AlfaNova 14, 27, 52, 76 and 400

AlfaNova 14, 27, 52, 76 and 400 - Fusion-brazed Plate Heat Exchangers

General information

AlfaNova is a completely new type of plate heat exchanger (PHE), the world's first PHE made of 100% stainless steel. It is based on Alfa Laval's new revolutionary technology, Alfa Fusion, the art of joining stainless steel components.

AlfaNova heat exchangers are well suited in applications which put high demand on cleanliness, applications where ammonia is used or applications where copper or nickel contamination is not accepted. Its high resistance to corrosion makes it both hygienic and environmentally friendly.

It is extremely compact compared to its capacity to withstand great strains in demanding heat transfer applications.

Applications

Within Refrigeration:

- Oil cooler
- Condenser
- Evaporator
- Economizer
- Desuper heater
- Absorption systems

Other main applications:

- Domestic hot water heater
- Process cooling
- Hydraulic oil cooling
- Laser cooling
- Hygienic/sanitary
- Water/water cooling & heating

Working principles

The heating surface consists of thin corrugated metal plates stacked on top of each other. Channels are formed between the plates and corner ports are arranged so that the two media flow through alternate channels, always in counter-current flow. The media are kept in the unit by a bonded seal around the edge of the plates. The contact points of the plates are also bonded to withstand the pressure of the media handled.

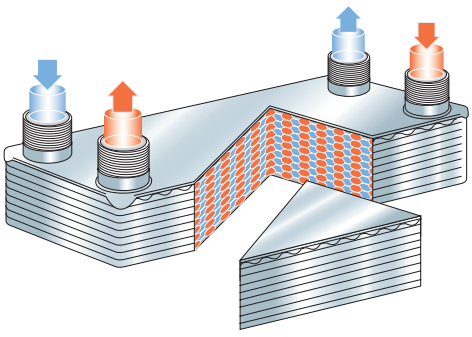
Standard design

The plate pack is covered by cover plates. Connections are located in the front or rear cover plate. The channel plates are corrugated to improve heat transfer design.

Particulars required for quotation

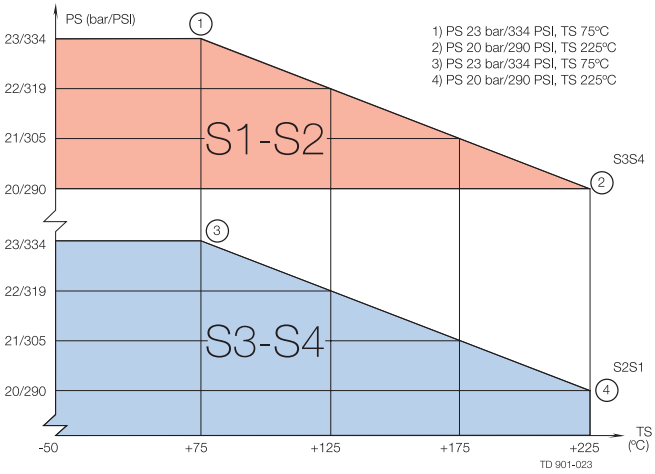
To enable Alfa Laval's representative to make a specific quotation, enquiries should be accompanied by the following particulars:

- flow rates or heat load required
- temperature program
- physical properties of liquids in question
- desired working pressure
- maximum permitted pressure drop

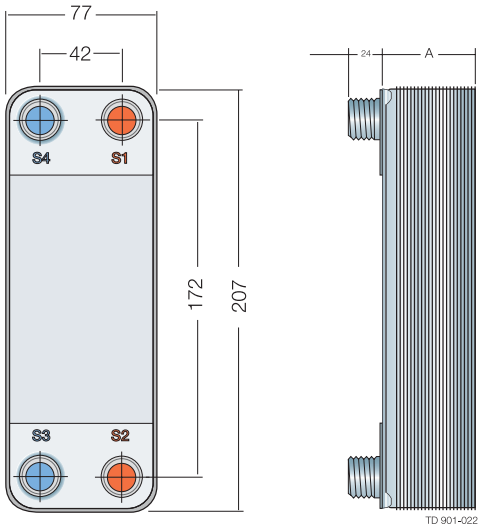


Flow principle of an AlfaNova plate heat exchanger

CE approval pressure/temperature graph (Alfa Nova HP 14)



