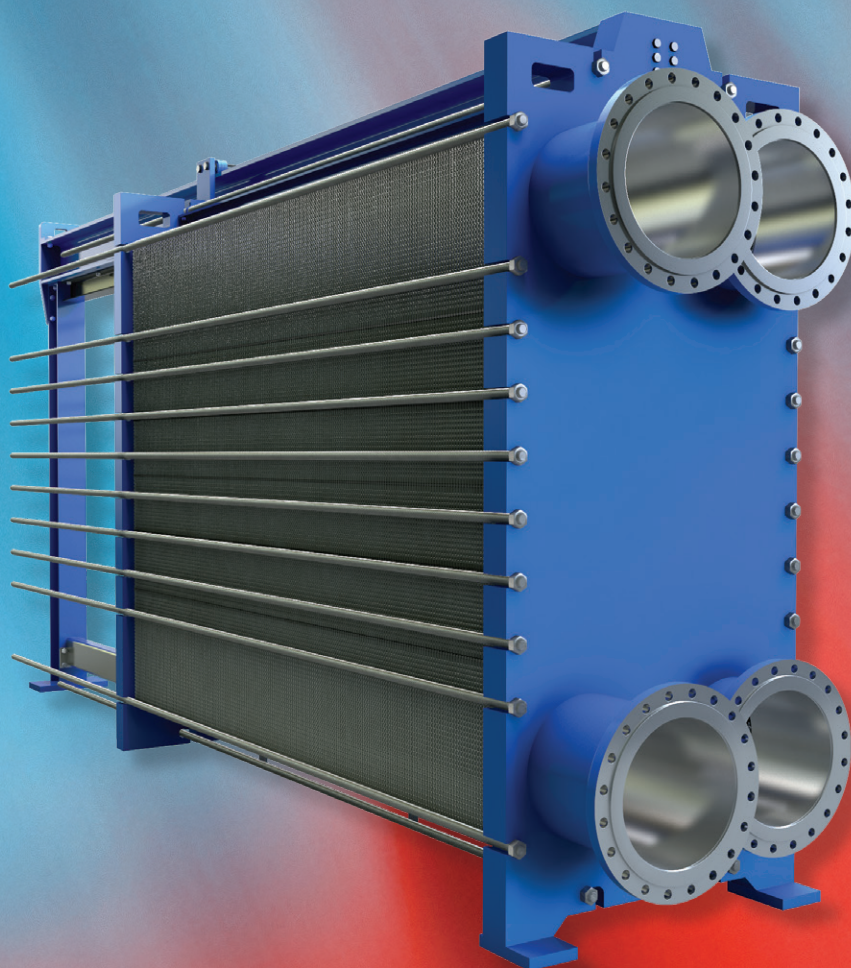


# SCHMIDT® SIGMA PLATE HEAT EXCHANGERS



## The highest degree of performance

With API Heat Transfer, you'll benefit from working with a global company with wide-ranging experience. We have manufacturing facilities in the United States, Germany, and China, plus sales and engineering support in more than 30 countries. This means we can meet virtually any codes or specifications your project may require.

What also sets us apart is our wide range of heat transfer solutions to meet the demands of the chemical, petrochemical, oil and gas, and energy markets. This includes our extensive selection of gasketed and fully welded plate heat exchangers as well as our full line of TEMA shell and tube heat exchangers. You'll work directly with our team of engineers to identify and overcome the unique challenges of your process

application. Then we'll size, design, and manufacture the optimum solution using industry-leading proprietary and HTRI thermal rating software, state-of-the-art mechanical software, and modern manufacturing processes — ensuring a final product that meets all the required specifications.

And when it comes to quality, API Heat Transfer is known the world over for delivering heat exchangers that are easy to maintain, offer exceptional lifecycles, and meet your performance requirements the first time, every time.





With more than 40 variants, the Schmidt® SIGMA plate heat exchanger has proven itself more than 100,000 times in practically all applications and under the harshest operating conditions—from vacuums to 25-bar operating pressure and temperatures from -30 °C to 250 °C.

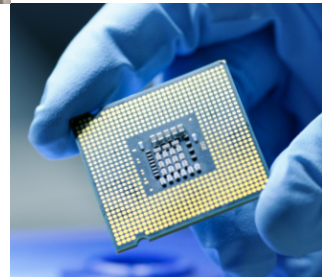
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## Markets and Applications

Our long-standing experience in sophisticated applications allows us to provide our clients with custom-tailored, cost-effective solutions. Our SIGMA plate heat exchangers offer industry leading solutions for a variety of thermal process applications in practically any market.

