

INDUSTRIAL CRANES
NUCLEAR CRANES
PORT CRANES
HEAVY-DUTY LIFT TRUCKS
SERVICE
MACHINE TOOL SERVICE

CONTAINER LIFT TRUCKS

KONECRANES[®]
Lifting Businesses[™]

Empty 8–10 tons, laden 33–45 tons
CONTAINER LIFT TRUCKS
WITH HEART







TAKING CONTAINER HANDLING TO A HIGHER LEVEL

Konecranes has a long history of working with leading container ports and terminals that are expert buyers and operators of container lift trucks. Our customers demand a lot of us, and we have a long track record of meeting their requirements year after year.

Empty container lift trucks

Empty containers have to be moved out of the way and brought back into play, with the greatest possible efficiency. Our empty container lift trucks offer a very fast total operating speed as a function of lifting, lowering, and driving speed based on load-sensing hydraulics. The range has mid-mounted or rear-mounted cabins and excellent stability.

Laden container lift trucks

Laden containers need to be moved with the right balance of efficiency and precision within the container handling process. Our laden container lift trucks offer a fast total operating speed (lifting + lowering + driving speed). The ratio of lifting capacity to truck size and length is best-in-class. These heavy-duty top-loaders are very stable and still rather compact.

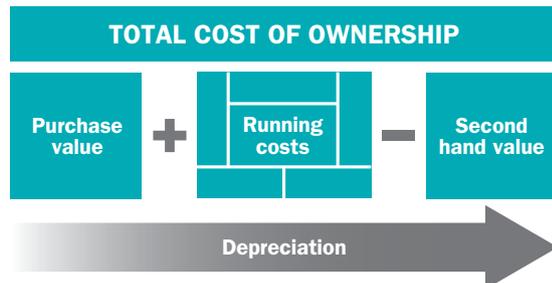


**Made with heart
in every detail**

**SMARTER
WHERE IT
MATTERS**

Konecranes has been manufacturing, selling, and supporting heavy-duty lift trucks for some 60 years. Buy a container lift truck from us today and you will get the latest technology, the lowest Total Cost of Ownership, and a lift truck made with heart.

We claim the lowest Total Cost of Ownership with our container lift trucks, understood as an equation running over a time period of years as shown below. When you're shopping around the suppliers and comparing prices, our truck will probably not be the cheapest. But it will provide the best value over time.



Close to you

We sell our lift trucks around the world in two main ways: directly via our own sales and service organizations, and indirectly via distributors. In both cases, our container lift trucks are fully supported with spare parts and personalized service. Konecranes has the widest service reach of any company in the lifting business. And our distributors are some of the most respected in the business.

Service made easy

To reduce lifetime running and maintenance costs, we have extended the service interval of the engine by 500 hours, the gearbox by 1000 hours, and the hydraulics by 4000 hours.

Our HLL ultra-fine filter system extends the hydraulic oil change interval from 4000 up to 12000 hours. In practice, you will use up to 80% less hydraulic oil than with a conventional hydraulic system.

GENUINE KONECRANES PARTS

Genuine Konecranes parts are the best protection for your investment. They pay off in truck performance and uptime.

