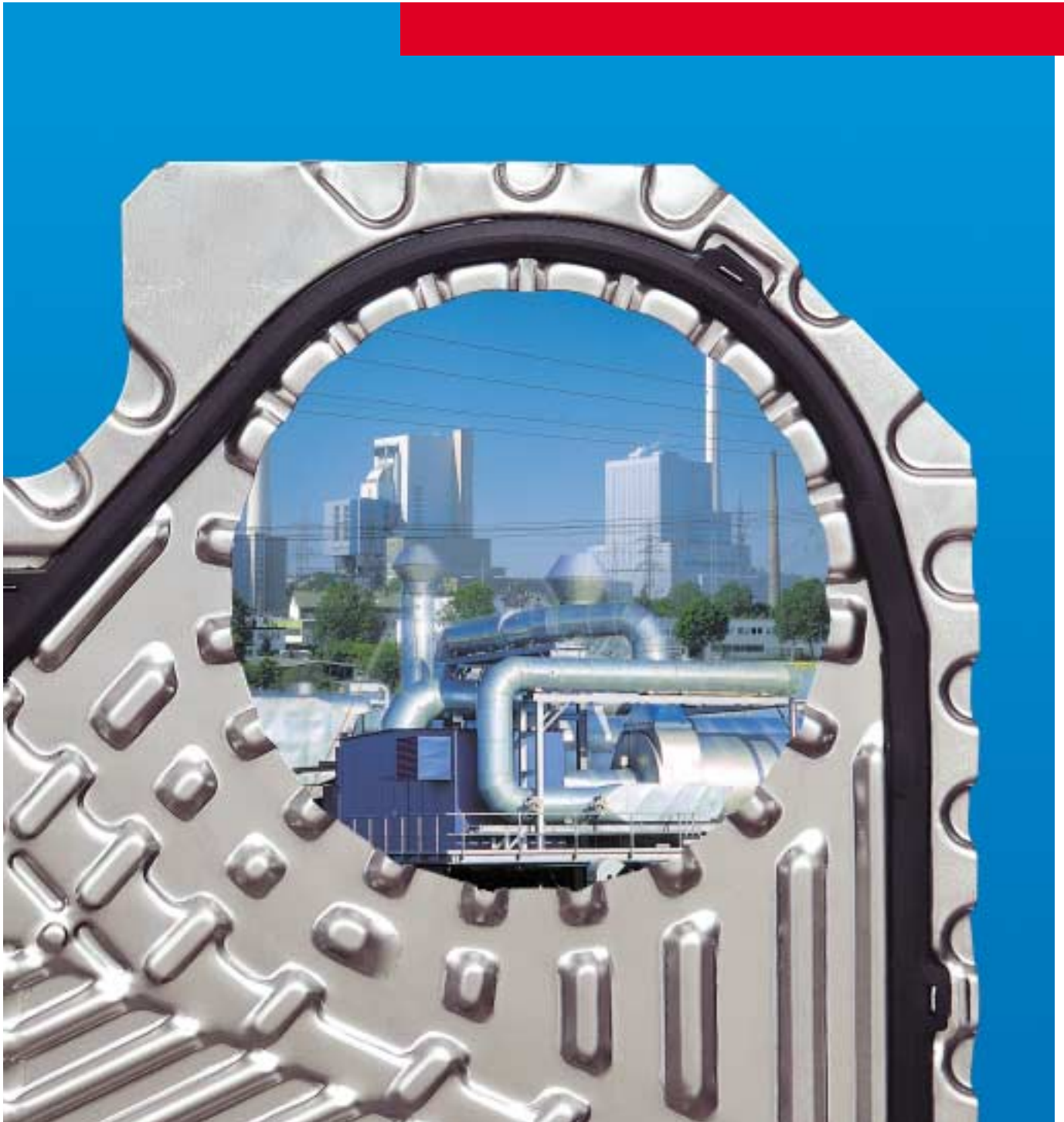


Plate Heat Exchanger FP/FPS



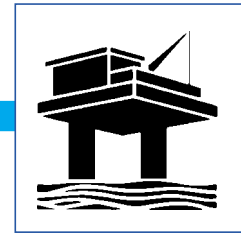
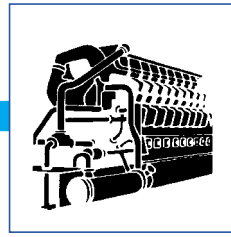
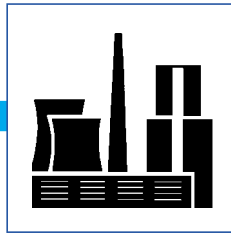


