



HYDAC INTERNATIONAL

**Components,
Systems and Service
for Telescopic Cranes.**

HYDAC

Your professional partner for Telescopic Cranes.

With 5,500 employees worldwide, HYDAC is one of the leading suppliers of fluid technology, hydraulic and electronic equipment.

Our wide range of products, combined with our expertise in development, manufacturing, sales and service enables the construction machinery industry worldwide to overcome the most diverse problems.

Our quality and environment certification to ISO 9001/2000 and ISO 14001 denote first class quality and responsible management of our resources.

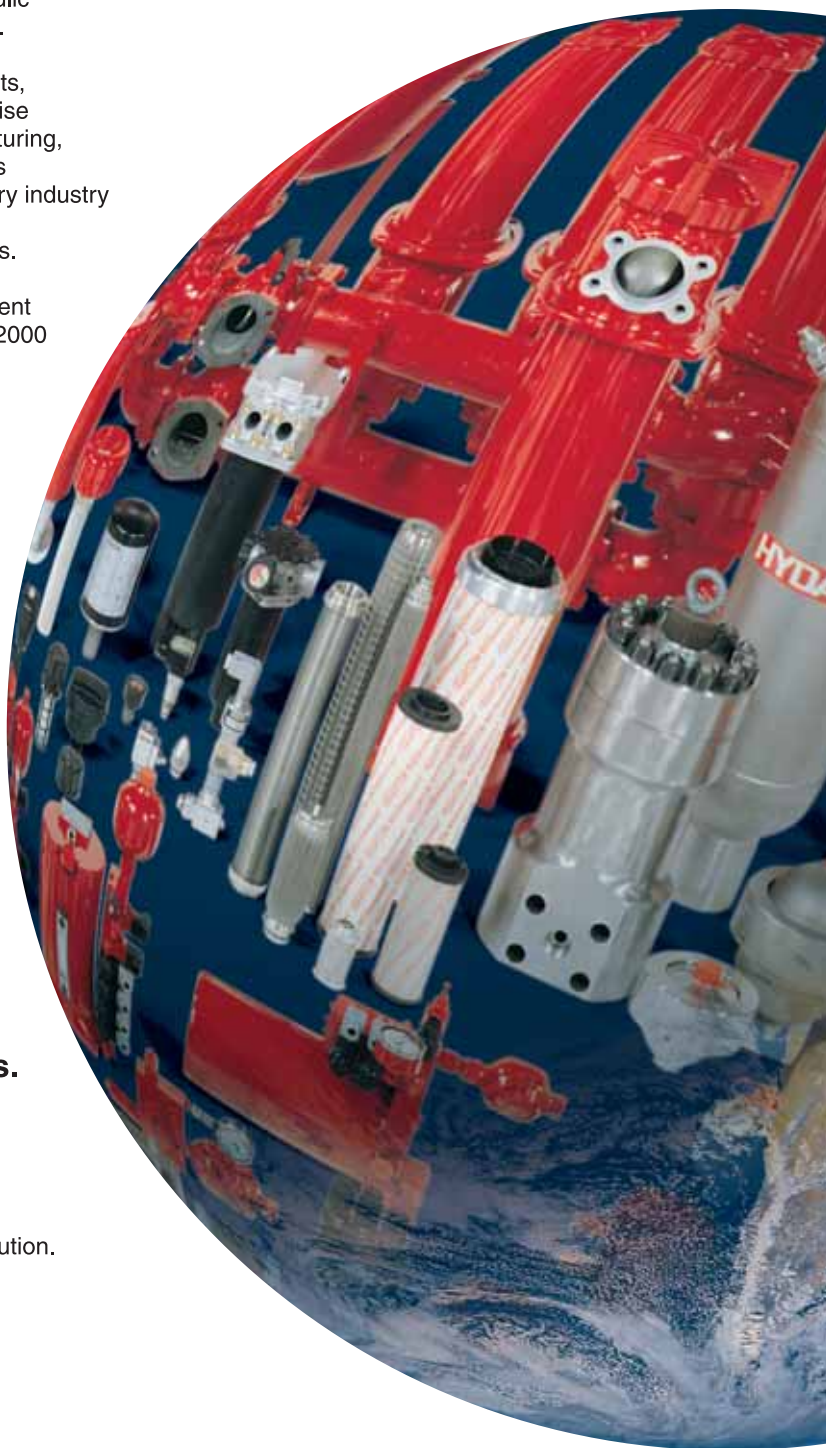
Global yet local.

