



Quick Release Hook

IntMoor™ Intelligent Mooring Equipment

www.glenengineering.com

Applied to Marine, Offshore, Oil & Gas Industry
Various Piers, Seaports, LNG Jetty Terminals
Buoy, Tugboat, FSO, FPSO, FSRU etc.



GLEN ENGINEERING *limited*
FOCUS ON MARINE AND OFFSHORE



Quick Release

Mooring & Towing & Offshore Hooks

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Since 2004, we specialize in port and terminal mooring and berthing equipment. Our products are certified by LR, DNVGL, ABS, CCS etc. classification societies industrial division. After 10 years of innovative efforts and quality control, GLEN has become leading supplier of quick release hooks in design, manufacture and commissioning for the Southeast Asian market.

Providing high value consulting, project management, and remote intelligent maintenance are our core competencies. Through strategic partnerships with global brand electrical equipment manufacturers, GLEN has established a stable quality management system and product delivery system as well as testing and maintenance services to ensure successful installations and ongoing service results.

GLEN has passed ISO 9001: 2015 QUALITY MANAGEMENT SYSTEM certification by Lloyd's Register, UK, as well as ISO 14000 ENVIRONMENTAL MANAGEMENT SYSTEM and ISO 45001 OCCUPATION HEALTH SAFETY MANAGEMENT SYSTEM.

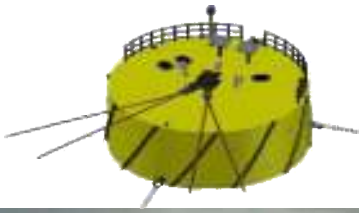
GLEN has 1 invention, 6 patents and 5 soft publications, and was awarded the honor of high-tech enterprise by the state in 2021. Our strategic goal is to be a national professional, refined, specialized and novelty enterprise in the next five years.

IntMoor™ series mooring & docking products ensure users get the maximum benefit from fast turnaround, increased cargo handling capacity and low-cost operation. Intelligent cable-free mooring is the direction of our efforts in the future.

You may find out further information on our website:

www.glenengineering.com





Advantages & Reasons Why Choose GLEN Quick Release Hooks

- Finite Element Modeling and 3-D modelling to ensure the hook strength
- Forged hook head provides better strength and durability
- Safety factor: 1.5 times S.W.L. by proof of test individually
- Quick and safe release at full load when emergency
- Manual release and reset force less than 150 N
- Simple one-step reset after release
- Spark-free operation & electrical insulation for hazardous area
- Rubber block absorbs the energy during hook release
- Rope guard guides the mooring line and avoid accidental loss
- Locking device design to avoid accidental release
- Modular design, easier to repair and maintain
- IntMoor™ Intelligent System for remote control & load monitoring is optional
- Suitable for various of environment and condition

How we ensure **QUALITY**

In-house design/production/test

Highly educated employees

Objective external consultation

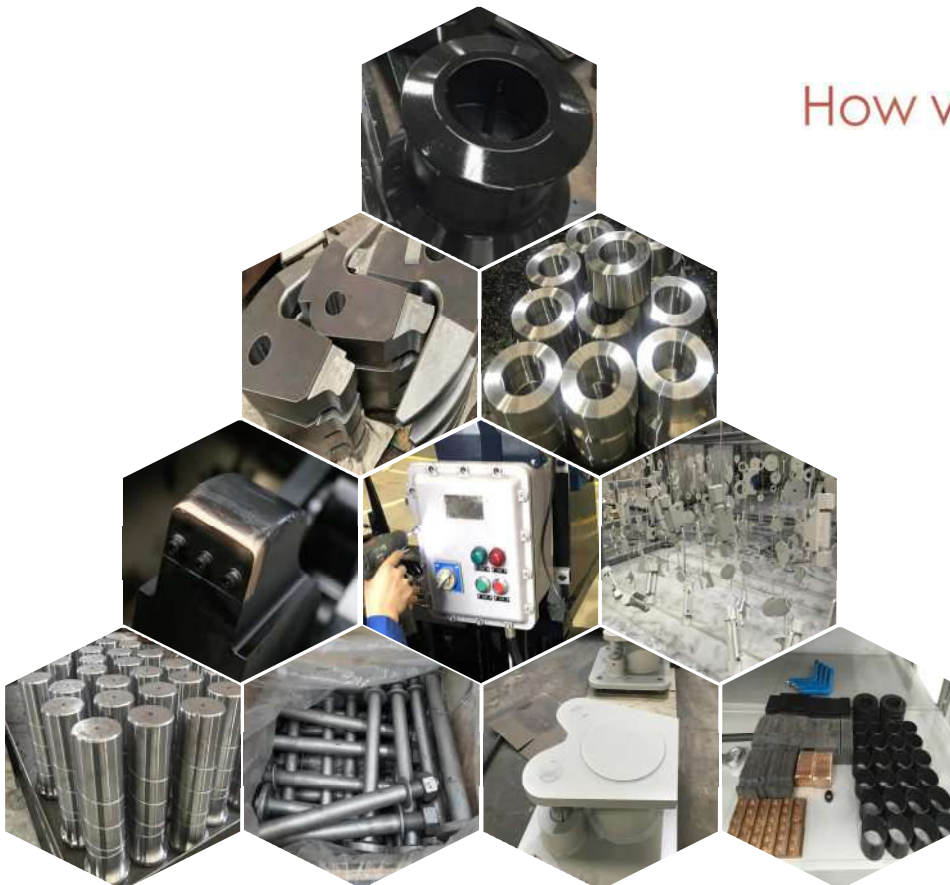
Dedicated suppliers

Interlocking technical specialties

Assembly test and load test

Test trials for process

Third party certificate from LR/BV/ABS/DNVGL/RINA/CCS etc.





Professional Team and Facility

Highly Educated & Skilled Team Members

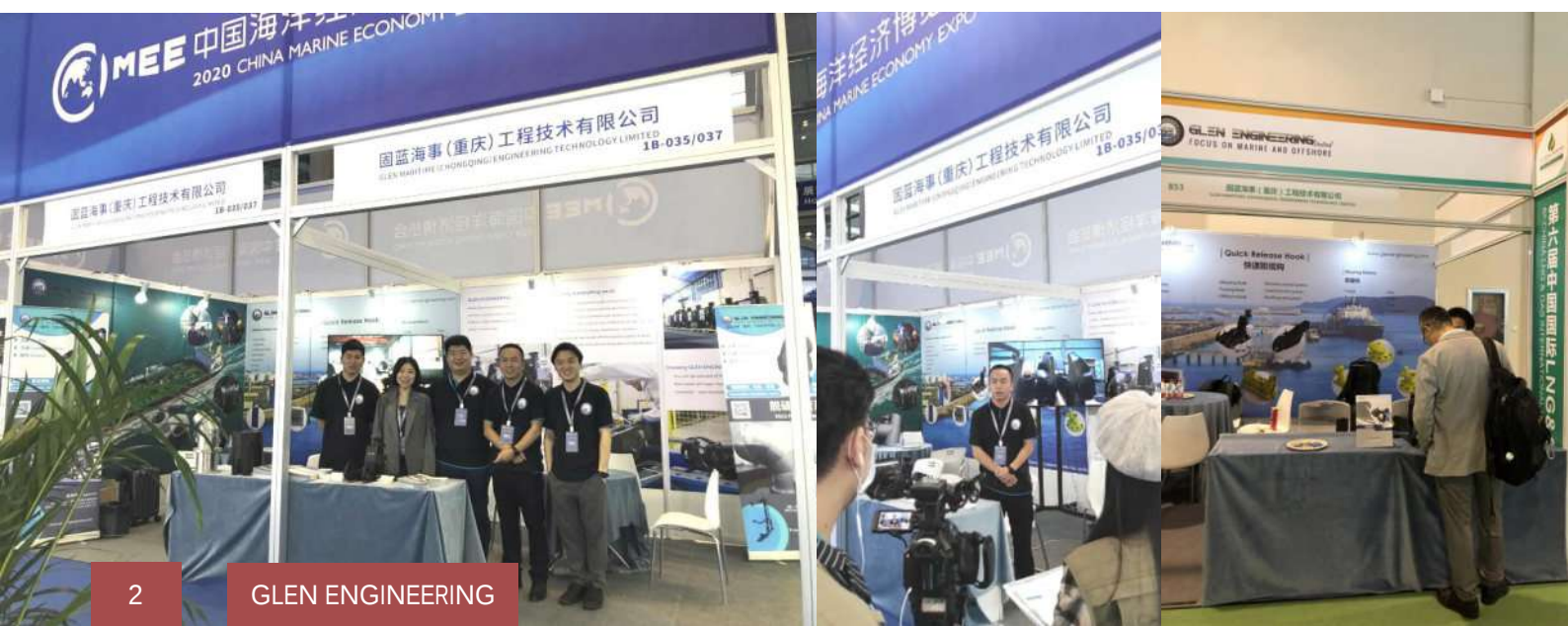
Glen is teamed up with 25 core persons, among which 10 persons had achieved Bachelor's degree, 9 had achieved Associate degree. 76% of the team are highly educated.