Plate Heat Exchanger FP/FPS

FUNKE can look back on many years of broad experience in the field of heat transfer and possess special competence in all aspects concerned with the design and calculation of different types of equipment. Consistent development in the field of sealed plate heat exchangers has resulted in a wide variety of plate versions with respect to surface structure, materials and gaskets. The high-performance plates from FUNKE provide the optimum heat exchanger for every thermal problem.

High heat transfer coefficients and thus best possible utilisation of the surface guarantee a compact, low-price solution to the problem. Plate heat exchangers offer

additional flexibility. By changing the number of plates, the heat exchanger can also be adapted to other thermal operating conditions.

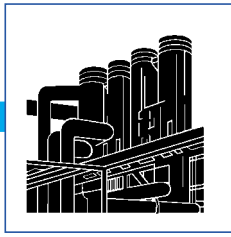
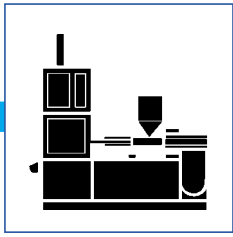
Computer programs determine the optimum heat exchanger for your operating conditions based on latest technology.

Our heat exchanger experts will answer any questions you may have.



*Machine oil cooler for
a rolling mill plant*



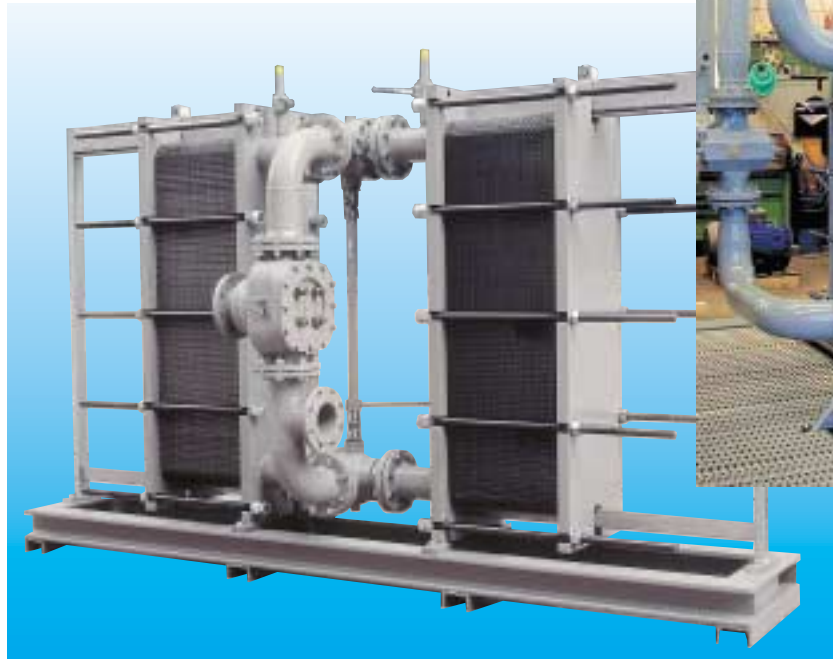


Applications range from heating and cooling of liquids to gas cooling and condensation. Heat recovery is currently another important economic factor which is becoming increasingly significant. The special advantages of the new FP/FPS heat exchangers can be fully utilised here and lead to exceptionally good results.

All designs have preliminary approval from TÜV (Germany Technical Inspectorate) and comply with the appropriate inspection and acceptance regulations such as LRS, DNV, BV, GL, Stoomwezen, ASME etc.

