

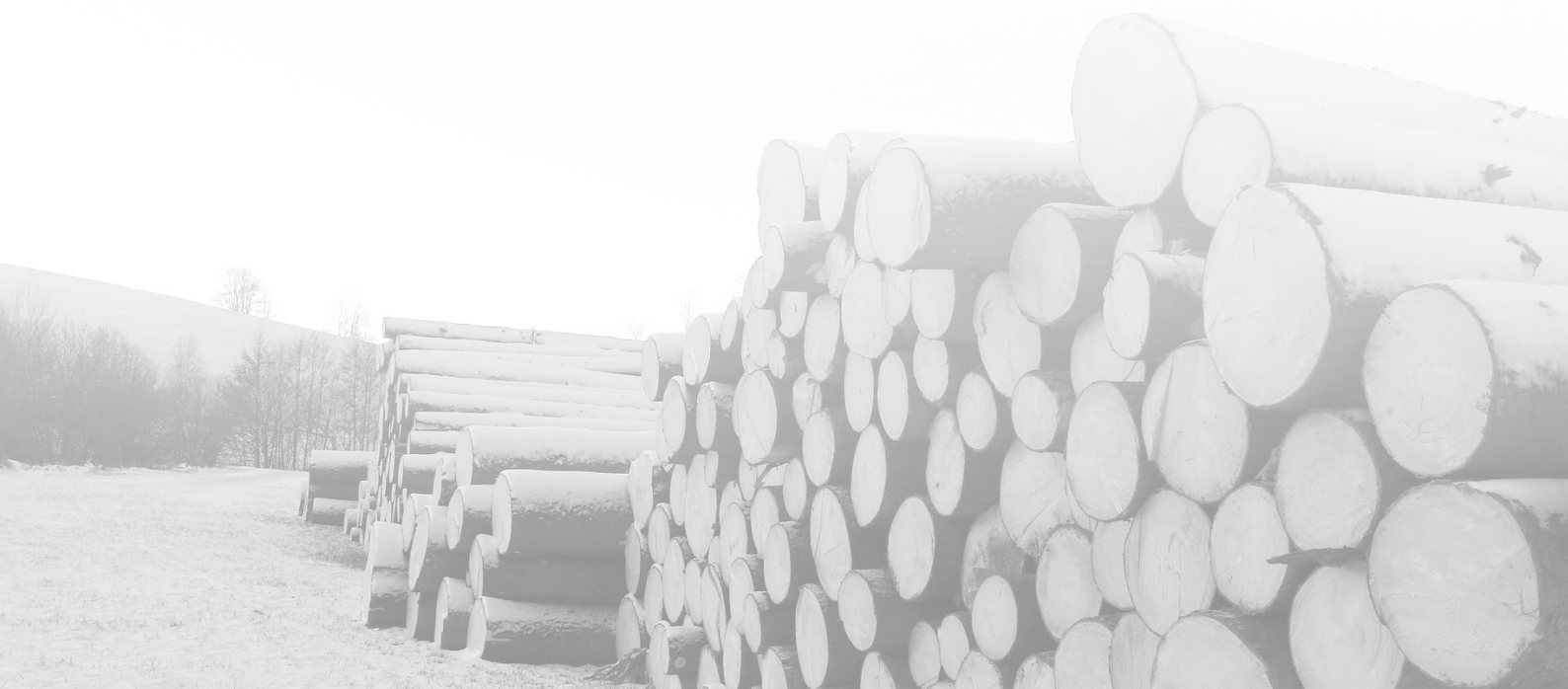
Flexibility and precision in woodworking

A use case for sawing stations and clamping devices with ZIMM

ZIMM – Efficient drive solutions for precise woodworking

Wood is a variable natural material: strength, density and knot zones vary from workpiece to workpiece. In practice, this means fluctuating cutting forces, potential misalignments and unnecessary waste – especially at high cycle rates. To keep processes stable, an adjustment mechanism is needed that controls shock peaks, protects tools and still positions them precisely and repeatably. This is exactly where the combination of an electromechanical actuator and load damper (LAD) comes in.

A compact, robust system moves clamping and guide axes precisely – quietly, with low maintenance and integrated safety functions. The focus is on consistently straight cuts with varying workpiece thicknesses, high availability in shift operation and easy integration into existing machines.