### Markets Served:

- Automotive Industry
- Beverage Industry
- Chemical and Petrochemical Industries
- Data Centers
- Food Industry
- HVAC
- Industrial
- Marine and Offshore
- Metal Processing
- Pharmacy and Life Science
- Power Generation
- Pulp & Paper Industry
- Refrigeration Technology
- Renewable Energies
- Steel Mills and Cooking Plants



# 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 |

| 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)<br>PTFE-enveloped elastomers (SIGMA <b>COAT</b> ), Aramid fibers, materials for industrial and foodstuff applications.                                                     |
| Fixing    | Gasketed plates:<br>- with mechanically fixed gaskets (SIGMA <b>FIX</b> )<br>- with glued gaskets<br>Semi-weldedmodules (SIGMA <b>DUAL</b> ):<br>- with mechanically fixed gaskets (SIGMA <b>FIX</b> )<br>- with glued gaskets |

| PRESSURE FRAMES |                                                                                                                                                      |
|-----------------|------------------------------------------------------------------------------------------------------------------------------------------------------|
| Materials       | Carbon steel, painted<br>Carbon steel, stainless steel-cladded<br>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<br>Flanges acc. to DIN, EN 1092-1, ANSI<br>Threaded connections<br>Aseptic and foodstuff connections |

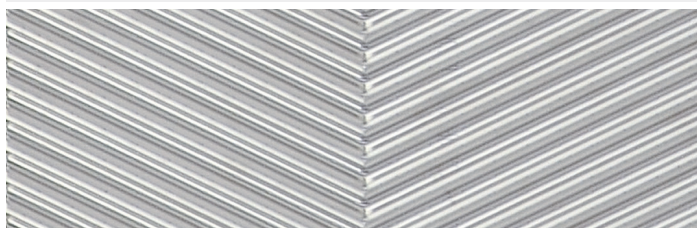
## OPTIONAL ACCESSORIES

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

## Plate Corrugation Patterns

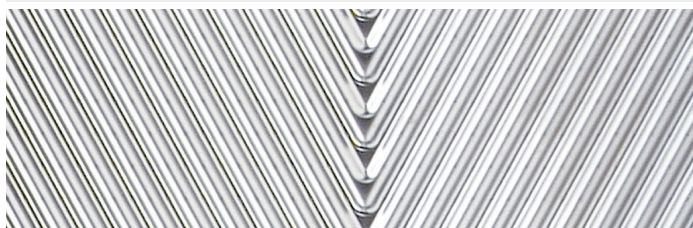
### H-CORRUGATION

- Fish bone plate profile



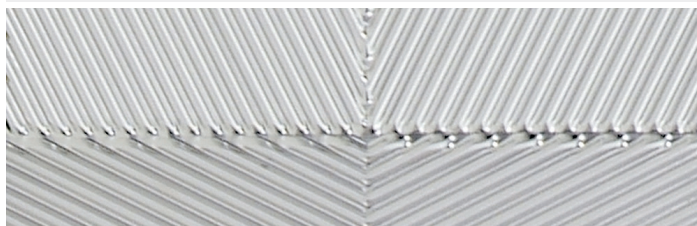
### W-CORRUGATION

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



### Y-CORRUGATION

- Patented fish bone corrugation pattern
- Increased heat transfer at lowest pressure loss



