OILTECH®
OLAER GROUP

The Professional Choice – in Fluid Management

LAC-M

For industrial hydraulics in aggressive environments

The Olaer Group 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, e.g. the aircraft, engineering, steel and mining industries, as well as in sectors such as oil and gas, contracting and transport, farming and forestry, renewable energy, etc.

LAC-M air oil cooler

For aggressive environments

LAC-M air oil cooler with AC-motor is designed to resist aggressive environments such as marine, offshore and coastal environments, environments with a high level of contamination such as chemical industries, refineries etc. Maximum cooling capacity is 160 kW at ETD 40 °C. All components are thoroughly selected for optimal performance and corrosion resistance.

Temperature optimisation - a basic prerequisite for cost-efficient operation

Temperature balance in a hydraulic system occurs when the cooler can cool down the energy input that the system does not consume - the system's lost energy (Ploss = Pcool = Pin – Pused). Temperature optimisation means that temperature balance occurs at the system's ideal working temperature – the temperature at which the oil's viscosity and the air content comply with recommended values. The correct working temperature produces a number of economic and environmental benefits:

- The hydraulic system's useful life is extended.
- The oil's useful life is extended.
- The hydraulic system's availability increases – more operating time and fewer shutdowns.
- Service and repair costs are reduced.
- High efficiency level maintained in continuous operation – the system's efficiency falls if the temperature exceeds the ideal working temperature.

More cooling per

Optimal sizing produces efficient cooling. Correct sizing requires knowledge and experience. Oiltech's calculation program, combined with our engineers' support, gives you access to this very knowledge and experience. The result is more cooling per invested.

Can be fitted with thermo contact
for oil temperature control.

Different by-pass
functions are available to protect against cold starts.

Can be fitted
with dust and/or stone guard.

AC motor
with heater.

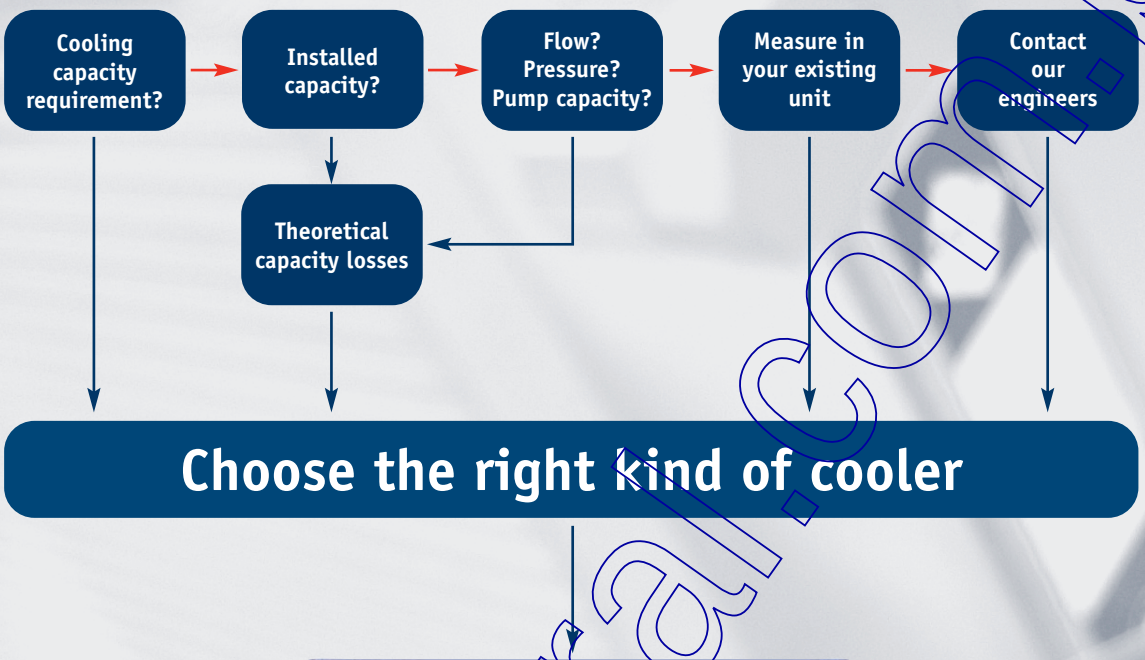
Cooler matrix
with low pressure drop and high cooling capacity.

