

Heavy-duty Digger - Official Technical Overview & Datasheet

EXECUTIVE SUMMARY

Designed for the most punishing earthmoving and material handling environments, the HD-5000 SERIES heavy-duty digger represents a paradigm shift in durability and productivity. Targeting large-scale mining overburden removal, major civil construction trenches, and deep agricultural drainage systems, this machine combines a high-strength steel chassis with a next-generation electro-hydraulic system. The primary value proposition lies in a 15% reduction in fuel consumption per cubic meter moved versus previous generation competitors, achieved without sacrificing breakout force or cycle speed.

Built to operate reliably in extreme ambient temperatures ranging from -30°C to +50°C, the HD-5000 maintains consistent hydraulic response and operator safety. The machine bridges the gap between standard backhoes and massive mining shovels, offering optimal transportability (under 55 metric tons shipping configuration) while delivering class-leading dig depths up to 7.2 meters. For fleet owners, this translates to lower capital expenditure per ton of daily production and simplified parts commonality across job sites.



STRUCTURAL INTEGRITY & POWERTRAIN

The chassis and boom arm utilize HARDOX 500 grade wear-resistant steel with a box-section design featuring internal bulkhead reinforcement. This configuration provides a 40% higher fatigue life compared to standard BR450 steel frames. The main frame incorporates a cast steel front idler bracket and forged track chain links with induction-hardened bushings, delivering a projected undercarriage life exceeding 10,000 hours in abrasive conditions.

Power is delivered by a CUMMINS QSM11 diesel engine, rated at 250 kW (335 HP) at 2,100 rpm, fully compliant with EPA TIER 4 FINAL and EU STAGE V emission norms. The engine employs Selective Catalytic Reduction (SCR) and a Diesel Particulate Filter (DPF) with a fully automatic regeneration cycle that does not interrupt operation. A dual-circuit, load-sensing hydraulic system with

variable displacement axial piston pumps delivers a maximum flow of 2 x 220 L/min at 350 bar system pressure. Hydraulic efficiency measured at the attachment reaches 88%, minimizing thermal loss and extending component service intervals to 4,000 hours.

KEY FEATURES & OPERATOR COMFORT

- **LOAD-INDEPENDENT FLOW SHARING (LIFS) VALVES:** This system ensures simultaneous, precise control of boom, arm, and bucket movements regardless of load pressure, eliminating jerky operation and enabling millimeter-grade trenching accuracy even at full engine load.
- **ROPS/FOPS CERTIFIED CAB:** The one-piece pressed steel cab exceeds ISO 3471 (Roll Over) and ISO 3449 (Falling Objects) standards. It features viscous isolation mounts reducing whole-body vibration by 35%, laminated soundproof glass reducing interior dB(A) to 72, and an automatic climate control system with positive cabin pressurization against dust ingress.
- **8-INCH SMART CONTROL PANEL:** A high-brightness, glove-friendly touchscreen provides real-time telemetry: fuel consumption per cycle, hydraulic oil temperature trending, maintenance countdown timers, and integrated rear-view/right-side camera feeds. Three user-selectable power modes (Power, Standard, Eco) allow the operator to match output to site conditions.
- **MODULAR SERVICE ARCHITECTURE:** All daily check points (engine oil, hydraulic return filter, fuel/water separator, coolant reservoir) are grouped

behind a single, gas-strut assisted door at ground level. A centralized greasing block for all pivot points reduces daily lubrication time from 20 minutes to under 6 minutes.

COMPLIANCE & SAFETY STANDARDS

This equipment is fully certified to ISO 9001:2015 for quality management systems and ISO 14001 for environmental manufacturing standards. Safety compliance includes ISO 20474 (Earth-moving machinery safety), ISO 13031 (quick coupler safety), and EN 474-1 (European harmonized standard). The standard equipment includes a secondary hydraulic isolation valve on the boom, an acoustic travel alarm (reversing alarm) meeting SAE J1446, and an electric master disconnect switch accessible from ground level. For underground or enclosed sites, an optional methane gas detection system with automatic engine shutdown is available.

TECHNICAL SPECIFICATIONS

All values are based on SAE J/ISO 9249 standard testing conditions with standard track shoes and heavy-duty bucket (1.8 cubic meter heaped capacity).

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Parameter	Specification
Engine Model	Cummins QSM11 (Tier 4 Final)
Net Power	250 kW (335 HP) @ 2,100 rpm
Operating Weight (Standard Boom + Arm)	48,500 kg (106,924 lbs)
Max Dig Depth (Standard Arm)	7.2 m (23 ft 7 in)
Max Reach at Ground Level	11.1 m (36 ft 5 in)
Bucket Breakout Force (ISO)	210 kN (47,210 lbf)
Arm Tearout Force (ISO)	165 kN (37,092 lbf)
Main Hydraulic Pressure - Equipment	350 bar (5,076 psi)

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#ddd;'>Swing Speed</td><td style='padding: 8px; border: 1px solid
#ddd;'>9.5 rpm</td></tr><tr><td style='padding: 8px; border: 1px solid
#ddd;'>Ground Clearance</td><td style='padding: 8px; border: 1px solid
#ddd;'>520 mm (20.5 in)</td></tr></table>
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