

Expect  
**MORE**



The Kalmar DCG80-110  
Empty Container Handler range.





# MORE for you

Our extensive range of Kalmar empty container handlers offer you more than they ever have before, which means you get more for your money.

## **The market's largest range.**

You get more choice of machines, with a range of single stackers in 8, 9, 10 and 11 tonne capacities and lifting heights from 4 to 8-high. Double stackers are available in 10 and 11 tonne capacities, with stacking heights from 4+1 to 8+1-high. Plus, a greater choice of drive lines and performance levels that you can match to your individual needs. More comfort for your drivers, as all of our new range comes with our state of the art EGO Cabin, which can be situated in either a high or low position on the chassis.

A more robust and efficient range, with the highest lifting and lowering rates and dramatically reduced running costs per move. Plus easier access for service and maintenance and more options across the whole range to choose from than ever before.

No matter how you look at it, the new range of Kalmar empty container handlers gives you more.

## Expect nothing less.

With nearly 10,000 empty container handlers built to our high standards over the last 30 years, it's no surprise that 1000's of them are still in operation today. In fact over 90% of our customers say they would repurchase a Kalmar empty container handler again, primarily for their superior durability and reliability and the local Kalmar support and service network.

MORE  
for you

*The operability and control of the Kalmar empty container handler is extremely good. It's agile, suitable for any empty container yard.*

Zhang Lin. Operator at NingBo Beilun International Container Terminals Ltd.

*To us, Kalmar offers the best machines. It's the safest truck we've used. Kalmar also offers excellent service support.*

He Jianguo.  
Container Handler Unit leader, G-Fortune (Ningbo) Company.



# You can expect more across **ENTIRE RANGE**

## **MORE** options

Now more safety features and options to customise your machine than ever before. From reverse warning systems to a range of different drive lines and spreaders.

## **MORE** return

Higher productivity with lower fuel consumption and less emissions means a greener and lower cost per move. Longer servicing intervals with easier access for service and maintenance, saving you time and money. Plus, the highest re-sale values in the market.

## **MORE** robust

Built on our proven G-Generation platform you get a stronger chassis with high and rear mounted cylinder package for improved stability and toughness. You also get upgraded drive axles with oil-cooled wet disc brakes and a wider rear steer for greater stability when lifting heavy loads to heights.



**Double stackers,  
up to 11 tonnes,  
high mounted cabin.**

## **MORE** choice

You can choose from either a single stacker with 4 lifting capacities or a double stacker with 2 lifting capacities. There are 4 different cabin offerings, with low or high mounting and the choice of single or dual access stairways. All machines can be equipped with mechanical or hydraulic side tilt or pile slope and there are 6 spreader choices.

## **MORE** efficient

Proven, powerful and efficient drive lines in both medium and high performance versions with 3 or 4 speed fully automatic transmissions and a choice of engines that meet current emission standards (EU stage 3-4-5 / EPA Tier 3 and 4F). The added efficiency of standard load sensing hydraulics (power-on-demand) and a choice of options for greater fuel efficiency including Eco Drive Modes, Stop/Start technology and a Tyre Pressure Monitoring System.

## **MORE** comfort

Our EGO cabin with multi-functional joystick or linear lift levers is ergonomically designed and provides a quiet working environment and improved visibility in all directions. Plus, a new tilt cylinder design for greater stability and control.

## **MORE** safety

Kalmar smart controls include several important safety functions as standard. The overload protection system offers safety information with the container weight in the main display, including warnings and pop-up messages. There is also a mechanical mast tilt indicator on the tilt cylinder and a transport position striping in the mast for additional driver and operational safety.



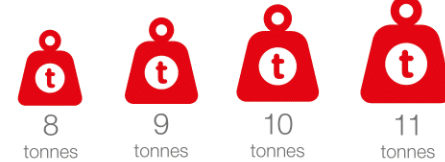
**Single stackers,  
up to 11 tonnes,  
low mounted cabin.**



# More CHOICE

Choose from six different machines depending on your needs. The single stackers are available in 8, 9, 10 and 11 tonne capacities and the double stackers in 10 and 11 tonne models. Both ranges share the same main components and performance.

## 4 lifting capacities.

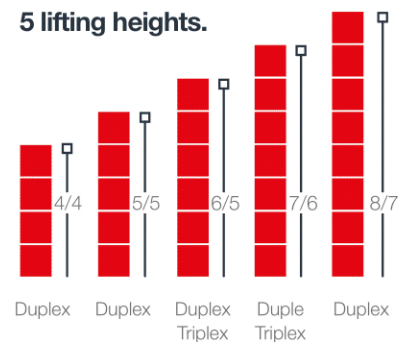


## A choice of lifting heights.

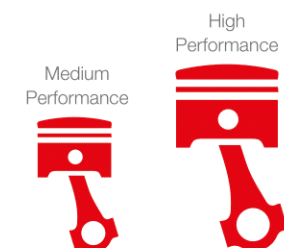
We have five different duplex mast heights (2-stage) to choose from, which give you the ability to stack from 4-high up to 8+1-high.

You can choose from 4/4-high up to 8/7-high (stacking heights) for the containers sizes of 8'6" / 9'6" and you can handle one container higher with our double stacker as you are able to carry your containers "1 over 1". Plus, we offer a low-built triplex mast (3-stage) which will allow you to operate in height restricted areas or when you need to drive inside a factory.

## 5 lifting heights.



## 2 performance alternatives.



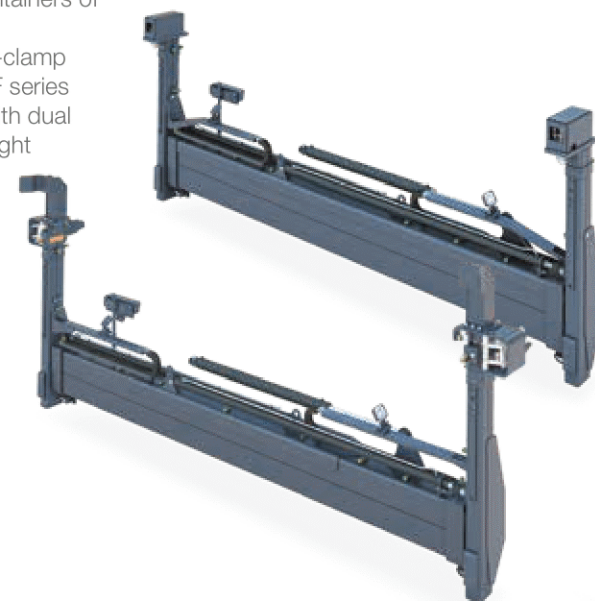
## A choice of spreaders.