Solutions for client

From port owners and operators to consulting engineers, Glen works with closely with customers to determine best fit solutions for their marine applications. We provided full integrated QRH solutions that combines project consultation, system design, QRH manufacturing and testing, commissioning, installation and support. Design concepts are processed by Glen's experienced in-house engineering team engineering team, which generates a complete suite of project documentation including 3D CAD designs, application-specific drawings, and full documentation of the analysis and calculations required for each of our marine technology solutions.

Activities in Ocean Economics

Glen always focus on development in the filed of marine & offshore, including oil and gas industry, follow up the latest technology for ocean economics. At the same time, Glen provide free consultation service for clients' demands, help them as a professional partner.



Mission

We manufacture and supply Quick release hook with world class quality and best possible price.



Facility in famous industrial area

Our facility and workshop is located in Luohuang Industrial Park, Jiangjin, Chongqing. Quick release hook products are fabricated in an area of 2000m².

Benefiting from a complete industrial and supply chain and fast development in the past decade, we are able manufacturing high standard quality product which meet the demand of global market, as well as deliver fast to every corner on the earth.

To become a leading brand in China and top 3 key player in global market for quick release hook product

Vision



Focus on GLEN's Manufacture

- Design
- Verify & Approval
- Material Control
- CNC Machining
- Welding
- Painting
- Assembly
- Tests
- Inspection
- Packing & Delivery



According to ISO 9001



Load Test at 100% ~ 150% S.W.L.



Coating Thickness Checking



As-built Document



Well-packed Product

Inspected by Independent International Third Party



Standard Wiring & Function Tests



Final Inspection before Delivery



Suitable for Various Transportation



GLEN STANDARD LOADS

Safety Working Loads (S.W.L.):

Quick release *mooring* hook

450kN, 600kN, 750kN, 1,000kN,
1,250kN, 1,500kN

Integral electrical capstan

10kN, 15kN, 20kN, 30kN

Quick release *towing* hook

100kN, 400 kN, 750 kN, 1,000 kN,
1,250 kN, 1,500 kN

Area classification

Non-Hazardous and Hazardous Zone 1 - 2 / Zone 21 - 22

Quick release *offshore* hook

2,000kN, 2,500 kN

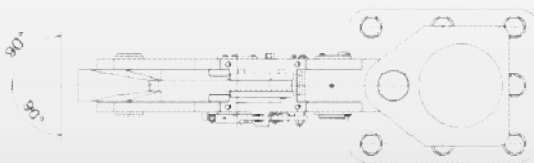
*Custom capacities are offered upon request

Release load=SWL

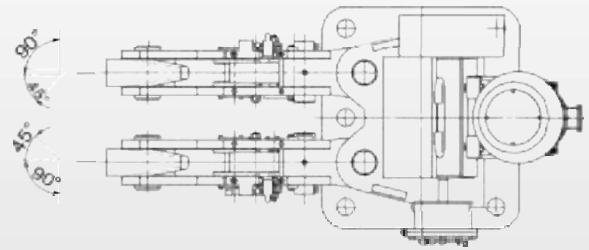
Test load=SWL x 1.5

Manual release force less than 150N at SWL

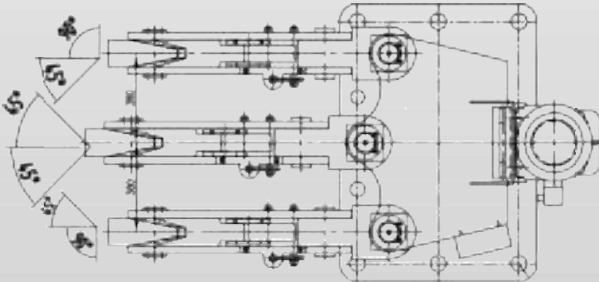
Standard Arrangement



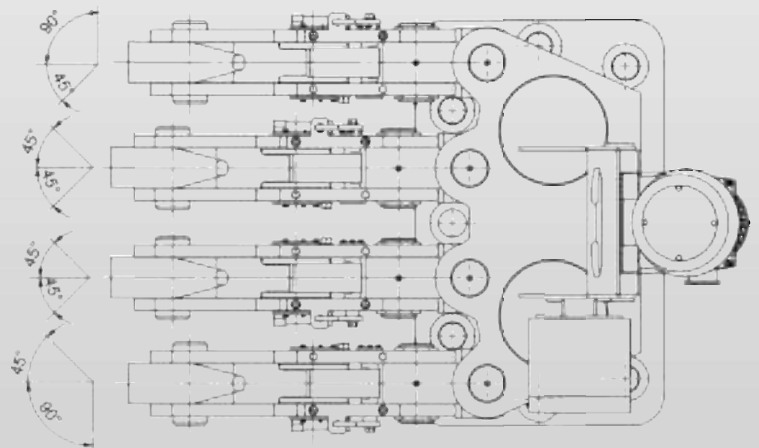
Single



Double



Triple



Quadruple

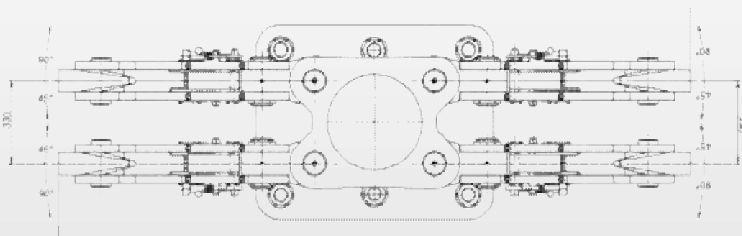
Standard Hook Assembly

Designed for different mounting base

- Concrete embedment
- Welded on steel deck
- Bolted onto steel deck
- Lock by steel pin

