



# HEAT TRANSFER TECHNOLOGY

APV Plate Heat Exchangers



SPXFLOW®

# EFFICIENT HEAT TRANSFER PROCESSES



**APV heat transfer solutions have proven reliable and highly efficient, helping customers worldwide to run their processes safely and economically.**



## **Improved performance, with higher heat recovery, equates to lower energy costs**

Energy consumption and runtime are key parameters affecting production costs in several sectors. Minimizing energy consumption through more efficient process heat recovery is critical to profitability in the face of increasing energy costs. Improving process performance and avoiding unscheduled stoppages can increase runtime. Both deliver immediate and significant cost savings that translate directly to the bottom line.

SPX FLOW provides advanced APV heat transfer solutions for cooling, heating, condensing and evaporation of process fluids and for utility applications in a vast array of industries – ranging from food and beverage to oil and gas and industrial processes. Solutions are based on a range of plate-type heat exchanger technologies including gasketed, semi-welded and plate heat exchangers. These range from high-capacity, heavy-duty units to small, compact designs, and are available either as standard solutions or as customized units based on proven designs and a vast variety of materials. APV plate heat exchangers may be supplied as standalone components or integrated into modules or complete systems.

**APV HEAT EXCHANGERS ARE SOLVING HEAT TRANSFER PROCESS CHALLENGES IN A VAST ARRAY OF INDUSTRIES – such as Dairy, Food & Beverage; Oil & Gas; Petrochemical & Chemical; HVAC; Pharmaceutical & Personal Care; Process Industry and Power**



## Lifetime Performance

### – maximizing efficiency and ROI

We are committed to helping you improve the performance and profitability of your heat transfer equipment and solutions throughout its entire lifetime. Lifetime performance depends on a long line of factors that can affect uptime, efficiency, and costs. We offer the following services to ensure maximum performance and return on investment from your plant and equipment.

- **Service and maintenance assistance.** Service centers and field service technicians available to maximize your heat exchanger performance, increase uptime and to develop optimized and continuous process flow.
- **Original spare parts.** SPX FLOW genuine spare parts are critical to the optimization, longevity and integrity of your equipment. Our genuine heat exchanger spare parts are precisely measured and fabricated to fit the exacting requirements of purchased equipment. Non-genuine spare parts that are off in measurement or tensile strength even minutely could cause lasting damage to an otherwise optimal heat exchanger. Be prepared with OEM parts in inventory for preventative maintenance schedules.
- **Maintenance agreements.** Through a deep understanding of process applications, we have developed a comprehensive range of service solutions to meet your process and business needs. Implementation of a preventive maintenance plan keeps your heat exchangers running at optimal levels and protects your product investment.
- **Refurbishment - maintaining performance.** As a heat exchanger ages, factory processes around the heat exchanger will change. Refurbishment of the plate heat exchanger and replacement of the plate pack can bring a significant boost to performance and efficiency.
- **On-site audits – reduce operating expenses.** Our engineers are available to conduct on-site audits of your plant and equipment to identify areas where upgrades or replacements can further lower your cost of ownership by improving efficiency and reducing your operating and maintenance expenses.
- **Upgrades.** Our process engineers can expand the scope of a product through detailed upgrades. Upgrading a heat exchanger to fit the contemporary needs of a process is conducted quickly to exact specifications to minimize factory downtime and ensure an optimized future process.

Since APV invented the plate heat exchanger in 1923, we have been pioneering innovative production technologies, as well as designing and realizing efficient and durable heat transfer solutions for our customers

## Global presence – dedicated people

Our dedicated heat transfer specialists utilize their experience and knowledge of sector needs and solution options to assist you in selecting the solutions that will deliver the best performance and ROI over a long service life for your particular application and process conditions.



# Plate Heat Exchangers for Efficient Heat Transfer



## ParaBrazed

A comprehensive range of compact brazed plate heat exchangers especially suited for water heater, district heating units, gas boilers, and solar heating.



## Plate Evaporator

For the concentration of milk, juices, syrups, animal and vegetable extracts, effluents and industrial streams.



