



Customized Spiral Plate Heat Exchanger (SPHE) 3 Steam - Heater applications

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



Conception

The main benefits are:

- Self cleaning effect in each channel
- Compact size unit
- No dead zone in the channels
- Robustness (high pressure and temperature)
- Work in difficult operational conditions of fatigue, erosion and with fouling fluids

The Steam/Heater Spiral Plate Heat Exchanger, or SPHE, is commonly used to heat a fouling, viscous fluid by using steam.

The steam circulates in an opened channel on the complete width of the unit (cross flow), and the heavy fluid is circulating in spiral flow in the second channel to get the best of the SPHE specific self cleaning effect. Anyhow, this channel can be easily inspected and eventually cleaned, by simply opening the cover.

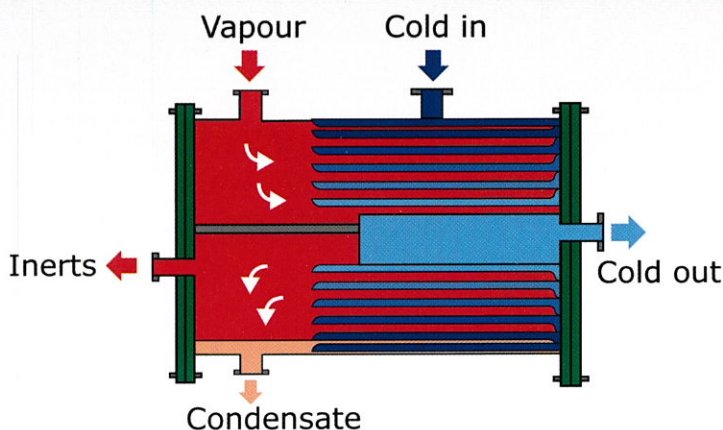
Applications

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:

- To heat a fouling fluid by mean of steam on shell side



Conditions of use

Design temperature : -48°C up to 450°C (-40°F up to 842°F)
Design pressure: FV / 60 Barg

Materials

SA 516 gr60, SA 516 Gr70, 304 / 304L, 316 / 316L, UNS S32205, UNS S32750, 904L, 254 SMO, C276, C22, C2000, Titanium...



Customer benefits

> ENERGY SAVING

Spiral design and optimization of conditions in both channels of customized SPHE type 3 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 design 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

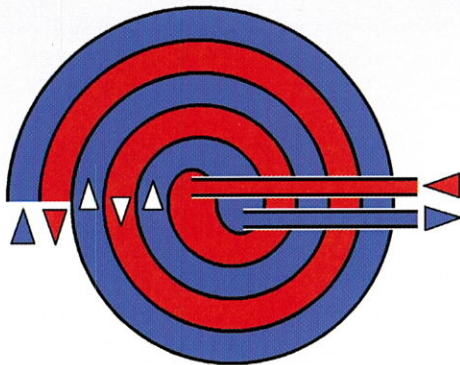
This system allows an easy access in case of inspection, or eventual cleaning, removing the covers handled with fixations.

> 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.



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.

