OLAER®

The Professional Choice

PWO

Water Oil Cooler

OLAER PWO | Lightweight, compact and efficient water oil cooler

Olaer is a global player specialising in innovative, efficient system solutions for temperature optimisation and energy storage.
All over the world, our products are working in the most diverse environments and applications.

Unique design

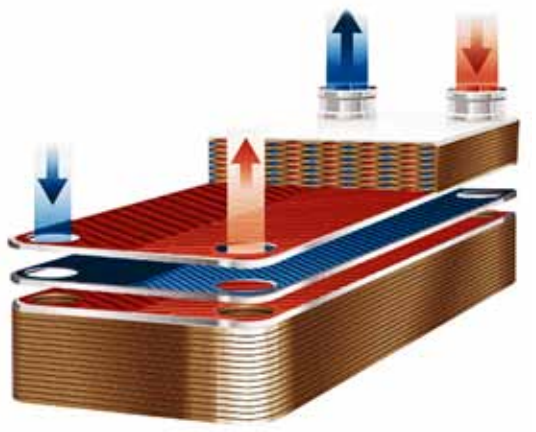
Optimal performance as well as maintenance free

The PWO is a compact and lightweight water oil cooler with a high cooling capacity compared to size. This lightweight and compact water oil cooler consists of corrugated channel plates sandwiched between the front and rear cover plates. The channel plates are pressed and vacuum brazed in the same automated procedure, and with rigorous standards of quality control.

The unique plate design provides high turbulent flow conditions throughout the cooler, the key to efficient cooling. This turbulent flow reduces the risk for clogging, which in turn makes this PWO virtually maintenance free.

A wide number of possibilities
The unique design emphasizes a number of possibilities for versatile and efficient solutions. The PWO can easily be adapted to a variety of needs and special applications including seawater, aggressive oils, high pressure and high temperature applications. With a PWO water oil cooler in your system, you can be assured that the fluid in your system is working at the correct temperature, providing maximum performance and reliability in your system.

PWO WATER OIL COOLER
- Light and compact
- Suitable for many applications
- Ease of installation
- Cost efficient and environmentally friendly



PWO

Complete system for water oil cooling

PWO
standard range...
...of water oil coolers is available in a wide number of sizes and is in general available for immediate off-the-shelf delivery. The basic material is stainless steel (AISI 316/304), vacuum brazed with pure copper. AISI 316 can be limited to the parts of the PWO that actually come in contact with fluid, i.e. the channel plates. PWO requires small hold up volumes , i.e. a lower cost and a more environmentally-friendly solution. Low installation cost allows for oversizing for future requirements or peak loads

PWO
in Mo-steel...
...provides higher resistance vs. AISI 316 to pitting and crevice corrosion and chloride-rich fluids. PWO's state-of-the-art brazing technology eliminates the risk of intergranular corrosion. Mo-steel can be limited to the parts of the PWO that actually come in contact with corrosive fluid, i.e. the channel plates. Typical applications for the Mo-series are in industrial applications where high chloride concentrations put high demands on corrosion resistance. Another typical application is in the pulp and paper industries that often process with chloride-rich fluids.

PWO
in stainless steel...
...free from copper. The nickel-based brazing material has increased durability to aggressive media and they can also endure higher working temperatures than normal copper-brazed PWO. PWO in stainless steel is used where the water supply is corrosive to copper. Other applications are cooling or heating of oil with a high content of sulphur, ammonia-based cooling systems where copper is prohibited as well as pharmaceutical and chemical applications where copper-brazed coolers are susceptible to corrosion from acids and bases. Another field of application is in high-temperature applications, e.g. heating of oils.

PWO-M...
...is an extremely small PWO water oil cooler, perfect wherever compactness is crucial. The gaskets and the plates can be of various materials to ensure compatibility with the refrigerant. Even if a costlier, highperformance metal is required for the heat transfer surfaces, the front and back plates can be made of more basic materials to cut costs. The snap-in-place connections allow easy assembly and the use of different metals without the risk of weld deterioration. The PWO-M with plates made of titanium resists corrosive seawater in onboard engine coolers and applications containing de-ionized water or aggressive fluids. See separate pamphlet, which can be downloaded from www.olaer.se .

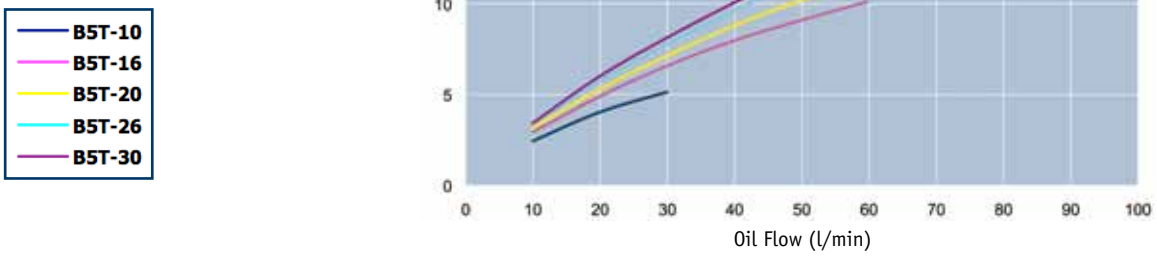
PWO with
double walled channel plates...
...are designed for applications where high thermal efficiency is a requirement, and the risk of internal leakage must be minimized. Thanks to excellent thermal efficiency, compactness, low weight and quick response time, it is primarily used in sanitary water applications, coolers for the chemical process industries, food and pharmaceutical industries and wherever required by law or other regulations.

