



# AUTOMATIC TWISTLOCK HANDLING SOLUTIONS

*A Tradition of Innovation*

**BROMMA**



# FACING THE CHALLENGE

To fulfill the customer's need of a smooth and quick container handling, Bromma offers the technology for a fully automated container handling process.

Today stevedores are removing twistlocks during the discharge process and fixing twistlocks during the load process. They work close to suspended loads and moreover in the same area as the horizontal transport (straddle carriers, trucks).

The handling of centre twistlocks on twin and twin-tandem lifts is particularly dangerous because stevedores have to step between the containers to access them.

Bromma offer the first fully automated twistlock handling system worldwide. This system fully automates the manual coning and deconing of twistlocks on the quay or directly on STS cranes during the load and discharge process.

MRU  
21 413  
451

70



9

CAUTION HIGH CONTAINER

MRKU  
2184153

CAUTION HIGH CONTAINER



# SAFETY AND EFFICIENCY INCREASE DUE TO FULL AUTOMATION

*Today leading terminal operators aim to achieve a fully automated container handling process.*

Modern automated or partially automated terminals attain better levels of safety at work by replacing stevedores working under suspended loads on the lanes of the horizontal transport. Automation is the next step towards better planning security and safety at the same time. But only a fully automated process can provide an optimum efficiency in container handling. The weak spot in this process can be seen between STS cranes and the horizontal transport. An automatic lashing platform closes this gap.

The average time to remove four twistlocks with two stevedores has been measured to be 20 seconds. Using the ALP/ALS reduces the coning/deconing process approximately to zero seconds. Evidently, the ALP/ALS provides a huge potential for productivity increase.

The ALP/ALS is a key technology towards achieving the best possible STS crane productivity increase with single twin and tandem or quad-moves, simultaneously making this process economically viable.

