



# Spiral Plate Heat Exchanger (SPHE)

## Standard range : sludge & biosolid treatment (SBT)

“Economical and short delivery time”

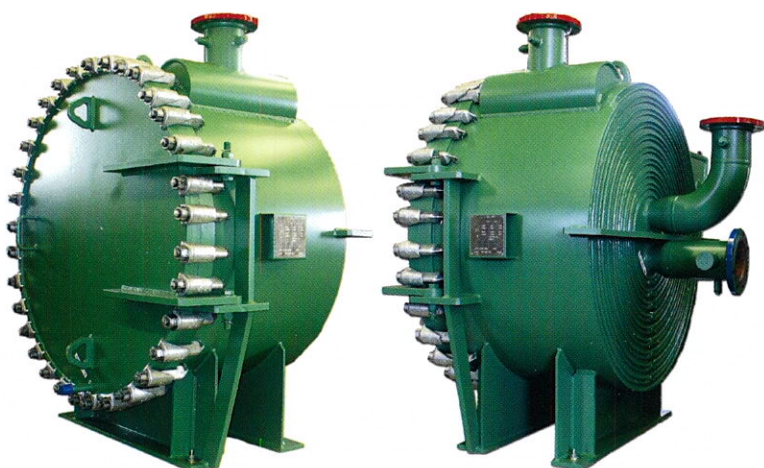
Nexson team : 20 years experience in designing and manufacturing Spiral Plate Heat Exchangers

### Conception

SPHE GreenSpiral® is made of two concentric channels, the spacings and width of which are controlled by special guideways and chosen in accordance with Customer's requirements and working conditions. This approach of the SPHE design allows to take into account such parameters as fluids flow rate, presence and concentration of mechanical impurities (solids, fibers, etc...), pressure drop values.

#### Advantages:

- Self-cleaning effect
- Compact
- No dead zone in the channels
- Robustness (high pressure and temperature)
- Can work in extreme conditions of corrosion and erosion



### Applications

This range is specially designed for digester sludge heating and heat recovery applications, such as digested sludge, raw sludge and heat recovery from effluents. The SPHE 3 can be used with all types of sludges, including fibers, particles, and other viscous and abrasive fluids

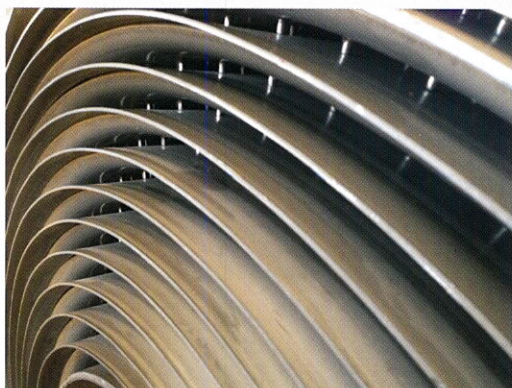
	SBT 60	SBT 100	SBT 150	SBT 200	SBT 300	SBT 450	SBT 600	SBT 700	SBT 900
Capacity KW	60	115	145	220	300	440	585	705	875
Hot side DN connexion	50/50	80/80	80/80	100/100	150/150	150/150	150/150	150/150	150/150
Cold side DN connexion	80/80	100/100	100/100	150/150	150/150	150/150	150/150	150/150	150/150
Design Pressure Barg	4	4	4	4	4	4	4	4	4
Design Temp °C	150	150	150	150	150	150	150	150	150

## Conditions of use

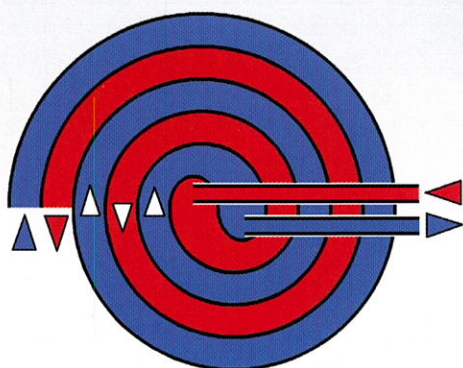
Design temperature: 150°C  
Design pressure: 4 Barg

## Materials

Stainless steel, carbone steel, SA 516, Gr 60/70, 304 / 304L, 316 / 316L.



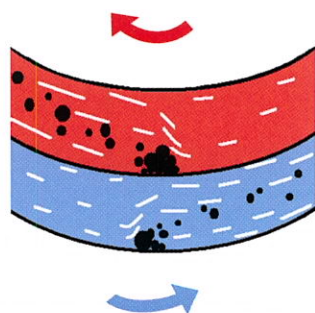
## Customer benefits



*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.*

### Design following Section VIII Div I + PED 9723 EC

- Removable sludge cover with clamp-bolts
- Available in CS & SS
- Custom-designed for each service
- EN 1092 1 02A
- DN100 clean-out port with cap at sludge entry
- Tangential inlet port at sludge entry
- DN50 back-flush nozzles for sludge circuit
- Others on request



### > ENERGY SAVING

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

### > AVAILABILITY AND COST SAVING

Nexson Group sas provides a standard range of spiral heat exchanger with the possibility to save costs comparing to customized units.

### > 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 exchanger 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.