














## Options and Upgrades

With the future of container trade expected to grow, so does the increasing pressures for terminals to cope with these demands. At RAM, we are committed to helping you get the most out of your equipment.



**Our spreader upgrades will enhance performance,  
boost productivity and increase safety**

Upgrade Option	Type	Description	Crane Type			Fitting	
			MHC	STS	Yard	Onsite	Factory
<b>ShockAbsorb (SA)</b>		Designed to instantly absorb impact and vibration forces during landing of spreader. The design assembly will improve operational efficiency and reliability, whilst reducing noise.	●	●	●	●	●
<b>ASi Communication</b>		The ASi network provides non-stop monitoring of the spreader and delivers excellent diagnostics. The industrial-proven ASi bus system gives you the option to have the PLC in the crane cabin or on the spreader. This reduces the wiring around the spreader and reduces operational maintenance costs by 40% from traditional hard-wiring methods.	●	●	●	●	●
<b>CANOpen D444 Communication</b>		CANOpen DS444 is a two-wire system that can be connected from the crane to the spreader or around the spreader only. With this system in place, the PLC system is placed in the spreader. This reduces the wiring around the spreader and reduces operational maintenance costs by 40% from traditional hard-wiring methods.		●	●	●	●
<b>Profinet Communication</b>		Profinet protocol can be selected for communication between the crane and the spreader.		●	●	●	●
<b>Height Indication System (HIS)</b>		Located under the spreader, the HIS detects containers or other objects within a pre-set distance from the spreader. A signal will then be sent to slow the hoisting down. This will prevent any accidental high-speed impact when landing the spreader on the container.	●	●	●	●	●
<b>Memory Positioning System (MPS)</b>		Using innovative mechanisms and encoders, the current positions of the telescopic arms are logged into the systems memory. MPS can store a landside and seaside position, enabling the crane operator to return to either of these positions.		●		●	●
<b>Automatic Positioning System (APS)</b>		Due to the spreader being subjected to collision with external object, the spreader telescopic arms may be knocked out of position. When this occurs, the APS will activate the appropriate telescopic motion (extend or retract) to reposition itself.	●	●	●	●	●
<b>Twin 20 Container Detection System (TTDS)</b>		When the spreader is landed on the container(s), TTDS is activated to determine whether the container(s) to be lifted is a single 40' container or two 20' containers. The system works by the sensors facing downwards, detecting the gap present if two 20' containers are underneath the spreader.	●	●	●	●	●
<b>Anti Fall Away System (AFAS)</b>		RAM's AFAS system employs two photo-electric sensors to monitor and prevent containers falling away when hoisted up. A loss of one or more sensor signals will trigger an alarm to the crane operator to inhibit hoisting.	●	●	●	●	●
<b>Side Shift Mechanism (SS)</b>		The mechanism is an integrated frame that connects to the crane headblock, allowing a shifting movement along the spreader in a longitudinal direction. This side-shift system can be fitted to hydraulic or electric spreaders.		●	●		●
<b>Integrated Rotator (IR)</b>		The spreader can be fitted with a rotating head frame allowing up to 360 degrees of spreader rotation under the crane headblock.		●	●		●
<b>Hi-Torque Rotary Flipper Actuator</b>		A higher torque rotary actuator can be fitted, giving increased holding torque.	●	●	●	●	●
<b>6 Flipper Upgrade</b>		Upgrading from 4 x flippers to 6 x flippers for STS cranes spreaders is designed for maximum flipper torque and durability. The additional 2 x flippers are located at the ends of the spreader to improve operator control.		●	●	●	●

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<b>Auto Greasing System</b>		The auto-greasing system performs autonomously, eliminating the consuming manual lubrication job. The system extends the life of the part/component by preventing unnecessary wear.	●	●	●	●	●
<b>Camera System (CS)</b>		The camera system extends operator's vision showing real-time visuals of the specific locations on the spreader. This eases the container handling process, increasing operational efficiency. Cameras can be mounted in various locations on the spreader to suit requirements.	●	●	●	●	●
<b>Load Weighing System (LWS)</b>		The Load Weighing System determines container weight and sends the data to the crane CMS, which then sends the information onto the terminal operating software (TOS). The system helps prevent accidents, as ships can be loaded too heavy.		●	●	●	●
<b>On-board Diagnostic Screen</b>		A Diagnostic HMI screen can be installed onto the spreader, indicating all sensor and spreader status. The screen can also control the functions of the spreader when in maintenance mode. Additional option for WIFI access is also available.	●	●	●	●	●
<b>Virtual HMI Diagnostic System (VDS)</b>		With no physical screen, this diagnostic system is a virtual HMI and available with WIFI access. The system is a safe and secure method of obtaining spreader diagnostics on web browsers.	●	●	●	●	●
<b>LED Indicator Lights</b>		LED Indicator Lights offer excellent visibility for drivers and ground crews. Multiple colour combinations are available to indicate the spreader status.	●	●	●	●	●
<b>Over-height Latching Brackets</b>		Improving the safety of Stevedores and reducing costs, by allowing the spreader to attach onto an over-height frame.	●	●	●	●	●
<b>Stainless Steel Hydraulic Tank</b>		The standard carbon steel tank can be upgraded to stainless steel to enhance spreader durability.		●	●	●	●
<b>Stainless Steel SS316 Electrical Enclosure</b>		A Stainless steel upgrade to enhance the robustness of the electrical enclosure for the harshest of operating conditions.	●	●	●	●	●
<b>IP56 Electrical Motors</b>		An upgrade option of protection classification for the spreader electrical motor	●	●	●	●	●
<b>Electrical Enclosure Interior Lighting</b>		Interior enclosure electrical lighting designed to improve visibility during maintenance.	●	●	●	●	●
<b>Hand-Pump for Emergency Twistlock operation</b>		A Hydraulic hand-pump for manual operation of the spreader twistlocks in emergency situations. The hand-pump is fitted onto the spreader hydraulic power-pack.	●	●	●	●	●
<b>Cold Weather Pack</b>		A spreader upgrade for extreme cold weather operations.	●	●	●	●	●

## After Sales:

- Service
- Spare Parts
- Commissioning
- Refurbishments
- Health Checks



Contact us



## Our Mission

We continue to develop our product range, both in response to customers expectations and in anticipating future developments.

With such a wide range of spreader types and options, we can meet the needs of most terminal operator's but we're always happy to develop bespoke solutions to deliver the most effective and practical container handling solution.

We are proud that we are one of the world's leading independent, dedicated specialist spreader manufacturer, with manufacturing facilities in China; service and repair centres in Singapore, UK and Germany; and sales and after-sales service support throughout Asia, Americas, Europe, Middle East and Africa.

## Our products

Hydraulic Spreaders | Single & Twin Lift

Electric Spreaders | Single & Twin Lift

Lightweight Spreaders | Single & Twin Lift | Yard | STS

Twin 40 Headblock | SingFlex™

Mobile Harbour Crane Spreaders | Single & Twin Lift

Overheight Spreaders

Containerised Bulk Handling | Revolver®

Fully Automatic Twistlock Handling Machine | PinSmart™

Pipe Handling Spreader

Tipping Spreader

Bulk Handling Grabs | PEINER

## Product Range for:

Ship-to-Shore Cranes

Yard Cranes

Mobile Harbour Cranes

Bridge Cranes (Revolver®)

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Print: February 2021