PWO
for high pressure...
...is designed to meet the high demands for a cooler in applications with working pressures up to 45 bar (Note: special models and configurations are available for max working pressure 120 bar!). With the exception of high-pressure applications e.g. within the process industry, the PWO is perfect for use with new, high-capacity, environmentally-friendly refrigerants. The PWO's greater heat transfer efficiency provides opportunites linked to energy-cost and environmental savings.

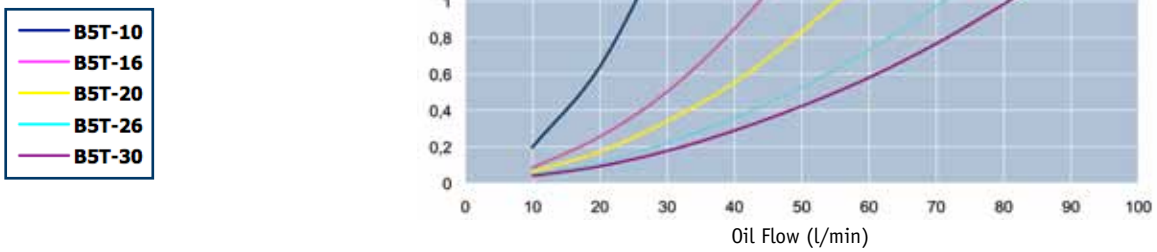
Oil type: ISO VG 46
Oil/water flow ratio: 2/1

