Amphibious Excavator - Official Technical Overview & Datasheet

EXECUTIVE SUMMARY

Our New Amphibious Excavator is purpose-engineered to conquer the most challenging wetlands, marshes, and soft-terrain environments where conventional machinery fails. This machine synergizes a high-performance upper structure with a specialized pontoon undercarriage, delivering unparalleled flotation and traction in waterlogged and unstable ground. Designed for versatility, it is the premier choice for demanding applications including waterway dredging, shoreline restoration, levee construction, and environmental remediation projects across the construction, mining, and agricultural sectors .

The equipment offers a unique value proposition by eliminating the need for costly temporary access roads, barges, or extensive site preparation. Its remarkable stability and low ground pressure allow operators to work efficiently in ecologically sensitive areas with minimal environmental disruption . By combining the power of a standard hydraulic excavator with the buoyancy of a pontoon system, this machine ensures maximum productivity and safety for projects that were previously considered inaccessible or prohibitively expensive.

STRUCTURAL INTEGRITY & POWERTRAIN

The structural foundation of the amphibious excavator is built for extreme durability and longevity in corrosive aquatic environments. The undercarriage is constructed from high-grade CORTEN steel, a material renowned for its atmospheric corrosion resistance. Each pontoon is internally reinforced with multiple watertight bulkheads, ensuring safety and operational integrity even in the event of hull damage. The bottom and side plates are manufactured to robust thicknesses, providing superior impact resistance against submerged debris and underwater obstructions . A comprehensive anti-corrosion coating system, including sandblasting and advanced paint applications, is applied to protect against rust and chemical degradation.

At the heart of the powertrain is a high-efficiency, electronically controlled

diesel engine from a leading manufacturer such as Cummins or Isuzu, delivering a robust power output of up to 177 HP and meeting stringent EPA Tier 4 Final emission standards . The closed-loop hydraulic system is engineered for maximum productivity, providing impressive flow rates and system pressures of up to 5220 psi. This ensures lightning-fast cycle times, exceptional digging forces, and smooth, precise control even under heavy load . An independent two-speed hydrostatic travel system provides superior tractive effort and gradeability, allowing the machine to effortlessly transition between land and water operations .

KEY FEATURES & OPERATOR COMFORT

- Amphibious Pontoon Undercarriage: The core innovation, featuring large, sealed steel pontoons that provide exceptional buoyancy and stability on water and soft terrain. The undercarriage's wide footprint and low ground pressure prevent the machine from sinking in mud, sand, or wetlands, enabling it to operate safely in depths and conditions unreachable by standard equipment . Hydraulically extendable track options are available to further enhance stability during demanding lifting and digging operations .

- Load-Sensing Hydraulic System: An advanced load-sensing hydraulic system that delivers power on demand, directly matching flow and pressure to the task at hand. This design significantly improves fuel efficiency, reduces heat generation, and provides the operator with precise, proportional control over

all machine functions, resulting in smoother, more productive operations .

- ROPS/FOPS Certified Cab: The operator's cab is designed as a fortress of safety and comfort, meeting or exceeding ROPS and FOPS safety standards. It features a fully sealed, pressurized cab with a high-efficiency heating, ventilation, and air conditioning (HVAC) system, keeping the operator comfortable in extreme temperatures . The ergonomic suspension seat, intuitive joystick controls, and comprehensive digital display reduce operator fatigue and enhance control, maximizing productivity over extended shifts .

- Versatile Attachment Interface: The machine is equipped with a robust attachment interface, allowing for rapid deployment of a wide range of tools to suit any project. From standard and skeleton buckets for digging to hydraulic hammers for demolition, grapples for debris removal, and specialized cutter pumps for dredging, the machine is a true multi-tool platform. This adaptability makes it suitable for diverse applications from pipeline installation to disaster recovery .

COMPLIANCE & SAFETY STANDARDS

This Amphibious Excavator is engineered and manufactured in strict adherence to global safety and quality standards. It is certified to meet ISO 9001 standards for quality management, ensuring consistent manufacturing excellence. For European markets, the machine complies with CE regulations and, for inland

waterway operations, meets the stringent requirements of ES-TRIN (European Standard for Technical Requirements for Inland Navigation Vessels), which encompasses safety, environmental protection, and stability . The engine platform is certified to meet the latest EPA Tier 4 Final emission regulations, ensuring a low environmental footprint. Comprehensive safety features, including spring-applied, hydraulically-released parking brakes, counterbalance valves on travel motors to prevent overspeeding on inclines, and automatic grade/speed controls, are standard .

TECHNICAL SPECIFICATIONS

The following parameters represent the standard configuration. Please note that specifications may vary based on specific model (e.g., Standard or Long-Reach) and configuration. For detailed specifications tailored to your project needs, please refer to our comprehensive technical datasheet or contact our sales engineering team.

<table border='1' style='border-collapse: collapse; width: 100%;'><tr><th style='padding: 8px; text-align: left; background-color: #f2f2f2;'>Parameter</th><th style='padding: 8px; text-align: left; background-color: #f2f2f2;'>Specification (Typical Range)</th></tr><tr><td style='padding: 8px; border: 1px solid #ddd;'>Engine Model</td><td

style='padding: 8px; border: 1px solid #ddd;'>Diesel, EPA Tier 4 Final (e.g., Cummins, Isuzu)</td></tr><tr><td style='padding: 8px; border: 1px solid #ddd;'>Rated Power</td><td style='padding: 8px; border: 1px solid #ddd;'>44.4 kW - 177+ HP </td></tr><tr><td style='padding: 8px; border: 1px solid #ddd;'>Operating Weight</td><td style='padding: 8px; border: 1px solid #ddd;'>8 - 40 Metric Tons </td></tr><tr><td style='padding: 8px; border: 1px solid #ddd;'>Maximum Digging Depth</td><td style='padding: 8px; border: 1px solid #ddd;'>Up to 11.5 m (Varies with configuration) </td></tr><tr><td style='padding: 8px; border: 1px solid #ddd;'>Maximum Reach at Ground Level</td><td style='padding: 8px; border: 1px solid #ddd;'>Up to 18.0 m (Varies with configuration) </td></tr><tr><td style='padding: 8px; border: 1px solid #ddd;'>Pontoon Material</td><td style='padding: 8px; border: 1px solid #ddd;'>CORTEN Steel with Marine-Grade Anti-Corrosion Coating </td></tr><tr><td style='padding: 8px; border: 1px solid #ddd;'>Maximum Operating Depth</td><td style='padding: 8px; border: 1px solid #ddd;'>~1.3 m - 9.0 m (Depth dependent on configuration) </td></tr><tr><td style='padding: 8px; border: 1px solid #ddd;'>Hydraulic System Pressure</td><td style='padding: 8px; border: 1px solid #ddd;'>Up to 5220 psi </td></tr><tr><td style='padding: 8px; border: 1px solid #ddd;'>Track Configuration</td><td style='padding: 8px; border: 1px solid #ddd;'>Heavy-Duty, Multi-strand Roller Chain with Aluminum Cleats</td></tr></table>