



Cooling efficiency on the way

Transmission oil cooling solutions



High-efficiency solutions for transmission oil cooling

Alfa Laval supplies a complete range of cooling and cleaning solutions for all types of engines and vehicles in diverse sectors – everything from marine to on- and off-highway.

Our heat exchangers provide engine lube oil, transmission and fuel cooling.

Specially designed for heavy-duty on- and off-highway applications, our comprehensive range of transmission oil coolers utilizes robust, yet compact and lightweight technology.

The reliable and efficient coolers come in both shell-and-tube and plate heat exchanger designs.

Our solution ensures that your engines perform to their highest efficiency – with the lowest life-cycle costs and minimum impact on the environment.

Reducing unplanned downtime and extending machine life, Alfa Laval pushes the boundaries of optimal performance – so that you can focus on your way ahead.

Copper brazed plate heat exchanger

Extremely efficient heat transfer with a small footprint

Forming a self-contained unit that can handle both high pressures and high temperatures, the efficient copper brazed (CB) plate heat exchanger offers large capacity even in small spaces. Unlike traditional designs, the brazed plate heat exchanger consists solely of surfaces that actively contribute to heat transfer, resulting in significant increases in overall efficiency.



The exceptional heat transfer efficiency makes all CB units very compact. As a result, they can tackle large-capacity duties even though there is only limited installation space available. The copper brazed plate heat exchangers are the optimal solution for demanding installations where space is at a premium.

The brazed construction also eliminates the need for gaskets, making CB units ideal in applications where temperatures and/or pressures are high like engine oil cooling. Units in this efficient range are available in many different sizes and capacities, with varying plate patterns and connections for particular duties and performance specifications. CB units can be configured as single-pass, dual-pass or multi-pass installations, according to project requirements.

Alfa Laval CB plate heat exchangers are available both with 316 and 304 stainless steel plates with a variety of mounting options and connections. The brazed

plate heat exchanger can seal up to 30 bar (450 psi) and is rated up to 175°C (350°F).



Key benefits:

- Compact and lightweight
- Gasket-free, modular design
- Robust integrated mounting
- High thermal efficiency

Fusion-bonded plate heat exchanger

AlfaNova – 100% stainless steel for a copper-free corrosion-resistant solution

The AlfaNova is the first plate heat exchanger in the world to be made completely of stainless steel – made possible by the unique active diffusion bonding technology patented by Alfa Laval.

The innovative heat exchanger provides levels of pressure, temperature and corrosion resistance unmatched by any other brazed plate heat exchanger. With the AlfaNova, it becomes feasible to use a high-efficiency plate heat



exchanger under the kinds of extreme temperature and pressure fatigue conditions that other technologies cannot manage over the lifetime of the transmission.

As a result, AlfaNova units have become a breakthrough gasket-free alternative for a wide range of industrial applications that use aggressive liquids. This ensures low lifecycle costs – even under high temperatures exceeding 550°C (1022°F).

Subjected to exhaustive testing, AlfaNova units have proven to give maximum safety, reliability and durability.

A cost-effective transfer solution: This technology is ideally suited to copper-free, extreme pressure, thermal cycling and high temperature applications. There are a variety of mounting options and connections available.

The AlfaNova plate heat exchanger can seal up to 30 bar (450 psi) and is rated up to 550°C (1022°F).



Key benefits:

- 100% stainless steel
- Copper-free and corrosion-resistant
- For extreme temperatures and pressures

Rubber tube sheet shell-and-tube heat exchanger

Designed for extreme duty on-and off-highway

Using revolutionary technology, the flexible design of Alfa Laval's rubber tube sheet shell-and-tube heat exchanger is the ideal solution for high shock and vibration resistance. Reducing or even eliminating the need for brazing, the innovative model improves engine reliability, reduces part-to-part vibration, and minimizes engine lifecycle costs.



As the design eliminates brazing, tubes are never annealed with heat and the overall strength of the copper tubes is retained – resulting in a highly reliable cooling solution.

The rubber tube sheets also isolate the tube bundle from engine vibration and thermal expansion, resulting in a reduction of thermal stress as the tubes can expand in the rubber.

The tubes are mechanically retained in non-metallic tube baffles, helping to eliminate tube-to-baffle wear. Removable ends are provided and preferred by many industries for service and maintenance. O-ring seals are also used for reusability.

A variety of shell housings are available – including aluminium, cast aluminium, cast iron and reinforced plastic. The heat exchangers can seal up to 22 bar (325 psi) and are rubber rated up to 176°C (300°F).



Key benefits:

- High shock and vibration resistance
- Improves engine reliability
- Minimalizes lifecycle costs

Brazed shell-and-tube heat exchanger

High-efficiency cooling for heavy duty on- and off-highway

This robust, extremely efficient heat exchanger is designed for high pressure and high temperature applications, such as transmission cooling. It is manufactured with non-ferrous materials – eliminating thermal expansion problems, as the shell and tube expand at the same rate.



