

Dimensions

| frame/ pressure rating | max. number of plates | surface/ plate m ² | A mm | B mm | C mm | D mm | E mm | L2 mm | PP mm | connec- tions | max. surface m ² |
|---------------------------|-----------------------------|-------------------------------------|---------|---------|---------|---------|---------|-----------|-----------|------------------|-----------------------------------|
| FP 04-16 | 125 | 0.04 | 460 | 160 | 336 | 65 | 85 | 150-600 | pcs.x 2.4 | 1" | 5 |
| FP 08-16 | 150 | 0.08 | 799 | 160 | 675 | 65 | 85 | 150-600 | pcs.x 2.4 | 1" | 12 |
| FP 14-10/16 | 200 | 0.14 | 837 | 310 | 590 | 135 | 132 | 250-1000 | pcs.x 2.4 | 2" | 28 |
| FP 20-10/16 | 200 | 0.20 | 1066 | 310 | 819 | 135 | 132 | 250-1000 | pcs.x 2.4 | 2" | 40 |
| FP 10-10/16 | 200 | 0.10 | 735 | 310 | 494 | 126 | 131 | 250-1000 | pcs.x 2.9 | DN 50 | 20 |
| FP 16-10/16 | 200 | 0.15 | 940 | 310 | 694 | 126 | 131 | 250-1000 | pcs.x 2.9 | DN 50 | 30 |
| FP 22-10/16 | 200 | 0.22 | 1135 | 310 | 894 | 126 | 131 | 250-1000 | pcs.x 2.9 | DN 50 | 45 |
| FP 19-6/10/16/25 | 500 | 0.20 | 1080 | 440 | 650 | 202 | 200 | 500-3000 | pcs.x 3.1 | DN 80 | 100 |
| FP 205-10/16/25 | 500 | 0.21 | 1160 | 480 | 719 | 225 | 204 | 500-2500 | pcs.x 3.1 | DN 100 | 105 |
| FP 31-6/10/16/25 | 500 | 0.30 | 1332 | 480 | 894 | 225 | 204 | 500-3000 | pcs.x 3.1 | DN 100 | 150 |
| FP 40-6/10/16/25 | 500 | 0.40 | 1579 | 480 | 1141 | 225 | 204 | 500-3000 | pcs.x 3.1 | DN 100 | 200 |
| FP 50-6/10/16/25 | 500 | 0.50 | 1826 | 480 | 1388 | 225 | 204 | 500-3000 | pcs.x 3.1 | DN 100 | 250 |
| FP 41-6/10/16/25 | 700 | 0.40 | 1470 | 610 | 941,4 | 290 | 225 | 500-4000 | pcs.x 3.5 | DN 150 | 280 |
| FP 60-6/10/16/25 | 700 | 0.60 | 1835 | 610 | 1306,2 | 290 | 225 | 500-4000 | pcs.x 3.5 | DN 150 | 420 |
| FP 80-6/10/16/25 | 700 | 0.80 | 2200 | 610 | 1671 | 290 | 225 | 500-4000 | pcs.x 3.5 | DN 150 | 560 |
| FP 405-6/10/16/25 | 700 | 0.41 | 1380 | 760 | 770 | 395 | 285 | 500-4000 | pcs.x 3.1 | DN 200 | 300 |
| FP 70-6/10/16/25 | 700 | 0.68 | 1740 | 760 | 1130 | 395 | 285 | 500-4000 | pcs.x 3.1 | DN 200 | 455 |
| FP 100-6/10/16/25 | 700 | 1.00 | 2100 | 760 | 1490 | 395 | 285 | 500-4000 | pcs.x 3.1 | DN 200 | 700 |
| FP 130-6/10/16/25 | 700 | 1.30 | 2460 | 760 | 1850 | 395 | 285 | 500-4000 | pcs.x 3.1 | DN 200 | 910 |
| FP 81-6/10/16/25 | 700 | 0.80 | 1930 | 980 | 1100 | 480 | 365 | 1280-3780 | pcs.x 3.8 | DN 300 | 585 |
| FP 120-6/10/16/25 | 700 | 1.20 | 2320 | 980 | 1490 | 480 | 365 | 1280-3780 | pcs.x 3.8 | DN 300 | 875 |
| FP 160-6/10/16/25 | 700 | 1.60 | 2710 | 980 | 1879 | 480 | 365 | 1280-3780 | pcs.x 3.8 | DN 300 | 1120 |
| FP 190-6/10/16/25 | 700 | 1.90 | 3100 | 980 | 2267 | 480 | 365 | 1280-3780 | pcs.x 3.8 | DN 300 | 1330 |
| FP 200-6/10/16 | 700 | 2.00 | 2855 | 1370 | 1822 | 672 | 480 | 1280-3780 | pcs.x 4.1 | DN 500 | 1400 |
| FP 250-6/10/16 | 700 | 2.50 | 3211 | 1370 | 2178 | 672 | 480 | 1280-3780 | pcs.x 4.1 | DN 500 | 1750 |
| FP 300-6/10/16 | 700 | 3.00 | 3567 | 1370 | 2534 | 672 | 480 | 1280-3780 | pcs.x 4.1 | DN 500 | 2100 |

