



AN API HEAT TRANSFER COMPANY 

# SCHMIDT® SIGMAWIG ALL WELDED PLATE HEAT EXCHANGERS



## SIGMAWIG – opens up new fields of application

SIGMA plate heat exchangers are recognized world-wide for quality and reliability in thermal processes such as cooling, heating, pasteurising, evaporation and condensation. To meet the increasing requirements for plate heat exchangers in special applications, a new type of plate heat exchangers without gaskets called **SIGMAWIG** was developed particularly for:

- Chemical industry
- Pharmaceutical industry
- Industrial cooling
- Heat balancing systems

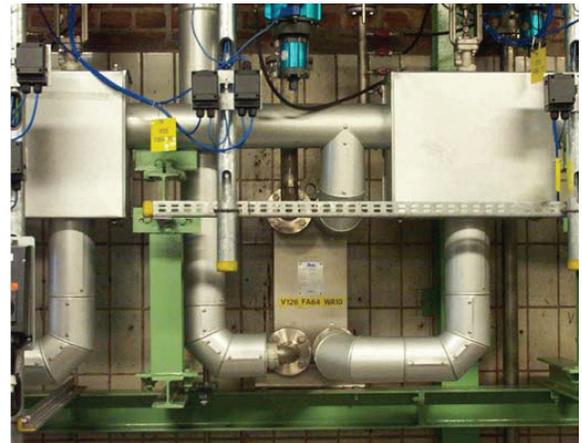
The **SIGMAWIG** construction makes it possible to noticeably extend the application of plate heat exchangers in respect of new media, temperatures and operating pressures. Especially media with aggressive or environmentally dangerous potential can be controlled with this new gasket-free plate heat exchanger design.

TIG welding seams without filler eliminate the risks of leakage and diffusion. That is why more and more **SIGMAWIG** are used, where operational dependability is indispensable:

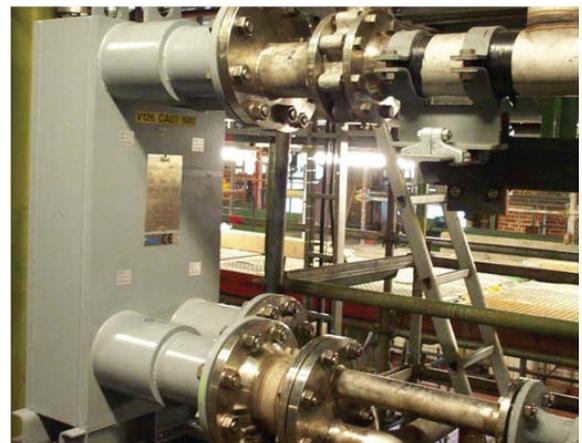
- Control of chemical reaction processes
- Temperature equalization of intermediate and final products
- Cooling, heating or condensation of solvents
- Cooling and heating of DEMI-water
- Heat recovery in chemical or refining processes
- Evaporation / condensation of refrigerants

**SIGMAWIG** in standard design can be applied for operating pressures of up to 25 bar and operating temperatures of up to 250 °C.

Special design for higher pressures and temperatures and in special alloys are available.



SIGMAWIG ST12 in a heating-cooling circuit for tempering of chemical reactor



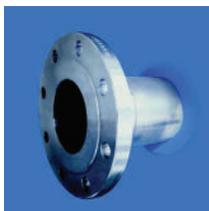
SIGMAWIG ST30 for steam condensation

## SIGMAWIG – one application out of a vast multitude



More than 10.000 SIGMAWIG prove under tough process conditions

## SIGMAWIG – main connection types



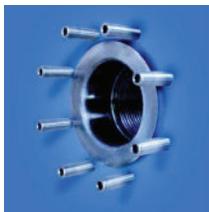
### **STANDARD FLANGED CONNECTION**

Availability of a variety of flanges—ranging from standards such as EN 1092 to ASME 16.5 as well as a number of other standards upon request.



### **FLANGED CONNECTION WITH INTERNAL EXPANSION JOINTS**

A construction for applications with frequent temperature changes that is proven in more than 1,000 installations.



### **STUDED PORT WITH O-RING SEALING BETWEEN PLATE PACK AND PRESSURE FRAME**

The advantages of this connection type are not only in its cost efficiency but also in the possibility to change or extend the plate pack on site. Especially where nonstandard plate materials are required, this construction offers an economical solution while allowing higher nozzle loads and higher temperature changes.

