Demolition Digger - Official Technical Overview & Datasheet

EXECUTIVE SUMMARY

The Demolition Digger represents a paradigm shift in controlled dismantling and structural reduction. Designed for the rigorous demands of high-rise demolition, bridge deconstruction, mining overburden removal, and agricultural silage processing, this machine combines raw hydraulic power with surgical precision. Leveraging a heavy-duty undercarriage and a two-piece high-reach boom, the unit delivers exceptional stability and breakout force while minimizing machine footprint on congested job sites.

Built for contractors who demand zero-compromise uptime, the Demolition Digger integrates a Tier 4 Final powerplant with a fully independent hydraulic cooling system. This configuration ensures continuous operation during prolonged shearing, pulverizing, or hammering cycles. The machine’ s value proposition centers on lowering total cost of ownership through modular guarding, extended service intervals, and factory-integrated telematics for predictive fleet management.

STRUCTURAL INTEGRITY & POWERTRAIN

The chassis is fabricated from DOMEX 700 MC high-yield-strength steel, providing 700 MPa tensile resistance while maintaining a 15% weight reduction versus conventional AR400 designs. Full-length track guiding guards, rock guards, and a belly pan with 25mm HARDOX 450 liners protect against falling debris and ground impacts. The upper structure integrates a cast steel pivot joint with taper roller bearings, rated for 40% higher dynamic loading compared to welded designs.

Power is delivered by a Cummins X12 Stage V / EPA Tier 4 Final diesel engine, producing 310 kW (416 HP) at 1,900 rpm. The selective catalytic reduction (SCR) and diesel exhaust fluid (DEF) system enables uninterrupted operation in regulated zones. The closed-loop hydraulic system features three

variable-displacement axial piston pumps delivering 2 x 430 L/min at 34.3 MPa (4,975 psi). Efficiency peaks at 88% due to independent metering valves and an electro-hydraulic load sensing network that reduces flow losses by 22% versus open-center systems.

KEY FEATURES & OPERATOR COMFORT

- High-Reach Variable Angle Boom: The two-piece boom articulates from -20° to +75° with a reinforced pivot pin diameter of 180mm. A hydraulic cylinder cushioning system absorbs end-stroke shocks when deploying extension beams up to 28m vertical reach.

- Intelligent Attachment Management System (IAMS): Automatically recognizes factory-calibrated hydraulic shears, multi-processors, or hammers. Adjusts oil flow, pressure ramp rates, and anti-cavitation logic in 0.2 seconds. Preset for 17 demolition attachments including rotating grapples.

- ROPS/FOPS Level II Cab: Sealed and pressurized to 0.5 kPa above ambient. Dual-pane laminated glass (ISO 12509) withstands 2.2 kJ impact. Vibration-absorbing mounts reduce whole-body vibration to below 0.6 m/s^2 RMS. A 360° object detection radar with zone-configurable audible alerts.

- Smart Control & Telematics: 10-inch high-brightness touchscreen displays real-time slew torque, hydraulic oil temperature, and filter restriction. Integrated LTE modem transmits machine health data to fleet portal. Enables geo-fencing, anti-theft engine lock, and predictive filter change alerts.

- Dual-Circuit Cooling System: Segregates hydraulic oil and engine coolant radiators with independent variable-speed fans. Maintains hydraulic oil below 85 °C during continuous high-load shearing. Automatic reversing fan clears debris every 15 minutes without operator intervention.

COMPLIANCE & SAFETY STANDARDS

The Demolition Digger holds CE marking (2006/42/EC) and complies with ISO 20474 for earth-moving machinery. Engine meets EPA Tier 4 Final and EU Stage V emission limits (non-road transient cycle). Structural design follows ISO 12117-2 for excavator tip-over protection and ISO 10265 for falling object protective structures. The machine integrates ISO 19014-1 functional safety for electrical/electronic systems with performance level PLr = d. Component manufacturing adheres to ISO 9001:2015 and ISO 14001:2015 standards. All hydraulic hoses meet EN 857 2SC and ISO 11237 high-impulse specifications. Emergency engine shutdown, secondary pilot-lock lever, and two remote isolation switches are factory-standard.

TECHNICAL SPECIFICATIONS

All values correspond to standard configuration with heavy-duty bucket and 6.5m boom arm (not including optional high-reach extension). Weights include

full fuel, hydraulic oil, operator (75 kg), and standard counterweight.

<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 X12 (Stage V / Tier 4 Final)</td></tr><tr><td style='padding: 8px; border: 1px solid #ddd;'>Engine Power (Net)</td><td style='padding: 8px; border: 1px solid #ddd;'>310 kW / 416 HP @ 1,900 rpm</td></tr><tr><td style='padding: 8px; border: 1px solid #ddd;'>Operating Weight (Standard)</td><td style='padding: 8px; border: 1px solid #ddd;'>48,200 kg (106,260 lbs)</td></tr><tr><td style='padding: 8px; border: 1px solid #ddd;'>Max Vertical Reach (High-Reach Option)</td><td style='padding: 8px; border: 1px solid #ddd;'>27.8 m (91.2 ft)</td></tr><tr><td style='padding: 8px; border: 1px solid #ddd;'>Max Digging Depth</td><td style='padding: 8px; border: 1px solid #ddd;'>8.5 m (27.9 ft)</td></tr><tr><td style='padding: 8px; border: 1px solid #ddd;'>Main Hydraulic Flow</td><td style='padding: 8px; border: 1px solid #ddd;'>860 L/min total (2 x 430 L/min)</td></tr><tr><td style='padding: 8px; border: 1px solid #ddd;'>Hydraulic Pressure (Implement)</td><td style='padding: 8px; border: 1px solid #ddd;'>34.3 MPa (4,975

psi)</td></tr><tr><td style='padding: 8px; border: 1px solid #ddd;'>Swing Torque</td><td style='padding: 8px; border: 1px solid #ddd;'>152 kNm (112,100 lbf · ft)</td></tr><tr><td style='padding: 8px; border: 1px solid #ddd;'>Undercarriage Track Width</td><td style='padding: 8px; border: 1px solid #ddd;'>600 mm (triple semi-grouser)</td></tr><tr><td style='padding: 8px; border: 1px solid #ddd;'>Ground Pressure (Standard)</td><td style='padding: 8px; border: 1px solid #ddd;'>82.5 kPa (11.9 psi)</td></tr><tr><td style='padding: 8px; border: 1px solid #ddd;'>Fuel Tank Capacity</td><td style='padding: 8px; border: 1px solid #ddd;'>750 L (198 gal)</td></tr></table>