### F-CORRUGATION

- Free flow plate profile with some stamped spacers

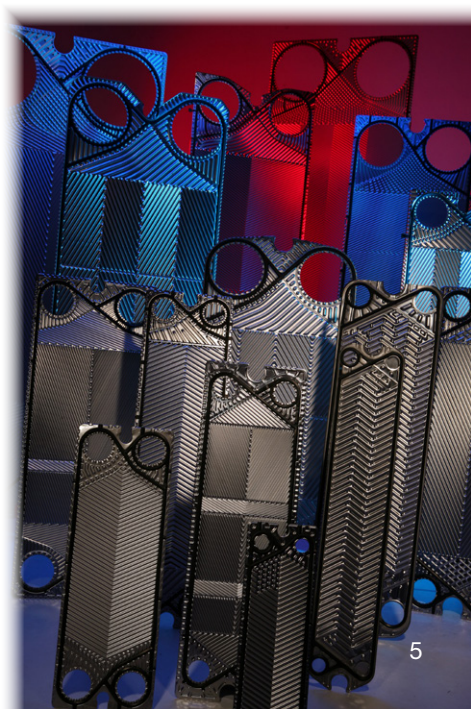


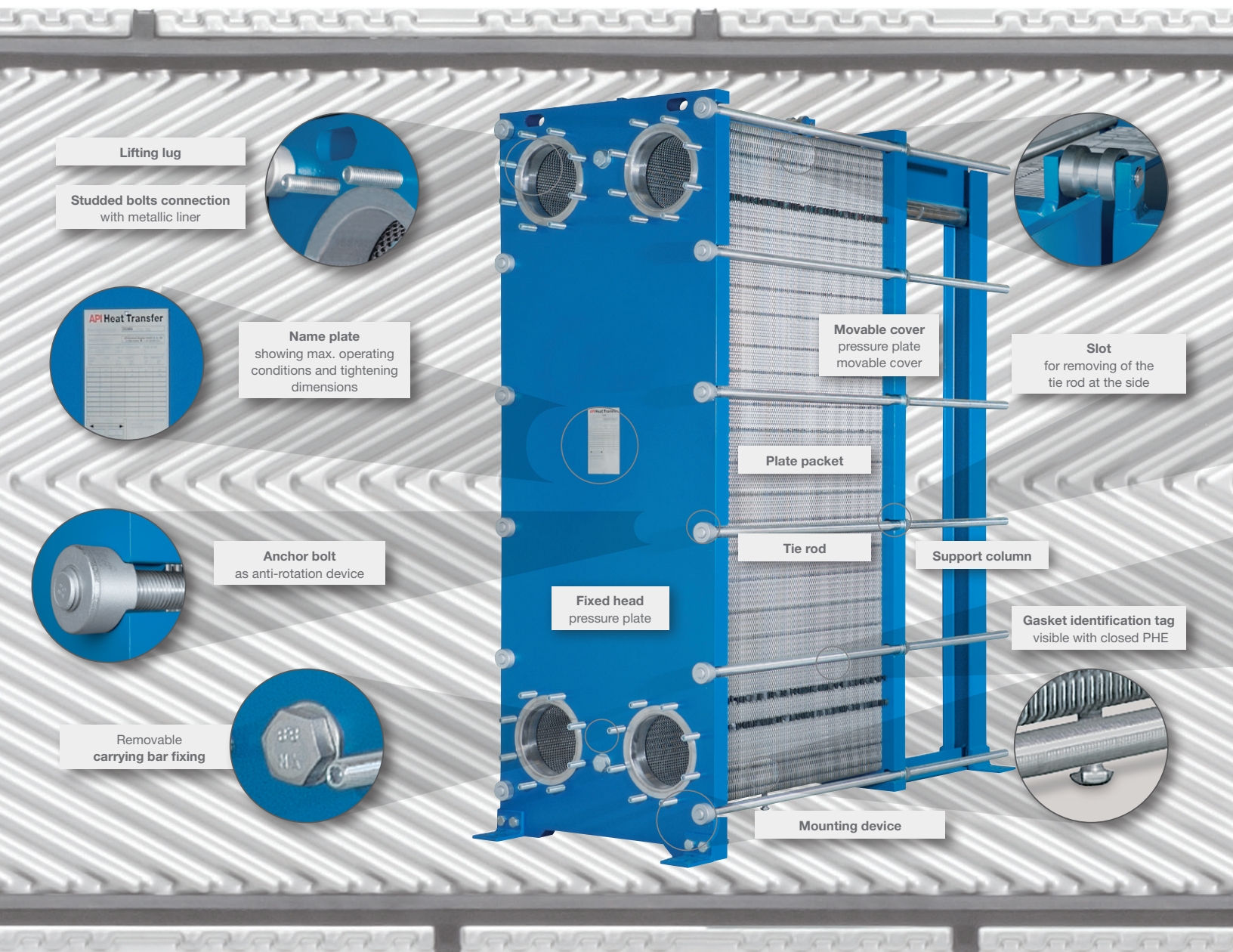
# Modular Components of SIGMA Plate Heat Exchangers