PARTS ONLINE

> Easy to find, easy to buy

REAL-TIME SHIPMENT INFORMATION

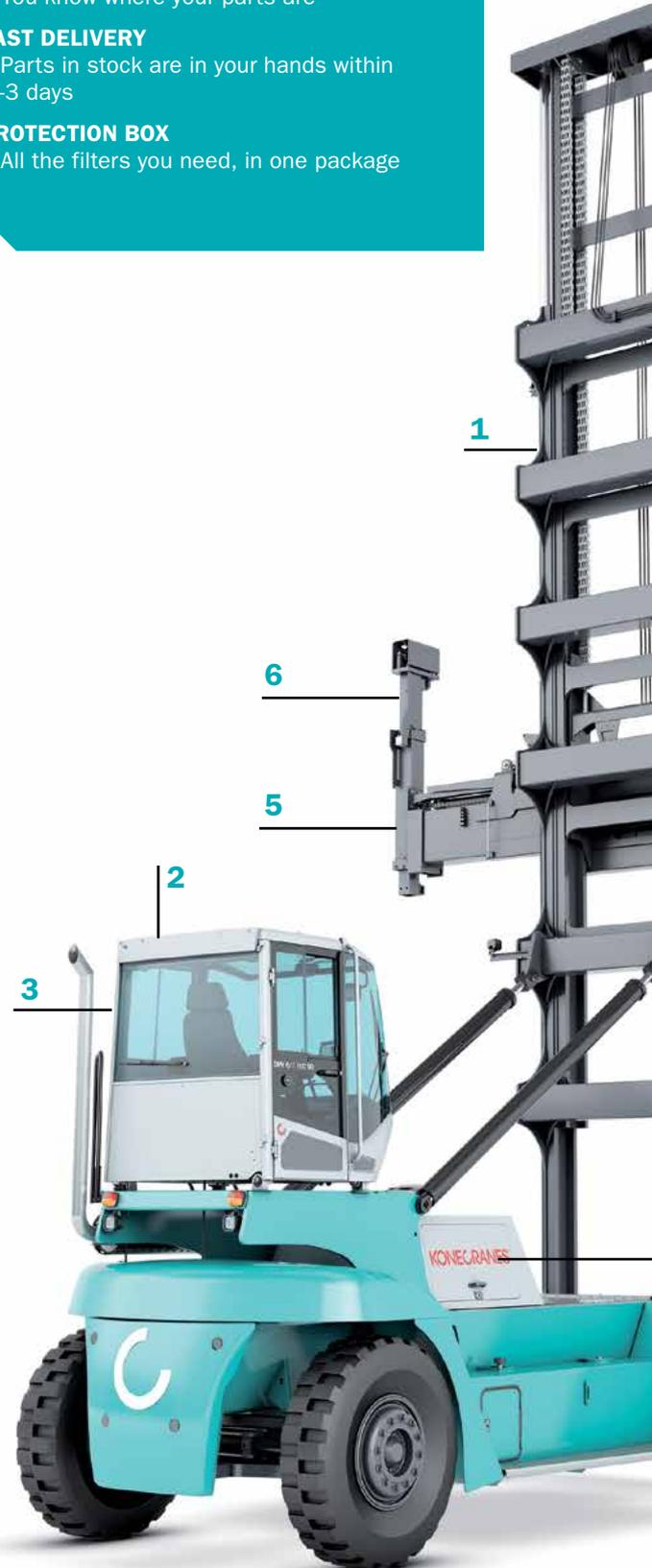
> You know where your parts are

FAST DELIVERY

> Parts in stock are in your hands within 1–3 days

PROTECTION BOX

> All the filters you need, in one package



LADEN CONTAINER LIFT TRUCKS

1 Reliable lifting

Lift masts adapted for laden container handling. Hoses and cables kept to a minimum for low maintenance costs and maximum uptime.

2 Single stacking spreader

Toplift handling of 20–40 ft containers, 45–53 ft containers are lifted in 40 ft position with the 4 twistlocks. There are 4 lift eyes for sling cargo, large sideshift, reach in & out, slew left & right, and mechanical pile slope. Large sideshift, mechanical pile slope, and optional hydraulic pile slope.

3 Maintenance-free brakes

Brakes with continuous oil cooling provide full braking power in every situation.

4 Powerful engine

Certified low-emission engine provides extra high torque at low revs, reduced fuel consumption, and low noise levels. We offer a variety of engines for EU stage 4 and EPA Tier 4f.

5 Excellent stability

Wide drive axle and long wheelbase: the two keys to excellent stability.

6 Heavy-duty box-type chassis

The strongest on the market. The foundation of long-lasting high performance.

7 OPTIMA – probably the best cabin on the market

Every detail has been carefully designed for comfort and safety. Controls, displays, ventilation, and seating work to boost driver productivity. Excellent visibility in all directions.



EMPTY CONTAINER LIFT TRUCKS

1 Very fast lifting and lowering

The trucks can lift 8 containers high thanks to the wide mast: hoses and cables are kept to a minimum for low maintenance costs and maximum uptime. Heavy-duty mast and tilt cylinder solution for high stability and safety.

2 Electronic Machine Control, EMC Master

Full monitoring of all the vital components and functions on a 7" touch screen. Programmable settings. CanBus technology increases engine and transmission reliability as well as hydraulics and joystick.

3 OPTIMA – probably the best cabin on the market

Every detail has been carefully designed for comfort and safety. Controls, displays, ventilation, and seating work to boost driver productivity. Excellent visibility in all directions.

4 Powerful engine

Certified low-emission engine provides extra high torque at low revs, reduced fuel consumption, and low noise levels. We offer a variety of engines for EU stage 4 and EPA Tier 4f.

5 Smart load-sensing hydraulics

They sense the load and adapt the lifting power to the weight of the load. The truck provides maximum power only when really needed, so it consumes less fuel while reducing emissions and noise.

6 Single and double stacking

Sidelift handling of 20–40 ft containers, 45–53 ft containers are lifted in 40 ft position with the twistlocks only. Large sideshift, mechanical pile slope, and optional hydraulic pile slope. Single mode lifts up to 8 containers high. Double mode lifts up to 2-over-6.