Inlet oil temperature 60°C at Δ p max 2 bar
Inlet water temperature 20°C

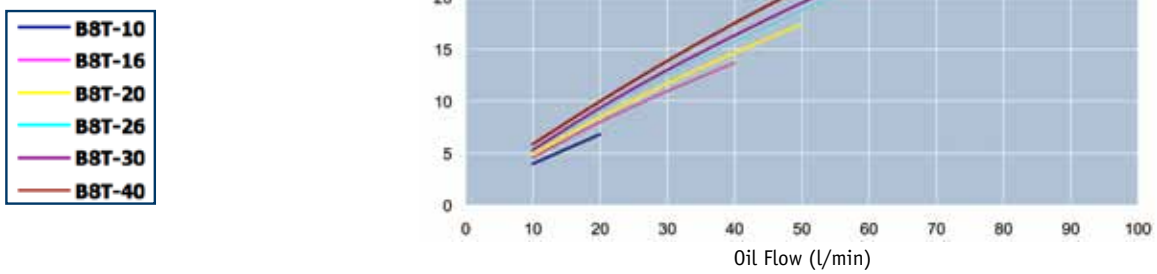
Heat Load (kW)
B5T



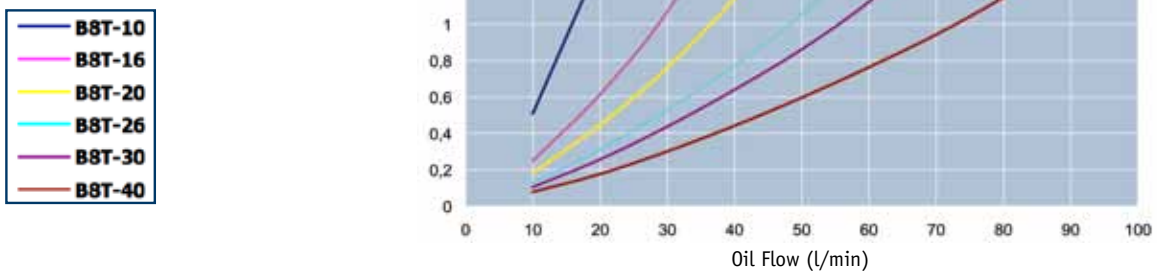
Pressure Drop (bar)
B5T



Heat Load (kW)
B8T



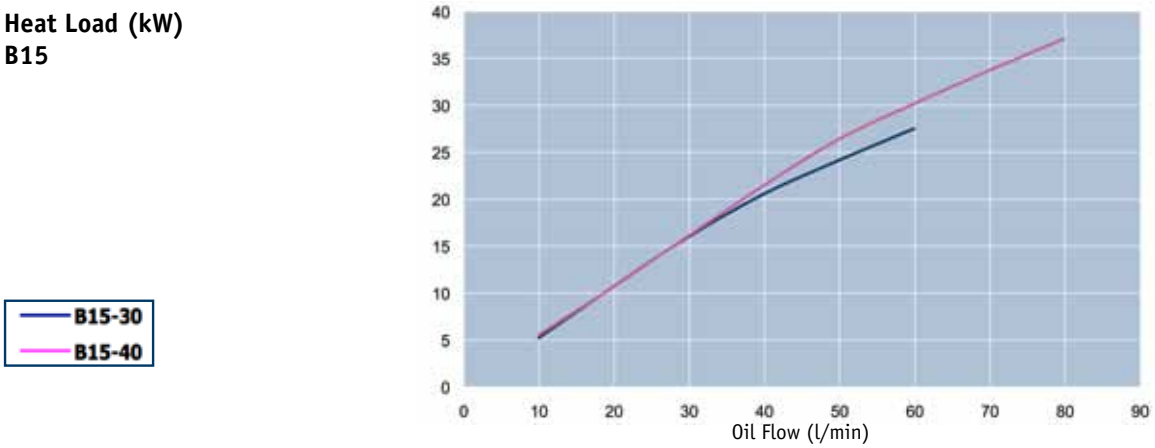
Pressure Drop (bar)
B8T



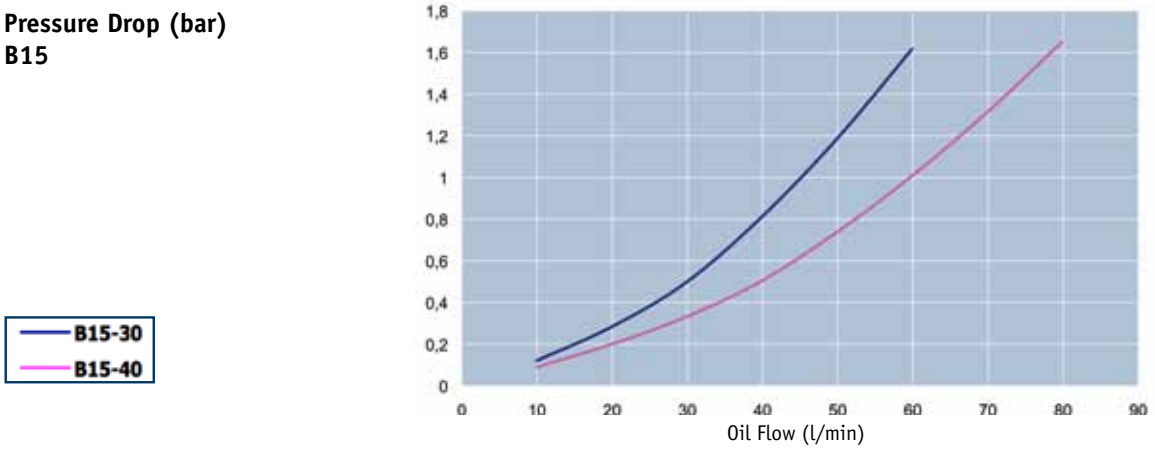
Oil type: ISO VG 46
Oil/water flow ratio: 2/1

