



API Heat Transfer, a family of high-performance brands

### High-performance heat transfer.

It's who we are and what we do. It's part of our 140-year heritage designing and delivering world-class heat transfer products for nearly every industry. It's bolstered by our worldwide network of manufacturing facilities that provide sales, service, and support. And it's ingrained in a process that has helped customers around the world for nearly a century and a half.

When you work with us, you'll find the performance of our technologies sets the bar for heat transfer products, and our relentless drive to find and create custom heat transfer solutions to meet any industry challenge sets us apart.



For more information about our heat transfer products, contact our API Heat Transfer sales representative or visit [apiheattransfer.com](http://apiheattransfer.com) or [apiheattransfer.de](http://apiheattransfer.de)

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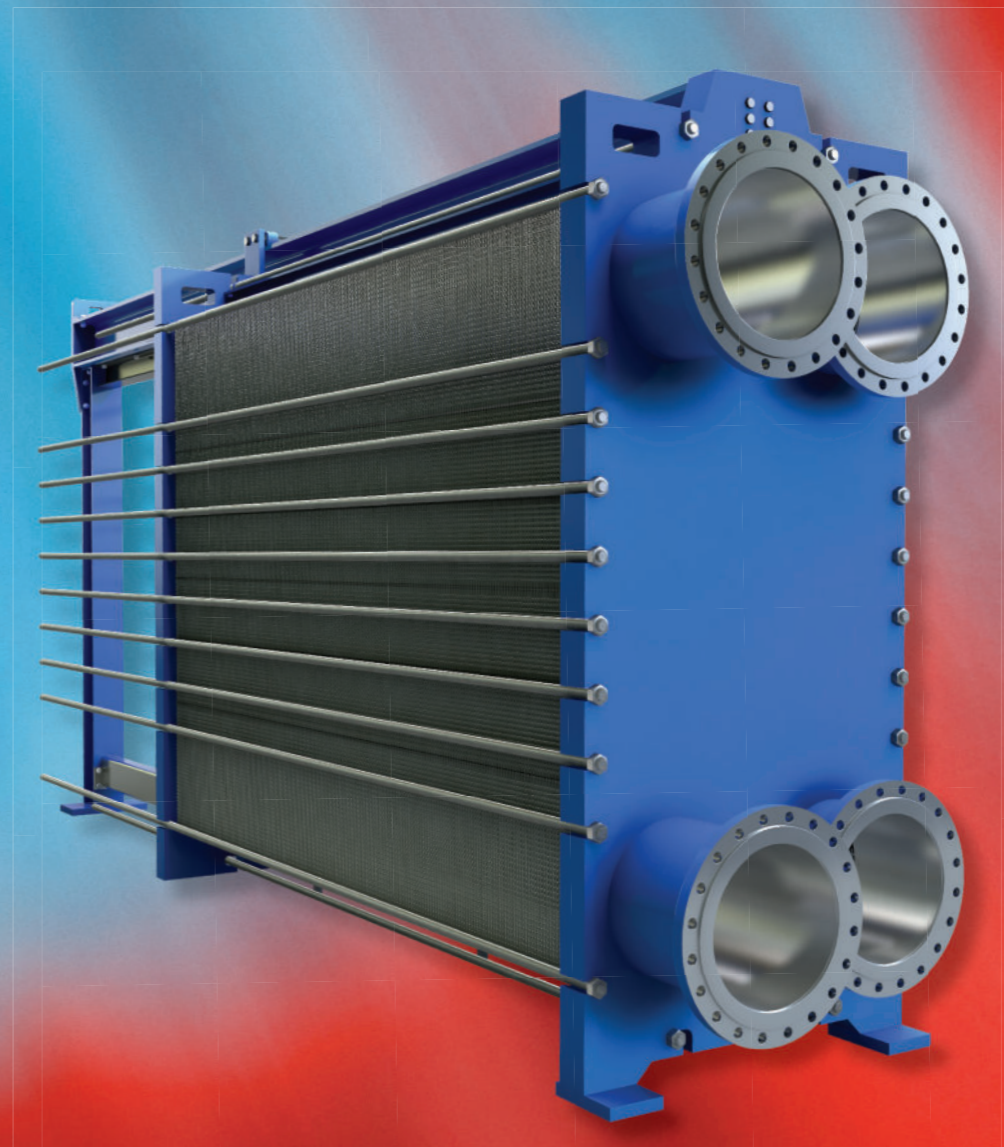
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PERFORMANCE IS EVERYTHING

# SCHMIDT® GASKETED PLATE HEAT EXCHANGERS



Innovation, quality, and the experience of more than 140 years makes API Heat Transfer's line of Schmidt® Plate Heat Exchangers an excellent choice for your heat transfer needs.

