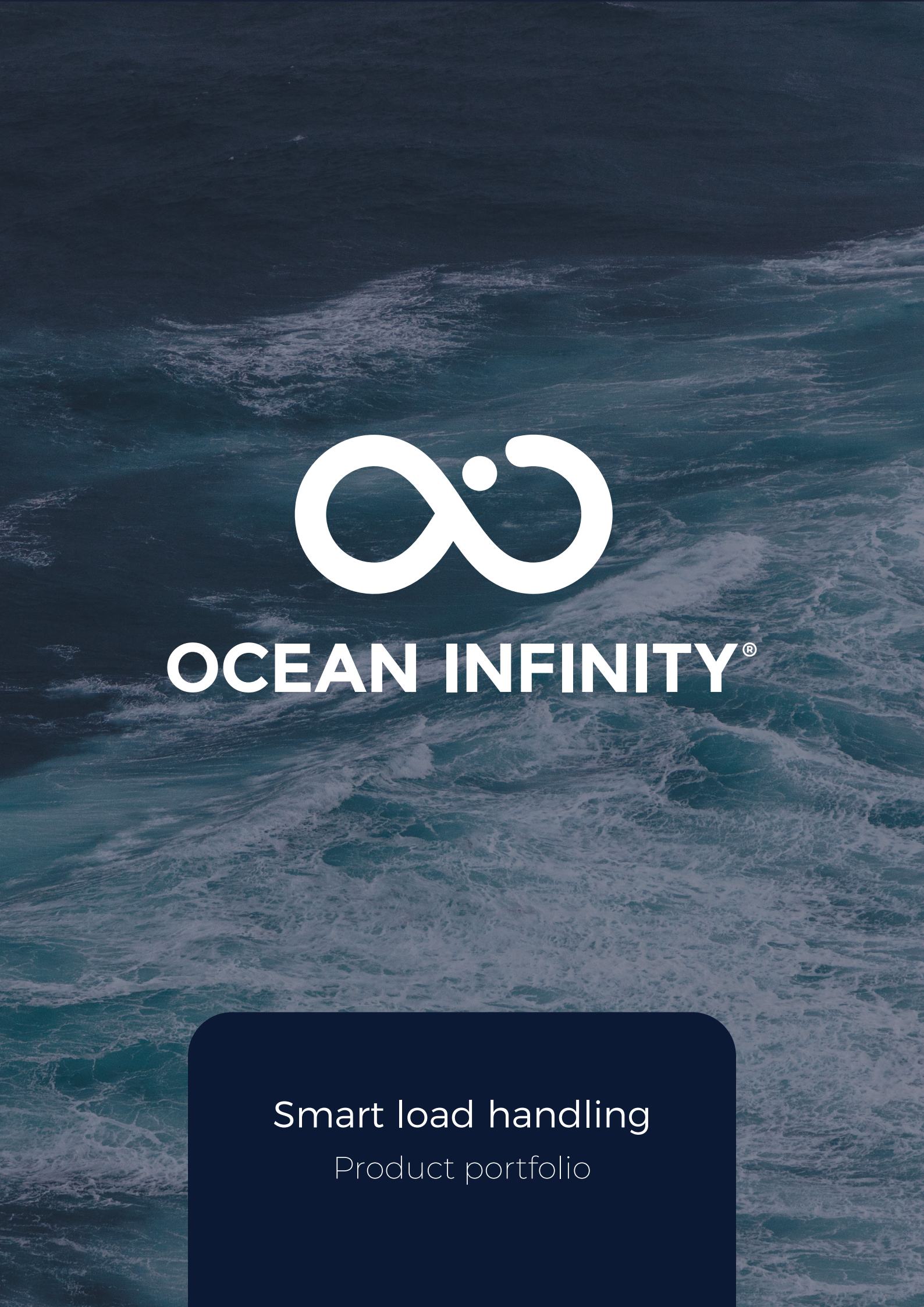

OCEAN INFINITY®

Smart load handling

Product portfolio

OCEAN INFINITY®

We use innovative technology, to transform operations at sea, to enable people and the planet to thrive.

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About Ocean Infinity

Ocean Infinity is a world leading marine robotics company that has undertaken some of the most ambitious offshore projects the industry has ever seen. Using its innovative technology, Ocean Infinity is transforming operations at sea to enable people and the planet to thrive. The company operates within a variety of maritime sectors including energy, science and research, telecommunications, as well as government, security and defence. Using the latest marine robotic technology, Ocean Infinity provides low-emission solutions including seabed data acquisition, asset integrity services and geotechnical sampling.

