

Schmidt



**SIGMA
PLATE HEAT
EXCHANGERS**

API Heat Transfer

... world leaders in heat transfer technology



Heat transfer is and remains our main subject

One big challenge of the 21st century consists in the sufficient availability of clean air, water and heat. API Schmidt-Bretten realized that decades ago and has devoted its efforts to make our world better both in everyday life and in industry by using innovative technology. Along with the environmental compatibility, for us “better” also means higher efficiency; that heat or cold energy is transferred with the highest possible efficiency level. In almost all industrial applications, that can be achieved with a plate heat exchanger from API Schmidt-Bretten where high performance is not theory but an everyday occurrence.

This became possible not least as a result of the many years of experience: Since the foundation of the company in 1879, we research, develop and manufacture thermal process engineering products which are constantly improved and become more efficient. This core competence is the basis of our successful business activity which has been continuing for more than a century; it is also a commitment to develop and manufacture in the future products with outstanding efficiency for thermal systems in almost all areas of application. API Schmidt-Bretten is the plate technology center of API Heat Transfer. Along with experts worldwide, API Schmidt-Bretten is working today on the technologies of tomorrow.

The plate heat exchangers of the current SIGMA series are setting standards in every aspect – in the food-processing technology and the pharmaceutical industry, the building technology as well as under the hardest operating conditions – in the chemical industry and process technology. This is taking place also in diverse fields of application and design. With its more than 40 variants, the Schmidt SIGMA plate heat exchanger has proven itself more than 100,000 times in practically all applications from vacuum to 25 bar operating pressure and at temperatures from -30 °C to 250 °C.

The commitment to make a significant contribution to the environment-friendly technologies and at the same time to the energy-efficient industrial processes remains a continuous challenge for our engineers. Therefore, the Schmidt SIGMA plate heat exchangers will distinguish themselves also in the future by their high level of comfort and careful handling of the provided resources in close connection with the best “Made in Germany” quality in terms of the philosophy of API Schmidt-Bretten. The success of our business partners worldwide stimulates us daily to remain true to this high challenge and to meet the business and technological requirements of our clients.

You can rely on that.

Markets and applications

Our daily challenge and objective is to offer individual custom-tailored solutions with optimal cost-benefit ratio.

Longstanding experience – also in sophisticated applications – and the exceptional specialized knowledge of our engineers in the process engineering field have made API Schmidt-Bretten a recognized partner in the industry.

In our commitment to this entrepreneurship philosophy, our SIGMA plate heat exchangers offer first-class solutions for the thermal processes in many application areas. Thus they are well suited to practically all markets in which they perform reliably their day-to-day tasks.

The clients use successfully and with great satisfaction the SIGMA plate heat exchangers in the following fields:

- Chemical- and Petrochemical industries
- Pharmacy and Life Science
- Renewable energies
- Power generation
- HVAC
- Refrigeration technology
- Beverage industry
- Food industry
- Industrial engineering
- Steel mills and coking plants
- Automotive industry
- Surface technology
- Engine makers
- Metal processing
- Pulp & Paper industry
- Marine & Offshore



Modular components of SIGMA plate heat exchangers

Application range

- Operating pressure: up to 25 bar for standard units
- Operating temperature: up to 170 °C for standard units
– higher values on request –

Plates

- Materials: AISI 304, AISI 316L, AISI 316Ti, alloy 926, AISI 904L, SMO 254®
nickel, nickel alloys, titanium grade 1, titanium grade 11

Gaskets

- Materials: Elastomers (nitrile, EPDM, FKM / Viton® and others)
PTFE-enveloped elastomers (SIGMACOAT)
Aramid fibers
– materials for industrial and foodstuff applications –
- Fixing: Gasketed plates:
 - with mechanically fixed gaskets (SIGMAFIX)
 - with glued gasketsSemi-welded modules (SIGMADUAL):
 - with mechanically fixed gaskets (SIGMAFIX)
 - with glued gaskets

Pressure Frames

- Materials: Carbon steel, painted
Carbon steel, stainless steel-cladded
Stainless steel, solid
- Codes (PED): AD 2000-Merkblatt, ASME Sec. VIII Div. 1, GL, ABS, DNV and others
- Connections: Studded bolts acc. to DIN 2501, EN 1092-1, ANSI
Flanges acc. to DIN, EN 1092-1, ANSI
Threaded connections
Aseptic and foodstuff connections

