

**SONDEX**®

ENGINEERING  
TOMORROW

*Danfoss*

# Energy Efficient Plate Heat Exchangers In Distillery Processes

By Pradeep Rathy – Director Sales



**The World's Only  
DN650-Connection**  
Highest Cooling Capacity  
& Thermal Efficiency

# Sondex & Danfoss – Join Forces

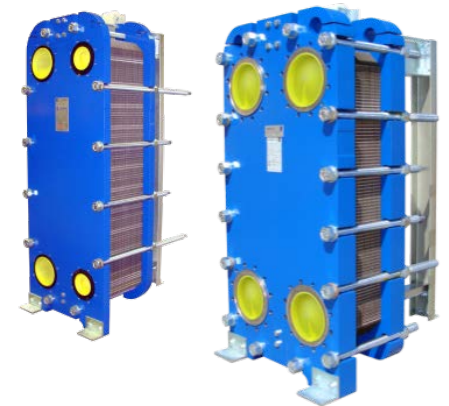
Sondex A/S is a Danish company founded in 1984. In 2016, Sondex was acquired by Danfoss - this step marks the merger of two strong players to create a global leader in heat transfer solutions.

We specialize in customized, high-efficiency heat transfer solutions and have rapidly expanded our global presence to become one of the leading manufacturers of plate heat exchangers in the world.

We have many subsidiaries across the globe, and provide localized service and production.



**SONDEX**<sup>®</sup>  
by Danfoss





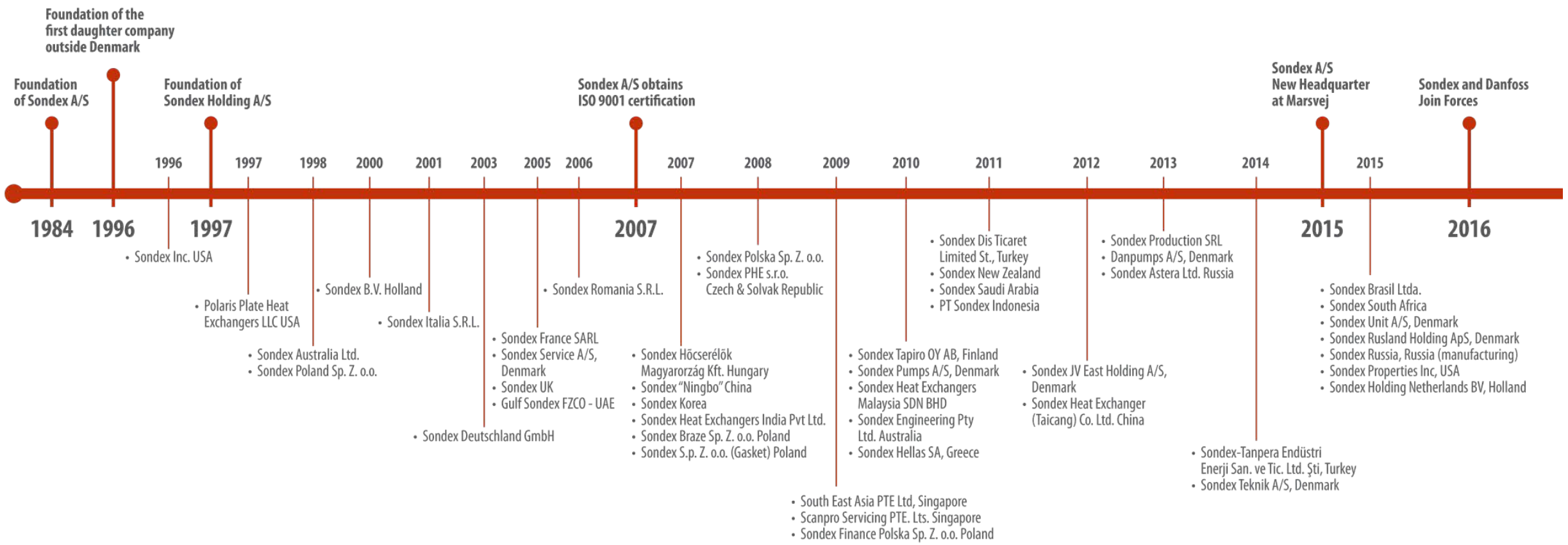
# Sondex : A Worldwide Company

Sondex is a global Company with offices In almost every part Of the world

Sondex was founded in 1984 And is a Danish company Specialized in customer-adapted, high-efficient plate heat exchangers.



