

Multi-functional Excavator - Official Technical Overview & Datasheet

EXECUTIVE SUMMARY

Engineered for the most demanding job sites across construction, quarry mining, and large-scale agriculture, the Multi-functional Excavator redefines versatility without compromising breakout force. This platform integrates a heavy-duty X-frame undercarriage with a proprietary quick-coupler system, allowing operators to switch between standard bucket, grapple, auger, and compact shears in under 60 seconds. Targeting fleet owners who require maximum machine utilization, the unit delivers a class-leading power-to-weight ratio while reducing fuel consumption by up to 12% compared to previous generations.

Built to withstand 20,000+ operational hours in extreme conditions, this excavator merges traditional excavation capability with specialized attachments for land clearing, trenching, and material handling. The primary value proposition lies in its ability to replace two dedicated machines (standard excavator + tool carrier) with a single certified platform, lowering total cost of ownership and simplifying maintenance logistics for contractors and rental houses.



STRUCTURAL INTEGRITY & POWERTRAIN

The chassis utilizes high-tensile BS600MC steel for the boom arm and full-box-section track frames, achieving a tensile strength of 650 MPa. The upper structure employs a D-type anti-twist frame with integrated cross-ribs, eliminating stress fractures common in multi-tool applications. The powertrain is anchored by a six-cylinder, turbocharged diesel engine (Cummins QSB6.7 or Isuzu 4HK1X, market dependent), compliant with EPA Tier 4 Final / EU Stage V emission norms. A variable displacement axial piston pump (Kawasaki K3V series) feeds the main control valve, delivering 360 L/min hydraulic flow at 34.3 MPa (4,975 psi). The closed-center load-sensing hydraulic system reduces parasitic loss by routing flow only when demand is detected, resulting in a net efficiency gain of 18% over open-center designs.

KEY FEATURES & OPERATOR COMFORT

- Modular Smart Coupling System: Integrated electro-hydraulic attachment locking with hose burst check valves. The cab-mounted display stores up to 12 attachment profiles, automatically adjusting auxiliary flow rates and pressure relief settings.
- Next-Gen ROPS/FOPS Cab: Certified to ISO 12117-2 (ROPS) and ISO 3449 Level II (FOPS). The cab features viscous isolation mounts, a pressurized filtration system (HEPA H14), and low-effort pilot joysticks with proportional thumb rollers for precise attachment feathering.
- Auto Comfort & Grade Assist: Standard 2D laser receiver interface with machine inclination sensors. Optional 3D grade control (Topcon / Leica ready) allows semi-automatic boom and arm movement for finish grading with 20mm accuracy.
- Anti-Drift Hydraulic Accumulator: Maintains dipper and bucket position even when engine is off. Essential for pipe laying and precast handling. Drift rate held under 25mm per 10 minutes at rated load.
- Smart Telemetry (Fleet Management 5.0): Embedded OEM gateway provides real-time data on filter life, hydraulic oil temperature, impact counting, and attachment operating hours. Geofencing and immobilization available via cloud dashboard.

COMPLIANCE & SAFETY STANDARDS

Manufactured under ISO 9001:2015 quality management and ISO 14001:2015 environmental systems. Full CE certification (Machinery Directive 2006/42/EC) and ANSI compliance for North America. Engine meets EPA Tier 4 Final and EU Stage V regulations. Safety compliance includes ISO 20474 (Earth-moving machinery safety) and EN 474-series for hydraulics. The excavator features a secondary pilot shut-off lever, automatic parking brake (engaged when swing lock is activated), and visual/acoustic travel alarm as standard. All high-pressure hoses meet SAE 100R12 impulse requirements for 1,000,000 cycles.

TECHNICAL SPECIFICATIONS

Parameter	Specification	(Standard Model MFX-350)
Engine Model	Cummins	QSB6.7-C260 (Turbo/Intercooler)
Rated Power	194 kW (260 HP) @ 2,050 rpm	

Operating Weight	34,500 kg (76,060 lbs)
Standard Bucket Capacity	1.8 m ³ (2.35 cu yd)
Max Digging Reach	10.85 m (35 ft 7 in)
Max Digging Depth	7.32 m (24 ft 0 in)
Auxiliary Hydraulic Flow (high flow)	360 L/min @ 34.3 MPa (95 gpm @ 4,975 psi)
Swing Torque	98 kN·m (72,300 lbf · ft)
Ground Clearance	470 mm (18.5 in)
Fuel Tank Capacity	560 L (148 gal)