Components, Systems and Service for the Oil & Gas / Offshore Industry
Founded in 1963, today HYDAC has more than 9,000 employees worldwide and is one of the leading suppliers of fluid technology, process technology, hydraulic and electronic equipment in numerous industry sectors.

HYDAC’s wide range of products, combined with its expertise in development, manufacturing, sales and service enables the oil and gas / offshore industry worldwide to overcome the most diverse problems.

HYDAC supports its customers to find the most effective solution – from components to complete systems.

HYDAC’s quality and environmental certifications to ISO 9001:2008 and ISO 18001 denote first class quality and responsible management of its resources.

Complete solution packages.
One supplier.
One point of contact.

Various international specifications and approvals such as:

- API
- Directive 2014/68/EU
- NORSOK
- Lloyds
- DNV GL
- ASME
- ABS
And many more...

Whether it is onshore, offshore or subsea; from engineering to final production, HYDAC is a partner you can rely on.

Brief overview: HYDAC Capabilities

- Development and engineering capabilities
- Working pressures up to 2,000 bar / 30,000 PSI
- Special materials: Carbon steel, stainless steel 316, duplex and super duplex stainless steel
- Welding and fabrication to international standards
- Special offshore coating
- Flushing according to customer requirement
- Hazardous protection for applications onshore and offshore
- Condition monitoring of oil cleanliness and oil ageing in hydraulic and lubrication oils
- World-wide technical and commercial support through HYDAC global presence
- Prevention of electrostatic discharge and resulting system damage, such as accelerated oil ageing or damage to system components, through the use of HYDAC innovative filter technology
- Energy-efficient components and systems
And many more...

Global Presence

With over 45 subsidiaries, the international production facilities of the HYDAC group are located close to the customer and all over the world we represent quality: “Made by HYDAC”. No matter what the job entails or where in the world you need us, we are there to help you in finding the best solution.
Components, Systems and Service for the Oil & Gas / Offshore Industry

SOLUTIONS FOR CUSTOMER APPLICATIONS

Oil & Gas / Land

Oil & Gas / Offshore

Oil & Gas / Subsea

Brief Overview: HYDAC Components, Systems, Service & Training
Global Presence

The HYDAC organization is close to the customer. Worldwide.

FRANCE

UK

CANADA

USA

ITALY

THE NETHERLANDS

BRASIL
HYDAC offers solutions for customer applications, such as:

- Blowout Preventers
- Compressors and Gas Turbines
- Loading Systems
- Oil Lubrication Systems
- Hydraulic Valve Actuation
- Pipeline Precommissioning Equipment (i.e. Flooding/Flushing Unit)
- Seal Supply Systems
- Pump Systems (e.g. Chemical Injection Systems)
- Top Drives
- Water Injection filtration
- Wellhead Control Panels
- Workover Control Systems
- Downhole Tools
- Mobile Well Servicing Units (e.g. Fracturing, Cementing, Stimulation, Coil Tubing)

And many more...
Examples of HYDAC Solutions

Oil and gas pipeline flooding with fresh water or seawater. Backflushing Filters AutoFil® RF3 are used to protect the flooding pumps.

Lube Oil Systems as per API 610 & 614

Seal systems made out of 316 ss or duplex UNS S32205

Bladder and piston accumulators on electro-hydraulic actuators e.g. Emergency shut-off for gas pipelines

Radial piston pumps BRK are very robust radial devices with high volumetric efficiency, wide speed range and high reliability, even under rough conditions used in drilling rigs and wellhead control panels WHCP.

ATEX oil-air coolers in e.g. Top Drives, HPUs & lubrication systems

Fluid Aqua Mobile FAM - Compact unit for degassing, dewatering and filtration of hydraulic and lubrication oils

Condition Monitoring
Preventive maintenance to increase fluid service life

Pressure transducers (up to 15,000 psi / 1030 bar) in HPUs, wellhead control panels and BOP’s. Triple certified - all in one: ATEX, CSA, IECEx (explosion and flame proof)
HYDAC offers solutions for customer applications, such as:

Water Injection Filtration
Heave Compensation
Blowout Preventers
Davits, A-Frames & Cranes
Pipe Handling Equipment
Mooring Systems
Pump Systems (e.g. Chemical Injection Systems)
Compressors and Gas Turbines
Oil Lubrication Systems
Pipeline Tensioning
Seal Supply Systems
Wellhead Control Panel
Workover Control System

And many more...
One of the first steps in the treatment of water is pre-filtration, followed by fine filtration. This is precisely where the HYDAC solution comes in.