Standard dimensions (mm)



A = 7.6 + n x 2.35 /0.30 + n x 0.09
Weight kg: 0.74 + n x 0.046
(n = number of plates)

Standard data

Min. working temperature	-50ºC
Max. working temperature	see graph
Min. working pressure	Vacuum
Max. working pressure	see graph
Volume per channel, litres/g	0.02
Max. flowrate *)	4.5 m³/h

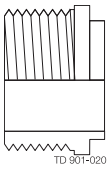
*) Water at 5 m/s (connection velocity)

Standard materials

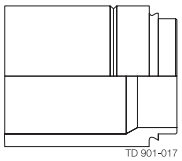
Cover plates	Stainless steel AISI 316
Connections	Stainless steel AISI 316
Plates	Stainless steel AISI 316
AlfaFusion filler	Stainless steel AISI 316

Standard connections

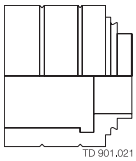
External tread connection



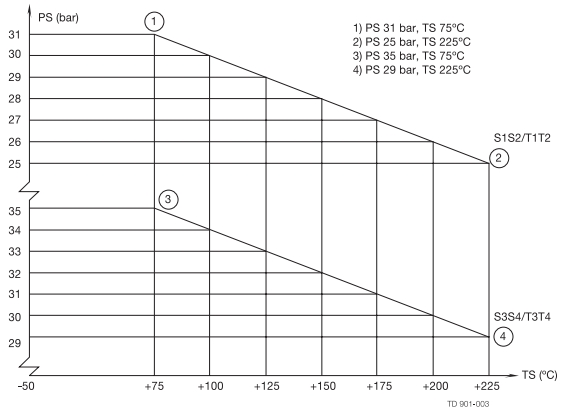
Sweat connection



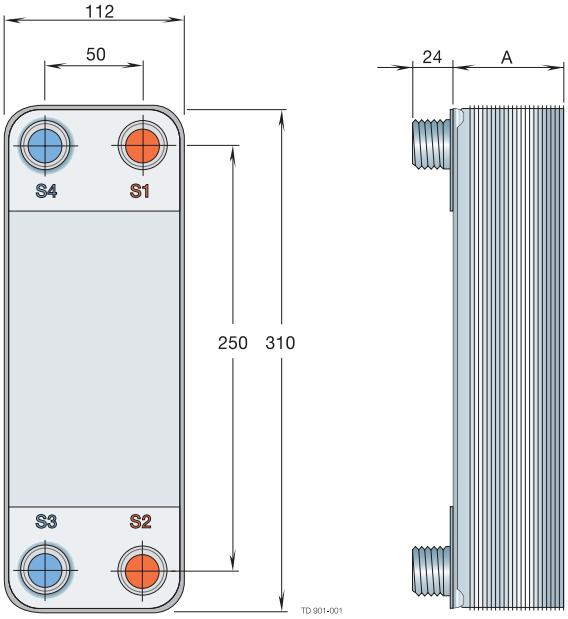
Internal thread connection



CE approval pressure/temperature graph (Alfa Nova HP 27)



Standard dimensions (mm)



A = 14 + n x 2.4
Weight kg: 1.5 + n x 0.13
(n = number of plates)

Standard data

Min. working temperature	-50ºC
Max. working temperature	see graph
Min. working pressure	Vacuum
Max. working pressure	see graph
Volume per channel, litres	0.05
Max. flowrate *)	7.5 m³/h

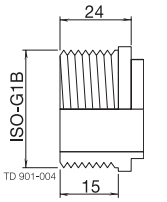
*) Water at 5 m/s (connection velocity)

