

# Plate and Shell Heat Exchangers

## Designed for High Thermal Efficiency

### The Best of Two Worlds

Sondex Plate and Shell heat exchangers combine the benefits of plate heat exchangers and tubular heat exchangers.

Retaining the high working pressure and temperatures of tubular heat exchangers coupled with the high efficiency of plate heat exchangers; plate and shell heat exchangers provide unmatched performance for a wide range of applications.

### Recommended Applications

Sondex Plate and Shell heat exchangers are able to handle a wide range of thermal duties:

Evaporation	Chemical processes
Condensation	NH <sub>3</sub> Applications
Heat recovery	Liquid/liquid Applications
Fuel oil heaters	Steam/liquid Applications

The Plate and Shell heat exchanger is available as a fully-welded or a bolted solution, depending on your specifications. The heat exchanger features a fully welded plate pack making it well-suited for handling aggressive media, as well as high pressure and temperatures.

The single-pass plate and shell heat exchanger is ideal for handling duties with low thermal requirements that need short plates for efficient heat transfer.

For higher thermal requirements, the plate and shell heat exchanger can be designed as a multi-pass solution.

### Benefits of Choosing a Sondex Plate and Shell Heat Exchanger

Why choose a plate and shell heat exchanger instead of a shell and tube heat exchanger?

**Reduced foot print** – A plate and shell heat exchanger requires far less space and is much lighter than a shell and tube heat exchanger.

**Minimal space and foundation requirements!**

**The plate technology provides high heat transfer coefficient that reduces the surface area needed** – A plate and shell heat exchanger requires less material for construction compared to a shell and tube heat exchanger. If exotic construction materials are required by the duty, the savings are even greater. **Much more economically viable!**

**Reduced risk of fouling, with the right plate range available** – plate and shell heat exchangers are particularly well-suited for applications where fouling and corrosion is a problem. The corrugated surfaces of the heat exchanger plates create a turbulent flow.

**This greatly reduces the fouling tendency!**



SPS 1200, bolted type

**Easy and cost effective maintenance** – due to less fouling etc., inspections of the plate and shell heat exchanger are needed in much less frequent intervals. In contrast, a shell and tube heat exchanger needs to be opened frequently for cleaning which leads to severe production and product loss, due to the larger volumes in the tubular heat exchanger. **Enjoy minimal down time and reduced maintenance costs!**

**Return of investments** – There are a lot cost benefits from using a Sondex Plate and Shell heat exchanger; not just from the initial investment savings but also from lower installation costs as well as reduced space requirements, decreased maintenance costs and minimal down time. **Receive a faster return of investment!**

# Plate and Shell Heat Exchangers

## Technical Specifications

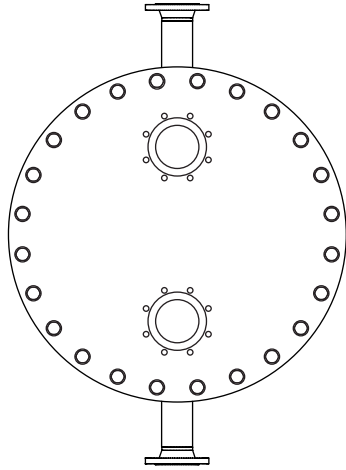
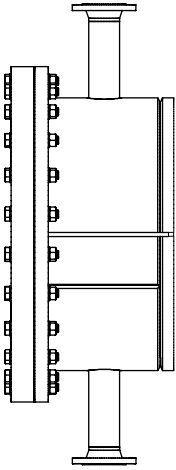


Plate and Shell bolted type

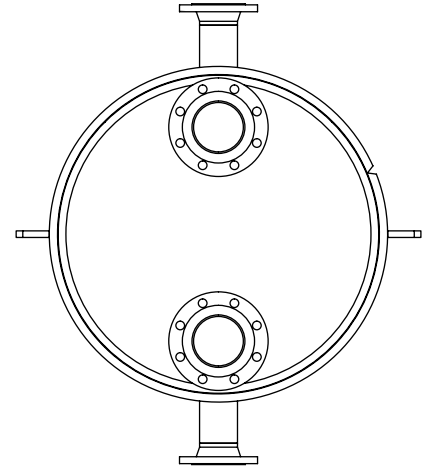
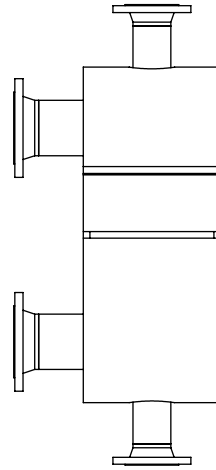


Plate and Shell fully-welded type

Type	Plate diameter (mm)	Connection (DN)		Design Pressure (MPa)		Design Temperature (°C)			
		Plate side	Shell side	Fully-Welded	Bolted	Fully-Welded		Bolted	
						Min.	Max.	Min.	Max.
SPS22	190	25	25/50	1,6 / 2,5 / 4,0	1,6 / 2,5	-10	400	-10	250
SPS72	320	50	50/65/80/100	1,6 / 2,5 / 4,0	1,6 / 2,5	-10	400	-10	250
SPS179	480	100	50/65/80/100/150/200	1,6 / 2,5 / 4,0	1,6 / 2,5	-10	400	-10	250
SPS400	690	100	65/80/100/150/200/250	1,6 / 2,5 / 4,0	1,6 / 2,5	-10	400	-10	250
SPS646	870	150	100/150/200/250	1,6 / 2,5 / 4,0	1,6 / 2,5	-10	400	-10	250
SPS647	872	150	100/150/200/250	1,6 / 2,5 / 4,0	1,6 / 2,5	-10	400	-10	250
SPS648	885	150	100/150/200/250	1,6 / 2,5 / 4,0	1,6 / 2,5	-10	400	-10	250
SPS1200	1255	300	100/150/200/250/300	1,6 / 2,5 / 4,0	1,6 / 2,5	-10	400	-10	250
SPS1201	1255	400 & 150*	100/150/200/250/300	1,6 / 2,5 / 4,0	1,6 / 2,5	-10	400	-10	250
SPS1203	1255	250	100/150/200/250/300	1,6 / 2,5 / 4,0	1,6 / 2,5	-10	400	-10	250

\* SPS1201 is specially developed for evaporation and condensing duties.  
 Other specifications available upon request!

### Material Specifications:

#### Shell Material:

Carbon steel (P355GH)  
 Stainless steel (AISI 316L)

#### Paint and Colour Specifications:

RAL, colour 5010 up to 140 °C  
 Hempel Silicone Acrylic 56940, colour Aluminium 19000, up to 400 °C

**Plate Material:** AISI 316

**Construction Standard:** EN 13445 (PED 2014/68/EU)

#### Extra Equipment:

Insulation jacket  
 Floor mounting bracket

Other specifications available upon request.

### Sondex Plate and Shell Heat Exchangers Offer:

- Customized solutions that perfectly match your requirements.
- A large plate portfolio for any duty.
- A small footprint compared to tubular heat exchangers.
- Safe operation with minimal risk of leaking.
- Operation with high working pressure and temperatures.
- Operation with small liquid volumes.
- High efficiency.
- Reduced energy consumption.
- Easy maintenance.
- A proven, technologically superior solution.

**All Sondex Plate and Shell heat exchangers are customized according to your specifications and requirements!**