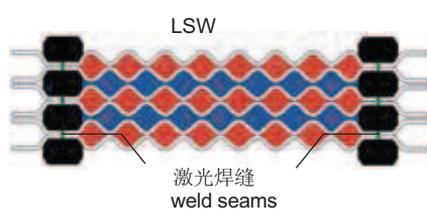


激光半焊板式换热器 Semi-welded plate heat exchanger

激光半焊板式换热器由焊接流道和常规流道交替组成。两张板片互相颠倒180度焊接而成板片组，形成焊接流道；每一板片组之间采用密封垫密封，形成可拆的常规流道。敏感性介质流经焊接流道，常规介质流经常规流道进行换热。

激光半焊板式换热器特别适用于氨和氟利昂等制冷剂的蒸发和冷凝，对于化工和一般工艺热交换中对垫片会产生腐蚀的介质亦是理想的热交换设备。

Semi-welded plate heat exchanger is made of cassette channel and regular channel one by one. Two plates are laser welded to a cassette channel; regular channel is sealed by gasket through two cassettes. Aggressive media will go through cassette channel to transfer energy with normal media, which will go through regular channel.



独特的流道设计

独特的流道设计可以增加介质流经板式换热器时的紊流强度，增强换热效果并减少相应的压力损失。即使介质在换热器内的流速很低，亦可得到很高的换热效率，为了满足不同工况的要求，我们有多种板型可供选择。

The advanced flow principle

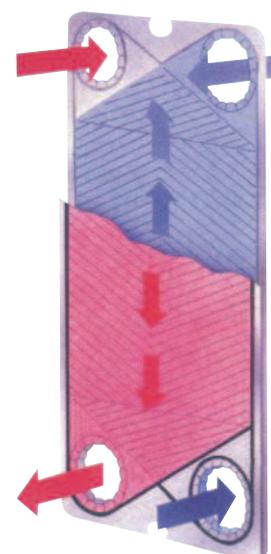
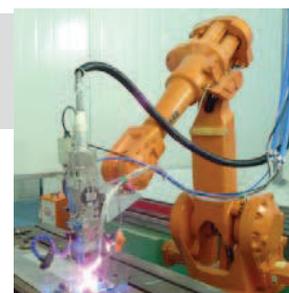
This innovative flow path geometry generates turbulence in the media flowing through the gap. This result in very high efficient heat transfer with minimum pressure drop. Excellent heat transfer is possible? even with moderate flow rates. Plate types with different heat transfer values are available for different applications

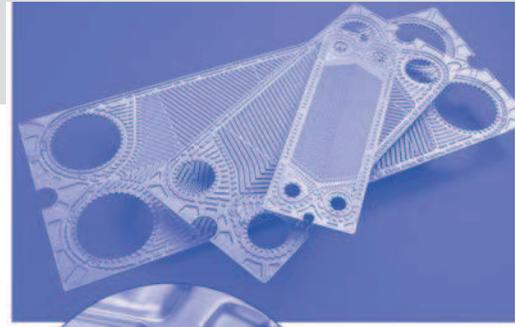
免粘结胶垫设计——密封时间更长。

由于氯丁橡胶密封垫圈具有很高的抗腐蚀性，因此LSW换热器采用此种材质作为垫圈原料，免粘结系统将垫圈安装在一个专门设计的凹槽中，使垫圈与媒质的接触面积减到最小，延长其使用寿命。封垫圈还具有清洗容易及抗热应力能力好的优点。