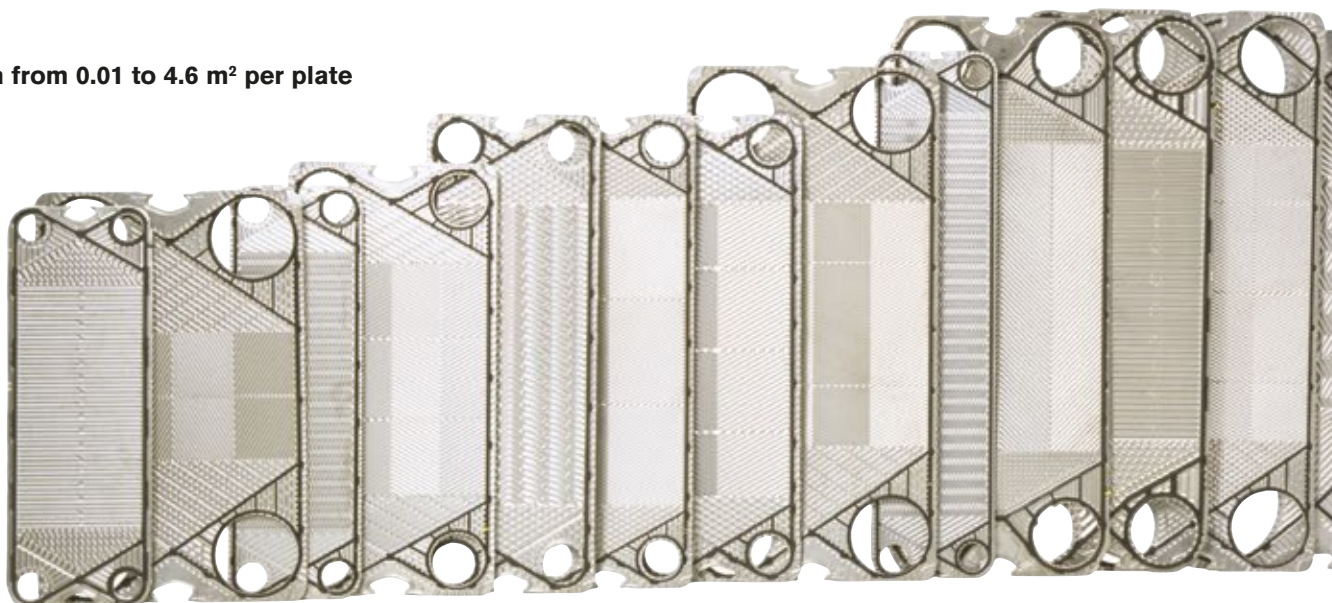
## Hygienic frames

Extendable frames to meet stringent hygienic requirements.

## Industrial frames

Wide range of extendable frames for meeting various application needs.

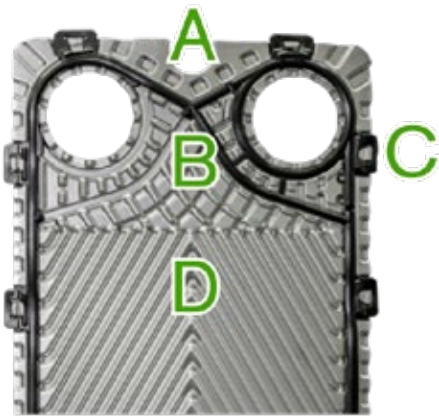
Plate area from 0.01 to 4.6 m<sup>2</sup> per plate





SELECTION GUIDE	ENERGYSAVER	DURAFLOW	EASYFLOW	DUOSAFETY	PARAWELD	PARABRAZED	PLATE EVAPORATOR
DESCRIPTION	Plate with narrow gap and many contact points to secure high thermal efficiency	Plate with wide gap and reduced number of contact points to ease the flow of viscous products and products containing small particles. Designed for continuous, durable flow and long run time	Wide gap plate with reduced number of contact points to ease the flow of viscous products and products containing fibres or pulp. Designed for long run time, continuous flow, and extra gentle product treatment	Double wall (for added safety) consisting of 2 layers of plates per flow plate in order to drain any fluid from leakage to the atmosphere. For use in gasketed plate heat exchangers	Corrugated plates welded in pairs. Pairs are separated by gaskets (welded pairs on process side, normal gasket technology on the secondary side)	Plate heat exchanger without gaskets. Copper soldering joins the plates	Falling film or sometimes climbing/falling film evaporation in low height modular plate evaporator yielding superior quality concentrates
MATERIAL	Plates: AISI 316, AISI 304, Titanium Gaskets: NBR per, EPDM, FKM	Plates: AISI 316, AISI 304, Titanium Gaskets: NBR per, EPDM, FKM	Plates: AISI 316, AISI 304, Titanium Gaskets: NBR per, EPDM, FKM	Plates: AISI 316, Titanium Gaskets: NBR per, EPDM, FKM	Plates: AISI 304, AISI 316, Titanium Gaskets: NBR, EPDM, FKM	AISI 316L (and copper)	Plates: AISI 316 Gaskets: NBR, EPDM
TEMPERATURE	Rubber gaskets: -35°C to 180°C	-35°C to 180°C	-35°C to 180°C	-35°C to 180°C	Rubber gaskets: -45°C to 250°C	-50°C to 195°C	-30°C to max. 130°C
PRESSURE	25 bar gauge	0 - 16 bar gauge	0 - 16 bar gauge	0 - 16 bar gauge	0 - 35 bar gauge	0 - 30 bar gauge	Vacuum to 2 bar gauge
TRANSMISSION AREA/DUTY	Up to 3,800 m <sup>2</sup>	Up to 2,800 m <sup>2</sup>	Up to 680 m <sup>2</sup>	Up to 650 m <sup>2</sup>	Up to 1,800 m <sup>2</sup>	Up to 75 m <sup>2</sup>	Up to 400 m <sup>2</sup>
MAINTENANCE ACCESS	Full access for cleaning and inspection	Full access for cleaning and inspection	Full access for cleaning and inspection. Sediments may be CIP cleaned	Full access for cleaning and inspection	Welded side: Cleaning by circulation of cleaning fluids (CIP)	Cleaning by circulation of cleaning fluids (CIP)	Full accessibility to heat transfer surfaces. Easy to dismantle for inspection of all product wetted parts





