

The Autonomy Influence

ConExpo/ConAgg highlights future of construction industry



Matthew Jaster, Director, Editorial Content

Liebherr continues to expand its manufacturing, logistics, and service footprint through targeted investments in the construction and off-highway markets. (Photo: Liebherr)

Leaders from across the construction and heavy equipment manufacturing industries gathered in Las Vegas recently for ConExpo-ConAgg 2026. The show celebrated the innovation, economic impact and workforce powering the \$2.2 trillion U.S. construction sector today.

“Construction touches every community and every industry, and ConExpo brings that impact to life on a global stage,” said Megan Tanel, president and CEO of AEM. “The show underscores the significance of the innovation, collaboration and workforce that keeps our industry moving forward and our communities thriving.”

The show featured the latest equipment, products, services and technologies for the construction industry, as well as industry-leading education. It is owned in partnership with NRMCA, NSSGA and AEM and managed by AEM. The following article highlights technology

displayed at the trade show from Liebherr, Schaeffler, Cat and ZF. (Additional ConExpo highlights can be found in the *PTE* Product News section on p.8).

Liebherr Expands Presence of Components and Construction Equipment

Liebherr’s presence at ConExpo reflected a broader long-term strategy in the North American construction market that extends well beyond the exhibition cycle. Active in the United States since 1970, the company continues to expand its manufacturing, logistics, and service footprint through targeted investments. Recent milestones include expanded assembly and manufacturing capabilities in Newport News, VA, and the construction of a new logistics and distribution center in Tupelo, MS.

Once operational, the Tupelo facility will become Liebherr’s first major distribution hub outside Europe designed to improve parts availability and service support across the Americas. The site will manage parts and components for earthmoving, crane, concrete technology, maritime, and components business units, while also supporting pre-assembly, kitting, and repackaging activities.

Kai Friedrich, managing director of Liebherr USA, Co., stated, “Liebherr’s commitment to the U.S. construction market goes beyond just building machines. We continue our local investments so customers can depend on prompt service, reliable parts support, and effective solutions that consistently deliver at North American jobsites.”

Earthmoving and material handling equipment represented the largest share of Liebherr’s ConExpo lineup, with a focus on durability,



The LTM 1055-3.3 redefines mobility as a lightweight 3-axle all-terrain crane.
(Photo: Liebherr)



Liebherr continues to invest in the latest in construction equipment technology.
(Photo: Liebherr)

efficiency, and long service life. Under demanding jobsite conditions, this focus is reflected in machine concepts designed for continuous operation, efficient power delivery, and low total cost of ownership.

Central to the exhibit was the articulated dump truck, TA 230 Litronic, shown in live operation throughout the week, engineered for heavy-duty applications, high payload efficiency, and reliable performance over long service lifecycles. Additional highlights included the Generation 8, crawler dozers, including the PR 716, developed for grading and site preparation, as well as the crawler loader LR 636 G8. Both machines are designed for sustained operation in challenging environments, where durability and precise machine control are critical. The machine features hydrostatic drive technology, optional 2D and 3D grade control, and an ergonomically designed cab.

The R 945 crawler excavator is presented as a solution for heavy-duty quarrying and earthmoving, emphasizing precise machine control, fuel-efficient operation, and long-term reliability. Its robust machine design and optimized drive systems are intended to deliver consistent performance and reduced wear in high-load applications. The wheeled excavator A 924 demonstrates Liebherr's approach to compact design and mobility for infrastructure and civil engineering projects, while the mid-sized wheel loader L 546 will be shown in live demonstrations equipped with active personnel detection and the Skyview 360-degree camera system, reinforcing Liebherr's focus on operator awareness and jobsite safety.

Electrification and energy efficiency are represented by machines such as the LH 60 M Industry E, an electrically driven material handler designed for a wide range of applications. Operating emission-free and quietly, the machine uses an energy recovery system to reduce overall consumption while maintaining high handling performance. Liebherr's XPower wheel loaders, including the L 550 and L 586, further illustrate

how application-specific kinematics and power-split drive technology are used to balance performance, fuel efficiency, and robustness across recycling, industrial, and classic loading applications, with a clear focus on durability and consistent performance throughout the machine lifecycle.