Glue-free seals that last longer

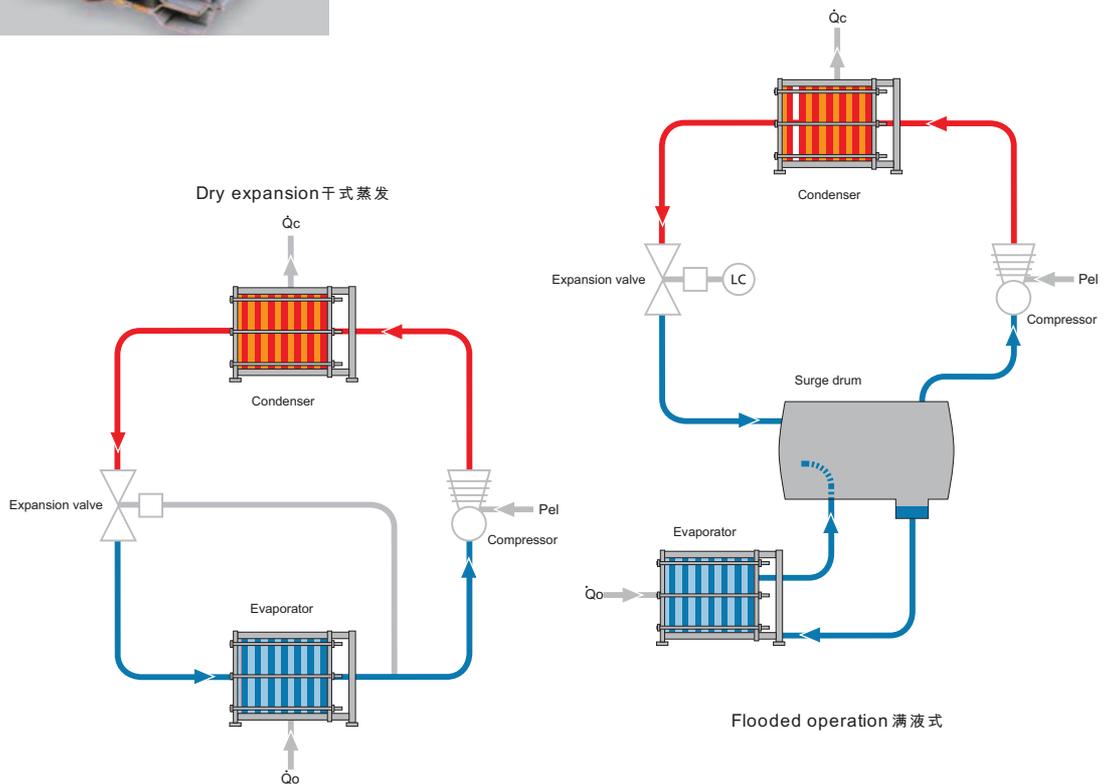
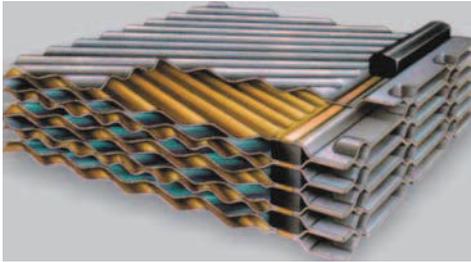
Neoprene sealing rings with a high resistance to chemica attack are fitted to the joints of the laser welded cassettes the Glue-free system hides. These seals in a special groove minimising direct contact with the medium and extending their life. The sealing rings also provide access for cleaning and improve stability against thermal tension