The company of FUNKE Heat Exchangers is certified in accordance with ISO 9001.

Double oil cooler in a power plant



FPS Plate Heat Exchanger as double oil cooler with transflow valves and temperature control.

The high-performance, bolted version



FUNKE plate heat exchangers consist of a package of embossed heat transfer plates. The plates are provided with gaskets which seal the various flow gaps from the outside and separate the media from one another.

FP plate heat exchanger used in a heating system

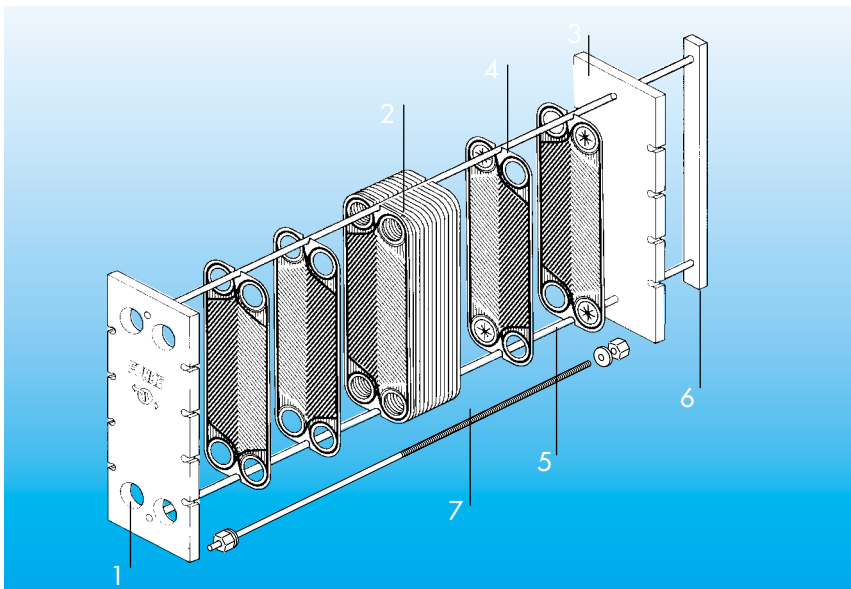
The plate package is mounted in a rack consisting of a fixed plate, a loose pressure plate, a number of clamping bolts and supports.



Process water heating in the food industry



Standard design with rubber lines and welding-neck flange



Design of a Plate Heat Exchanger

- 1 Fixed plate
- 2 Plate package
- 3 Pressure plate
- 4 Upper plate guide
- 5 Lower plate guide
- 6 Support
- 7 Clamping bolts and nuts

The Heat Transfer Plate

The FUNKE heat transfer plates are characterised by optimum embossing, resulting in high heat transfer coefficients. Variable flow gaps can be generated as a result of the different types and angles of embossing. This permits optimum adaptation to the respective application conditions.

FUNKE heat transfer plates are supplied as standard in material grade DIN 1.4301/AISI 304, 1.4401/AISI 316 respectively, due to its corrosion-resistance, long service life, high pressure resistance and easy cleaning. All plates are provided with a double gasket at the inlet and outlet

which prevents mixing of the two media. For safety reasons, the gasket is provided with an outer leakage groove at this point. If one of the two gaskets starts to leak, the medium passes to atmosphere.

Well-known and proven gasket materials such as

- * NBR
- * EPDM
- * VITON

are available.

Other gasket materials can be provided for special applications. The plate and gasket construction

has been designed such that both adhered and adhesive free gasket versions are possible on request.

Dependent on the operating conditions more high-grade materials may be offered (1.4539, 254 SMO and titanium)

Ranges of application of the bolted plate heat exchangers are:

max. design pressure 25 bar
max. design temperature 200°C



Embossing of quality plates with 6000 tons clamping force

Automatically manufacturing line for plates up to 0,3m²



Technical Data

Connections

FUNKE plate heat exchangers can be supplied with all of the usual connections for all fields of application (Industry, building services, chemicals, food). Alternative materials and welded designs are also available, subject to approval/feasibility.