Inlet oil temperature 60°C at Δp max 2 bar
Inlet water temperature 20°C

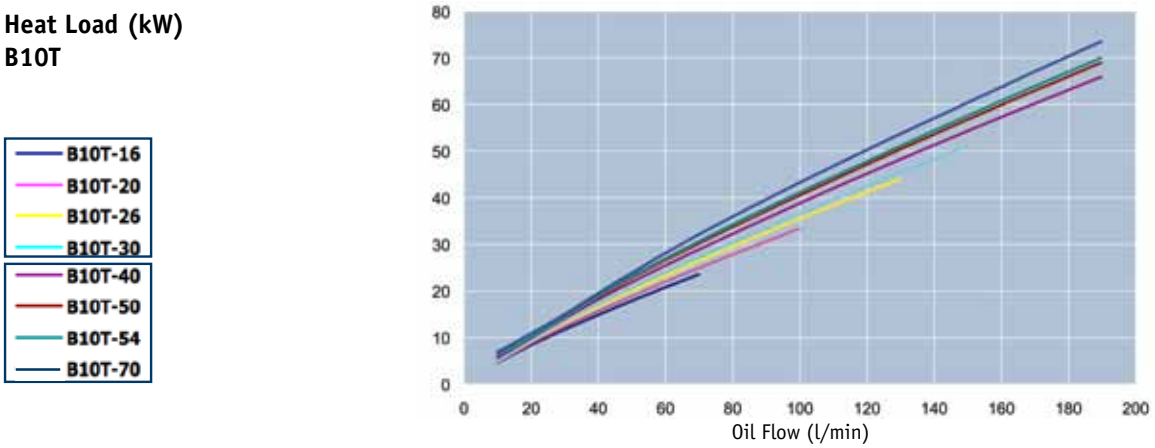
Heat Load (kW)
B15



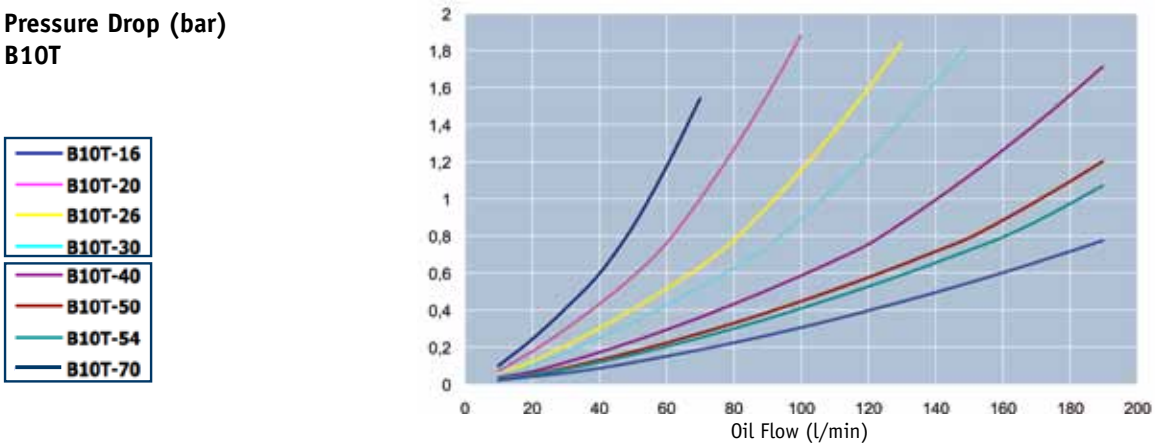
Pressure Drop (bar)
B15



Heat Load (kW)
B10T



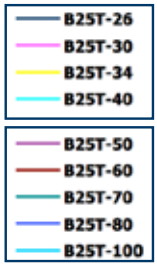
Pressure Drop (bar)
B10T

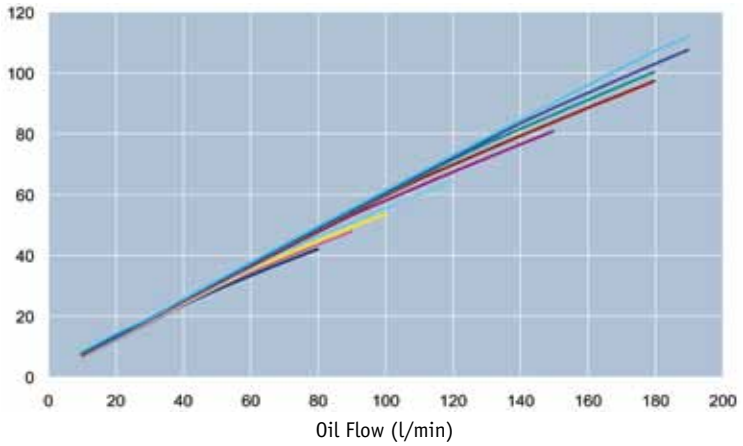


Oil type: ISO VG 46
Oil/water flow ratio: 2/1

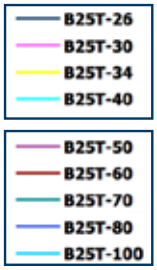
Inlet oil temperature 60°C at Δ p max 2 bar
Inlet water temperature 20°C

