

0.3m³ Excavator - Official Technical Overview & Datasheet

EXECUTIVE SUMMARY

Designed for the intersection of confined urban worksites and serious material handling, the 0.3m³ Hydraulic Excavator sets a new benchmark in the 3-4 ton compact class. Targeting the construction, landscaping, and agricultural sectors, this machine replaces manual labor and backhoe attachments with a dedicated, high-cycle hydraulic system. Its primary value proposition is simple: move more cubic meters per hour than any competitive 0.3m³ offering, while fitting through a standard yard gate. The machine excels at utility trenching, foundation digging, and livestock pen cleaning where larger 5-ton units cannot maneuver.



From an operational cost perspective, the 0.3m³ platform reduces total cost of

ownership (TCO) by 18% compared to traditional 1-ton mini-excavators retrofitted with larger buckets. The optimized digging geometry ensures heaped bucket fill factors exceed 95% in ISO 171 soil conditions, minimizing cycle times. For rental fleets and municipal contractors, this excavator offers the durability of a full-size undercarriage in a transport-friendly package (max width < 1.55m), eliminating the need for special lowboy permits.

STRUCTURAL INTEGRITY & POWERTRAIN

The chassis is fabricated from high-tensile DOMEX 700 MC steel for the main track frame and blade arm, providing triple the yield strength of standard structural steel. The upper structure incorporates a one-piece welded X-frame that distributes digging reaction forces directly to the turntable bearing, eliminating common pivot-point cracking seen in light-framed competitors. All pivot pins are induction-hardened to 58 HRC and equipped with dual-cone greased seals. The powertrain centers on a naturally aspirated, liquid-cooled diesel engine from the YANMAR 3TNV series (or equivalent Tier 4 Final compliant Isuzu 3LD1), rated at 24.3 hp (18.1 kW) at 2,200 rpm. This engine drives a variable-displacement axial piston pump delivering 45 L/min at 230 bar, coupled to a load-sensing, closed-center hydraulic distribution manifold for parallel operation without flow starvation.

KEY FEATURES & OPERATOR COMFORT

- Load-Sensing Hydraulic Optimization: The main control valve features a built-in pressure compensator that prioritizes swing torque while trenching. This allows operators to curl the bucket against a trench wall while simultaneously swinging the house, with zero cross-function speed loss. Fine metering notches provide smooth spool engagement for delicate grading near foundations.

- ROPS/FOPS Certified Modular Cab: ISO 3471 (ROPS) and ISO 3449 (FOPS Level I) certified steel cab with tempered front glass. Optional bolt-on FOPS Level II grid guards are available for demolition work. The cab includes a fully adjustable suspension seat, automotive-grade sealed floor matting, and a 12V auxiliary power outlet. A large sliding right-side window allows hand-signal communication and drive-through material handling.

- Smart Auto-Idle & Deceleration System: An electronic control module (ECM) monitors joystick and travel lever inputs. When no activation is detected for 5 seconds, engine RPM automatically drops to 1,100 rpm. After 10 continuous seconds of inactivity, the system engages auto-idle at 900 rpm, reducing fuel burn by up to 33% during truck waiting periods. A momentary throttle-up switch instantly returns to selected working RPM.

- Zero Tail Swing & Offset Boom: The rear counterweight stays within the track width, allowing the operator to work flush against existing walls, traffic barriers, or building foundations without collision. The articulated boom hydraulically

shifts left 70° and right 55° independent of the house position, enabling parallel digging to a foundation wall. The dozer blade is integrated into the X-frame and includes float mode for site finishing.

- Comprehensive Service Access: The engine hood and both side cowlings open to 90°, revealing a single-plane layout. The cooling package (radiator, oil cooler, intercooler) swings out on gas-strut hinges for core cleaning without tools. Daily checkpoints (engine oil dipstick, hydraulic tank sight glass, fuel/water separator drain) are grouped within arm's reach of ground level.

COMPLIANCE & SAFETY STANDARDS

This 0.3m³ excavator carries full CE marking (2006/42/EC Machinery Directive) and meets EPA Tier 4 Final emissions standards for the US market, as well as EU Stage V for European territories. The complete machine is manufactured under ISO 9001:2015 certified quality management processes. Safety engineering includes secondary and parking brakes applied via spring-applied, hydraulically-released (SAHR) mechanisms on both final drives, an accumulator-equipped emergency lower valve to safely descend the boom upon engine stall, and an operator presence sensor that cuts hydraulic power if the operator leaves the seat with the hydraulic lock engaged. All hydraulic hoses meet ISO 3862 (R13) 4-spiral wire standard, burst pressure rated at 4x working pressure. OPG (Operating Protective Guard) Level II is standard for the

front upper windshield.

TECHNICAL SPECIFICATIONS

All parameters measured at rated engine speed (2,200 rpm) with standard 300mm steel track shoes and 0.3m³ general-purpose digging bucket (ISO 7451 heaped capacity). Operating weight includes full fluids, operator (75 kg), standard bucket, and ROPS cab.

Parameter	Specification
Engine Model	YANMAR 3TNV76 (or Isuzu 3LD1)
Net Power	24.3 hp (18.1 kW) @ 2,200 rpm
Operating Weight (Cab)	3,850 kg (8,488 lbs)
Bucket Capacity (Heaped)	0.30 m ³ (0.39 cu yd)

Max Digging Depth	3,150 mm (10 ft 4 in)
Max Dump Height	3,450 mm (11 ft 4 in)
Ground Pressure	29.2 kPa (4.24 psi)
Hydraulic Flow (Main)	45 L/min (11.9 gal/min)
Swing Speed	9.5 rpm
Travel Speed (High/Low)	4.2 / 2.5 km/h (2.6 / 1.6 mph)