Options

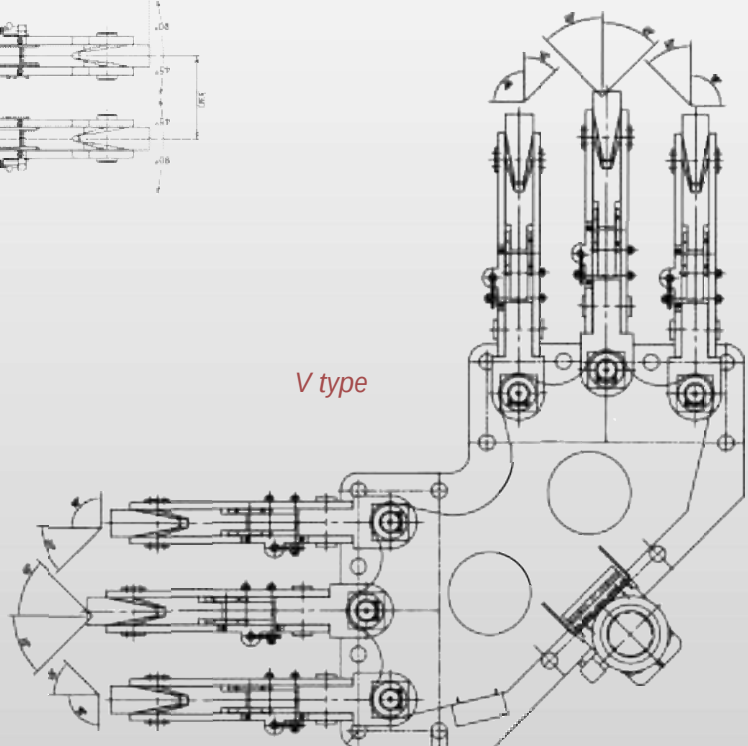
- Special coating
- Low temperature execution
- Rope keeper
- Integral Capstan
- Remote Control System
- Load Monitoring System



Back to Back type



V type



Sextuple

Quick Release Mooring Hook

Standard assembly

Mooring hook

With integral capstan

APPLICATION:

Release tanker's mooring lines with minimal effort even if under full load.

STANDARD CAPACITY:

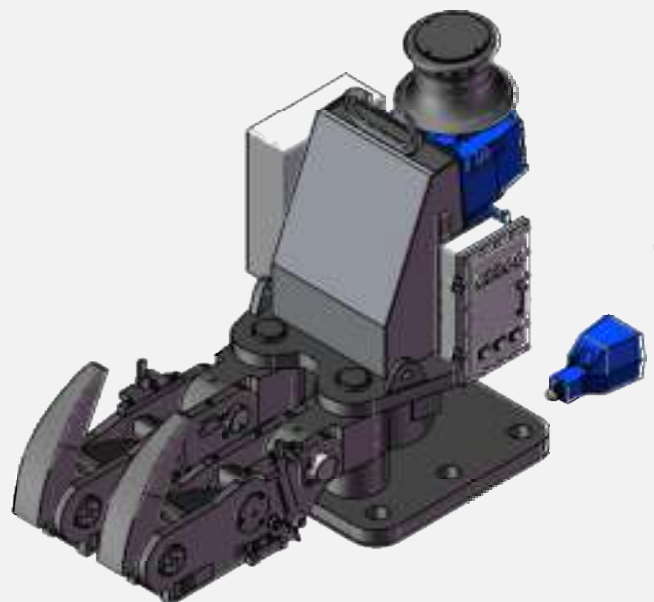
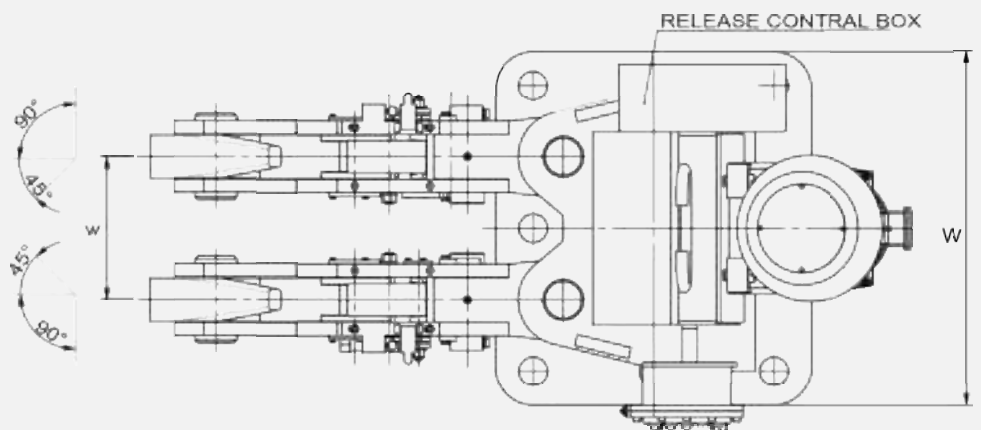
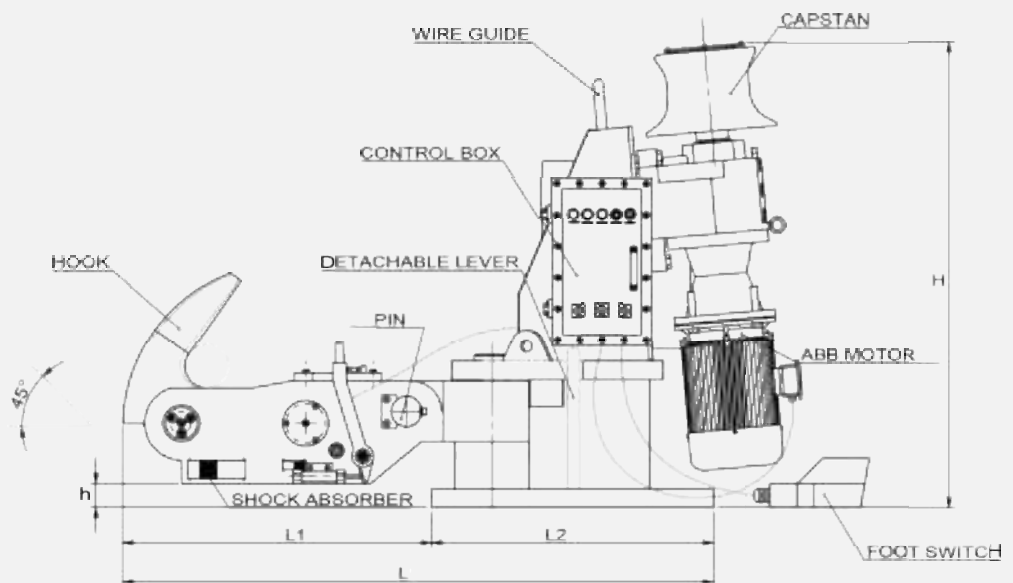
- 45 ton
- 60 ton
- 75 ton
- 100 ton
- 125 ton
- 150 ton
- 180 ton

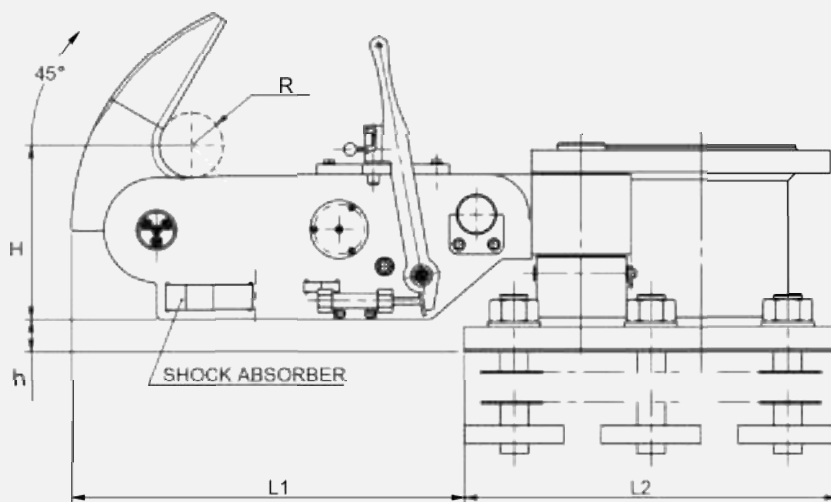
OPTIONS:

- Remote control system
- Load monitor system
- Extremely low temperature execution

CERTIFICATE:

Load test witnessed by BV, LR, ABS, DNVGL, CCS, etc.