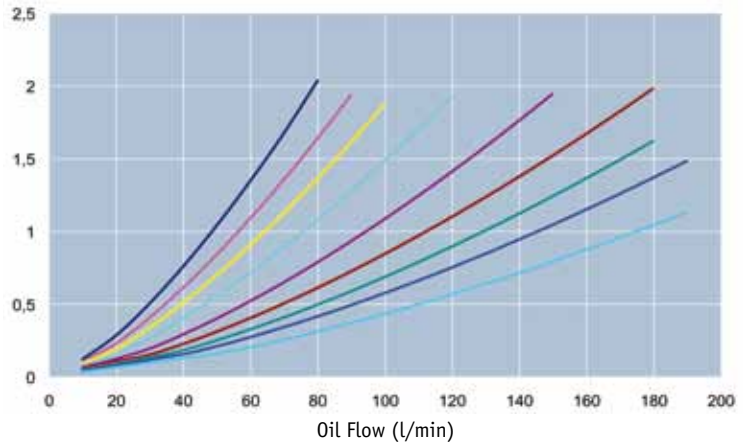
Heat Load (kW) B25T



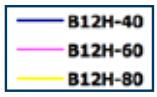


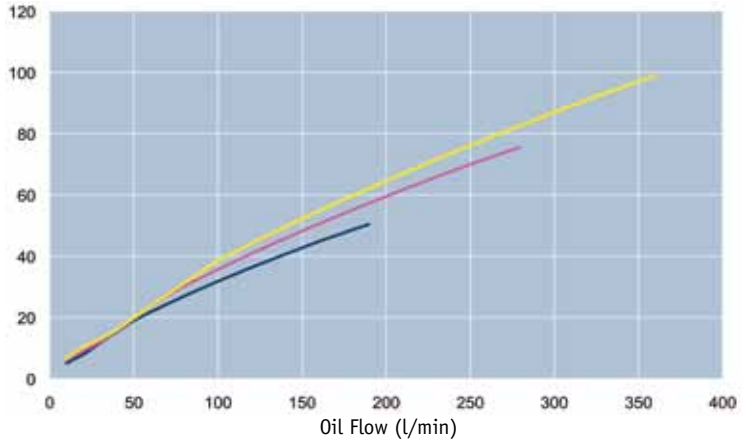
Pressure Drop (bar) B25T



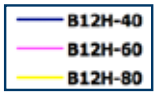


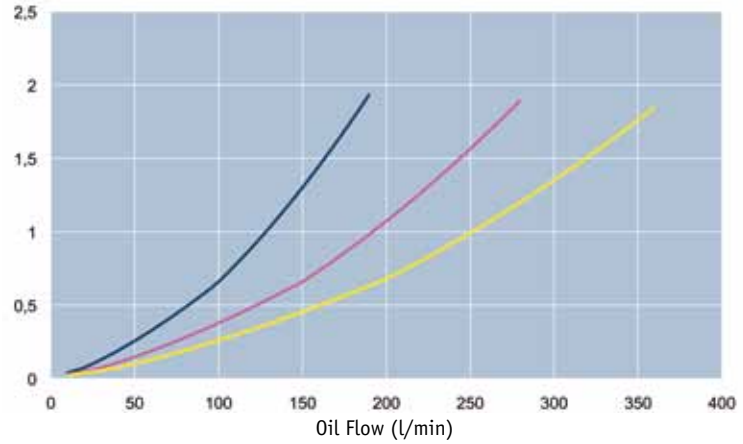
Heat Load (kW) B12





Pressure Drop (bar) B12

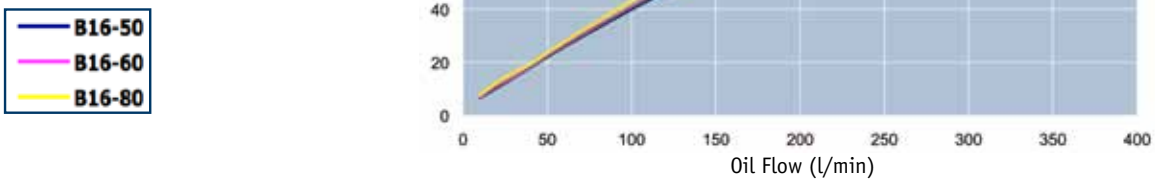




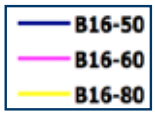
Oil type: ISO VG 46
Oil/water flow ratio: 2/1

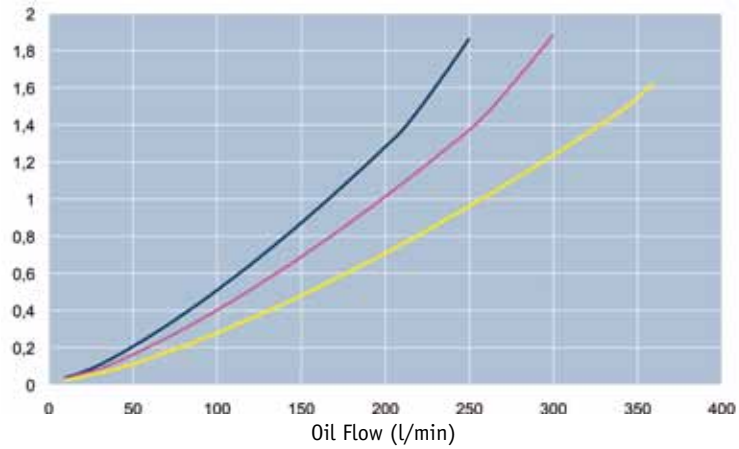
Inlet oil temperature 60°C at Δ p max 2 bar
Inlet water temperature 20°C

