

# Spreading out

**Emmanuel Mair takes a look at the latest innovative solutions that spreader manufacturers are bringing to market**

**F**or terminal operators, the search for productivity gains can often seem never-ending. Of course, for equipment manufacturers this presents both a challenge and an opportunity to entice customers with safe, reliable and high-performance equipment – including in the spreader market.

RAM Spreaders is currently focusing on its RAM SingFlex tandem headblock for multiple container lifting, which is in use at several APM Terminals (APMT) and DP World facilities. Many terminals are already familiar with the concept of lifting two 40 ft containers simultaneously. Single-hoist tandem capability allows terminals to work tandem operations for less than 3% of the capital cost of an extra ship-to-shore (STS) crane, according to RAM.

Tandem hoisting also produces benefits in the form of energy savings. Crane trolleys weigh more than 100 tonnes and, with the spreader and a normal headblock close to 20 tonnes, the

ability to add another spreader and headblock and to perform only half the number of journeys is significant. A case study comparing the lifting of 100 25-tonne loaded containers by single-lift and tandem-lift cranes has shown an energy saving of 15–20%.

Due to the cost benefits and the speedy change-over process between single and tandem operation, the manufacturer believes that large terminals will make a “logical progression” to adopt tandem and quad lifting in the next few years.

RAM's system has a fully automated rapid mode change system from single- to twin-headblock mode. According to the company, this means capital savings over a dedicated dual-hoist set-up, which is associated with high maintenance costs.

SingFlex is a single-hoist tandem lifting (SHTL) system







and uses a conventional crane design. It employs a “smart” headblock that can automatically switch from single to tandem mode, which allows two spreaders to be attached to a single hoist crane.

Transferring from single to twin mode allows cranes to handle either two 40 ft containers or four 20 ft containers in tandem mode, without the need for assistance from ground staff. This operation is performed by a crane operator in a docking station with an auto-electrical connector, and takes less than two minutes.

The operator has the ability to adjust the gap, skew angle, offset capability and height between the spreaders and containers. This is particularly necessary given the range of different conditions on ships and quays, meaning that the system has to adjust to different heights and gaps.

Eight cranes at DP World’s new London Gateway terminal in the UK were the first to use RAM’s SingFlex in commercial operation, and these were recently followed by 19 semi-automated cranes at Jebel Ali Terminal 3 in Dubai. Single-hoist tandem capability makes London Gateway the only UK container terminal able to lift two 40 ft containers or four 20 ft containers at once.

Andrew Bowen, head of engineering at the port, stated: “We are pleased that the single-hoist tandem has allowed DP World to work more productively and, as such, attract more business.”

Meanwhile, APMT has installed “tandem 40” cranes fitted with SingFlex in Lázaro Cárdenas, Mexico. RAM has also received orders for 15 units destined for automated terminals in Shanghai, Yangshan and Qingdao in China.

Gap Adjustment 0-1600mm	Longitudinal Offset ± 200mm	Skewing Angle ± 5 degrees	Vertical Float ± 1000mm

Above: The RAM SingFlex in tandem mode  
Below: Design of the RAM SingFlex

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