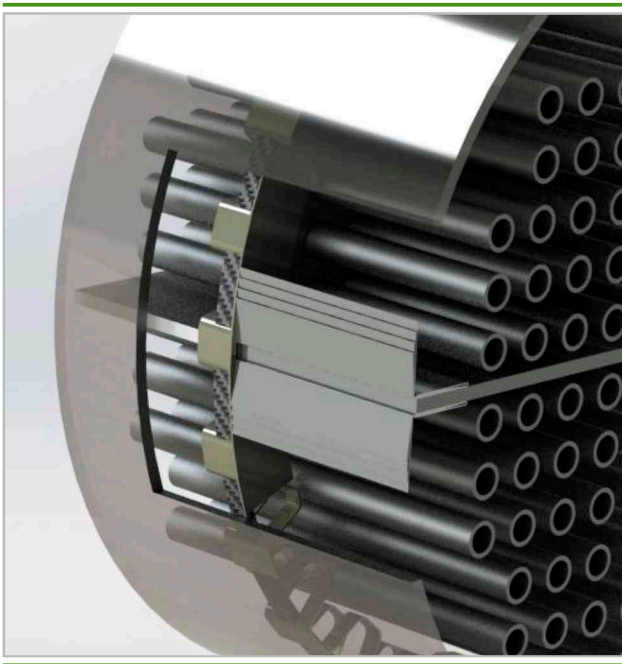


## Baffle seals T4

### Baffle seals T4 for sealing longitudinal baffles in high-performance heat exchangers.

Baffle seal profile T4 is a full metal seal. It is generally made from 1.4571 steel for the lamellae supports and for the lamellas themselves. On request for larger these seals can also be produced from other spring-elastic steels or non-ferrous metals.

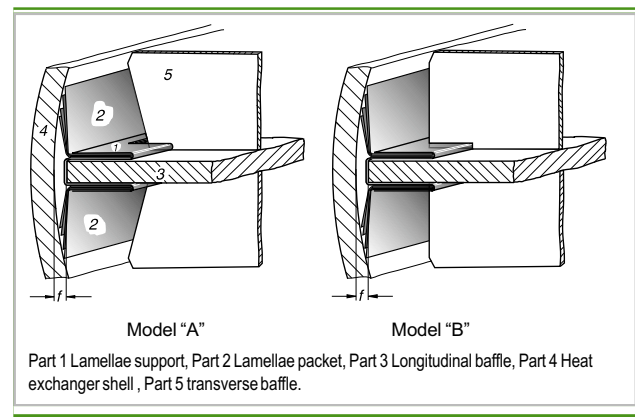
We are able to produce precisely adapted separating plate gaskets for every heat exchanger. Particularly suitable for heat exchangers with large or small gaps, due to construction filters, refurbishment or warping.



The baffle seal plays an important role in effectively sealing the gap between the longitudinal baffle and the heat exchanger shell in high-performance heat exchangers. In particular, when there are small differences in temperature, even low short-circuit currents cause a significant power loss. This can largely be avoided by using the baffle seal T4. The T4 seal is easily assembled directly onto the longitudinal baffle.

No bolts are required to affix it. This means that there is no need to drill holes or to do any of the usual bolting work during assembly.

The lamellae in the baffle seal profile T4 are spot welded to a lamellae unit with the lamellae support and can be supplied in any length. For transport reasons they cannot exceed 6000 mm. We can supply fixed lengths down to the exact millimetre in accordance with your specifications, avoiding the difficult task of cutting the thin lamellas.



Part	1	2
Name	Lamellae support	Lamellae packet
Material no.	1.4571	1.4571
Material thickness	0,50 mm	0,2 mm

The length of the baffle seal corresponds to the length of the heat exchanger bundle.

#### Model A

In this model the lamellae supports have a corresponding recess.

The necessary slots for the longitudinal baffles should be ground during installation. The slots should only be made as deep as is needed to take the transverse baffles (part 5).

#### Model B:

With large numbers of longitudinal baffles it is easier to fit the baffle seal continuously. However, it should also be secured, and the first lamellae support (which is the deepest) can be secured with a bolt or pin to the baffle, so that when pulling the bundle, the baffle seal is also securely pulled out.

