Heavy-duty Backhoe Excavator - Official Technical Overview & Datasheet

EXECUTIVE SUMMARY

Engineered for the most demanding job sites, the Heavy-duty Backhoe Excavator represents a paradigm shift in material handling and earthmoving efficiency. Designed to bridge the gap between a standard excavator and a wheel loader, this machine delivers exceptional breakout force and lifting capacity without compromising mobility. It is the premier solution for contractors in construction, quarrying, and large-scale agricultural projects who require a versatile, single-machine fleet capable of performing multiple tasks with ruthless efficiency.

Built upon decades of engineering excellence, this backhoe excavator integrates a heavy-duty chassis with a high-efficiency hydraulic system to ensure maximum uptime and lowest total cost of ownership. Whether trenching for utilities, loading trucks, or handling heavy aggregates, the machine's advanced load-sensing technology provides optimal power distribution, reducing fuel consumption while delivering instantaneous response. This is not merely an evolution of the backhoe; it is a revolution in compact, high-output performance.

STRUCTURAL INTEGRITY & POWERTRAIN

The core of this machine lies in its robust structural architecture. The mainframe is fabricated from high-tensile, low-alloy steel with a yield strength exceeding 550 MPa, utilizing robotically welded box-section construction to withstand severe torsional stresses and shock loads encountered in heavy digging. This chassis is integral to the machine's longevity, providing a solid foundation for all critical components and absorbing the punishing vibrations of continuous operation.

Powering the beast is a next-generation diesel engine, meticulously tuned to meet stringent emission regulations without sacrificing performance. This turbocharged, air-to-air aftercooled unit delivers a substantial power peak at low RPM, ensuring high torque availability for breakout operations. The engine

is coupled to an advanced closed-center, pressure-compensated hydraulic system that intelligently manages flow. This system reduces parasitic losses by delivering oil only on demand, which directly translates to lower fuel consumption and reduced heat generation, enhancing the overall efficiency and durability of the hydraulic components.

KEY FEATURES & OPERATOR COMFORT

- Intelligent Load-Sensing Hydraulics: This advanced system automatically adjusts pump flow to match the demand of the control lever movements. This results in smoother, more precise implement control, reduced fuel consumption by up to 8%, and significantly lower heat generation, extending hydraulic component life.
- ROPS/FOPS Certified Cab: The pressurized, sound-dampened cabin is certified to ROPS (Roll Over Protective Structure) and FOPS (Falling Object Protective Structure) standards. This ensures operator safety in the event of a rollover or impact from falling debris, while the ergonomic layout minimizes fatigue during long shifts.
- Smart Control & Telematics Panel: The intuitive 8-inch LCD display provides the operator with critical real-time data including fuel consumption, hydraulic oil temperature, and service reminders. It is also the gateway to the machine's telematics system, enabling remote diagnostics and fleet management.
- Extended Service Intervals: Designed for maximum uptime, the machine

features grouped service points and extended oil change intervals. The swing-out cooler package and easy-access filters simplify routine maintenance, drastically reducing service time and associated costs.

COMPLIANCE & SAFETY STANDARDS

This backhoe excavator is manufactured under a strict Quality Management System certified to ISO 9001. The engine is fully compliant with EPA Tier 4 Final and EU Stage V emission regulations, ensuring a low environmental impact without compromising power output. The entire machine design adheres to the stringent EN 474 safety standards for earth-moving machinery, encompassing features such as a secondary braking system, anti-theft locking mechanisms, and high-visibility LED work lights for safe operation at dawn and dusk.

TECHNICAL SPECIFICATIONS

The following parameters define the exceptional capabilities of the Heavy-duty Backhoe Excavator. These figures represent the machine at its standard operating weight and configuration, offering a benchmark for total performance and efficiency.

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style='padding: 8px; text-align: left; background-color: #f2f2f2;'>Parameter</th><th style='padding: 8px; text-align: left; background-color: #f2f2f2;'>Specification</th></tr><tr><td style='padding: 8px; border: 1px solid #ddd;'>Engine Model</td><td style='padding: 8px; border: 1px solid #ddd;'>Cummins QSB 6.7 (Turbocharged)</td></tr><tr><td style='padding: 8px; border: 1px solid #ddd;'>Net Power</td><td style='padding: 8px; border: 1px solid #ddd;'>120 kW (161 hp) @ 2000 rpm</td></tr><tr><td style='padding: 8px; border: 1px solid #ddd;'>Operating Weight</td><td style='padding: 8px; border: 1px solid #ddd;'>24,500 kg (54,000 lb)</td></tr><tr><td style='padding: 8px; border: 1px solid #ddd;'>Bucket Capacity (Heavy Duty)</td><td style='padding: 8px; border: 1px solid #ddd;'>1.5 - 1.8 m³ (2.0 - 2.4 yd³)</td></tr><tr><td style='padding: 8px; border: 1px solid #ddd;'>Max Digging Depth (Backhoe)</td><td style='padding: 8px; border: 1px solid #ddd;'>7,200 mm (23 ft 7 in)</td></tr><tr><td style='padding: 8px; border: 1px solid #ddd;'>Max Reach at Ground Level</td><td style='padding: 8px; border: 1px solid #ddd;'>10,800 mm (35 ft 5 in)</td></tr><tr><td style='padding: 8px; border: 1px solid #ddd;'>Breakout Force (Backhoe)</td><td style='padding: 8px; border: 1px solid #ddd;'>150 kN (33,700 lbf)</td></tr><tr><td style='padding: 8px; border: 1px solid #ddd;'>Breakout Force (Loader)</td><td style='padding: 8px; border: 1px solid #ddd;'>145 kN (32,600 lbf)</td></tr><tr><td style='padding: 8px; border: 1px solid

#ddd;'>Hydraulic System Flow</td><td style='padding: 8px; border: 1px solid #ddd;'>2 x 240 L/min (2 x 63.4 gal/min)</td></tr><tr><td style='padding: 8px; border: 1px solid #ddd;'>Fuel Tank Capacity</td><td style='padding: 8px; border: 1px solid #ddd;'>400 L (105.7 US gal)</td></tr></table>