The first thing you need to do is know what sort of containers you will be handling, then you can decide what sort of lifting head / spreader version you will need on your single or double spreader.

For single stacker toplift spreaders you can choose from lifting heads with either a standard twistlock position (8' wide) for ISO containers or a wide twistlock position (8'6") and / or wide body containers (WBC / 8'6" wide).

For double stacker sidelift spreaders there are four choices:

1. Side lift hooks and hydraulic side clamps for single lifting of 20-53' or double lifting of 20-40' containers
2. Lift head with hooks-n-clamps including additional safety wedge, that will lock single containers of 45-53' length.
3. The C-shaped hook-n-clamp spreader from the DCF series
4. ELME 582 spreader with dual sidelift twistlocks, for tight stacking.



## A choice of spreader and lift beam levelling.

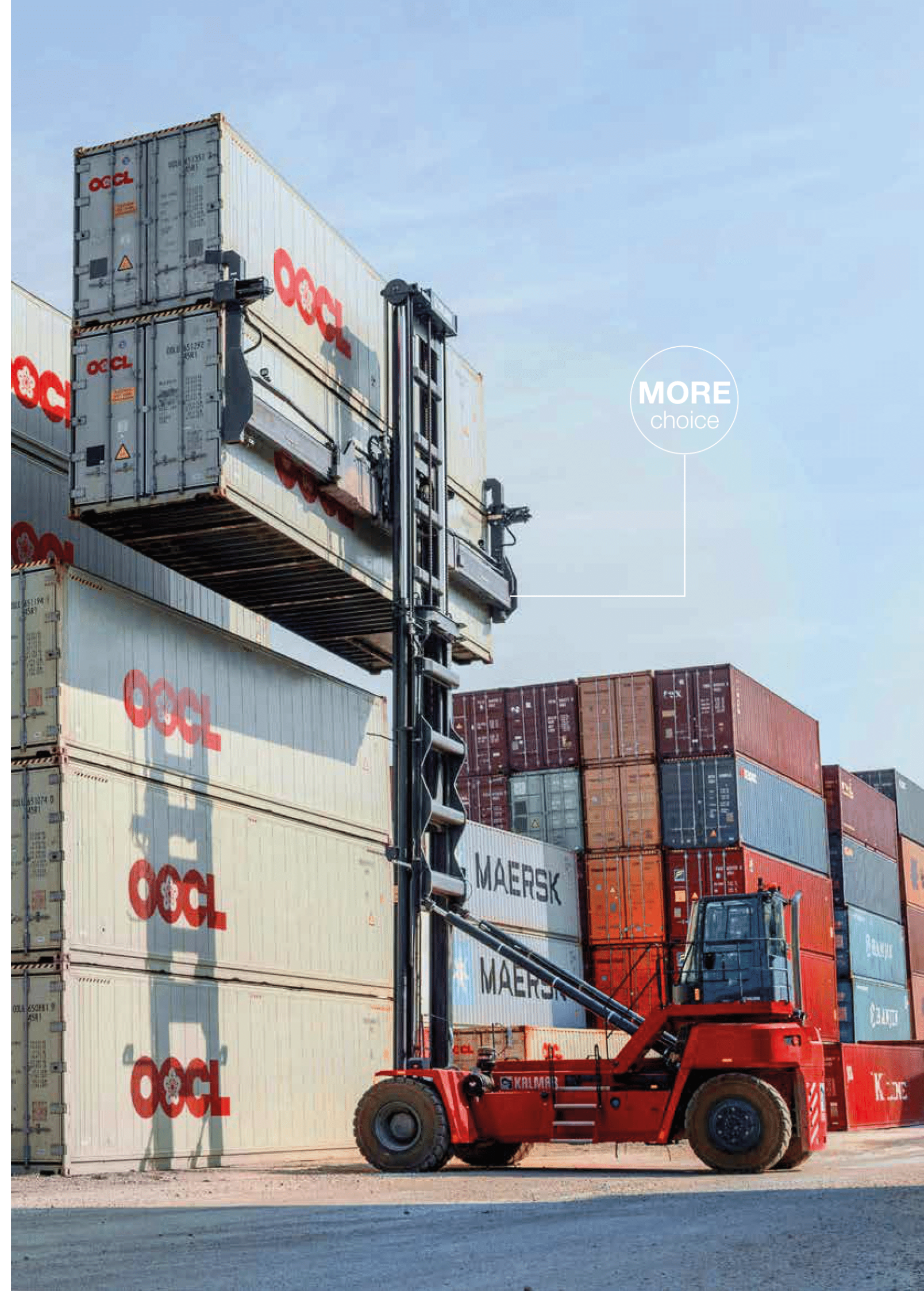
All machines, mast designs and spreaders come with two different solutions for spreader carriage and lifting heads.

Choose from either:

1. A standard mechanical end beam levelling carriage (MPS, mechanical pile slope, stroke 0-250 mm)
2. Or the optional combined hydraulic pile slope (HPS  $\pm 5$  deg) and mechanical pile slope functions.

These solutions are ideal for operating on uneven grounds and poor yard conditions or when loading handling containers onto tilting trailers.

MORE  
choice





# Extra comfort, extra SMART

Every member of our empty container handler range comes fitted with our EGO cabin, the ultimate operating environment for your driver.

With a more ergonomic design, smarter functions and an intuitive workspace than ever before, you can expect to get more from your operators.



## More to see.

With A-posts being replaced with slim B-posts you can expect greater visibility in all directions: forward, backward, to the side and upwards.

Our new dual wiper system cleans a bigger area of the front windscreen than before so your forward view will stay extra clean and clear.



## Easy to operate.

With a wide choice of joysticks or lifting levers, an electronically adjustable work console and side tilt steering wheel they are designed for ease of operation, making them more efficient to operate.



