

Port Handling Excavator - Official Technical Overview & Datasheet

EXECUTIVE SUMMARY

Designed specifically for the punishing demands of port logistics, bulk material terminals, and heavy scrap handling, the Port Handling Excavator redefines productivity in maritime environments. Unlike standard construction excavators, this purpose-built machine features a high-visibility elevated cab, extended reach booms (up to 18m), and advanced anti-corrosion sealing for continuous operation near saltwater. Target markets include port authorities, grain and coal terminal operators, steel mills, and recycling facilities requiring cycle times under 18 seconds per grab.

Engineered for a minimum 15,000-hour structural life in high-abuse applications, this machine integrates a heavy-duty carbody with six bottom rollers and a reinforced turntable bearing. The combination of a high-efficiency load-sensing hydraulic system and a digitally governed EU Stage V / EPA Tier 4 Final powerplant delivers up to 15% lower fuel consumption per ton handled compared to previous generation port equipment. Optional telematics enable real-time productivity tracking and predictive parts replacement.



STRUCTURAL INTEGRITY & POWERTRAIN

The chassis and undercarriage utilize high-tensile DOMEX 700 MC steel (minimum yield strength 700 MPa) with 30% thicker boom foot plates and reinforced pivot points. All structural welds are subjected to magnetic particle inspection prior to assembly. The upper frame integrates a bolt-on, fatigue-resistant mounting bracket for the hydraulic swivel joint, ensuring 5,000 hours of maintenance-free turntable operation.

Power is delivered by a Cummins QSB6.7 or optional Isuzu 6HK1 diesel engine, rated at 200 kW (268 hp) at 2,000 rpm. Both configurations meet EPA Tier 4 Final and EU Stage V emission standards using SCR and DOC technologies without requiring a DPF on select models. The closed-center, load-sensing hydraulic system produces 2 x 280 l/min flow at 34.3 MPa (4,980 psi), featuring

independent metering valves for precise simultaneous control of boom, arm, grab, and swing functions. Hydraulic oil temperature is actively regulated within +/- 3°C via a variable-speed fan.

KEY FEATURES & OPERATOR COMFORT

- High-Cycle Swing System: Heavy-spec planetary swing drive with oil-immersed disc brake delivers 9.5 rpm swing speed with automatic swing cushioning at end-of-stroke, reducing shock loads by 40% and extending turntable bearing life.
- Elevated ROPS/FOPS Cab: Fully sealed pressurized cab mounted 3.2m above ground level, providing 360° panoramic tempered glass (ISO 12509 compliant). Includes heated front glass defroster, LED work lights, and dual 10.1" high-brightness touchscreens.
- Intelligent Load Management: Onboard weighing system with +/- 1% accuracy integrated into the display. Auto idle-shutdown, variable displacement pumps, and five selectable working modes (Port, Grab, Lifting, Eco, Demo) optimize fuel/power curves.
- Service-Designed Layout: Centralized grease points, swing-out cooling pack, and ground-level engine oil/fuel filter access. Tilting cab floor provides direct reach to hydraulic servo valves, reducing routine maintenance time by 25%.
- Corrosion Protection Suite: Sealed waterproof electrical connectors, zinc-phosphate plated fasteners, marine-grade paint (1,000+ hours salt spray

resistance), and stainless steel clamps as standard.

COMPLIANCE & SAFETY STANDARDS

The Port Handling Excavator is manufactured under ISO 9001:2015 quality management and ISO 14001 environmental systems. Safety certifications include CE Mark (Machinery Directive 2006/42/EC), ANSI/SAE J229 (ROPS), ISO 12117-2 (FOPS Level II), and compliance with OSHA 1910.269 for material handling near marine vessels. The machine also meets EN 474-1:2006 + A1:2009 stability requirements for front-loading configurations and IEC 60529 IP65 protection for all junction boxes.

TECHNICAL SPECIFICATIONS

All values represent standard configuration with 5.0m gooseneck boom, 4.2m arm, and heavy-duty 0.8m³ mechanical grab unless noted.

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<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;
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Cummins QSB6.7 / Isuzu 6HK1	
Net Power	
200 kW (268 hp) @ 2,000 rpm	
Operating Weight	
38,500 kg (84,900 lbs)	
Max Reach at Ground Level	
18.0 m (59 ft)	
Max Lifting Height	
14.5 m (47 ft 7 in)	
Swing Speed	
9.5 rpm	
Main Pump Flow	
2 x 280 L/min	
System Pressure	
34.3 MPa (4,980 psi)	
Fuel Tank Capacity	
520 L (137 gal)	
Gradeability	
35 °	
Standard Grapple Capacity	

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solid #ddd;'>0.4 - 1.2 m3 hyd. grab</td> </tr> <tr> <td style='padding: 8px;
border: 1px solid #ddd;'>Noise Level (LpA)</td> <td style='padding: 8px;
border: 1px solid #ddd;'>74 dB(A) at operator ear</td> </tr> </table>
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