					
FP 04/08	•	—	—	•	•
FP 14/20	•	—	—	•	•
FP 31/40/50	—	•	•	•	•
FP 41/60/80	—	•	•	•	•
FP 45-130	—	•	•	—	—
FPS 80-250	—	•	•	—	—
FPS 200	—	—	•	—	—

• = available, — = not available
 Other connections or bolts on request

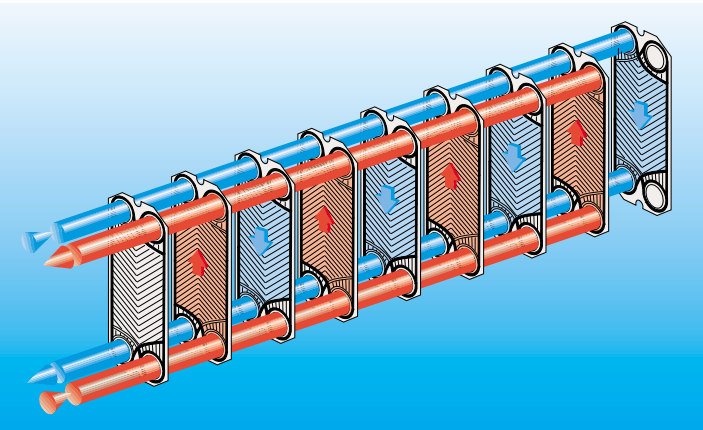


Plate heat exchanger - single-pass design

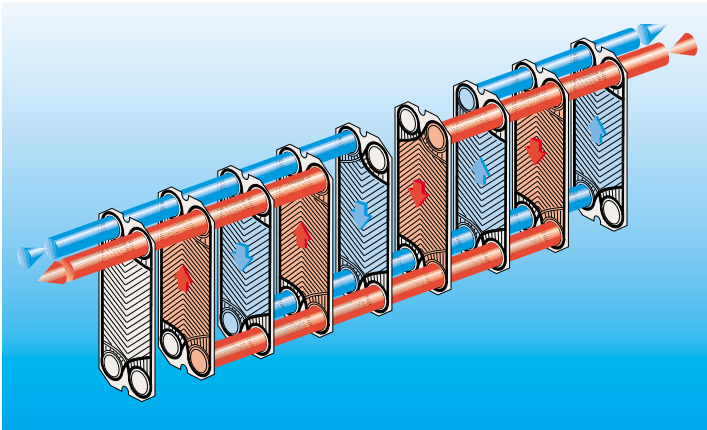
This design is used with both media in pure counter flow. All connections are on the fixed plate. The heat exchanger can be readily

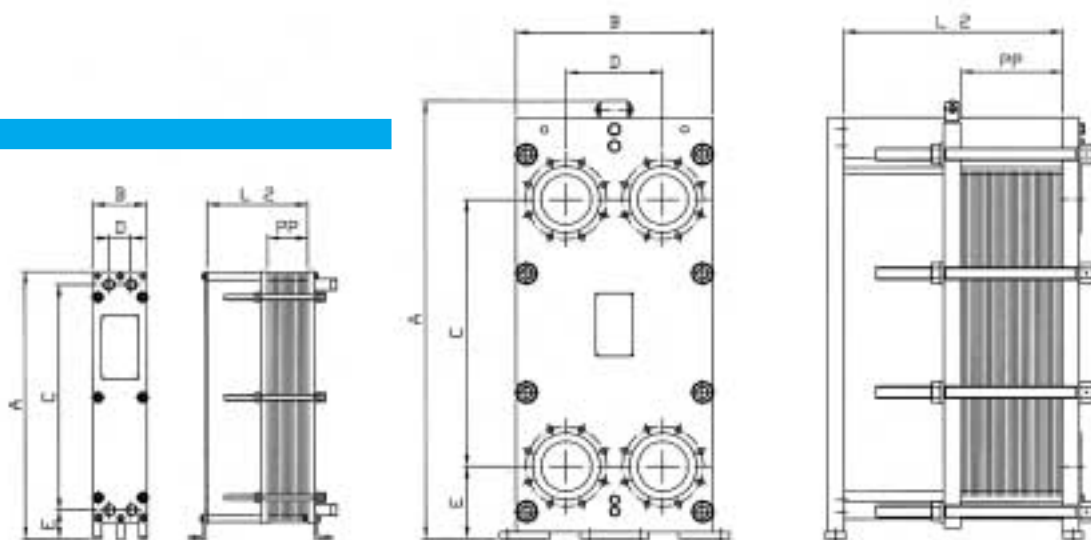
dismantled for ease of cleaning and maintenance without disturbing the interconnecting pipework.