# Sondex Timeline



# Sondex and Danfoss Join Forces

This step marks the merger of two strong players to create a global leader in heat transfer solutions.

By joining forces we are able to offer you a broader, even more competitive and innovative product and service portfolio within heat transfer.

**We are very excited to welcome you to a world of high-efficiency heat transfer solutions.**



Leveraging the strength of two great companies

# Sondex Organization Chart

## Sondex Holding A/S

### North America

**Sondex Properties Inc. - USA**  
**Sondex Inc - USA**  
**Polaris PHE LLC - USA**

### South America

**Sondex Brasil Ltda. - Brasil**

### Africa

**Sondex South Africa - South Africa**

### Europe

<b>Sondex A/S - Denmark</b>	<b>Sondex Sp. Z. o.o - Poland</b>	<b>S.C. Sondex Romania SRL - Romania</b>
<b>Sondex Service A/S - Denmark</b>	<b>Sondex Braze Sp. Z. o.o - Poland</b>	<b>Sondex Production SRL - Romania</b>
<b>Sondex Pumps A/S - Denmark</b>	<b>Sondex Polska Sp. Z. o.o - Poland</b>	<b>Sondex Hőcserélők Magyarország Kft - Hungary</b>
<b>Sondex Teknik A/S - Denmark</b>	<b>Sondex Holding Netherlands - The Netherlands</b>	<b>Sondex PHE S.R.O. - Slovakia</b>
<b>Danpumps - Denmark</b>	<b>Sondex BV - The Netherlands</b>	<b>Sondex Tapiro - Finland</b>
<b>Sondex Unit A/S - Denmark</b>	<b>Sondex Italia s.r.l. - Italy</b>	<b>Sondex Dis Ticaret Limited St. - Turkey</b>
<b>Sondex Rusland Holding ApS - Denmark</b>	<b>Sondex Deutschland GmbH - Germany</b>	<b>Sondex Russia - Russia (Manufacturing)</b>
<b>Sondex JV East Holding - Denmark</b>	<b>Sondex France SARL - France</b>	<b>Sondex-Tanpera Endüstri Enerji San. ve Tic. Ltd. Şti - Turkey</b>
<b>Sondex Poland Sp. Z. o.o - Poland</b>	<b>Sondex UK - England</b>	

### Asia

**Gulf Sondex FZCO - Dubai**  
**Sondex Saudi Arabia - Saudi Arabia**  
**Sondex Heat Exchangers India Private Ltd. - India**  
**Scanpro South East Asia - Singapore**  
**Sondex Heat Exchangers Malaysia SDN. BHD - Malaysia**  
**Vietnam (Sales office only)**

**Scanpro Servicing PTE Ltd. - Singapore**  
**Sondex Heat Exchanger (Taicang) Co., Ltd. - China**  
**Sondex Heat Exchanger (Ningbo) Co., Ltd. - China**  
**Sondex Ningbo Phe Co., Ltd. - China**  
**Sondex Korea LLC - Korea**

### Oceania

**Sondex Australia PTY LTD - Australia**  
**Sondex Engineering PTY LTD - Australia**  
**Sondex New Zealand - Australia**



# Product Development And R&D



All Sondex products are developed with the aim of:

- Reducing service and maintenance costs
- Minimizing energy consumption

This means a long lifetime of the products and a reduction of total costs.

R&D-department and tool factory is located in Denmark and most Sondex products are produced at ***our own factories close to our markets. We invest 4% of Turnover in R&D***

- ***Sondex A/S – Denmark***
- ***Sondex Poland***
- ***Sondex China***
- ***Sondex USA***
- ***Sondex Romania***
- ***Sondex India***
- ***Sondex Russia***