The challenge

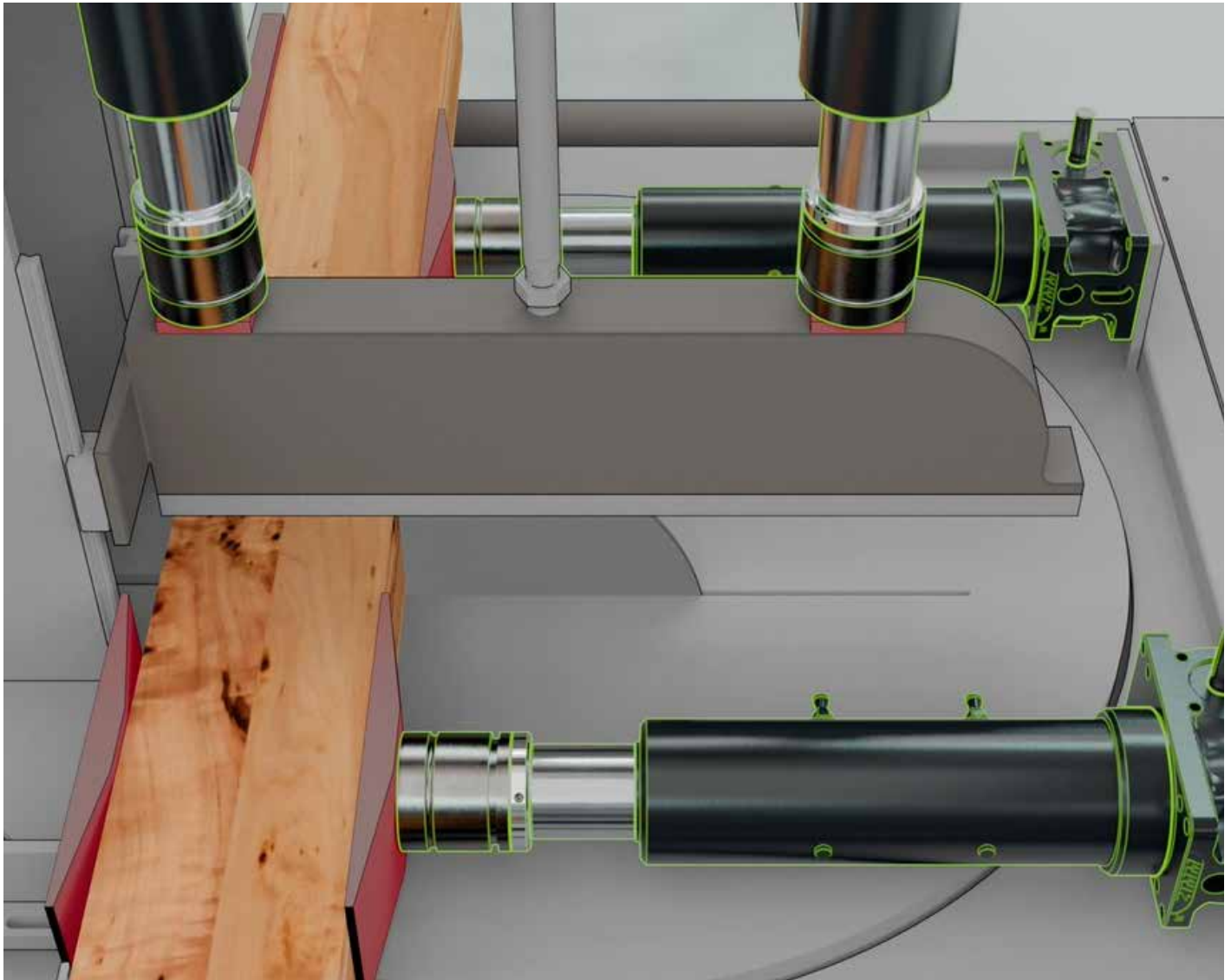
Straight cuts with variable workpiece thicknesses

Fluctuating wood thicknesses and knot zones lead to varying cutting forces, misalignments and increased wear. Unforeseen blockages put strain on the drive and saw blade, compromising process stability.

The solution

Actuators with load dampers (LAD)

Electromechanical actuators position the adjustment axes precisely. The LAD acts as a physical buffer: shock peaks during block movements are mechanically absorbed; the control system uses the defined spring travel to switch off/brake. The result: straight, repeatable cuts and protected tools – clean and low-maintenance, without any hydraulics.



The application scenario

Sawing stations & clamping devices

In sawing stations and clamping devices with varying wood thicknesses (e.g. knot zones), the cutting position remains stable and the process stays on track. Short-term resistance peaks are mechanically absorbed, the system maintains speed and dimensional accuracy; feed and trimming

continue smoothly. This reduces unplanned stops, protects saw blades and ensures reproducible cutting quality across entire shifts. Ideal for lines with high cycle rates, new installations and retrofits.

Typical applications

Multi-blade, band and sliding table saws

Clamping devices

Feed/trimming stations

New installations and retrofits



Advantages with LAD

Straight cuts, protected tools, smooth process.

Impact peaks are absorbed in the spring travel; the switch-off/braking logic protects the drive and saw blade. End position and position monitoring secure the stroke range.