With 40 overseas subsidiaries and over 500 distributors and service partners, HYDAC is your reliable partner worldwide.

Solution packages. One supplier. One contact.

Wherever you need us, we are there to help you find the most effective solution.

For every application, from components to a complete system.



HYDAC Germany



HYDAC China



HYDAC Japan



HYDAC Korea



HYDAC USA



HYDAC France



HYDAC Italy

HYDAC in the telescopic crane.

From the components to the system – whether in hydraulics, electronics or mechanics. Your demand for the best solution is our challenge:

- Machine know-how
- Enhancing the performance by means of fully integrated systems
- Increasing the operational availability by reducing the number of interfaces
- Higher level of comfort due to reduced oscillation, vibration and noise
- Active collaboration in close development partnership
- Worldwide technical and commercial support through our global presence

1 Sensor technology and system electronics

Generation of modern control concepts using HYDAC sensor technology, electronics or as a ready-to-install total concept fulfilling IEC 61508, EN ISO 13849 requirements.

- Sensors for monitoring, control and condition monitoring
 - Pressure
 - Temperature
 - Fluid level
 - Flow rate
 - Oil condition / oil ageing
 - Solid particle contamination
 - Position (cylinder-mounted)
- Electronics
- Customer requirements
- Application examples:
 - Load torque limiting
 - Load spectrum
 - Load sensing control
 - Max. load regulation
 - Energy management
 - Condition monitoring



Pressure transmitter / Pressure switch



Plug&Work total system



Temperature switch ETS



Oil condition sensor HYDACLab®



Fluid level sensor ENS



UMC series



Linear position sensors

2 Cylinder Systems

Intelligent mechatronic Plug&Work linear systems.

- Telescopic systems: classic multi-stage cylinder and modern single-stage systems according to customer requirement
- Derricking cylinders including valve and sensor technology (load torque limiting)
- System integration: counterbalance (ballast), levelling, suspension, steering, additional functions
- Service and repair
 - Cylinders
 - Valves
 - Systems
 - Mechanics (steel construction)



Telescopic systems



Derricking cylinder systems

4 Steering systems

Complete hydraulic systems for flexible design of rear axle and auxiliary steering.

Sensor-monitored pressure supply with energy storage

Constant pressure system with optimised performance

Easy-to-maintain build-on filters, accumulators



Telescopic systems



5 Main- and auxiliary control blocks in monoblock and modular design

For flexible design of complex controls in the crane undercarriage and auxiliary functions in the superstructure.

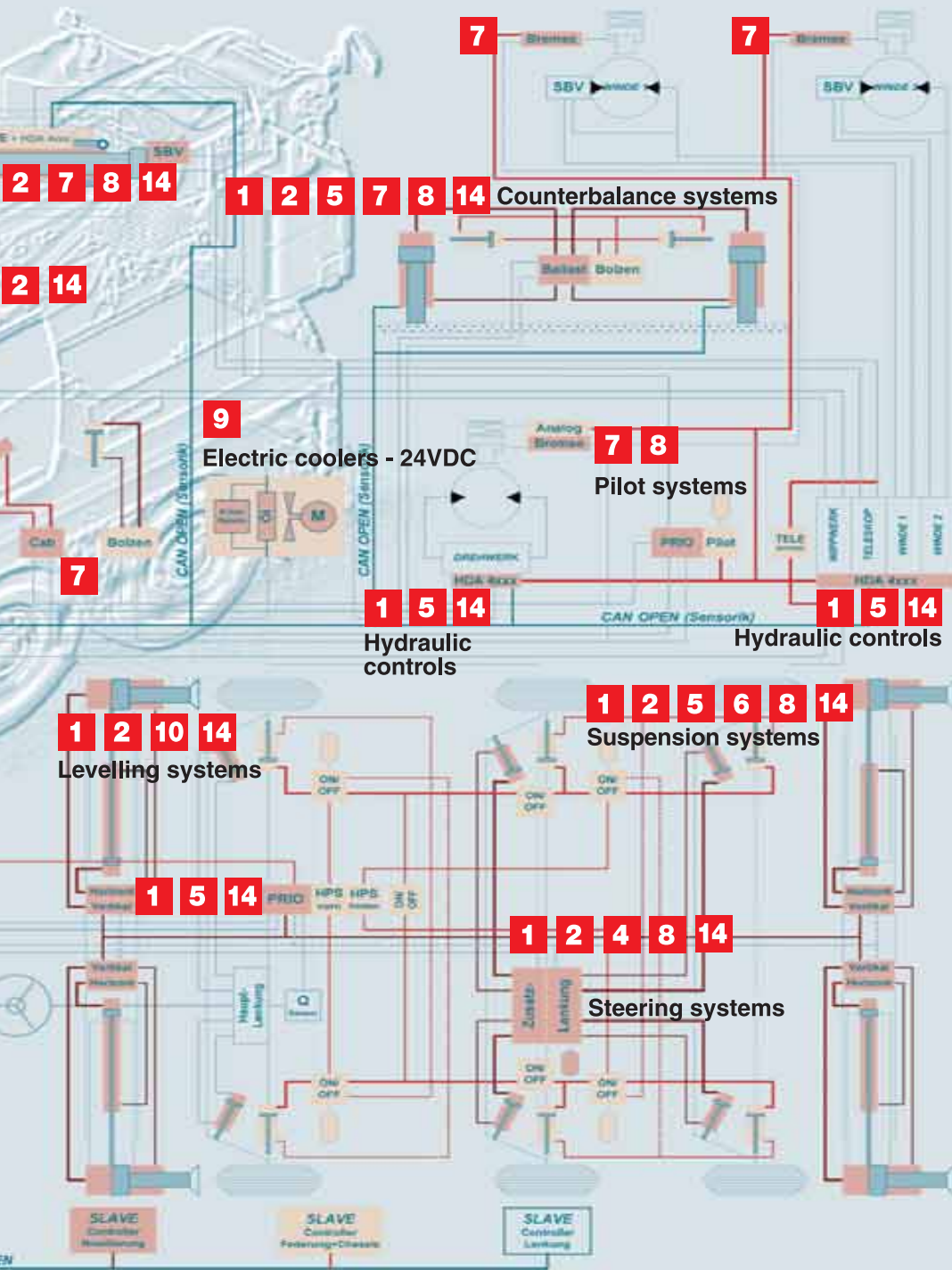
Central controls (monoblock, modular) with load sensing capabilities