7 Maintenance-free brakes

Brakes with continuous oil cooling provide full braking power in every situation.

**Satisfied customers
around the world**
**OUT IN
THE FIELD**

**Konecranes
container lift
trucks are hard
at work around
the world as an
essential part of
container port
and intermodal
operations.**



Empty stacker, China



Empty stacker, Netherlands



Laden top-loader, United Kingdom



Laden top-loader, Saudi Arabia



Empty stacker, Indonesia



Laden top-loader, Australia



Empty stacker, Belgium



Empty stacker, Germany



Laden top-loader, USA



OPTIMA ENHANCED SPACIOUSNESS AND VISIBILITY

Customized for your container handling needs.

When you step inside OPTIMA cabin, you find outstanding spaciousness and superior visibility. That makes operating the lift truck safe and efficient, along with valuable extra equipment.

The remarkable visibility is made possible by very large, lowered windows with no corner posts, thin but very strong roof crossmember, and curved panels. Sightlines to key working areas are clear both in the front, to the sides, and to the rear.

New EMC Master with MD4 7" touch screen enables a more spacious cabin with its integrated solutions. There is also more space for operating the foot pedals.

The positioning of the instrumentation improves operating ergonomics. Instrumentation has been moved from the driver's left side to his right, above his seat, where it is conveniently accessible.

OPTIMA is customizable for your exact operational needs. You can select mini-wheel steering, lever steering, the driver's seat, and precisely the instrumentation that you need. The empty handlers have set cabin positions for optimized visibility: mid-mounted or rear-mounted on the chassis. The laden handlers have a forward-mounted cabin (3–4 high) or a raised, mid-mounted cabin (4–5 high).

1 Remarkable visibility

You know great visibility when you see it. Sitting down in OPTIMA shows you what superior visibility means.

2 Electronic Machine Control, EMC Master

Full monitoring of all the vital components and functions on a MD4 7" touch screen. Programmable settings.

CanBus technology increases engine and transmission reliability as well as hydraulics and joystick control.

3 Left armrest lever or mini-steering options

Optional, ergonomic steering solutions that improve productivity.

4 Ergonomic instrumentation

Whatever extra equipment you need, we can install it as part of an ergonomic instrumentation layout. OPTIMA is truly spacious.

5 Comfort

An excellent seat, powerful cabin heating and ventilation, air conditioning – the driver is provided with every possible comfort.

6 Joystick control

Available with electronic joystick with auto accelerator/power control.





Lever steering with return



Mini-wheel steering



Lever steering without return



Remote control unit for rail and barge handling

A world of options

BOOSTING SAFETY AND EFFICIENCY

Konecranes invests significantly in container lift truck R&D to be the first to offer new technologies that improve performance and safety. We also ensure that our container lift trucks are fully compliant with emissions regulations, anticipating their evolution as a normal part of our product development process.

Emissions-compliant diesel engines

We offer a wide range of powerful Volvo and Scania engines certified according to EU stage 4 and US EPA Tier 4f.

EMC Master

Our Electronic Machine Control system, EMC Master, provides the following functions as standard:

- Full truck monitoring
- ECO-Drive and fuel management
- Productivity counter management
- Auto accelerator / power control
- Data logging of alarms and errors
- Driver log-in (20 drivers)

The following functions are optional:

- Electronic weight scale
- Mini-wheel steering
- Lever steering
- Auto engine shut-down
- Auto parking brake
- Auto tilt-to-zero of lift mast
- Remote Access Service via GPRS/(3G)
- Drive speed limitation (unloaded/loaded)
- TRUCONNECT Remote Services

TRUCONNECT Remote monitoring for lift trucks

The TRUCONNECT Remote Monitoring service enables you to track the real usage of your lift trucks through a remote connection. It provides you with an online view as well as periodic PDF and Excel reports that illustrate the actual use of your lift trucks. The data gives you confidence to not only plan your actions but also to make informed decisions regarding maintenance investments and productivity.

TRUCONNECT Basic

- Safety alerts
- Machine status
- Average fuel consumption
- Average fuel consumption per lifted load
- Total fuel consumption
- Traveling distance
- Average traveling speed
- Load spectrum
- Total load lifted
- Alarm fault codes from engine and transmission

TRUCONNECT Premium

- All the features included in TRUCONNECT Basic AND
- Tyre pressure monitoring
- Shock sensors
- Alarm on emails and SMS
- GPS signal
- Data on command

TRUCONNECT Premium+

- Features included in TRUCONNECT Basic
- Features included in TRUCONNECT Premium AND
- Hydraulic oil particles counter and water content

Tire pressure

Under-inflated tires can increase fuel consumption by as much as 15% while impairing stability and drivability. Our tire pressure monitor makes it easy to keep your lift truck tires properly inflated. It's installed in minutes. If you combine it with the drive speed limitation provided by EMC Master, you can extend the life of your tires even further.