Standard materials

Cover plates	Stainless steel AISI 316
Connections	Stainless steel AISI 316
Plates	Stainless steel AISI 316
AlfaFusion filler*	Stainless steel AISI 316

Standard connections

B21



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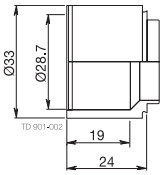
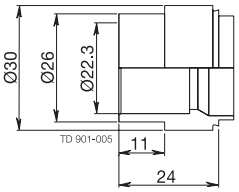
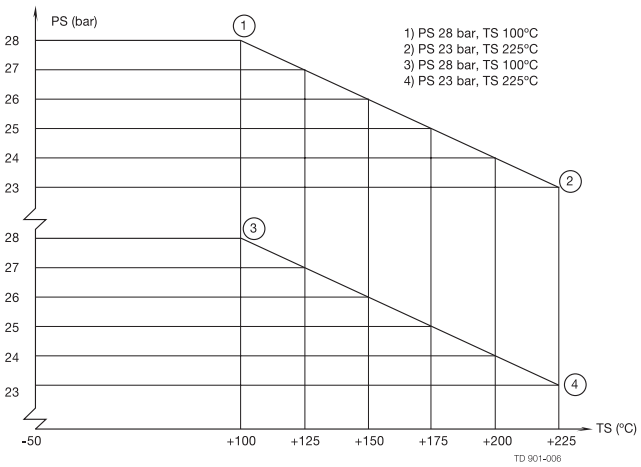


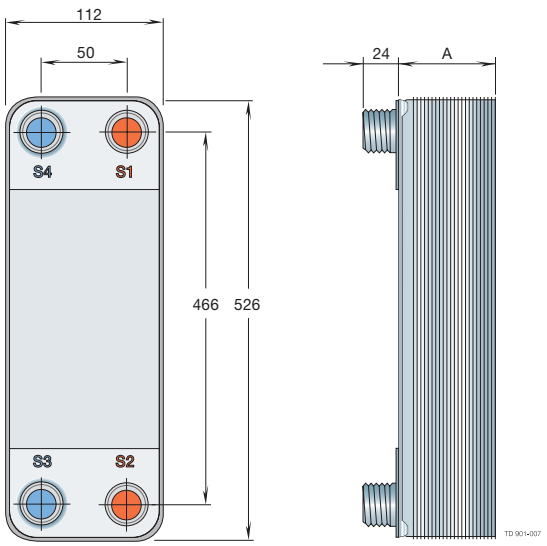
H23



CE approval pressure/temperature graph (Alfa Nova HP 52)



Standard dimensions (mm)



A = 12 + n x 2.4
Weight kg: 2.2 + n x 0.23
(n = number of plates)

Standard data

Min. working temperature	-50°C
Max. working temperature	see graph
Min. working pressure	Vacuum
Max. working pressure	see graph
Volume per channel, litres	0.095
Max. flowrate *)	7.5 m³/h

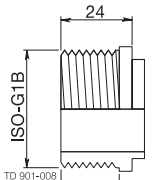
*) Water at 5 m/s (connection velocity)

Standard materials

Cover plates	Stainless steel AISI 316
Connections	Stainless steel AISI 316
Plates	Stainless steel AISI 316
AlfaFusion filler*	Stainless steel AISI 316

Standard connections

B21



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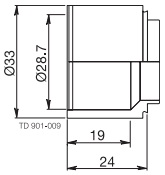