Undercarriage: priority, suspension (HPS), levelling

Superstructure: Auxiliary function

Truck crane systems





7 Low pressure systems and pilot control modules PCM

For any combination of directional, pressure and flow control valves in operation with accumulator, filter and sensor (electronic) technologies.

Individual supply of low pressure circuits (210 bar) in auxiliary function (priority, accumulator charging, cylinders) and pilot systems.

- Modular stacking
- Monoblock (quantities)



Pilot circuit accumulator charging block



Proportional pressure control block

6 Suspension systems

To meet the demands for higher levels of comfort.

- Hydro-pneumatic chassis suspension, irrespective of the load, with load sensing, level control, axle lifting, shut-off function, anti-roll and automatic error indication
- Hydro-pneumatic cab suspension with appropriate damping and level control for full utilisation of the spring travel of the cab



LCS-HCU

8 Accumulator technology

For hydraulic and damping circuits where energy and function are optimised:

- Energy storage: bolting, steering, etc.
- Compensation of thermal expansion: removable devices
- Damping element: suspension systems, reducing pressure spikes



Chassis suspension

9 Cooling systems

To comply with legal requirements for noise, emissions (EURO 4, TIER 3) and fuel economy, high capacity and easy-to-install cooling systems are available.

Superstructure

Standard solutions with numerous options:

- integral bypass
- DC fan drive with softstart and electrical speed control for constant temperature and energy saving



Chassis

- High capacity and compact cooling systems
- Integral bypass valves for pressure and / or temperature
- Hydraulic fan drives with proportional speed control to reduce noise and save fuel



11 Tank and filtration solutions

A comprehensive range of hydraulic and breather filters, fitted with high-quality filter element materials, ensure a high level of operating safety and extended maintenance intervals e.g.

Return line filter RFM

Using return line filters RFM
As tank-top or in-tank filters

Air filtration

using tank breather filters BF, ELF, ELFL, BD

Pressure oil filtration

Pilot circuits, supply circuits and leak-oil circuits for primary movers using low pressure filters LPF (< 50 bar) Offline and additional functions in the medium pressure range using medium pressure filters MFM (< 280 bar)

Protective and coarse contamination filtration

Inline solution ILF to protect the hydraulic system after the gear pumps



Return line filter RFM



Inline filter LPF



Inline filter MFM



Tank breather filters BF, ELF, ELFL, BD



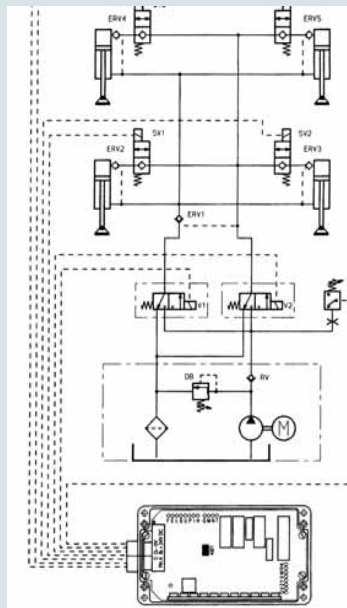
Inline filter ILF

10 Levelling systems

Automatic levelling system from HYDAC as a complete package or individual solution: sensor technology, electronics, control and cylinders from one company.