Smart load handling

With the suite of smart load handling and robotics equipment, Ocean Infinity, formerly known as Red Rock, can serve a wide range of lifting operations. By offering equipment within operations ship-to-ship, subsea or ship-to-fixed, Ocean Infinity is able to address all handling operations in the entire chain from shelf to shelf.

The control system takes advantage of the best technology from all industries and merges it into a state-of-the-art system for marine and offshore handling operations. Add-ons like digital twin and PdM systems enable ease of operational planning, reduced downtime and maintenance cost, including faster and safer operations.

Ocean Infinity's cranes, gangways and davit systems are designed in close cooperaton with our customers' and markets' needs.

Our long experience within the marine and offshore segment is represented by an install base of +140 cranes and +130 davit systems making Ocean Infinity a market leader.

Armada

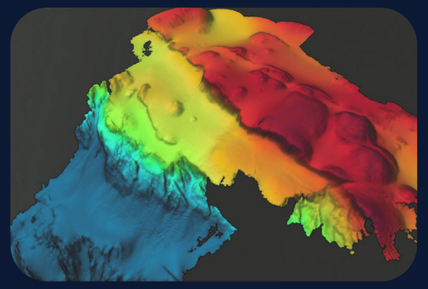
Learn more about our mission, services and technology at **oceaninfinity.com**

AUVs

ROVs

Marine robotics for offshore wind

We offer products and services relevant for the entire value chain of offshore wind farms, all the way from the planning phase, through to the operation and service phases.

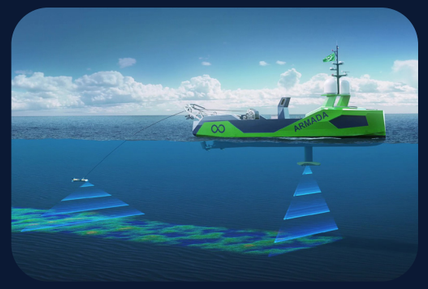


Pre-construction

- Site assessment and characterisation
- Geophysical, environmental and UXO survey
- Geotechnical site investigation
- UXO mitigation / boulder relocation
- GeoConsulting and foundation eng.

Construction

- Construction support
- Touch-down monitoring
- Scour and debris clearance survey
- As-built / As-laid survey



O&M phase

- Subsea cable inspection
- Repair response support
- Cable depth of burial survey
- Digital twin

Service

- Wind park service
- Marine robotics
- Remote control and operations
- Lean crewed and uncrewed vessels
- Autonomous load handling

OCEAN INFINITY®

W2W Gangways

The motion compensated gangway (W2W) consists of a column with an integrated elevator having several stops and a telescopic frame, enabling safe transfer of personnel and equipment to/from the vessel and fixed point.

The design is based on Ocean Infinity's 3D and AHC knuckle boom crane design. With a design having improved dynamic features, weights and wind loads are reduced, which in turn reduce fuel and energy consumption keeping emissions at a minimum.

The W2W is equipped with smart sensors like wave radars and an AI-based control system forecasting vessel motion. Such enhanced control features enable increased station keeping and cost-efficient operation.

Gangways

CONFIGURATION

- Designed according to DNV-GL ST-0358 as a Type 2 gangway
- Equipped with an elevator with 3 fixed and 1 variable / dynamic stop
- Tailormade to suit the application and customer specifications

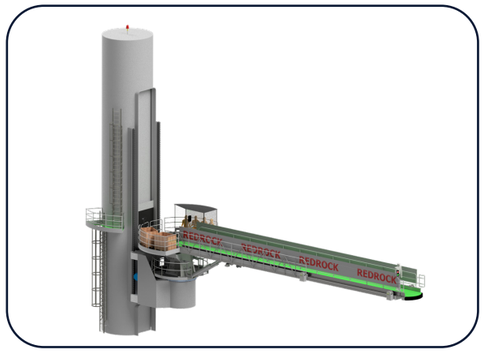
SAFE & EFFICIENT OPERATIONS

Personnel and cargo can be transported to and from the TP / vessel in a safe and efficient manner.

MODES OF OPERATIONS

Bumper mode: Engaged with constant controlled tension to TP and emergency functions active. Various TP bumper heads available.

Hovering mode: Full 3D compensation in relation to TP.



OCEAN INFINITY®

3D Motion compensated cranes

3D Motion compensated cranes are reliable and rigid cranes for handling cargo and personnel from vessel to vessel, or vessel to a fixed point.

The 3D Motion compensated cranes keep the load still due to advanced sensor signals together with compensating hydraulic system. The system's simplicity ensures reliable operation.

