

Electric Excavating Machine - Official Technical Overview & Datasheet

EXECUTIVE SUMMARY

The Electric Excavating Machine represents a paradigm shift in heavy earthmoving, combining the brute force of traditional diesel-powered units with the efficiency and sustainability of electric drive technology. Engineered for the most demanding applications in mining, quarrying, and large-scale infrastructure projects, this machine delivers exceptional digging power and high productivity while eliminating on-site emissions and drastically reducing fuel costs . Its robust design and advanced powertrain are tailored for operations requiring continuous high productivity, offering a superior alternative for contractors and mine operators committed to sustainable practices without compromising performance.

Positioned as the premier choice for large-scale excavation and quarry operations, the Electric Excavator is built to handle the toughest materials with ease . The shift to electric power translates to lower operating costs through reduced maintenance requirements and energy consumption, making it an economically viable and environmentally responsible investment . This machine is the ideal solution for projects seeking to meet stringent environmental regulations, reduce noise pollution, and achieve lower total cost of ownership over the machine's lifecycle.



STRUCTURAL INTEGRITY & POWERTRAIN

The machine's structural integrity is foundational to its performance. It features a heavy-duty undercarriage with reinforced track shoes, such as 600 mm triple-grouser shoes, which provide exceptional stability on rugged terrain and ensure durability during high-load operations . The boom, arm, and frame are engineered from high-grade steel to withstand the immense stresses of continuous excavation, significantly extending the service life of working components . This robust construction is complemented by a heavy-duty hydraulic system designed for high efficiency and fast cycle times, ensuring reliable operation in the most challenging environments.

At the core of the machine is a high-performance electric drive system. Options

include a custom-made Permanent Magnet Synchronous Motor (PMSM) that delivers a rated power of up to 620 kW and a massive torque output of 2960 Nm, providing instant, consistent power for heavy excavation tasks . The water-cooled IP67 motor ensures reliable operation in harsh conditions, while the fully electric powertrain eliminates diesel consumption, significantly lowering energy costs and reducing the number of mechanical components that require maintenance . An advanced intelligent control system, such as the DOMCS (Distributed Object-oriented Management and Control System), coordinates the powertrain and hydraulics for precise, efficient operation under variable workloads .

KEY FEATURES & OPERATOR COMFORT

- High-Power Electric Drive System: Equipped with a high-torque PMSM electric motor (e.g., 620 kW) that provides powerful, consistent performance for tough rock and mining conditions. The IP67 water-cooled motor ensures reliable operation in harsh environments and eliminates on-site emissions .
- Exceptional Digging Performance: Delivers superior productivity with high bucket digging forces (e.g., 345 kN) and arm digging forces (e.g., 293 kN), enabling powerful penetration in hard rock and efficient deep excavation. Large bucket capacities up to 4.5 m³ increase material handling efficiency and reduce cycle times .
- Heavy-Duty Structural Design: Features a reinforced undercarriage with

heavy-duty track shoes for stability, and a strong boom and arm design engineered for heavy-duty operations. The optimized frame structure enhances durability and extends component life during continuous high-load work .

- Advanced Operator Cab: The spacious, ergonomic cab offers superior comfort and control, designed to meet ROPS/FOPS (Roll Over Protective Structure / Falling Object Protective Structure) safety standards. It features a modern control panel with a high-resolution monitor for machine diagnostics and operation management, minimizing operator fatigue and maximizing productivity .

- Intelligent Control & Efficiency: The advanced electro-hydraulic system enables smooth, precise movements for complex excavation cycles. An intelligent power management system, such as DOMCS, optimizes energy usage and machine coordination, improving efficiency during variable workloads and reducing maintenance requirements .

COMPLIANCE & SAFETY STANDARDS

The Electric Excavating Machine is designed and manufactured in accordance with the highest international standards for safety and environmental compliance. The machine's cabin is certified to ROPS/FOPS standards, ensuring operator protection in the event of a rollover or impact from falling objects . It meets global emissions standards by producing zero on-site emissions,

supporting sustainable mining and construction practices . The machine is also fully compliant with CE and ISO 9001 quality management standards, reflecting a commitment to engineering excellence and operational reliability.

TECHNICAL SPECIFICATIONS

The following table outlines the key operational parameters for this high-capacity Electric Excavating Machine. Specifications are based on a 65-ton class model .

Parameter	Specification
Engine Model	PMSM Electric Motor
Rated Power	620 kW (830 hp)
Operating Weight	65,000 kg (143,300 lb)
Std. Bucket Capacity	

#ddd;'>4.2 m ³ (5.5 yd ³) </td></tr><tr><td style='padding: 8px; border: 1px solid #ddd;'>Bucket Capacity Range</td><td style='padding: 8px; border: 1px solid #ddd;'>3.0 - 4.5 m ³ (3.9 - 5.9 yd ³) </td></tr><tr><td style='padding: 8px; border: 1px solid #ddd;'>Swing Speed</td><td style='padding: 8px; border: 1px solid #ddd;'>7.3 rpm </td></tr><tr><td style='padding: 8px; border: 1px solid #ddd;'>Max Traction Force</td><td style='padding: 8px; border: 1px solid #ddd;'>477 kN </td></tr><tr><td style='padding: 8px; border: 1px solid #ddd;'>Bucket Digging Force</td><td style='padding: 8px; border: 1px solid #ddd;'>345 kN </td></tr><tr><td style='padding: 8px; border: 1px solid #ddd;'>Arm Digging Force</td><td style='padding: 8px; border: 1px solid #ddd;'>293 kN </td></tr><tr><td style='padding: 8px; border: 1px solid #ddd;'>Boom Length</td><td style='padding: 8px; border: 1px solid #ddd;'>7000 mm (23.0 ft) </td></tr></table>
--