DOCKLOCK brings mooring to a next level
Mampaey Offshore Industries, established in 1904 and still privately owned and managed by the fourth Mampaey generation, is the global market leader in the design, engineering, manufacturing and commissioning of innovative berthing, mooring and towing systems.

TRACK RECORD OF INNOVATIVE SOLUTIONS
Over the years our dedication to serve our customers has resulted in several maritime innovations that have driven the new standards in the towing and mooring industry. All these developments have contributed to our continuously expanding global customer base.

PROVEN QUALITY
All our products are designed and manufactured to safely withstand the toughest mechanical and environmental conditions. Anywhere. Day in day out.

LONGER LIFESPAN AND LOW MAINTENANCE
Mampaey’s products are manufactured of materials that meet the highest standards and therefore guarantee low maintenance and minimum amount of spares throughout their lifespan. Adding up these features results in an unrivalled long lifespan. Mampaey's track record of the highest quality safe and innovative products offers the most economical solution to your specific maritime needs. The low total costs of ownership turn all Mampaey’s solutions into a solid investment.

Gerard Mampaey

FOR OVER A CENTURY THE WORLD’S LEADING EXPERT IN MOORING, BERTHING AND TOWING SYSTEMS

“The low total costs of ownership turn all Mampaey’s solutions into a solid investment.”

Gerard Mampaey
AUTOMATIC MAGNETIC MOORING
Taking intelligent mooring to a new level

THE CHALLENGE: An international bunker tanker operator, was investigating the possibility of a more productive way of delivering fuel oil to their client’s vessels, aiming to lower cost whilst enhancing safety. Within the supply chain, the mooring process was identified as a bottleneck in the operations. Traditional methods are slow and time-consuming, often resulting in being the controlling factor in the departure of ships keen to get underway.

THE OPPORTUNITY: As specialist in mooring applications, Mampaey Offshore Industries was requested to take on this challenge to design and engineer an innovative mooring system, keeping in mind the goals of increasing efficiency, durability and above all, safety.

THE SOLUTION: The revolutionary DOCKLOCK® auto-mooring system. The DOCKLOCK® auto-mooring system satisfies a growing need for a faster and safer means of mooring bunkering tankers alongside other vessels whilst intelligently adapting to complex dynamic events. DOCKLOCK® has dual mooring arms bow and stern with magnetic connection pads that firmly and reliably attach to any hull, flat or undulating, cleanly painted or corroded. These pads can ‘walk’ along the hull to accommodate changes in levels whilst resisting fore and aft motions.

DOCKLOCK® is a compact and extremely flexible system, which enables it to be installed on a wide variety of vessels, quays and jetties, for any mooring situation demanded. Following successful trials DOCKLOCK® will go into commercial production immediately.

Safety improvements:
• Less hazardous operations for shore personnel and deck crew by eliminating hawser lines
• Built for worst case scenarios in external influences (passing movements, current & wind force)
• Real-time monitoring of mooring situation (loads, positions, movement)
• Magnetism technique used insusceptible to loss of power guaranteeing mooring connection at all time

Efficiency increase:
• Faster mooring and quick release (seconds instead of hours)
• Independence from mooring crews or linesmen
• Less personnel hours involved in mooring and vessel operation
• Faster mooring decreases bunker delays, benefiting vessel and port.
• Rapid vessel and berth utilization

Durability:
• Reducing mooring speeds, reduces fuel consumption as propulsion of all involved vessel are shut down earlier.
• Cutting down costs for traditional mooring gear
• Minimal wear & tear of materials compared to traditional mooring methods used
TYPICAL DESIGN BUNKERING CONFIGURATION

side view

top view
TYPICAL DESIGN SAILING CONFIGURATION

DOCKLOCK AUTOMOORING

Sailing configuration

side view

top view
DOCKLOCK AUTOMOORING
Intelligent magnetic mooring systems

DOCKLOCK CONTROL PHILOSOPHY
DOCKLOCK® operates as an autonomous system, capable of mooring independently once the system has been activated by human command. The arms approach and connect at different positions, by monitoring each other’s movements. As each arm holds a different mooring height, this enables “stepping”, if physically necessary (for example during ascending due to unloading), as physical limits will be reached by only one arm at a time.

Human interference through manual override is always possible if deemed necessary, remote and locally. As DOCKLOCK® continuously provides real-time information regarding the current mooring session, it creates a safe and clear overview of the mooring situation for all involved stakeholders.

FORCE VALIDATION
Once the arms have connected to the hull, the fender cylinder system validates the minimally required magnetic hold force in terms of worst case loads. Once the magnets hold, the system will give the green light for being safely mooring.

When all arms are moored with a solid connection, the system will switch to “torque” mode. This is a precise collaboration between software controls and hydraulic architecture, enabling sudden heave movements, while being able to correct sway movements simultaneously and thus controlling the external influences acting on a moored ship.

QUICK RELEASE
When the vessel has finished (un-)loading and is ready for departure, releasing and unmooring is a rapid movement of seconds, initiated by a simple push of a button. Together with rapid mooring, the quick release after mooring drastically enhances the vessel’s utilization by bringing mooring efforts down to minutes instead of hours.
ADDITIONAL INTEGRATED BERTHING, MOORING AND TOWING SOLUTIONS

I-Moor Systems
Mooring Hooks
Offshore Hooks

Towing Hooks
Mooring Buoys
Commissioning & Training

Due to continuous development Mampaey Offshore Industries reserves the right to alter the specifications presented in this document without further notice.