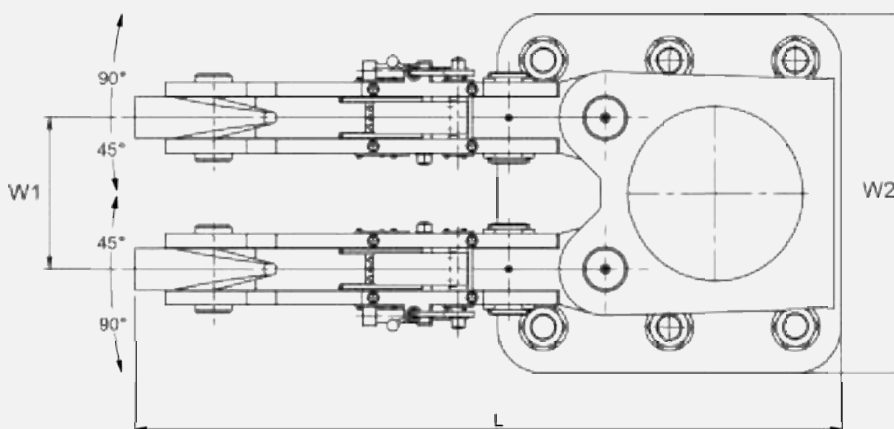




Standard assembly

Mooring hook

Without capstan



APPLICATION:

Release tanker's mooring lines with minimal effort even if under full load.

STANDARD CAPACITY:

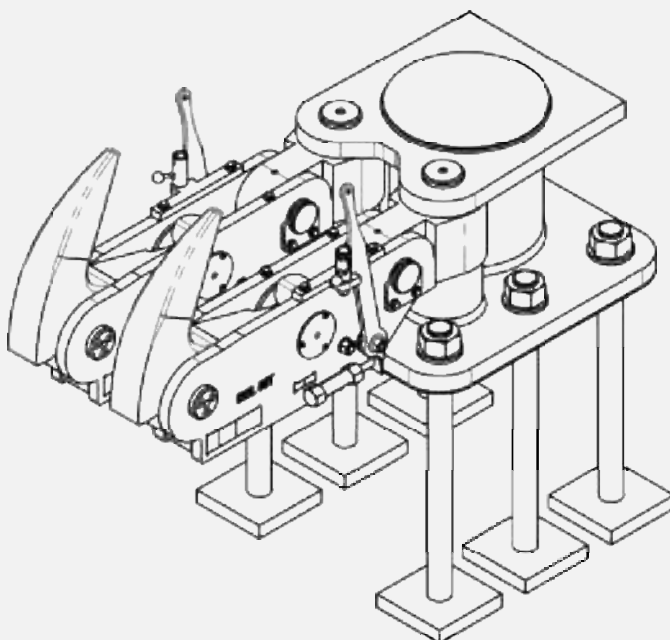
- 45 ton
- 60 ton
- 75 ton
- 100 ton
- 125 ton
- 150 ton
- 180 ton

OPTIONS:

- Remote control system
- Load monitor system
- Extremely low temperature execution

CERTIFICATE:

Load test witnessed by BV, LR, ABS, DNVGL, CCS, etc.



Quick Release Towing Hook

Standard assembly

Towing hook

Disc Type

APPLICATION:

Towing with nylon,
polypropylene as well as
steel

STANDARD CAPACITY:

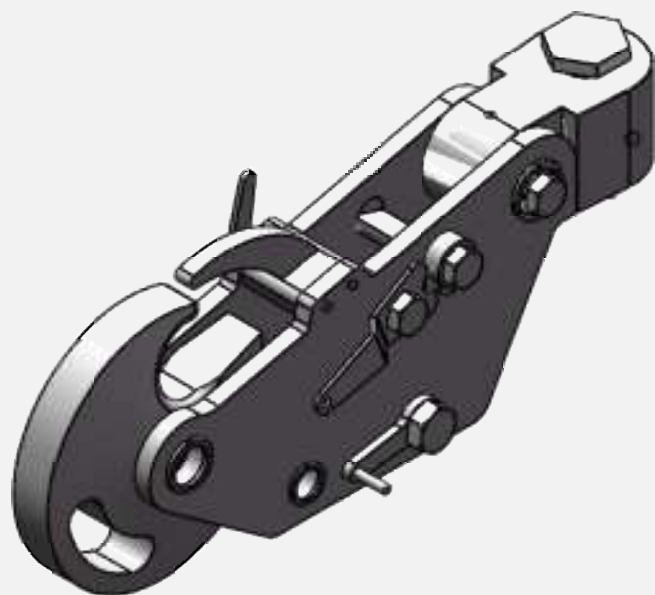
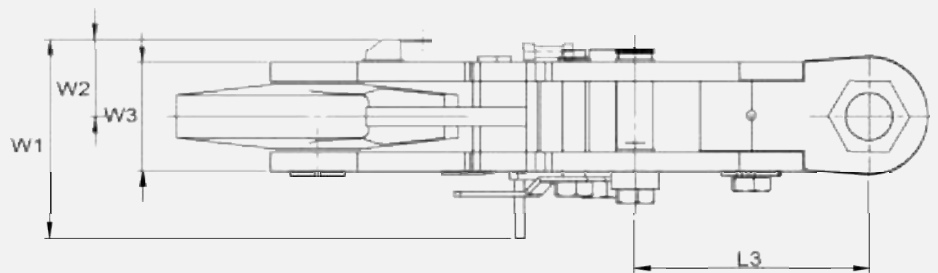
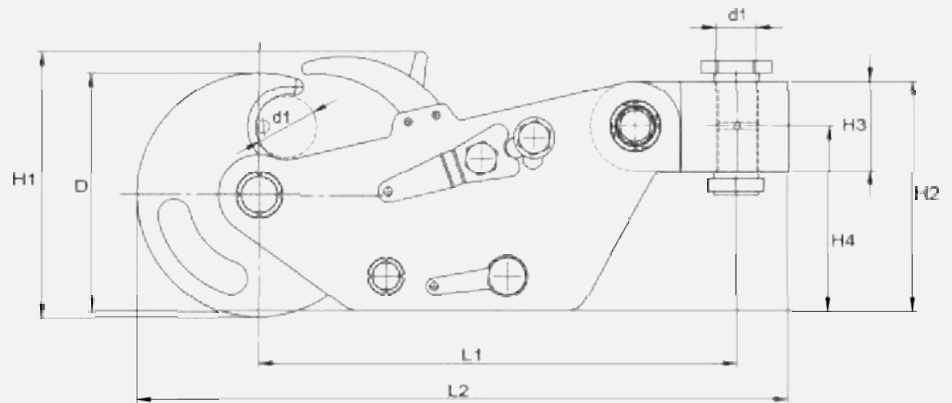
- 10 ton
- 40 ton
- 75 ton
- 100 ton
- 125 ton
- 150 ton