## More comfortable.

With a choice of comfortable driver seats, a fault safe pedal system and powerful Electronic Climate Control (ECC) system with smarter controls your operator will benefit from improved ventilation heating and cooling, plus a cabin with superior comfort and lowest noise level inside and outside.



## Extra smart.

Our intuitive user interface combines visibility, sound and touch to create a perfectly balanced operating environment with an intelligent colour display at its heart. Advanced diagnostics and smart settings allow for improved operational control and safety.







MORE  
efficient

# More EFFICIENT

## More choice of drive lines.

You can choose from either Medium Performance (MP) or High Performance (HP) drive lines. The MP engine and transmission combination can handle most day-to-day applications. However, if you need that extra power and faster lifting speed, then the HP combination might be more suitable. Both options come with Eco Drive Modes with three different operating modes.

### Engine Power

Medium Performance:  
**160-170 kW**  
(max 2100 rpm)

High Performance:  
**180-190 kW**  
(max 1800 rpm)

### Engine Torque

Medium Performance:  
**900-1000 Nm**

High Performance:  
**1100-1200 Nm**

### Transmission

Medium Performance:  
**3+3 gears**  
(no lock-up)

High Performance:  
**4+4 gears**  
(with lock-up)

### Lift and lowering speeds

Medium Performance:  
**MP 0,55-0,50** ↑  
**0,50-0,60 m/sec** ↓

High Performance:  
**MP 0,65-0,60** ↑  
**0,50-0,60 m/sec** ↓

## More performance on demand.

Our entire range of empty container handlers comes with ECO-Drive modes, giving you three different power modes to choose from.

**Power Mode:** when speed is of the essence. With full engine speed you will be able to move quickly about the yard, lift and lower, without compromising on safety.

**Normal Mode:** when you need to retain some speed. With a slightly reduced engine speed you can expect 5-15% lower running and fuel costs.

**Economy Mode:** when you need the lowest running costs. With engine speed reduced even further you can expect 10-25% lower running and fuel costs.

**Normal Mode.**  
Save **5-15%**  
in running costs.

**Economy Mode.**  
Save **10-25%**  
in running costs.



# More OPTIONS



Kalmar has a range of options that make operating your equipment safer:



**Reverse Warning System.** Knowing what's going on behind you is critical when other personnel are present. Four rear sensors and a reversing camera relay real-time information to an in-cabin display, alerting the driver to any dangers, increasing personnel and driver safety. You can also add additional cameras on the spreaders or on the front of the machine.



**Fire Suppression System.** To protect your operator and machine from fire you can fit a FSS to your machine. The system utilises multiple spray nozzles that release a high pressure water mist where the fire has been detected from a re-chargeable water tank. This can be activated manually or automatically through an in-cabin temperature sensor.



**Alcolock.** To ensure that your driver is at their best when operating your equipment you can install an Alcolock system. This system makes sure that the driver meets alcohol blood level standards before being able to start the machine, much like a breathalyser.



**Reverse Beeper System.** When your staff are working side by side with moving vehicles there is always a safety risk. Installing a reverse beeper system provides a clear acoustic alert when the machine is reversing so personnel can make sure that they are out of harm's way at all times.



Kalmar has a range of solutions that will help make your equipment more productive:



**Tyre Pressure Monitoring System.** Helps to reduce wear and tear on tyres which results in reduced fuel consumption. Bluetooth sensors keep the driver advised of the condition of the tyres continually. Active care of your tyres can result in a 10-40% increase in tyre life and up to a 10% decrease in fuel consumption.



**Additional lighting.** Extra lighting, particularly if you have to operate your machine at night, as you can bring greater operational visibility and safety for personnel working on the site. You can add up to 18 extra powerful LED working lamps (see Options page).



**Safety cage.** An additional safety cage can be fitted around the cabin to provide additional safety for your driver from falling cargo.



**Cabin options.** Depending on your specific needs you can choose from a low or high mounted cabin (+600mm). High cabins provide better visibility for the driver particularly when working with two containers or on high stacks.



**Container Checking System.** The Kalmar Container Checking System makes it easy, fast and safe to identify and report containers that are not safe to handle. By automatically locking the mast and spreader to ensure a secure inspection position which makes the machine inoperable while in inspection mode, it will keep your team safe. The system ensures that damaged containers will be removed from service and not be filled with goods and shipped on, potentially causing issues at the next handling facility. If an insurance claim needs to be raised then this system can also help provide the documented evidence you need to support your claim.



**Start/stop function.** An optional start/stop function can be added to automatically activate and deactivate the machine. In addition to reducing unnecessary emissions and extending the lifespan of your components, this makes it possible to achieve up to 10% in fuel savings.

# More VALUE

Being the most reliable and robust range of empty container handlers in the market can give you real advantages, like higher uptime and lower total running costs.

## Safer to operate.

With a clearer view forward, backward and upward, a new ergonomically designed cabin, non-slip access surfaces with supporting handrails, plus numerous safety options to choose from including our Reverse Warning System, Alcolock and four overload alerts you can be sure that your operator is working in a safe environment.

## Lowering operating costs.

You get longer servicing intervals than before so you can keep your machine hard at work for longer. Plus, with the addition of advanced diagnostic tools and monitoring systems, faults can be dealt with quickly, thereby reducing any downtime.

## Higher resale values.

With over 10,000 machines built to the high standard you expect from us - Kalmar Empty Container Handlers are known for their reliability and durability which is why they demand the highest resale values in the market.

## Best lifetime value.

Higher uptime, improved productivity and lower costs per move coupled with high re-sale values means you can expect one thing; the best lifetime value you can expect of any empty container handler.

MORE  
value



# KEEP MOVING

## with Kalmar Service

To keep your business moving Kalmar Services offers a range of services that can help you keep your equipment moving optimally.

### Financing options.

You may choose to buy your new empty container handler outright or consider leasing or renting your equipment. Kalmar offers a range of leasing and renting options that can give you the financial predictability you need and the option to upgrade your equipment after a fixed period. With our leasing packages you can focus on your core operations, while we perform all your service and maintenance needs required by your fleet. You just need to choose which leasing package and level of service and maintenance support is right for your business. Kalmar can also help you with trading-in your old equipment.