***Frames, products and assembly in most daughter companies.***

# Quality System

## Design Codes:



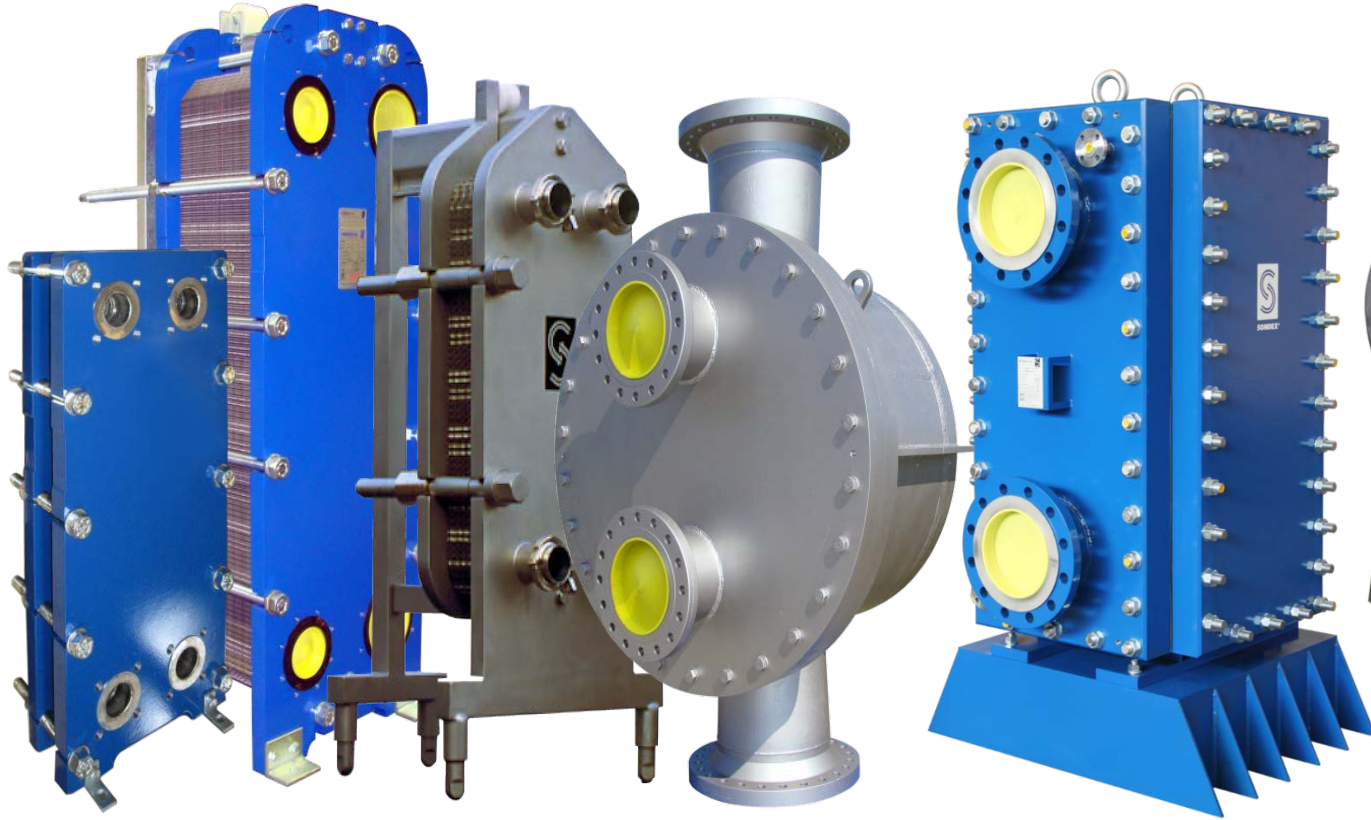
## Quality Systems:

- ASME U, UM, & R Stamp Certified
- Din ISO9001 Certified
- EN729-2





# Product Portfolio



*Standard Gasketed, All Welded & Semi-Welded PHE's*

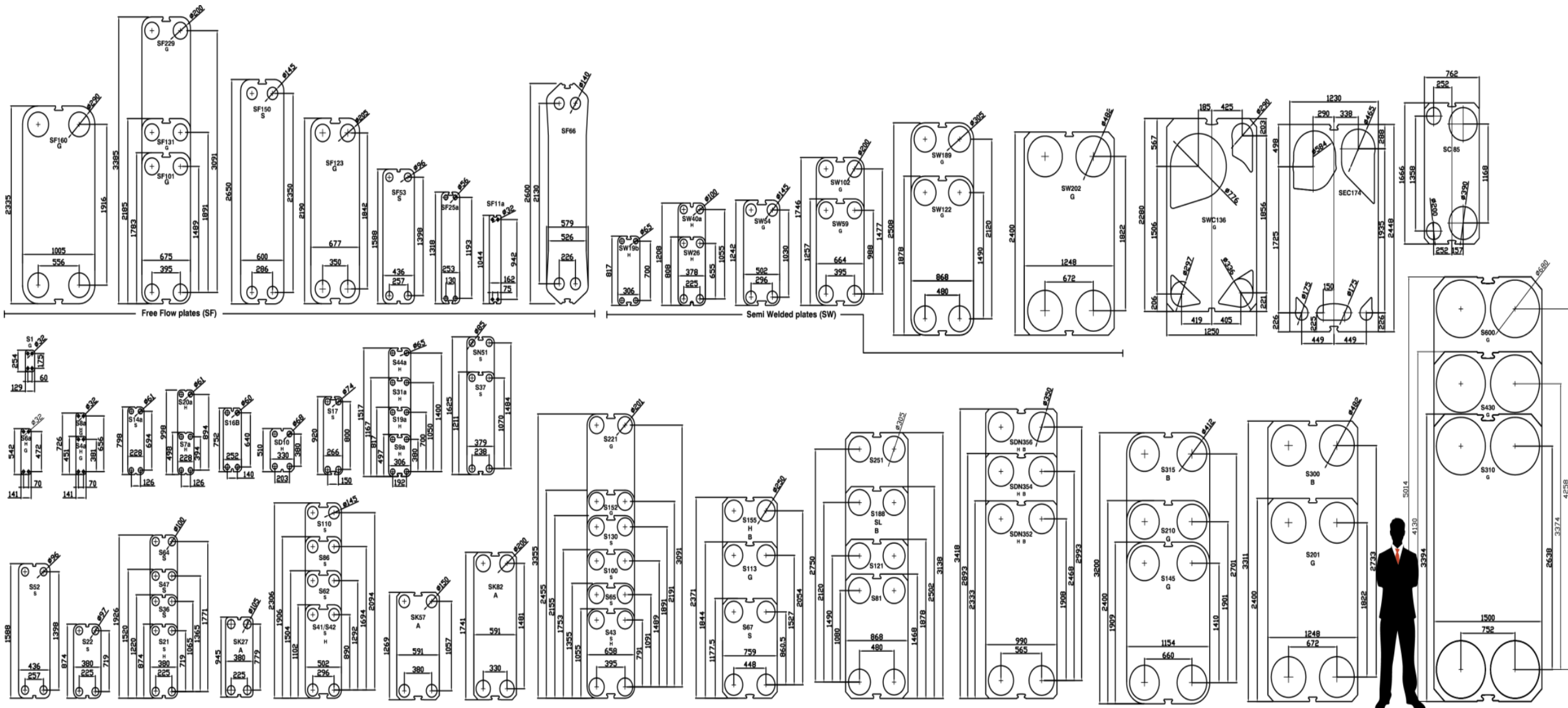


*Brazed PHE & FWD*



*Spiral Heat Exchangers*

# Largest Plate Portfolio





# Plate Heat Exchangers

Standard, Semi-Welded, Sonder Safe and Free Flow

Sondex delivers standard plate heat exchangers as well as customized heat transfer solutions for any task.

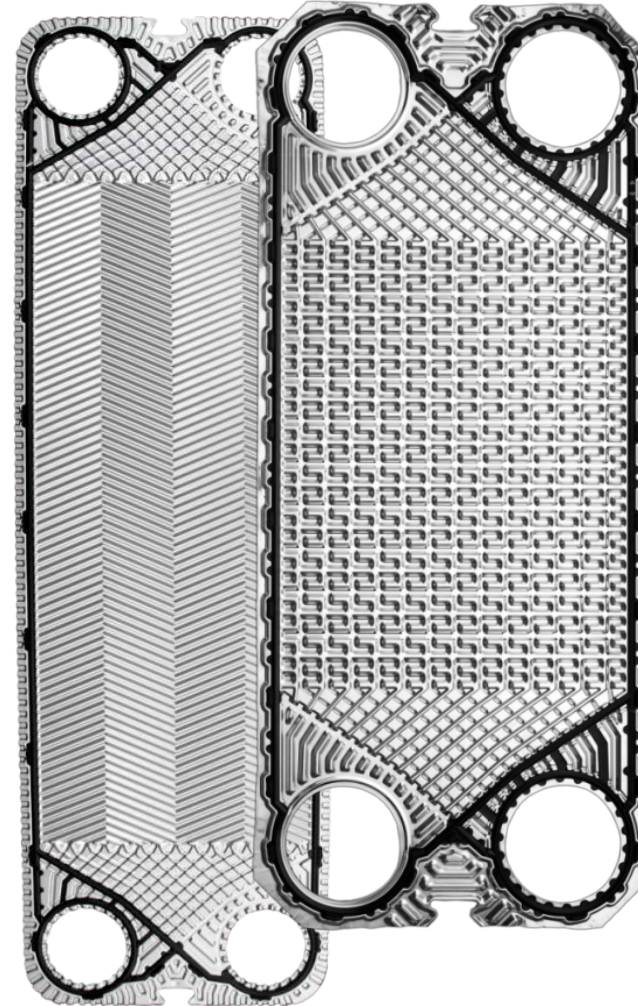
The Sondex plate pattern is designed to solve a variety of different heat exchanger applications:

- ***Standard Gasketed Plate Heat Exchangers – 256 Plate Variants***
- ***Semi-Welded Plate Heat Exchangers***
- ***Sonder Safe Plate Heat Exchangers***
- ***Free Flow Plate Heat Exchangers***

## Facts:

Pressure: up to 30 bar

Temperature: up to 200°C



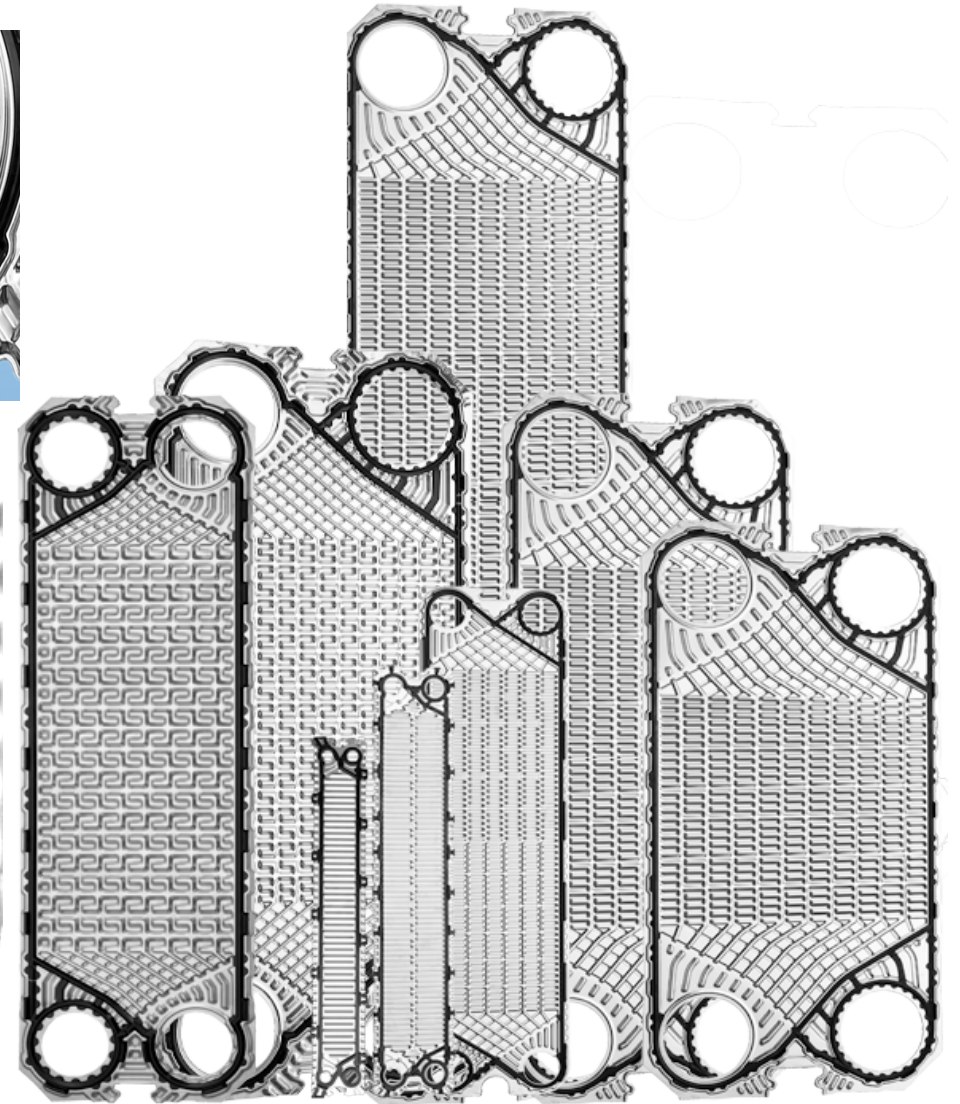
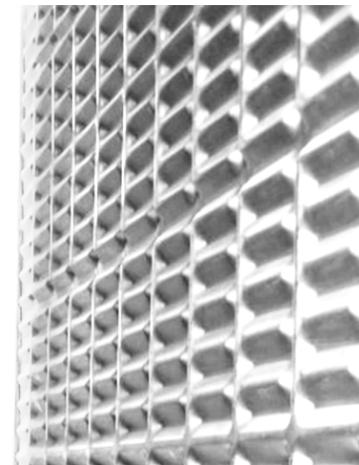
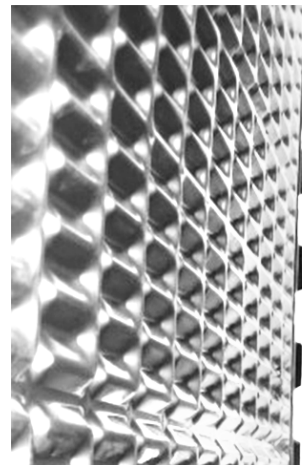
Sonder Safe

