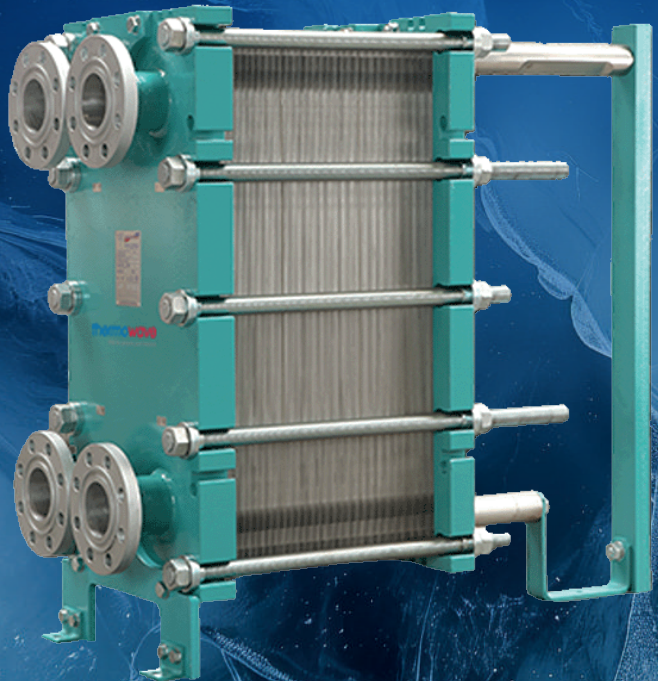


thermolinePLUS

Plate heat exchangers for
high pressure applications

DN25 - DN500





thermowave GmbH is a leading manufacturer of plate heat exchangers configured according to customer specifications in a wide range of materials, frame designs and sizes. Its head office is in Berga halfway between Göttingen and Leipzig.

The product portfolio covers everything from standard heat exchangers for HVAC applications to highly specialised apparatuses for industrial refrigeration, the food and beverages industry, the chemical and process industry, and the energy sector.

10 000 sqm
Production area

3000
Units per years



30
years

A quarter-century quality and experience

Rapid expansion of product portfolio and equipment

The product portfolio was already undergoing expansion as a laser-welding machine now complemented the machine park, making it possible to also offer welded modules.

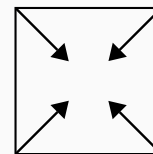
The product range as well as the technical equipment of the production facilities also continued to grow continuously in the subsequent period. Three product lines leading to the company's decision to build a second production hall for even more sophisticated plate heat exchangers.

Quality experience

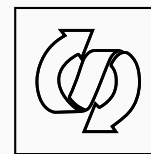
Qualified and motivated staff ensure a consistently high level of quality across all products to the benefit of their customers. thermowave's experience in the industrial transfer of heat allow them to develop new innovative products to launch onto the market.

thermolinePLUS Hybrid design

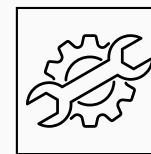
Gasketed & Semi-welded



COMPACTY



VERSATILITY



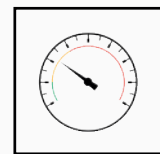
EASY
MAINTENANCE



HIGH TRANSFER
EFFICIENCY

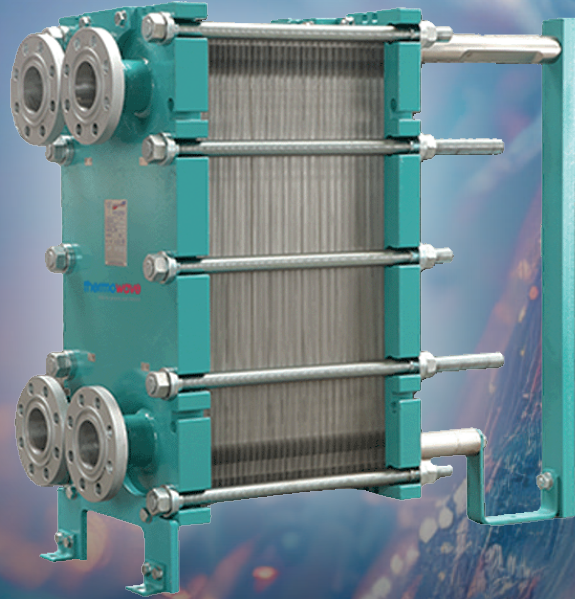


HYBRID DESIGN



HIGH PRESSURES
-1/63 BAR

Key features



thermolinePLUS plate heat exchangers are characterized by their outstanding efficiency in high-pressure applications with natural coolants such as CO₂ and NH₃.

With thermolinePLUS, thermowave offers you an superior high-pressure machine in semi-welded design with an operating pressure of up to 63 bar on the module side.

The variety of our frame designs and connection types are sure to impress in this area. thermolinePLUS apparatuses are made from laser-welded modules and can be used for industrial cooling processes requiring low evaporating temperatures.