Liebherr's digital solutions and services were presented in a dedicated pavilion, where visitors explored how software, connectivity, and data-driven tools are applied across construction operations today.

Liebherr.com

Schaeffler Advances Autonomy in Construction Sector

Schaeffler is driving the digitalization and automation of construction machinery by integrating advanced sensor technologies that enable intelligent, data-driven autonomy. These sensor systems empower equipment with precise environmental awareness, resource management and regulatory compliance capabilities. By harnessing real-time data from powertrains, cooling and exhaust systems, Schaeffler supports the construction industry's shift to smarter, safer and more connected equipment that anticipates operational needs

and adapts dynamically to complex jobsite conditions.

Transitioning from traditional hydraulics to electromechanical actuators, Schaeffler also delivers precise, energy-efficient motion solutions that power intelligent, emissions-free construction machinery. These advanced actuators provide smooth, programmable control with high reliability and durability under the demanding stresses of heavy lifting and material handling. Through a compact and modular design, Schaeffler solutions enable OEMs to build smarter machines that simplify architecture, improve uptime, and accelerate the path to autonomous operation.

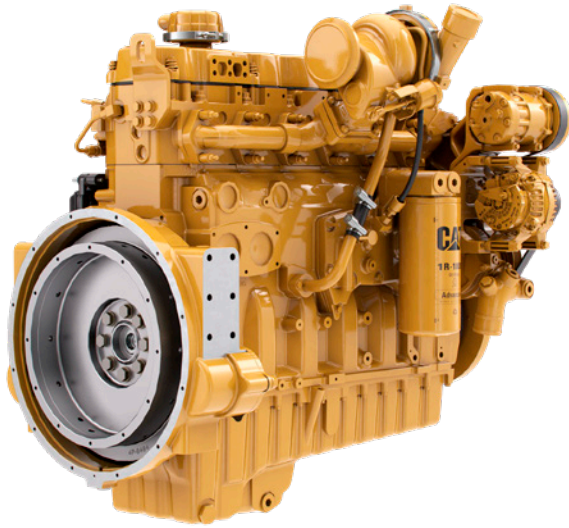
Meeting the urgent demand for emissions reduction and fuel efficiency, Schaeffler's portfolio at ConExpo included electric drive systems designed for off-road and construction vehicles. These solutions optimize power density and thermal management, enabling electric and hybrid machinery to deliver high continuous output in a compact design. By integrating scalable, oil-cooled motors and modular e-axes, Schaeffler facilitates cleaner, quieter job sites without compromising productivity or performance.

Schaeffler's advanced bearing and valve train solutions play a



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Schaeffler's advanced bearing and valve train solutions play a critical role in reducing friction and extending machinery life across harsh construction environments. (Photo: Schaeffler)



Cat's C9.3B diesel-electric power unit.
(Photo: Caterpillar)

critical role in reducing friction and extending machinery life across harsh construction environments. Engineered for robustness and precision, these components enhance mechanical efficiency, minimize energy losses, and increase reliability. Whether they're enhancing electric motor performance with innovative bearing designs, or optimizing traditional powertrains for lower friction, emissions and fuel consumption, Schaeffler's solutions contribute directly to energy-efficient, cost-effective construction operations.

schaeffler.us/us

Caterpillar Highlights Engines and Power Systems

Caterpillar Industrial Power Systems showcased the strength and breadth of Caterpillar power systems and solutions at ConExpo. The exhibit featured a new high horsepower 173 hp (129 kW) Cat C3.6 engine and the new power-dense C13D, both meet EU Stage V and U.S EPA Tier 4 Final emissions standards.

The booth also highlighted Cat's commitment to extending engine lifecycles, including ongoing support for customers' aftermarket needs with Cat parts and service solutions including connectivity, condition

monitoring, service replacement engines, VisionLink and a Cat Reman C7 engine.

A range of optimized and fuel-flexible Cat engines were on display in the Festival Lot including the compact C2.2 which outputs 74 hp (55 kW), the new C3.6 delivering 173 hp (129 kW) and the power-dense series-turbocharged C18TT engine at 800 hp (597 kW).

"As the construction landscape changes, our extensive portfolio of solutions and expertise, from full-fleet jobsites through to a full range of optimized diesel engines, will help solve our customers toughest challenges," said Steve Ferguson, senior vice president of Caterpillar Industrial Power Systems.