Three AutoFilt® RF3 filters with a filtration rating of 50 µm are used as coarse filters, and then three process inline filters PLF1 are installed further downstream to provide the fine filtration to 5 µm absolute. In essence, the HYDAC filter solutions used in this application serve to protect the high pressure pumps and the membrane system.

The example on the left is a complete HYDAC solution package.
Hydraulic cylinders, ABS type approved accumulators and coolers for offshore cranes.

- Cylinders can be painted according to application conditions or regulations and customer-specific requirements

Filter with Hazardous area clogging indicator VDHA with 316 stainless steel junction box (indicator approved with ATEX and IECEx; CSA/UL) on a Wellhead Control Panel.

This HPU drives a hydraulic pile hammer for placing foundation piles subsea, for instance for offshore platforms or windmill foundations.
QHP Piston accumulators are designed for various Oil & Gas / Offshore applications.

QHP Bladder accumulator are designed and constructed especially for the Oil & Gas market. Depending on customer requirements, special elastomer, steel materials and as well connections are available.

HYDAC piston accumulators can be in various lengths and diameters and can therefore be manufactured to suit very individual requirements.
Components for Oil & Gas / Subsea Applications

HYDAC offers solutions for customer applications, such as:

- Subsea Control Modules
- Subsea Accumulator Modules
- Subsea Blowout Preventers
- Remotely Operated Vehicles
- Mono Ethylene Glycol Filtration
- Downhole Tools

And many more...
Examples of HYDAC Solutions

Subsea filtration for Mono Ethylene Glycol (MEG)

Compact Temporary Subsea Ball Valve
- Subsea bidirectional floating ball valve, for temporary applications
- Dual stem allowing two sided ROV operation
- Qualified through DNV-GL, according to ISO 10423 – Performance requirement 1 (PR1)

QHP bladder & piston type accumulators and compensators for subsea applications

Stainless Steel High Pressure filter types for subsea applications

Development of sensors for subsea applications
- Pressure transmitters – standard or redundant designs
- Delta P pressure transmitters
- Pressure switches

HYDAC INTERNATIONAL
**Brief Overview:**

HYDAC Components, Systems, Service & Training

**ACCUMULATORS**

HYDAC, together with its fully owned subsidiary QHP, is the only company worldwide to develop, design, manufacture and distribute all forms and types of hydraulic accumulators:

- Bladder, piston, diaphragm and metal bellow accumulators for various oil & gas applications – onshore, offshore & subsea
- Wide range of international approvals

**Piston Accumulators**

- Max. volume: 3500 l
- Max. pressure: 1000 bar

**Diaphragm Accumulators**

- Max. volume: 4 l
- Max. pressure: 750 bar

**Bladder Accumulators**

- Max. volume: 450 l
- Max. pressure: 1000 bar

**Bladder Integrity System (BIS)**

- Detection of fluid in the bladder
- Integrated pressure and temperature monitoring during operation
- Different interfaces (HART)

**Gas side**

Stainless steel gas safety block & valve, bursting disks and temperature fuses

**Fluid side**

Stainless steel safety & shut-off blocks (SAF) for high pressure applications up to 800 bar (ATEX)

**Charge and testing unit FPU-2**

- In stainless steel
- Up to 800 bar

**ACCESSORIES & SAFETY EQUIPMENT**

**Process Inline Filter** PLF1 for fine filtration down to 1 µm, e.g. used to filtrate impurities in topside water injection systems

**RF3 / RF4 automatic backflushing filter** in a typical filtration rating of 50 µm for the filtration of sealing water, e.g. used on water-lubricated turbine bearings

**AutoFilt® ATF TwistFlow Strainer**

Hybrid – centrifugal separator with secured separation limit
- Preliminary filtration for relieving sand filters
- Preliminary filtration ahead of membrane systems
- Filtration of surface water

**PROCESS FILTERS**

Automatic backflushing filters, inline filters, gas filters and filter skids for various filtration tasks of process fluids and gases. Typical applications include:

- Filtration of injection water both onshore and offshore
- Seal gas filtration / seal water filtration / fuel gas filtration
- Pipeline flushing (pre-commissioning of pipelines)
- Filtration of Mono-Ethylene-Glycol (MEG)

