100+ ton Excavator - Official Technical Overview & Datasheet

EXECUTIVE SUMMARY

The Global Heavy Machinery 100+ ton excavator series (Model GHX-1200) represents a paradigm shift in mass excavation efficiency for mining, quarrying, and large-scale infrastructure. Engineered to outperform conventional 90-ton class machines by 35% in material moved per hour, this machine integrates a high-flow, load-sensing hydraulic system with a Tier 4 Final or EU Stage V powerplant. Whether extracting overburden in open-pit mines or handling aggregates in mega-quarries, the GHX-1200 delivers sustained productivity under continuous duty cycles.

Built on a foundation of ultra-high-tensile steel and modular component architecture, the GHX-1200 minimizes unplanned downtime through condition-based monitoring and globally sourced service parts. The combination of a reinforced undercarriage, a high-rigidity boom/arm package, and an intelligent swing-priority valve translates directly into lower cost per ton. For operators, a FOPS/ROPS certified, pressurized cab and a 10-inch high-resolution touch interface ensure fatigue-free shifts in extreme ambient temperatures from -40°C to +50°C.

STRUCTURAL INTEGRITY & POWERTRAIN

The chassis, boom, and arm employ JIS G3141 / EN 10025 grade 690 MPa high-tensile steel with cast steel nodal joints, achieving a structural life of 25,000 hours under severe digging conditions. The upper frame incorporates stress-relieved box-section fabrication and a bolt-on swivel joint guard. The undercarriage uses sealed and lubricated track chains with 750 mm triple-grouser shoes, designed for 12,000-hour wear life.

The engine is a 6-cylinder, turbocharged, air-to-air aftercooled diesel: either a Cummins QSK23 (600 hp / 448 kW @ 1900 rpm) or an Isuzu 6WG1 (585 hp / 436 kW). Both configurations meet EPA Tier 4 Final / EU Stage V with SCR + DOC + DPF aftertreatment. The hydraulic system is a closed-center, load-sensing, variable-displacement piston pump with a maximum flow of 2 x

400 L/min at 34.3 MPa (4970 psi). Boom/arm regeneration circuits reduce cycle times by 12% during lowering and dump actions.

KEY FEATURES & OPERATOR COMFORT

- Advanced Electro-Hydraulic Control System (E-H): Fully proportional joysticks with 7 customizable work modes (Rock, Heavy Lifting, Grading, Eco, Breaker, Ripping, Trenching). Includes automatic idle and engine speed deceleration when hydraulic demand drops below 5%.

- ROPS/FOPS Level II Certified Cab: Pressurized (ISO 10263), with 15% larger glass area, integrated polycarbonate window guards, and heated/air-suspended cloth seat with lumbar support. Noise level at operator ear ≤ 70 dB(A).

- 10-inch High-Visibility Touchscreen Display: Real-time telemetry, fuel consumption, filter life percentage, hydraulic oil temperature, and 360-degree object detection radar integration (ISO 15998 compliant).

- Modular Cooling Package: Swing-out, reverse-fan optional cooling system with dual-plane radiators and hydraulic oil cooler. Enables ambient operation up to 52°C without derating. Automatic fan reversal every 15 minutes.

- Smart Auto-Lube System: Programmable centralized greasing for all bucket pins, swing bearing, and track adjusters. Reduces daily service time to under 5 minutes and extends bushing life by 200%.

COMPLIANCE & SAFETY STANDARDS

All Global Heavy Machinery 100+ ton excavators are designed and certified to ISO 9001:2024 (Quality Management), ISO 14001 (Environmental), and ISO 45001 (Occupational Health & Safety). Engine compliance includes EPA Tier 4 Final, EU Stage V, and China Non-Road Stage IV. Safety certifications cover ROPS/FOPS per ISO 12117-2:2023, overhead guard impact per ISO 10262, and secondary exit/emergency lowering system per ISO 2867. Additionally, the machine carries CE marking (2006/42/EC Machinery Directive) and meets Australian AS 2958.1 for mining haul-road compatibility.

TECHNICAL SPECIFICATIONS

All values are based on standard heavy-duty bucket (5.2 m^3 heaped) and SAE J1098 conditions. Operating weight includes full fuel, lubricants, operator (75 kg), and standard tooling.

<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 QSK23 or Isuzu 6WG1</td></tr><tr><td style='padding: 8px; border: 1px solid #ddd;'>Gross Power (SAE J1995)</td><td style='padding: 8px; border: 1px solid #ddd;'>600 hp / 448 kW @ 1900 rpm</td></tr><tr><td style='padding: 8px; border: 1px solid #ddd;'>Operating Weight</td><td style='padding: 8px; border: 1px solid #ddd;'>112,500 kg (248,000 lb)</td></tr><tr><td style='padding: 8px; border: 1px solid #ddd;'>Standard Bucket Capacity</td><td style='padding: 8px; border: 1px solid #ddd;'>5.2 m³ (6.8 yd³) heavy-duty</td></tr><tr><td style='padding: 8px; border: 1px solid #ddd;'>Max Digging Reach</td><td style='padding: 8px; border: 1px solid #ddd;'>13.8 m (45 ft 3 in)</td></tr><tr><td style='padding: 8px; border: 1px solid #ddd;'>Max Digging Depth</td><td style='padding: 8px; border: 1px solid #ddd;'>7.9 m (25 ft 11 in)</td></tr><tr><td style='padding: 8px; border: 1px solid #ddd;'>Arm Tearout Force (SAE)</td><td style='padding: 8px; border: 1px solid #ddd;'>52,000 kgf (114,640 lbf)</td></tr><tr><td style='padding: 8px; border: 1px solid #ddd;'>Bucket Breakout Force (SAE)</td><td style='padding: 8px; border: 1px solid #ddd;'>58,500 kgf (128,970 lbf)</td></tr><tr><td

style='padding: 8px; border: 1px solid #ddd;'>Hydraulic Flow (Main)</td><td style='padding: 8px; border: 1px solid #ddd;'>800 L/min (211 gpm)</td></tr><tr><td style='padding: 8px; border: 1px solid #ddd;'>Main Relief Pressure</td><td style='padding: 8px; border: 1px solid #ddd;'>34.3 MPa (4970 psi)</td></tr><tr><td style='padding: 8px; border: 1px solid #ddd;'>Swing Speed</td><td style='padding: 8px; border: 1px solid #ddd;'>8.5 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;'>4.5 / 2.8 km/h (2.8 / 1.7 mph)</td></tr><tr><td style='padding: 8px; border: 1px solid #ddd;'>Fuel Tank Capacity</td><td style='padding: 8px; border: 1px solid #ddd;'>1,250 L (330 gal)</td></tr><tr><td style='padding: 8px; border: 1px solid #ddd;'>Undercarriage Track Shoe Width</td><td style='padding: 8px; border: 1px solid #ddd;'>750 mm (29.5 in)</td></tr><tr><td style='padding: 8px; border: 1px solid #ddd;'>Gradeability</td><td style='padding: 8px; border: 1px solid #ddd;'>35° (70%)</td></tr><tr><td style='padding: 8px; border: 1px solid #ddd;'>Ground Clearance</td><td style='padding: 8px; border: 1px solid #ddd;'>920 mm (36.2 in)</td></tr></table>