery, oil & gas, petrochemicals, coke oven gas, steel, mining, pulp & paper, municipal and industrial waste water treatment...  
All fluid types containing fiber, particles, sludges and other viscous or abrasive medias.

**It is possible to use it as:**

- Interchanger
- Heater
- Cooler



## Conditions of use

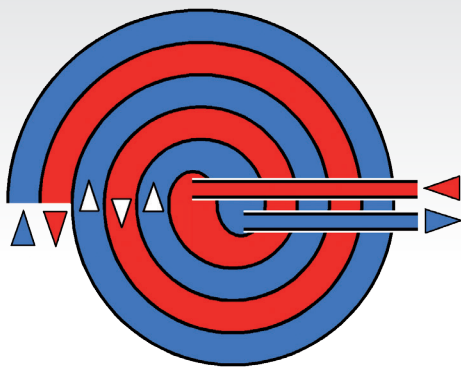
Design temperature: -40°C up to 450°C (-40°F up to 842°F)  
Design pressure: FV / 60 Barg

## Materials

It is possible to manufacture the SPHE in any material that can be formed and welded (carbon steels, stainless steels, duplex, super-duplex, nickel alloys, etc...) : SA 516 gr60, SA 516 Gr70, 304 / 304L, 316 / 316L, UNS S32205, UNS S32750, 904L, 254 SMO, C276, C22, C2000, Titanium...



## Customer benefits



*The hot flow enters in the center of the heat exchanger and exit to the outside. The cold flow is from the periphery to the center : counter-current flow effect.*

### > ENERGY SAVING

Spiral design and optimization of conditions in both channels of customized SPHE type 1 provide high heat transfer performance and reduction of energy costs habitually needed to heat liquids.

### > CUSTOMIZED CONCEPTION

Nexson Group sas provides a customized product, guarantying customer focus and team experience in welded heat exchangers.

### > LOW INSTALLATION COST (COMPACT)

The SPHE is designed in order to maximize heat transfer surface. It can be set up vertically or horizontally and it is not necessary to have complex installation. By consequent, a SPHE ensures a low installation budget.

### > LOW OPERATING COST

This system allows an easy access in case of inspection, or eventual cleaning, removing the covers handled with fixations.

### > LOW MAINTENANCE COST (SELF CLEANING EFFECT)

Even though in multi pass heat exchangers clogging redirects the flow through the open channels, the channel design in the SPHE reduces bypassing through the velocity in the channel spiral that increases until deposits are eliminated. This system allows to the SPHE to work in extreme conditions.

### > EASY ACCESS FOR INSPECTION AND CLEANING

These heat exchangers can be easily cleaned by opening the covers, giving total access to the whole heat transfer area.