Fire alarm and suppression system

We offer an effective fire alarm and suppression system that can be activated either manually or automatically. When the lift truck is in use, the system discharges in three ways: manually from inside the cabin; manually from outside via a mudguard trigger; automatically by sensors in the engine compartment. When the truck is not in use, i.e. when the master power switch is turned off, the system discharges automatically when the fire alarm goes off.

Other safety options

- Parking Distance Control (PDC): with sensors for driving in reverse
- Breath Analyzer: an alcohol test unit which requires the driver to take a breath test before starting the lift truck
- Camera Supervision System: can be mounted as a reversing camera on the rear of the lift truck, or as a forward camera mounted on e.g. the mast

1 EMC Master – full monitoring of all the vital components and functions on a 7" touch screen

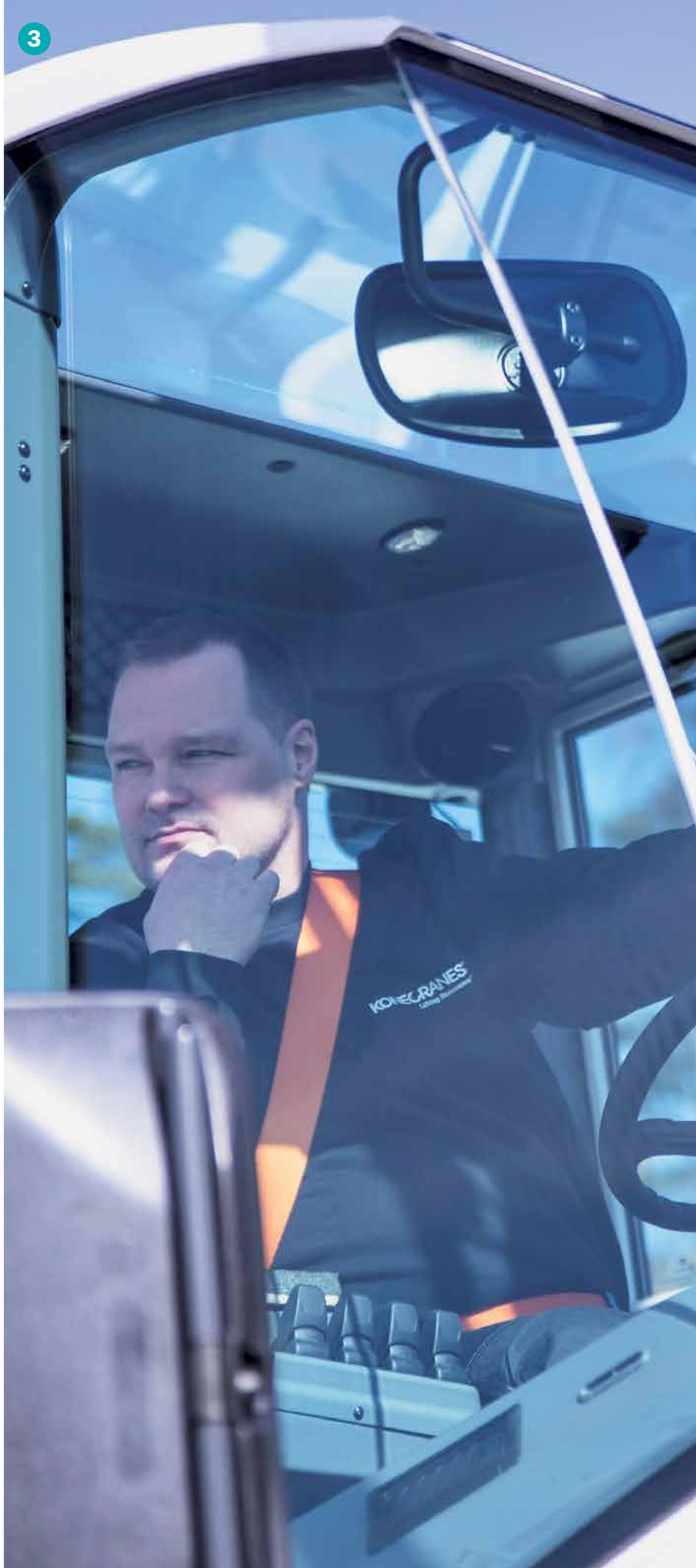
2 TRUCONNECT remote monitoring and reporting for lift trucks

3 Cabin options: keyboard, reading lamp, side mirror, side-mounted roof wiper, sun visor roof & front, compressor seat etc.