more types and sizes on request

Subject to change without notice

Anz = number of plates

Wherever you are - we understand ... *Quality Heat Exchangers*



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Plate Heat Exchangers

Funke Heat Exchanger Ltd.

Have your plate heat exchangers made by specialists ...

For three decades, FUNKE has been specialising in the field of development and manufacture of plate heat exchangers with an exchange surface of up to 2000 m² for all standard industrial applications as well as for use in the field of heating, air-conditioning and ventilation.

FUNKE supplies from one source:

- plate heat exchangers (brazed and bolted)
- shell and tube heat exchangers
- oil/air coolers
- electrical oil preheaters

In the field of plate heat exchangers FUNKE offers a sophisticated range of products able to meet almost any requirement in machine and plant engineering. FUNKE's special "off-set" system with asymmetrical flow gaps creates highly efficient and cost-effective apparatuses whose performance (depending on design) is up to 17 percent higher compared with conventional plate heat exchangers. Furthermore, the "FUNKE" brand stands for highest quality standards and customer-oriented solutions. The high level of customer retention confirms that this product line is in high demand. More than 60 percent of all plate heat exchangers are supplied to regular customers, more than half of which have been using our products for ten years or more!

Plate Material

FUNKE heat transfer plates are always produced in 1.4401/AISI 316 as this material is generally more corrosion-resistant and more resistant to chloride damage than 1.4301/AISI 304. Depending on the design, titanium is also available in serial production.

As an option, the following additional materials may be used:

- 1.4301/AISI 304 (cost-effective in the case of uncritical media)
- 1.4539/AISI 904L (with high nickel content against stress corrosion cracking, good price/performance ratio in the case of media with a low acid and chloride content)
- 1.4529/254 SMO (more chloride and acid-resistant than 1.4401/AISI 316)
- Hastelloy (highly resistant against acids and chlorides, e.g. for concentrated sulphuric acid)
- Titanium-palladium (highest quality material, suitable e.g. for chlorides at higher temperatures)

Advantages of FUNKE plate heat exchangers (PHE):

- low investment, operation and maintenance costs
- highly efficient heat transfer (K-values on average 3-5 times higher than in the case of bare-tube heat exchangers)
- asymmetrical flow gap available for the most cost-effective solutions
- use of smallest temperature differences ≤ 1 K
- up to 75% less space required
- self-cleaning effect due to highly turbulent flow behaviour
- subsequent capacity adjustment
- high safety with regard to media mixing
- easy to open/clean
- low operating weight/ low liquid content



