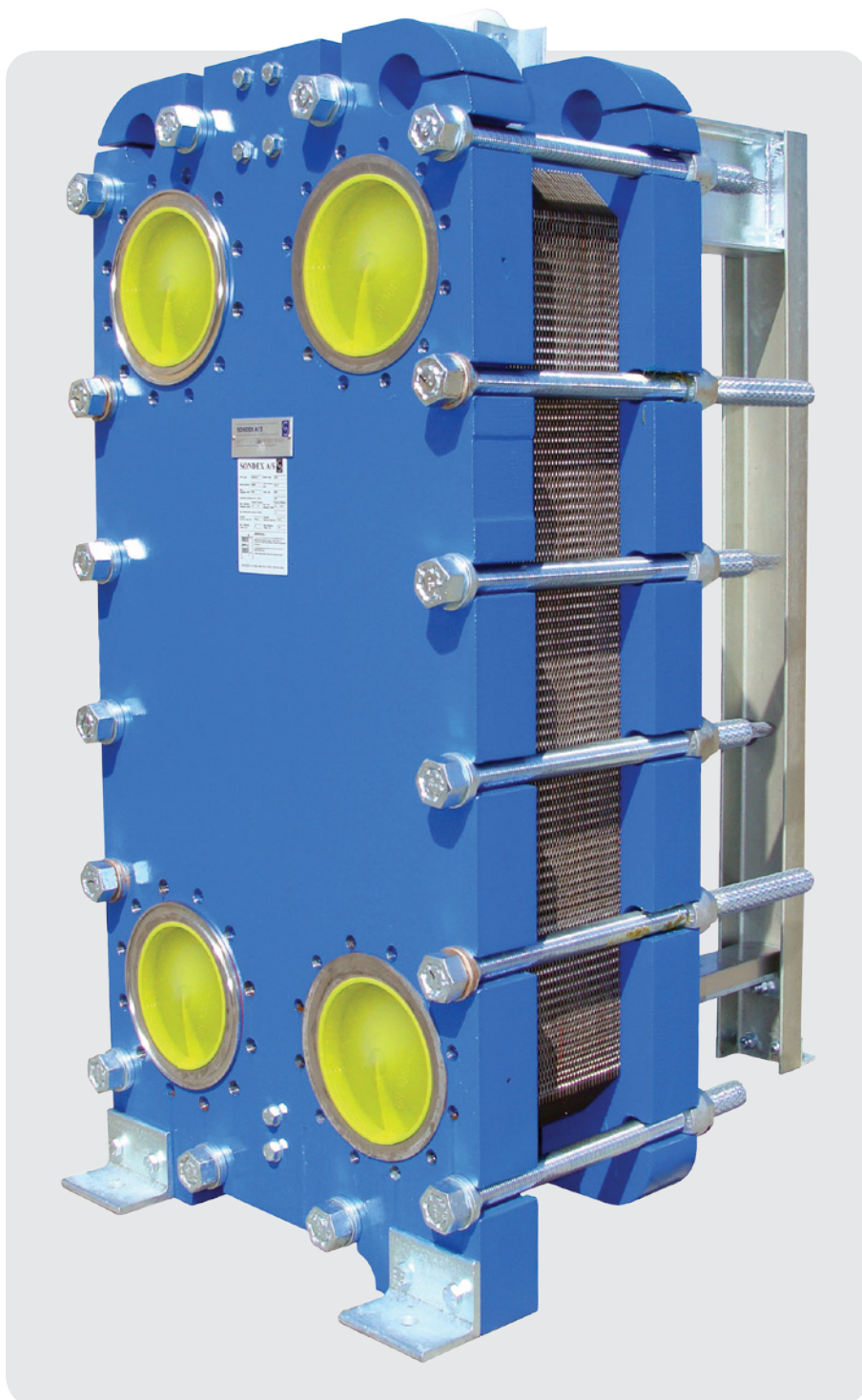
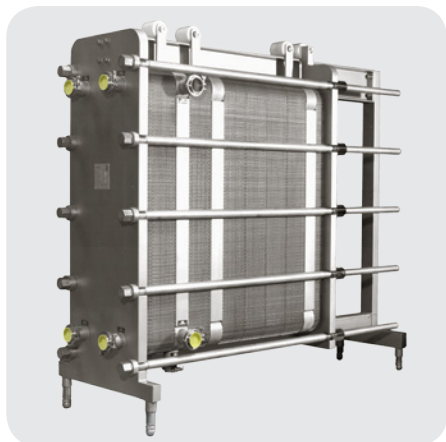