1



3



2

REMOTE WORKFLOW



Portal



Konecranes Remote Data Center



Modem



Getting the job done right

ATTACHMENTS

For empty container handling



ELME 588-TB single stacking spreader

Telescopic sidelif spreader for empty ISO containers with capacity up to 9 tons. Strong and well-proven single beam spreader design, two floating heads (± 70 mm) with hydraulic operation and mechanical safety locking. Hydraulic extension with 2 cylinders (20–40 ft), large sideshift (± 300 mm) with 1 cylinder. Spreader side tilt with floating end-posts (stroke 200 mm / mechanical pile slope). Hydraulic pile slope (± 6 deg) and longer sideshift (± 600 mm) are optional. Four strong LED work lamps (top-bottom/left-right).



ELME 584-LB double stacking spreader

Telescopic sidelif spreader for single and double stacking of empty ISO containers with capacity up to 10 tons. Strong and well-proven single beam spreader design, with two fixed horizontal lifting hooks and two hydraulic side clamps with safety locking and sensors. Same extension 20–40 ft, large sideshift, side tilt with vertical floating end-posts (mechanical pile slope). Hydraulic pile slope (± 6 deg) and longer sideshift (± 600 mm) are optional. Four strong LED work lamps.

For laden container handling

ELME 818 gantry-type spreader

Telescopic toplift spreader for laden ISO containers with capacity up to 45 tons. Strong and well-proven parallel double beam spreader design, pendular twistlock system (± 10 mm) with hydraulic operation and mechanical safety locking. Hydraulic cylinder extension (20–40 ft), large sideshift (± 200 mm), reach in/out (0–240 mm), and slew left/right (± 6 deg). Spreader side tilt with stroke of ± 5 deg (MPS mechanical pile slope) and 4 lift eyes included for slings (45 tons). Hydraulic pile slope HPS is optional (± 6 deg). The spreader frame and the end beams are of strong heavy-duty design. Weight 818-MPS/HPS = appr. 7.1 tons.





ELME 582-LS double stacking spreader

Telescopic sidelifte spreader for single and double stacking of empty ISO containers with capacity up to 10 tons. Strong and well-proven single beam spreader design, with two pairs of horizontal twistlocks and safety locking with sensors. The lower twistlock pair lifts the lower container and the upper twistlock pair lifts the upper container, each twistlock pair with safety locking and sensors. The upper pair has a retract stroke of 110 mm (4,3") for alignment of the upper container. Same extension 20–40 ft, large sideshift, side tilt with vertical floating end-posts. Hydraulic pile slope (± 6 deg) and longer sideshift (± 600 mm) are optional. Four strong LED work lamps.



Empty container handlers

Single stacking
3–6 high
up to 8 tons



Single stacking
5–8 high
up to 9 tons



Double stacking
4–8 high
up to 10 tons



MODEL NAME	CAPACITY	WHEELBASE
SMV 3 ECC 80	8 tons at 1220 mm	3750 mm
SMV 4 ECC 80	8 tons at 1220 mm	3750 mm
SMV 5 ECC 80	8 tons at 1220 mm	3750 mm
SMV 6 ECC 80	8 tons at 1220 mm	3750 mm

MODEL NAME	CAPACITY	WHEELBASE
SMV 5/6 ECC 90	9 tons at 1220 mm	4500 mm
SMV 6/7 ECC 90	9 tons at 1220 mm	4500 mm
SMV 7/8 ECC 90	9 tons at 1220 mm	4500 mm

MODEL NAME	CAPACITY	WHEELBASE
SMV 4/5 ECC 100 DS*	10 tons at 1220 mm	4500 mm
SMV 5/6 ECC 100 DS*	10 tons at 1220 mm	4500 mm
SMV 6/7 ECC 100 DS*	10 tons at 1220 mm	4500 mm

*DS = double-stacking spreader

Laden container handlers

Low cabin
3–4 high
33–35 tons



MODEL NAME	CAPACITY	WHEELBASE
SMV 37 GC3-GC4	35/33 tons at 1490/1730 mm	5000 mm

High/mid cabin
4 high
33–35 tons



MODEL NAME	CAPACITY	WHEELBASE
SMV 37 GC4S	35/33 tons at 1490/1730 mm	5000 mm

Low cabin
3–4 high
41–45 tons



MODEL NAME	CAPACITY	WHEELBASE
SMV 45 GC3-GC4	43/41 tons at 1490/1730 mm	5500 mm
SMV 52 GC3-GC4	45/43 tons at 1490/1730 mm	6000 mm

High/mid cabin
4–5 high
41–45 tons



MODEL NAME	CAPACITY	WHEELBASE
SMV 45 GC4S-GC5S	42/41 tons at 1490/1730 mm	5500 mm
SMV 52 GC4S-GC5S	45/43 tons at 1490/1730 mm	6000 mm

HOW TO REDUCE TOTAL COST OF OWNERSHIP

Keep to preventive maintenance schedules no matter how much operational pressure and temptation prevent you from doing so.