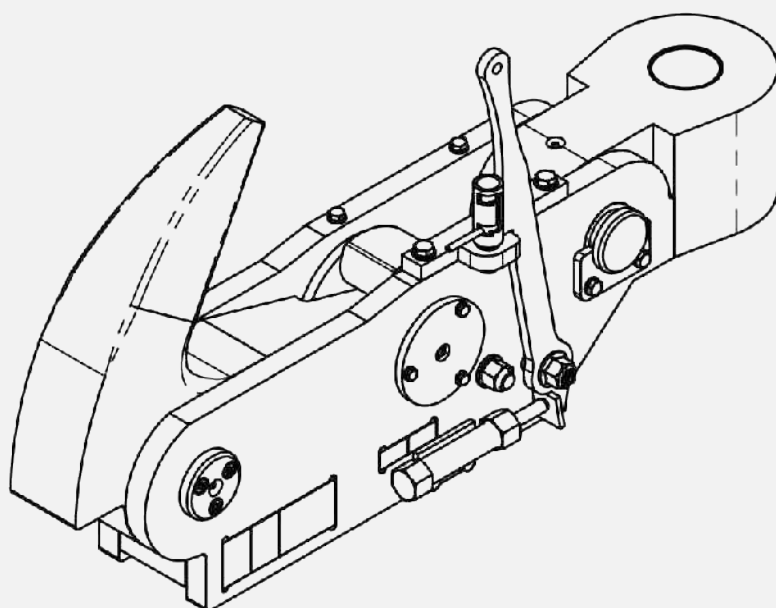
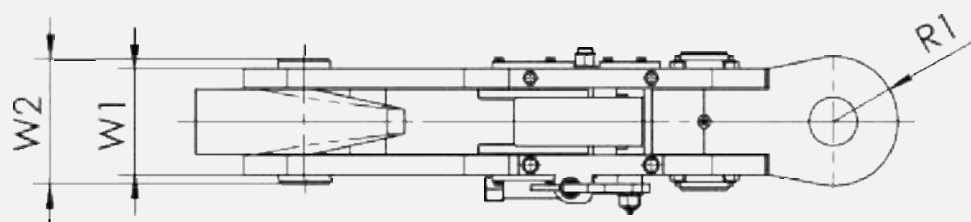
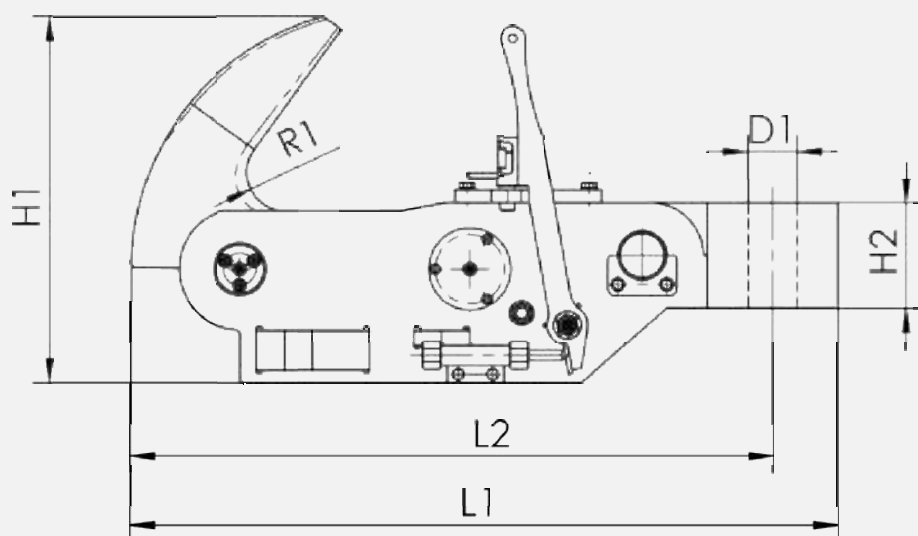
OPTIONS:

- Shock absorber
- Remote control system
- Load monitor system
- Extremely low
temperature execution

CERTIFICATE:

BV, LR, ABS, DNVGL,
CCS, etc.





Standard assembly

Towing hook

Harbour Type

APPLICATION:

Towing with nylon, polypropylene as well as steel

STANDARD CAPACITY:

- 10 ton
- 40 ton
- 75 ton
- 100 ton
- 125 ton
- 150 ton

OPTIONS:

- Shock absorber
- Remote control system
- Load monitor system
- Extremely low temperature execution

CERTIFICATE:

BV, LR, ABS, DNVGL, CCS, etc.

Quick Release Offshore Hook

Standard assembly

Offshore hook

Fixed Type

APPLICATION:

For safer tandem mooring of shuttle tankers to FSO, FPSO, FLNG and Buoys.

STANDARD CAPACITY:

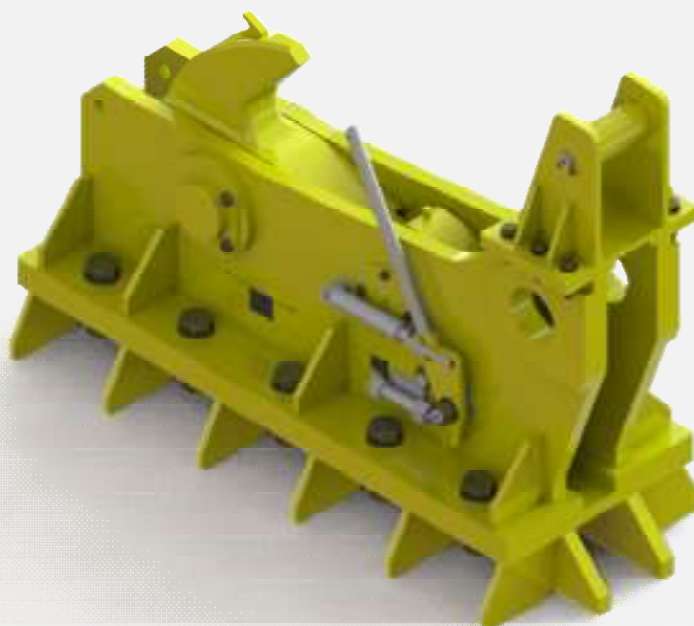
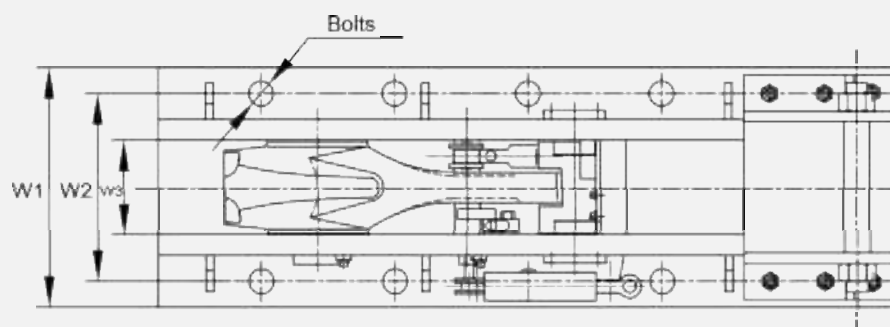
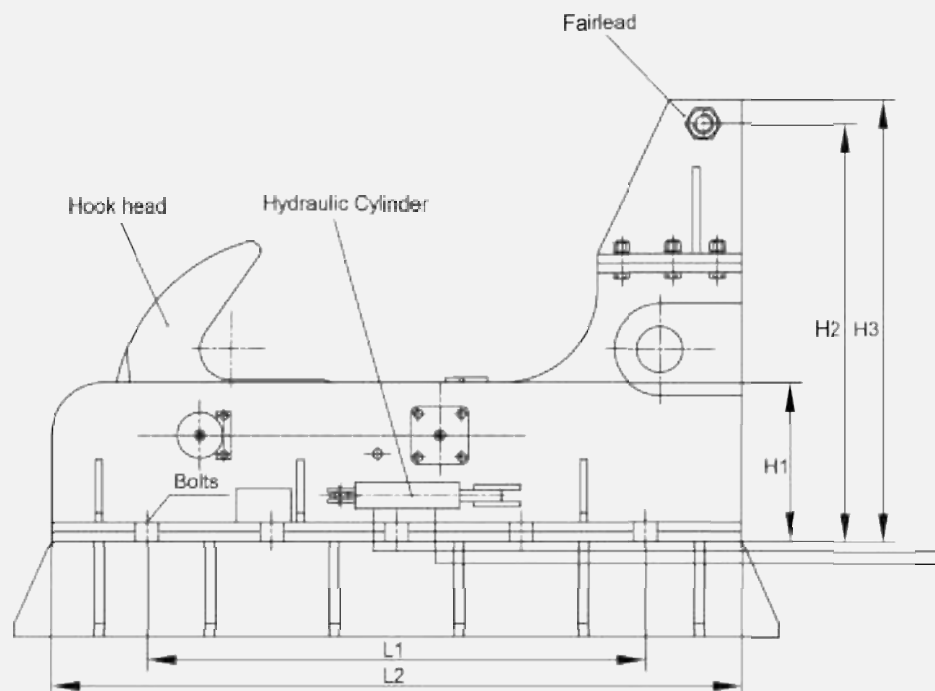
- 200 ton
- 250 ton

