

Operational Safety Guide for Automatic Marine Quick Release Hooks in Ports

LIANYUNGANG, JIANGSU, CHINA, March 4, 2026 /EINPresswire.com/ -- As global maritime trade scales to unprecedented volumes, the safety and efficiency of mooring operations have become the cornerstone of modern port management. Lianyungang Hechang Machinery Co., Ltd., a premier provider of energy-industry handling solutions, is proud to release its latest comprehensive operational safety guide. This guide is specifically designed to optimize the use of the [Automatic marine quick release hook made in China](#), ensuring that terminal operators can balance rapid turnaround times with the highest standards of personnel and asset protection.

The Evolution of Mooring Safety

Traditional mooring methods often involve manual labor in high-risk zones, where the snap-back of mooring lines poses a lethal threat. Hechang Machinery, established in 2009, has dedicated over a decade to

engineering systems that remove the operator from the "danger zone." By integrating advanced hydraulic and electronic release mechanisms, the modern quick release hook (QRH) has transformed from a simple mechanical fastener into a sophisticated safety device.

With a portfolio spanning more than 6,000 successful projects, Hechang leverages its deep expertise in oil, gas, and chemical terminals to define the gold standard for QRH operations.



Core Safety Pillars for Automatic QRH Operations

1. Pre-Operational Inspection and Testing

Safety begins long before a vessel approaches the berth. The "full life-cycle service" philosophy championed by Hechang emphasizes that equipment readiness is the first line of defense.

Visual Integrity: Operators must inspect hooks for signs of metal fatigue, corrosion, or debris that might impede the locking mechanism.

Load Cell Calibration: For hooks equipped with integrated tension monitoring, ensuring that load cells are calibrated is vital. This prevents "false positives" or undetected overloads during high-wind events.

Hydraulic Fluid Levels: For automatic release systems, maintaining fluid pressure and cleanliness is essential to ensure the hook opens instantly when the command is given.

2. Intelligent Tension Monitoring

One of the primary advantages of Hechang's automatic systems is the ability to monitor mooring line tension in real-time.

Threshold Alerts: The system should be programmed with tiered alarms. A "Warning" alert triggers when tension reaches a certain percentage of the Safe Working Load (SWL), while an "Action" alarm indicates immediate risk.

Dynamic Response: In ports with high tidal ranges or surge issues, intelligent monitoring allows the crew to adjust lines before they reach a breaking point, preventing catastrophic failures.

3. The Protocol for Emergency Release

The "Quick Release" function is the most critical safety feature of the hook. However, its use must be governed by strict protocols to prevent accidental deployment.

Two-Step Verification: Hechang's automatic systems utilize a coded signal or a physical two-step process (e.g., "Lift Cover & Press") to initiate a release. This prevents accidental triggering via the Remote Control System (RCS).

Emergency Power Backup: Safety guidelines dictate that the automatic release must remain functional even during a terminal power failure. Hechang's systems often include Uninterruptible Power Supplies (UPS) or manual overrides to ensure the vessel can be cast off in an emergency.

4. Environmental Adaptability and Maintenance

Operating in harsh saline environments requires specialized care. Whether it is an LNG receiving station or a chemical industrial park, the QRH must withstand corrosive atmospheres.

Lubrication Schedules: Regular lubrication of pivot pins and moving parts is non-negotiable.

Explosion-Proof Compliance: Given Hechang's specialty in the oil and gas sector, all electronic components of the QRH must be maintained to meet ATEX or IECEx standards to prevent ignition in volatile environments.

Integration with Smart Port Ecosystems

As ports move toward "Smart Terminal" status, the QRH is no longer a standalone component. Hechang's fully automatic intelligent loading systems and quick release hooks are designed to interface with the broader port management software. This integration allows for:

Remote Monitoring: Supervisors can view the status of every hook on the jetty from a centralized control room.

Data Logging: Post-mooring analysis helps in understanding the stress patterns on the berth, which informs future engineering designs and maintenance cycles.

About Lianyungang Hechang Machinery Co., Ltd.

Since its inception in 2009, Lianyungang Hechang Machinery Co., Ltd. has grown into a global leader in storage and transportation system solutions. Specializing in the oil, chemical, and energy sectors, the company provides a comprehensive suite of products, including:

Marine Loading Arms: Including cryogenic LNG and intelligent auto-alignment models.

Mooring Solutions: Advanced quick release hooks and gangway systems.

Loading Systems: Quantitative control and fully automatic intelligent loading systems.

Infrastructure: Hose handling systems, steel trestles, and floating pontoons.

With a track record of serving over 2,000 domestic and international clients, Hechang's commitment to quality is backed by "full life-cycle services." From the initial technical consultation and engineering design to on-site installation and long-term after-sales maintenance, Hechang ensures that every piece of equipment performs with precision and safety.

Industry Impact

Hechang's products are the backbone of critical infrastructure worldwide, including refineries, pharmaceutical plants, and metallurgy projects. By focusing on innovation—such as the pneumatic and hydraulic intelligent auto-alignment loading arms—the company continues to push the boundaries of what is possible in maritime logistics.

Conclusion: A Commitment to Zero Accidents

The safe operation of automatic marine quick release hooks is a combination of superior Chinese engineering and rigorous operational discipline. As Lianyungang Hechang Machinery Co., Ltd. continues to innovate, its primary goal remains clear: to provide the global energy industry with the most reliable, efficient, and safest handling solutions available.

For more information on the full range of marine and onshore handling equipment, or to consult with an engineering expert on your next project, please visit the official Hechang website.

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