No matter what your service and support needs are, make sure that you speak to your local Kalmar team first.

### Kalmar Care, making sure your business never stops.

Our job doesn't stop once we deliver your new machine, as Kalmar Care offers a range of service and maintenance contracts. Each of our Service Contracts are designed to meet your exact needs and will help you improve your operational efficiency, productivity and financial predictability. You just need to decide what you require to keep your day-to-day operations moving optimally.

### MyKalmar.

#### Keeping your cargo moving.

The MyKalmar portal brings together many of Kalmar's digital services into one place. With a single point of access and a user-friendly design you'll benefit from greater visibility and control over your maintenance activities, parts ordering and equipment performance - helping you improve your operational performance, safety and efficiency across your entire fleet.

### Kalmar MyParts.

#### A smarter way to order your parts.

Kalmar MyParts is your one stop shop for all the parts you need which is accessible through MyKalmar. Open 24/7, accessible on any screen and available in different languages, MyParts stocks 100s of thousands of Kalmar Genuine Parts at any given time and we can have them delivered quickly to you, no matter where you are in the world. You can search, order and then track your order all through the same application. MyParts has been designed to make your life easier.

### Kalmar Insight.

#### Optimise your operations with Insight.

Kalmar Insight\* is a performance management tool for cargo handling, which gives you an easy to use overview of your fleet operations, by aggregating data from multiple sources, including equipment built by other manufacturers.

Review your entire fleet activities, schedule maintenance activities and order the required parts automatically. All enabling you to take action on real-time information, that will help improve your overall operations immediately. Kalmar Insight comes fitted and ready to be activated in all new Kalmar equipment, it can also be retrofitted into existing Kalmar equipment or those built by other manufacturers.

### Kalmar Training.

#### Enhance your skills.

To get the most out of your new machine our training centre offers a range of courses for both your technicians and operators. Operators can be taught how to drive the machine for optimum performance and minimum waste, and to learn what needs to be checked daily for optimal safety. Technicians can be educated with the knowledge they need to keep your new equipment in top condition in a safe way. Courses are a mix of theory and hands-on experience.

\*Installation costs and/or an annual subscription fee may apply.

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# Standard.

## Kalmar DCG80-110

Kalmar DCG80-110, E4-E8 // Empty Container Handlers // 8 - 11 tonnes (EU3 / Tier 3, EU4 / Tier 4 or EU5)

### Norms, standards and regulations according to:

- Machinery Directive 2006/42/EC
- Safety Industrial Trucks ISO 3691-1 & EN 16307-1
- Safety Low & High Lift Trucks ANSI/ITSDF B56.1
- Stability of EC-Handlers ISO 22915-9
- CE-marking for trucks within EU/EEA
- ANSI/ITSDF-marking for North America trucks

### Chassis

- Strong, durable heavy-duty EC-Handler chassis
- High and rear mounted heavy-duty tilt cylinders
- LHS access stairway, with steps and a wide platform
- Low cabin mounting (LCM) at the rear of the truck
- Very good rear end visibility of the truck
- Chassis with full access to the drive line
- Easy-to-open drive line cover plates (low noise)
- Lifting eyes and anchor points (front & rear)
- Towing pin (rear - incasted)

### Body

- Steps with anti-slip protection
- 2x Rear view mirrors - rear on front mudguards
- Strong and protective mudguards (front & rear)
- Noise insulation kit for the complete truck

### Steer Axle (rear)

- Kalmar steer axle mounted dual pivot bearings
- Wide track axle with mechanical stops (±3 deg)
- El-servo power steering with double acting cylinder
- Steer axle with narrow turning radius

### Drive Axle (front)

- Kessler planetary axle with differential drive
- Wide track axle for high side stability
- Oil-cooled Wet Disc Brakes (WDB)
- High pressure filter (10 my) for the brakes
- DCG80ES44-87: D81-ND, width 4,0 m.
- DCG90ES44-87: D81-ND, width 4,1 m.
- DCG100ES44-87: D91-ND, width 4,1 m.
- DCG110ES44-87: D91-ND, width 4,1 m.
- DCG100ED44-65: D91-ND, width 4,1 m.
- DCG110ED44-65: D91-ND, width 4,1 m.
- DCG100ED76-87: D91-HD, width 4,6 m.
- DCG110ED76-87: D91-HD, width 4,6 m.

### Wheels (tyres & rims)

- DCG80: Tyres 12.00x24" (4+2)
- DCG90-110: Tyres 14.00x24" (4+2)

### Drive Train

- Volvo and Cummins diesel engines 6 cylinder
- Emission approval EU3 / Tier 3, EU4 / Tier 4 or EU5
- High power & torque with low fuel consumption
- Engine with preheater, monitoring and protection system
- Fully automatic transmission DANA TE-14000
- Transmission monitoring and reverse protection
- Declutch function activated by the brake pressure
- Strong radiators for engine, transmission & brakes
- Muffler and exhaust pipe in stainless steel

### Load-Sensing Hydraulics

- Load-sensing variable piston pumps (2x)
- Power-on-demand with high lift & lowering speeds
- Pumps for mast, spreader, brakes & steering
- Vane pumps for brake pressure & oil cooling (2x)
- Return filters for the work hydraulics (2x/10 my)
- Servo filter for the work hydraulics (10 my)
- Pressure filter for hydraulics / brakes (10 my)
- Power steering, power brakes & ORFS-couplings
- Diesel tank 380 litre incl. breather filter

### Lift Mast

- Mast design for up to 8-high single & double stacking
- Duplex 2-stage mast with high mounted tilt cylinder
- Strong, durable lift mast, 1 pair of cylinders & chains
- Heavy-duty mast profiles and strong cross members
- Mast with strong mast wheels, bearings & guide pads
- Large diameter shafts / bearing for mast / tilt fixations
- Only 2 oil hoses + 1 electrical cable over the mast
- Mast tilt angles +3 / -3 deg (FW / BW)
- Mechanical tilt indicator on tilt cylinder
- Transport position striping (on lift mast)

### Lift Carriage

- Carriage with strong wheels, bearings & guide pads
- Large sideshift of ±600 mm (total stroke 1200 mm)
- 2 fixed twistlocks with indication lamps
- Mechanical Pile Slope by gravity (MPS) 250 mm
- The carriage is connected by the 2 lift chains