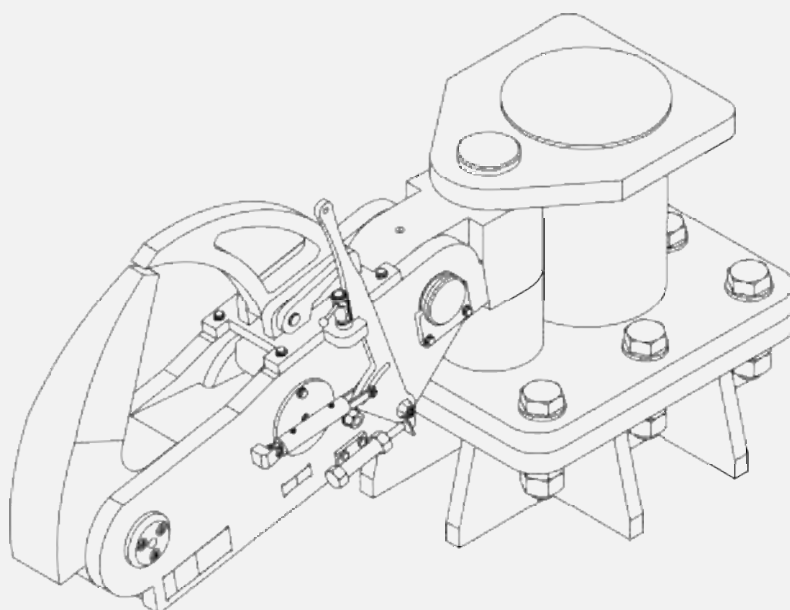
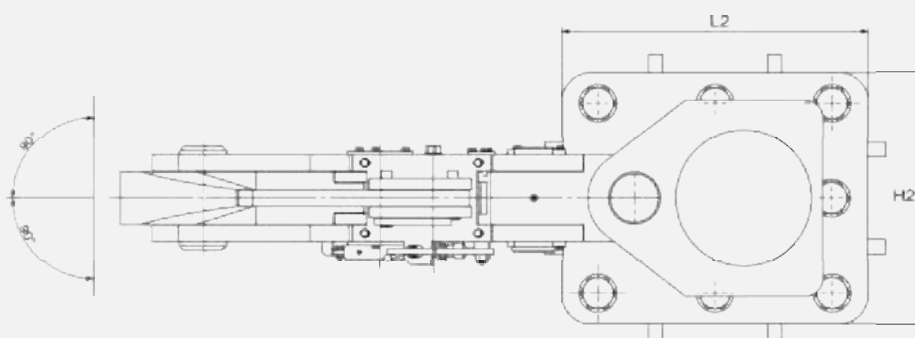
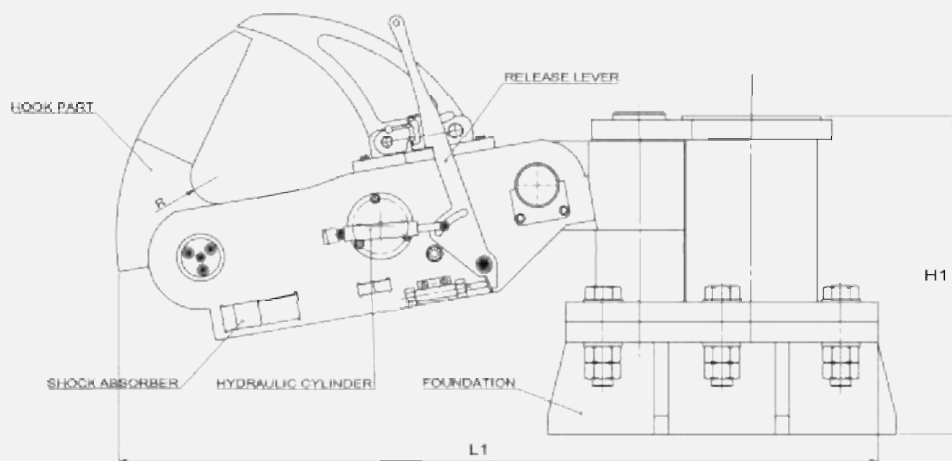
OPTIONAL:

- Remote control system
- Load monitor system

CERTIFICATE:

BV, LR, ABS, DNVGL, CCS, etc.





Standard assembly

Offshore hook

Swivel Type

APPLICATION:

For safer tandem mooring of shuttle tankers to FSO, FPSO, FLNG and Buoys.

STANDARD CAPACITY:

- 200 ton
- 250 ton

OPTIONS:

- Remote control system
- Load monitor system

CERTIFICATE:

BV, LR, ABS, DNVGL, CCS, etc.

IntMoor™ Intelligent System for Mooring

Safety and smart operation are the basic and necessary requirements for port mooring in current time. GLEN's IntMoor™ Smart System combines all the information generated by Glen's berthing and mooring solution into concise, easy-to-understand real-time data that gives operators the confidence to make informed and safe operational decisions.

IntMoor™ Mooring Load Monitoring System (MLMS)

Glen's effective load monitoring system combines reliable, repeatable load cell measurements with intuitive, stable software that is easily accessible via PC and mobile devices. The system shall include all equipment, power and control cables, amplifiers, junction boxes, power supplies, electronic data processing equipment etc. As required to monitor the line loads and transmit the data back to the Shore Control Centre.

Accurate Load Cell measurements

To monitor the mooring line tensions generated when load limits are exceeded, a load cell is installed in the Quick Release Hook pivot. The constant data stream produced by the cell is transmitted both to a local controller and remote monitoring software.

The Load Monitoring software's simple graphical user interface (GUI) makes it simple to identify individual loads, while visual and audible alarms identify that action needs to be taken. Glen's load cells are individually calibrated and meet all major marine compliance standards.

Simple monitoring via PC and mobile devices

Data is quickly and efficiently available to PC computer systems or accessible from mobile devices including laptop PCs, pagers, tablets and mobile phones. Data can be transmitted wirelessly, or received on the LNG carrier by secure ship-to-shore telecommunications systems. The system continues to learn, with load alarm settings, mooring line patterns, rope tension limits and event/trend logs for specific locations stored to the ship's database for future use.

Load Measuring Cells (Pins)

Each mooring hook is equipped with one load measuring cell installed into the hook at the place of horizontal hook cell. Each load measuring cell is calibrated up to the proof load during the hook load-test.



IntMoor™ Remote Release Control System (RRCS) & Central Monitoring Systems (CMS)

In case of an emergency, operators have to do hook release from a safe distance, such as in the jetty control room. So, in addition to the standard manual release, the quick release hooks could be equipped with a remote release control system.