Semi-Welded  
Plate



# Free Flow Plate Range – Biggest Plate Range

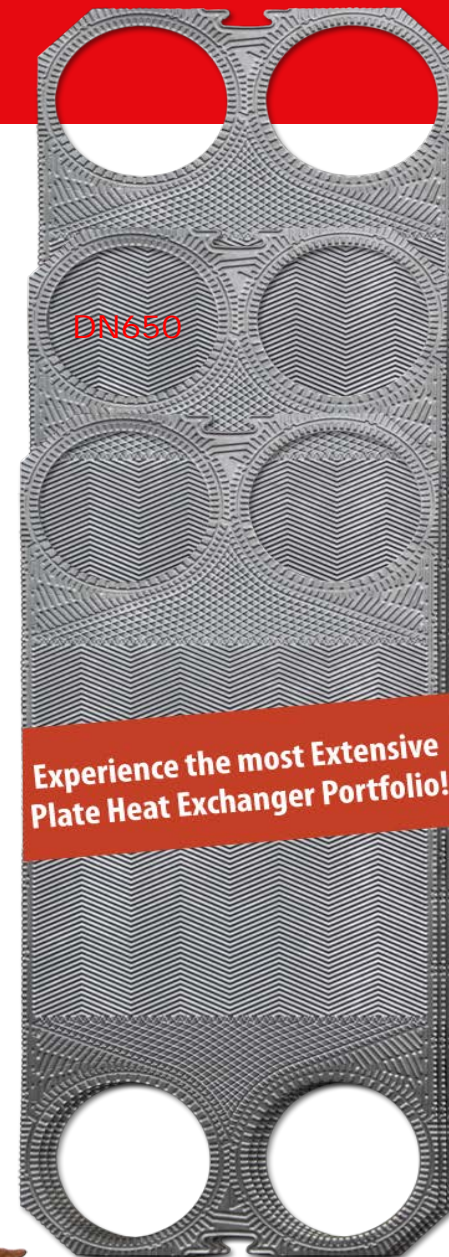
- Spacious Channels – Limited Contact Points with Holding Volume of Fluids
- Contact Free Inlets at Ports – Even Distribution & Min. Risk of clogging at Inlets.
- Large Free Flow Plate Gaps – up to 20mm
- Line Contacts – Ensure Longer Intervals between Cleaning & service, Maximizing the Uptime



# World's only DN650 connection Plate

## Save upto 44% on installation & service with DN650 Connection

- Designed for large installations.
- For power, oil & gas, petrochemical and desalination industries
- For where extended quantities of cooling water are required
- Reduces capital investments
- Smaller footprint and service costs





# Welded Heat Exchanger - SonderBlock

A SondBlock is a welded heat exchanger which is

- **Compact and robust.**
- **A heat exchanger based on plate technology in a cross flow design**
- **Provides a high turbulence and high heat transmission**

The Sondex SondBlock can be used in a number of applications:

- Re-boiling applications in the process industries
- Oil and gas production
- Refineries and mining
- Chemical processing
- Pharmaceutical industry
- Pulp and paper manufacturing
- Wide range of condensing applications
- Corrosive and high temperature applications



