

# InKorr

This product is represented in Australia, New Zealand, and PNG by:

## InKorr Pty Ltd

**Address:** Unit 8, 1470 Ferntree Gully Road,  
Knoxfield VIC 3180, Australia  
**Email:** [inkorr.service@inkorr.com.au](mailto:inkorr.service@inkorr.com.au)  
**General:** +61 (0) 413 996 890 (Makarios Wong)  
**Service:** +61 (0) 478 800 003 (Shane Halliwell)

### Contact InKorr Pty Ltd for:



#### Heat Exchangers

- Shell & Tube Heat Exchangers
- Gasketed Plate Heat Exchangers
- Brazed Plate Heat Exchangers
- Crossflow Welded Plate Heat Exchangers
- Plate & Shell Heat Exchangers
- Non Metallic Heat Exchangers
- Corrugated Tube Heat Exchangers
- Spiral Heat Exchangers
- Air-Cooled Heat Exchangers



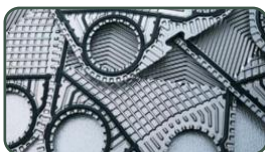
#### Vessels, Columns, and Equipment manufactured from:

- Exotic Alloys (Ta, Zr, Ti)
- Graphite and Silicon Carbide
- PTFE Lining



#### Plastic Lined Valves and Piping

- PTFE
- PVDF
- PP
- and many more!



#### Servicing and reburishment of heat exchangers!

- Plate cleaning
- NDE for crack testing
- Spare parts, both OEM and aftermarket



# 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

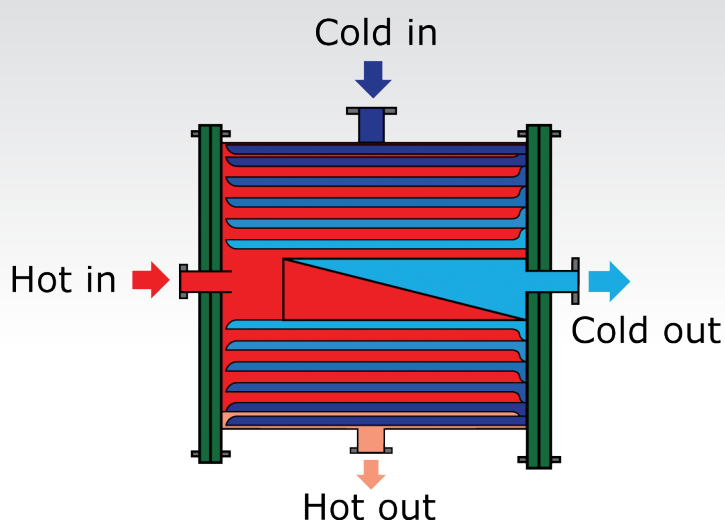
Principle of the Spiral Plate Heat Exchanger : the two fluids circulate in countercurrent flow through the channels, providing possibility of medias temperatures cross and approach around 3°C. Thanks to its specific design, the Spiral can handle two fouling fluids. Both channels are easy to access for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

### > 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

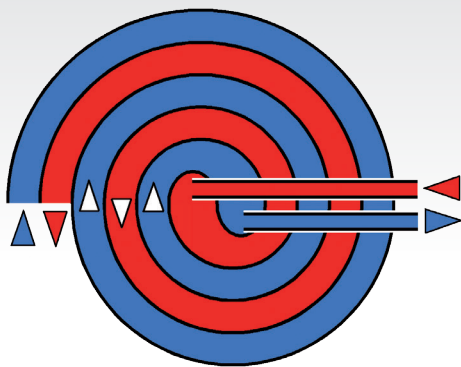
This system allows an easy access in case of inspection, or eventual cleaning, removing the covers handled with fixations.

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

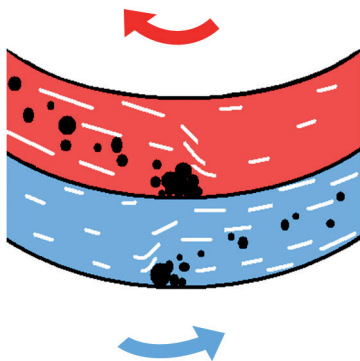
Even though in multi pass heat exchangers clogging redirects the flow through the open channels, the channel design in the SPHE reduces bypassing through the velocity in the channel spiral that increases until deposits are eliminated. This system allows to the SPHE to work in extreme conditions.

### > 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.



*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.*





# Customized Spiral Plate Heat Exchanger (SPHE) 2 Heat Exchanger 2 phases duties Condenser - Reboiler

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



## Conception

The vapor circulates, cross flow, in a fully opened channel, with negligible pressure drop and the coolant circulates in a closed spiral channel. Thanks to his versatile design, it can be directly installed on the top of a column/rector without any supporting system, reducing quite much installation cost. It is perfectly suitable for vacuum condensation with negligible pressure drop.



