Components, Systems and Service for Municipal Machines.
Your Professional Partner for Municipal Machines

With over 7,000 employees worldwide, HYDAC is one of the leading suppliers for fluid technology, hydraulic and electronic equipment.

With our wide range of products, combined with our expertise in development, manufacturing, sales and service, the municipal machine industry worldwide can meet the most diverse challenges.

Our quality and environment certification to ISO 9001/2000 and ISO 18001 denote first class quality and responsible management of our resources.

Global yet local.

With over 45 overseas companies, and more than 500 sales and service partners, HYDAC is your reliable partner worldwide.

System solutions.
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.

Worldwide specifications and approvals.
HYDAC in Municipal Machines.

From the components to the system; whether in hydraulics, electronics or mechanics, we aim to provide you with the best solution:

- Industry experience and machinery know-how
- Higher level of comfort due to reduced vibration and noise
- Greater serviceability through optimised designs and component combinations
- Increased operational safety by minimising the number of interfaces
- Integration of reliable electronic controls and components
- Cost optimisation by reducing the complexity of choice through the use of standard components and modular construction
- Active co-operation in close development partnership
- World-wide technical and commercial support through our global presence

1 Sensors, System Electronics, Control Systems and Condition Monitoring.

Application-compatible sensors:
- IP 67 K
- Vibration-resistant due to potted components
- All standard connections available
- Pressure and temperature
- Fluid level and flow rate
- Measuring instruments for monitoring operating data
  - Application-specific control and regulating electronics, for example proportional amplifiers or axle level control
  - For preventive fluid servicing and increased operating safety
- Transmits signals to customer-specific software or external hand-held measuring devices
- Oil condition
- Particle contamination and humidity

Functional safety
The technical requirements with regard to functional safety are derived from the standards IEC 61508 and EN 13849.

HYDAC provides:
- Control units certified to IEC 61508, SIL 2 (3) and EN 13849, PI d (c)
- Other components for applications with increased functional safety
- Sensors
- Valves
- Support provided throughout, from risk analysis to certified machine function

2 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.

- Integrated thermal bypass valves
- Electric / hydraulic fan drives with proportional speed control / reversible function
- Oil / air cooler
- Multiple combined cooling systems
- Tank-filter integration
### Accessories
For complete hydraulic systems.
- Standard fittings (high pressure)
- Tamper-proof inductive proximity switch (high pressure-resistant)
- Fluid level sensors
- Temperature switch TSE
- Standard clamp 3015
- Air/water reservoir clamping bands
- Test point connections
- Quick release couplings
- Special clamps for particle filters

### Accumulator Technology
Accumulators of all major types for every application:
- Energy storage for braking systems
- Minimising pump pulsations
- Damping of pressure surges
- Chassis suspension
- Weight equalization
- Attachments suspension

### Working Hydraulics
Modular system with load sensing capability for flexible configuration of complex controls.
- Compatible with all pump systems with the design parameters Q = < 200 l/min; p = 350 / 420 bar
- Monoblock design, monoblock with interface (HYDAC interface) and segment design
- Cylinder position functions with or without load sensing
- Main consumer connected in parallel or in series
- Simple integration of
  - secondary functions
  - the priority valve for steering (OC or LS steering)
  - the priority valve for the braking system with integrated accumulator charging circuit
  - pressure filters and sensors
  - level control

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![HYDAC Diagram](image-url)
Suspension and Levelling Systems

To meet increased demands for comfort and traction stability.

- Hydro-pneumatic chassis suspension, irrespective of load, with level control, axle lift, shut-off function, roll stabilisation and an automatic error indication.
- Optimum adjustment of the chassis to the load condition (level control).
- Hydro-pneumatic cab suspension with adaptive damping and level control for full utilisation of the piston travel of the cab (Human response to vibration directive ISO 8041).

Tank and Filter Systems

A comprehensive range of hydraulic and breather filters, equipped with elements made from high-quality materials, provide a high level of operating safety and long service life e.g.:

- **Return line and suction boost filter RKM**
  Optionally with thermal-cooler bypass valve integrated into the head.

- **Return line filter RFM**
  All sizes and also available in various in-tank designs.

- **Supply circuit filtration with supply pressure filter LPF**

- **Pressure filters MFM, HFM and DF**

- **Tank filter solutions from a single source**
  Ready-to-install complete systems, optimised for component protection, system cleanliness and venting.

