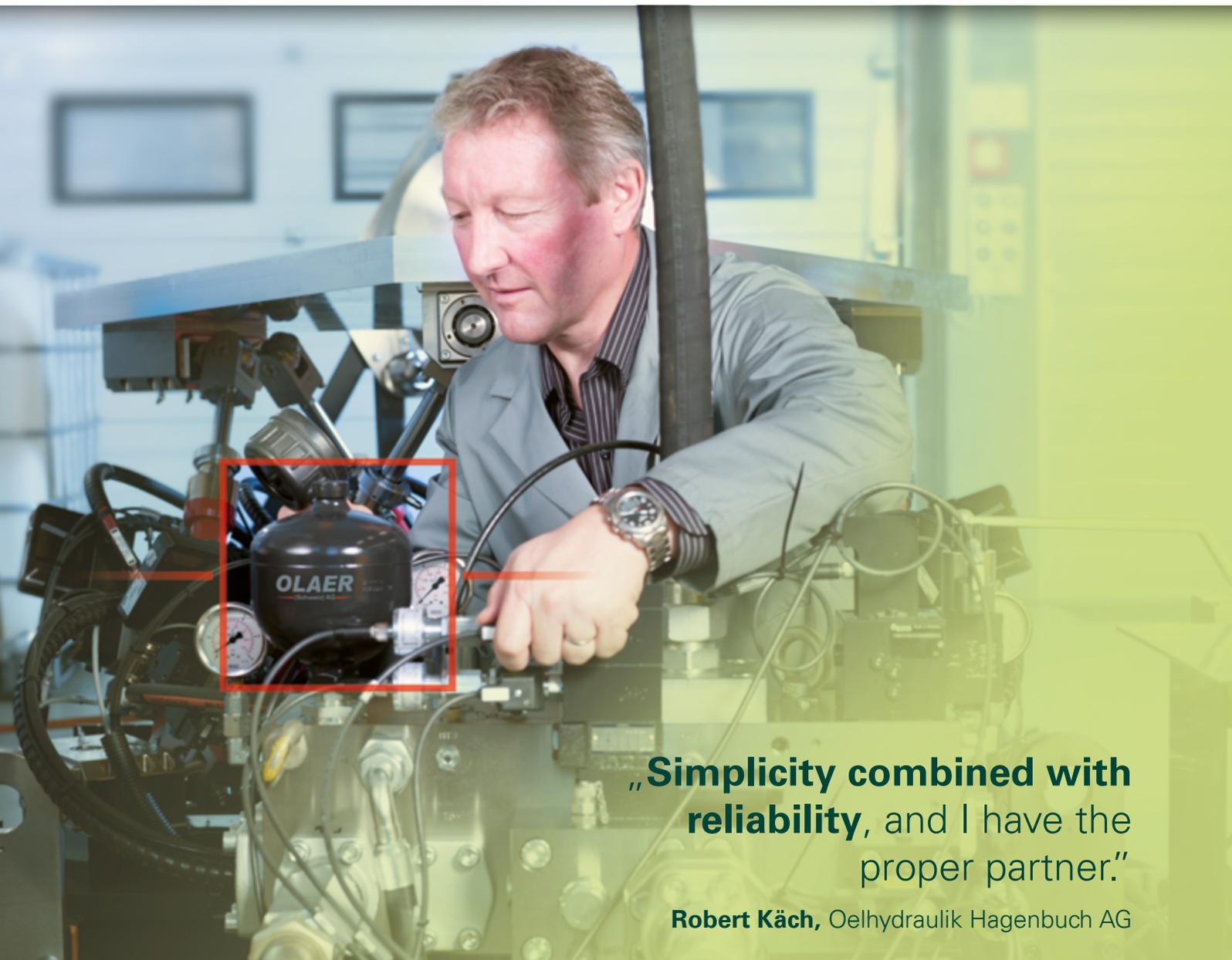




ORELL

Range of hydraulic products

Storing, cooling and filtering



„Simplicity combined with reliability, and I have the proper partner.“

Robert Käch, Oelhydraulik Hagenbuch AG

RANGE OF ACCUMULATORS

Quality that delivers what it promises

Engineering, sales and servicing of products and systems for **storing, cooling and filtering** fluids – this is what the we has stood for since 1969.

Apart from our main products in the hydraulics sector – hydraulic accumulators, heat exchangers and hydraulic filters – we have specialised for many decades in water hammer calculations as well as the production and delivery of appropriate dampers for drinking and waste water systems.