Tested and approved according to ISO and IEC

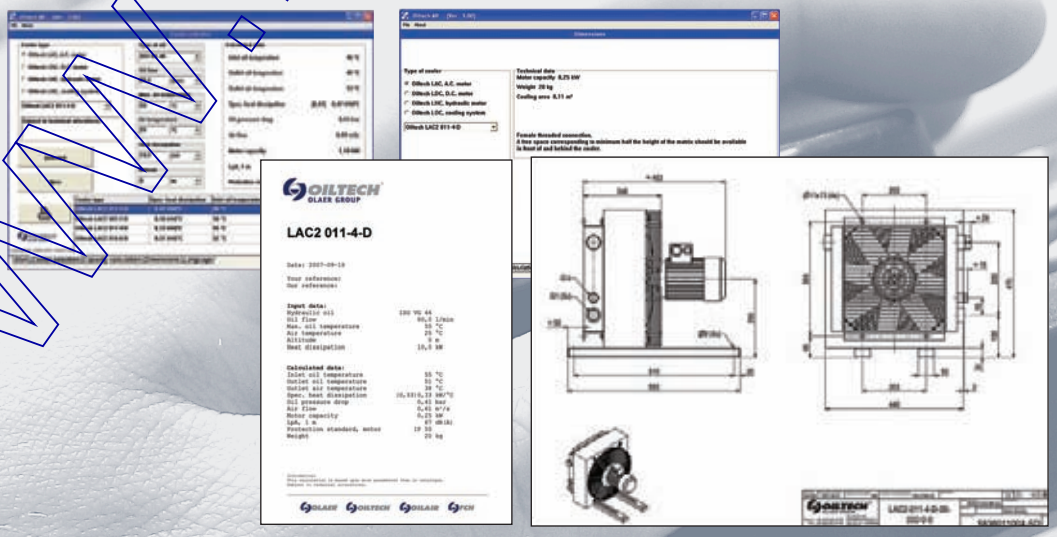
All components made in steel, such as fan housing, motor supports etc. are pre-treated and painted. According to The Swedish Corrosion Institute this corresponds to a corrosion protection equivalent to corrosivity category C5 (very high) according to ISO 9223:1992.

The cooler matrix has been tested and approved by Det Norske Veritas according to IEC 60068-2-52, test Kb, which includes a 4 weeks' salt spray test. This test is intended for equipment placed unprotected on open deck, masts, below floor plates in engine room and other places where it can be exposed to salt fog/brine solutions.

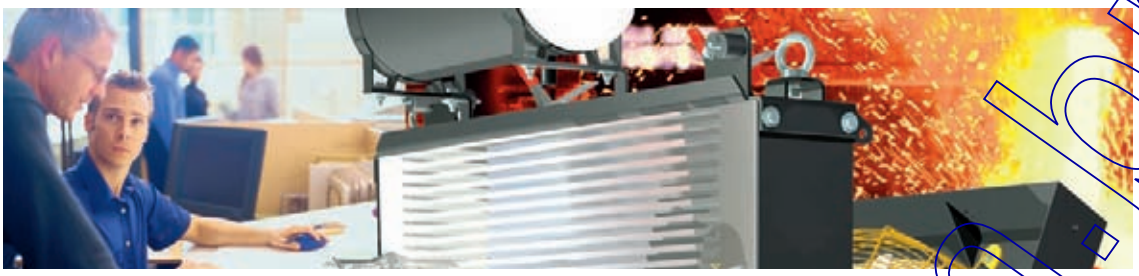
Calculate the cooling capacity requirement



Enter your values...