产品型号 Models

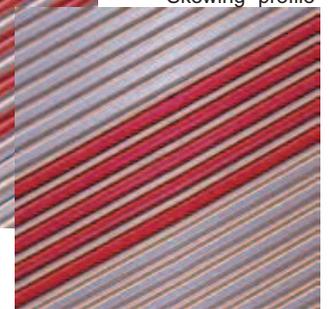
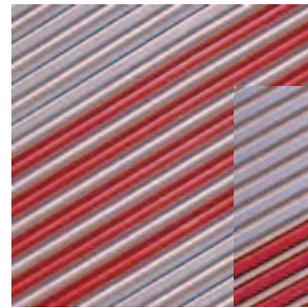
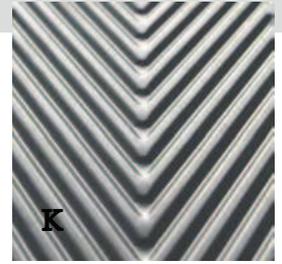
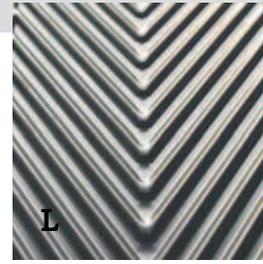
型号 Models	单位 Unit	LSW 50	LSW 100	LSW 150	LSW 200S	LSW 200H	LSW 250S	LSW 250H
Height 高度	mm	940	1180	1650	1750	2090	2290	2834
Width 宽度	mm	340	440	620	730	730	940	940
Connection 接管尺寸		DN 50	DN 100	DN 150	DN 200	DN 200	DN 250	DN 250
Max volume flow 最大流量	m ³ /h	40	155	340	620	620	940	940
Max pressure 最大压力	bar	40						
Plate material 板片材质		SUS 304, SUS 316L, SMO 254, Titanium						
Main body gasket 密封垫材质		Laser welded EPDM, NBR, HNBR, Viton 激光焊接, EPDM, NBR, HNBR, Viton						
Port ring gasket 侧角孔密封圈材质		Neoprene (CR) LT-NBR, HNBR, PTFE 氯丁橡胶 (CR), LT-NBR, HNBR, PTFE						
Frame 框架		extended design: 16 25 40 bar 框架等级: 16 25 40 bar						



非对称流道 Asymmetrical flow gaps

不同厂商的换热器产品从外观上看不出太大的区别，但在换热效果上起决定作用的换热板片的结构却千差万别。HF系列板型打破传统的正弦对称波纹的设计，创造出独特的波形偏离式板型，板片的正反面具有不同的流通面积，通过4种板片（H，L，G，K）灵活的组合，可以形成6种流量各异的流通道，巧妙的解决换热性能和压力损失之间的矛盾关系，在两侧流量1:3的条件下，可以取得两侧压降相等。即使在两侧流量差异极大的场合（1:10），仍然可以取得较高的换热系数，提高换热器的性价比。

At first glance, the plate heat exchangers of the different providers seem to be very similar. However, the secret of an efficient heat transfer is 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 operating costs. The „skewing“-Plates are available with four different profiles each (G, H, K, L), differing in ratio of embossing depth, distance and angle of corrugation. Each of the 14 plate sizes offer six different flow gaps. When combining the asymmetrical G, H, K, L-plates, the plate heat exchanger can be adapted optimally to the thermal case of application already in the series with limited diversity of types.

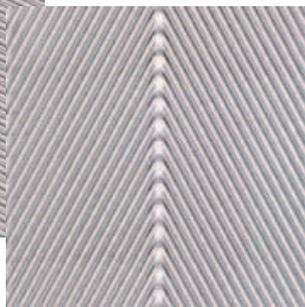


偏离式波形
“Skewing” profile

正弦对称波形
“Sinus” profile



低换热板 (L)
“thermally short”



高换热板 (H)
“thermally long”