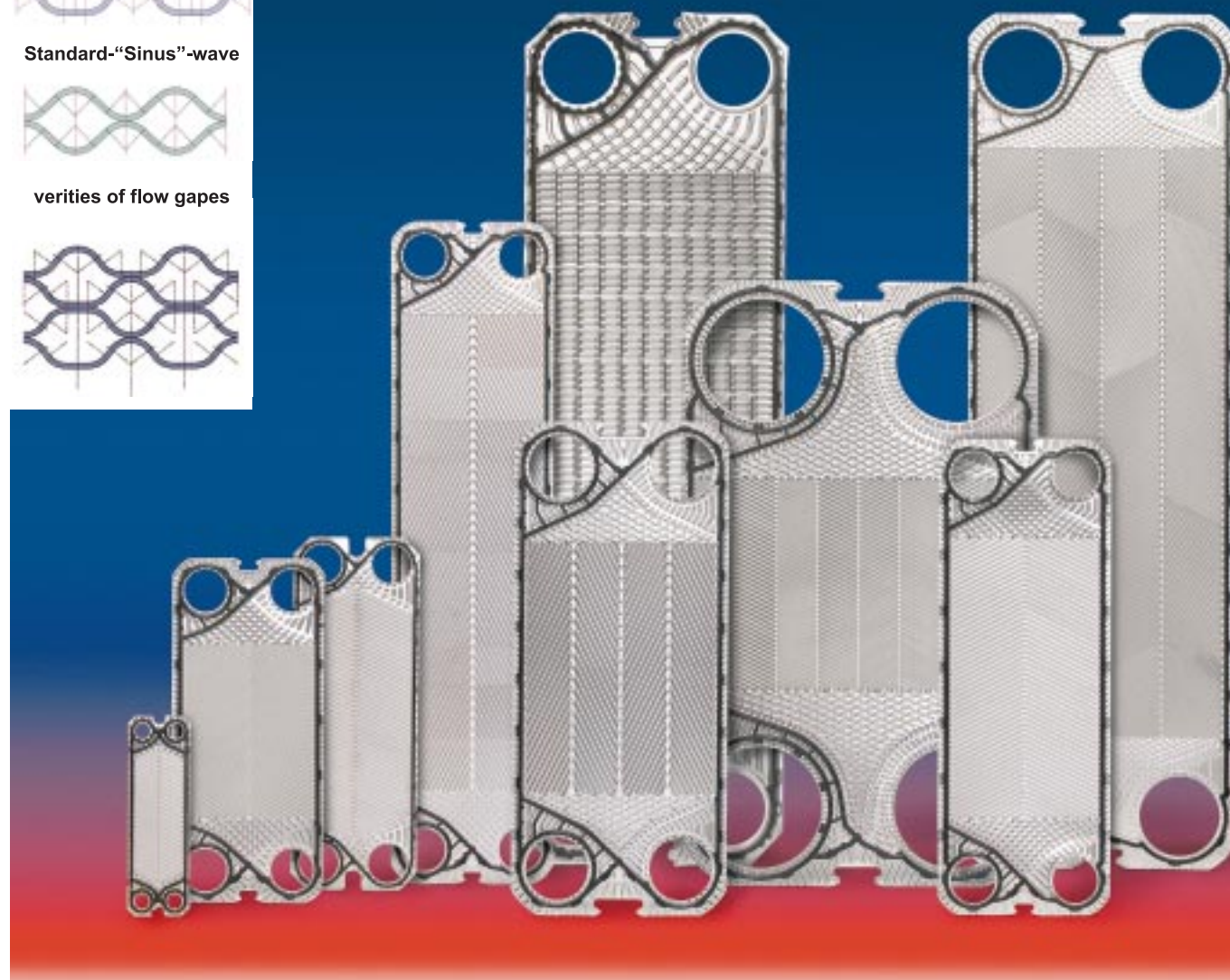
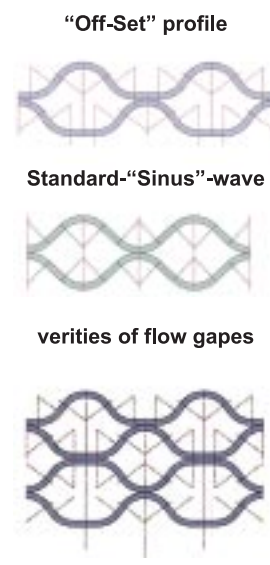
In the final assembly area for small and medium-sized PHE units



PHE cooler in high-pressure plants e.g. for oil field detection

Gaskets

- NBR (nitrile-butadiene rubber): Universal use for aqueous and unctuous media e. g. water/oil applications
- EPDM (ethylene-propylene rubber): Wide range of applications for many chemical compounds which do not contain mineral oil and grease, and for water- and steam application
- Fluororubber (Viton): Extremely resistant to chemicals and organic solvents as well as sulphuric acid and vegetable oils at high temperatures.



