

50 TON BUCKET LOADER - OFFICIAL TECHNICAL OVERVIEW & DATASHEET

EXECUTIVE SUMMARY

Engineered as the optimal loading solution for 50-ton haul truck classes, this Bucket Loader represents a pinnacle of heavy machinery engineering, delivering exceptional productivity in the most demanding mining, quarry, and large-scale construction environments. The machine is meticulously designed to offer a superior cost-per-ton advantage, combining a robust powertrain with advanced hydraulic systems to ensure maximum uptime and efficiency. Its primary value proposition lies in its ability to move high volumes of material swiftly and reliably, making it an indispensable asset for any high-production operation.

This machine is purpose-built for the rigorous demands of shot rock loading in quarries, load-and-carry operations in mining, and heavy material handling in large infrastructure projects. With a matched bucket payload to its 50-ton truck counterparts, it achieves up to 740 tons per hour in truck loading applications, significantly reducing cycle times and accelerating project timelines. The loader's design philosophy centers on durability, operator safety, and ease of maintenance, ensuring it remains a productive and profitable investment for years to come.



STRUCTURAL INTEGRITY & POWERTRAIN

The chassis of this 50-ton class loader is constructed from high-tensile, welded steel, providing a robust foundation to withstand the extreme torsional and impact stresses encountered in heavy mining and quarrying applications. The articulation joint is engineered with large center bearings and self-centering, double-tapered roller bearings, ensuring long-term reliability and smooth operation even under the heaviest loads. This heavy-duty frame is the core of the machine's structural integrity, ensuring a long service life.

At the heart of the powertrain is a high-performance diesel engine, such as the Tier 4 Final compliant Cummins or equivalent, delivering exceptional horsepower and torque for superior digging and acceleration. This power is seamlessly transferred through a fully automatic, electronically controlled

power-shift transmission, which offers multiple forward and reverse speeds for optimal performance in any application . The advanced hydraulic system, featuring load-sensing technology, efficiently manages oil flow to the steering, implement, and cooling circuits. A large-capacity hydraulic oil cooler ensures stable operating temperatures even in the most extreme ambient conditions .

KEY FEATURES & OPERATOR COMFORT

- **HIGH-PERFORMANCE Z-BAR LINKAGE:** The machine utilizes a robust Z-bar front linkage, engineered for high breakout force and excellent lift capacity to handle dense materials efficiently. The design incorporates a reinforced Z-bar, larger profile arms, and optimized lift cylinder geometry, which significantly improves lifting and prying capabilities for superior productivity in tough digging conditions .
- **ROPS/FOPS CERTIFIED CAB:** The operator cabin is built to meet ROPS (Roll-Over Protective Structure) and FOPS (Falling Object Protective Structure) standards, ensuring maximum operator safety . The spacious, pressurized, and sound-dampened cab is ergonomically designed with intuitive joystick controls, a high-resolution display monitor, and optimized airflow systems to reduce operator fatigue and enhance comfort during extended shifts .
- **ADVANCED TELEMATICS & TECHNOLOGY:** The loader is equipped with a comprehensive telematics system (such as Product Link) that provides real-time machine data including location, health, and utilization to optimize fleet

management and maintenance planning . An optional on-board weighing system provides accurate payload measurement to maximize productivity and prevent overloading, often with advanced productivity subscriptions available for deeper operational insights .

- RIDE CONTROL & EFFICIENCY: An optional or standard Ride Control system features an accumulator that acts as a boom shock absorber to improve stability and reduce material spillage when traveling over rough terrain, thereby increasing speed and productivity . Additionally, the engine features selectable power modes and auto-idle/shutdown functions to optimize fuel consumption and efficiency without compromising performance .

- IMPROVED VISIBILITY & SAFETY: Enhanced visibility is a key feature, with strategically placed cameras (such as rearview and advanced vision systems) that provide a clear view of the machine's surroundings to enhance job site safety and operator confidence . On-board diagnostics offer proactive alerting of machine issues to minimize unplanned downtime and potential safety hazards .

COMPLIANCE & SAFETY STANDARDS

This 50-ton bucket loader is designed and manufactured to comply with the most stringent global safety and emissions regulations. The machine meets EPA Tier 4 Final and EU Stage V emissions standards through advanced technology

like Diesel Particulate Filters (DPF) and Selective Catalytic Reduction (SCR) with Diesel Exhaust Fluid (DEF), reducing its environmental footprint while delivering powerful performance .

Safety compliance is paramount, with the loader meeting ISO 3471 (ROPS), ISO 3449 (FOPS), and ISO 3450 braking standards . The brake system is a dual-circuit, spring-applied, hydraulically-released multi-disc wet brake system, providing safe and reliable stopping power on all wheels . Operational safety is further reinforced by features such as emergency steering, a neutral safety start system, and a reverse alarm .

TECHNICAL SPECIFICATIONS

The following are the general technical specifications for the 50 Ton Bucket Loader. Please note that final figures may vary based on specific configurations, options, and attachments selected.

Parameter	Specification
Engine Model	

CAT C15 / Cummins QSM11	
Net Power	~320 - 430 hp (238 - 320 kW)
Operating Weight	~78,000 - 86,000 lbs (35,400 - 39,000 kg)
Bucket Capacity Range	7.1 - 10.0 yd ³ (5.4 - 7.6 m ³)
Breakout Force	~61,800 lbf (275 kN)
Max. Dump Clearance	~12.8 ft (3.9 m)
Transmission Type	Full-Auto Powershift
Max. Travel Speed	~26 mph (42 km/h)