

**FluidCareCenter:
The Research and
Development Center
for Fluid Expertise.**



HYDAC Focused Expertise and High Tech

An operating fluid is as specialized as its application. We are familiar with almost all aspects – the applications and the appropriate operating fluids.

The lubricating properties of hydraulic and lubricating fluids are key to properly functioning industrial systems. Fluid condition monitoring and the corresponding fluid conditioning guarantee the functionality, availability, and service life of industrial systems in stationary and mobile hydraulics and in lubrication technology.

In order to assess and predict the actual performance and characteristics of industrial fluids, a proper understanding of the interaction of mechanical and chemical factors is required, experience and knowledge of relevant factors, derived from research and real-world operations.

HYDAC have created a FluidCareCenter which is a center of excellence for study and development of optimized hydraulic applications.

In addition to the systematic analysis of various fluids, we perform tests commissioned by customers, tailored to their specific applications. Our objective is to develop machines and systems optimized for lubrication applications and to select the optimal type of fluid and ensure its proper conditioning.



HMG 3000,
AS 1000

Operating pressure

Temperature

Flow rate

e.g. FTIR spectroscopy



Oil and additive molecular analysis

Synthetic, accelerated oil ageing

Behaviour of fluids
and filter media

Various chemical analyses



Electrostatic test stand,
Stat-Stick,
HMG 3000



Oil and additive
elemental analysis

ICP-OES



Equipment Produce Reliable Operating Fluids.

Mechanical shearing, thermal, oxidative and hydrolytic oil ageing, Brugger test etc.



Lubricant properties

Particle contamination

Automated Laboratory Particle Counter (ALPC), Bottle Sampling Unit, SEM-EDX



Contaminant analyses

Microscope, Patch test, Spectroscopy



Select analyses

Mobile FluidCareCenter

Gaseous contamination (air)



Analyses of oil, additive degradation, varnish analyses

Contamination caused by water

Karl Fischer

Titration: TAN / TBN, HYDACLab®, RULER, MPC



Test rig for characterisation of air separators



Are you looking for support in developing new products? You have come to the right place: HYDAC's FluidCareCenter.

Collaboration with HYDAC will help you make the most of your application:

HYDAC Filbertechnik has developed a brand-new facility to provide support in R & D and application engineering for the benefit of our customers.

At the HYDAC FluidCareCenter we employ top-notch experts in fluid chemistry, contamination control & condition monitoring. Our aim is always to find out the best solution for our customers' applications. Here we combine our forces to develop solutions tailored to meet our customers' specific needs. Although we focus on developments in the field of filtration, we also welcome projects that go above and beyond



The new HYDAC FluidCareCenter



Electrostatic test stand

filtration concepts. At HYDAC you have access to hydraulic specialists as well as diverse technology and products "all under one roof". The FluidCareCenter, the only facility of its kind in the world, is housed in a modern building covering an area of over 2400 m².

It is equipped with cutting-edge laboratory and testing equipment, making it possible to perform every filter performance test and fluid analysis.

Our equipment allows us to simulate nearly all application condition.

Technical expertise:

Application-specific solutions for hydraulic and lubrication systems have long been our area of specialization. We have built-up decades of field experience through customer-site visits and individual customer solutions. As a result, our specialists have acquired a thorough understanding of application issues. Consequently they can provide detailed answers and specific solutions to numerous issues commonly encountered in industrial settings.

We focus on the innovative filter media such as high-performance filter element technologies.



Universal test stand



Multi-pass test stand

Our range of product developments includes the high-efficiency Betamicon[®]4 elements (for high-efficiency filtration and high contamination retention) as well as the innovative Stat-Free[®] element technology (for preventing electrostatic discharge (ESD) in hydraulic and lubrication systems). We are now the market leader for ESD-control in industrial hydraulic and lubrication systems.

Our Specialists Develop Professional Sol

Our testing methodologies are carried out in accordance to the ISO World Standards, however we can also provide selective and specific evaluations.

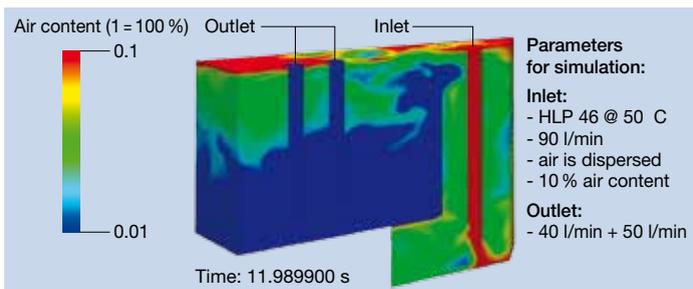
Air-in-oil:

For several years we have been involved with the „air-in-oil“-issue also in partnership with universities. Whether in the wind sector or the mobile machinery sector, the number of customer applications where „air-in-oil“ has been the root cause of poor system performance has been steadily rising.

We can provide new and innovative solutions to redress these issues.



Test rig for characterisation of air separators



Tank simulation



Test stand for simulating dry sump transmission

Complete systems – function integration: All from one supplier.

The trend towards more compact machines is particularly striking in mobile machinery. The requirements of the new Emissions Directive in particular demand that more space is devoted to modern systems of exhaust gas treatment. Consequently, this substantially reduces the space available for hydraulic tank and filter components. HYDAC has been involved with the new Emissions Directive and its implications from the outset. Our company offers a series of advanced solutions to help manufacturers of mobile machinery save on development costs and expenditure.



One such solution is the complete plastic tank system. These tanks offer nearly limitless possibilities in terms of shape to fully utilize the available installation space. Clever innovations provide maximum operating safety such as the completely leakage-free connection of the filter with the tank with an injection-moulded assembly ring, and the integrated baffle wall which ensures consistently turbulence-free oil on the suction side.

