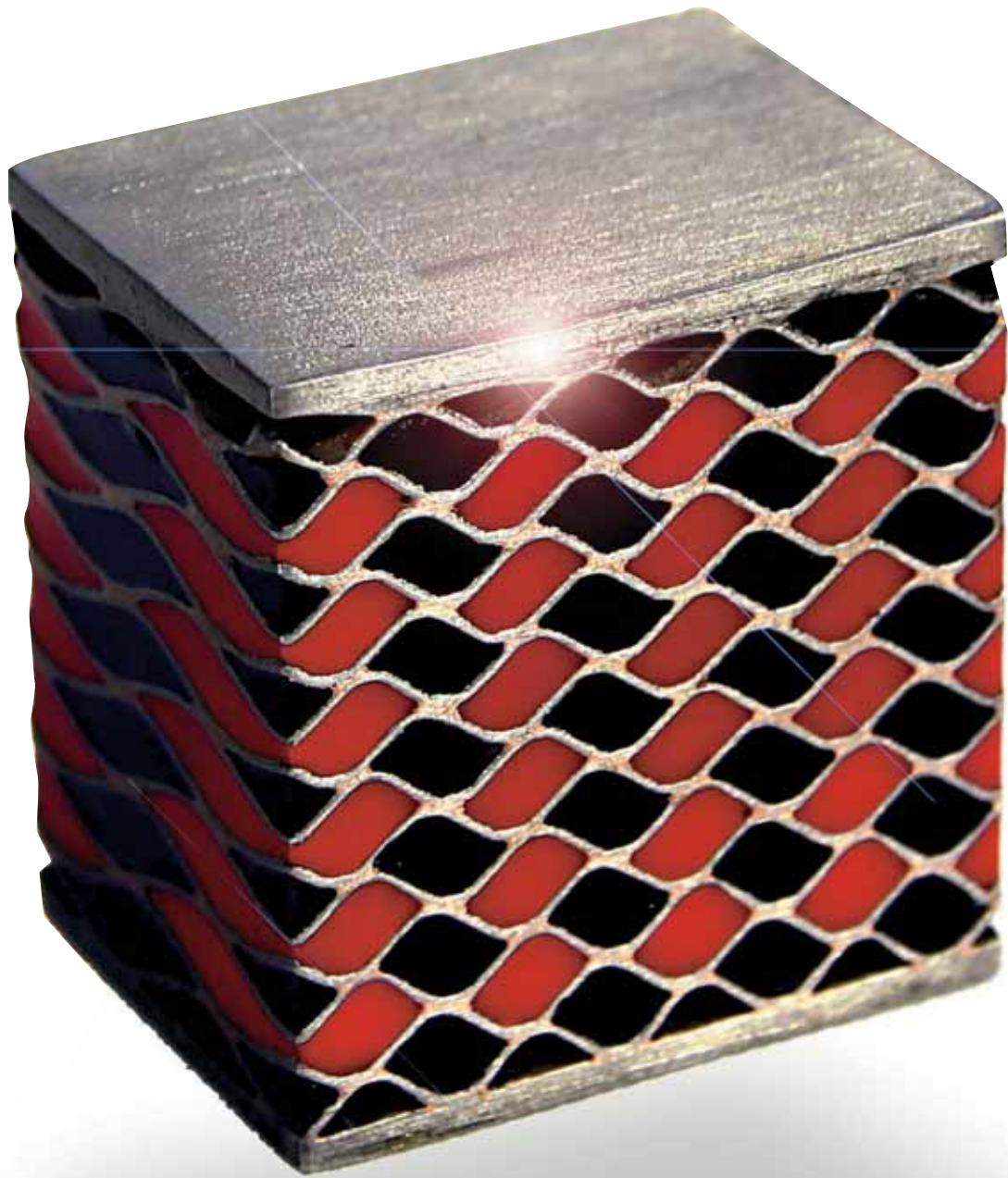




PWO

Light weight, compact and efficient water oil cooler



The unique plate design provides high turbulent flow conditions throughout the cooler.



Oiltech form part of the worldwide Olaer-Group. For more than 40 years, we have been a leader in the design and manufacture of oil coolers, accumulators and circulation pumps – products, which are a part of all modern hydraulic systems.

Unique design

Optimal performance as well as maintenance free

The **PWO** is a compact and lightweight water oil cooler with a high cooling capacity for the cooler 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.

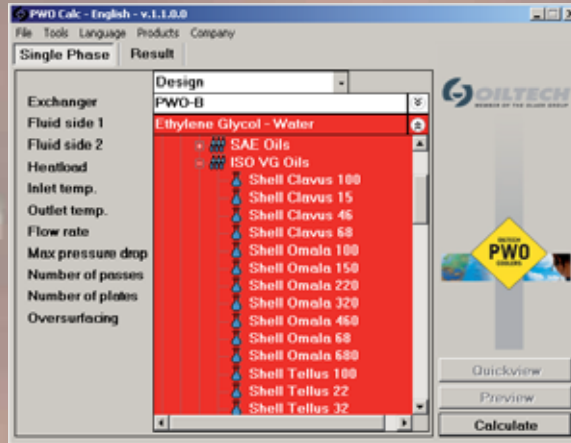
A wide number of possibilities

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 and provide maximum performance and safety in your system.