Optional Accessories

- Insulation
- Tie rod protection
- Inline-strainer and automatic filter



■ Drip tray



■ Ratchet spanner



■ Protection shield

Lifting lug



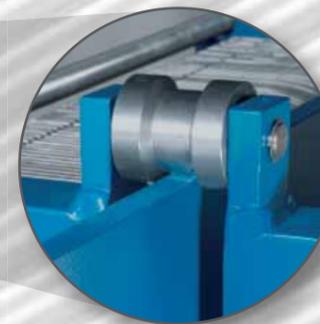
Studded bolts connection with metallic liner



Name plate showing max. operating conditions and tightening dimensions



Movable cover – pressure plate



Roller for easy opening

Slot for removing of the tie rod at the side

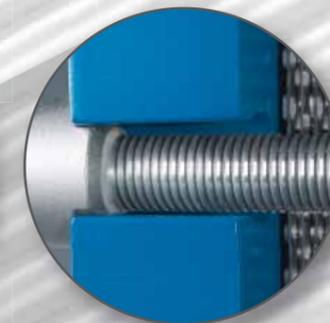
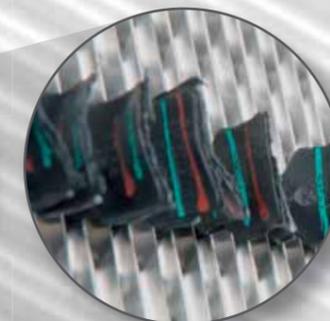