板型组合 Plate combination	换热效率 Heat transfer rate		压力损失 Pressure drop		板间流量 Cross-section of flow gap	
	高 high	低 low	高 high	低 low	冷侧大通道, 热侧小通道 warm side: big gap, cold side: small gap	冷侧小通道, 热侧大通道 warm side: small gap, cold side: big gap
H-H	高 high	高 high	高 high	高 high	冷热侧流量相同 same flow gaps	冷热侧流量相同 same flow gaps
H-G	高 high	高 high	高 high	高 high	热侧大通道, 冷侧小通道 warm side: big gap, cold side: small gap	热侧大通道, 冷侧小通道 warm side: big gap, cold side: small gap
G-H	高 high	高 high	高 high	高 high	热侧小通道, 冷侧大通道 warm side: small gap, cold side: big gap	热侧小通道, 冷侧大通道 warm side: small gap, cold side: big gap
H-L	中 medium	中 medium	中 medium	中 medium	冷热侧流量相同 same flow gaps	冷热侧流量相同 same flow gaps
H-K	中 medium	中 medium	中 medium	中 medium	热侧大通道, 冷侧小通道 warm side: big gap, cold side: small gap	热侧大通道, 冷侧小通道 warm side: big gap, cold side: small gap
K-H	中 medium	中 medium	中 medium	中 medium	热侧小通道, 冷侧大通道 warm side: small gap, cold side: big gap	热侧小通道, 冷侧大通道 warm side: small gap, cold side: big gap
L-L	低 low	低 low	低 low	低 low	冷热侧流量相同 same flow gaps	冷热侧流量相同 same flow gaps
L-K	低 low	低 low	低 low	低 low	热侧大通道, 冷侧小通道 warm side: big gap, cold side: small gap	热侧大通道, 冷侧小通道 warm side: big gap, cold side: small gap
K-L	低 low	低 low	低 low	低 low	热侧小通道, 冷侧大通道 warm side: small gap, cold side: big gap	热侧小通道, 冷侧大通道 warm side: small gap, cold side: big gap



- 小通道 small gap
- 大通道 big gap
- 中等通道 medium gap

- 大通道 big gap
- 小通道 small gap

- 等通道
same flow gap

- 对称波形流道
symmetric wave gap

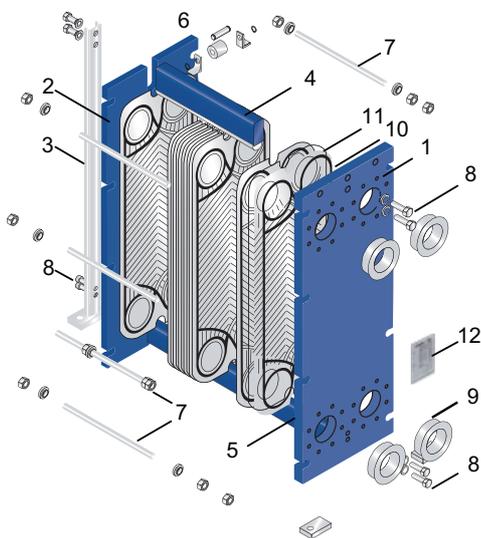
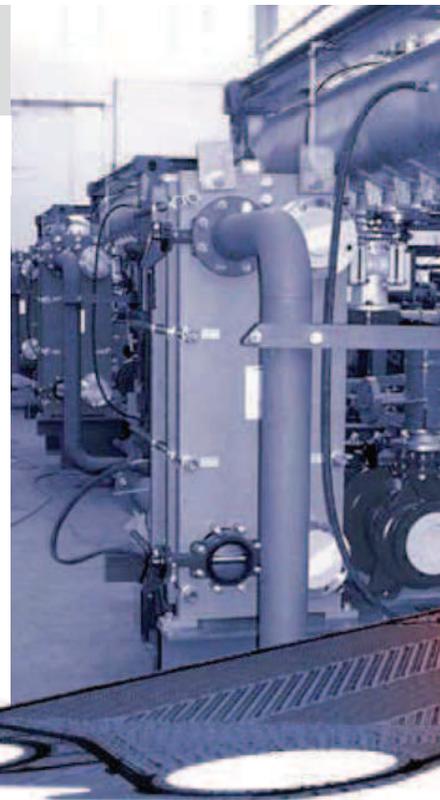
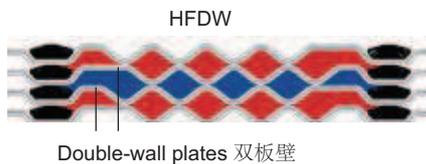
HFDW 双板壁安全型板式换热器

当板式换热器的冷热介质发生混合会产生有害反应时，我们就需要使用双板壁安全型板式换热器。HFDW 系列双板壁安全型板式换热器被广泛应用于食品、医药、市政供水、冶金、电力及化工等行业。