### Attachment (DCG80-110 Single Stacker)

- Side lift with hydraulic extension 20'-40'
- 2 fixed twistlocks with indication lamps
- Large sideshift of ±600 mm (total stroke 1200 mm)
- Spring loaded floating vertical heads (0-250 mm)
- Safety locking, alignment pins & sensors (2x)
- Lowering interrupt sensors for safe handling

### Attachment (DCG80-110 Double Stacker)

- Side lift with hydraulic extension 20'-40'
- 2 mechanical lift hooks with 2 hydraulic side clamps
- The 2 lift hooks connects the bottom container (I)
- The 2 side clamps connect upper & bottom containers
- 20'-40' containers are locked by the side clamps
- Indication lamps for alignment / locked container (I+II)
- Large sideshift of ±600 mm (total stroke 1200 mm)
- Spring loaded floating vertical heads (0-250 mm)
- Safety locking, alignment pins & sensors (4x)
- Lowering interrupt sensors for safe handling

### Electronic System

- OLS1, Over Loading System, monitoring lift with speed limit (pop-up)
- Electronic weight scale in main display
- Speed limit outside drive position (ED)
- Dynamic speed limits on 2 load levels (ED)

### Electrical System 24V

- Battery box 2x12V & main power switch
- Electric service box on chassis (LHS)
- 2 working LED-lights on spreader carriage (lift head)
- 2 working LED-lights on spreader on end beams
- 2 working LED-lights on mast
- 2 working LED-lights front on fenders (head beam)
- 2 working LED-lights rear below cabin (in reverse)
- 2 position LED-lights on each side of the truck
- 2 tail / brake LED-lights rear in counter weight
- 4 blinker LED-lights (front - rear / left - right)
- 2 flashing LED-brake lights (when reversing)
- 1 rotating warning LED-beacon
- Buzzer when reversing (reverse alarm)

### Cabin (EGO)

#### Structure

- Spacious, modern cabin with good ergonomY level
- Large windows, good visibility, in all directions
- Instep handle (left side)
- Sliding window on both sides
- Doors with air damper and key lock (L + R)
- Tinted laminated windows

#### Comfort

- Seat Kalmar, mech. spring, high back
- Adjustable armrest (RHS) & 2-point safety belt
- Inside rear view mirror (right side)
- Interior lights with fade away function
- Fully adjustable steering wheel incl tilt function
- Fully adjustable colour display
- Electric adjustable operational console with joystick, operational buttons & armrest (RHS)
- Power steering wheel with steer knob
- Electric horn
- LED background light for buttons & switches

#### Controls

- Electronic lift levers for mast & spreader functions
- Button for forward-neutral-reverse on 1st lift lever
- Auto rev-up accelerator at lifting / tilting / spreader
- Electric accelerator pedal
- Double brake pedals (L + R)
- Gear lever with electronic hand brake (on/off)
- Automatic gear shifting (P1)
- Multi-function lever LHS (parking brake and gear/ direction switch)
- Combined horn and blinker lever
- Warning - hand brake (on/off) leaving seat
- Hour meter

### Climate

- ECH, electronic controlled heating/ventilation
- Fresh air and recirculation filter
- Wipers/washers on front, rear and roof windows
- Interval wiper functions on front, rear and roof
- Tinted windows

### Information systems

- CECS 2.0 Kalmar intelligent control system
- HMI based on TFT-display 4,3" (109 mm)
- Colour display DM430E (automatic fault analysis)
- Menu control with toggle wheel & push buttons

#### ECO Drive Modes (EDM):

- Power mode
- Normal mode (default setting)
- Economy mode

#### Operator menu:

- System voltage
- Actual gear
- Engine rpm
- Travelling speed (km/h or m/h)
- Combined hydraulic and brake oil temperature
- Transmission oil temperature
- Engine oil pressure (Volvo)
- Engine oil pressure only (Cummins)
- Engine coolant temperature
- Clock and date
- Operating time (hours)
- Service time indicator (hours)
- Electronic weight scale functions
- Status of heating system & AC system
- Fuel level (diesel and optional AdBlue)
- Est. operating time before empty tank (hour/min)
- Service indicator
- Container counter with reset function
- Trip computer / statistics

#### Head-Up display for twistlock indication:

- LED indicators for alignment & container(s)

#### Various warning lights & signals:

- Charging battery
- Low brake pressure
- Failure indicator
- High engine coolant temperature
- Low engine coolant level (not on Cummins)
- Low engine oil pressure
- Preheating engine
- Transmission oil temperature
- Low fuel level (incl AdBlue)
- Hydraulic and brake oil temperature
- Low washer fluid level

#### Indicator lamps:

- Head beam
- Direction indication
- Parking brake

#### Fleet Management

- Equipped with telemetric hardware for Kalmar Insight

### Colour

- Cabin: Iron-Grey RAL 7011
- Chassis, tanks & mudguards: Red RAL 3000
- Boom, attachment & axles: Black RAL 7021
- Rims: Iron-Grey RAL 7011

### Documentation and Decals

- Load chart diagram inside cabin
- Machine data sign on chassis incl. load chart
- Warning, tyre pressure & oil pressure stickers
- Information & levers/joystick stickers
- Fuse diagram
- Instruction manual
- Maintenance manual
- Spare parts catalogue



# Optional.

## Kalmar DCG80-110

Kalmar DCG80-110, E4-E8 // Empty Container Handlers // 8 - 11 tonnes (EU3 / Tier 3, EU4 / Tier 4 or EU5)

### Chassis

#### Chassis - ES Empty Single Stacker

- DCG 80-45 ES (L3=4550 mm)
- DCG 90-45 ES (L3=4550 mm)
- DCG 100-45 ES (L3=4550 mm)
- DCG 110-45 ES (L3=4550 mm)
- Chassis - ED Empty Double Stacker
- DCG 100-45 ED (L3=4550 mm)
- DCG 110-45 ED (L3=4550 mm)