To meet customers' ongoing needs for higher power density power systems, which boost machine capability without increasing size or complexity, the twin-turbo C3.6 has been designed to deliver higher torque, greater uptime, and lower total operating costs for a range of equipment including wheel excavators, dumper trucks, soil compactors, backhoe loaders, asphalt pavers and telehandlers.

To achieve up to 173 hp (129 kW) and 546 lb ft (740 Nm) at 1,500 rpm of power density from the proven 3.6 liter, four-cylinder platform,

engineers have upgraded the combustion system to achieve maximum power and efficiency and have strengthened many core components.

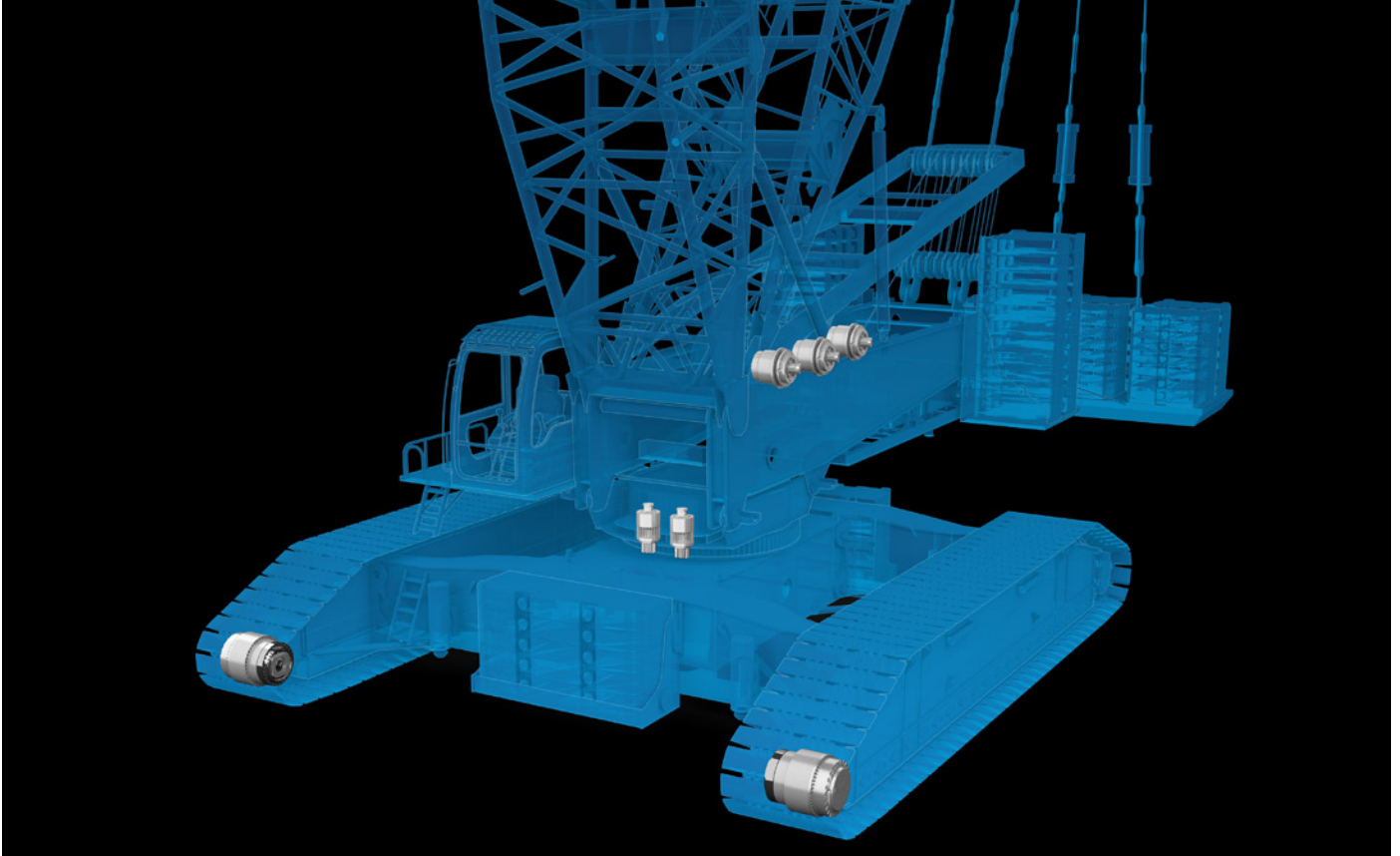
The high horsepower variant has been designed for low fluid consumption while delivering the required power across high, medium and low load operations. With a transparent, maintenance free after-treatment system with no downtime, the engine is set to deliver serious power in a compact footprint for a wide range of OEMs whose equipment is the bedrock of construction sites around the world.