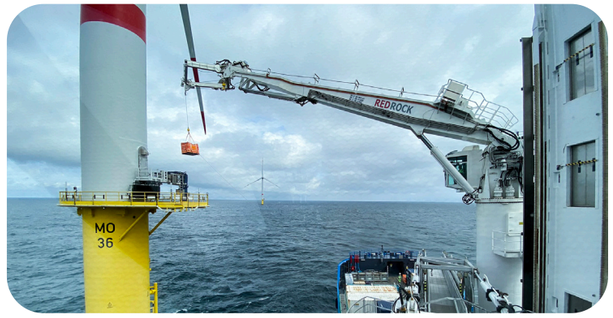
Tailor made to your requested specifications, different outreaches, lifting capacities and operating conditions. All RMCK cranes can be equipped with different accessories and class certified by all leading classification societies. 3D Motion compensation can easily be retrofitted on an existing crane.

Revolutionary crane design – counteracts 360° ship movements, for safe and precise operations in rough seas.

3D Motion compensated cranes

STANDARD EXECUTION

- 3D as well as traditional knuckle boom function in shipboard mode
- Centralized lubrication system
- 360° continuous slewing (rotation)
- Precise step less speed control for all motions
- Simultaneous operation of 2 or more functions
- MOPS - Manual Overload Protection System
- AOPS - Automatic Overload Protection System
- AHC
- Offshore paint specification
- Upgradable for bridge central/land control



OCEAN INFINITY®

AHC cranes

Active Heave Compensated (AHC) offshore cranes are reliable and rigid cranes for handling cargo from vessel to vessel, vessel to a fixed point and vessel to subsea.

An AHC keeps cargo leveled due to advanced sensor signals together with compensating hydraulic system.

The crane is tailor made to your requested specifications, in different outreaches, lifting capacities and operating conditions. All AHC cranes can be equipped with different accessories and class certificates by all classification societies.

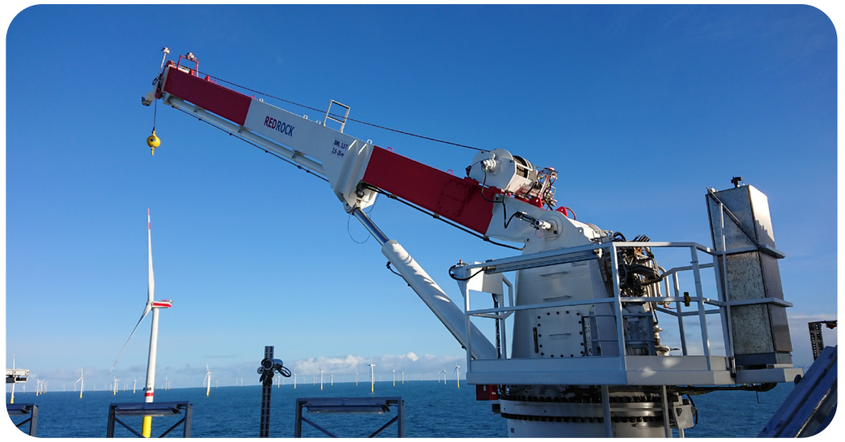
All our AHC cranes are easily upgradable to: 3D, bridge and land control.

The crane is made as a self-contained unit with integrated hydraulic power pack and motor inside crane king and pedestal. Starter cabinet (IP56) and remote start / stop box (IP 66) is included for mounting in the most suitable place close to the crane. Operators' cabin (or alternatively) platform mounted on left or right side of the pedestal.

Active Heave Compensated (AHC) offshore cranes

STANDARD EXECUTION

- Electrical starter cabinet
- 360° continuous slewing (rotation)
- Precise step less speed control for all motions
- Centralized lubrication system
- Offshore paint specification



Marine / offshore cranes

Ocean Infinity's cranes are reliable and rigid cranes for general cargo handling and service onboard vessels and platforms.

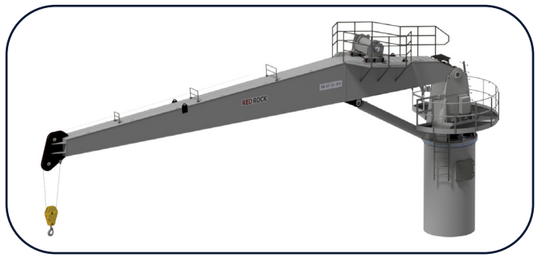
Tailor made to customer requested specifications, in different boom lengths and lifting capacities for different sea state working conditions. All Ocean Infinity cranes can be equipped with different accessories and class certificates by all leading classification societies.