### Lift Mast

- Duplex E4 (4-high 8'6" / 4-high 9'6")
- Duplex E5 (6-high 8'6" / 5-high 9'6")
- Duplex E6 (6-high 8'6" / 5-high 9'6")
- Duplex E7 (7-high 8'6" / 6-high 9'6")
- Duplex E8 (8-high 8'6" / 7-high 9'6")
- Triplex E6 (6 of 8'6" / 5 of 9'6") max 10 T
- Triplex E7 (7 of 8'6" / 6 of 9'6") max 10 T
- Container checker device in carriage

### Cabin

#### Structure

- Low mounted cabin (LCM) with dual access stairways & upper platforms
- High mounted cabin (HCM), +600 mm, improved visibility, dual access stairways & upper platforms
- Hydraulic tilting cabin (stroke 10 degrees)
- Globetrotter cabin, +200 mm, ledge mount windows
- Safety cage to protect cabin from falling cargo
- Comfort
- Various seat alternatives
- Head rest for the seat
- Armrest with adjustment (LHS )
- Horizontal dampening/suspension of seat
- Extra trainer seat incl 2-p safety belt (LHS)
- Bracket for terminal and monitor (RHS)
- Writing pad, A4 paper box and reading lamp (RHS)
- Extra rear view mirror (inside cabin / left side)

#### Controls

- Lever steering incl switch for forward/reverse
- Mini-wheel steering incl switch for forward/reverse
- Only second gear activated (P3)
- Safety override for hydraulic functions (by code)

#### Climate

- Electronic Climate Control (ECC)
- Microfilter in additional to std filter
- AC/ECC switched off when door is open
- Sun visor front window (black net)
- Sun visor roof window (black net)
- Sun visor rear window (black net)
- Sun visor roof window (reflective film)
- Extra cabin heater (incl. 1 x 220V outlet)
- Postheating



### Drive Trains

#### Medium Performance (MP)

- DANA TE-14300 (3+3 gears) for all MP drive lines
- Cummins QSB-6.7-C220 (EU3 / Tier 3, 164 kW, 949 Nm, 6.70 l, 6-cyl)
- Volvo TAD-850-VE (EU3 / Tier 3, 160 kW, 1060 Nm, 7.70 l, 6-cyl)

#### High Performance (HP)

- DANA LTE-14400 (4+4 gears + Lock-Up) for all HP drive lines
- Volvo TAD-851-VE (EU3 / Tier 3, 185 kW, 1160 Nm, 7.70 l, 6-cyl)
- Volvo TAD-871-VE (EU4 / Tier 4F, 185 kW, 1160 Nm, 7.70 l, 6-cyl)
- Volvo TAD-881-VE (EU5, 185 kW, 1160 Nm, 7.70 l, 6-cyl)

- Auto engine & ignition stop, after 5 min idle
- Air intake filter, with Pre-Cleaner, raised air intake
- Start/stop function (for Volvo engine only)
- Stronger/wider drive axle, Kessler D91, 4500 mm

### Hydraulics

- Hydraulic mast accumulator (shock dampening)
- Mast tilt angles +3 / -6 deg (FW / BW)
- Mast tilt angles +2 / -3 deg (FW / BW)
- Hydraulic longlife fine filter with by-pass (3 my)
- Block valve mounted on lift cylinders

### Body

- Anti slip protection on fenders and tanks
- Mud flaps in steel + rubber (front)
- Mud flaps in rubber (rear)
- Noise insulation kit for complete truck (1-3 dB)

### Electronic System and Settings

- OLS3, Over Loading System, cut lift with speed limit (pop-up)
- Lift height limitation
- Lift height warning over defined height (specify height)
- Speed limitation (specify speed)
- Speed limit over defined lift height (specify height)
- Speed limit outside drive position (ES)
- Dynamic speed limit depending of lift height
- Dynamic speed limit on 2 load levels (ES)

### Electrical System 24V

- 2 extra working LED-lights on mudguard
- 4 extra working LED-lights on mudguard
- 2 extra working LED-lights on cabin roof
- 4 extra working LED-lights on cabin roof
- 6 extra working LED-lights on cabin roof
- 8 extra working LED-lights on cabin roof
- 2 extra working LED-lights on mast
- 2 extra working LED-lights on carriage
- 2 extra reverse LED-lights on counter weight
- 1 extra warning LED-beacon the top of the mast
- 1 extra entrance LED-lights on left stairway + button
- 2 el. heated mirrors on front mudguards (std pos.)
- 2 el. heated & adjustable mirrors on front mudguards
- Radio with MP3, Bluetooth, speakers (24V)
- DAB-Radio with CD, MP3, Bluetooth, speakers (24V)
- 2 x 24V sockets and 2 x 12V sockets in cabin
- 2 x 24V sockets and 2 x 5V / USB sockets in cabin
- Electric air pressure horn

### Lift Carriage

- Automatic extension 20'-30'-40' stop
- Soft landing by inductive sensor (on twistlocks only)
- Hydraulic Pile Slope by cylinders (HPS ±5 deg), the MPS with 0-250 mm end beam levelling is included
- All trucks has full lifting capacity with MPS & HPS
- Available for both single and double stackers

### Attachment (Single Stacker)

- Twistlock spreader for wide body (TWL-WTP)
- Spreader standard / wide body container
- Standard / wide body containers are 8' / 8,5' wide
- 2 lift heads with Wide Twistlock Position (WTP)
- Hydraulic moveable twistlocks (stroke 76 mm/3")

### Attachment (Double Stacker)

#### Hook, clamp & safety wedge double spreader

- Lift heads with lift hook and hydraulic side clamp
- Hydraulic safety wedge for bottom container lock
- Active safety locking of 45'-53' single containers
- 45'-53' containers are locked by safety wedge (SW)

### C-hook spreader with optimised visibility

- Dedicated Hydraulic Pile Slope (HPS) is included, no mechanical end-beam leveling is included
- Side lift with hydraulic extension 20'-40'
- 20'-40' containers are locked by the side clamps
- Indication lamps for alignment / locked container (I+II)
- Large sideshift of ±600 mm (total stroke 1200 mm)
- Safety locking, alignment pins & sensors (4x)
- Lowering interrupt sensors for safe handling

### Steer Axle (rear)

- Wheel nut protection on steer tires
- Steer cylinder spacer

### Wheels

- Spare wheel & rim 12.00x24" of various brands
- Spare wheel & rim 14.00x24" of various brands