PWO WATER OIL COOLER

- Light and compact
- Suitable for many applications
- Ease of installation
- Cost efficient and environmentally friendly





Enter your parameters...

This block contains two screenshots from the PWO Calc software. The left screenshot shows a table of suggested solutions for different CBE (Circular Baffle Elements) configurations. The right screenshot shows a detailed design report for a heat exchanger.

CBE	dP 1 [bar]	dP 2 [bar]	Passes	Parallel
B5x16	1.02	0.263	1	1
B8x20	1.35	0.295	1	1
B10Tx16	0.679	0.141	1	1
B15x30	1.05	0.191	1	1
B25Tx26	0.857	0.124	1	1

B5			
Inlet temperature	°C	60,00	20,00
Outlet temperature	°C	56,49	22,87
Mass flow	l/min	50,00	25,00
Max pressure drop	bar	1,50	0,500
Heat load	kW		5,000
Heat transfer area	m²		0,168
HF	kW / m²		29,76
Log. Mean Temp. Diff.	K		36,81
Heat transfer coefficient (predicted/requi...	W/m²·°C		1490 / 809
Pressure drop	bar	1,02	0,263
Number of channels		8	7
Number of plates			16
Over surfacing	%		84
Fouling factor	m²·°C/kW		0,532

...suggested solution...

This block contains two screenshots from the PWO Calc software. The left screenshot shows a table of dimensions for various CBE configurations. The right screenshot shows a technical drawing of a heat exchanger with dimensions and a legend.

CBE	dP 1 [bar]	dP 2 [bar]	Passes
B5x16	1.02	0.263	1
B8x20	1.35	0.295	1
B10Tx16	0.679	0.141	1
B15x30	1.05	0.191	1
B25Tx26	0.857	0.124	1
B12H-Hx40	0.228	0.0258	1
B16x50	0.184	0.0169	1

Dimensions...



RAPID and efficient cooling, often with recycled energy. ADAPTED solutions with standard components.
 PRECISE with large variation. COMPACT with unmatched economy.

Exact calculation

...provides the correct cooler

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.

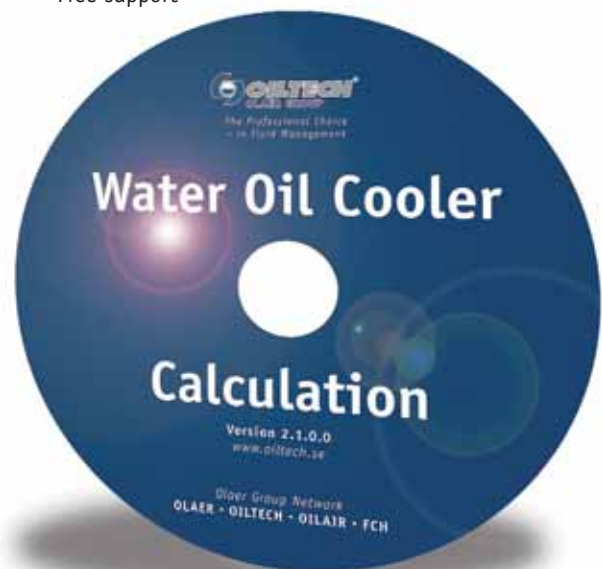
Our user-friendly calculation program is a simple and easily accessible aid, which based on given parameters, will select the most adequate cooler with regard to function and economy.

The program can easily be downloaded at no charge from www.oiltech.se. Our technicians are, of course, at your disposal if you have any inquiries about the program and its use.

PWO

CALCULATION PROGRAM

- A solution to your cooling needs
- Possible to download from our home site
- Ease of use
- Free support



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 AISI 316 stainless steel, vacuum brazed with pure copper. PWO requires little refrigerant volume, i.e. a lower cost and a more environment-friendly solution. Low installation cost allows for oversizing for future requirements or peak loads.

PWO in Mo-steel...

...provides high resistance to pitting and crevice corrosion and withstands chloride-rich fluids. PWOs 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, high-performance 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. 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.oiltech.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. 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 compensates largely for the extra cost of conventional refrigerants.







Complete

system for water oil cooling

The PW0 is a part of our water oil cooling system WEG03, an offline fluid cooling and cleaning system. Functions, such as water oil cooling, cleaning and circulation of fluids are all contained in one and only unit, which allows for an economy and ease of installation. Standard pump capacity is 20, 40, 60 or 80 l/min. Standard cooling capacity is 10, 20, 30 or 40 kW.