Outrigger cylinders: leakage free, high-strength, weight-optimised construction for outrigger pressures of up to 500 bar
→ customer requirement

Horizontal cylinders: Especially long stroke For operating pressures 250/60 bar
→ customer requirement



12 Accessories

For the completion of hydraulic systems.

- Fluid level gauges and sensors
- Mounting elements
- Ball valves



Systems and service – worldwide.

13 Service, commissioning, analysis and diagnosis



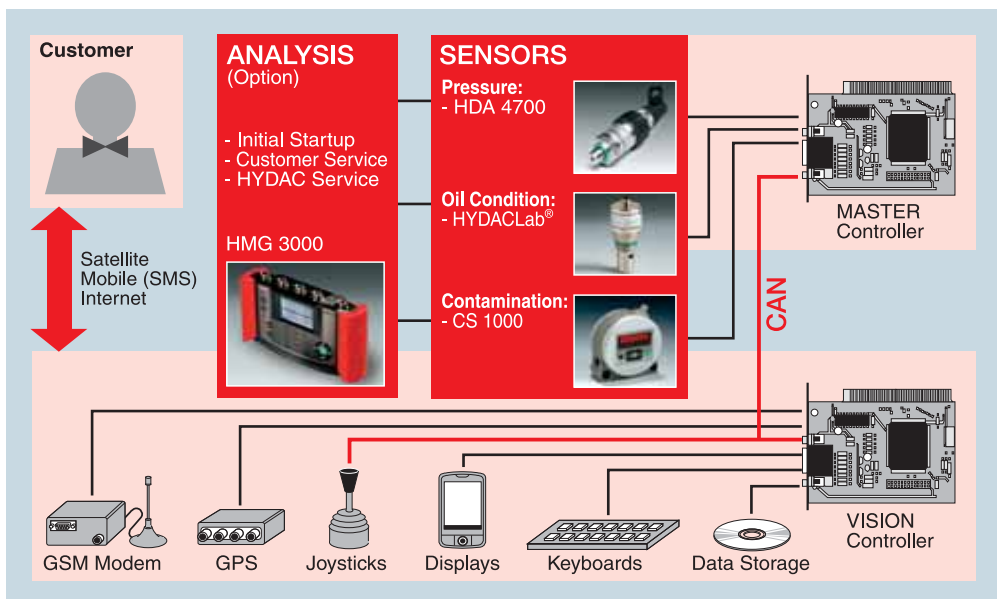
70 - 80 % of all breakdowns in hydraulic and lubrication systems is due to excess contamination of the fluids and components used.

In practice, this direct relationship is often not sufficiently recognized.

HYDAC offers a comprehensive range of easy-to-use measurement and analysis equipment to monitor the condition of operating media and component cleanliness.

Fluid laboratory vehicles are in operation worldwide.

14 Condition monitoring, remote data transfer



Constantly growing demands for operational availability, the reduction of downtimes, detailed load and service management (economy, wear & tear, service, warranty) require innovative monitoring, service and control concepts.

A variety of sensors provides the ideal basis for the construction of such total system solutions.

- Oil condition / oil ageing via temperature, moisture, viscosity, dielectric constant (HYDACLab®), water content (AS), temperature (ETS)
- Particle contamination (CS)
- Pressure (HDA)
- Flow rate (EVS)
- Fluid level (ENS)

When used in conjunction with the Portable Data Recorders of the HMG series, this data can be displayed and analysed, to supplement the electronics of the machine (servicing).



Br.: Accumulators DEF 3,000



Br.: Filtration Flange DEF 7,000



Br.: Filters for Industrial Processing DEF 7,700



Br.: Systematic Fluid Service DEF 7,929



Br.: Compact Hydraulics DEF 5,300



Br.: Accessories DEF 6,100



Br.: Electronics DEF 18,000



Br.: Cooling Systems DEF 5,700

Global Presence. Local Expertise. www.hydac.com



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