

## Gasketed plates for high flexibility

### **thermowave** Gasketed plates:

An optimal choice of material and gaskets adapted to the area of application and the elements ensures high reliability and flexibility of thermoline® plate heat exchangers.

The flow gaps for cold and warm elements are additionally sealed with elastomers which are ideally adapted to medium.

The gaskets in use are resistant against the media flowing into the apparatus.

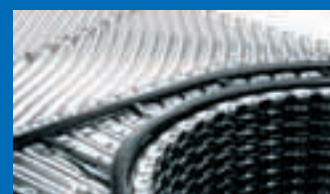
thermowave's line of heat transfer plates guarantee optimal adaptation to the heat transfer process through their structure and aspect ratio and can thus meet all customer specifications.

A further advantage of the gasketed thermoline® plate heat exchangers is their high flexibility. This is because they can at any time be opened, mechanically cleaned, adjusted for performance as well as equipped with other gasket and plate materials in the case of a change of medium.



# TL 50 – 2000

Gasketed plates



Powerful plate heat exchangers – worldwide.

plate type	dimensions (mm)						connections	max. operating pressure bar	max. heat transfer surface m <sup>2</sup>	total dead weight kg	max. volume per side dm <sup>3</sup>
	TL	H	B	L	h1	h2					
50	685	335	250-2000	194	363	125	DN 25/40	-1 to 25	25	70-350	30
	643	335	250-2000	152	363	125					
90	887	335	250-2000	194	565	125	DN 25/40	-1 to 25	33	120-600	36
	845	335	250-2000	152	565	125					
150	1147	335	250-2000	194	825	125	DN 25/40	-1 to 25	53	160-830	57
	1105	335	250-2000	152	825	125					
200	1124	475	500-2500	318	619	212	DN 80	-1 to 25	70	215-1100	190
	1012	475	500-2500	206	619	215					
250	1265	550	500-2500	316	774	256	DN 100	-1 to 25	82	510-1820	120
	1140	550	500-2500	192	774	256					
400	1712	475	500-2500	318	1207	212	DN 80	-1 to 25	115	390-2100	230
	1600	475	500-2500	206	1207	212					
500	1745	550	500-2500	316	1255	256	DN 100	-1 to 25	280	690-4160	370
	1620	550	500-2500	192	1255	256					
650	1750	730	500-4000	323	1153	305	DN 150/200	-1 to 25	300	700-4700	470
850	2290	730	500-4000	323	1693	305	DN 150/200	-1 to 25	500	1000-7000	700
1100	2290	940	500-4000	335	1670	450	DN 250	-1 to 25	661	1900-9500	1125
1500	2844	940	500-4000	335	2214	450	DN 250	-1 to 25	750	2400-11780	1505
2000	3398	940	500-4000	335	2758	450	DN 250	-1 to 25	1000	2800-14060	1885



## Your advantages

- compact design, low space requirement, low weight
- modular system offers high degree of flexibility, capacity adjustment by adding or removing plates
- easy to clean
- quick and low cost installation
- easy to maintain
- high specific thermal efficiency, suitable for low temperature differences
- excellent fouling resistance due to high turbulence and smooth surfaces
- high resistance to corrosion

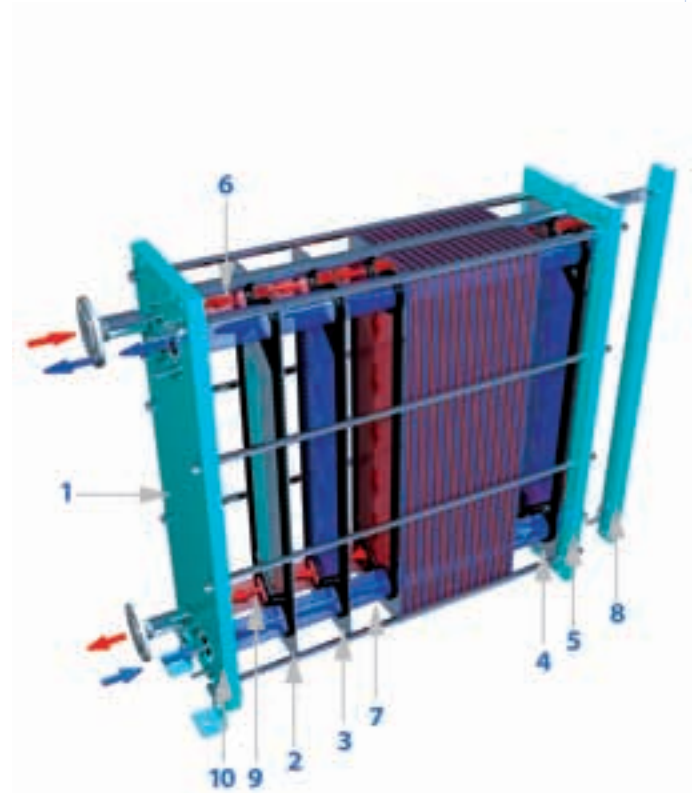
## Working principle

The media involved in the heat exchange process, are fed into the plate pack via connections on the fixed and movable pressure plates.