"The customer requirement for high power density to boost machine capability without increasing engine size or complexity has driven the launch of this new high horsepower C3.6 and the C13D which we unveiled at ConExpo," said Ferguson. "Given that internal combustion engines remain the dominant power solution across global jobsites; we continue to strategically invest in advanced diesel engine technologies that help customers tackle their daily challenges."

The booth featured the C13D diesel engine platform, designed to achieve power density, torque and fuel efficiency for optimizing the performance of heavy duty off-highway applications.

Engineered to Caterpillar's standards for reliability and productivity, the inline, six-cylinder 13-liter engine platform will offer eight power ratings from 456 to 690 hp (340 to 515 kW) with up to 3,200 Nm of peak torque. Engine mounted aftertreatment and cooling packs will also be available from the factory to reduce installation and validation costs. The C13D will meet the emissions standards of highly regulated territories, such as Stage V, Tier 4 Final, China Nonroad Stage IV, Korea Stage V, and Japan 2014, with models available for less regulated territories.

The Cat C13D is designed for use in a wide range of off-highway equipment, including rock crushers, screeners, and grinders; trenchers; agriculture tractors, harvesters and self-propelled sprayers; woodchippers;



ZF presented gearbox solutions for crawler cranes.
(Photo: ZF)

material-handling equipment; and large industrial pumps.

caterpillar.com

ZF Offers Intelligent Off-Highway Solutions

In the construction and mining Industry, machine efficiency is a key factor in increasing site productivity and minimizing downtime. Addressing these growing demands, ZF Industrial Drives presented its latest advancements in large drive systems for mobile applications—the GPT 4F Travel Gearbox Series, covering a range from 73,750 to 2,212,500 ft-lbs. (100 – 3,000 kNm) output torque.

The next generation of ZF planetary gearboxes combines a compact design with significantly higher output torque, along with optimized service concepts that support greater availability and reduced maintenance effort

The Travel Gearbox Series GPT 4F is designed for mining excavators, large construction machines and for crawler cranes with machine weights from 50 to 1,000 tons. By using the latest design and manufacturing

tools, the gearboxes show a significantly increased torque density, while maintaining a compact design.

In this context, ZF displayed the modified GPT 450 4F Travel Gearbox for excavator and crane applications. The GPT 450 4F is suited for output torques up to 368,000 ft-lbs (500 kNm) and is designed to deliver highest reliability in harshest operating conditions.

The new generation of ZF planetary gearboxes is also available with the performance management system *ProVID*. The sensors and software of the *ZF ProVID* system enable a permanent condition analysis and a significant extension of service life through preventive maintenance measures. To complete the gearbox portfolio for Construction Machinery, ZF also showcased GFB Swing Gearboxes and GFC Pump Distribution Gearboxes in different sizes.

To meet the increasing demands for flexibility, efficiency and reliability throughout the entire machine lifecycle, ZF complements its system expertise with a strong and comprehensive aftermarket

portfolio. Built on decades of experience in off-highway applications, ZF Aftermarket supports construction machinery operators and service partners with robust components and integrated service solutions designed for extreme loads, harsh environments and demanding duty cycles.

The portfolio includes for example torque converters, oils and hydraulic brake components, engineered to ensure optimal performance while minimizing downtime. Workshops benefit from comprehensive technical training and detailed documentation, enabling them to maintain consistently high service standards. ZF's global service ecosystem further supports professional repair operations with diagnostics, repair solutions and remanufacturing options, while a strong global logistics network ensures fast delivery times and high parts availability. With this end-to-end aftermarket approach, ZF provides reliable support worldwide—with North America representing a key market for future growth.

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