### Additional equipment

- Reverse display inside cabin (7"/17 cm)
- Reverse camera connected to display in cabin
- Spreader cameras (2x) connected to display in cabin
- Reverse warning system (camera, display & sensors)
- Tyre pressure monitoring system (Bluetooth)
- Diesel powered cabin heater 5 kW
- Alcolock Draeger in cabin
- Semi-automatic fire suppression system (DAFO)
- Fire extinguisher 5-6 kg, powder
- Lockable fuel cap
- Cabin heater incl 220V outlet
- Engine heater incl cab heater
- Engine/hydraulic oil heater incl cab heater
- Central greasing base machine
- Central greasing spreader
- Chain greaser with replaceable cartridge
- Kalmar Insight solutions
- Tool kit or filter kit 2000 hrs
- Soft landing function with ultrasonic sensor (only for single stacking spreader)

### Fleet Management

- Kalmar Insight licence (only in certified countries)
- Kalmar Insight Driver Monitor (RFID reader + 10 unique driver tags)
- Kalmar Insight extra monitoring tags

### Colour (specify RAL number)

- Other colour than standard - on chassis
- Other colour than standard - on cabin
- Other colour than standard - on rims
- Reinforced anti-corrosion protection (extra primer)

### Training

- Contact Kalmar Training Centre for training programs



TECHNICAL INFORMATION

| MANDATES   | 1                                               | Truck Model                                           |    |           | DCG80-45ES                                                |                                                           |                                                                              |              |                     | DCG90-45ES                                                |                                                           |                                                                              |              |                     | DCG100-45ES                                               |                                                          |                                                                              |              |                     |               |
|------------|-------------------------------------------------|-------------------------------------------------------|----|-----------|-----------------------------------------------------------|-----------------------------------------------------------|------------------------------------------------------------------------------|--------------|---------------------|-----------------------------------------------------------|-----------------------------------------------------------|------------------------------------------------------------------------------|--------------|---------------------|-----------------------------------------------------------|----------------------------------------------------------|------------------------------------------------------------------------------|--------------|---------------------|---------------|
|            | 2                                               | Stacking model and height                             |    |           | ES4/4                                                     | ES5/5                                                     | ES6/5                                                                        | ES7/6        | ES8/7               | ES4/4                                                     | ES5/5                                                     | ES6/5                                                                        | ES7/6        | ES8/7               | ES4/4                                                     | ES5/5                                                    | ES6/5                                                                        | ES7/6        | ES8/7               |               |
|            | 3                                               | Type of handling                                      |    |           | Single Stackers                                           |                                                           |                                                                              |              |                     | Single Stackers                                           |                                                           |                                                                              |              |                     | Single Stackers                                           |                                                          |                                                                              |              |                     |               |
|            | 4                                               | Lifting capacity, with MPS or with HPS (1*)           |    | Q1        | (kgs)                                                     | 8000                                                      | 8000                                                                         | 8000         | 8000                | 8000                                                      | 9000                                                      | 9000                                                                         | 9000         | 9000                | 9000                                                      | 10000                                                    | 10000                                                                        | 10000        | 10000               | 10000         |
|            | 5                                               | Stacking height, no. of containers (8'6" / 9'6")      |    |           |                                                           | 4/4                                                       | 5/5                                                                          | 6/5          | 7/6                 | 8/7                                                       | 4/4                                                       | 5/5                                                                          | 6/5          | 7/6                 | 8/7                                                       | 4/4                                                      | 5/5                                                                          | 6/5          | 7/6                 | 8/7           |
|            | 6                                               | Spreader locking type, standard / optional            |    |           | Standard: Twistlocks / optional: Twistlocks + WTP (76 mm) |                                                           |                                                                              |              |                     | Standard: Twistlocks / optional: Twistlocks + WTP (76 mm) |                                                           |                                                                              |              |                     | Standard: Twistlocks / optional: Twistlocks + WTP (76 mm) |                                                          |                                                                              |              |                     |               |
|            | 7                                               | Spreader type, extension stops, sensors               |    |           |                                                           | Sidelift, 20' + 40' stops, alignment & interrupt sensors  |                                                                              |              |                     |                                                           | Sidelift, 20' + 40' stops, alignment & interrupt sensors  |                                                                              |              |                     |                                                           | Sidelift, 20' + 40' stops, alignment & interrupt sensors |                                                                              |              |                     |               |
|            | 8                                               | Wheelbase                                             | L3 | (mm)      | 4550                                                      |                                                           |                                                                              |              |                     | 4550                                                      |                                                           |                                                                              |              |                     | 4550                                                      |                                                          |                                                                              |              |                     |               |
|            | 9                                               | Load centre, front of tyres, with MPS or HPS (2*)     |    | L2        | (mm)                                                      | 1210 to 1280                                              |                                                                              |              |                     |                                                           | 1210 to 1280                                              |                                                                              |              |                     |                                                           | 1210 to 1280                                             |                                                                              |              |                     |               |
|            | 10                                              | Lost load centre, to front face of tyres              |    | X         | (mm)                                                      | 700                                                       |                                                                              |              |                     |                                                           | 700                                                       |                                                                              |              |                     |                                                           | 700                                                      |                                                                              |              |                     |               |
| WEIGHTS    | 11                                              | Service weight, with MPS or HPS (2*)                  |    |           | (kgs)                                                     | 33300/34400                                               | 34700/35800                                                                  | 35300/36400  | 36800/37900         | 38300/39400                                               | 35300/36400                                               | 36700/37800                                                                  | 37300/38400  | 38800/39900         | 40300/41400                                               | 38000/39100                                              | 39400/40500                                                                  | 40000/41100  | 41500/42600         | 43000/44100   |
|            | 12                                              | Axle load, front unloaded - rated load MPS            |    |           | (kgs)                                                     | 20900/33100                                               | 22400/34700                                                                  | 23100/35300  | 24700/37000         | 26400/38600                                               | 21400/35200                                               | 22900/36700                                                                  | 23600/37400  | 25200/39000         | 26900/40700                                               | 22300/37700                                              | 23800/39200                                                                  | 24500/39900  | 26200/41500         | 27800/43200   |