Heat Load (kW)
B16

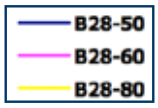


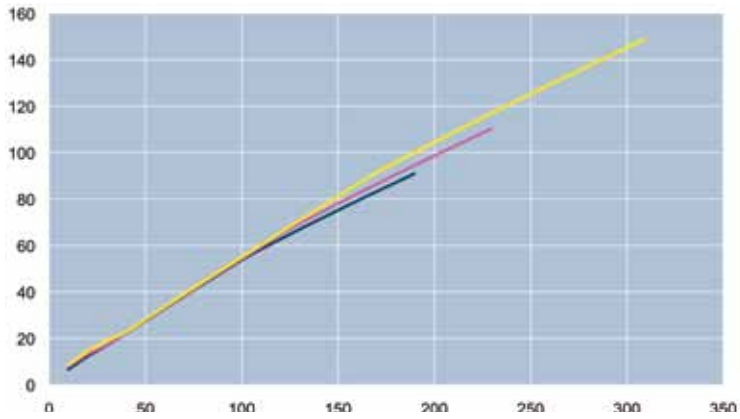
Pressure Drop (bar)
B16



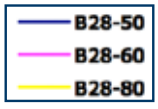


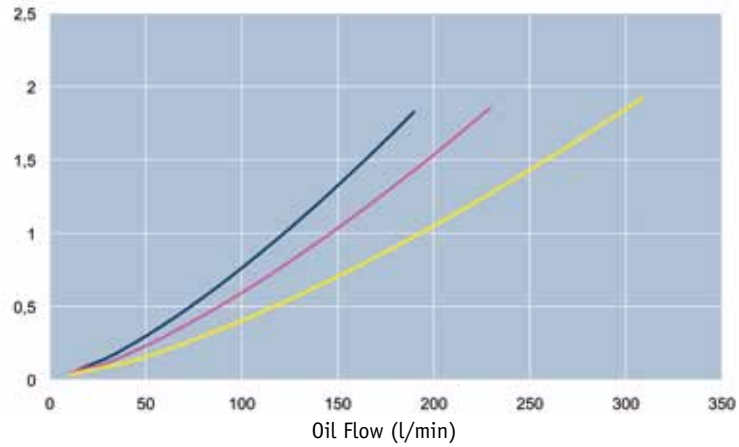
Heat Load (kW)
B28





Pressure Drop (bar)
B28

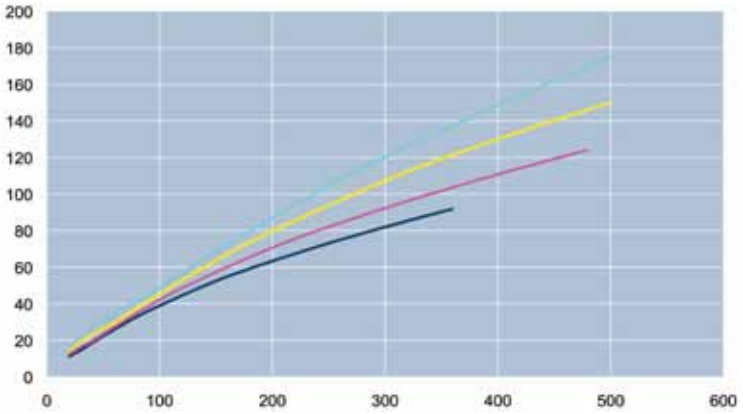




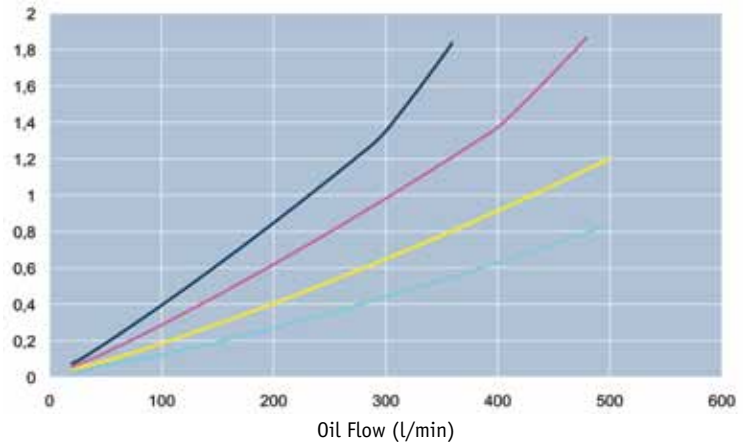
Oil type: ISO VG 46
Oil/water flow ratio: 2/1