双板壁安全型板式换热器工作原理与普通板式换热器相同。区别在于每一换热单元由两张板片焊接而成，两张板片经过特殊压制，使其完全贴合，以减小热阻。四个角孔用激光焊接，而形成一个换热单元，相当于普通可拆换热器的一张板片。可和普通板片通用密封垫。当板片出现裂纹或穿孔时，任何一侧的流体泄露，都会从板片组之间的缝隙流出；任一侧流体相对泄露的部分均为正压，绝对不会串流到另一侧介质，保证另一侧介质的绝对安全。

Double-wall plates

These plates provide maximum protection against the mixing of media used in the heat exchange process. Two simultaneously embossed plates are laser-welded at the port holes. If there is a leak, fluids can escape at the edges of the plate pair. All models can provide double-wall plates



1. 固定板
2. 活动板
3. 后立柱
4. 上导杆
5. 下导杆
6. 滚轮
7. 压紧螺栓螺母垫圈
8. 固定螺栓
9. 接口衬套
10. 密封垫
11. 换热板片
12. 铭牌

板片材质 Plate material

- 1.4301 / AISI 304
- 1.4401 / AISI 316L
- 1.4539 / AISI 904L
- 1.4547 / 254 SMO
- Alloy C276
- Titanium
- Titanium-Palladium
- Ni

密封垫材质 Gasket material

- NBR (丁腈橡胶)
- HNBR (氢化丁腈橡胶)
- EPDM (乙丙橡胶)
- Viton (氟橡胶)
- PTFE (聚四氟乙烯)

Connction 接口

	螺纹接口 Threaded connection	橡胶衬套 Moulded rubber part	金属衬套 Metal lining	快速接头 Quick connection	法兰接口 Flange connection
HF 25-S/M/L	●	x	x	●	●
HF 32-M/L	●	x	x	●	●
HF 50-S/M/L	●	●	●	●	●
HF 65-M/L	●	●	●	●	●
HF 80-M	●	●	●	●	●
HF 100-T/S/M/L	●	●	●	●	●
HF 150-T/S/M/L	x	●	●	x	●
HF 200-T/S/M/L	x	●	●	x	●
HF 300-T/S/M/L	x	●	●	x	●

● = 可选择 X = 不可选
其它接口方式可按用户要求提供

卫生级换热器 Food hygiene grade heat exchanger

全不锈钢部件，密封垫为免粘结结构，符合FDA及GMP标准
 Stainless steel parts, glue-free gasket, according to FDA & GMP