USE KONECRANES GENUINE SPARE PARTS

VALUE

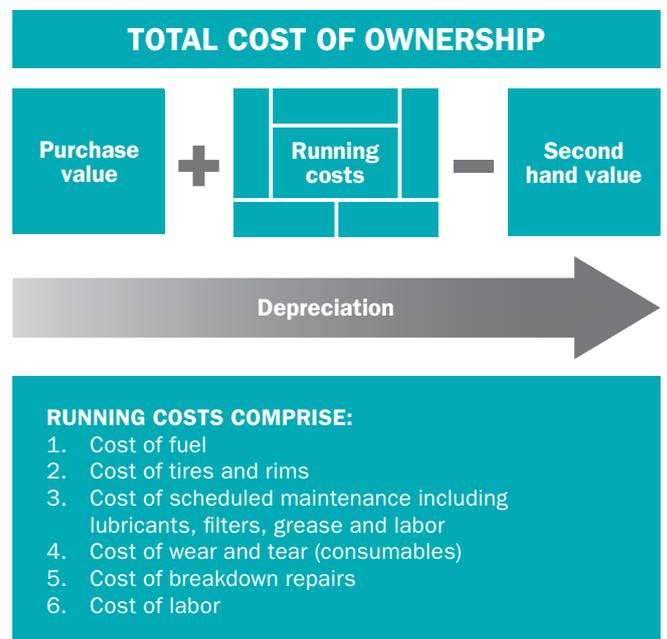
When you're in the market for a spare or replacement part, how do you calculate its value? Is price your only consideration? We all know that you can look online and find non-OEM suppliers offering cheap prices. However, are these cheap parts truly a value? We don't believe they are. Instead, we believe there's inherent value in purchasing from the original manufacturer of the equipment. That value is reflected in engineering expertise, upgrades and new features not available elsewhere. Ultimately, it will also be reflected in optimal operational performance.

WARRANTY

KONECRANES Genuine Parts are covered by a 6-month warranty and are the only replacement parts that will not impact the validity of your KONECRANES's manufacturer's warranty.

- ✓ **All Konecranes lift trucks are equipped with a load-sensing hydraulic system.** This system uses the engine power only as needed at each moment of the lift, based on the load and required lifting speed. It always provides power-on-demand. If you are driving and not lifting, the system turns off the oil flow. The result is reduced fuel consumption and reduced engine and drive train wear.
- ✓ **Use TRUCONNECT Remote Monitoring and Reporting for Lift Trucks, a first in the industry.** TRUCONNECT allows you to track the real usage of your trucks through a remote connection. It provides online views and reports containing information that will prove invaluable in efforts to improve fleet efficiency, productivity and safety.
- ✓ **TRUCONNECT Premium+ includes for example a tire pressure management system** to reduce tire wear, save fuel and increase safety. Proper inflation of tires provides proper stability, allowing work at the rated maximum load. It extends tire life by as much as 25–50 %, and cuts fuel consumption by as much as 10–25 %. **Shock sensors** in order to detect possible safety concerns and to increase production efficiency. **Hydraulic oil particles counter and water content** in order to measure the particles and the amount of water content in the hydraulic oil. This gives you a better insight into how your oil is doing and when it's actually time to either clean or replace it.
- ✓ **Extend the hydraulic oil change interval by using the Hydraulic Long Life (HLL) filter.** Using an HLL filter makes it possible to extend the recommended oil change interval from 4,000 running hours to 12,000 running hours. You save money and increase truck uptime while helping to preserve the environment. Meanwhile, the HLL filter helps to keep the entire hydraulic system clean: filtration particle size is max. 3 microns. It also reduces the amount of condensed water that gets into the oil tank. All of the hydraulic components work better with the HLL filter.

