

2 Ton Mini Excavator Sourcing Checklist - Official Technical Overview & Datasheet

EXECUTIVE SUMMARY

A paradigm of compact efficiency, the 2-ton mini excavator is engineered for optimal performance in space-constrained environments. Strategically positioned to serve the construction, agricultural, and landscaping sectors, this equipment class offers an unparalleled balance of power and maneuverability, enabling critical operations such as trenching, utility installation, and site preparation in areas inaccessible to larger machinery. Designed to maximize Return on Investment (ROI), these machines address the rigorous demands of commercial contractors and rental fleets by combining robust engineering with low total cost of ownership .

This document serves as a definitive sourcing checklist and technical datasheet for procurement professionals. It provides a deep dive into the critical specifications and engineering principles that define quality and reliability. From evaluating engine performance and hydraulic system efficiency to validating supplier credibility and safety certifications, this overview ensures that stakeholders are equipped to make a data-driven capital investment. The value proposition of the 2-ton mini excavator extends beyond its initial price, focusing on long-term profitability through reduced downtime, high parts

availability, and exceptional operational versatility .



STRUCTURAL INTEGRITY & POWERTRAIN

The foundation of the 2-ton mini excavator is its robust undercarriage and chassis, constructed from high-grade steel to withstand torsional stresses and abrasive job site conditions. The structural design incorporates a self-cleaning track frame, which minimizes wear and maintenance in tough environments by preventing debris build-up. This approach to chassis design ensures long-term durability and machine stability, critical for safe and efficient operations on uneven terrain .

At the heart of the machine lies a high-performance, liquid-cooled diesel engine from world-renowned manufacturers such as Kubota or Caterpillar.

These engines are engineered to meet stringent emission standards, including U.S. EPA Tier 4 Final and EU Stage V requirements, delivering reliable power and exceptional fuel efficiency . The powertrain is complemented by a state-of-the-art load-sensing hydraulic system featuring a variable displacement piston pump. This technology optimizes power distribution by automatically adjusting flow and pressure to match the specific demands of the attachment or operation, resulting in superior cycle times, reduced fuel consumption, and precise multifunction control .

KEY FEATURES & OPERATOR COMFORT

- Load Sensing Hydraulics (LSH): The integration of a variable displacement piston pump and load-sensing valves ensures that hydraulic flow is precisely matched to the load. This delivers significant fuel savings, reduces heat generation, and provides unmatched controllability for delicate operations, ensuring the machine operates efficiently across a wide range of applications, from auger drilling to heavy bucket digging .
- ROPS/FOPS Certified Cab: The operator station is designed to meet ISO 12117-2 (ROPS) and ISO 10262 (TOPS/FOPS) safety standards, providing a protective structure in the event of a rollover or falling objects . The ergonomically designed cab features pilot control joysticks, adjustable wrist rests, a high-back suspension seat, and automatic climate control, significantly reducing operator fatigue and enhancing productivity during extended shifts .

- COMPASS Digital Control Panel: A next-generation, intuitive color LCD monitor serves as the central command interface, providing real-time data on fuel levels, coolant temperature, machine diagnostics, and performance metrics. This system offers multiple language support, security passcode protection, and is camera-ready, enhancing job site safety and machine management efficiency .
- Rapid Attachment Versatility: The machine is equipped with standard auxiliary hydraulic lines and a quick coupler system, enabling rapid deployment of a wide range of attachments. This includes hydraulic breakers for demolition, augers for drilling, and grapples for material handling, transforming the excavator into a multi-functional tool that expands business opportunities and revenue streams .

COMPLIANCE & SAFETY STANDARDS

The 2-ton mini excavator is engineered and manufactured in full compliance with international safety and environmental standards, ensuring global operability and risk mitigation. Key certifications include U.S. EPA Tier 4 Final/EU Stage V compliance for emissions, ISO 9001 for quality management systems, and CE marking for adherence to European safety directives .

Furthermore, the equipment is designed to align with OSHA regulations (29

CFR 1926) for safe construction operations, mandating proper training and operational protocols for all personnel . To ensure safe transport and operation, the machine features standard safety equipment including a travel alarm, lockout controls, battery disconnect, and an automatic swing brake. The implementation of rigorous pre-trip inspection protocols, which include verifying chain ratings and hydraulic lockouts, is essential to prevent transport incidents and ensure site safety .

TECHNICAL SPECIFICATIONS

The following specifications provide a comprehensive overview of the key performance, dimensional, and operational parameters for the 2-ton mini excavator class, designed to facilitate detailed technical comparison and engineering analysis.

Parameter	Specification
Engine Model	Kubota / Cat C1.7 Tier 4 Final / Isuzu (Equivalent)

Net Power	17.5 - 20.0 kW (23.5 - 27.0 hp)
Operating Weight	~ 2,000 kg (4,400 lbs)
Max Dig Depth	~ 2,500 - 3,200 mm (98 - 126 in)
Hydraulic System	Load Sensing with Variable Displacement Piston Pump
Hydraulic Flow (Main)	~ 60 - 100 L/min (15.9 - 26.4 gpm)
Max Traction Force	~ 31 kN (6,992 lbf)
Ground Pressure	~ 27 - 32 kPa (4.0 - 4.6 psi)
Fuel Tank Capacity	~ 46 L (12.2 gal)
Bucket Digging Force	~ 33 kN (7,419 lbf)
Swing Speed	~ 10 rpm

1px solid #ddd; >ROPS Standard</td><td style='padding: 8px; border: 1px solid #ddd; >ISO 12117-2:2008</td></tr><tr><td style='padding: 8px; border: 1px solid #ddd; >Emission Standard</td><td style='padding: 8px; border: 1px solid #ddd; >U.S. EPA Tier 4 Final / EU Stage V</td></tr><tr><td style='padding: 8px; border: 1px solid #ddd; >Overall Width</td><td style='padding: 8px; border: 1px solid #ddd; >~ 1,780 mm (70 in)</td></tr><tr><td style='padding: 8px; border: 1px solid #ddd; >Tail Swing Radius</td><td style='padding: 8px; border: 1px solid #ddd; >~ 1,090 - 1,350 mm (43 - 53 in)</td></tr></table>
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