

50 TON EXCAVATOR - OFFICIAL TECHNICAL OVERVIEW & DATASHEET

EXECUTIVE SUMMARY

The 50 Ton Excavator represents a significant leap forward in heavy construction and mining machinery, designed to tackle the most demanding earthmoving and material handling challenges. This next-generation machine integrates a high-output, electronically controlled powertrain with a state-of-the-art hydraulic system, delivering a superior balance of digging force, lift capacity, and cycle speed. Targeted specifically at large-scale infrastructure projects, open-pit mining, and heavy-duty quarry applications, this excavator is engineered to maximize productivity while minimizing total cost of ownership through reduced fuel consumption and extended component life.

Built on a legacy of durability and innovation, the 50 Ton Excavator prioritizes operational safety and operator well-being without compromising performance. Its robust design features a reinforced, high-tensile steel frame and a heavy-duty undercarriage, ensuring stability and reliability in the harshest conditions. Complemented by an ergonomically designed, vibration-dampened cab with 360-degree visibility and an intuitive smart control system, this machine empowers operators to work longer hours with greater precision and comfort. The 50 Ton Excavator is the definitive solution for contractors and mining companies seeking a reliable, high-performance

partner for their critical operations.



STRUCTURAL INTEGRITY & POWERTRAIN

The foundation of the 50 Ton Excavator's exceptional performance is its superior structural integrity and advanced powertrain. The main chassis and boom are constructed from high-grade, fine-grained steel (yield strength exceeding 500 MPa), offering outstanding resistance to bending, cracking, and fatigue in high-impact applications. This robust design is complemented by a heavy-duty, sealed and lubricated track undercarriage with extended track shoe width options, providing exceptional stability and ground pressure distribution for demanding terrains.

At the heart of the machine lies a high-displacement, electronically controlled

diesel engine, optimized for maximum torque at low RPM. The engine, meeting stringent emissions regulations, is paired with a sophisticated, variable-displacement axial piston hydraulic system featuring an advanced load-sensing and pressure-compensated architecture. This closed-center system intelligently directs hydraulic flow on demand, ensuring optimal fuel efficiency and precise control of all implement and travel functions. The integration of large-capacity hydraulic coolers and high-efficiency filters guarantees sustained performance and component longevity, even in continuous, high-load operating cycles.

KEY FEATURES & OPERATOR COMFORT

- Advanced Load-Sensing Hydraulic System: Features a closed-center, variable-displacement pump with a load-sensing valve. This advanced system automatically adjusts oil flow and pressure based on the operator's lever input, providing exceptional fuel economy, reduced heat generation, and precise, smooth multi-function operation for unparalleled controllability.
- ROPS/FOPS Certified Operator Cab: The pressurized, sound-suppressed cab is certified to ISO 3471 (ROPS) and ISO 3449 (FOPS) Level II standards, ensuring operator safety. The structure incorporates a reinforced steel cage, laminated front glass, and emergency escape hatches, offering a secure working environment in rock-handling applications.

- Smart Touch Control & Telematics Panel: An intuitive, high-resolution, 8-inch touchscreen display serves as the command center, providing real-time data on engine vitals, hydraulic temperatures, fuel consumption, and maintenance schedules. Integrated telematics enable remote fleet management, geo-fencing, and performance monitoring, optimizing machine utilization.
- Hydraulic Accumulator & Swing Priority System: The integrated hydraulic accumulator ensures consistent auxiliary flow for attachments, eliminating pressure drops during rapid swings. The intelligent swing priority system utilizes a pressure-sensing valve to automatically prioritize swing speed when using heavy attachments, significantly improving cycle times and productivity.
- Automatic Climate Control & Ergonomic Joysticks: The cab features a fully automatic, multi-zone climate control system to maintain optimal temperature in extreme environments. Fitted with low-effort, proportional joysticks featuring built-in roller switches, the system reduces operator fatigue and provides precise, fingertip control over boom, arm, bucket, and swing functions.

COMPLIANCE & SAFETY STANDARDS

The 50 Ton Excavator is designed and manufactured to meet the most rigorous global safety and environmental standards, ensuring compliance and peace of mind for operations worldwide. The machine holds certification for CE marking

(Machinery Directive 2006/42/EC) and is fully compliant with EPA Tier 4 Final emissions standards. Furthermore, the manufacturing and quality processes are certified under ISO 9001:2015, and the cab structure meets ISO 12100 for general safety requirements. Additional safety features include standard rearview cameras, object detection systems, and automatic engine shutdown in case of critical pressure loss.

TECHNICAL SPECIFICATIONS

The 50 Ton Excavator's technical parameters are detailed below, showcasing its operational and dimensional capabilities for a comprehensive assessment of its performance envelope.

PARAMETER	SPECIFICATION
Engine Model	Cummins X12 (or Isuzu 6WG1)
Rated Power (Net)	310 kW (416 HP) @ 1,900 rpm

Operating Weight (Approx.)	50,000 kg - 52,000 kg
Standard Bucket Capacity	2.8 - 3.5 m ³ (Heavy Duty)
Max Digging Depth	7,500 mm
Max Reach at Ground Level	11,500 mm
Max Dumping Height	7,200 mm
Swing Speed	8.5 rpm
Travel Speed (High/Low)	5.5 / 3.5 km/h
Hydraulic System Pressure	34.3 MPa (350 kg/cm ²)