## Characteristics

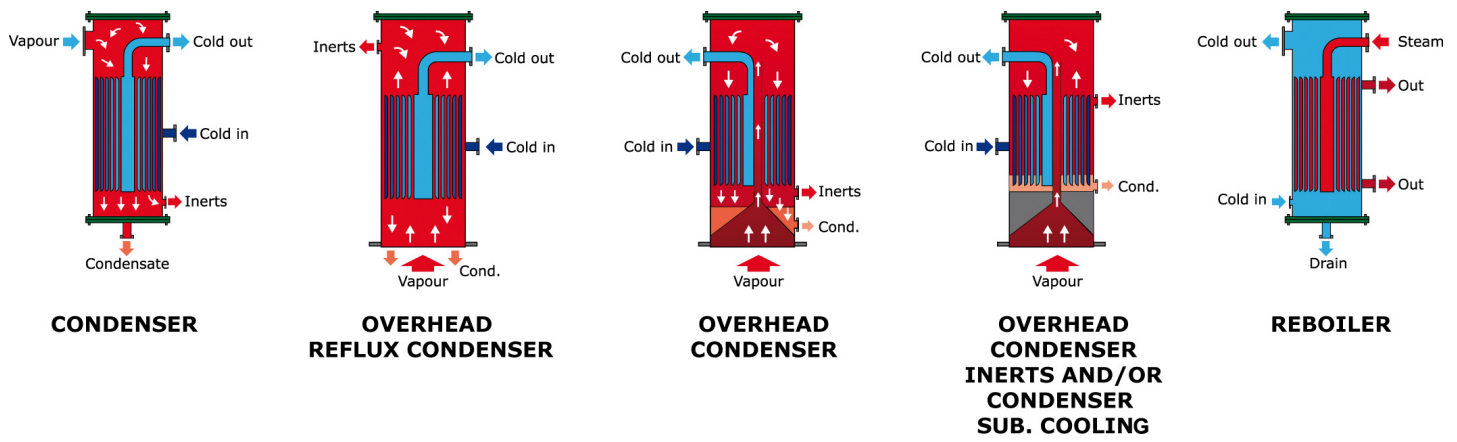
Able to work in extreme conditions (of pressure and temperature), this single channel heat exchanger, with self-cleaning effect, has become the alternative to the shell & tube exchangers. More compact, and until 3 times more thermally efficient, the SPHE gives the possibility to do substantial savings in installation, operation and maintenance.

### Condensing mode:

- Vapour circulates, cross flow, in a fully opened channel
- Negligible pressure drop
- Coolant circulates in spiral flow
- Can be directly installed on the top of a column without any supporting system
- Suitable for big vapour flowrates and allows sub-cooling of inerts, condensates or inerts and condensates

### Evaporating mode / Reboiler:

- The fluid to evaporate circulates in an adjusted channel gap
- Fully opened, that allows working with fouling fluids
- Easy access for an inspection or an eventual mechanical cleaning



## Conditions of use

Design temperature: 200°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

- > **CUSTOMIZED DESIGN**
- > **NEGLIGIBLE PRESSURE DROP**
- > **HIGH VAPOR FLOW**
- > **LOW INSTALLATION COST (DIRECT COLUMN MOUNTED AND COMPACT SIZE)**
- > **LOW OPERATING COST**
- > **LOW MAINTENANCE COST (SELF CLEANING EFFECT )**

## Applications

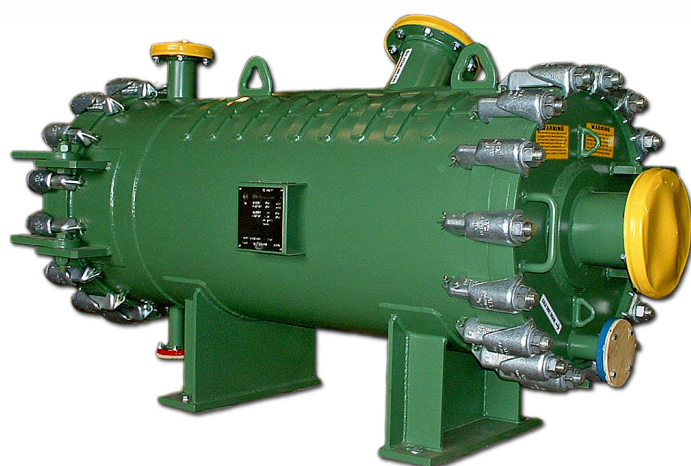


- Vacuum condenser
- Gas cooler
- Reflux condenser
- Vent condenser
- Evaporator
- Reboiler



# 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.

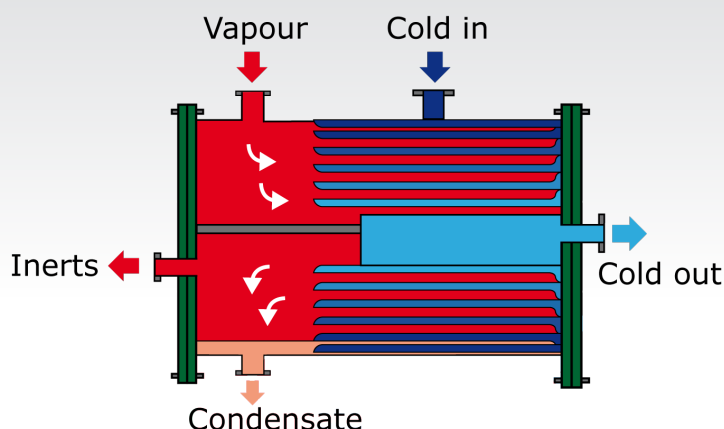
## Applications

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

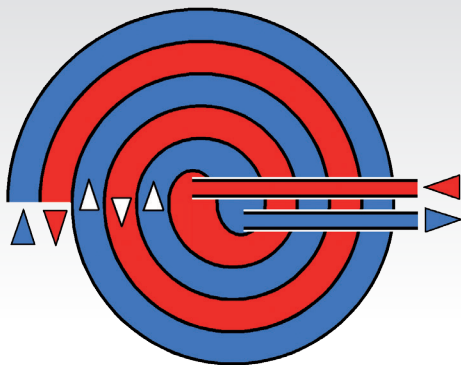
This system allows an easy access in case of inspection, or eventual cleaning, removing the covers handled with fixations.

### > 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.*

