

Urban Construction Excavator - Official Technical Overview & Datasheet

EXECUTIVE SUMMARY

The Urban Construction Excavator (UCE) series is purpose-engineered for high-density infrastructure development, residential rehabilitation, and utility trenching in space-constrained environments. Targeting the construction, municipal, and landscaping sectors, the UCE platform delivers the brute force of a standard 12-16 ton excavator while maintaining a compact radius and sub-3.5m transport height. Primary value propositions include reduced site footprint, lower fuel consumption per cubic meter moved, and compliance with urban noise ordinances.

Leveraging modular powertrain architecture and high-tensile steel booms, the UCE achieves over 20% cycle time improvement over legacy compact excavators. The integrated telematics package enables fleet managers to monitor real-time machine health, idle time, and location security—critical for urban job sites with strict access windows.



STRUCTURAL INTEGRITY & POWERTRAIN

The undercarriage and upper frame utilize HARDOX 450-grade steel with reinforced track guides, providing a 12% higher torsional rigidity versus previous generation urban excavators. The X-frame chassis features laser-welded box sections and integrated anti-debris skid plates, essential for construction debris and reclaimed asphalt environments.

Power is delivered by an Isuzu EU Stage V / EPA Tier 4 Final four-cylinder diesel engine (55.4 kW net) with a high-pressure common rail system and cooled EGR. The engine is coupled to a tandem variable-displacement axial piston pump delivering 2 x 110 L/min at 2,200 rpm. The closed-center load-sensing hydraulic system (maximum pressure 34.3 MPa) automatically matches flow to demand, reducing parasitic losses by 18% compared to open-center designs.

KEY FEATURES & OPERATOR COMFORT

- Zero-Tail Swing & Compact Radius: The superstructure remains within track width during full rotation (tail swing radius 1,490mm). Allows safe operation directly adjacent to concrete barriers, scaffolding, or existing structures without counterweight interference.
- Smart Load-Sensing Hydraulics with Boom Float: Proportional joystick control with adjustable auxiliary flow presets (40-110 L/min) for hydraulic breakers, compactors, and shears. Boom float mode enables grade finishing without ground disturbance.
- ROPS/FOPS Certified Pressurized Cab: ISO 12117-2 certified cab with 10% larger glass area, laminated front windshield (top-hinged opening), and optional mesh guard. Silicone-filled mounts reduce whole-body vibration by 23%. Automatic climate control and heated air-suspension seat with 80 mm travel.
- 7-Inch Smart Control Panel: Full-color LCD touchscreen displaying real-time fuel consumption, hydraulic oil temperature, maintenance intervals, and three user-configurable power modes (Eco/Smart/Power). Integrated rearview and right-side camera system with dynamic gridlines.
- Auto-Stop Safety & Geo-fencing: Engine auto-stops after user-defined idle period (5-30 minutes). GPS-based geofencing triggers audible alerts and engine derate (50% power) if machine exits approved urban work zone.

COMPLIANCE & SAFETY STANDARDS

The Urban Construction Excavator is manufactured under ISO 9001:2015 certified processes and meets CE marking (2006/42/EC), EPA Tier 4 Final, EU Stage V, and Korea KTC noise regulations. Safety compliance includes ISO 10265 (operator protective structures), ISO 13031 (tip-over protection), and UN ECE R10 electromagnetic compatibility for urban signaling equipment. All hydraulic hoses meet SAE 100R2 and EN 857 2SC standards, with flame-retardant sleeving standard for engine compartment runs.

TECHNICAL SPECIFICATIONS

All values are based on machine with standard arm, 2,100mm track shoes, 1.2m³ bucket, full fluids, and 80 kg operator.

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Net Power	55.4 kW @ 2,200 rpm
Operating Weight	12,850 kg (standard arm & bucket)
Bucket Capacity (SAE heaped)	0.45 - 1.2 m ³ (interchangeable)
Max Dig Depth	4,520 mm
Max Reach at Ground Level	7,150 mm
Max Dump Height	5,810 mm
Tail Swing Radius	1,490 mm (zero tail)
Track Width (retracted / extended)	2,200 mm / 2,490 mm
Hydraulic Flow (main pumps)	2 x 110 L/min
Hydraulic Pressure (implement)	

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1px solid #ddd;'>34.3 MPa (4,975 psi)</td></tr><tr><td style='padding: 8px;
border: 1px solid #ddd;'>Fuel Tank Capacity</td><td style='padding: 8px;
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1px solid #ddd;'>Ground Clearance</td><td style='padding: 8px; border: 1px
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solid #ddd;'>ROPS/FOPS Certification</td><td style='padding: 8px; border:
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dB(A)</td></tr></table>
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