Easy access from all sides for cleaning

Design pressure: up to 25 Bar

Design temperature: up to 200°C

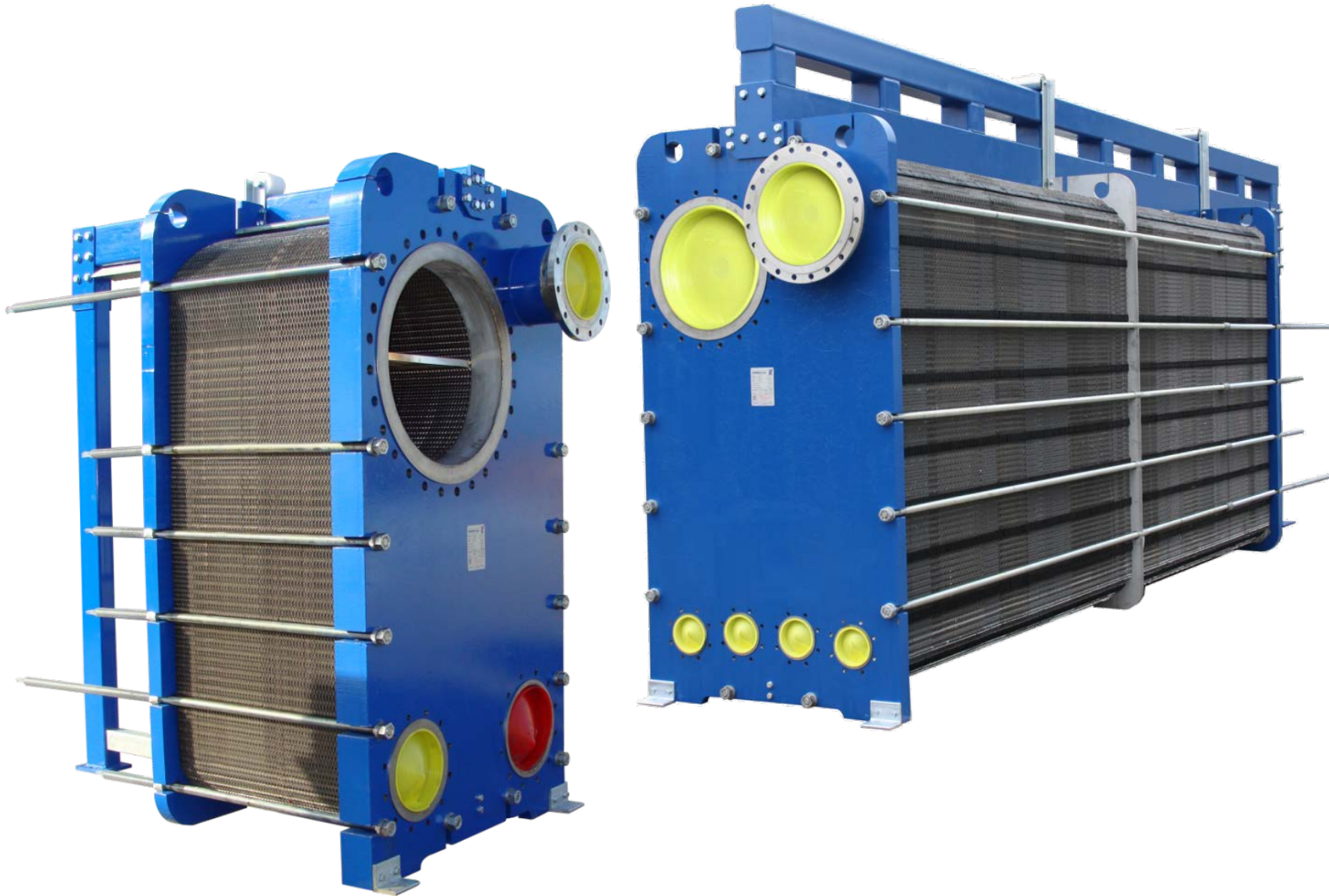


# Plate Evaporators & Condenser

The unique Rising Film Plate 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.

