

Energy Efficiency
in Tandem 40
Crane Operations



The natural evolution from single to twin to tandem container lifting for terminals

ENERGY EFFICIENCY

With the world's energy resources demanding a higher premium and international efforts to reduce greenhouse emissions

being more energy efficient is top of the list of many global ports and terminals in order to reduce their emissions and remain competitive.



REDUCE AMOUNT OF ENERGY

The industry **is increasingly under pressure** to reduce the amount of energy consumed

which reduces operational costs and helps reduce the amount of emissions produced.



MORE CONTAINERS = LESS JOURNEYS

Mega ships help to **reduce the energy consumed** per box during the shipping

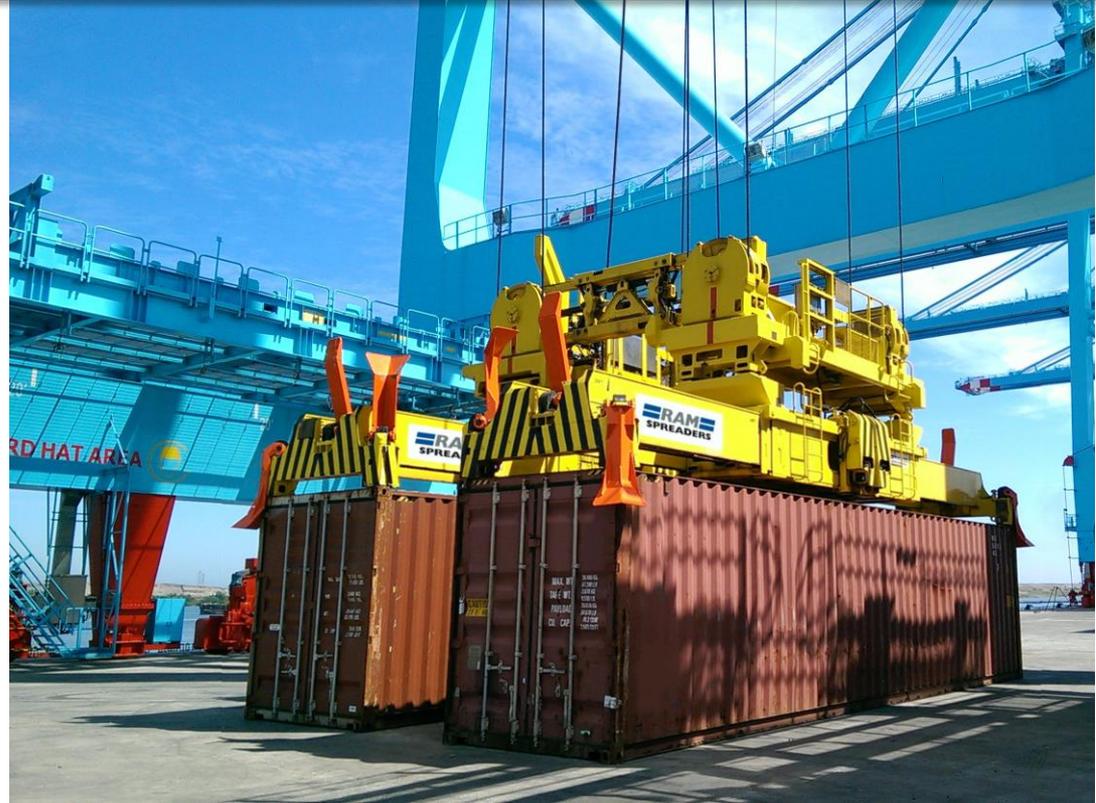
by transporting **more containers** in **less journeys.**



MORE CONTAINERS = LESS JOURNEYS

More containers by less journeys is not just limited to mega ships

it is now achievable when unloading the vessel with the use of a **tandem lift headblock**.



SINGLE HOIST TANDEM HEADBLOCKS

and now **Tandem Lift** is available for use on **Single Hoist Cranes** making it more cost effective for terminals.



INCREASING LOAD RATES AND SAVING ENERGY

Capable of lifting **2 x 40ft** containers
or **4 x 20ft** containers

The **Tandem Lift** has been designed
to increase port performance

with an emphasis on **energy
reduction** as a key design criteria.



INCREASING LOAD RATES AND SAVING ENERGY

A lightweight single hoist tandem system can reduce energy at the port **significantly more** than other green systems that just shift the source of emissions.



