

AOTUO Expands Solutions as a China Leading Efficient Screw Ship Unloader Manufacturer

HANGZHOU, ZHEJIANG, CHINA, August 26, 2026 /EINPresswire.com/ -- As dry bulk terminals face growing requirements for efficient unloading, dust control and coordinated material handling, the role of a [China Leading Efficient Screw Ship Unloader Manufacturer](#) has become increasingly important. AOTUO, the brand of Hangzhou Aotuo Mechanical and Electrical Co., Ltd., focuses on screw ship unloading technology and integrated dry bulk material transfer solutions, supporting applications across cement, clinker, coal, grain and other bulk-material sectors. Since its establishment in 2003, AOTUO has continued to develop equipment and engineering capabilities around the practical requirements of port and terminal operations.

Addressing Changing Requirements in Dry Bulk Handling

Dry bulk terminals manage large quantities of materials that must move efficiently between vessels, unloading equipment, conveying systems, storage facilities and downstream production processes. Cement, coal, clinker, grain, mineral powder and other bulk materials each present different handling requirements, making equipment configuration an important consideration for terminal operations.

Efficiency is no longer limited to unloading speed. Dust control, equipment coordination, automation, maintenance and adaptability to different terminal layouts have become increasingly important factors in dry bulk handling. Port operators are also paying greater attention to resource consumption and environmental performance as the maritime industry



moves toward more efficient and sustainable operations.

These changes create demand for unloading equipment that can integrate with broader material-handling systems. Screw ship unloading technology provides one approach by combining continuous material transfer with equipment configurations suited to different operating environments.

AOTUO Develops Screw Ship Unloading Technology

AOTUO has built its product development around screw ship unloading technology and dry bulk material transfer. Hangzhou Aotuo Mechanical and Electrical Co., Ltd. integrates research and development, equipment manufacturing and engineering services to provide solutions for dry bulk port transfer applications.

AOTUO's screw ship unloader portfolio includes fixed, rail-mounted, vehicle-mounted, tyre-mounted and shipborne configurations. These different arrangements support varying terminal layouts and operational conditions. Continuous environment-friendly screw ship unloaders are also available for materials such as coal and clinker, while multi-material unloading equipment addresses applications involving different types of bulk cargo.

AOTUO reports a maximum designed unloading capacity of 3,000 tonnes per hour, with equipment designed for vessels of up to 200,000 DWT. Such equipment specifications support large-scale bulk material transfer operations where continuous unloading performance is an important part of terminal productivity.

Expanding Beyond Individual Unloading Machines

AOTUO's product development extends beyond screw ship unloaders. The current portfolio also includes efficient environment-friendly ship loaders, dust suppression hopper loaders, conveying equipment, dust collectors, metering control systems, industrial automation systems and intelligent control systems.

This broader equipment structure reflects the interconnected nature of bulk material handling. Unloading represents only one stage of the process. Once material leaves a vessel, conveying, transfer, dust collection, metering and storage operations must work together to maintain a stable material flow.

AOTUO has continued to expand related technologies over recent years. Product development has included screw elevators, pneumatic bulk loading heads, dust-free loading machines and online cleaning systems. Mobile screw ship unloaders and clinker unloading equipment have also been developed for specific operational requirements. A continuous multi-material ship unloader was developed and delivered in 2024, followed by the completion and delivery of an active obstacle-avoiding automatic ship-loading robot in 2025.

This development path connects mechanical unloading technology with automation and supporting material-handling systems, reflecting the broader transition toward more coordinated port equipment.

Engineering and Manufacturing Support

AOTUO places research and engineering capabilities at the center of product development. A dedicated technical R&D department focuses on screw ship unloader technology, while continued investment in research supports different equipment configurations and application requirements.

AOTUO reports more than 100 patents covering inventions, utility models, designs and software copyrights. Participation in industry standards development has also included standards related to bulk cement screw ship unloaders, cement air conveying chutes and complete equipment for bulk cement transfer stations.

AOTUO's independently developed cement clinker and coal screw ship unloader with supporting transfer system has been recognized as China's First (Set) Major Technical Equipment. This development reflects the role of integrated unloading and transfer technology in large-scale bulk material handling.

Manufacturing capabilities further support equipment development. AOTUO operates a Class A production workshop covering nearly 14,000 square meters, with CNC machining, laser tracking, ultrasonic flaw detection, thickness measurement and other inspection technologies. Automated welding robots, dedicated process lines, welding lines and painting assembly lines form part of the production infrastructure.

Applications Across Different Bulk Material Sectors

AOTUO's equipment serves a range of dry bulk material applications. The product portfolio covers handling requirements associated with grain, coal, cement clinker, fertilizer raw materials, copper concentrate, stone, cement, mineral powder and fly ash.

Different material characteristics can affect unloading and conveying requirements. Material density, particle size, flowability and dust generation can influence equipment selection and system configuration. AOTUO's range of unloading structures and supporting systems allows different technical approaches to be considered according to specific project conditions.

International applications extend across Australia, Korea, Singapore, the Philippines, Vietnam, Malaysia, Indonesia, Sri Lanka and Russia. AOTUO reports more than 350 performance sets, with core products serving more than 200 ports and terminals worldwide.

Moving Toward Integrated and Intelligent Port Operations

Automation and environmental management are becoming increasingly relevant to the development of modern ports. Digital control, automated material transfer and coordinated equipment operation can help improve process visibility and reduce unnecessary manual intervention.

For dry bulk terminals, environmental considerations are particularly important because materials such as coal, cement, clinker and mineral powders can generate dust during unloading and transfer. Dust suppression, collection and enclosed conveying therefore form important parts of responsible bulk material handling.

AOTUO's combination of screw ship unloaders, ship loaders, dust-control equipment, conveying systems, metering technology and automation systems provides a foundation for integrated dry bulk transfer applications. Different equipment configurations also allow unloading systems to respond to fixed and mobile terminal requirements.

The development of intelligent loading and unloading equipment further reflects the direction of port automation. By connecting mechanical handling with control and automation technologies, AOTUO continues to expand the range of solutions available for modern dry bulk terminals.

AOTUO's Role in Evolving Dry Bulk Handling

The development of dry bulk port infrastructure increasingly requires a balance between unloading efficiency, environmental control, automation and system integration. Equipment

must operate as part of a broader material-handling process rather than as an isolated machine.

AOTUO's long-term focus on screw ship unloading, combined with related conveying, dust-control, loading and automation technologies, provides a product and engineering foundation for this type of integrated operation. Experience across cement, clinker, coal, grain and mineral-material applications also supports different project environments and terminal requirements. As dry bulk logistics continue to evolve, screw ship unloaders and supporting material-transfer systems will remain important components of port infrastructure. AOTUO continues to develop equipment around these operational requirements while expanding applications across domestic and international markets.

More information about AOTUO, screw ship unloaders, dry bulk material transfer equipment and related engineering solutions is available at <https://www.cnaotuo.com/>.

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