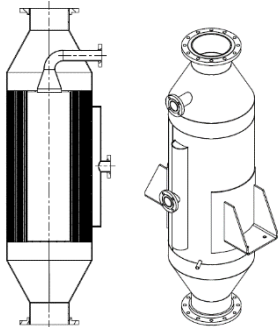


# Spiral Heat Exchangers

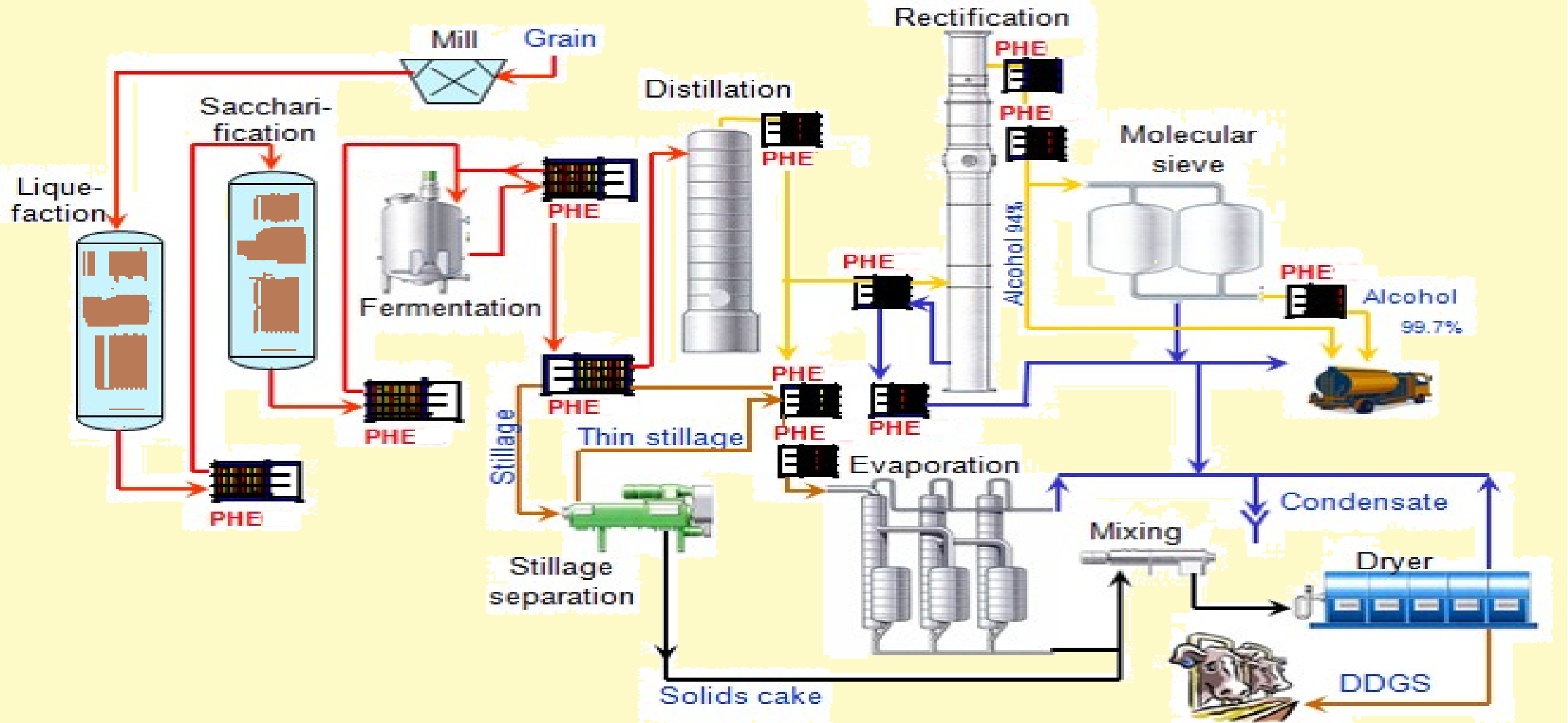
***Sondex Spiral Heat Exchangers are***

1. Horizontal SHE : Liquid / Liquid open able from both sides
2. Vertical SHE : Liquid / Vapor open able from one side.
3. Vacuum Condensers SHE

The flow of the two products are countercurrent which makes it possible to have a close temperature approach between the two medias being treated in the heat exchanger. Hence Heat Transfer Efficiency.



# Brief Description of the Process





# PHE's in Ethanol Plant

## Applications for PHE:

- Liquefied mash heater
- Saccharified mash cooler
- Fermentation cooler
- Bottom feed heater
- Spent Wash Cooler
- SW / FW Heat Recovery
- Re boiler
- Top Condenser
- Vacuum Condenser
- Forces circulation Plate Evaporators
- Fall Film Plate MME
- Rising Film Plate Evaporator



# Thank You For Your Attention



**For more information:**  
[www.sondex.net](http://www.sondex.net)

**Sondex Heat Exchanger India Pvt. Ltd**  
E-1, GIDC, Savli, P.O. Manjusar,  
Dist. Vadodara.  
Tel.: +91-2667-267000  
Fax: +91-2667-264133  
sales@sondex.in  
www.sondex.net

Copyright © Sondex A/S • Sondex cannot be held liable for possible errors in any printed materials. Sondex reserves the right to change any data without notice.