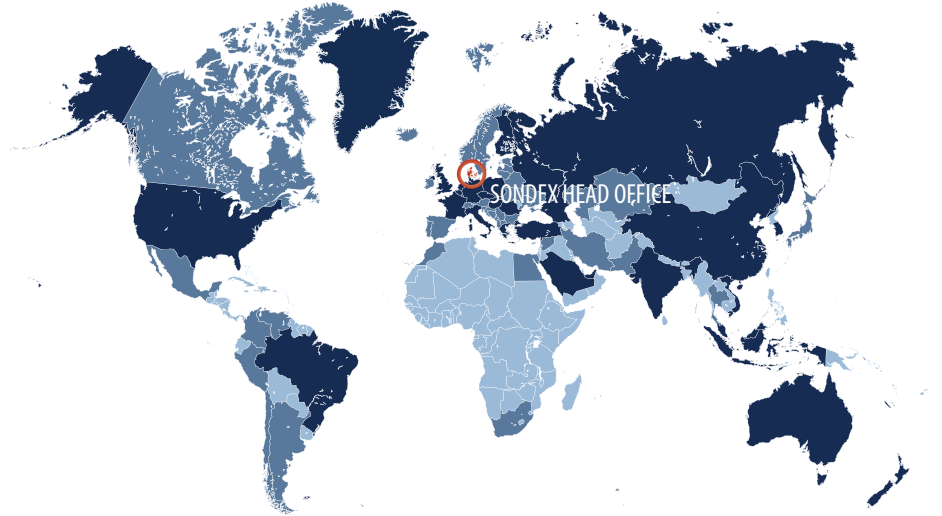
Sondex - A World of Heat Exchangers

For All Applications

SONDEX®



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Sondex - A Leading Manufacturer of Plate Heat Exchangers

Sondex A/S, a Danish company, was founded in 1984 by Mr. Aa. Søndergaard Nielsen who started development, production and marketing of plate heat exchangers for the markets of district heating, industry, marine (offshore) and for the food and dairy market. However, during the following years the company quickly expanded, and today Sondex is one of the leading manufacturers of plate heat exchangers in the world.