## Leadership in Plate Heat Exchangers Since 1879

The Schmidt® name traces its roots back to 1879 in Germany when the company founder, Wilhelm Schmidt, patented a new highly efficient counter-flow external surface cooler for the brewing and dairy industries.

The next major development was the first closed or pressurized spiral type plate heat exchanger constructed of brass plates milled with spiral channels and then chrome plates. Subsequent models utilized stainless steel plates pressed to form corrugated flow channels. The spiral heat exchanger provided the first opportunity for separate sections within a single unit.

1938 saw the introduction of a horizontal crossflow plate heat exchanger. And then in 1948 came a new generation of SIGMA plate heat exchangers.

Acquired by API Heat Transfer in 1997, our API Schmidt-Bretten division continues the tradition of systematic development to improve performance, maximize heat transfer, and provide the best value for our customers.

## Engineering Excellence

API Heat Transfer engineers have the experience and tools to quickly provide economic, tailor-made solutions to meet your exact needs. We utilize state-of-the-art software to bring high quality, cost effective, thermally efficient designs to market.



1879 – Counter flow external surface cooler



1932 – Spiral Plate Unit



1990 – SIGMA X19



2005 – SIGMA 156

## Automated Production

API Heat Transfer's commitment to meeting production demands is reflected by our continual improvement in manufacturing areas. Our unique plate pressing equipment takes the plate material from its raw state and converts it to a finished product in moments.

Pressing tools are changed in minutes to allow easy conversion from one plate style to another.

Special sensing equipment controls the pressure applied in the process to guarantee uniform thickness and the highest quality.

## Today & Tomorrow

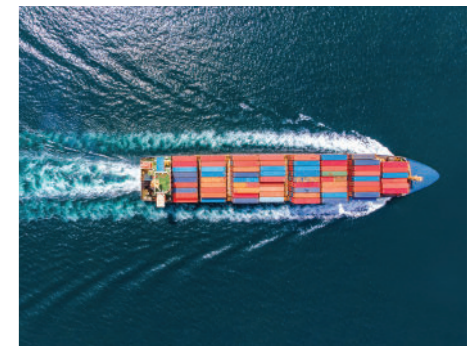
Today our Schmidt brand represents one of the widest selections of plate heat exchanger designs available in the industry.

With our variety of model sizes, plate corrugations, plate materials, gasket options, and frame designs, our plate heat exchangers meet the needs of virtually every industry requiring heat transfer.

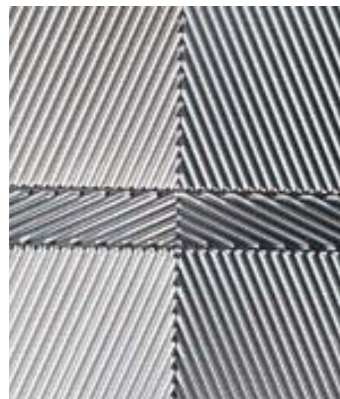
And every plate heat exchanger is supported by a knowledgeable, dedicated staff to ensure the design, application and quality exceed your expectations.

## Markets Served Include:

- Beverage
- Brewery
- Chemical
- Dairy
- Food
- Heat Recovery
- HVAC
- Marine
- Pharmaceutical
- Power
- Refrigeration
- Steel Production



## Thermal Plate Options



### X SERIES HIGH PERFORMANCE PLATES

- Suitable for industrial and HVAC applications with clean, homogeneous, solid-free liquids.
- Thin film plates with corrugation depths between 2.0 and 3.0 mm for high thermal performance.
- Hard and soft plate corrugation patterns in the herringbone design to provide the most economic thermal solution for each application.
- Plates can be equipped with either the SIGMAFIX adhesive-free gasket system or with glued high performance gaskets.



