EPA Certified Digger - Official Technical Overview & Datasheet

EXECUTIVE SUMMARY

The EPA Certified Digger is a heavy-duty earthmoving solution engineered for the most demanding job sites across construction, mining, and large-scale agriculture. Designed to meet stringent US EPA Tier 4 Final emission standards, this machine bridges the gap between environmental compliance and maximum production output, delivering up to 15% fuel savings compared to previous generation models.

Targeting contractors, quarry operators, and agricultural land developers, the unit provides class-leading breakout force and cycle times. With an optimized power-to-weight ratio and advanced telematics, the EPA Certified Digger reduces total cost of ownership while ensuring seamless integration into modern fleet management ecosystems. It is the definitive choice for projects requiring certified low emissions without compromising dig depth or lift capacity.

STRUCTURAL INTEGRITY & POWERTRAIN

The chassis utilizes high-tensile, fine-grained steel (Grade Q460C) with a box-section design, achieving a structural yield strength of 460 MPa. The upper frame incorporates double-welded overlap joints and cast nodes at all high-stress pivot points, extending service life by 30% in abrasive conditions such as hard rock mining and compacted clay.

Power is delivered by a turbocharged, air-to-air aftercooled Cummins X6.7 diesel engine, fully certified to EPA Tier 4 Final via cooled exhaust gas recirculation (CEGR) and a diesel particulate filter (DPF). The engine produces 210 net horsepower (156 kW) at 2,000 rpm, with a peak torque reserve of 35%. The closed-center, load-sensing hydraulic system operates at 34.8 MPa (5,050 psi) and utilizes a variable-displacement axial piston pump, offering precise

flow control (max 300 L/min) to the boom, arm, and bucket circuits. System efficiency exceeds 88% at full load.

KEY FEATURES & OPERATOR COMFORT

- Load-Sensing Hydraulic with ECO Mode: An intelligent pump control reduces flow by 18% during light to medium digging cycles, lowering fuel consumption by up to 20% while maintaining cycle times. Operators can select from Power, Standard, or ECO modes via a rotary dial.

- ROPS/FOPS Certified Cab: A one-piece, sealed pressurized cab certified to ISO 12117-2 (ROPS) and ISO 10262 (FOPS Level II). Features laminated double-glazed front glass, a dash-mounted 10-inch high-resolution touchscreen display, and low-effort servo joysticks. Interior sound pressure is reduced to 71 dBA.

- Smart Autogrease System: Standard factory-integrated, programmable automatic greasing system with 20L reservoir. Delivers precise grease intervals (every 2-10 hours) to all 14 pivot points, reducing pin and bushing wear in dusty environments by 40%.

- 360-degree Object Detection: A 4-camera AI-enabled surround view system

with dynamic guidelines and rear proximity radar. Visual and audible alerts activate when personnel or obstacles enter predefined zones within 5 meters of the swing radius.

- Automatic Climate & Air Filtration: A dual-stage, high-efficiency cab air filtration system (HEPA + activated carbon) maintains positive pressure, blocking 99.97% of airborne particles down to 0.3 microns. Automatic climate control maintains 22°C ±2°C regardless of ambient temperature (-30°C to 55°C operating range).

COMPLIANCE & SAFETY STANDARDS

The EPA Certified Digger carries full US EPA Tier 4 Final certification (Engine Family: C6.7X8E4). Additionally, the machine meets CE (Category IV), ISO 9001:2015 (manufacturing quality), and ISO 14001:2015 (environmental management) standards. Safety compliance includes ISO 20474 (earth-moving machinery safety) and ANSI/SAE J1290 (hydraulic excavator operator controls). The secondary engine shutdown system, fire suppression prep kit, and all ground-level service shutoffs are standard. The machine also meets EU Stage V equivalent noise emission directive 2000/14/EC (LwA 104 dB(A)).

TECHNICAL SPECIFICATIONS

All parameters are measured under ISO 9249 (net power) and ISO 6016 (operating weight) standards. The following values are for the standard heavy-duty configuration (6.0 m boom, 2.9 m arm, 1.2 m³ heavy-duty bucket).

<table border='1' style='border-collapse: collapse; width: 100%;'><tr><th 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 X6.7 (EPA Tier 4 Final)</td></tr><tr><td style='padding: 8px; border: 1px solid #ddd;'>Net Power</td><td style='padding: 8px; border: 1px solid #ddd;'>210 hp (156 kW) @ 2,000 rpm</td></tr><tr><td style='padding: 8px; border: 1px solid #ddd;'>Operating Weight</td><td style='padding: 8px; border: 1px solid #ddd;'>22,500 kg (49,604 lb)</td></tr><tr><td style='padding: 8px; border: 1px solid #ddd;'>Bucket Capacity (SAE)</td><td style='padding: 8px; border: 1px solid #ddd;'>0.9 - 1.4 m³ (standard 1.2 m³)</td></tr><tr><td style='padding: 8px; border: 1px solid #ddd;'>Max Digging Depth</td><td style='padding: 8px; border: 1px solid #ddd;'>6,850 mm (22 ft 6 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;'>10,150 mm (33 ft 4 in)</td></tr><tr><td style='padding: 8px; border: 1px solid #ddd;'>Max Breakout Force (Bucket)</td><td style='padding: 8px; border: 1px solid #ddd;'>172 kN (38,670 lbf)</td></tr><tr><td style='padding: 8px; border: 1px solid #ddd;'>Arm Crowd Force</td><td style='padding: 8px; border: 1px solid #ddd;'>122 kN (27,430 lbf)</td></tr><tr><td style='padding: 8px; border: 1px solid #ddd;'>Swing Speed</td><td style='padding: 8px; border: 1px solid #ddd;'>11.2 rpm</td></tr><tr><td style='padding: 8px; border: 1px solid #ddd;'>Travel Speed (High/Low)</td><td style='padding: 8px; border: 1px solid #ddd;'>5.2 / 3.2 km/h (3.2 / 2.0 mph)</td></tr><tr><td style='padding: 8px; border: 1px solid #ddd;'>Hydraulic Main Pump Flow</td><td style='padding: 8px; border: 1px solid #ddd;'>2 x 150 L/min (total 300 L/min)</td></tr><tr><td style='padding: 8px; border: 1px solid #ddd;'>Main Relief Pressure</td><td style='padding: 8px; border: 1px solid #ddd;'>34.8 MPa (5,050 psi)</td></tr><tr><td style='padding: 8px; border: 1px solid #ddd;'>Fuel Tank Capacity</td><td style='padding: 8px; border: 1px solid #ddd;'>410 L (108.3 US gal)</td></tr><tr><td style='padding: 8px; border: 1px solid #ddd;'>Ground Clearance</td><td style='padding: 8px; border: 1px solid #ddd;'>470 mm (18.5 in)</td></tr><tr><td style='padding: 8px; border: 1px solid #ddd;'>Tail Swing Radius</td><td style='padding: 8px; border: 1px solid #ddd;'>2,850 mm (112.2 in)</td></tr></table>