Plate packet

Tie rod

Support column

Gasket identification tag visible with closed phe



Anchor bolt as anti-rotation device

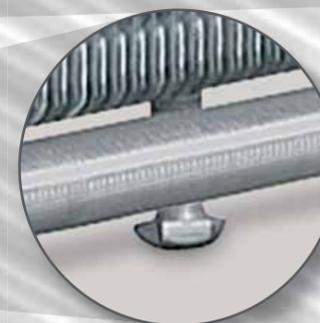


Fixed head pressure plate

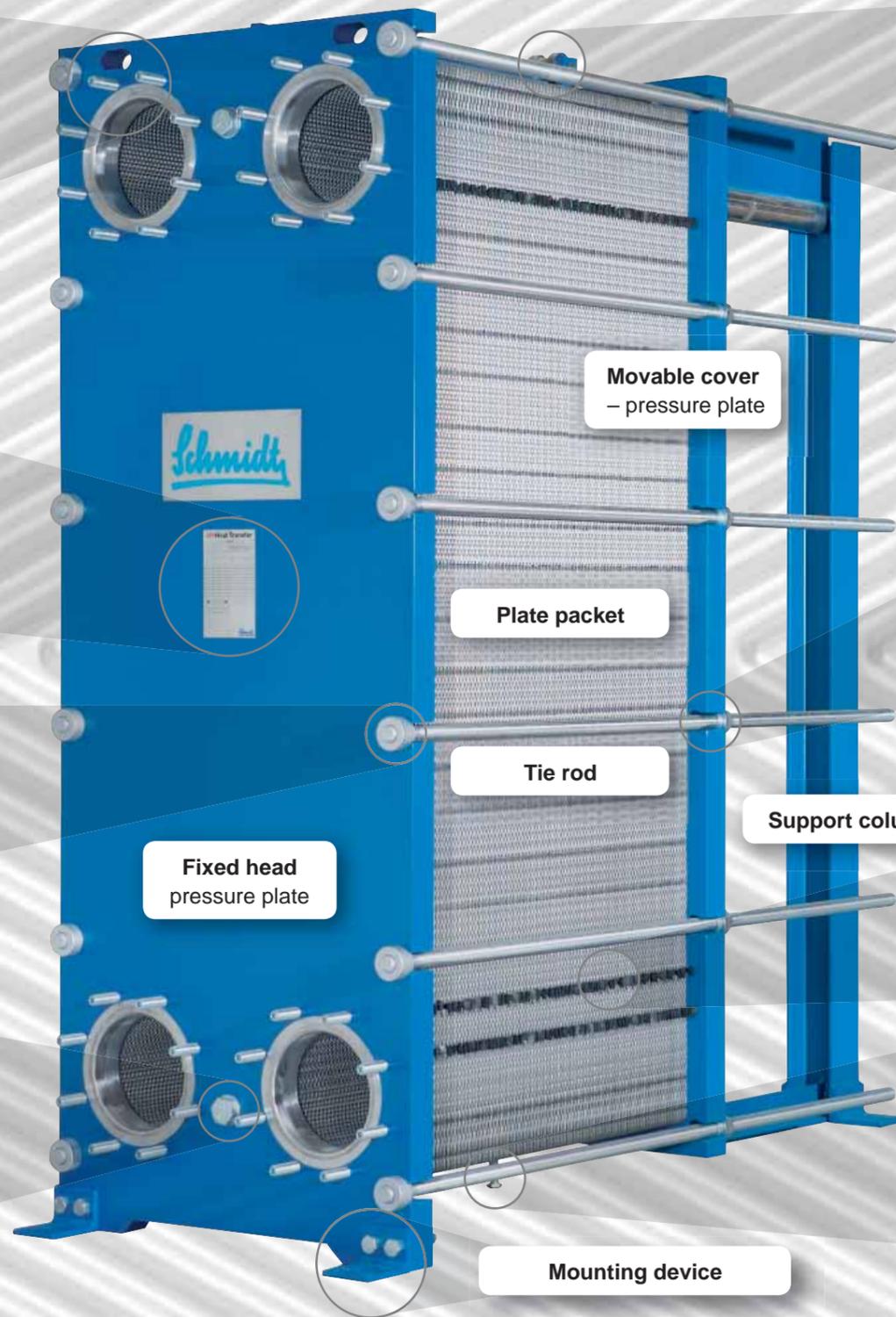
Removable carrying bar fixing

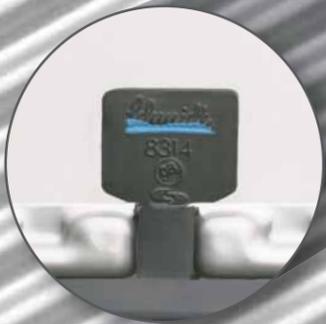
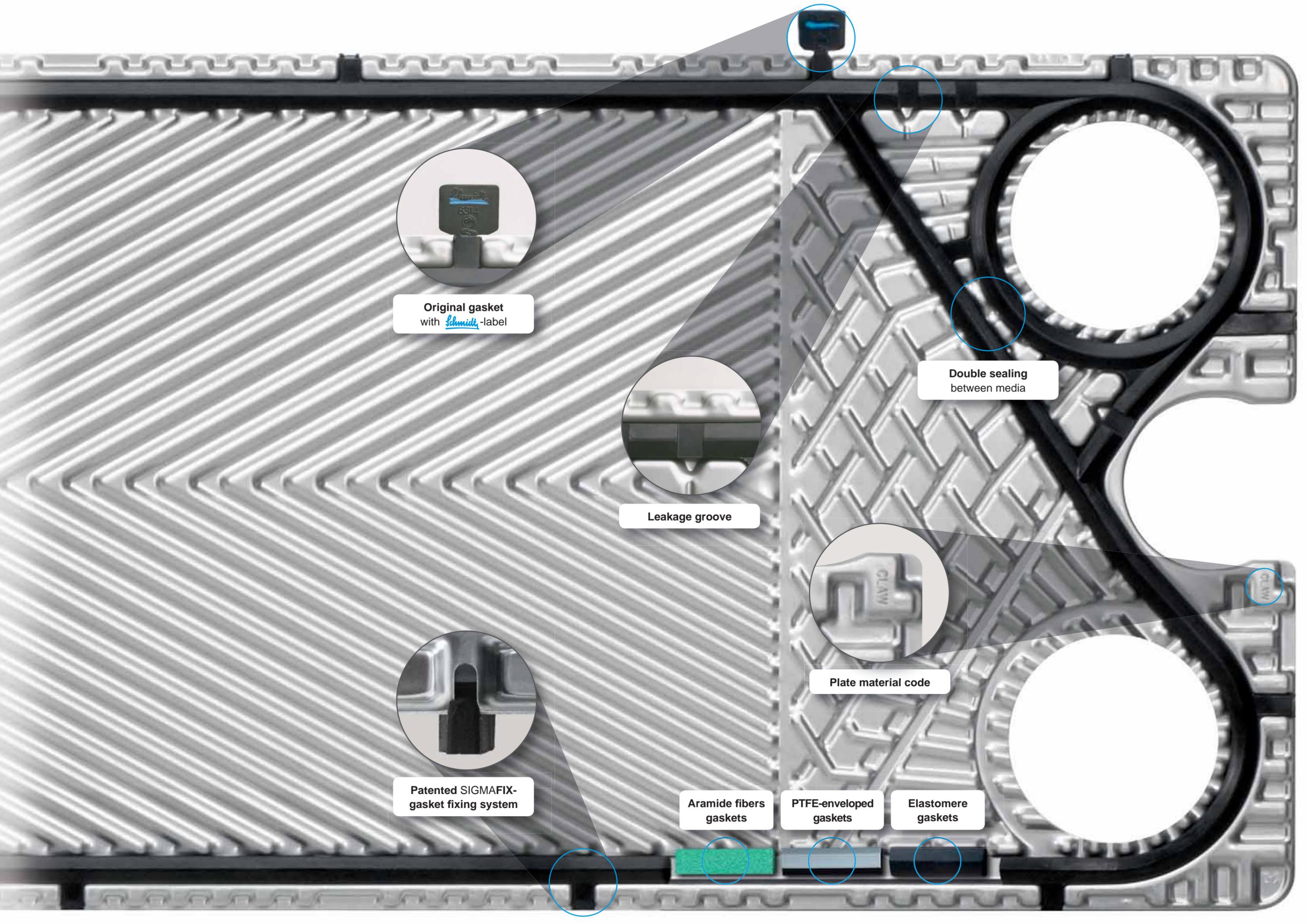