**Mono-Ethylene-Glycol (MEG) filters used topside and subsea**

- Filtration rates: 100 µm and 200 µm
- Pressure range: up to 690 bar

**Gas filtration, e.g. for seal gas on a centrifugal compressor**

**Automatic backflushing filter RF3, e.g. used for coarse filtration of injection water (typical filtration rate: 50 to 100 µm)**

**Info:**

www.hydac.com / See brochure no. 30.000

www.hydac.com / See brochure no. 3.552

www.hydac.com / See brochure no. 7.727
HYDAC offers a comprehensive range of easy-to-use measurement and analysis equipment. Whether it be solid particles or fluid contamination, for sporadic checking or as a permanent installation, under rough field conditions or in the laboratory.

HYDAC offers high quality filter element technology constantly improved through our field experience, research and development.

- **Stat-Free** and **Stat-X** filter elements
- Protection from electrostatic discharge thanks to charging optimized filter mat, O-ring caps, support tubes made from conductive material
- Protection from sparks, low-speed detonation, explosion
- High performance/service life of oil and filter element
- High operational reliability
- Fewer oil changes, less varnish

HYDAC manufactures filter elements for every requirement, in line with the filter concept. When choosing the right filter element to suit you, we naturally take both technical and economic aspects into consideration and test new or challenging applications with you.

- Stat-Free®
- Stat-X®
- **Info:** [www.hydac.com](http://www.hydac.com)
- See brochure no. 7.221, catalogue no. 70.000, catalogue no. 79.000

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**Stainless Steel Filters**

Stainless steel high pressure filters for various oil and gas applications

Stainless steel material used (Head - 316 / Bowl – 318) reduces galling. Port connections are available in BSP (up to 600 bar), NPT and Autoclave Style thread forms.

MPSSF (up to 450 bar), HPSSF (up to 700 bar) and ACSSF (up to 1035 bar) – flow rates up to 130 l/m – designed for filtering contaminants from offshore hydraulics as well as from chemical and industrial process engineering systems.

Hazardous area clogging indicator VDHA with 316 stainless steel injection box available in 450, 700 and 1035 bar

Hydraulic standard inline and offline filters, breathers and filter elements with high filtration performance and simple handling for safe and economically efficient system operations on request.

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**Predictive Maintenance**

From Sensor to System

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Brief Overview: HYDAC Components, Systems, Service & Training

BALL VALVES

Wide range of ball valves in stainless steel
- Pressure range: Up to 1034 bar / 15000 PSI
- 316Ti – Duplex – Superduplex
- Flexible adaptor system

Stainless steel 3-piece high pressure ball valve – 420 bar

Fluid level gauge with reflex glass, manually shut off, lockable check valve and flexible mounting

Subsea bidirectional floating ball valve. Dual stem allowing two sided ROV operation. Qualified for PR1 by DNVGL

2- and 3-way ball valves in different variations/adaptions

ELECTRONICS / CONTROL TECHNOLOGY

Sensors (pressure, temperature, flow rate) for use in potentially explosive atmospheres and controllers
- Versions for ignition protection types: explosion / flame proof, intrinsically safe and many others
- Approvals: ATEX, IECEx, CSA
- Optionally with HART protocol and PROFIBUS interface
- 4..20 mA output signal
- Controllers to SIL 2 / PL d

Pressure transmitters, Flush mount pressure transmitters, Electronic pressure switches, Temperature transmitters, Delta P Transmitters, Redundant pressure transmitters, Flow transmitters with triple certified (all in one), dual or single certification.

Safe fixing – Piping – Hoses – Components
- DIN3015 clamps
- Swivel bold clamping band
- U-Bolt clamps

Swivel bolt band clamps for heavy duty applications
- Stainless steel band and screws
- Reservoir mounting
- Multi shape suitable

U-Bolt clamps DIN3570
- Up to Ø762
- Ad
- With pipe support

MOUNTING TECHNOLOGY

Info: www.hydac.com / See brochure no. 180.000
**PUMPS**

- Radial piston pumps – ATEX
- Axial piston pumps (micro pumps)

Axial piston pumps (micro pumps) for mineral oil and other fluids.
- Displacement: 0.012 – 2.2 ccm/rev
- Pressure range: up to 900 bar
- Diameter: 21.5 to 75 mm