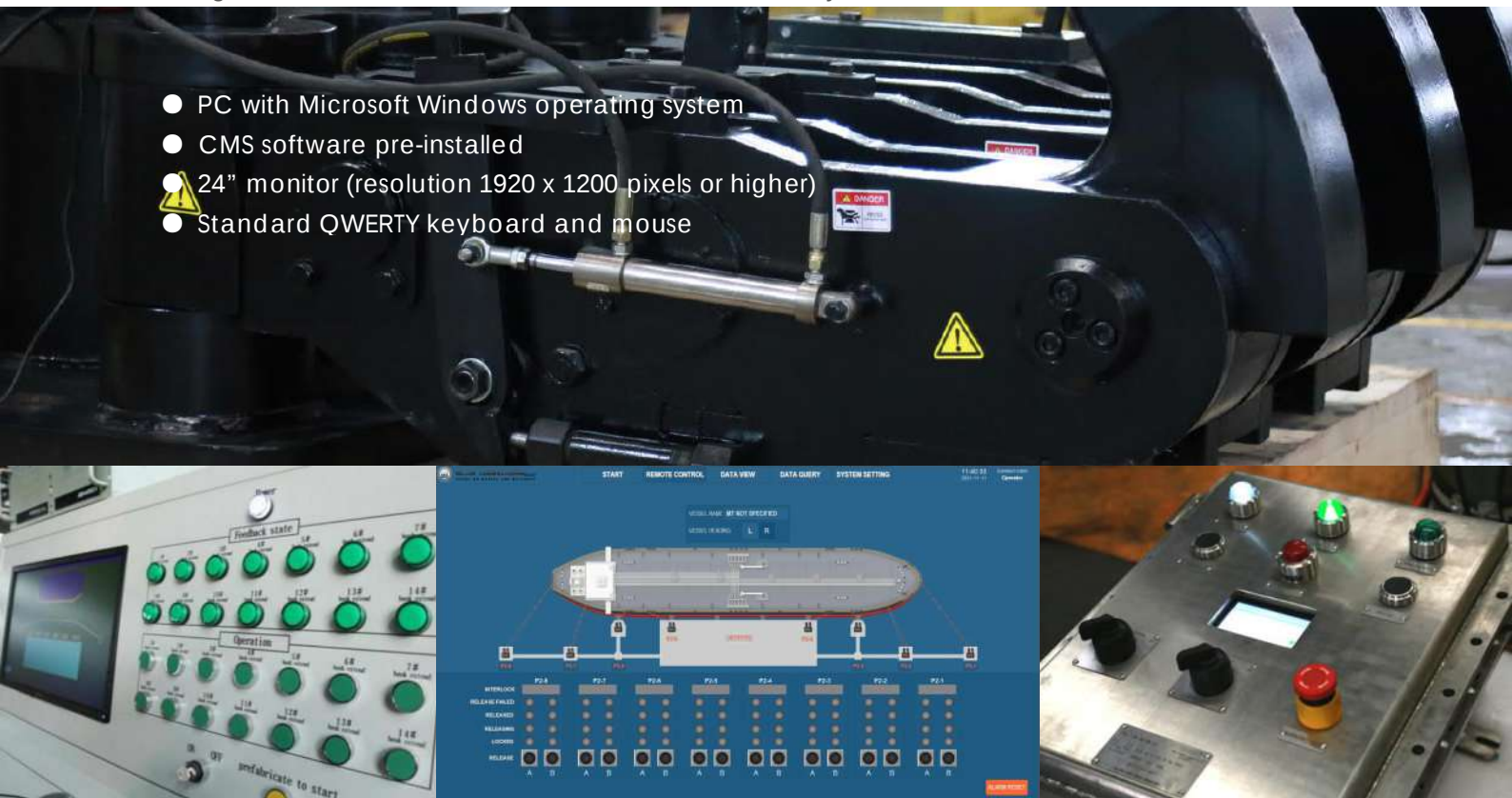
Remote control hardware - Release part would be installed in QRH and - Control part would be installed in control room. Hydraulic release and electrical release are optional. All outdoor equipment could be ATEX certified for using in Zone 1 / 2 hazardous areas.

Remote quick release panel is designed for safe and easy operation. It could be located in both safe and hazardous areas. The panel has built-in display providing the mooring load data and the hook station status and sends alarms in case of hooks station failure.

Smart, flexible and easy to operate via PC, CMS software aggregates the berthing and mooring data sensing generated by Quick Release Hook systems (QRH), Berthing Approach Systems (BAS), Environmental Monitoring Systems (EMS) and Mooring Load Monitoring Systems (MLMS). The data is then visualised in a clear and informative graphical user interface provides exceptional insight and control over berthing and mooring process – optimising processes, reducing time and cost, and ensuring safety.

Central Monitoring System is integrated into PC system controller pre-loaded with CMS software. Designed for location in the shore control centre, the system consists of:

- PC with Microsoft Windows operating system
- CMS software pre-installed
- 24" monitor (resolution 1920 x 1200 pixels or higher)
- Standard QWERTY keyboard and mouse



IntDock™ - Berthing Approach System (BAS)

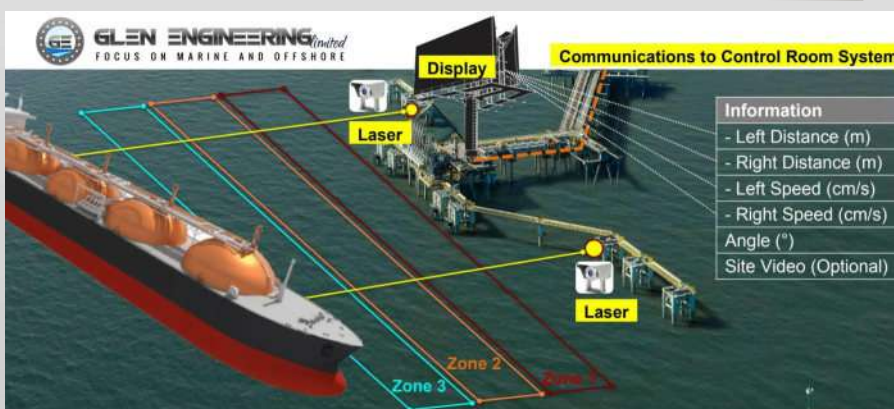
A Glen-supplied Berthing Approach System consists of a laser sensing system, which relays the key data to LED displays and traffic light displays located close to the berth, as well as triggering audio alarms where the potential for collision has been identified.

The rich stream of data produced during the berthing operation includes the approach speed, distance, and angle. The data is displayed both on highly visible LED displays, and on the ship's bridge. Subsequent to the mooring, the system continues to monitor the vessel for signs of drift or fender deflection, with alarms set to monitor activities that could potentially damage the fenders and the jetty. A comprehensive data logging system records a comprehensive and continuous record of activity for peace-of-mind.

LED Data Display

A high-quality LED is a critical component in communicating data to pilots and crew, requiring to be visible at minimum distance of 300 meters in all light and weather conditions, including fog and rain, and easily viewable from a wide viewing angle. Typical data relayed via the display includes vessel distance, speed of approach, and berthing angle, with the unit able to provide audible warning alarms for factors such as speed and collision. Traffic lights are integrated into the display, and the LED units can set to display ambient environmental data derived from weather stations, such as wave, tidal, and sea current information.

Integrating a high-quality display with quick refresh speeds into a robust and rugged designed to weather the elements, LED digital displays to have a long operational life with no maintenance requirements.



IntDock™ - Environmental Monitoring System (EMS)

GLEN's Environmental Monitoring Systems are a vital aid to safe and controlled berthing operations. By gathering oceanographical and meteorological data from sensitive sensor arrays, pilots and jetty operators can use the trend data for better and safer decision making for the berthing operation. A system built around a weather station and supported by measurements including tidal, wave, and sea currents.

As specialist manufacturers of Quick Release Hooks, Glen is an expert in all aspects of berthing and mooring applications, including the recommendation and supply of their EMS systems to support a safe berthing process.

System Overview

A Glen-supplied Environmental Monitoring System is built around a weather station, designed to provide common meteorological measurements, and supported by more complex oceanographical measurements that include tidal, wave and sea currents.