During this time we have gained a great deal of knowledge about applications and all this is freely available for you to use. With our engineering we offer you tailor-made solutions that meet the current demands.

Our products are based on tried and tested technology and continuous further development and they guarantee reliability. Compliance with the current regulations, guidelines and standards, including the appropriate declarations of conformity and certifications, are a matter of course for us.

Furthermore, at us, customer satisfaction, safety and service are top of our list of priorities.

Bladder accumulators – 0,2 to 57 litres

Regardless of the design, hydraulic accumulators allow the energy in a fluid to be stored and delivered when it is needed, depending on the requirement.

Bladder accumulators are the ideal all-round accumulators for any application. They are excellent for applications where reserves are required for energy or safety reasons such as for hydrostatic bearings, the supply of lubricating oil, chucking systems on machine tools, safety systems and emergency braking.

They protect expensive machines and systems in the event of a drive system failure.

The steel design of the EHV series ensures that maximum working pressures of **up to 760 bar** can be achieved. For the **version made entirely from stainless steel 316L** the maximum pressure is **207 bar**.

Industrial CE, ASME and TR-CU certifications among others, offshore DNV/GL and ABS certifications.



Large accumulators – 100 to 10000 litres

Our strength lies in the manufacture of low-pressure accumulators that handle high volumes in line with our customers' requirements. OLAER's standard service includes a very wide range of possible certifications or combinations of certifications, special surface treatments and connecting dimensions according to specifications. The accumulators are available in C-steel or stainless steel 316L.

Operating pressures are standardised to **16 or 25 bar** and can be adjusted, if required. **Volumetric flow rates of up to 3000 l/min** can also be achieved.

Examples of applications are energy reserves in large lubricating oil systems or thermal expansion tanks in the cooling circuits of large systems.

Industrial CE, ASME and TR-CU certifications among others, offshore DNV/GL and ABS certifications.



RANGE FOR ENCLOSURE AIR CONDITIONING

Cooling units

To achieve greater operational safety and extend the service life of the electronic components.

If, for example, the ambient temperature «T outside» is significantly higher than the desired temperature inside the control cabinet enclosure, air conditioning systems are used. They work according to the principle of a compression chiller.

A refrigerant is used as the cooling medium. This allows the control cabinet enclosure to be kept consistently at a constant temperature, irrespective of the ambient temperature. The **FLY**, **SKY**, **EGO**, **DEK** and **EMO** model series are suitable in part for mounting, installation or partial installation.

Available **cooling capacities from 300 to 15150 W**.



Air-water heat exchangers

A cooling element is used for **BLU-BIT** heat exchangers to cool the air inside the control cabinet enclosure. The heat conducted from the control cabinet is not released into the environment but is instead removed by a water return pipe so that it can, for instance, be reused in a heat recovery unit.

This type of cooling is often used for control cabinet enclosures if water cooling is used for other systems such as hydraulic oil, transmission oil or high-frequency spindles in addition to the electronics. In the majority of cases the cooling water required is produced by a water cooling system "in the self-contained circuit".

Available **cooling capacities from 1000 to 15000 W**.



Air-air heat exchangers

The **MIX** air-air heat exchanger has two air circuits that are completely separate from each other. The installed components are protected against outside influences.

For these indirect control cabinet enclosure chillers a heat exchanger package transfers the heat extracted from the control cabinet enclosure to the cooler ambient air.

Available **thermal capacity from 22 to 80 W/K**.



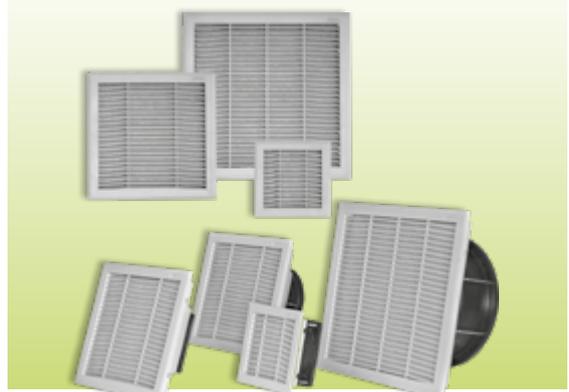
Ventilation units with filter/Ventilation towers

The fan and filter units (**FAN**) or **DLK** roof-mounted fans in combination with an identically constructed outlet filter ensure uniform distribution of heat in a control cabinet enclosure. They are used, in particular, when small amounts of heat need to be removed.