Advantages

- Perfectly chambered plate/gasket construction for high pressures of up to 63 bar on the module side
- Six possible gap types (combinable)
- NH₃/CO₂ cascade applications
- Compact design, low space requirements, low weight
- Low refrigerant filling quantity/high power density
- Cleaning at 50 bar possible
- Basis for calculation developed in cooperation with the institute of Air Handling and Refrigeration Dresden and the Martin-Luther-University in Halle-Wittenberg

Gaskets

- NBR
- EPDM
- Chloroprene
- Butyl
- FKM (Viton)
- FEPM

Rack frames

- Painted carbon steel

Energy-saving operation

- Efficient heat exchanger for small Δt_m
- Ideal ratio between heat transfer and pressure drop

Service friendly

- Low weight
- Compact design
- Low maintenance
- Easy to clean

Connection variants

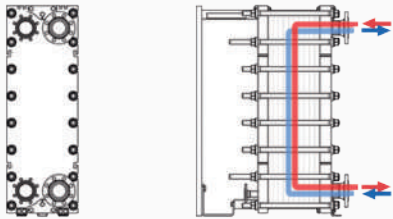
- Welding neck flange
- Stud bolts with lining
- Lapped flange with plain collar
- Threaded coupling

Available accessories

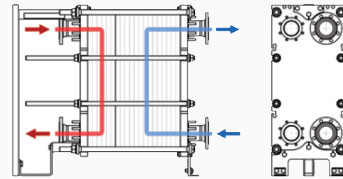
- Stainless steel protection sheet
- Counter flange and screw
- Stainless steel drip tray
- Clamping screw covers
- Hook wrench
- Disk spring packs

Frame types

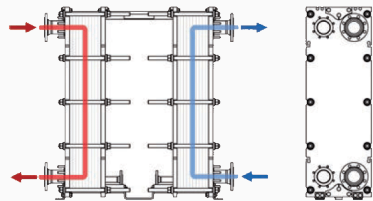
Standard configuration



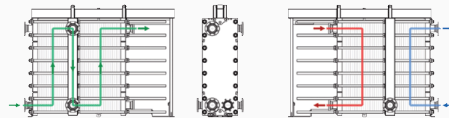
Two in one configuration



Tandem configuration



Multisection configuration



Plates range

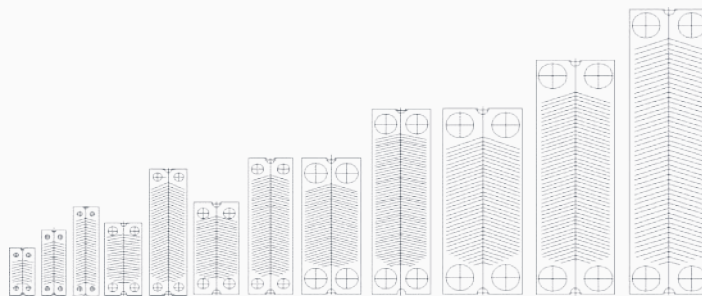


Plate type	0050	0090	0150	0200	0400	0250	0500	0650	0850	1100
Port diameter (DN)	40	40	40	80	80	100	100	200	200	250
Length (mm)	519	721	981	795	1383	1014	1495	1495	2034	2034
Width (mm)	244	244	244	369	369	437	437	586	586	774
Length / Width	2.13	2.95	4.02	2.15	3.75	2.32	3.42	2.55	3.47	2.63

Plates types



StandardLine plates

Thermodynamically soft pattern
 High flow rate
 Low pressure drop
 Wide range of applications
 Also suitable for viscous fluids and shear-sensitive media
 Gentle treatment of products
 Corrugation depths from 3.5 to 4 mm

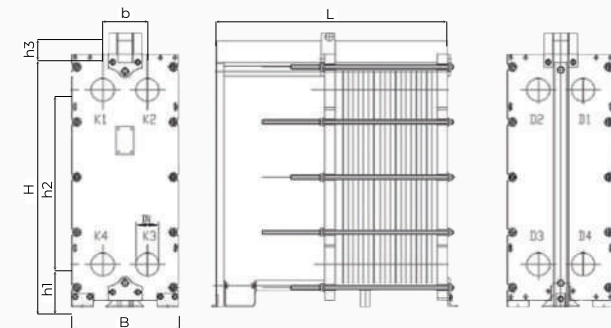
PowerLine plates

Thermodynamically hard pattern
 Very high heat transfer coefficients
 High thermal efficiency
 Low filling volume
 Suitable for homogeneous and low viscous fluids
 Corrugation depths from 2.0 to 2.5 mm

PS-modules

Semi-welded modules comprising a PowerLine and a StandardLine plate
 Combines the advantages of both corrugation structures
 Extends the range of applications
 Reduced surfaces, lower costs and filling volumes

High flexibility and versatility



Technical data

TL	Frame type	H	B	L	h1	h2	h3	Nominal width	bar	m ²	kg	dm ³
250	T	1140	550	500-4000	192	774	0-215	DN 100	-1 / 63	265	650-2300	287
500	T	1620	550	500-4000	192	1255	0-215	DN 100	-1 / 63	476	800-4900	477
650	K	1750	730	500-4000	323 297	1153 1205	0-230	DN 200 DN 150	-1 / 63	450	850-5320	585

Your applications at a glance

PRODUCT	APPLICATION	PROCESS	MEDIA	
			Refrigerant	Coolant
thermoline PLUS	Evaporator	Evaporation in pump mode, gravity-assisted mode or as a dry expansion evaporator for cooling the coolant agent	NH ₂ CO ₂ Propan R22 R134A R404A R407C R502 R507 And other synthetic refrigerants	Ethylene Glycol Propylene Glycol NaCl CaCl ₂ Pekasol Tyfoxit Tyfocor Dowcal Tempering
thermoline PLUS	Condenser	- Condensation - Partial condensation and desuperheating - Condensation at high pressures and temperatures		
thermoline PLUS	Desuperheater	- Hot gas desuperheating for heating the heat exchanger		
thermoline PLUS	Oil cooler	- Oil cooling with coolant agent or refrigerant		
thermoline PLUS	Cascade PHE	- Evaporation and condensation (+desuperheating) as cascade		

References

Neuhausser



KGHM Group



Paulaner





Website



LinkedIn

EXPERT OF PLATE HEAT EXCHANGERS

Makes life fresh



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