INCREASING LOAD RATES AND SAVING ENERGY

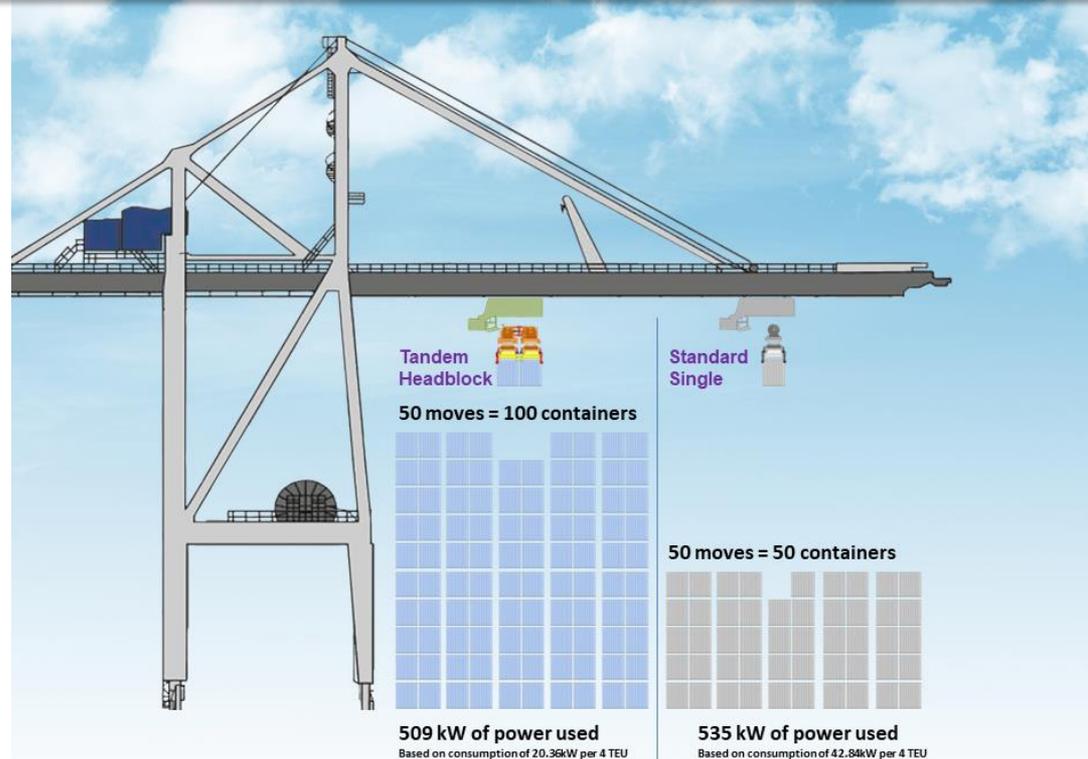
Whilst physics dictate the energy used to move a box cannot change



INCREASING LOAD RATES AND SAVING ENERGY

The moving of 100 boxes in 50 moves compared to moving 50 boxes in 50 moves...

“Significantly reduces the total energy consumed per TEU”



SINGLE & TANDEM KW PER TEU COMPARISON

Single lift

Uses on average 10.7kW of power per TEU



Tandem lift

Uses on average **5.1kW** of power per TEU. This is achieved by **lifting more containers per lift cycle**



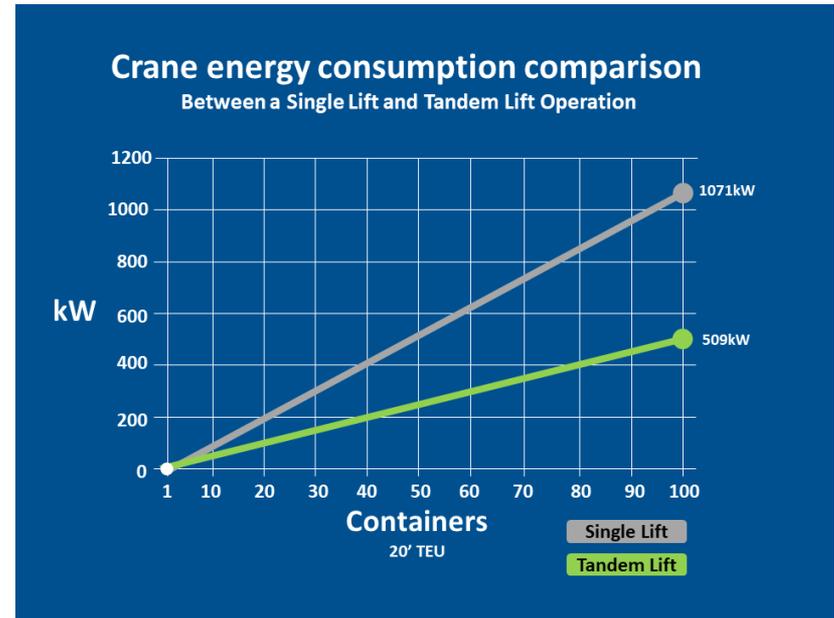
50 MOVES COMPARISON BETWEEN SINGLE & TANDEM