	Features	Benefits	Customer Advantage
<b>A</b>	Interplate locking system integrated in hanging eye	Improved plate pack stability, with extremely minimal loss of heat transfer area	<ul style="list-style-type: none"> <li>▪ Safe and economic operation</li> <li>▪ Simple and efficient serviceability</li> <li>▪ Minimum service downtime</li> </ul>
<b>B</b>	Graduated chocolate box distribution	Better thermal performance of plate -> reduction in m <sup>2</sup> of required heat transfer area and improved performance	<ul style="list-style-type: none"> <li>▪ Improves distribution of media</li> </ul>
<b>C</b>	New doubleclip gasket affixing system	Improved gasket stability, easy removal and replacement of gasket	<ul style="list-style-type: none"> <li>▪ Reliable operation</li> <li>▪ Easy and quick to replace</li> <li>▪ No special tools needed</li> </ul>
<b>D</b>	Corrugated plate pattern - heat transfer area	Promoted turbulence, minimizes fouling	<ul style="list-style-type: none"> <li>▪ Excellent heat recovery effect</li> <li>▪ Maximizes run time</li> </ul>



**EnergySaver**

For processing low-viscosity media. Designed for high thermal efficiency with a very close temperature approach.



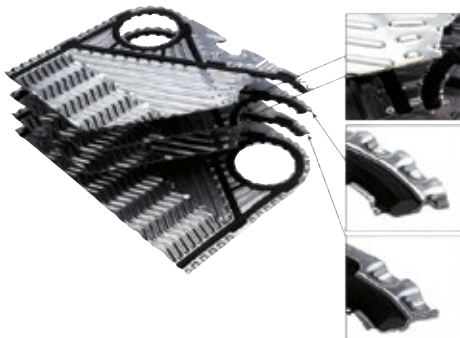
**DuraFlow**

For medium or high viscosity media. Designed for continuous process and long run time.



**EasyFlow**

For media containing fibres or pulp, requiring highest possible recovery without blocking.

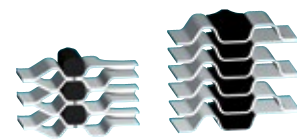


**DuoSafety**

The DuoSafety system prevents potential cross-contamination of fluids due to plate pinholes or cracks by discharging the fluid to the environment.



**Welding on plate**



**ParaWeld**

**Conventional**

**ParaWeld**

Welded plate pairs. Designed with welded channels allowing handling of aggressive fluids. Widely used for single and two-phase heat transfer in refrigeration and in chemical, industrial and petrochemical applications.

## Compliance – Global Certification



APV plate heat transfer solutions meet the pressure equipment requirements in Europe, Asia and Americas. They are produced in accordance with the European Pressure Equipment Directive (PED 97/23/EU) and are CE marked accordingly. They can be delivered according to GB standards and comply with ASME U-Stamp and National Board Certification. APV sanitary heat exchangers comply with international hygienic standards including 3A and FDA. Our main production facilities are certified in accordance with the EN ISO 9001 quality assurance standard, and selected sites hold the ISO 3834 Welding Workshop Approval.



**FOR YOUR LOCAL REPRESENTATIVE:**

See WHERE TO BUY on [www.spxflow.com/apv](http://www.spxflow.com/apv)



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