Brazed shell-and-tube heat exchangers can be easily customized to fit specific customer requirements and are suitable for a variety of applications within heavy duty on- and off-highway. They provide maximum efficiency, and are able to withstand high flow rates with a low pressure drop.

The brazed shell-and-tube design is ideal for applications with different liquid flows. To optimize flow and velocity, you can change the oil velocity (shell-side liquid) by changing the quantity and cut of the baffles. To change the water velocity (tube-side liquid), simply adjust the multi-tube passes.

Brazed shell-and-tube heat exchanger housings are primarily made of copper. The copper housings are offered at various wall thickness to specifically meet application conditions. The brazed shell-and-tube heat exchanger

can withstand pressures up to 31 bar (450 psi) and temperatures up to 287°C (550°F).



Key benefits:

- Non-ferrous materials
- Easily customized
- For high temperatures and pressures

Technical data

Shell-and-tube heat exchangers

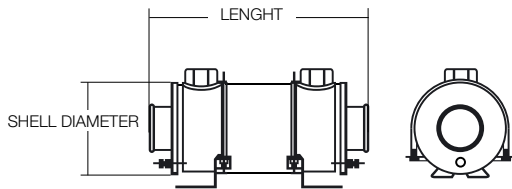
Diameter in mm (inch)	50-200 (2-8)
Length in mm (inch)	Up to 1800 (72)
Tube diameter in mm (inch)	4,76 (3/16), 6,35 (1/4), 9,53 (3/8), and 15,88 (5/8)
Shell material	Cast Iron, Cast Aluminum, Extruded Aluminum, Copper and Reinforced Plastic
Bundle material	Copper and 90/10 Cupronickel
Connections	NPT, SAE O-ring seal, SAE Flange and Hose Connections
Max pressure in bar (psi)	30 (450)
Max temperature in C (F)	285° (550°)
Fluid capability	Glycols, Oils, Fuels, Water, Seawater, and Power Steering.

Cooper brazed plate heat exchangers (CB) / Fusion-bonded AlfaNova (AN)

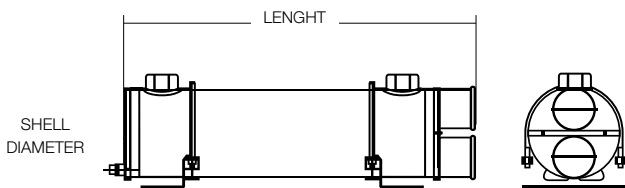
Depth (a) in mm (inch)	25 (1) - 680 (27)
Length (b) in mm (inch)	207 (8.15) - 825 (32.48)
Width (c) in mm (inch)	77 (3.03) - 390 (15.35)
Plate material	Stainless steel
Connections	NPT, SAE O-ring seal, SAE Flange and Hose Connections
Max pressure in bar (psi)	BHE 30 (450) *AN 30 (450)
Max temperature in C (F)	BHE 175° (350°) AN 550° (1022°)
Fluid capability	Glycols, Oils, Fuels, Water and Power Steering.

*lower at higher temperatures

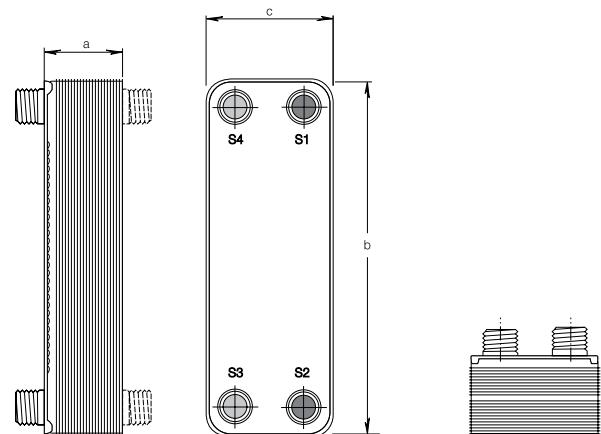
1 Pass Oil Cooler



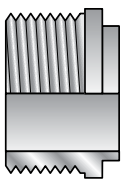
2 Pass Oil Cooler



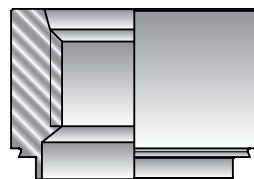
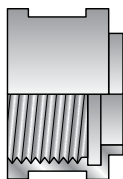
Brazed Heat Exchanger



Connections



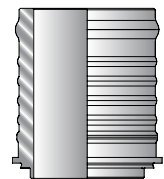
NPT
Outside threaded / Inside threaded



SAE O-ring seal



SAE Flange



Hose

How to contact Alfa Laval

Up-to-date Alfa Laval contact details for all countries are always available on our website at www.alfalaval.com.