Short & important:

- **Accuracy is maintained:** the spring travel only acts in the event of an incident; the control system compensates.
- **Easy to retrofit:** Compact, hydraulics-free integration – ideal for retrofitting.
- **Scalable safety:** End positions/position mandatory; optional emergency stop/protective cover and torque/speed limits.



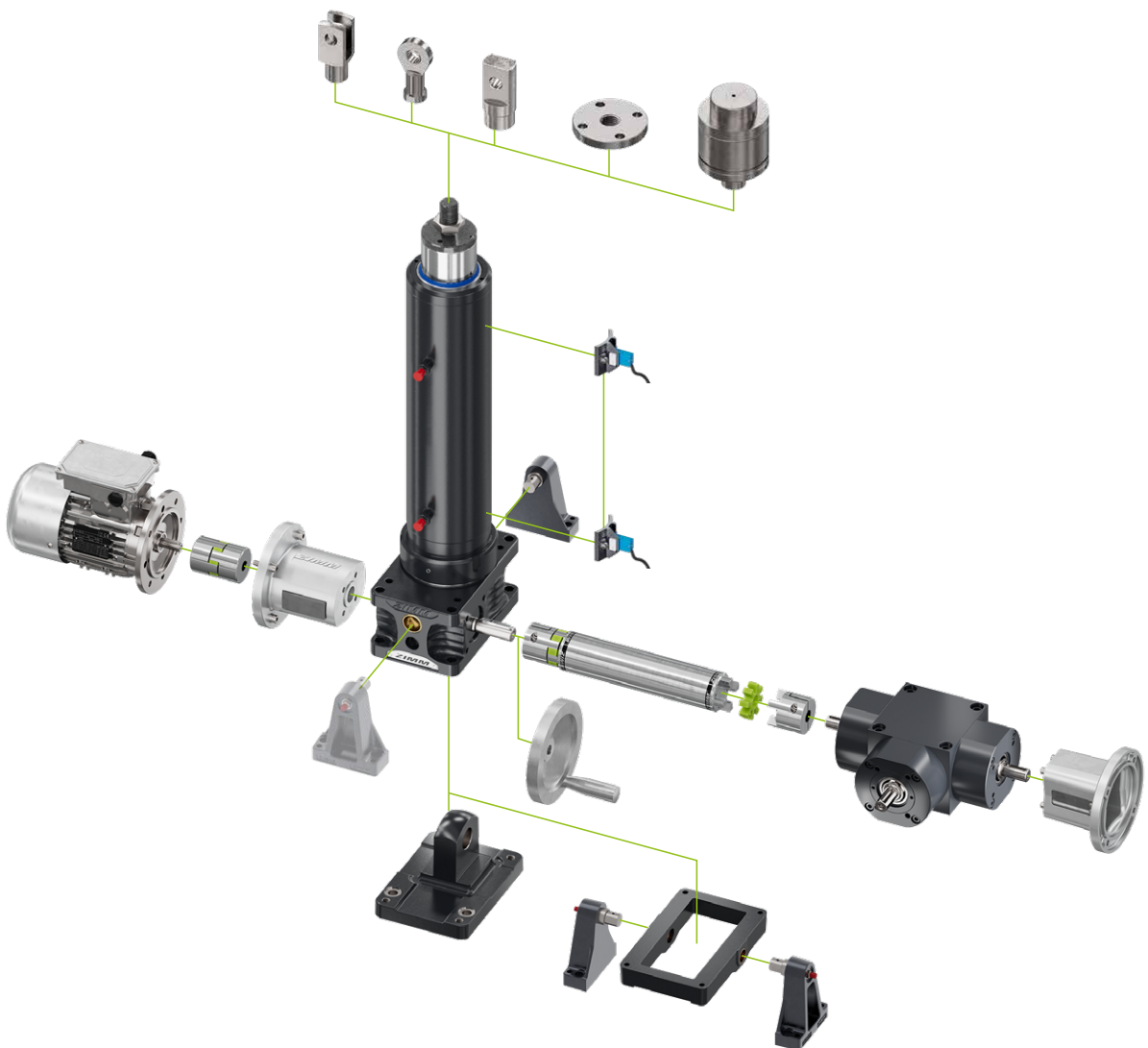
Why ZIMM is the right partner

- **Precise and available** for continuous operation
- **Safe and clean** without hydraulics
- **Modularly scalable** with modular system



To get started: ZIMM CAD product configurator with 3D/2D data and parts list – tailored precisely to your application, including matching accessory components (LAD, ES limit switches, bellows, couplings, motor flanges) and optional ZE/ZE-H screw jacks for centralised or distributed adjustments.

To the configurator: zimm.com/cad-login



Rely on ZIMM as your strong partner for woodworking – from design and configuration to commissioning.

Contact us – we can assist you with straight cutting, tool protection and availability.

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