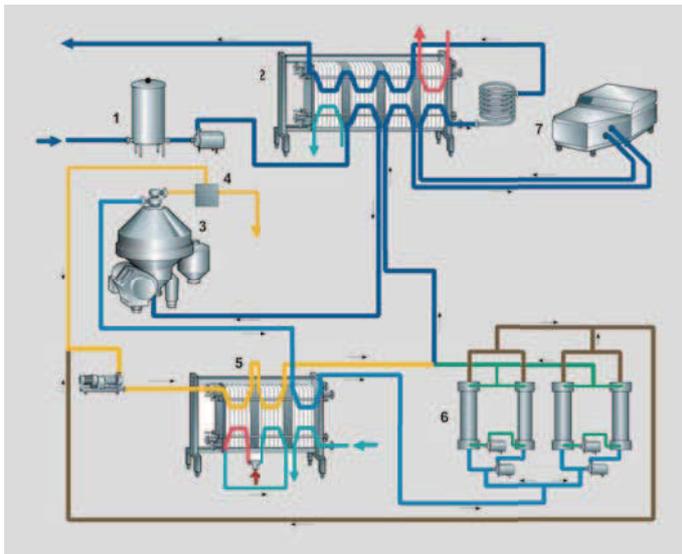
啤酒激冷器
Greenbeer cooler



巴士杀菌
Pasteurisation

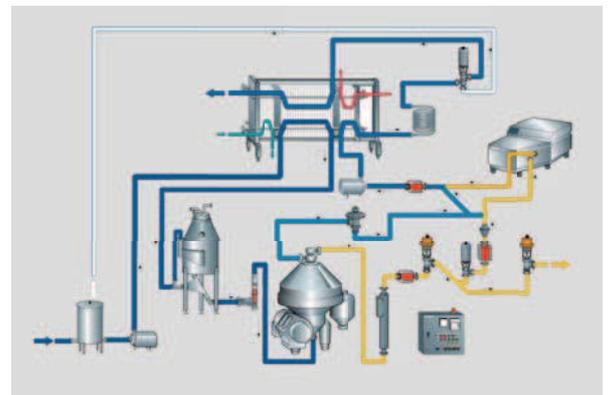


牛奶加工业 Dairy products



- 乳 milk
- 稀奶油 single cream
- 脱脂乳 skim milk
- 透过液 permeate
- 截留液 trapped fluid
- 加热介质 heating medium
- 冷却介质 cooling medium
- 蒸汽 steam

带有微滤装置的牛乳加工工艺图
Milk processing chart with micro device



部分均质的市乳生产线
Production line for market milk partially homogeneous

HF技术参数 Dimensions

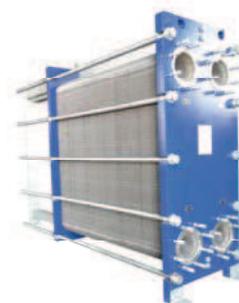
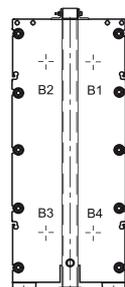
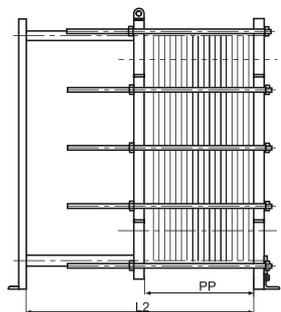
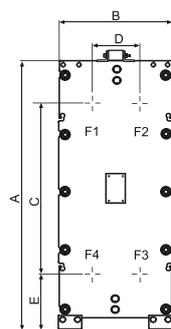
型号 / 压力等级 Type/ pressure rating	最大装机 板片数 Max. plates	单片面积 surface/plate m ²	A mm	B mm	C mm	D mm	E mm	L2 mm	PP* mm	接口尺寸 connection	最大装机面积 Max. surface m ²
HF 25S -10/16	125	0.02	460	160	336	65	85	150-600	pcs.x 2.4	1"	5
HF 25M -10/16	125	0.04	460	160	336	65	85	150-600	pcs.x 2.4	1"	5
HF 25L -10/16	150	0.08	799	160	675	65	85	150-600	pcs.x 2.4	1"	12
HF 32M-10/16	150	0.05	532	200	381	70	45	250-1000	pcs.x 2.7	1 1/4"	7.5
HF 32L -10/16	150	0.09	827	200	676	70	45	250-1000	pcs.x 2.7	1 1/4"	7.5
HF 65M-10/16	200	0.14	837	310	590	135	132	250-1000	pcs.x 2.4	DN65	28
HF 65L -10/16	200	0.20	1066	310	819	135	132	250-1000	pcs.x 2.4	DN65	28
HF 50S -10/16	200	0.10	735	310	494	126	131	250-1000	pcs.x 2.9	DN 50	20
HF 50M-10/16	200	0.15	940	310	694	126	131	250-1000	pcs.x 2.9	DN 50	30
HF 50L -10/16	200	0.22	1135	310	894	126	131	250-1000	pcs.x 2.9	DN 50	45
HF 80M-6/10/16/25	500	0.20	1080	440	650	202	200	500-3000	pcs.x 3.1	DN 80	100
HF 100T-10/16/25	500	0.24	1160	480	719	225	204	500-2500	pcs.x 3.1	DN 100	105
HF 100S -10/16/25	500	0.31	1332	480	894	225	204	500-3000	pcs.x 3.1	DN 100	150
HF 100M-10/16/25	500	0.40	1579	480	1141	225	204	500-3000	pcs.x 3.1	DN 100	200
HF 100L -10/16/25	500	0.50	1826	480	1388	225	204	500-3000	pcs.x 3.1	DN 100	250
HF 150S -10/16/25	700	0.40	1470	610	941,4	290	225	500-4000	pcs.x 3.5	DN 150	280
HF 150M-10/16/25	700	0.60	1835	610	1306,2	290	225	500-4000	pcs.x 3.5	DN 150	420
HF 150L -10/16/25	700	0.80	2200	610	1671	290	225	500-4000	pcs.x 3.5	DN 150	560
HF 200T- 10/16/25	700	0.43	1380	760	791	395	285	500-4000	pcs.x 3.1	DN 200	300
HF 200S- 10/16/25	700	0.68	1740	760	1130	395	285	500-4000	pcs.x 3.1	DN 200	455
HF 200M-10/16/25	700	1.00	2100	760	1490	395	285	500-4000	pcs.x 3.1	DN 200	700
HF 200L -10/16/25	700	1.30	2460	760	1850	395	285	500-4000	pcs.x 3.1	DN 200	910
HF 300T -10/16/25	700	0.80	1930	980	1100	480	365	1280-3780	pcs.x 3.8	DN 300	585
HF 300S -10/16/25	700	1.20	2320	980	1490	480	365	1280-3780	pcs.x 3.8	DN 300	875
HF 300M-10/16/25	700	1.60	2710	980	1879	480	365	1280-3780	pcs.x 3.8	DN 300	1120
HF 300L -10/16/25	700	1.90	3100	980	2267	480	365	1280-3780	pcs.x 3.8	DN 300	1330

