

Press Release

Schaeffler at bauma 2025 (Hall 6, Booth 103)

On the road to decarbonization: Schaeffler presents e-motors with outputs of up to 315 kW

SCHWEINFURT, 2025-04-03.

- Ready for volume production: the high-efficiency 800 V electric motor series for electric and hybrid drive systems
- Cost-effective production with automated coil manufacturing
- Especially high efficiencies for long operating times on construction sites

Today, there's no longer any doubt that electric drive systems will make inroads into construction sites in the future. Some local governments in Germany and other countries are already banning vehicles with combustion engines from susceptible urban areas. At bauma 2025, Schaeffler will present its new high-performance heavy-duty electric motors as a volume production-ready solution for electric-only and hybrid drive systems. Due to their design, they achieve especially high torques, a power-to-weight ratio (peak) of around 5 to 7 kW/kg, and maximum efficiencies of more than 97% in a speed range of 3,000 to 8,000 rpm. The low losses of the liquid-cooled drive motors are essential to allow long operating times between charging cycles on construction sites and ensure efficient use of energy. Minimal losses and high operational reliability were also particularly important factors for the design of the bearing and seal. Ceramic balls reduce bearing friction and prevent damaging passage of current.

The modular motor series consists of three variants with maximum outputs of 125, 299 and 315 kW. The only difference is the length of the active parts. The individual stator laminations and the A- and B-side bearing end shields of the motors are identical in each case and therefore facilitate especially cost-efficient manufacturing. With an overall length of 151, 206 and 261 mm and a uniform outer diameter of around 239 mm (laminated core diameter) or 280 mm (including screw connection), the motors require minimal installation space. The stator windings are designed as flat wire (continuous hairpin) windings, also known as wave windings. At bauma in Munich, Schaeffler will be demonstrating a complete electric axle with integrated heavy-duty electric motor.

Schaeffler's portfolio includes various types of electric motor and manufacturing technologies

Thanks to synergies from the automotive segment, the offroad sector of Schaeffler's Bearings & Industrial Solutions division offers a comprehensive range

of electric drives with a continuous output of 1 to 300 kW for the construction equipment industry. Schaeffler can supply a wide range of active-part components and complete systems such as wheel-hub drives based on permanent magnet synchronous machines. All crucial manufacturing technologies also come from a single source: the stator laminations stamped 'in-house', the hairpin and wave winding technology, the automatically produced coil windings, and the HV plug connector systems.

Schaeffler Group – We pioneer motion: The Schaeffler Group has been driving forward groundbreaking inventions and developments in the field of motion technology for 80 years. With innovative technologies, products, and services for electric mobility, CO₂-efficient drives, chassis solutions and renewable energies, the company is a reliable partner for making motion more efficient, intelligent, and sustainable – over the entire life cycle. Schaeffler describes its comprehensive range of products and services by means of eight product families: From bearing solutions and all types of linear guidance systems through to repair and monitoring services. Schaeffler is with around 110,000 employees and more than 250 locations in 55 countries, one of the world's largest family-owned companies and one of Germany's most innovative companies.

Äußerst kompakter, ölgekühlter Heavy-Duty-eMotor mit einem Wirkungsgrad von über 97% in einem Drehzahlbereich von 3000 bis 8000 min⁻¹. Image: Schaeffler

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Mit der Wave Winding-Technologie und einer hochautomatisierten Fertigung lassen sich Elektromotoren mit hohem Wirkungsgrad besonders wirtschaftlich produzieren. Image: Schaeffler

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