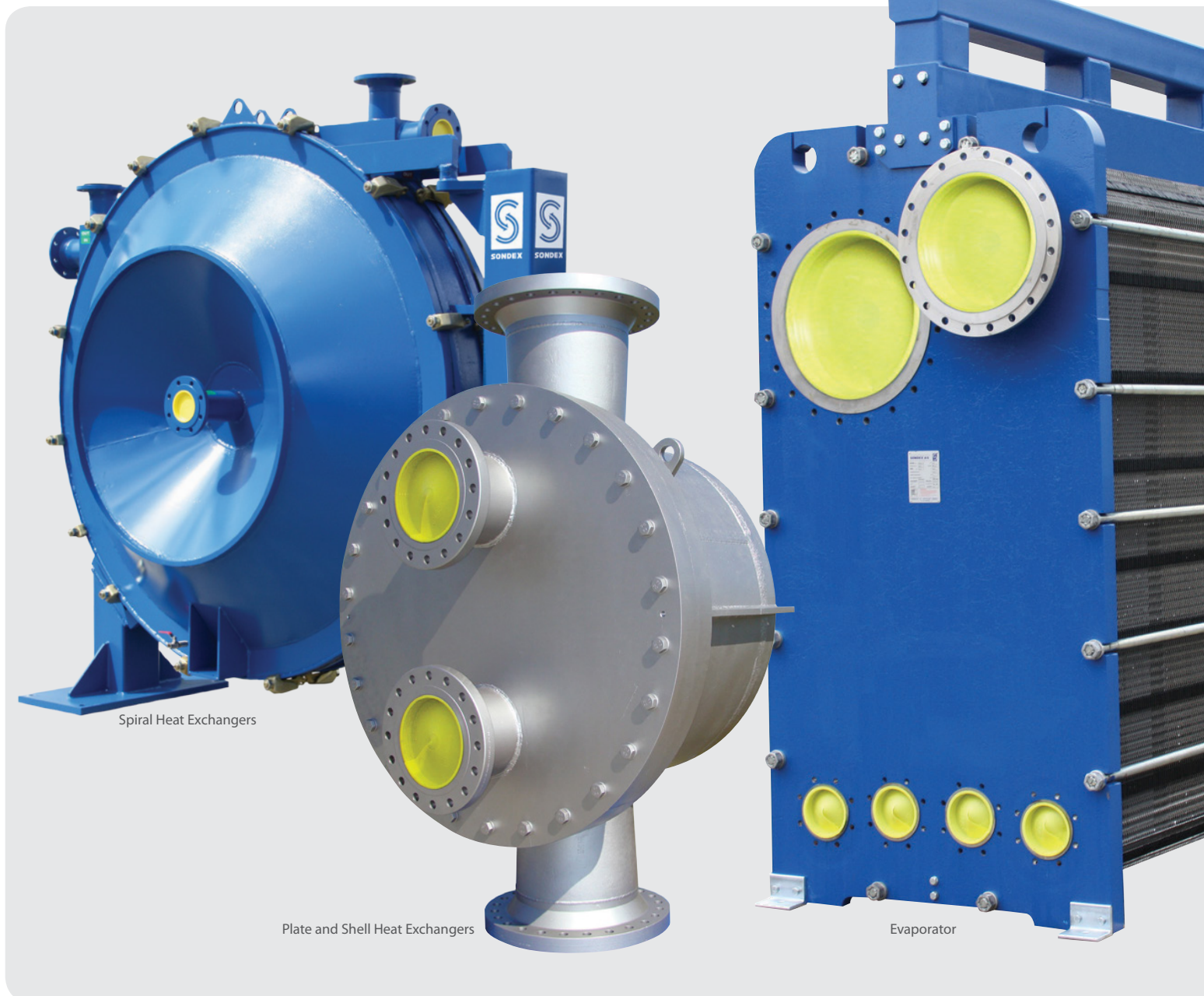
Since the very start Sondex has constantly extended its market area, and today the company includes approx. 40 sales and production companies worldwide. Today the production of plate heat exchangers has been extended and includes now brazed and welded heat exchangers, spiral heat exchangers and units for various purposes, e.g. district heating units, freshwater distillers and pumps.

All Sondex products are developed in close cooperation with our customers with the aim of minimizing energy consumption and reduction of service and maintenance costs. This means a long lifetime of the products and a reduction of the total costs. Sondex plate heat exchangers are characterized by high quality and a comprehensive plate programme making it possible to find the optimal solution for any thermal task.

Sondex products are produced in our own factories close to our markets, as we find it advantageous to produce locally where the products are sold and used. The products of Sondex fulfill international standards, such as AHRI, EHEDG, ASME, ISO etc. and all certificates for marine applications.



Inspecta



Spiral Heat Exchangers

Plate and Shell Heat Exchangers

Evaporator

Free Flow Plate Heat Exchanger

Free Flow plates are designed for liquids containing fibres or other particles which may clog up a traditional plate heat exchanger. Sondex Free Flow plates are designed without metal contact between the plates in the liquid area giving a high turbulence and thus a high heat transmission coefficient and especially a long power time.