Tank breather filters ELF, BF 10/30/7/72

- Customised filter elements
- STAT-Free® filter elements to combat static charging
- Filter for diesel pre-filtration and water removal

Return line and suction boost filter RFM

- Plastic tank with return line suction boost filter, air breather (customised solution)

Return line and suction boost filter RKM

- Closed Center Load sensing
- Open Center Load sensing

Breather filters

- Front-end attachment
- Rear-end attachment
- Option

Intelligent axle suspension system

Cab suspension system

Level control
**Electro-hydraulic Components and System Solutions for:**

**Waste Collection Vehicles**  
Rear, side and front loaders

- **Working hydraulics** to control the: slide and blade cylinders, ejection plate and tailgate cylinders, tipping cylinders, press cylinders on front and side loaders
- **Filter systems:** return line filters, tank-filter solutions, pressure filters
- **Sensors and system electronics:** pressure, temperature and contamination, standard and customised system electronics
- **Accessories** to complete the system
- **Electronic control systems** (individual, subsystem or whole vehicle / device controls)

**Sewage Vehicles**  
Washing and suction vehicles

- **Working hydraulics** to control the cylinder position function, hydraulic motors
- **Filter systems:** suction and return line filters, tank-filter solutions, pressure filters, supply circuit filtration
- **Cooling systems:** oil coolers and combined coolers, with electrical or hydraulic fan drive
- **Sensors:** pressure, temperature and contamination, standard and customised system electronics
- **Accumulators:** diaphragm and piston accumulators
- **Accessories** to complete the system
- **Electronic control systems** (individual, subsystem or whole vehicle / device controls)

**Gradient Mowers**

- **Working hydraulics** to control the: boom with integrated lowering brakes, adaptation to ground contour, including sensors and accumulators
- **Filter systems:** suction and return line filters, tank-filter solutions, pressure filters, supply circuit filtration
- **Cooling systems:** oil coolers and combined coolers, with electric or hydraulic fan drive
- **Sensors:** pressure, temperature and contamination, standard and customised system electronics
- **Accumulators:** diaphragm and piston accumulators
- **Accessories** to complete the system
- **Electronic control systems** (individual, subsystem or whole vehicle / device controls)

**Road Sweepers**  
Compact and truck-mounted road sweepers

- **Working hydraulics** to control and supply: cylinder position functions and main actuator, steering, brakes and low pressure actuator, functional safety through the use of priorities assignment
- **Filter systems:** return line filters, tank-filter solutions, pressure filters, supply circuit filtration
- **Suspension and levelling systems** consisting of: electronics, sensors and hydraulics
- **Cooling systems:** oil coolers and combined coolers, with electric or hydraulic fan drive
- **Low pressure actuator** to activate the differential lock, PTO clutch
- **Sensors:** pressure, temperature and contamination, standard and customised system electronics
- **Accumulators:** diaphragm and piston accumulators
- **Accessories** to complete the system
- **Electronic control systems** (individual, subsystem or whole vehicle / device controls)

**Gritters**

- **Working hydraulics** to drive the spinning plate, the mixing unit and the additional pump
- **Filter systems:** pressure filters
- **Sensors:** pressure, temperature and contamination, standard and customised system electronics
- **Accumulators:** diaphragm and piston accumulators
- **Accessories** to complete the system
- **Electronic control systems** (individual, subsystem or whole vehicle / device controls)

**Snow Groomers**

- **Working hydraulics:** raising, lowering and slewing the snow plough, unloading and loading including sensors and accumulators, DC compact power unit with build-on control
- **Filter systems:** pressure filters
- **Accumulators:** diaphragm and piston accumulators
- **Sensors:** pressure, temperature and contamination, standard and customised system electronics
- **Accessories** to complete the system
- **Electronic control systems** (individual, subsystem or whole vehicle / device controls)
70 – 80% of all breakdowns in hydraulic and lubrication systems are due to excess contamination of the fluids and components used. In practice, this is often not sufficiently recognized. HYDAC offers a comprehensive range of easy-to-use measurement and analysis equipment to monitor fluid condition and technical cleanliness. Fluid laboratory vehicles are at your service worldwide.

Condition Monitoring, Teleservice.

Constantly growing demands for operational availability, reduction in downtime, 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 development of such integrated system solutions.

- Oil condition / oil ageing through the measurement of temperature, humidity, 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 (e.g. servicing).