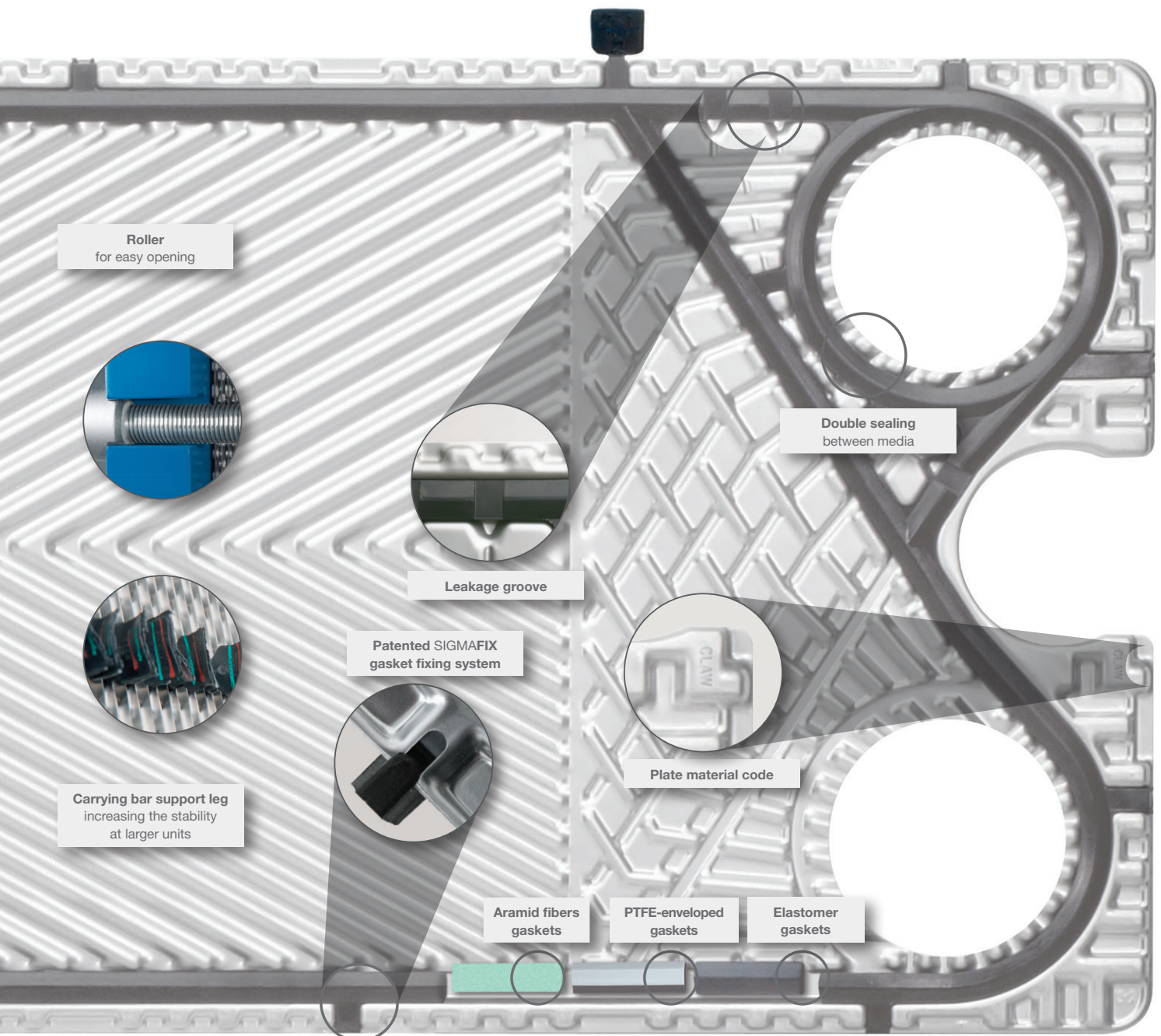
| PHE MODEL  | PLATE THICKNESS OFFERED | AVAILABLE PORT SIZES | PLATE TYPES | PLATE MATERIALS                                                                                                                                                                        |
|------------|-------------------------|----------------------|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Sigma M7   | .7mm                    | 1"                   | S           | 304/304L (No 304 for any .4mm plates)<br>316/316L<br>Hastelloy<br>SMO254<br>Titanium<br>Titanium-Pd<br>Incoloy 825<br>Inconel<br>Monel<br>Nickel<br>Tantalum<br>Others-consult factory |
| Sigma M9   | .7mm                    | 1"                   | S           |                                                                                                                                                                                        |
| Sigma X13  | .6mm                    | 2"                   | S           |                                                                                                                                                                                        |
| Sigma M18  | .5mm, .6mm, .7mm        | 2"                   | S, X        |                                                                                                                                                                                        |
| Sigma X18  | .4mm, .5mm, .6mm        | 2"                   | S, X        |                                                                                                                                                                                        |
| Sigma M25  | .5mm, .6mm, .7mm        | 4"                   | S, X        |                                                                                                                                                                                        |
| Sigma X25  | .4mm, .5mm, .6mm        | 4"                   | S, X        |                                                                                                                                                                                        |
| Sigma M26  | .5mm, .6mm, .7mm        | 2" & 2.5"            | S           |                                                                                                                                                                                        |
| Sigma M35  | .5mm, .6mm, .7mm        | 4"                   | S, X        |                                                                                                                                                                                        |
| Sigma X35  | .4mm, .5mm, .6mm        | 4"                   | S, X        |                                                                                                                                                                                        |
| Sigma 36   | .5mm, .6mm, .7mm        | 3"                   | S           |                                                                                                                                                                                        |
| Sigma M55  | .5mm, .6mm, .7mm        | 4"                   | S, X        |                                                                                                                                                                                        |
| Sigma X55  | .4mm, .5mm, .6mm        | 4"                   | S, X        |                                                                                                                                                                                        |
| Sigma M56  | .5mm, .6mm, .7mm        | 6" & 8"              | S           |                                                                                                                                                                                        |
| Sigma X56  | .4mm, .5mm, .6mm        | 6" & 8"              | S           |                                                                                                                                                                                        |