以上板型均可提供双板壁型号
* PP尺寸为板厚0.5mm时尺寸

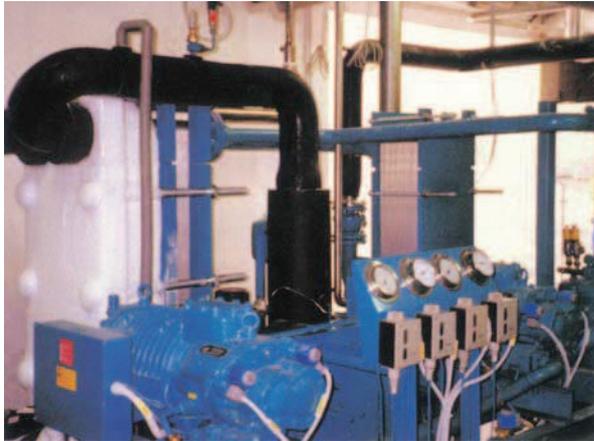
All above Models can provide Double-wall plates

The data of PP is based on plates with material AISI 304/316 and thickness 0,5 mm.

pcs. = number of plates



工程案例
references



低温卤水双板换机组 Glycol chiller



啤酒厂冰水冷却器 Brewery water chiller



船用海水蒸发器 Fish boat seawater evap.



楼宇中间层换热器 HVAC pressure breaker



液压站油冷却器 Hydraulic station oil cooler

服务

Services

- 清洗服务：在线清洗（CIP）、现场拆卸清洗及返厂清洗
 - 清洗工具及药液供应
 - 密封垫更换及板片清洗与检测（无损检漏）
 - 翻修
 - 性能改进：板片增减及流程调整
-
- cleaning service: CIP (Cleaning in Place) or mechanical cleaning on site or chemical cleaning (immersion bath) at the factory
 - on request, complete CIP systems (incl. the required cleaning chemicals) can be provided
 - replacing gaskets: this always includes cleaning of plates; crack test is optional
 - overhaul of complete unit
 - future supplementary performance optimization: extension of plate pack / change in plate configuration



备件供应

Spare parts

世界各品牌原配件及替代品供应
Supply of original parts & replace parts throughout the world