Carrying bar support leg increasing the stability at larger units

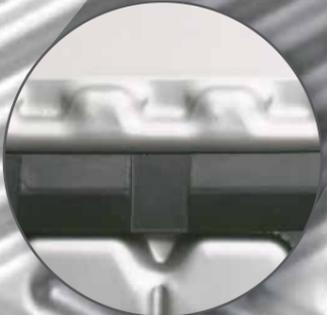


Mounting device





Original gasket with Schmidt-label



Leakage groove



Patented SIGMAFIX-gasket fixing system



Plate material code

Aramide fibers gaskets



PTFE-enveloped gaskets



Elastomere gaskets



Double sealing between media

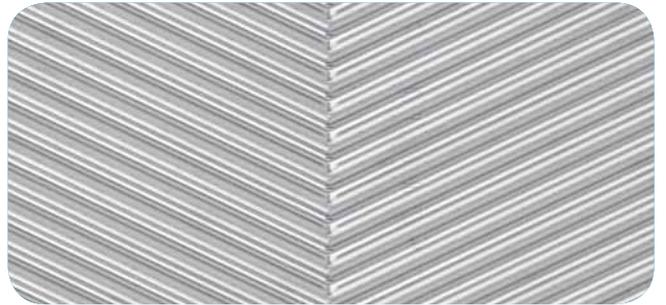


CLAW

Plate Corrugation Patterns

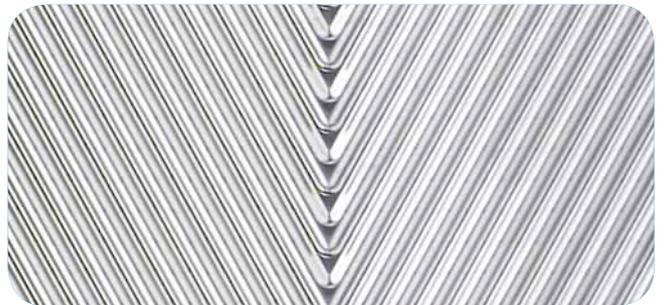
H-Corrugation

- Fish bone plate profile
- Highest heat transfer coefficients



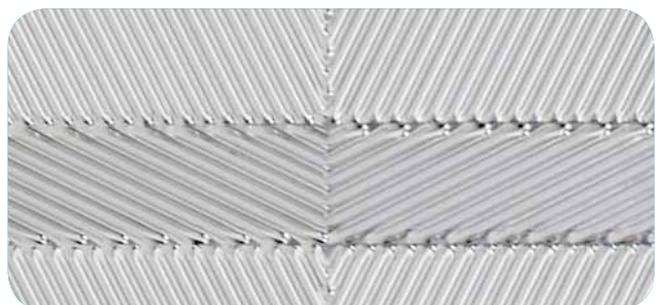
W-Corrugation

- Fish bone plate profile
- Minimized pressure loss at optimized heat transfer



Y-Corrugation

- Fish bone plate profile
- Patented plate corrugation patterns for increased heat transfer at lowest pressure loss