The cranes are made as self-contained units with integrated hydraulic power pack. Starter cabinet and remote start / stop box is included for mounting in the most suitable place close to the crane.

Operator platform or cabin mounted on left or right side of crane king.

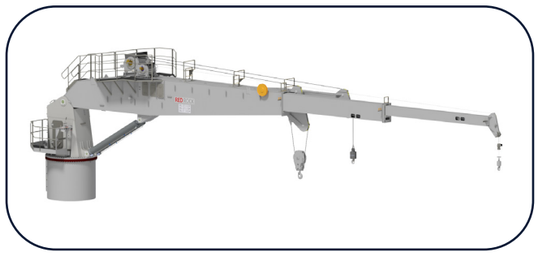
- Highly reliable and efficient design – optimized service and maintenance procedures
- Low wear exposure and compact unit – components and power pack inside crane king and pedestal
- Operator friendly – full operational overview
- Fast installation – Rigid construction for welding or bolting

Straight boom cranes



Knuckle boom cranes

Telescopic boom cranes



STANDARD EXECUTION

- Electrical starter cabinet
- 360˚ rotation
- Precise step less speed control for all motions
- Simultaneous operation of 2 or more functions
- Pedestal ready for welding or bolting on the vessel steel structure
- Start / stop box with emergency stop device
- Levers of spring centered type
- Fail safe slew brakes and load holding valves
- Full surface treatment

Standard options for Ocean Infinity cranes

Operators cabin
Ergonomic cabin with HVAC ensuring optimal line of sight and efficient operation.

Radio remote control
Portable handheld control of all function, ensuring flexible location and optimal line of sight.

Tablet
Industrial tablet containing a fully integrated HMI at radio remote control.

Bridge control
Operator chair with HMI for installation at vessels bridge.

Land control
Operator station with HMI for installation at a onshore control hub.

Aux winches
One or more secondary winch systems can be added to the crane.

Constant tension
A system that keep a constant tension on the wire. This ensures no slack wire during lifting operations.

Personnel handling
Winch and crane to be certified for personnel handling.

Winterisation
Ice class according to the classification rules.

Straight boom crane

Remote service assistanse
24/7 Remote service assistance.

Condition monitoring
Monitoring of the crane's main functions like slew, winch, motor and pumps.

Condition based maintenance
Predicting time to need of maintenance of crane main functions like slew, winch, motor and pumps.

Extended pedestal height
Increased pedestal height above standard height.

3D Compensation
3D Motion compensation system.

Active Heave Compensation (AHC)
A system that maintains the position of the crane hook when operating in waves.

Centralized lubrication system
Central lubrication system that lubricates several points on the product.

Other options available upon request

Knuckle boom crane

Telescopic boom crane

OCEAN INFINITY®

Control system

Ocean Infinity control software works seamlessly between all lifting and handling systems. It lets the operator effortlessly control the equipment to ensure an efficient and safe operation.

The control system takes advantage of the best technology from all industries and merge it in a state of the art system for marine and offshore lifting and handling operations. The systems schematics creates greater operational flexibility where the operation can be controlled from a operation cabin, wireless remote control, from the bridge and even from an onshore operational centre in certain conditions.

The system will also prepare customers for the operations of the future with both condition based maintenance, cloud connection and it is even prepared for the future of autonomous operations. This gives our customers less downtime, faster and safer operations.

Remote control centre

Crane cabin HMI

The cloud-based web-portal integrates with all the lifting and handling systems with real time access to equipment status, operational data and condition based maintenance programs.

With 24/7 support by highly qualified engineers, we eliminate most cases of down time. The cloud solution also enables remote troubleshooting and will in many cases remove the need to send a technician to the ship.

This is a cost saver and it also avoids unnecessary down time of the equipment. The cloud solution also creates the basis for the future of marine lifting and handling operations and is prepared for remote and autonomous operations.

Remote control with tablet

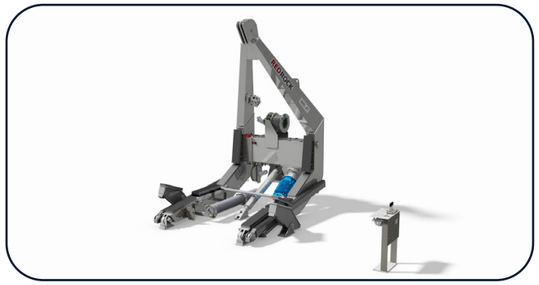
Davits

Our suites of davits range from traditional A-Frame design, to slew and telescopic versions that may be installed on deck or inside hull, enabling flexible location meeting tomorrow's vessel design. The davits have a module-based design and are powered by an integrated HPU that ensures ease of installation and commissioning.