- ✓ **Start using the following fuel-saving technologies and features:**
 - Use the "auto-throttle" function to optimize engine speed settings.
 - Use the drive speed limiting function to limit the maximum travel speed for example, 15–25 km/h (unloaded) and 10–20 km/h (loaded). These speeds are adjustable and programmable.
 - Use the automatic engine shut-off feature. The limit for idling can be programmed between 2–10 minutes.
 - Reduce fuel, lubricating oil and filters consumption to prolong the life of the engine and achieve a lower noise level.
- ✓ **Start using the Konecranes EcoDrive module to monitor driving habits.** Use the EcoDrive fuel graph, running the engine in the green-to-yellow field only, and try to avoid the red field. The EcoDrive module records driving data so that trucks and drivers can be benchmarked and compared. It's an operational tool for training your drivers to operate your trucks in the most economical and environmentally friendly ways.
- ✓ **Konecranes reach stackers are equipped with auto-throttle.** Autothrottle/automatic engine RPM increase (transmission in neutral) when the boom and/or spreader is being operated, maximizing productivity and optimizing fuel consumption. This smart feature is available for every Konecranes lift truck as an option: EMC 1.14 Electronic Servo Control.
- ✓ **Konecranes reach stackers and container lift trucks comes as standard with traveling mode function.** This function prevents the operator from driving at full speed if the container is not in the correct driving position, helping to minimize breakdowns and reduce wear and tear. The load distribution should be 1/3 on the two steering tires and 2/3 on the four drive tires.
- ✓ **Carry out annual inspections of your lift truck fleet.** It's a simple fact that preventive maintenance and repairs are much more cost-effective than post-breakdown maintenance and repairs. Konecranes offers an annual fleet inspection service that will maximize your fleet uptime over the long haul. It provides detailed reports on the status of each truck and expert recommendations for keeping your trucks running at peak performance.
- ✓ **Do you operate your trucks in a cold, hot or dusty climate?** If you work in a cold climate, start using our pre-heaters for the engine, transmission and hydraulics. If your trucks work in a hot environment, e.g. steel production, use our heat protection options. If it's a dusty environment, look into our filter options.



NTB North Sea Terminal Bremerhaven

A LARGE EUROPEAN CONTAINER TERMINAL

NTB North Sea Terminal Bremerhaven GmbH & Co. is one of the largest European container terminals. It handles over 3 million TEU annually with links to 130 ports around the world. NTB serves about 45 ships per week in Bremerhaven, using six berths for large ships and a container yard of more than 1 million m². About 200,000 empty containers are handled in the terminal every year.

Requirements

NTB has strict requirements for its empty container handlers to ensure uninterrupted, high-performance handling. The goal is to serve larger container ships and a fast-growing volume of containers.

Konecranes solution

NTB has been using Konecranes empty container handlers since 2004. They are high-capacity machines that are operated for up to 3,500 hours annually. NTB replaces the machines after four years of service and recently purchased a new 10-ton SMV 5/6 ECB 100 DS. The new machine has a very high handling speed, high availability, an ergonomic design, low fuel consumption, low noise levels and low service costs.

What does NTB say?

“The new Konecranes empty container handler ensures high container handling productivity and makes further growth possible. Another good thing is that fuel consumption and emissions could be lowered, which is good for the environment and the climate,” says Thorsten Kosog, Technical Coordinator of NTB North Sea Terminal Bremerhaven GmbH & Co.



NTB handles about 200,000 empty containers annually. Their newest Konecranes empty container handler is an SMV 5/6 ECB 100 DS with a load carrying capacity of 10 tons, lifting up to 7 containers high. It can stack both single and double containers.



“The new Konecranes empty container handler ensures high container handling productivity and makes further growth possible.”



True 10-ton twin stacker

The new empty container handler is particularly powerful thanks to its load carrying capacity of up to 10 tons and its high lifting and lowering speeds. It lifts up to 7 containers high and is fitted with a double-stroke frame which allows it to handle two empty containers at the same time, if necessary.

Low fuel consumption

Fuel consumption is kept low thanks to special load-sensing hydraulics. The driver's cabin provides excellent visibility over the entire operational area. It is also fitted with noise and vibration damping, a swiveling driver's seat and a heating and defrosting system.



The SMV 5/6 ECB 100 DS can lift two containers at the same time with high handling speed, low fuel consumption and low noise emissions.