...suggested solution



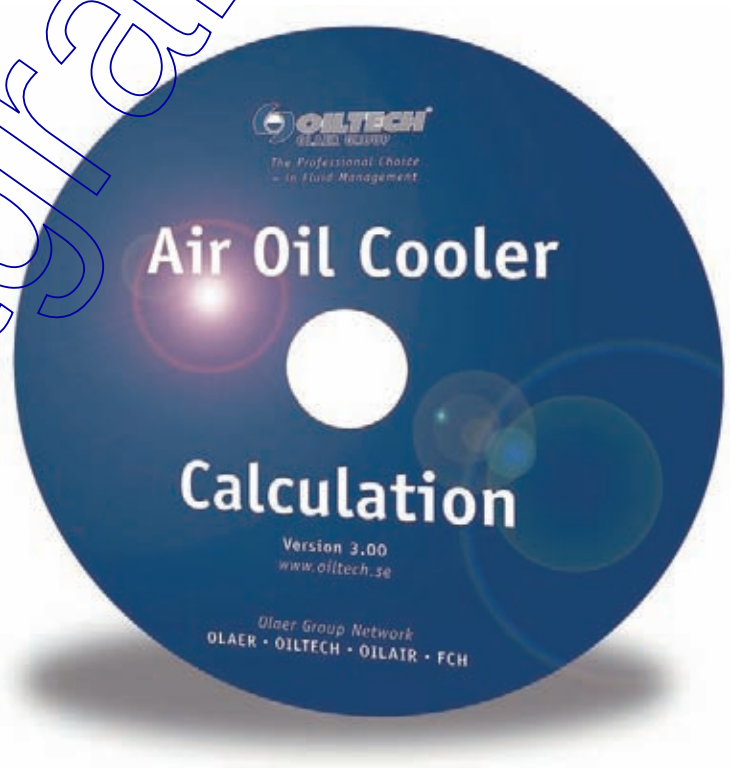
Better energy consumption means not only less environmental impact, but also reduces operating costs, i.e. more cooling per invested.

More cooling per

with precise calculations and our engineers' support

Optimal sizing produces efficient cooling. Correct sizing requires knowledge and experience. Oiltech's calculation program, combined with our engineers' support, gives you access to this very knowledge and experience. The result is more cooling per invested.

The user-friendly calculation program can be downloaded from Oiltech's website – www.oiltech.se.



Valuable system review into the bargain

A more wide-ranging review of the hydraulic system is often a natural element of cooling calculations. Other potential system improvements can then be discussed – e.g. filtering, offline or online cooling, etc. Contact us for further guidance and information.

Oiltech's quality and performance guarantee insurance for your operations and systems

A constant striving towards more cost-efficient and environmently-friendly hydraulic systems requires continuous development. Areas where we are continuously seeking to improve performance include cooling capacity, noise level, pressure drop and fatigue.

Meticulous quality and performance tests are conducted in Oiltech's laboratory. All tests and measurements take place in accordance with standardised methods - cooling capacity in accordance with EN1048, noise level ISO 3743, pressure drop EN 1048 and fatigue ISO 10771-1.

For more information about our standardised tests, ask for "Oiltech's blue book – a manual for more reliable cooler purchasing".

Key for LAC-M and LAC2-M air oil coolers

All positions must be filled in when ordering.

EXAMPLE:

LAC2-M - 016 - 6 - A - 50 - T20 - D - 0

1 2 3 4 5 6 7 8

1. AIR OIL COOLER WITH AC MOTOR = LAC-M / LAC2-M

2. COOLER SIZE

007, 011, 016, 023, 033, 044, 056, 058, 076, 078, 110, 112, 113	

3. NUMBER OF POLES, MOTOR

2-pole	= 2
4-pole	= 4
6-pole	= 6
8-pole	= 8

4. VOLTAGE AND FREQUENCY

No motor	= 0
Three-phase 220-240/380-420 V 50 Hz*	= A
Three-phase 440-480 V 60 Hz*	= B
Three-phase 220-240/380-420 V 50 Hz 440/480 V 60 Hz***	= D
Three-phase 500 V 50 Hz	= E
Three-phase 400/690 V 50 Hz 440-480 V 60 Hz	= F
Three-phase 525 V 50 Hz	= G
Motor for special voltage (stated in plain language)	= X

** = for LAC 033 to LAC 113, ** = contact us for frequency 60 Hz*
**** = for LAC2-M 007 to LAC2-M 023*

5. THERMO CONTACT

No thermo contact	= 00
40 °C	= 40
50 °C	= 50
60 °C	= 60
70 °C	= 70
80 °C	= 80
90 °C	= 90

6. COOLER MATRIX

Standard	= 000
Two-pass	= T00
Built-in, pressure-controlled bypass, single-pass	
2 bar	= S20
5 bar	= S50
8 bar	= S80
Built-in, pressure-controlled bypass, two-pass	
2 bar	= T20
5 bar	= T50
8 bar	= T80
Built-in temperature and pressure-controlled bypass, single-pass	
50 °C, 2.2 bar	= S25
60 °C, 2.2 bar	= S26
70 °C, 2.2 bar	= S27
90 °C, 2.2 bar	= S29
Built-in temperature and pressure-controlled bypass, two-pass	
50 °C, 2.2 bar	= T25
60 °C, 2.2 bar	= T26
70 °C, 2.2 bar	= T27
90 °C, 2.2 bar	= T29