Operation by local control panel, or remote control enables, ease and safe operation when handling rescue boats, service vessels or daughter crafts.

Our davits may be fitted with features like painter jib, shock absorber, constant tension mode etc., keeping the rescueboat in correct and stable position enabling safe and easy davit hook-up.

A-Frame davit



Designed to work in the toughest conditions, you can always trust the performance of the high quality davit system.

Whether it involves crafts for rescue operations, stand-by operations or other related activities, the davit can be equipped to perform the task.

RDA Rescue boat davit can be supplied with a range of options depending on operational requirements.

The unit features a rigid A-Frame construction for stable and safe operation and is designed considering optimizing service and maintenance procedures.

The davit winch and jib movements are operated from a control stand or a remote control nearby. Start / stop and emergency stop are also at the control stand or the remote control.

STANDARD EXECUTION

- Hydraulic power unit integrated into davit structure
- Control stand
- Electrical starter
- High speed winch

CERTIFICATION

- EC Type examination certificate, issued by DNVGL
- EC Declaration of conformity, issued by DNVGL
- Workshop testreport, witnessed by DNVGL
- Declaration of conformity
- LSA-code, SOLAS 74 and HSC code
- Wheel mark certification
- Certification from other class societies on request
- Design verification report (DVR) (workboat / daughter craft etc.)

Telescopic davit

The telescopic davit will integrate perfectly in the ship recess and the small footprint of the product will ensure maximum space utilization of the vessel.

With its parking frame, it is the most ridged davit giving the best support to the boat during operating the davit from parked position to launching position.

The davit can be delivered with an opening hatch in front of the recess to completely give you an indoor environment with the best protection for davit and boat in harsh weather conditions.

Whether it involves crafts for rescue operations, stand by operations or other related activities, the davit can be equipped to perform the task.

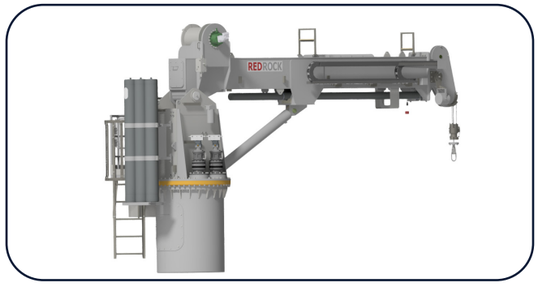
STANDARD EXECUTION

- Hydraulic power unit integrated in davit structure (size dependent)
- Integrated or separate control stand (size dependent)
- Electrical starter
- High speed winch

CERTIFICATION

- EC Type examination certificate, issued by DNVGL
- EC Declaration of conformity, issued by DNVGL
- Workshop test report, witnessed by DNVGL
- Declaration of conformity
- LSA-Code, SOLAS 74 and HSC code
- Wheel mark certification
- Certification from other class societies on request
- Design verification report (DVR) (workboat / daughter craft etc.)

Slew davit



Designed to work in the toughest conditions you can always trust the performance of the high quality davit systems.

Whether it involves crafts for rescue operations, stand-by operations or other related activities, the davit can be equipped to perform the task.

The Ocean Infinity slew davit is a cost efficient and safe solution for boat handling operations.

STANDART EXECUTION

- Integrated hydraulic power pack
- Hydraulic control stand that is integrated in the davit structure
- Electrical starter cabinet
- High speed winch

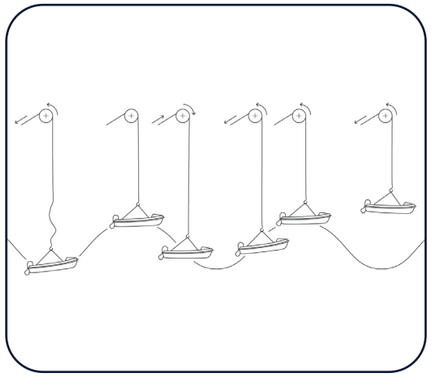
CERTIFICATION

- EC Type examination certificate, issued by DNVGL
- EC Declaration of conformity, issued by DNVGL
- Workshop test report, witnessed by DNVGL
- Declaration of conformity
- LSA-Code, SOLAS 74 and HSC code
- Wheel mark certification
- Certification from other class societies on request
- Design verification report (DVR) (workboat / daughter craft etc.)