VITAL STATISTICS

Lift truck type	SMV 5/6 ECB 100 DS	Engine	Scania DC 9-64 A with CanBus
Load carrying capacity	10 tons	Hydraulics	Parker Load Sensing System with variable pumping capacity for lower fuel consumption and reduced stress on motor and system components, joystick control
Lifting gear	Duplex-standard		
Lifting height	16.42 m		
Height (unextended)	9.12 m	Cabin	Ergonomic with noise and vibration damping, heating and defrosting system, joystick control of lifting functions
Height (extended)	16.89 m		
Lifting speed	0.73/0.63 m per second (without load/with load)	Special features	Integrated, hydraulically adjustable spreader type Elme 584 with hooks and side clamps
Lowering speed	0.60/0.60 meter per second (without load/with load)		



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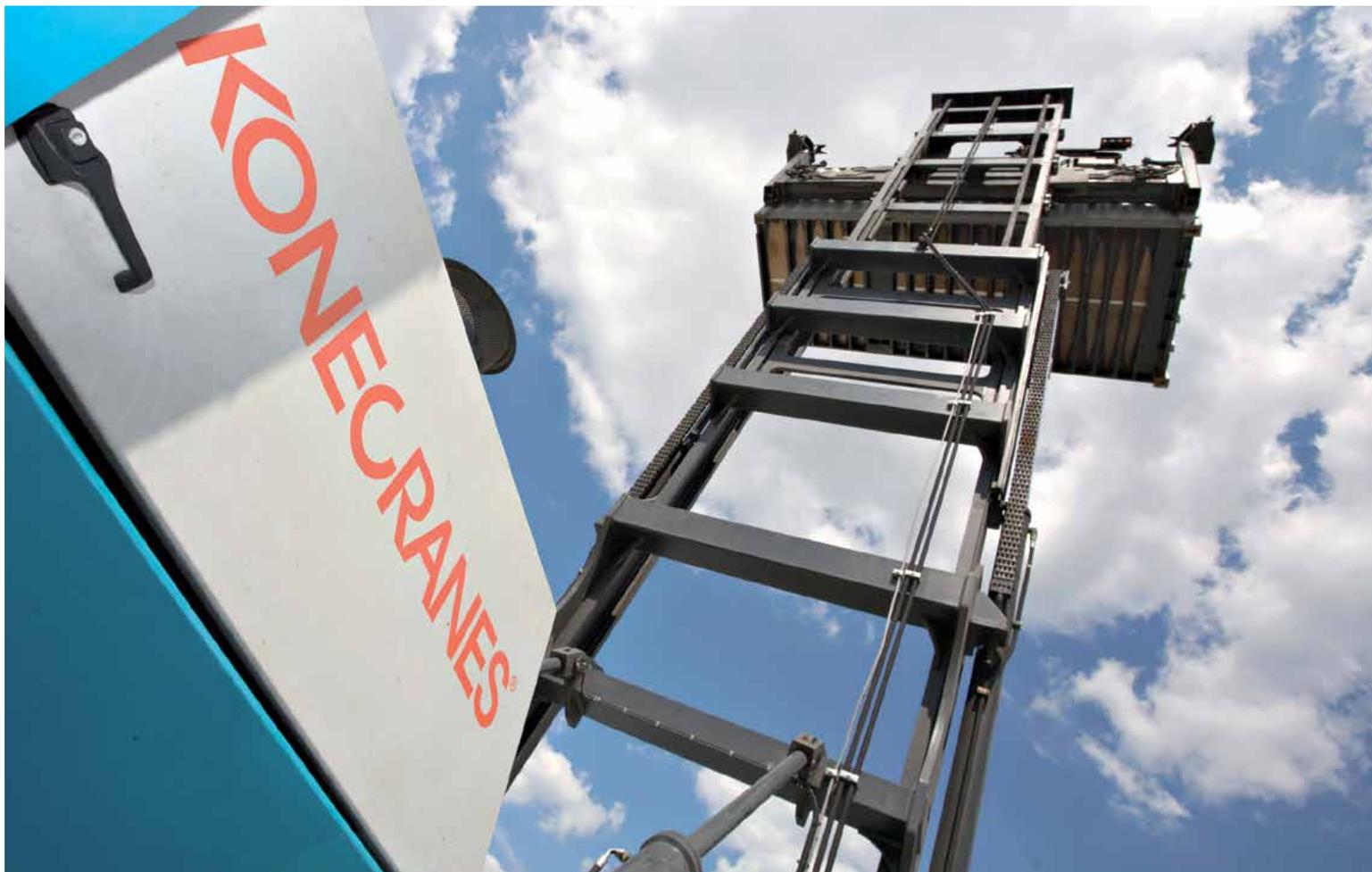


MACHINE
TOOL
SERVICE



Konecranes is a world-leading group of Lifting Businesses™ offering lifting equipment and services that improve productivity in a wide variety of industries. The company is listed on Nasdaq Helsinki Ltd (symbol: KCR1V). With almost 12,000 employees at 600 locations in nearly 50 countries we have the resources, technology and determination to deliver on the promise of Lifting Businesses™.

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