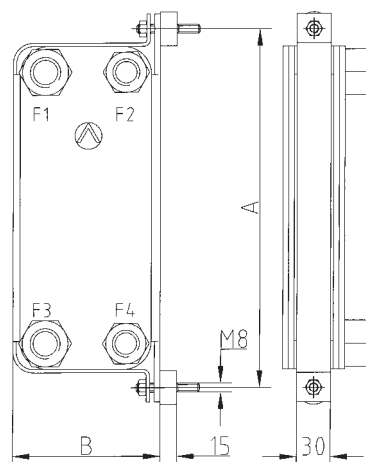
See pamphlet, which is available from www.oiltech.se.



PWO

Technical information

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	Max temp Temp °C	Min temp Temp °C	Working pressure 155°C bar	Test pressure bar	Empty weight kg * = x number of plates
B5	225	-196	31	50	1 + 0.04*
B8	225	-196	31	50	1 + 0.07*
B10T	225	-196	31	50	1 + 0.09*
B12	225	-196	31	50	2 + 0.12*
B15	225	-196	31	50	1 + 0.11*
B16	225	-196	28	45	2 + 0.11*
B25T	225	-196	31	50	2 + 0.17*
B28	225	-196	28	45	2 + 0.17*
B35	225	-196	31	50	7 + 0.34*
B120T	225	-196	31	50	10 + 0.43*
B56	225	-196	31	50	16 + 0.43*

Material:

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

Brazing: Pure copper

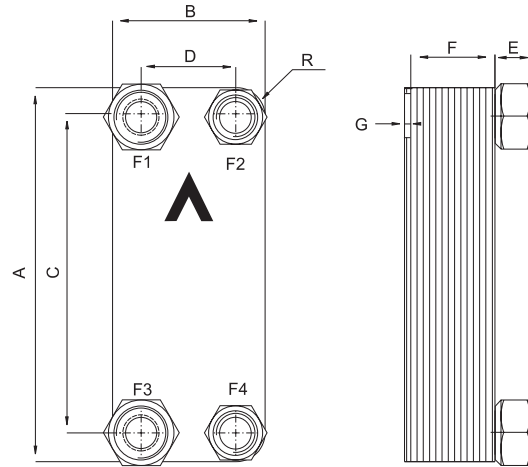
Connections: EN 10272-1.4401 (AISI 316)

Accessories

PWO water oil cooler

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

1. CLAMP TYPE	A	B
FK-B5	219	90
FK-B8	342	90
FK-B10, B12	319	135
FK-B15	496	90
FK-B16	408	139
FK-B25, B28	554	135
FK-B35	422	259
FK-B56/B120T	554	259



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
B5	187	72	154	40	20.1 2 x 3/4" - 2 x 1/2"	2.24 x * + 4	7	16
B8	310	72	278	40	20.1 2 x 3/4" - 2 x 1/2"	2.24 x * + 4	7	16
B10T	289	119	243	72	27.1 2 x 1" - 2 x 3/4"	2.24 x * + 4	6	22
B12	287	117	234	63	27.1 2 x 1 1/4" - 2 x 1"	2.24 x * + 4	6	22
B15	465	72	432	40	20.1 2 x 3/4" - 2 x 1/2"	2.24 x * + 4	7	16
B16	376	119	320	63	27.1 2 x 1 1/4" - 2 x 1 1/4"	2.24 x * + 4	6	23
B25T	526	119	479	72	27.1 2 x 1 1/4" - 2 x 1"	2.24 x * + 4	6	23
B28	526	119	470	63	27.1 2 x 1 1/4" - 2 x 1 1/4"	2.24 x * + 4	6	23
B35	393	243	324	174	27.1 2 x 1 1/2" - 2 x 1 1/4"	2.34 x * + 8	3	35
B120T	525	243	456	174	27.1 2 x 1 1/2" - 2 x 1 1/4"	2.29 x * + 10	4	35
B56	525	243	430	148	54.2 ISO G 4 x 2 1/2"	2.44 x * + 14	3	48

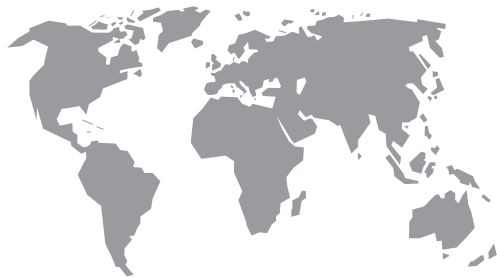


Production / © Micec Rylander-Byra

The Olaer Group develops, manufactures and markets products and systems in six business areas.

Global perspective

and local entrepreneurial flair



The Olaer Group is a global player specialising in innovative, efficient system solutions for temperature optimisation and energy storage.

The Group 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 the 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 combined with our cutting-edge expertise to give you the best possible conditions for making a professional choice.



The Professional Choice – in Fluid Management

Olaer Group Network



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