A-Frame davit

Telescopic davit

Slew davit



CONSTANT TENSION SYSTEM

The winch is fitted with a constant tension system acting as wave compensator, allowing the rescue boat to follow the wave movements and holding the boat steady along the ships side once connected to the davit wire ready for hoisting onboard. This system avoids critical dynamic forces to the rescue boat and crew in splash zone.

RECOVER WITH CONSTANT TENSION

The picture illustrates a recovery operation using the constant tension winch system. The wire is lowered to the boat with slack wire; the boatman attaches it to the boat. The davit operator activates the constant tension on the winch to pick up the slack. As the boat rises and falls on the waves, the davit winch drum will automatically pay in and out in unison with the wave and ship motion, maintaining tension on the wire until the davit operator is ready to hoist the boat. As the boat approaches the crest of a wave, the operator de-activates the constant tension and lifts the boat clear of the waves.

SHOCK ABSORBER

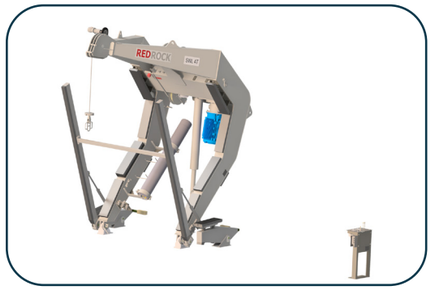
Hydraulic cylinder mounted in davit jib acting as shock absorber for smooth handling of the boat. The shock absorber reduces dynamic forces acting on the boat and crew to a minimum during launching and retrieving of the boat.

PARKING CRADLE

Mechanical cradle supporting the rescue boat in parked position by 2 supporting arms pushing the boat from outside into the davit to secure safe parking. This system allows davit wire to be disconnected from release hook for maintenance and inspection while boat is in parked position.

ANTI-PENDULUM ARMS

Anti-pendulum arms secure safe handling of the boat when swinging in / out over the ships side. The arms prevent larger movements / pendulum in the critical phase during boat handling from parked position to launching position and vice versa.



DE-ICE EQUIPMENT

Equipment mounted on davit allowing the davit to be operated in extreme low temperatures and in areas where icing occurs on equipment mounted on open deck.

Depending of de-ice requirement, davit can be equipped with:

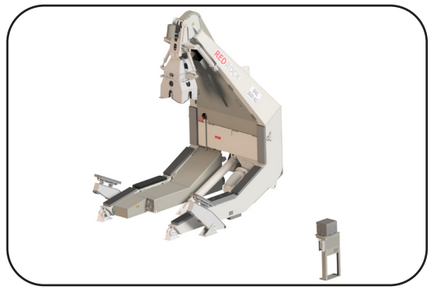
- Covers
- Protection for operator handles
- Steel grade for low temperature
- Heater in oil tank

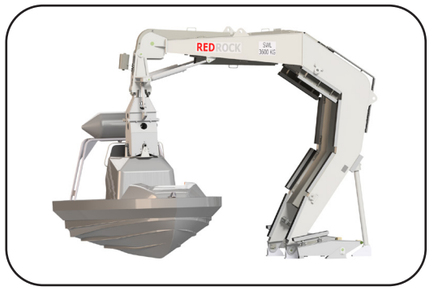
METALLIZED STEEL

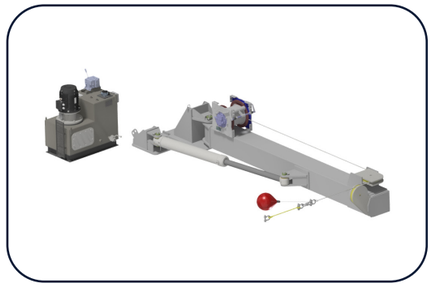
Shot blasted to SA 2.5 and zinc metallized for increased protection.

DOCKING HEAD

Docking head mounted in davit jib end acting as compensator for movements supporting the boat when swinging in/out over the ships side. The docking head secure safe handling of the boat by preventing larger movements in critical face during launching and retrieval.







PAINTER LINE BOOM (towing boom)

Boom for operating painter line to secure boat in a safe position before launching and retrieval. Painter line boom can be fitted with winch and be of horizontal, vertical or telescopic type.

ELECTRICAL CONTROL SYSTEM

An electric pilot control system for normal operation of davit. A fixed control stand with electric operating handles only requiring electrical wiring (no hydraulic pipes and hoses) between control stand and davit. Alternatively, Ocean Infinity can deliver only an electric control box with cable hanging on the davit when not in use. With this option, the hydraulic main control valve will be an el-activated type mounted on the davit itself. This option gives a quick and cost-effective installation of davit and control stand onboard.