The limits of fan and filter units become apparent when the environment in which the control cabinet is being used is likely to be contaminated with high dust levels, moisture or chemical substances.

Air-air heat exchangers are used in such situations.

Available **air capacity from 36 to 4520 m³/h**.



STORAGE AND COOLING RANGE

Safety and shut-off units

Safety and shut-off units are used to **enhance safety, block and balance the pressure** of hydraulic accumulators and consumers. They meet the safety regulations for hydraulic accumulators in the various countries, in particular the pressure vessel regulations in force in Germany.

Depending on the version, the pressure in the accumulator and/or consumers is balanced manually or electrically using a solenoid-operated two-way valve. A current control valve that regulates the amounts of pressure fluids in or out can also be installed.

The DI 20 size is also available in a fully stainless steel version.



Nitrogen charging units

Commercial nitrogen cylinders are filled with a pressure of max. 200 bar. Hydraulic accumulators with a precharge pressure in excess of >200 bar can therefore no longer be filled from cylinders.

The potential of nitrogen cylinders is not used to the full in the case of precharge pressures between 100 and 150 bar. OLAER nitrogen charging units allow better use to be made of nitrogen cylinders and accumulators can be charged at pressures of **up to 400 bar**



Tester and pressuriser / pressure-reducing valves

The universal **VGU tester and pressuriser unit** is indispensable for checking, charging and draining the most commonly used hydraulic accumulators available on the market.

It is screwed to the pressurizing valve on the accumulator and connected to the nitrogen source using a high-pressure hose that is fitted with a **pressure-reducing valve**, e.g. from our **DRV** range.

If the nitrogen only needs to be monitored or reduced, no hose is required.



Low-pressure oil pumps

OLAER's **QPM3** series consists of compact, lightweight Gerotor circulation pumps that provide high performance, low noise levels and low energy consumption. The low-pressure QPM3 pump has a dual shaft bearing and a flexible connection that ensures safe operation. The pump has been adapted for electric motors in accordance with EN 60034-1/60072, B3/14. It is therefore possible to use electric motors with the nominal sizes 80, 90, 100 and 112.

Pumps are available with **outputs of 20 to 80 l/min** and provide up to **10 bar**.

Where higher outputs are required, we recommend the use of screw pumps from the OHP range. These pumps are available with outputs up to 190 l/min.



COOLING RANGE

Air Oil coolers

Air Oil coolers are used to reduce and stabilise the operating temperature of hydraulic and lubricating systems as well as in cooling circuits.

These compact coolers, which have a modular design, provide efficient cooling using the ambient air. The fact that the fan speeds can be selected allows very quiet operation. A choice of drives is available – 3-phase current (**LAC**), direct current (**LDC**) or hydraulic (**LHC**) motors.

Partial-flow air coolers (**LOC**) with a 3-phase motor and integrated circulating pump allow a constant flow rate in the partial flow without water hammers.

OLAER has an extensive standard programme and supplies **special coolers upon request**.



Brazed and screwed plate coolers

Compact plate coolers represent an efficient solution for hydraulic systems and cooling circuits whilst also providing a good cooling performance and requiring very little cooling water – all in a unit with very small dimensions. There is very little risk of the unit becoming clogged thanks to the turbulence of the flow.

In our range you will find products with working pressures in the standard range as well as pressures in the mid, high and ultra-high ranges (**30, 42, 45 and 140 bar**). Available with copper or nickel brazing and in a screwed version. The plate coolers can be supplied in a double-walled design for applications where the media are not allowed to mix in the event of one of the plates being defective. If requested, we can provide **customised solutions** with switch-over fittings.



Cooling units

Our strengths lie in the design of cooling units to customers' requirements. To do this, we can rely on our extensive range of air coolers, plate coolers, pumps and filters.

Our ample range allows us to choose the best possible components for the customer's application and we can install these within a compact base area.



Water and oil cooling systems

For cooling fluids (e.g. water, and spindle, lubrication and hydraulic oils) or emulsions and stabilising these at a low temperature. Cold compressors in a closed circuit using environmentally compatible refrigerant are used for cooling. A circulating pump, tank and several circuits are available as options. Low-noise and compact units for high continuous cooling output whilst requiring very little energy.

With **water systems** it is possible to achieve **cooling performances of up to 400 kW**, and up to **75 kW** for **oil systems**.