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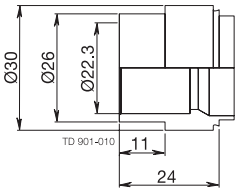
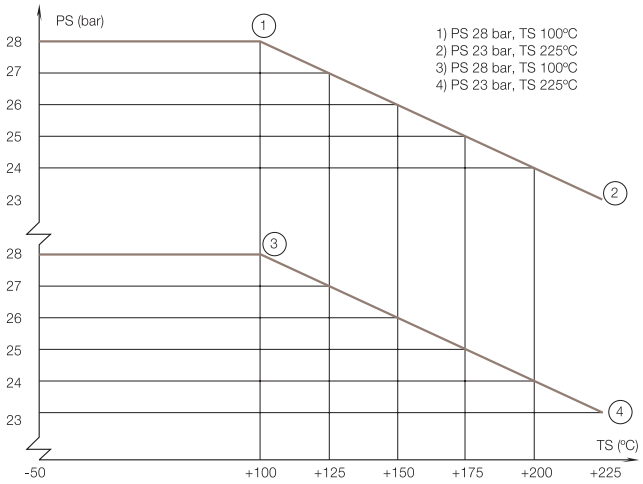
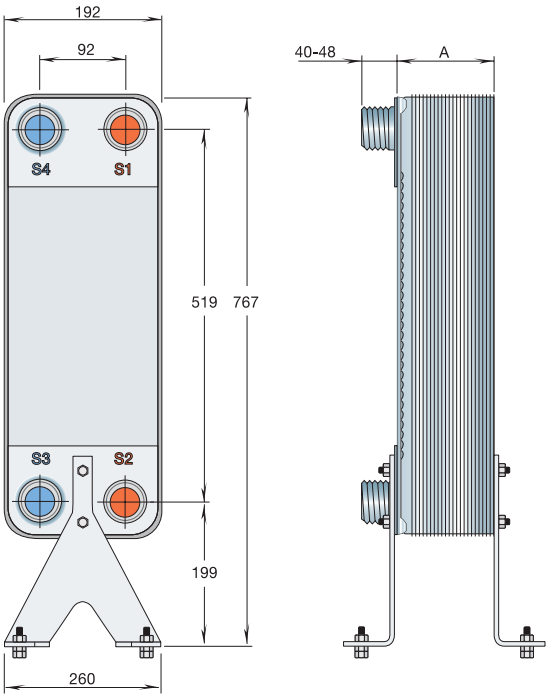


CE approval pressure/temperature graph (HP 76)



Standard dimensions (mm)



A = 14 + n x 2.85
Weight kg: 9.0 + n x 0.44 with feet
(n = number of plates)

Standard data

Min. working temperature	-50ºC
Max. working temperature	see graph
Min. working pressure	Vacuum
Max. working pressure	see graph
Volume per channel, litres	0.25
Max. flowrate *)	34 m³/h

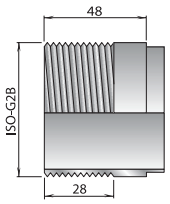
*) Water at 5 m/s (connection velocity)

Standard materials

Cover plates	Stainless steel AISI 316
Connections	Stainless steel AISI 316
Plates	Stainless steel AISI 316
AlfaFusion filler*	Stainless steel AISI 316

Standard connections

B23



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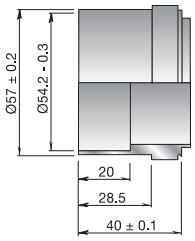

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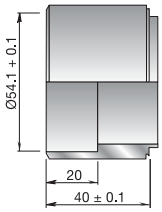
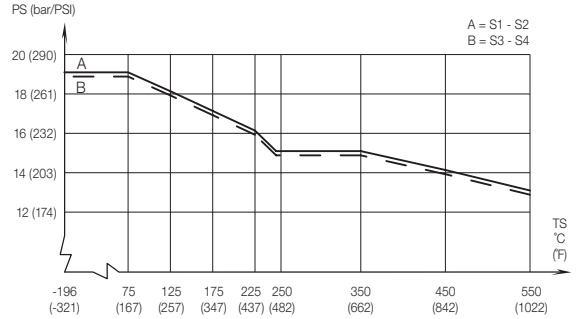
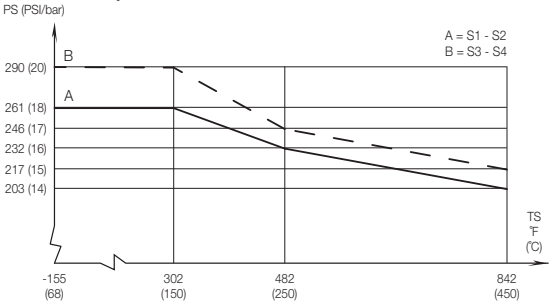


