

1.8 ton Excavator - Official Technical Overview & Datasheet

EXECUTIVE SUMMARY

Engineered for the intersection of brute force and spatial constraint, the 1.8 ton Excavator redefines the ultra-compact category. With an operating weight of 1,850 kg and a maximum dig depth of 2,550 mm, this machine delivers the power density of a much larger unit while fitting through standard garden gates and narrow urban corridors. Primary target markets include residential construction, utility trenching, landscaping, and light agricultural earthmoving.

The machine's value proposition centers on three pillars: exceptional fuel efficiency (sub-2.5 L/h), a true zero-tail-swing design for safe operation against walls, and a heavy-duty undercarriage that withstands rocky terrain. For rental fleets and owner-operators alike, the 1.8 ton Excavator offers rapid payback through reduced transport costs (tows behind a 3.5t pickup) and multi-attachment versatility.



STRUCTURAL INTEGRITY & POWERTRAIN

The chassis employs high-tensile BS700MC steel on all main stress points, yielding a 35% higher yield strength (700 MPa) compared to standard St52-3. This allows a reinforced boom and arm structure that resists bending under repeated shock loading. The undercarriage features sealed and lubricated track chains with bolt-on sprockets for extended wear life in abrasive soils.

Power is delivered by a Yanmar 3TNV76 (or equivalent Kubota D902) naturally aspirated diesel engine, producing 13.9 kW (18.6 hp) at 2,500 rpm. The engine meets EPA Tier 4 Final / EU Stage V emissions via a maintenance-free diesel oxidation catalyst (DOC) — no EGR or DPF regeneration cycles. The load-sensing hydraulic system uses a twin-gear pump setup (35 + 22 L/min) with a dedicated pilot pump, achieving precise simultaneous control of boom,

arm, bucket, and swing without flow starvation.

KEY FEATURES & OPERATOR COMFORT

- **LOAD-SENSING HYDRAULICS WITH AUXILIARY FLOW:** Electronically controlled pump delivers 35 L/min at 21 MPa, with a proportional thumb-wheel controlled auxiliary circuit (0-30 L/min adjustable). Compatible with hydraulic breakers, augers, and tilt buckets.
- **ROPS/FOPS CERTIFIED CANOPY (OPTIONAL CAB):** Meets ISO 12117-2 standards for roll-over and falling object protection. The enclosed cab variant features pressurized air filtration (dust/ pollen), a suspension seat with armrest-integrated controls, and a 120W heating/ ventilation system.
- **SMART CONTROL & TELEMATICS:** 5-inch color LCD display showing engine hours, fuel rate, hydraulic temperature, and maintenance intervals. Integrated GSM/ GPS module (optional) provides real-time location, geofencing alerts, and daily usage reports via fleet management portal.
- **ZERO-TAIL SWING & DOZER BLADE:** Superstructure remains within track width (990 mm) during full rotation — ideal for working against foundations. Hydraulic angle- dozer blade (standard) features float position for site leveling and backfilling.
- **ANTI-THEFT & SERVICE ACCESS:** Immobilizer with keypad code (4-digit) and hidden emergency manual release. Centralized grease points and hinged engine hood with gas strut allow full access to filters, dipstick, and battery.

COMPLIANCE & SAFETY STANDARDS

The 1.8 ton Excavator is designed and manufactured under ISO 9001:2015 quality management systems. Machine certification includes CE Mark (Machinery Directive 2006/42/EC), EPA Tier 4 Final Certificate of Conformity, and EU Stage V. Safety features comply with ISO 20474 (earth-moving machinery safety) and ISO 13766 (electromagnetic compatibility). Additional compliance: ROPS/FOPS per ISO 12117-2, tip-over protection module (TOPS) for canopy variants, and audible travel alarm meeting SAE J1446. All hydraulic hoses meet EN 857 2SC standards with burst pressure safety factor of 4:1.

TECHNICAL SPECIFICATIONS

Listed below are the certified parameters under standard configuration (600 mm track pads, canopy, no counterweight options). Values are consistent with ISO 6016 (operating weight) and ISO 7457 (dimensions).

Parameter	Specification
Engine Model	Yanmar 3TNV76 / Kubota D902 (13.9 kW @ 2500 rpm)
Operating Weight	1,850 kg (canopy) / 1,920 kg (enclosed)

	cab)
Dig Depth (max)	2,550 mm
Bucket Breakout Force	18.2 kN
Arm Crowd Force	12.5 kN
Swing Speed	8.5 rpm
Travel Speed (low/high)	2.2 / 4.1 km/h
Ground Pressure	29.5 kPa (standard tracks)
Overall Width	990 mm (zero-tail-swing)
Fuel Tank Capacity	22 L
Hydraulic System Capacity	30 L