# Baffle seals T4

For model A, which has recesses for the baffles, this safeguard is not necessary.

Baffle seal profile T4 is not completely leak-proof, especially in the case of gaseous media. With these simple methods, however, a far better seal can be achieved than was previously possible. The full metal finish guarantees safe functioning in a wide range of temperatures.

For particularly high demands on the seal, PTFE sheets can be inserted between the last two lamellae. Baffle seal profile T4 can be supplied in two lamellae widths.

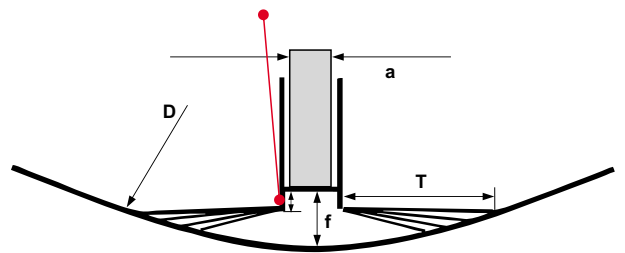
The lamellae width is 30 mm with lamellae support T4.30 and 20 mm with support T4.20. The lamellae supports are available for longitudinal baffles from 4 mm to 25 mm. The type which can be produced in the appropriate thickness can be taken from the following tables.

Ordering example for a baffle seal profile T4, material 1.4571, 30 mm side length, internal heat exchanger diameter  $D = 1000$  mm, baffle thickness  $a = 10$  mm, length = 2000 mm:

## Baffle seal T4.30.10/2000

### Calculation of the reset measurement of a baffle seal

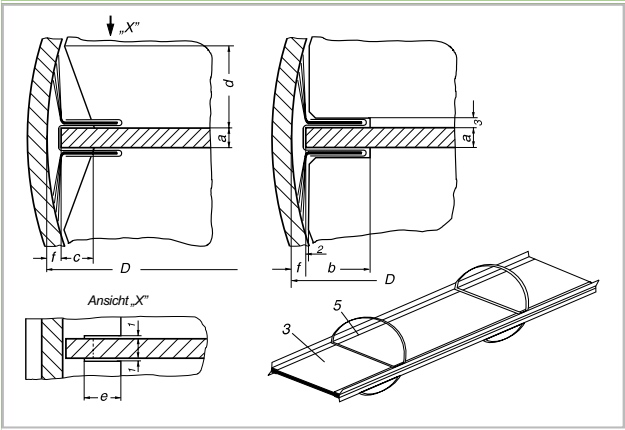
Description	Index	Value	Comment
Length of lamella	T	30 mm (T30: 30 mm; T20: 20 mm)	
Width of baffle seal	a	20 mm (usually customer specification)	
Internal diameter of vessel	D	500 mm (usually customer specification)	
Number of baffles seal lamellas		4 (usually 4 fins)	
Gap between baffle and shell	f	10 mm (usually customer specification)	
Offset for bracket		6,3 mm	



Through the individual specification of measurement “s”, the degree of efficiency of the exchanger is increased significantly and the gasket has a constant contact pressure.



## Works standard 124



### Calculation of internal leakage with / without baffle seals

Description	Index	Value	
Overall Volumen-Flow (shell)	$V_g$	25,00 m³/h	416,7 l/min
Overall pressure drop	$\Delta p_g$	0,100 bara	
Number of baffles in one flow direction	z	8,0	
Length of baffle (tubes)	L	3000,0 mm	
gap between baffle and shell	f	2,5 mm	
mean density of medium (shell)	$\rho$	900,0 kg/m³	
leakage flow without baffle seals	$V'$	25,00 m³/h	416,7 l/min
flow efficiency without baffle seals	$\eta$	0,00%	
leakage flow with baffle seals	$V'$	10,41 m³/h	173,5 l/min
flow efficiency with baffle seals	$\eta$	58,36%	
delta leakage flow with baffle seals	$V'$	14,59 m³/h	243,2 l/min
delta flow efficiency with baffle seals	$\eta$	58,36%	

## Computational Fluid Dynamics (CFD) - simulator

The basis for the calculation tool was a CFD simulator