Semi-Welded Plate Heat Exchanger

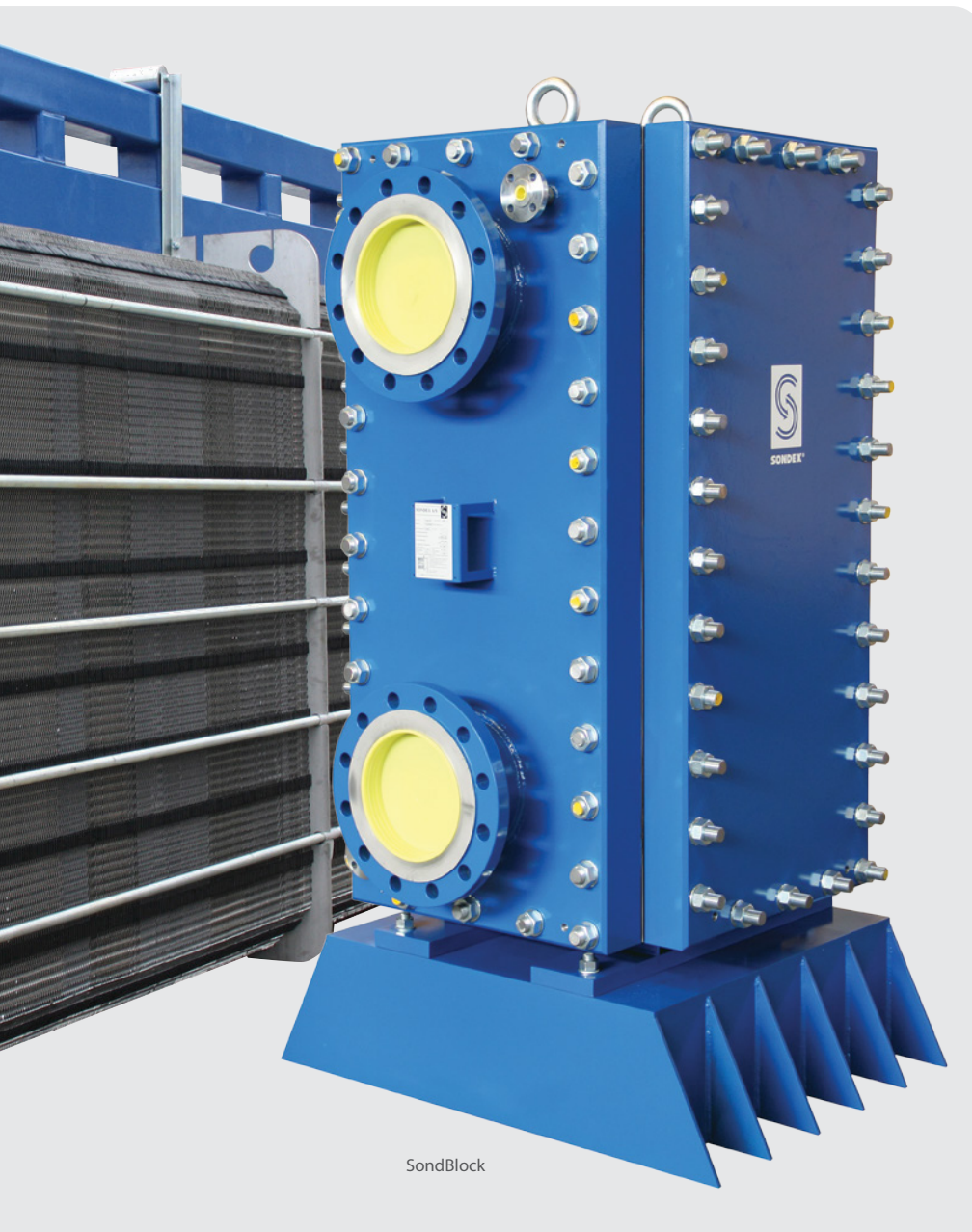
Semi-welded plates are built up in plate cassettes. A plate cassette is 2 plates welded together by means of laser welding. The advantage of this construction is on the one side a welded plate channel and on the other side a traditional plate channel with gaskets making assembling and cleaning of this side easier. On the welded side there are two specially produced corner hole gaskets creating the tightening between the two cassettes. Thus the gasket is reduced to a minimum on the welded side.

Condenser and Evaporator

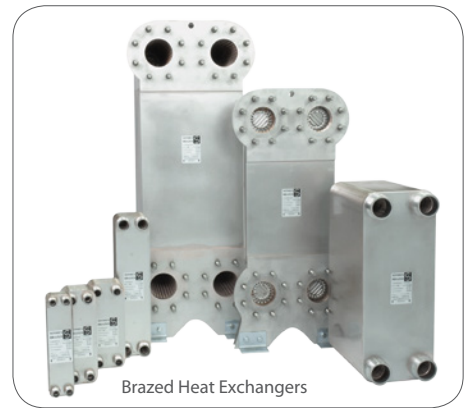
The unique evaporator and condenser plates from Sondex are especially designed for condensing low temperatures, vapour and for multistage evaporation of highly concentrated products. The unique asymmetric large port holes ensure an optimal exploitation of the available heat transfer area. The unique inlet design and high thermal efficiency make these plates the most efficient on the market today.