Thus, from a single source the customer obtains a plug-and-play solution ready for installation. The complete package includes high-quality HYDAC components such as a hydraulic filter, cooler, fan, fluid level gauge and oil degassing equipment.

solutions and Well-Engineered Application

Stat-Free® elements to prevent accelerated oil ageing (varnish).

Over the past several years, the trend towards ash-free hydraulic and lubricating fluids, more compact systems and finer filtration has led to increasing problems associated with electrostatic charging in hydraulic and lubrication systems.

ESD represents a serious problem for many plant operators.

Having recognized ESD as a serious and on-going issue, we focused our R & D efforts on finding an appropriate solution.

With the new Stat-Free® filter element technology, HYDAC has succeeded for the first time in combining first-rate electrostatic characteristics with outstanding filtration performance.



Damage due to electrostatic discharge on the **filter element**



Damage due to electrostatic discharge on the **operating medium**

Our filter media development included close cooperation with our customers, numerous field evaluations and a rigorous experimental program carried out on a HYDAC created ESD TÜV certified test stand. This new innovative test equipment allowed us to measure the effect of charge separation which in turn enabled us to create a new element technology for simulating a wide variety of working conditions. The accumulated electrostatic charge has been significantly lowered due to advanced filter mesh and element design.

The new Stat-Free® elements are ideal for any hydraulic and lubrication systems at risk of electrostatic charging.

„Cold-roll” coolant applications:

HYDAC has for the first time made it possible to measure the cleanliness of highly contaminated rolling fluids.

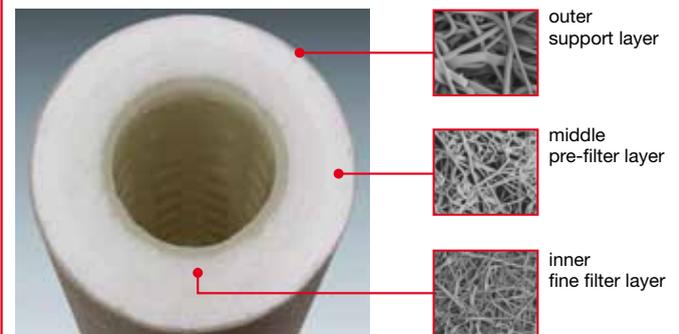
Using the specially developed ROCS (**R**olling **O**il **C**ontamination **S**ensor **S**ystem), the cleanliness of the rolling oil can be determined online, also in the ISO 4406 range codes of 25-30.

For the analysis of the rolling system, sensors are installed on the contaminated oil circuit before the filter and on the clean oil supply line to the rolling mill.

This technology, along with our rolling oil filtration test stand, enabled us to develop backflush filter elements perfectly adapted to the requirements of the steel industry.



Rolling oil filtration test stand



Our **development of filter elements** extends across a wide range of possible applications and industrial settings. We would be pleased to develop a filter element meeting the requirements of your specific application.

Diagnostics.



Online Contamination Sensor with integrated conditioning flow rate measurement and bubble suppression system.

CSM 2000 - Contamination Sensor Module

Designs for You.

OEMs in particular think about fluid quality right from the start!

We get involved in the process early on.

Our clean room in the FluidCareCenter delivers ensured cleanliness from individual components to the complete system.

Technical component cleanliness is becoming increasingly important in many industrial sectors especially in the automotive industry, mobile hydraulics and production systems. Programs aimed at reducing and preventing of production-stage breakdowns and longer warranty periods are driving the demand for increased component cleanliness.



HYDAC conducts component cleanliness analyses in the FluidCareCenter in accordance with the various current standards (ISO 16232 and VDA Volume 19), factory standards as well as customer specifications.

Our laboratory services include:

- All conventional extraction processes (spraying, rinsing, shaking, ultrasonic)
Analysis is performed with one of the following methods:
- Gravimetry according to ISO 4405
- Granulometry using light microscopy
- Automatic microscopic particle counting and classification according to the cleanliness class
- SEM/EDX analysis

The Benefits to You:

- ➔ By knowing the cleanliness of your components, you will be a step ahead of your competitors.
- ➔ Our laboratory is approved and recommended by well-known automotive suppliers
- ➔ Many years' experience in the area of technical cleanliness due to active collaboration on ISO 16232 and VDA Volume 19
- ➔ Analysis with extraction units developed at and by HYDAC
- ➔ High-quality analysis equipment
- ➔ Ongoing continual development of equipment and processes to meet the increasing customer needs and requirements

Innovative concepts and customer benefits of the FluidCareCenter

- Exchange of expertise with specialists in complex applications
- Acceleration of custom-designed developments
- Enhanced rate of technology innovation for our customers
- Higher success rate for your new design implementation on the market
- More rewarding regarding development cycle, increased satisfaction

Interested? Please contact us!

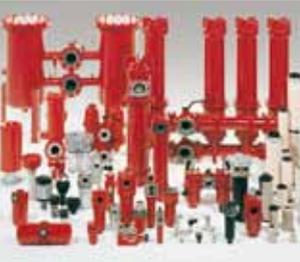
We look forward to hearing about your new development!

You are welcome to visit us to see the potential and the possibilities of our new FluidCareCenter for yourself.

Please contact Technical Sales at HYDAC Filtertechnik for further information.
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Accumulators E 30,000



Filter Technology E 70,000



Process Technology E 77,000



Filter Systems E 79,000



Compact Hydraulics E 53,000



Accessories E 61,000



Electronics E 180,000



Cooling Systems DEF 57,000

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