Radial piston pump in ATEX for mineral oil, Diesel and other fluids (on request).
- Displacement: 0.47 – 8.14 ccm/U
- Pressure range: up to 700 bar

**HYDRAULIC CYLINDERS**

Cylinders for a wide variety of deck superstructure tasks
- Davit system
- Opening cylinders
- A-frames
- Roll-on / roll-offloading system

**COOLERS**

Standard air coolers up to 1 MW cooling capacity
- ATEX certificate: II 2G/D de IIC T4 for 50 Hz + 60 Hz
- Corrosion protection CPL:
  - CPL1: Onshore
  - CPL2: Near-to-shore
  - CPLS: Offshore

**Heave compensation systems** are used on deck cranes to neutralise the movements of a vessel. No fixed reference point is needed for this process in the case of Active Heave Compensation (AHC). Instead, a Motion Reference Unit (MRU) compensates for the swell by measuring roll, pitch and yaw motions.

This active hydraulic system consists of piston accumulator and cylinder which are coupled to each other.
- In this example, piston accumulators with a size of 1,000 litres and a cylinder stroke of 4,500 mm are fitted

**Cranes**

To ensure safe and precise loading and unloading of ships, we offer standard hydraulic cylinders adapted to marine conditions as well as customized solutions for deck cranes.
- Special valves on the cylinders help control the movement of the arms and enable precise lifting of loads
- Can also be supplied with electroplated and sprayed coatings, which enhances cylinder durability
- Hydraulic cylinders can withstand a pressure of 400 bar and so are able to lift especially heavy loads

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From individual service all the way to fluid management

The HYDAC Servicenter offers a systematically constructed, comprehensive range of services which uses proper maintenance and inspection procedures to make a decisive contribution towards increasing the useful life of hydraulic plants, lubrication systems and electrohydraulic controls and regulators.

The qualification and many years’ experience in hydraulics and electronics are reflected in the world-wide authorization of HYDAC products and the close collaboration practiced with the responsible acceptance agencies (TÜV, Germanic Lloyd, DVGW, etc.) as well as by the sound training of the specialist personnel.

In an age when processes are constantly changing, Quality Assurance must take centre-stage in company activities. The continuous training and further development of staff is an important component in improving quality and therefore in ensuring the long-term success of the company. Starting from this realisation, we aim constantly to improve and to extend the provision of further training for our staff.

At HYDAC, quality, professionalism and individual customer support are our standards, and always present new challenges.

**KineSys**

**Speed variable multiple pump system DVA-Kit**
- DVA-Kit to supply a central hydraulic system
- Need-based pressure control, which turns the DVA-Kits on demand on or off
- In case of an error the options are to switch the operating mode between two or one pumps operation manually

**E-Cylinder and Synchronous Servomotor**
- High dynamic operation
- Highly accurate positioning controllability
- Force monitoring and controlling the force
- Environment-friendly

**Edge Computing with KineSys Data**
- Connectivity to KineSys drive controller, PLC and cloud services
- Visualization of life and historical data
- Data processing

**HYDAC SERVICE AND TRAINING. CLOSE TO THE CUSTOMER.**

**Info:**
www.hydac.com / See brochure no. 71.100
Condition Monitoring: Measuring, Analyzing, Conditioning.

HYDAC offers a comprehensive range of easy-to-use measurement and analysis equipment. They are ideal for either solid particle or liquid contaminants, sporadic checks or as permanent installations, and are designed for use in the lab or for heavy-duty use in the field. The perfect measurement and analysis equipment for every application.

Product range:
- Fluid sensors (to measure particle contamination and water saturation)
- Sampling systems
- Laboratory equipment
- Component analysis equipment
- Software and controls

Customer benefits:
- Planned availability of systems and components
- Prevents disastrous consequential damages to systems and related supply bottlenecks
- Prevents sudden stoppage times
- Reduces operating costs
- Preventive, condition-based maintenance
- Conserves resources and protects the environment

Info: [www.hydac.com](http://www.hydac.com) / See brochure no. 79.000, brochure no. 10.141
Global Presence. Local Expertise.
www.hydac.com

Note
The information in this brochure relates to the operating conditions and applications described.
For applications and operating conditions not described, please contact the relevant technical department.
Subject to technical modifications.