F-Corrugation

- Free flow plate profile with some stamped spacers



Close to our customers

The trustful collaboration with our partners and clients worldwide is our utmost concern.

API Schmidt-Bretten is the Plate Technology Center of API Heat Transfer. With a long tradition of working closely with our customers, we continue to expand our global presence with sales partners located on all major continents and production sites located in Germany, USA and China, as well as additional local assembly operations. This structure guarantees our short reaction times and allows us to come up with competent and quick solutions. In addition, our qualified engineers provide support to our customers directly at their sites.



Competence

For more than 130 years the name Schmidt-Bretten stands for outstanding expertise in the field of thermal process engineering. A reputation we will always be committed to upholding.

Our talented engineers and skilled partners all over the world permits our customers to benefit directly from our latest developments.

Our Research and Development Center at the Bretten site, the collaboration with universities and specialized technological institutes, as well as the cooperation with leading companies worldwide ensure our technological advantage as we work continuously to strengthen it. This is based on our extensive understanding of the processes employed by our more than 10,000 customers.

This in-depth expertise combined with our highly specialized software permits our application engineers to design and dimension our Schmidt SIGMA plate heat exchangers for all operating conditions.

Product

Schmidt SIGMA plate heat exchangers are used throughout the world for heat transfer of liquids and gases in many industrial sectors and application areas.

They are used as process chillers in chemical plants, water circulation coolers in power stations, lubricating oil coolers on ships, tempering devices in the clean room areas in the manufacturing of semiconductors, wort coolers in breweries or for soft drink pasteurization. Due to the wide range of plate and gasket types, the variety of materials and design implementations, as well as our specific know how, API Schmidt-Bretten offers individually tailored, highly efficient and cost-effective solutions for various processes.



Since the development and market-launch of the first plate heat exchanger in 1932, API Schmidt-Bretten has continuously expanded the Schmidt SIGMA heat exchanger product portfolio and fulfills the highest technological requirements. In order to satisfy the needs and requirements of our international customers the design and dimensioning of the plate heat exchangers follows all current regulations (e.g. PED, ASME).



More than 100,000 "Schmidt" branded SIGMA plate heat exchangers are used currently worldwide. They showcase the quality and versatility of the SIGMA product family.

Service

There is no room for compromise with respect to the safety of your operation, either in the process of manufacturing of our products, or in the availability and the quality of our spare parts. The use of original Schmidt spare parts guarantees the highest reliability and reduces production downtime. Our central warehouse at our Bretten site, as well as the stock at our partner's sites worldwide provides a wide assortment of spare parts which can be delivered to your site as quickly as is necessary. Our comprehensive documentation will ensure that any future delivery of spare parts will always be in line with our well-proven Schmidt quality.



We pay special attention to the needs of our customers also in our service program. Our engineers and service technicians at API Schmidt-Bretten will work together with you to create individually tailored service concepts which can be adjusted to accommodate your specific needs.

API Schmidt-Bretten – represented worldwide



Sec. VIII Div.1



Quality

API Schmidt-Bretten stands for superior and long-lasting quality of both our products and their operation. Thanks to the use of first-class raw materials, state-of-the-art manufacturing technology and a high-level of automation, our Schmidt SIGMA plate heat exchangers are in high demand worldwide.

The heat transfer plates, which are the core of the Schmidt SIGMA heat exchangers, are generally produced at our site in Bretten, Germany, to satisfy the worldwide demand. The high quality of our products and services is a result of the harmonious combination of the process-intrinsic quality assurance and our comprehensive quality management system. The result is an outstanding lifespan of our products; which means a clear-cut competitive advantage for our clients.

Schmidt SIGMA means Quality "MADE IN GERMANY"



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