Inlet oil temperature 60°C at Δp max 2 bar
Inlet water temperature 20°C

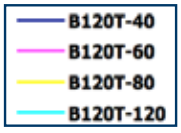
Heat Load (kW)
B35

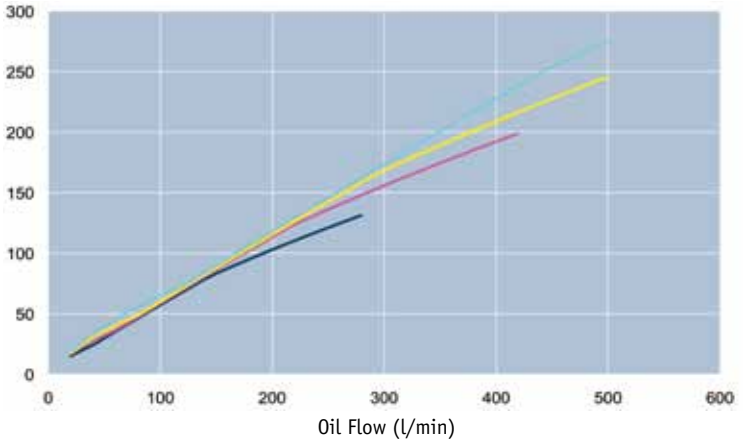


Pressure Drop (bar)
B35

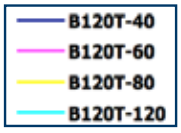


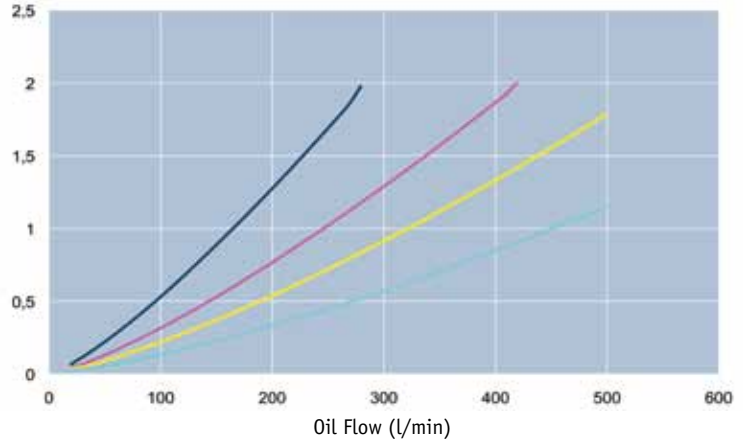
Heat Load (kW)
B120T





Pressure Drop (bar)
B120T



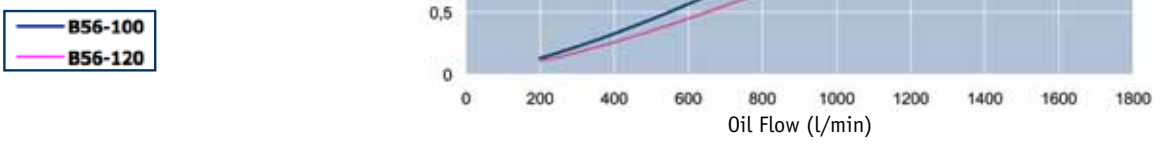


Oil type: ISO VG 46
Oil/water flow ratio: 2/1

Inlet oil temperature 60°C at Δp max 2 bar
Inlet water temperature 20°C

Heat Load (kW)
B56

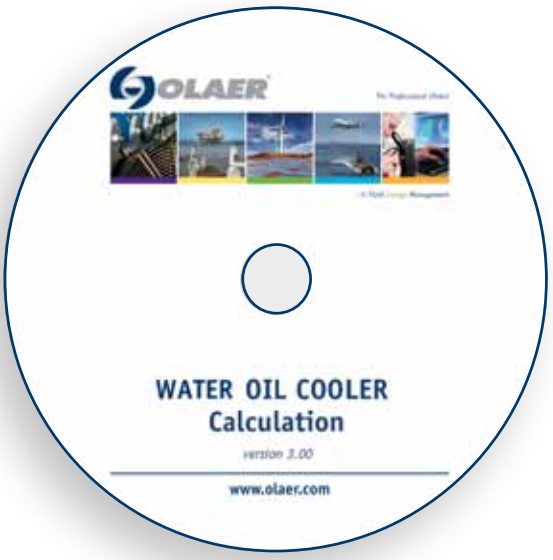
Pressure Drop (bar)
B56



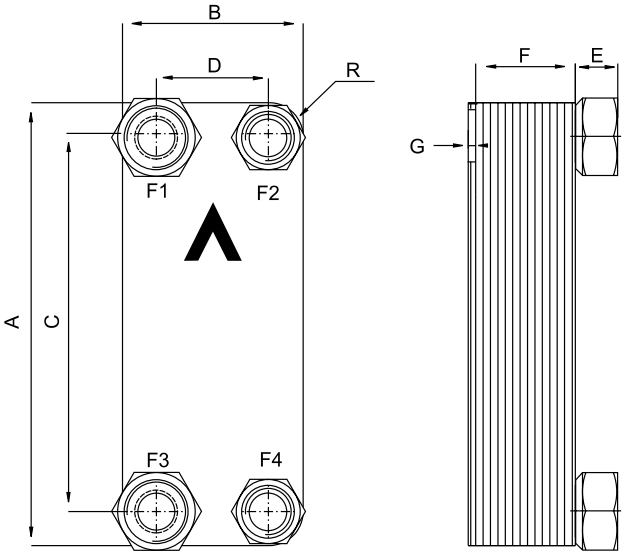
We offer a lot more than excellent coolers

Together we review all conditions, i.e. the water oil cooler performance, the working environment, type of fluid to be cooled etc. Because of our deep knowledge and long experience, we can build on previous solutions and discuss with you all feasible solutions. All information will be entered in the calculation program, which will quickly and accurately show the most adequate solution.

Our user-friendly calculation program is a simple and easily accessible aid, which based on given parameters, will select the most adequate cooler with regard to function and economy.
The program can easily be downloaded at no charge from www.olaer.se. Our technicians are, of course, at your disposal if you have any inquiries about the program and its use.