PED approval pressure/temperature graph (AlfaNova 400)



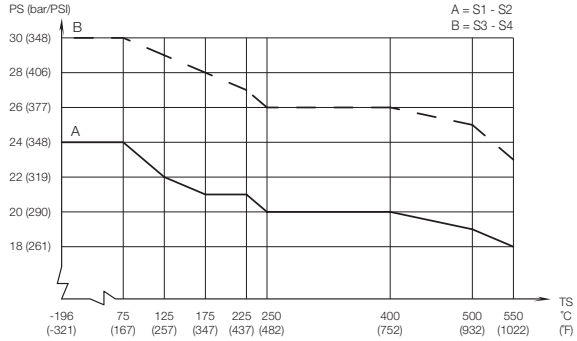
Min. temperature -50°C (-58°F) with connection tubes made of carbon steel.

ASME approval pressure/temperature graph (AlfaNova 400)



Min. temperature -49°C (-45°F) with connection tubes made of carbon steel.

PED approval pressure/temperature graph (AlfaNova HP 400)



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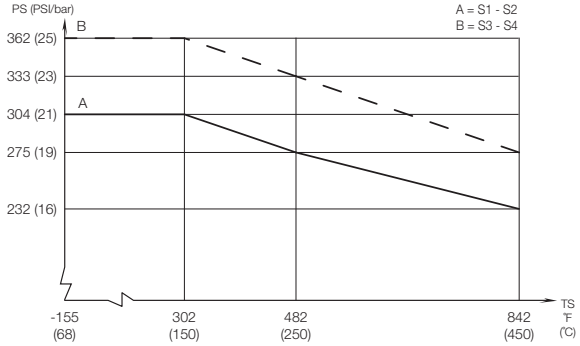
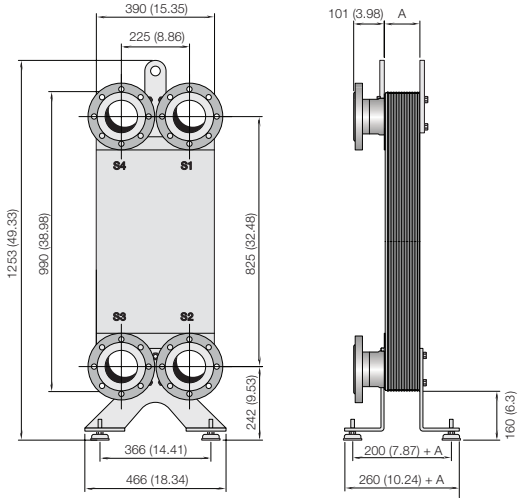
PED approval pressure/temperature graph (AlfaNova HP 400)



Min. temperature -49°C (-45°F) with connection tubes made of carbon steel.



Standard dimensions

Max number of plates: 270
A = 14 + n x 2.65 / (0.55 + n x 0.1)
Weight (approx.) kg: 44 + n x 1.5 / (Weight lb: 97 + n x 3.3)
(n = number of plates)

Standard data

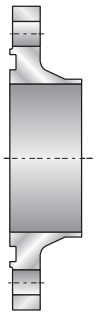
Min. working temperature	see graph
Max. working temperature	see graph
Min. working pressure	Vacuum
Max. working pressure	see graph
Volume per channel, litres/ga	0.74 (0.20)
Max. particle size	1.5 mm / (0.06")
Max. flowrate *)	170 m³/h (748 GPM)

*) Water at 5 m/s (16.4 ft/s) (connection velocity)

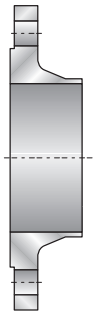
Standard materials

Cover plates	Stainless steel
Connections	Stainless steel
Plates	Stainless steel
AlfaFusion filler	Stainless steel

Examples of connections



Tounge & Groove flange



Water flange

Tube for welding

ESE00260EN 1001

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