# SIGMAWIG – the optimal choice for critical process parameters

Advantages	By Competence
Weldings replace gaskets	Higher security level at critical process conditions
Temperatures $\geq 250\text{ }^{\circ}\text{C}$	e.g., Steam, thermal oil edible oil
Operating pressures $\geq 25\text{ bar}$	e.g., Condensation of refrigerants high pressure heating or low temperature networks
Compact design	Minimum space required, minimum installation, minimum piping
Efficient heat transfer	Homogeneous countercurrent flow
Small liquid content	Optimized control of process, higher level of security, when handling dangerous products
10,000 Times proven	Proven design, long-term experience in practice in a wide field of applications



SIGMAWIG ST40 tempering of chemical reactor / Bayer Chemicals, Leverkusen



SIGMAWIG ST12 tempering of chemical reactor thermo-oil / ethylenglycol



Compact reactor heating-cooling module

# SIGMAWIG – the all welded plate heat exchanger

## Technical details

SIGMAWIG all welded plate heat exchangers are similar to gasketed plate heat exchangers because of the number of corrugated plates and do not include gaskets. The plates are sealed hermetically by TIG welded seams. The loading capacity of these connection exceeds the strength of gaskets.

The fishbone geometry of the flow channels built by the plates effects high turbulences on the fluids, which result in optimum heat transfer. The countercurrent flow arrangement allows most efficient heat transfer.

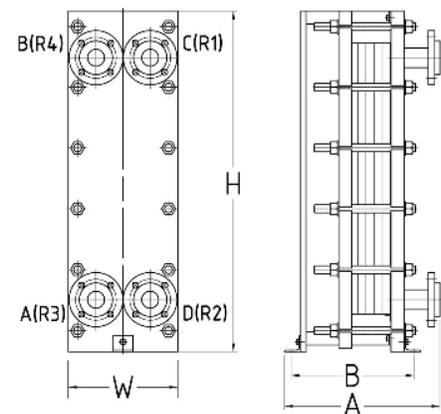
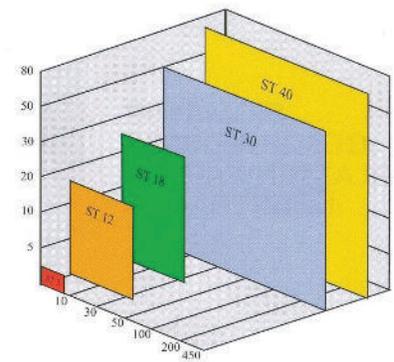
The welded plate pack is clamped into a pressure frame. Standard connections are flanges and threads.

For the standard product line, all parts in contact with the product are made of stainless steel and free of nonferrous metal.

Special alloys are possible, too.



Cross section of plate pack



Main dimensions SIGMAWIG

	Nozzle Size	Max.	Min. Operating Temperature *)	Min. Operating Temperature *)	Max. Flow Rate (Liquid)	Max. Exchange Surface	Max. Length A	Max. Length B	Width W	Height H
Units	[DN]	[bar]	[°C]	[°C]	[m³/h]	[m²]	[mm]	[mm]	[mm]	[mm]
<b>ST 3</b>	25	25	250	-120	8,5	2,7	600	325	108	303
<b>ST 12</b>	50	25	250	-120	35	16,5	686	576	335	790
<b>ST 18</b>	50	25	250	-120	35	25	686	576	335	1035
<b>ST 30</b>	100/150	25	250	-120	450	60	1385	935	550	1180
<b>ST 40</b>	100/150	25	250	-120	450	90	1385	935	550	1480

\*) variations on request



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)

### GERMANY

**API Schmidt-Bretten GmbH & Co. KG**  
Langenmorgen 4  
75015 Bretten  
Germany  
+49 7252 530

### USA

**API Heat Transfer Inc.**  
2777 Walden Avenue  
Buffalo, NY, 14225  
USA  
+1 716 684 6700

### CHINA

**API Heat Transfer Co., Ltd.**  
Meiheng Building  
369 Wuzhong Road  
Minhang District  
Shanghai 201 103  
+86 5426 2525

### GLOBAL HEADQUARTERS

2777 Walden Avenue | Buffalo, NY 14225 USA | +1.716.684.6700 | [sales@apiheattransfer.com](mailto:sales@apiheattransfer.com)