7. MATRIX GUARD

No guard	= 0
Stone guard	= S
Dust guard	= D
Dust and stone guard	= P

8. STANDARD/SPECIAL

Standard	= 0
Special	= Z

For information
such as dimensional drawings and cooling capacity curves, see brochure for our standard range of LAC air oil coolers or enter www.oiltech.se

Technical specification

FLUID COMBINATIONS

Mineral oil	HL/HLP in accordance with DIN 51524
Oil/water emulsion	HFA, HFB in accordance with CETOP RP 77H
Water glycol	HFC in accordance with CETOP RP 77H
Phosphate ester	HFD-R in accordance with CETOP RP 77H

COOLER MATRIX

Maximum static working pressure	21 bar
Dynamic working pressure	14 bar*
Heat transfer tolerance	±6 %
Maximum oil inlet temperature	120 °C

** Tested in accordance with ISO/DIS*

MATERIAL

Cooler matrix	Aluminium
Fan blades	Glass fibre reinforced polypropylene (PPG)
Fan hub (LAC2-M 007-023)	Aluminium
Motor hub (LAC-M 033-113)	Aluminium
Electric motor (LAC2-M 007-LAC-M 078)	Aluminium
Electric motor (LAC-M 110-113)	Cast iron
Dust guard	Stainless steel
Mounting details	Acidproof steel
Thermo contact	Brass
Other parts	Steel

SURFACE TREATMENT

Cooler matrix	Black powder coated
Fan blades	Black
Motor hub (LAC-M 033-113)	Black anodized
Electric motor	Painted in black
Other parts	Pre-treated and black powder coated

3-PHASE MOTOR WITH HEATER

3-phase asynchronous motor in accordance with IEC 60034-1 and IEC 60072 in accordance with DIN 57530/VDE 0530
Nominal voltage: 50 Hz 220-240V/380-420V or 60 Hz 255-290V/440-480V*

Insulation class	F
Rise of temperature	B
Protection class	IP 56

The heater should be connected to 220V 50/60 Hz. The output of the heater depends on motor size. Use a relay to allow the heater to start when the motor stops. Alternatively, the heater can be constantly connected.

** A, B och D motors.*

THERMO CONTACT

Protection class	IP 67
Maximum oil temperature	120 °C

CONTACT US FOR ADVICE ON

- Oil temperatures > 120 °C
- Oil viscosity > 100 cSt

With our specialist expertise, industry knowledge and advanced technology,
we can offer a range of different solutions for coolers and accessories to meet your requirements.

Take the next step

– choose the right accessories

Supplementing a hydraulic system with a cooler, cooler accessories and an accumulator gives you increased availability and a longer useful life, as well as lower service and repair costs. All applications and operating environments are unique. A well-planned choice of the following accessories can thus further improve your hydraulic system. Please contact us for guidance and information.

Pressure-controlled bypass valve *Integrated*

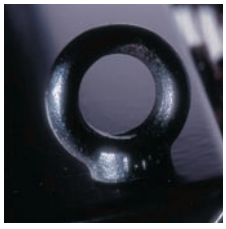
Guides the oil past the cooler matrix if the pressure drop is too high. Reduces the risk of the cooler bursting, e.g. in connection with cold starts and temporary peaks in pressure or flow. Available for single-pass or two-pass matrix design.

Stone guard/Dust guard

Protects components and systems from tough conditions.

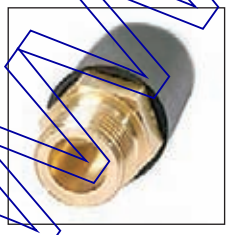
Temperature-controlled bypass valve *Integrated*

Same function as the pressure-controlled bypass valve, but with a temperature-controlled opening pressure – the hotter the oil, the higher the opening pressure. Available for single-pass or two-pass matrix design.



Lifting eyes

For simple installation and relocation.



TBF Thermo contact

Oiltech thermo contact type TBF made in brass is fitted with a bimetallic thermostat with fixed temperature. Protected to IP67 the thermo contact is suitable for outdoor installation or other environments where humidity, salt or other environmental influence is present.

Temperature-controlled 3-way valve *External*

Same function as the temperature-controlled bypass valve, but positioned externally.

Note: must be ordered separately.

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Production / © Mikke Mylander Aspect

Olaer Industry | Olaer Mobile | Olaer Energy | Olaer Oil & Gas | Olaer Special

The Olaer Group develops, manufactures and markets products and systems in five 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 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.

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