COOLING AND FILTERING RANGE

LRC coolers

As it is often difficult to find a cooler with dimensions that fit, we produce units with specified dimensions. This is our strength.

We achieve very high performances within a compact base area, thanks to an optimum layout and design selection. To do this, we can select the best possible fan from a very large range and this allows us to produce equipment that operates at very low noise levels.

Typical applications are the cooling of water-cooled refrigerating machines and direct cooling of process cooling installations.

Depending on the ΔT , **cooling capacities of 400 kW** and more are possible.



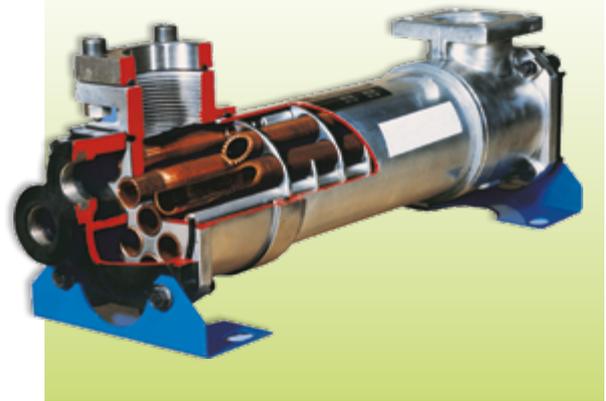
Tubular heat exchangers

For cooling fluids with water.

The tubular heat exchangers are suitable for many different medias, thanks to the wide choice of available materials.

Can be supplied with fixed or extendible tube bundles.

Thick-walled finned pipes with large inside diameters facilitate mechanical cleaning and are very stable.



Hydraulic filters

The purity of oil is a fundamental prerequisite for the reliable operation of a system. A broad programme including suction, pressure, high-pressure, return, partial-flow and breather filters in sizes with optimum increments and fineness ensure that the right filter is available for every application:

- Suction filters – Spin-ons – Pressure filters
- Return flow filters – Return-flow suction filters
- Partial-flow filters
- Filler-strainers and breather filters



Oil service unit, particle counting (monitoring)

Ever higher demands in respect of the reliability, availability and efficiency of hydraulic and lubricating systems do not only require purer operating fluids but they also need to be precisely monitored.

In order to reduce the risk that your system may be damaged by dirty particles and also to minimise the service outlay required, we recommend the use of an oil service device.

With our **FA 016** or **UM 045** devices it is easy to fill hydraulic or lubricating systems or purify oil in the partial flow.



RANGE OF ACCUMULATORS

Membrane accumulators – 0,075 to 3,5 litres

Because of their simple design, membrane accumulators are particularly suitable for secondary applications. They are available in different versions. The different types of design give flexibility in respect of uses and applications, e.g. in the case of fluids with high viscosity, to compensate for leakage losses, to maintain pressure, to bridge the response time for pumps with variable delivery quantities or for cushioning purposes.

The steel design of the EHM series ensures that maximum working pressures of **up to 350 bar** can be achieved. For the **version made entirely from stainless steel 316L** the maximum pressure is **180 bar**.

Available according to PED 2014/68/EC.



Piston accumulators – 0,1 to 1500 litres

Piston accumulators are used where operating safety has the highest priority. With these accumulators safety can be monitored via various systems such as electronic end-of-stroke limits and ultrasound monitoring. Standard units are available with up to **800 bar** operating pressure and made of steel or stainless steel 316L.

Piston accumulators – 0,1 to 1 litre “low cost”

In our program we also offer the “**low cost**” variant. It is a disposable piston accumulator that cannot be repaired. These operate with a volume of **0,1 to 1 litre** and at a maximum operating gauge pressure of **250 bar**. This design is now available in steel.

Industrial CE, ASME and TR-CU certifications among others, offshore DNV/GL and ABS certifications.



Accumulator stations

OLAER accumulator stations are manufactured to customers' requirements and, if required, accumulators may also be supplied complete - with pipes and ready to connect. They consist of bladder or piston accumulators with or without downstream gas cylinders. Accumulator stations offer maximum safety when storing large volumes of oil. The use of downstream gas cylinders results in an increase in the oil volume ΔV and a smaller pressure difference Δp .

Taking account of customer-specific operating data OLAER calculates the necessary accumulator volumes using the accumulator design program and thus achieves the optimum solution for your specific application.

Industrial CE, ASME and TR-CU certifications among others, offshore DNV/GL and ABS certifications.





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