HATCH OPENING SYSTEM

SOLAS approve operating arrangement for opening hatch in front of vessel recess area for davit. By installing davit within an enclosed vessel area, indoor environment is achieved for optimal protection of rescue boat and davit in harsh environment.

OCEAN INFINITY®

Services and technology

Services:
- Service and spare parts
- Conversion
- Training courses

Technology:
- Vessel logistics
- Digital twin systems
- Predictive maintanance
- Remote operations
- Cranes for construction / IMR
- Cranes for live fish carriers

SERVICE AND SPARE PARTS

Success depends on superior service and support throughout the lifetime of the product.

Ocean Infinity offers servicing and spare parts for all products. We have the experience and expertise to help customers with high demand to maintain a safe and reliable product lifetime.

Our highly competent service engineers supported by technical personnel are ready to assist customers with any service requirement. For life saving equipment we follow the SOLAS guidelines for maintenance, we follow MSC.1 / Circ.1206 for annual and 5-year inspections and certifications for your LSA equipment. Our service team is certified after MSC.1 / Circ. 1277.

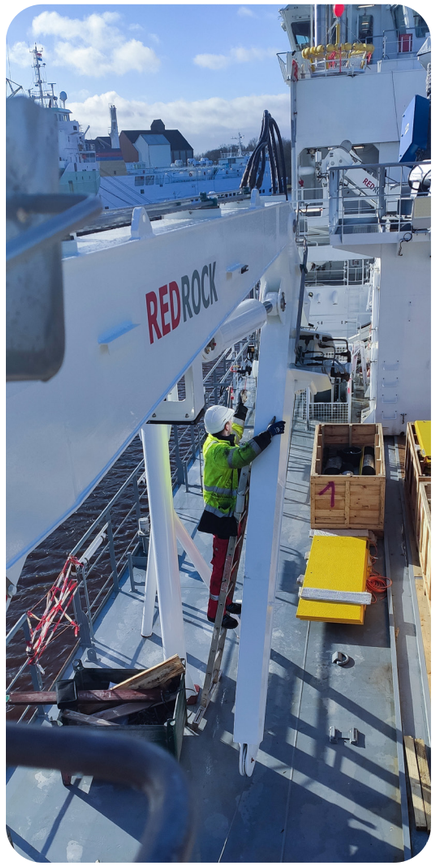
CONVERSION

We have the knowledge to offer conversion / rebuilding / upgrade on cranes or davits based on requested new requirements and needs.

An upgrade of existing equipment will suit today`s standards and qualifications.

Replacement of existing handling equipment like cranes and davits suiting existing interface onboard customer vessel.

Our options are under constant development, an upgrade or improvement could be of importance for your product lifetime.



TRAINING COURSES

We can offer training courses on all equipment to secure safe handling and operation.

Courses can also implement upgrade and information according to new regulations and software development concerning actual product. Such training can be performed at customer's premises onboard vessels on actual product or carried out at our training centre with combination of software simulations and other technical information.

Global presence

- Austin, USA
- Porto, Portugal
- Southampton, UK
- London, UK
- Aberdeen, UK
- Haugesund, Norway
- Kristiansand, Norway
- Gothenburg, Sweden
- St. George, Romania
- Singapore
- Manly, Australia

VESSEL LOGISTIC

Safe and quick logistic operations to / from vessel and TP.

A high-performance warehouse system, consisting of vertical mounted robots, Autonomous Mobile Robots (AMR) and the gangway elevator system.

By combining robotic technologies with I4.0 warehouse management software, autonomous transport of goods from the vessel hull storage area to the gangway loading platform is enabled.

DIGITAL TWIN SYSTEM

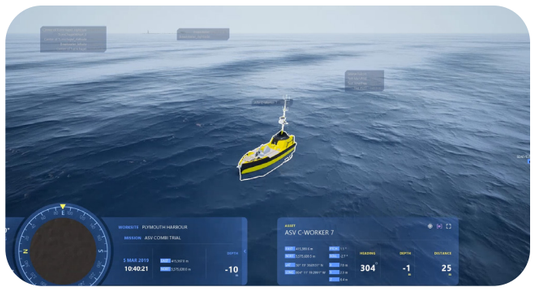
Provides detailed information assisting vessel crew and on-shore management with decision making.