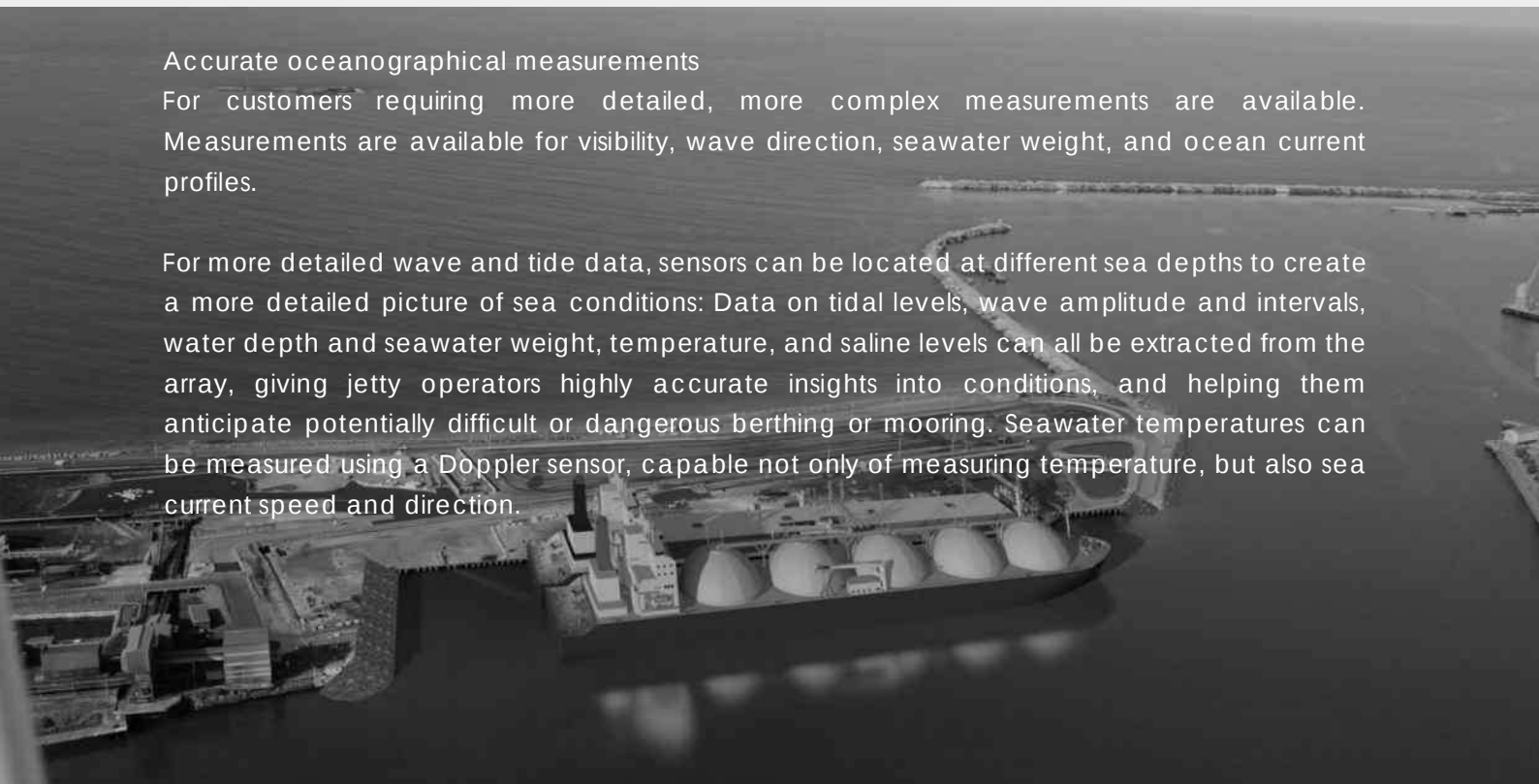
Weather Station meteorological measurements

Today's weather stations are highly sophisticated devices, capable of making a wide range of measurements, while resilient enough to ensure challenging weather conditions. Weather stations offer monitoring of commonly required conditions, including precipitation, air temperature, humidity, wind velocity, wind direction, as well as the presence of rain, snow, or hail. A weather station's compact footprint means it is easy to install on jetties, quays, or even buoys. Requiring minimal maintenance, the systems are protected from water ingress and UV radiation – making them effective in all weather conditions.

Accurate oceanographical measurements

For customers requiring more detailed, more complex measurements are available. Measurements are available for visibility, wave direction, seawater weight, and ocean current profiles.

For more detailed wave and tide data, sensors can be located at different sea depths to create a more detailed picture of sea conditions: Data on tidal levels, wave amplitude and intervals, water depth and seawater weight, temperature, and saline levels can all be extracted from the array, giving jetty operators highly accurate insights into conditions, and helping them anticipate potentially difficult or dangerous berthing or mooring. Seawater temperatures can be measured using a Doppler sensor, capable not only of measuring temperature, but also sea current speed and direction.



After-sale Service, Repair & Upgrade

It is widely recognized what actually really matters is the total cost of ownership, the costs are not just in the purchase of quick release hook equipment, but also in regular preventative maintenance which can reduce downtime, and improve productivity with risks under control.

A tailored service program gives you inside access to GLEN quick release hook experts and allows you to leverage our experience and product knowledge for your own benefit.

GLEN will work with you with a service solution including some or all of the following:

- Programmed Maintenance and Inspection
- Onsite Calibration
- Refresher Training
- Audit of Spare Parts Holdings
- Remote Technical Support and Diagnostics
- Comprehensive Reporting and Recommendations



Repair Services

We also offer a number of options to support and extend the life of your existing quick release hooks through factory repair and overhaul, including:

- QRH Hook Refurbishment and Testing
- Capstan Motor / Gearbox Refurbishment and Testing
- Load Cell Repairs and Overhaul
- General Equipment Repairs



Upgrade Services

The decision for ports to upgrade the quick release hook actually requires more than just a set of equipment. What more required is a deeper understanding of port operating parameters and the condition and functionality of existing mooring equipment.

Whether you're upgrading quick release hooks which are worn out, superseded or adding functionality, GLEN is able to offer a solution to meet your operational needs and budget.

The upgrades we can provide include but not only the following:

1) Adding Functionality to Existing Quick Release Hooks (QRH) and bases:

- Remote Release
- Load Monitoring
- Capstans
- Fitting Safety Keeper Bars
- Increase Operating Line Angles

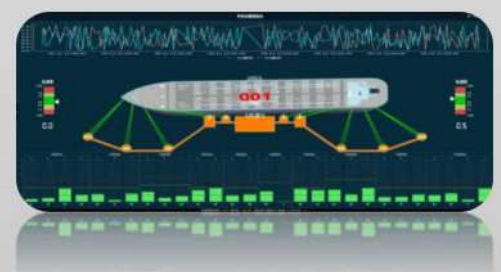
2) Replacing Obsolete or Worn Quick Release Hook Utilizing Existing Bases or Bolt Patterns

3) Replacing Bollards with Quick Release Hooks

4) Upgrading Obsolete Computer Software / Hardware

5) Upgrading or Replacing Environmental Monitoring Systems

6) Replacing Capstans With Tugger Winches





Reference Projects (Partly)



France



Dubai Tugboat



Malaysia



Indonesia FPSO



France



China



Indonesia



China



Italy

Gallery





GLEN ENGINEERING *limited*
FOCUS ON MARINE AND OFFSHORE

Extension Product Recommended

Your Professional Partner in Mooring & Docking



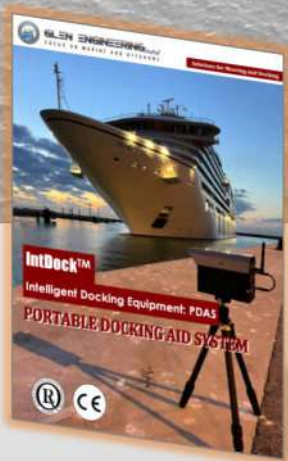
Quick Release Hook



Free Standing Capstan



Mooring Bollard



**Portable Docking
Aid System**



**Berthing Approach
System**



Rubber Fender

Contact

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