### 7 SERIES UNIVERSAL PLATES

- Suitable for industrial, HVAC and liquid food applications.
- Hard and soft plate corrugation patterns designed to provide the most economic thermal solution for each application.
- Corrugation depths vary between 2.5 and 4.0 mm.
- Plates can be equipped with either the SIGMAFIX adhesive-free gasket system or with glued high performance gaskets.



### 2 SERIES SPECIALIZED FREE FLOW PLATES

- For industrial and food applications with viscous, fibrous or pulpy liquids, e.g., for pasteurization of beverages and pulpy products.
- Free-flow plates with a corrugation depth between 4.5 and 5.5 mm.
- Wide range of plate and gasket materials.



### SEMI-WELDED PLATES

- Combines the high thermal efficiency, compact design, and low volumetric liquid hold-up of a plate heat exchanger with the leak prevention of a shell and tube.
- Ideal for ammonia applications.

## Gasket Options



### SUPERIOR GASKET SEALING

- The sealing system used with our heat exchanger plates is designed as a one piece molded gasket with a vented double gasket boundary.
- This design prevents the two process fluids from mixing and gives you added peace of mind.
- If there are any leaks at the gasket around the plate or port areas, the leakage is to atmosphere and easily detectable.



### SIGMAFIX GASKET

- Our patented, adhesive-free gasket fastening system allows quick and easy gasket replacement through laterally built-in mounting clips.
- Ensures high resistance against front-face sticking and minimizes the risk of the gasket being stuck to the following plate.
- The large area of contact between the mounting clips and the heat exchanger plate ensures a better attachment to the plate and a superior gasket seal.



### SIGMACOAT GASKET

- SIGMACOAT gasket has a protective PTFE coating over an elastomer (NBR or EPDM) core. This ensures a highly resistant gasket against aggressive mediums at processing temperatures of up to 320°F.
- Prolongs gasket life, which ensures production with minimum downtime.
- Available in the patented SIGMAFIX, adhesive-free gasket fastening system.



### SIGMA GLUED GASKET

- Gaskets are glued into place by a computer-controlled robotic process that ensures consistent mixing and application.
- All glued gaskets are heat cured for maximum bond strength.
- Available for all of our standard plate heat exchangers in various gasket materials.

<b>Plate Material Options</b>	304/304L	Incoloy 825	Nickel	Titanium
	316/316L	Inconel	SMO 254	Titanium-Pd
	Hastelloy	Monel	Tantalum	Others—consult factory

<b>Gasket Material Options</b>	Nitrile	Viton
	EPDM	AFM 34
	PTFE	Sil C-4400

## Advantages – Features at a Glance

### Heat Transfer Performance

The unique designs of our thermal plates produce high heat transfer coefficients for a given application, resulting in lower surface area and lower capital cost.

### Compact Design

Plate heat exchangers contain large heat exchanging surfaces in a very compact, space-saving frame. This results in a much smaller space requirement and lower weight.

### Versatility

Plates are formed in a wide variety of patterns and materials to meet your heat transfer needs.

### Peak Efficiency

With high heat transfer coefficients and a true counter-current flow path, our plate heat exchangers can cool hot fluids to within one degree of the cold fluid making heat recovery in excess of 96% technically and economically possible.

### Minimal Fouling

Fouling of the heat transfer surfaces of the plate heat exchanger is extraordinarily low. The high induced turbulence yields a self-cleaning effect, which minimizes fouling.

### Easy Maintenance

Units can be cleaned without dismantling by clean-in-place (CIP) systems, by reverse flow cleaning or by addition of suitable cleaning fluids.

Plate removal is easily accomplished by releasing the tightening bolts that compress all of the heat transfer plates.

### Lower Liquid Volume

Since the gap between plates is small, a plate heat exchanger contains only low quantities of process fluids, reducing cost due to lower volume requirements.

### Expandable

Plate arrangement can be changed and plates can be added or removed. It is possible to install several sections in one frame and permit several process steps in a single unit.

### Reliability

The unique design of our plates allows for optimum alignment during assembly for greatest sealing capabilities.