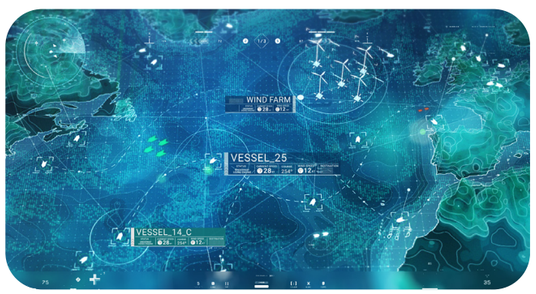
Advantages:

- Ability to analyze the optimal vessel position
- Minimize vessel movement
- Minimize motion of gangway and robotic cranes
- Enable tight station keeping
- Increasing operational safety
- Decreasing emission & energy consumption

Intuitive HMI:

- Safe to operate, limited wave impact
- Operation possible, but closer to the threshold limits. Caution should be taken
- Wave significance is outside of safe operational thresholds





PREDICTIVE MAINTENANCE

Connected Equipment → Remote Monitoring → Predictive Analysis → Smart Maintenance → Healthy, Efficient Equipment

1. Equipment is outfitted with IoT sensors and AI Core system.

2. Sensors collect data in real time to feed into our machine learning algorithms to evaluate component health.

3. Data is processed onboard and pushed to cloud for remote monitoring and diagnostics.

4. Our intuitive HMI displays key health data on equipment and notifies if components need to be ordered.

5. Needed components are sent to ordering system and maintenance service appointment can automatically be booked.

6. Service team arrives with the exact components on hand, and knowledge on which parts are broken, for more efficient maintenance.

CRANES FOR CONSTRUCTION / IMR

Typical configuration:

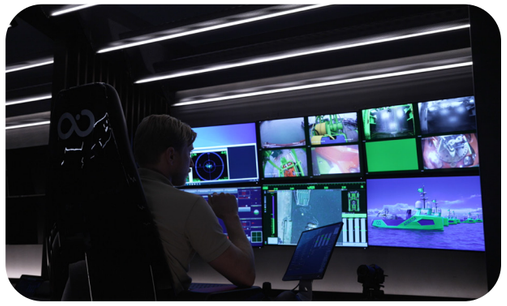
- SWL 20-150T
- Knuckle boom
- Offshore subsea crane DNV ST-0378
- Cabin
- Radio remote
- Bride control
- Shore control

CRANES FOR LIVE FISH CARRIERS

Typical configuration:

- Telescopic, foldable, knuckle boom
- Offshore cranes and shipboard cranes (DNV, BV, ABS or RMRS)
- Common bridge control
- Radio remote

SERVICES AND TECHNOLOGY

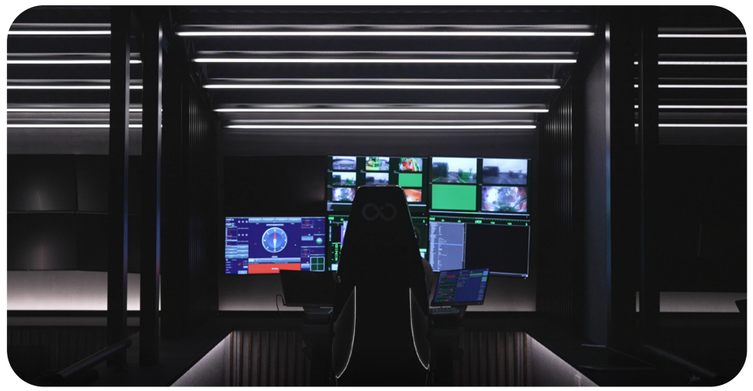


REMOTE OPERATIONS

Our custom developed remote control centres bridge our human operators with various robotic platforms. The first of several global remote control centres is located in Southampton, UK, from which our company's robotic vessels and equipment will be controlled and supervised over satellite links.

From the custom operator consoles, Ocean Infinity's mariners and data acquisition specialists will safely and efficiently harvest vast quantities of ocean data, and navigate from point to point. While operations from the remote control centre will comply with existing maritime laws and safety rules, they will set the standard for a new way of working.

- We provide state of the art remote operations centers with worldwide coverage
- We allow for one operator to have the ability to monitor and control multiple pieces of autonomous assisted equipment
- Monitor and control assets across multiple sites from one central location
- +15 years experience designing and implementing remote operation centers in group



OCEAN INFINITY®

Smart load handling team:

Buråsen 30,
4636 Kristiansand S,
Norway

Get in touch:

Sales enquiries:
oinorway_sales@oceaninfinity.com

Press and media enquiries:
oceaninfinity@celicourt.uk

info@oceaninfinity.com

Scan for:
oceaninfinity.com