Finding the right plate to fit your needs

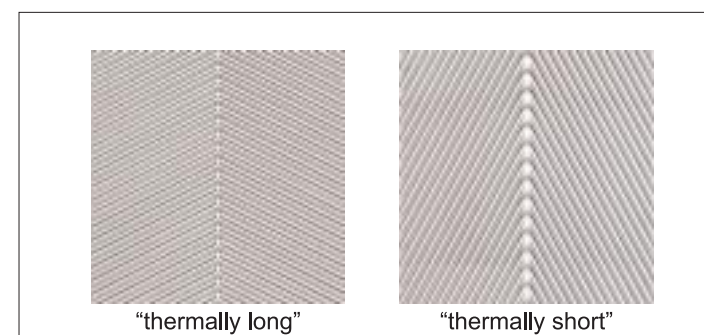
"Off-Set" - embossing allows for asymmetrical flow gaps

At first glance, the plate heat exchangers of the different providers seem to be very similar. However, the secret of an efficient heat transfer lies inside the plate pack whose performance depends on a whole range of factors apart from plate size and number. Ultimately, these factors determine the size of the device and the costs for the operator.

For example, plates with different plate corrugation angles (to the flow direction) can be used.

Obtuse corrugation angles result in longer thermal paths and higher heat transfer rates which in turn lead to a high pressure drop.

Acute corrugation angles are chosen if the required pressure drop is lower.



Not only do FUNKE plate heat exchangers make it possible to combine different plate corrugations. The "off-set" profile also allows for the formation of asymmetrical flow gaps.

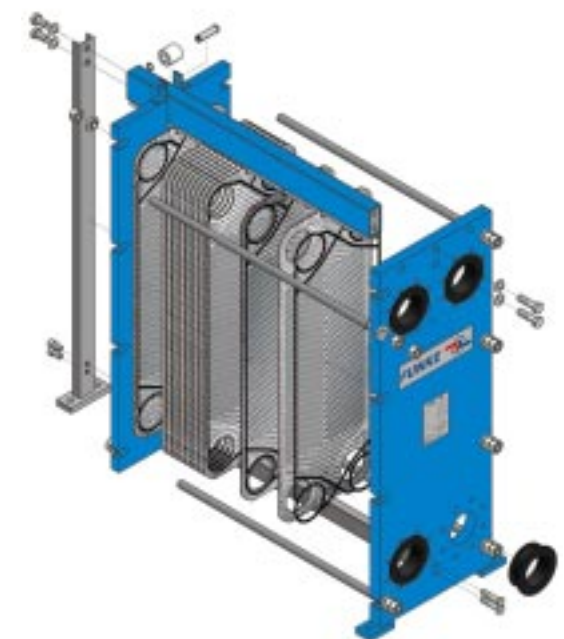
For Funke, the "off-set" profile represents an additional control element for cost effective PHE solutions.

An oil cooler, for example, is significantly smaller and cheaper if the volume flow on the cooling water side can be increased. Compared to symmetrical plates, up to approx. 17 percent less exchange surface is required.

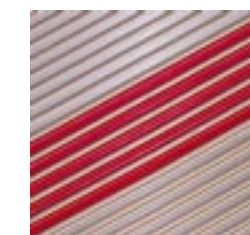
The advantage is that the cross-sectional areas of the "warm" and the "cold" side of the PHE may be approximately one third larger or smaller (see figure below and adjacent graphics).

Whether symmetrical or asymmetrical, the configuration of the plate pack is always calculated by state-of-the-art design software. The first priority is always to find the most cost-effective solution for the customer.

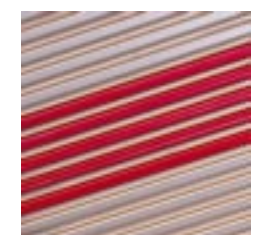
Design of a Plate Heat Exchanger



1. Fixed plate
2. Pressure plate
3. Support
4. Carrying beam
5. Lower plate guide
6. Carrier roller
7. Tightening bolt
8. Fixing screws
9. Rubber liner
10. Gaskets
11. Heat exchanger plates



"Sinus" profile



"Off-Set" profile