Single lift

Consumes 539kW of power to move 50 boxes in 50 moves

Tandem lift

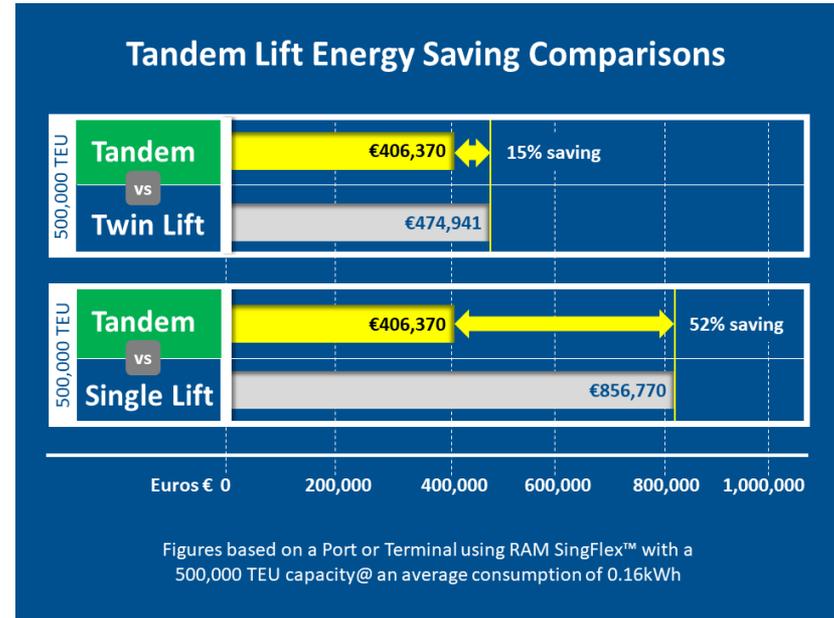
Typically uses just **509kW** of power to move **100 boxes in 50 moves**



50 MOVES COMPARISON COST SAVING

Based on an average EU tariff of €0.16 per kW

using Tandem can save a terminal up to **€450,000 Euros** per year compared to using a single lift operation



50 MOVES COMPARISON COST SAVING

Moving more containers in a lift cycle provides an opportunity for a terminal to increase its productivity and increase revenue.



50 MOVES COMPARISON COST SAVING

By reducing the amount of lift cycles per hour also **increases the longevity of the crane and spreader** because they **work less for the same TEU** output of a standard single lift cycle.



OTHER ENERGY SAVING MEASURES

Other energy saving measures such as LED lighting, efficiency of the components and synchronized movement of cranes all contribute towards energy saving measures

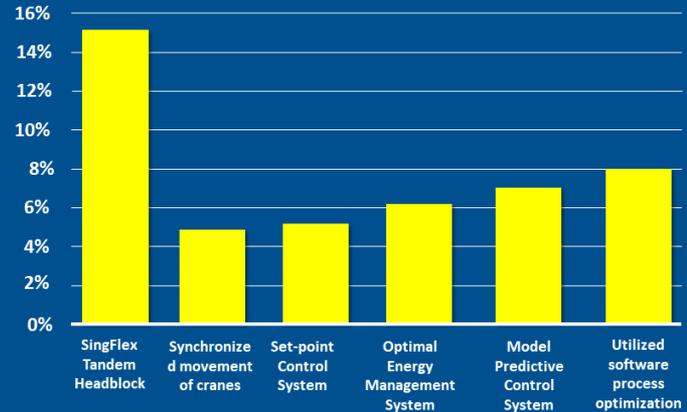


OTHER ENERGY SAVING MEASURES

However **Tandem Lift** has shown to be one of the **most significant energy saving apparatus** when compared to a standard single lift cycle

15%

Energy Saving equipment comparison



THE INNOVATION BEHIND TANDEM

Producing a machine that helps ports and terminals save **time, energy & costs** was at the forefront of **RAM Spreaders** research and development team...

...and the foresight to meet the demands for future port operations.



Also by understanding the needs of the crane operator

RAM has produced an innovative system that **maximises the ability to do tandem moves.**

[CLICK HERE FOR VIDEO](#)



QUICK CHANGE TANDEM HEADBLOCK SYSTEM

RAM provide a Tandem Headblock system which allows the crane operator to change from single to twin spreader or vice-versa **in less than 2 minutes** without calling on additional ground staff assistance.



POPULARITY IN TANDEM IS GROWING

Popularity in terminals using tandem is growing

With more than 80 units of single hoist tandem delivered in the last few years



POPULARITY IN TANDEM IS GROWING

Ports and terminals in Asia, Africa, South East Asia, North America, United Kingdom and Dubai using RAM SingFlex

now have the competitive edge by **increasing their TEU capacity** and **reducing their carbon footprint** by being more **energy efficient.**



Single Hoist Crane Tandem Lift Headblock

Helping to reduce
energy & increase
productivity for
Ports & Terminals