The arrangement of the plates creates two separate channel systems, enabling the two media to flow past and between each other without physical contact, leaving the exchanger again via connections in the pressure plates. Plates with different patterns can be mixed in the heat exchanger in order to achieve optimum efficiency at a given pressure drop.

By installing special distribution plates in the plate pack, the media can be conducted several times through the flow channels, and thus participate longer in the heat exchange process. Therefore, very high NTU rates, are achieved in a compact unit.

- 1 – fixed pressure plate
- 2 – starter plate
- 3 – heat exchange plate with gasket
- 4 – end plate
- 5 – movable pressure plate
- 6 – upper carrying bar
- 7 – lower carrying bar
- 8 – supporting column
- 9 – tightening bolt
- 10 – stud bolt connection



## Description of plate heat exchanger

thermoline® plate heat exchangers consist of a number of corrugated plates. The plate pack is mounted between a fixed and a movable pressure plate, positioned by an upper and a lower carrying bar, and compressed by several tightening bolts. Gasketed-type plates with various patterns are available for a wide range of applications.

The media can pass the heat exchanger either in cocurrent or countercurrent flow. Depending on the operating conditions, medium and temperature-resistant gaskets of the glued-on or clip-on version are used.

## Range of products

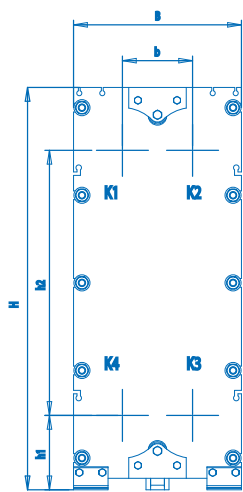
Plates with a variety of patterns, variable depths of stamping and different sizes are available.

### StandardLine plates

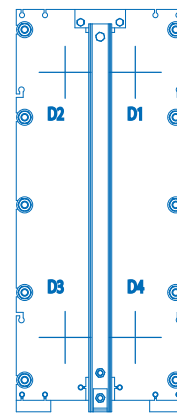
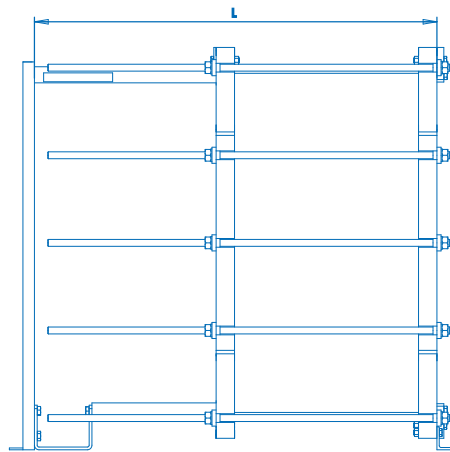
- thermodynamically soft pattern
- high flow rate
- low pressure drop
- wide range of applications
- suitable for viscous fluids and sensitive to shearing
- gentle treatment of products
- corrugation depths from 3,5 to 4,0 mm

### PowerLine plates

- thermodynamically hard pattern
- high heat transfer coefficients
- high thermal efficiency
- low hold-up volume
- suitable for homogeneous and low viscous fluids
- corrugation depths from 2,0 to 2,5 mm

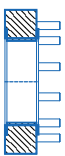


K1...K4:  
Inlet / outlet  
connections at  
fixed pressure  
plate

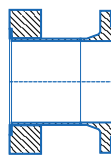


D1...D4:  
Inlet / outlet  
connections at  
movable pres-  
sure plate

## Connections



stud bolts  
with lining



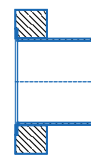
welding neck flange  
DIN 2631 (PN6),  
DIN 2632 (PN 10),  
DIN 2633 (PN16),  
DIN 2634 (PN 25),  
DIN 2635 (PN40)



lapped flange  
DIN 2641 (PN6),  
DIN 2642 (PN10)



lapped flange  
with plain collar  
DIN 2655 (PN 25),  
DIN 2656 (PN 40)



threaded coupling  
(BSPM)  
DIN 2999

## Materials

**Frame:** carbon steel, massive or clad stainless steel

**Connections:** stainless steel, carbon steel, Titanium, Hastelloy, PTFE, elastomers

**Plates:** 1.4301, 1.4404, 1.4529, 1.4539, 1.4547, Hastelloy, Titanium

**Gaskets:** NBR, EPDM, Chloroprene, Butyl, Viton, PTFE covered, elastomers

Other materials on request.

## Operating parameters

**Design temperature:** -40° C to 170° C

**Design pressure:** vacuum to 25 barg

**Connections:** DN 25 to DN 250

## Tests / Standards

thermoline® plate heat exchangers can be supplied in accordance with both local and foreign regulations.