| Sigma M66  | .5mm, .6mm, .7mm        | 4" & 6"              | S           |                                                                                                                                                                                        |
| Sigma M76  | .5mm, .6mm, .7mm        | 6" & 8"              | S           |                                                                                                                                                                                        |
| Sigma X76  | .5mm, .6mm              | 6" & 8"              | S, X        |                                                                                                                                                                                        |
| Sigma 96   | .5mm, .6mm, .7mm        | 6" & 8"              | S, X        |                                                                                                                                                                                        |
| Sigma X96  | .5mm, .6mm              | 6" & 8"              | S, X        |                                                                                                                                                                                        |
| Sigma 106  | .5mm, .6mm, .7mm        | 8" & 10"             | S, X        |                                                                                                                                                                                        |
| Sigma X106 | .5mm, .6mm              | 8" & 10"             | S, X        |                                                                                                                                                                                        |
| Sigma M136 | .5mm, .6mm, .7mm        | 8" & 10"             | S, X        |                                                                                                                                                                                        |
| Sigma M156 | .5mm, .6mm, .7mm        | 12" & 14"            | S           |                                                                                                                                                                                        |
| Sigma M206 | .5mm, .6mm, .7mm        | 12" & 14"            | S           |                                                                                                                                                                                        |
| Sigma M229 | .5mm, .6mm, .7mm        | 12" & 14"            | S           |                                                                                                                                                                                        |

## PLATE TYPES:

| S | UNIVERSAL PLATE:                                                      |
|---|-----------------------------------------------------------------------|
| 1 | Suitable for all liquids                                              |
| 2 | Hard and soft plate corrugation patterns in herringbone design        |
| 3 | Corrugation depth 2.5 to 4mm                                          |
| 4 | Available with SIGMAFIX adhesive-free gasket systems or glued         |
| 5 | Wide range of choices in plates and gasket materials                  |
| 6 | Available with PTFE coated SIGMAFIX elastomer gasket and SIGMACOAT    |
| X | HIGH PERFORMANCE PLATE:                                               |
| 1 | Suitable for clean, homogeneous, solid-free liquids                   |
| 2 | Hard and soft plate corrugation patterns in the herringbone design    |
| 3 | Corrugation depth at/less than 2.5mm                                  |
| 4 | Available with SIGMAFIX adhesive-free gasket systems or glued gaskets |
| 5 | Wide range of choices in plates and gasket materials                  |
| 6 | Thin film plates with high thermal performance                        |









**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.

## See how our performance can improve yours.

Contact your API Heat Transfer sales rep or visit [apiheattransfer.com](http://apiheattransfer.com) today.

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