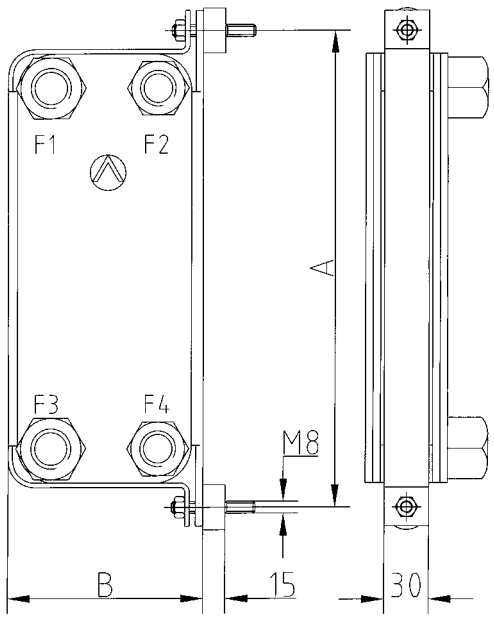
PWO STANDARD range of water oil coolers is available in a wide number of sizes and is in general available for immediate off-the-shelf delivery. The basic material is AISI 316 stainless steel, vacuum brazed with pure copper. PWO requires little refrigerant volume resulting in lower cost and a more environmentally-friendly installation. Low installation cost allows for oversizing to accommodate for future increase in requirements or peak loads.



TYPE	A *mm (±2)*	B *mm (±1)*	C *mm (±1)*	D *mm (±1)*	E *mm (±1) (+0.5% - 1.5%)*	F ** = x number of plates (±1)*	G *mm*	R *mm*
B5T	187	72	154	40	20.1 2x¾" - 2x ½"	2.24 x * + 4	7	16
B8T	310	72	278	40	20.1 2x¾" - 2x ½"	2.24 x * + 4	7	16
B10T	289	119	243	72	20.1 2x1" - 2x ¾"	2.24 x * + 4	6	22
B12	287	117	234	63	27.1 2x1¼" - 2x 1"	2.24 x * + 4	6	22
B15	465	72	432	40	20.1 2x¾" - 2x ½"	2.24 x * + 4	7	16
B16	376	119	320	63	27.1 2x1¼" - 2x 1¼"	2.24 x * + 4	6	23
B25T	526	119	479	72	20.1 2x1¼" - 2x 1"	2.24 x * + 4	6	23
B28	526	119	470	63	27.1 2x1¼" - 2x 1¼"	2.24 x * + 4	6	23
B35	393	243	324	174	27.1 2x1½" - 2x 1¼"	2.34 x * + 8	3	35
B120T	525	243	456	174	27.1 2x1½" - 2x 1¼"	2.29 x * + 10	4	35
B56	525	243	430	148	54.2 ISO G 4x 2½"	2.44 x * + 14	3	48

Units size >B35-90 should always be fixed with two clamps per cooler >B35-90

Clamp Type	A	B
FK-B5T	219	90
FK-B8T	342	90
FK-B10T, B12	319	135
FK-B15	496	90
FK-B16	408	139
FK-B25T, B28	554	135
FK-B35	422	259
FK-B56/B120T	554	259



B5T
Dimensions
72 x 187 mm

B8T
Dimensions
72 x 310 mm

B10T
Dimensions
119x 289 mm

B12
Dimensions
117 x 287 mm

B15
Dimensions
72 x 465 mm

B16
Dimensions
119 x 376 mm

B25T
Dimensions
119 x 526 mm

B28
Dimensions
119 x 526 mm

B35
Dimensions
243 x 393 mm

B56
Dimensions
243 x 525 mm

B120T
Dimensions
243 x 525 mm

TYPE	Max Temp *°C*	Min Temp *°C*	Working Pressure *155 °C bar*	Test Pressure *bar*	Empty Weight *kg* * = *number of plates*
B5T	225	-196	31	50	0.50 + NoP* x 0.05
B8T	225	-196	31	50	0.81 + NoP* x 0.08
B10T	225	-196	31	50	1.39 + NoP* x 0.10
B12	225	-196	31	50	1.44 + NoP* x 0.12
B15	225	-196	31	50	1.31 + NoP* x 0.10
B16	225	-196	28	45	1.73 + NoP* x 0.12
B25T	225	-196	31	50	2.15 + NoP* x 0.18
B28	225	-196	28	45	2.26 + NoP* x 0.16
B35	225	-196	31	50	6.99 + NoP* x 0.34
B120T	225	-196	31	50	10.27 + NoP* x 0.40
B56	225	-196	31	50	16.27 + NoP* x 0.42

Material:

Plates: EN 10028/7-1.4401 (AISI 316)

Brazing: Pure copper

Connections: EN 10272-1.4401 (AISI 316)

- in Fluid Energy Management

Global perspective

and local entrepreneurial flair

Olaer is a global player specialising in innovative, efficient system solutions for temperature optimisation and energy storage. Olaer develops, manufactures and markets products and systems for a number of different sectors, e.g. the aircraft, engineering, steel and mining industries, as well as for sectors such as oil and gas, contracting and transport, farming and forestry, renewable energy, etc.

All over the world, our products operate in the most diverse environments and applications. One constantly repeated demand in the market is for optimal energy storage and temperature optimisation. We work at a local level with a whole world as our workplace – local entrepreneurial flair and a global perspective go hand in hand.

Our local presence, long experience and a wealth of knowledge combine with our cutting-edge expertise to give you the best possible conditions for making a professional choice.