***“Automation is the next step towards better planning security and safety at the same time”***



7

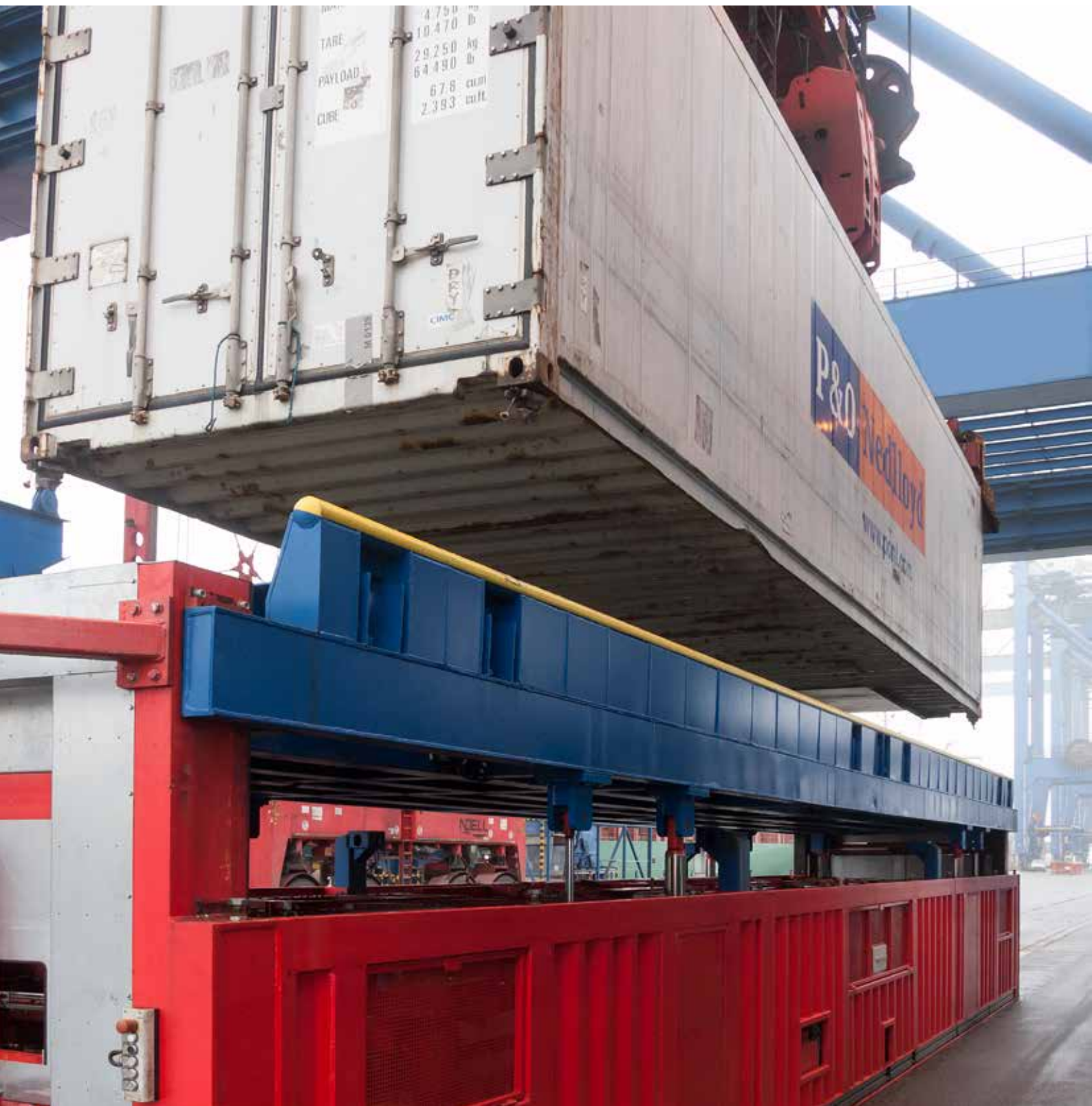
TCM 732342  
4561

# TWISTLOCK HANDLING

*Quick operation - automatic storage*

The ALP/ALS is a fast and reliable system which can fix and remove twistlocks and furthermore stores about 95 per cent of the twistlock currently available in internal stacks in a fully automatic process. The magazines can hold up to 2400 stackers, the twin lift capable ALP/ALS is equipped with eight magazines.

Given balanced load and discharge figures, the ALP/ALS magazines provide capacity for discharging and loading a full deck or hold of containers of the 14.000 TEU container vessels of the last generation.





*“95% of the current market share can be handled by the ALP/ALS systems”*



**Commonly used twistlocks of following manufacturers are handled by the ALP/ALS**

All Set  
Boen N&P Marine  
Container Technics  
CS/SC  
German Lashing

General Lashing Systems  
Int. Lashing Systems  
KOEI  
MacGREGOR  
Morrison Marine

Peck&Hale  
Seasafe  
SEC  
SCLashing

Somec  
TAIYO  
TEC  
Wader MEC

# CUSTOMIZED SOLUTIONS FOR YOUR INDIVIDUAL TERMINAL OPERATION

*Two Automated Twistlock Handling Solutions*





# ALP

**Driven by a self-sufficient hydraulic system, best for straddle carrier terminals, no external energy supply is required, easily portable by STS crane and straddle carrier**

Especially green terminals with a high environmental awareness will prefer this version of the ALP. This product meets all the requirements of a CO2 reduction and offers a wide variety of green credentials. Neither electricity nor diesel is required when using the ALP for operation under the STS crane.

# ALS

**The solution for STS-cranes with pre-installed lashing platforms**

A system designed to be installed and operated directly on STS cranes in pre-installed lashing platforms with the same twistlock technology features as the ALP. The ALS is integrated in a small frame, and can be operated electrically or electro-hydraulically according to customer requirements. Due to its position on the crane above the quay area, the ALS concentrates the pinning process on its isolated position, thus separating the different operational areas, making them independent. The ALS can be connected to the power supply of the STS crane.

## Core Benefits ALP/ALS

» Safety increase. Manual pinning is a dangerous job and many accidents are reported every year. By eliminating this manual work, the terminal safety will increase instantly.

» Productivity increase. By automating the twistlock handling-one step in the logistic chain is reduced. The time for pinning is reduced to zero seconds and means no interruption to the moving of the container between the ship and the Straddle Carrier.

» Environmental friendly. Green credentials, no CO2 emission. Lower noise emission.

» Cost reduction. Fewer personnel needed in the terminal.

» Easy integration. ALP/ALS can be integrated into individual terminals operational processes.

# THE MISSING LINK

*The ALP/ALS closes the gap in the automated working process*

## »High Durability

all ALP versions consist of a steel frame construction, designed to withstand the impacts and forces occurring during load and discharge operations

## »Productivity Increase

due to a reduced pinning time to zero seconds

## »Safety Increase

by removing stevedores out of the hazardous areas

## »Damping System

smooth operation through integrated hydraulic damping technology absorbing high forces, reducing the impact on cargo, equipment and quay structure

## »Fully Automated Quayside Twistlock Handling

automated devices remove the twistlocks and store them in magazines for re-attachment during load operation (controlled by a PLC system)

## »Remote Control for Machine Management

- easy configuration, setup and control from operator or crane cabin by means of WiFi panel
- easy control from crane cabin or service point by LAN/WIFI

## »Handling of All Standard Containers

20', 20' twin lift, 40', 45' with twistlocks on 40' or 45' positions, reefers, open tops and flat racks

## »Optional TOS Integration

providing all determined and relevant data for your TOS in real time through a secure WiFi/LAN connection

## »Low Noise Emissions

the integrated damping system reduces operational noise to a minimum

## »Flexible Integration in Terminal Operation

easily portable, fast start-up after change of site, quick and easy maintenance

## »Wide Range of Operational Areas

the ALP is flexibly applicable on the lanes or on STS cranes as well as in empty-stacks for vertical tandem, depending on terminal operational logistics and easily movable by straddle carrier and STS crane

## »Weight Measurement

checking the container weight during pinning operation

## »No External Power Supply, No CO2-emissions

generating the energy needed for operation by means of the container weight, makes the ALP extremely efficient and independent from external power supply like fuel and electricity – a maximum of flexibility for your operation



» CARGOTEC SWEDEN AB  
BROMMA CONQUIP  
Box 1133, Malaxgatan 7  
SE-164 22 Kista  
Sweden

☎ +46 8 620 0900  
☎ +46 8 739 3786  
✉ [sales@bromma.com](mailto:sales@bromma.com)  
[www.bromma.com](http://www.bromma.com)

*A Tradition of Innovation*

**BROMMA**