Brazed Heat Exchanger

A Sondex brazed plate heat exchanger consists of a number of thin acid-resistant precision stamped stainless steel plates. The plate packs are brazed with two end plates and connections. Vacuum brazing at extremely high temperatures provides a permanently sealed heat exchanger. The final result is a strong and compact plate heat exchanger with an extremely high heat transfer capability. Sondex offers copper- or stainless steel brazed heat exchangers.



SondBlock



Brazed Heat Exchangers



Condenser



Free Flow-, Semi-Welded- and All-Welded Heat Exchangers

All-Welded Plate Heat Exchanger (SAW)

The SAW heat exchanger is built into a frame with a welded plate pack. The perfect solution for heat transmission duties, which cannot be handled in a normal gasketed plate heat exchanger because of a too high design temperature, design pressure, or if there is no suitable gasket material for the media to be treated in the heat exchanger.

SondBlock

The SondBlock heat exchanger is built into a frame with a welded plate pack. The perfect solution for heavy duty and condenser tasks which cannot be handled in a normal gasketed plate heat exchanger because of a too high design temperature, design pressure, or if there is no suitable gasket material for the media to be treated in the heat exchanger.

Plate and Shell (SPS)

This heat exchanger works in the same way as an ordinary tubular unit. However, it is more efficient, because plates have been used instead of tubes. The plates are laser/TIG welded to form a plate pack which is then mounted inside a traditional cylindrical shell.

Spiral Heat Exchanger

The Sondex spiral heat exchanger is a circular heat exchanger with two spiral channels, each in one closed chamber ensuring that what comes in also comes out. The flow of the two products is counter-current, which makes it possible to have a close temperature approach between the two medias being treated in the heat exchanger. In the same spiral heat exchanger the design makes it possible to run free flow on the one side and standard flow on the other side.



