

Axle and Wheel Suspension Systems

Customers are demanding greater ride comfort and safety in vehicles of all kinds. In order to rise to these challenges, machine manufacturers and development partners have to adapt to new forms of cooperation.

As a development partner, Integral Accumulator channels its entire system expertise into the development of hydropneumatic axle and wheel suspension systems.



Hydropneumatic axle and wheel suspension

Integral Accumulator uses the combination of hydro-accumulators, control blocks, and electronic control units to produce a variety of advanced suspension systems. As a development partner, Integral Accumulator has extended its range of products to include complete, ready-to-assemble systems. In these patented systems, the ring chamber pressure and stiffness are kept at a consistently low level of pressure and readjusted every time the load changes.

Integral Accumulator

offers you three generations of hydropneumatic suspension systems. Our engineers work hand in hand with you, our customers in the agricultural and construction machinery sector, to make sure that each suspension system meets your individual requirements.




The combination of hydro-accumulators and control blocks minimizes vibrations and jolts. This in turn increases the **comfort** of your machinery and extends its **operational periods** by reducing the impact on the driver. Full **traction** is guaranteed under all operating conditions. Moreover, a large number of optional extras are available (e.g. pitch and roll control). These extras allow unwanted movements to be completely avoided when braking or driving around corners.

The advantages of the system are clear: improved **drivability** and enhanced **safety**. These advantages are particularly important when traveling at higher speeds and when using machinery for combined loading and transportation operations. The control block is compact and can be easily integrated into any machine. It also has the complete range of hydraulic functions. An electric control unit is available as an optional extra. The table below contains an overview of our three suspension system generations.

Standard hydro-accumulators

Integral Accumulator supplies special piston and diaphragm accumulators made of a variety of materials with capacities of up to 3.5 liters and for pressures of up to 350 bar. Each accumulator is specially adapted to meet specific application requirements.

Stiffness diagram

Gen I	Economy up to approx. 40 kN axle load		Basic suspension	Optional: <ul style="list-style-type: none"> • Blockage of suspension in any position; switch-on without jolts • Pitch control when braking and accelerating • Roll stabilization when driving around corners • Adaptable damping
Gen II	Standard 0 to 100 kN axle load		High comfort and good vehicle dynamics when driving (adapted 2-level stiffness)	
Gen III	Premium 0 to 100 kN axle load		Optimum comfort and vehicle dynamics in all operative ranges (regulated stiffness/damping)	

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