Plate heat exchanger - multi-pass design

Multi-passes for better thermal efficiency, i.e. higher allow. temperature crossing.

100 % counterflow in case of equal numbers of passes. Connections are on fixed plate as well as on pressure plate.





Dimensions

frame/ pressure rating	max. number of plates	surface/plate m ²	A mm	B mm	C mm	D mm	E mm	L 2 mm	PP mm	connections	max. surface m ²
FP 04-10/16	125	0,04	460	160	336	65	85	150-600	Anz.x 2,4	1"	5
FP 08-10/16	150	0,08	799	160	675	65	85	150-600	Anz.x 2,4	1"	12
FP 14-10/16	200	0,14	837	310	590	135	132	250-1000	Anz.x 2,4	2"	28
FP 20-10/16	200	0,20	1066	310	819	135	132	250-3000	Anz.x 2,4	2"	40
FP 31-10/16	500	0,30	133	480	894	225	184	500-3000	Anz.x 3,1	DN 100	150
FP 40-10/16	500	0,40	1579	480	1141	225	184	500-3000	Anz.x 3,1	DN 100	200
FP 50-10/16	500	0,50	1826	480	1388	225	184	500-3000	Anz.x 3,1	DN 100	250
FP 41-10/16	700	0,40	1470	610	941,4	290	205	500-4000	Anz.x 3,5	DN 150	280
FP 60-10/16	700	0,60	1835	610	1306,2	290	205	500-4000	Anz.x 3,5	DN 150	420
FP 80-10/16	700	0,80	2200	610	1671	290	205	500-4000	Anz.x 3,5	DN 150	560
FP 43-10/16	700	0,43	1403	760	791	395	291	500-3500	Anz.x 3,1	DN 200	300
FP 65-10/16	700	0,65	1703	760	1091	395	291	500-3500	Anz.x 3,1	DN 200	455
FP 100-10/16	700	1,00	2103	760	1489	395	291	500-3500	Anz.x 3,1	DN 200	700
FP 130-10/16	700	1,30	2503	760	1891	395	291	500-3500	Anz.x 3,1	DN 200	910
FPS 80-10/16	700	0,80	1907	980	1080	480	335	500-4000	Anz.x 4,1	DN 300	560
FPS 120-10/16	700	1,20	2317	980	1490	480	335	500-4000	Anz.x 4,1	DN 300	840
FPS 187-10/16	700	1,87	2947	980	2120	480	335	500-4000	Anz.x 4,1	DN 300	1310
FPS 250-10/16	700	2,50	3677	980	2750	480	335	500-4000	Anz.x 4,1	DN 300	1750
FPS 200-10/16	700	2,00	2855	1370	1822	672	450	500-4000	Anz.x 4,1	DN 500	1400

more types and sizes on request

No.= number of plates

Quality secured by specialists



Quality must be checked. Each unit is designed and pressure tested. Further tests can be performed

according to rules and corresponding inspection requirements if requested, such as

- EU pressure vessel rules 97/23



- AD 2000-Merkblatt • ASME
- TEMA (international)
- API (USA) • GOST (Russia)
- Australian Standard
- ISCR (Romania) • Lloyd's register etc. as well as in accordance with

customer's requirements. Obviously FUNKE is certified in accordance with ISO 9001 and as authorised manufacturer to • ASME U-Stamp • UDT-Poland • HP0/DIN EN 729-2 • China certificate.



- Shell-and-tube heat exchangers • Plate heat exchangers • Oil/air-cooling units

Quality Heat Exchangers



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