SONDEX®

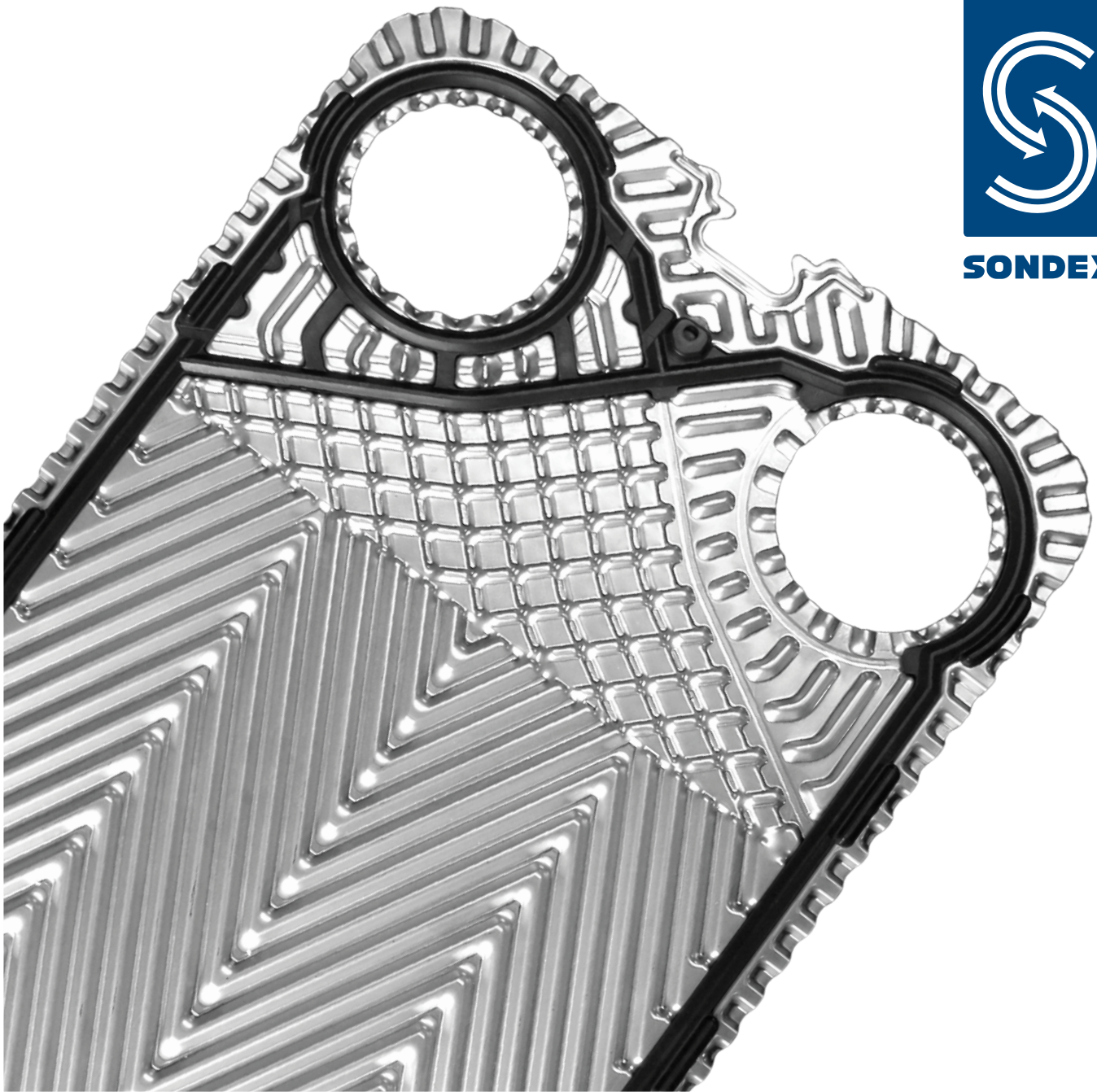


Plate Heat Exchangers

The Most Extensive Plate Heat Exchanger Range

With the most extensive plate heat exchanger range Sondex has got the optimal technical solution for any possible task. Connections from Ø25 to Ø650 mm covering a liquid flow range from 50 l/hour to 7.200 m³/hour.

Plate Design

The construction of the inlet part makes a perfect distribution of the liquids across the heating surface. The inlet part is increased and supplied with channels preventing "dead spots" bacteria in the plate heat exchanger. The inlet with channels secures a strong inlet part with a minimum of contact points. The inlet parts are constructed with a leakage drained zone fulfilling the 3A specifications.

The plate pattern is constructed to obtain a high thermal efficiency. The plates are available in several different types of patterns and angle sizes giving high respectively low turbulent flow. Combining the large plate range and the variety of plate patterns Sondex offers an optimal plate heat exchanger that fits any duty.

The Gaskets

The "Sonder Lock" gasket locks the plates together with strong rubber buttons, and so the plates are strongly guided during the assembly of the plate heat exchanger.

Sondex in-house gasket manufacturing secures high quality within the production and design of the gaskets.

Freshwater Distiller

Sondex freshwater distiller is the obvious choice, when fresh water is demanded on a ship or an oil rig/FPSO, even if it is a land-based facility connected with a decentralized power plant (one of the future solutions to meet the demands for fresh water on marine, offshore as well as land based markets).

Sondex freshwater distiller utilizes every available heat source, such as jacket water, steam, hot transfer oil or an electrical boiler. The heat from these can be used to produce pure drinkable water by evaporating sea water under high vacuum, enabling the feed water to evaporate at a low temperature. The Sondex freshwater distiller is based on two Sondex titanium plate heat exchangers, acting as evaporator and condenser respectively.



Units for Various Applications

Sondex delivers customized units in all sizes for a wide range of applications, e.g. for district heating and district cooling or as booster units to freshwater distillers. The units are based on Sondex heat exchangers and Sondex pumps combined with components from leading manufacturers of valves and electronic control systems.



Sondex Pumps for All Applications

The **Sondex wastewater pumps** are combinations between high-efficiency, intelligent design and practical features. 5 models are covering the demands from domestic houses and light industries to heavy duty applications within waste water, sludge, storm water, cooling water, raw water and industrial effluent with ratings from 0,55 kW to 95 kW.

The **Sondex sanitary pump** is primarily designed for the dairy, food, healthcare and pharmaceutical industries. This new unique design at the most competitive price and quality is the obvious choice and one of the most modern sanitary pumps on the market today.

The **Sondex pumps for industrial and marine applications** cover inline pumps in sizes from DN40-DN250. The pumps are delivered with housing in either cast iron for industrial applications or bronze for harsh medias and for the marine industry. All Sondex pumps are designed according to the specifications and regulations within the industry securing high quality and a long lifetime.