|            | 13                                              | Axle load, front unloaded - rated load HPS (2*)       |    |           | (kgs)                                                     | 22200/34400                                               | 23700/36000                                                                  | 24400/36700  | 26100/38400         | 27700/40000                                               | 22700/36600                                               | 24200/38100                                                                  | 24900/38800  | 26500/40300         | 28200/42000                                               | 23600/39100                                              | 25100/40600                                                                  | 25800/41200  | 27500/42900         | 29100/44500   |
|            | 14                                              | Axle load, rear unloaded - rated load MPS             |    |           | (kgs)                                                     | 12400/8200                                                | 12300/8000                                                                   | 12200/7900   | 12100/7800          | 11900/7600                                                | 13900/9100                                                | 13800/9000                                                                   | 13700/8600   | 13600/8800          | 13400/8600                                                | 15700/10400                                              | 15600/10200                                                                  | 15500/10200  | 15400/10000         | 15200/9900    |
|            | 15                                              | Axle load, rear unloaded - rated load HPS (2*)        |    |           | (kgs)                                                     | 12200/7900                                                | 12100/7700                                                                   | 12000/7600   | 11800/7500          | 11700/7300                                                | 13700/8800                                                | 13600/8700                                                                   | 13500/8600   | 13400/8600          | 13200/8400                                                | 15500/10100                                              | 15400/9900                                                                   | 15300/9900   | 15100/9700          | 15000/9600    |
| WHEELS     | 16                                              | Tyres, type, design, thread depth                     |    |           | Pneumatic / Diagonal / E4                                 |                                                           |                                                                              |              |                     | Pneumatic / Diagonal / E4                                 |                                                           |                                                                              |              |                     | Pneumatic / Diagonal / E4                                 |                                                          |                                                                              |              |                     |               |
|            | 17                                              | Tyres, dimension (front + rear)                       |    |           | (in)                                                      | Standard: 12.00x24" / Optional: 14.00x24"                 |                                                                              |              |                     |                                                           | 14,00x24"                                                 |                                                                              |              |                     |                                                           | 14,00x24"                                                |                                                                              |              |                     |               |
|            | 18                                              | Rims, dimension (front + rear)                        |    |           | (in)                                                      | Standard: 8.50x24" / Optional: 10.00x24"                  |                                                                              |              |                     |                                                           | 10,00x24"                                                 |                                                                              |              |                     |                                                           | 10,00x24"                                                |                                                                              |              |                     |               |
|            | 19                                              | No. of wheels, front - rear (*driven), pressure       |    |           | (MPa)                                                     | 4* - 2                                                    | 4* - 2                                                                       | 4* - 2       | 1.0                 |                                                           | 4* - 2                                                    | 4* - 2                                                                       | 4* - 2       | 1.0                 |                                                           | 4* - 2                                                   | 4* - 2                                                                       | 4* - 2       | 1.0                 |               |
|            | 20                                              | Track width (front - rear)                            |    | S1 - S2   | (mm)                                                      | Standard: 3270 - 2450 / Optional: 3270 - 2400             |                                                                              |              |                     |                                                           | Standard: 3270 - 2450 / Optional: 3270 - 2400             |                                                                              |              |                     |                                                           | Standard: 3270 - 2450 / Optional: 3270 - 2400            |                                                                              |              |                     |               |
|            | 21                                              | Truck width drive axle, standard / optional           |    | B / B     | (mm)                                                      | Standard: 4050 (12.00x24") / Optional 4100 (14.00x24")    |                                                                              |              |                     |                                                           | Standard: 4100 / Optional: 4600                           |                                                                              |              |                     |                                                           | Standard: 4100 / Optional: 4600                          |                                                                              |              |                     |               |
| 22         | Drive axle (ND = Normal Duty / HD = Heavy Duty) |                                                       |    |           |                                                           | D81-ND                                                    |                                                                              |              |                     |                                                           | Standard: D81-ND / Optional: D91-HD                       |                                                                              |              |                     |                                                           | Standard: D91-HD                                         |                                                                              |              |                     |               |
| DIMENSIONS | 23                                              | Lift mast, type, stage, cylinders and chains          |    |           | Duplex / 2-stage / 2 cylinders / 2 lift chains            |                                                           |                                                                              |              |                     | Duplex / 2-stage / 2 cylinders / 2 lift chains            |                                                           |                                                                              |              |                     | Duplex / 2-stage / 2 cylinders / 2 lift chains            |                                                          |                                                                              |              |                     |               |
|            | 24                                              | Mast tilt, forward – backward,standard / optional     |    | alfa-beta | (deg)                                                     | Standard: 3-3 / optional: 3-6 or 2-3                      |                                                                              |              |                     |                                                           | Standard: 3-3 / OPT: 3-6 or 2-3                           |                                                                              |              |                     |                                                           | Standard: 3-3 / optional: 3-6 or 2-3                     |                                                                              |              |                     |               |
|            | 25                                              | Lift mast height, min - max                           |    | H3 - H5   | (mm)                                                      | 7040 - 12040                                              | 8540 - 15040                                                                 | 9040 - 16040 | 10290 - 18540       | 11540 - 21040                                             | 7100 - 12100                                              | 8600 - 15100                                                                 | 9100 - 16100 | 10350 - 18600       | 11600 - 21100                                             | 7100 - 12100                                             | 8600 - 15100                                                                 | 9100 - 16100 | 10350 - 18600       | 11600 - 21100 |
|            | 26                                              | Lift height, min - max in twistlocks / lift hooks     |    | H10 - H4  | (mm)                                                      | 2240 - 12240                                              | 2240 - 15240                                                                 | 2240 - 16240 | 2240 - 18740        | 2240 - 21240                                              | 2300 - 12300                                              | 2300 - 15300                                                                 | 2300 - 16300 | 2300 - 18800        | 2300 - 21300                                              | 2300 - 12300                                             | 2300 - 15300                                                                 | 2300 - 16300 | 2300 - 18800        | 2300 - 21300  |
|            | 27                                              | Height cabin roof, standard / optional                |    | H6        | (mm)                                                      | Standard: 3940 / optional: 4540                           |                                                                              |              |                     |                                                           | Standard: 4000 / optional: 4600                           |                                                                              |              |                     |                                                           | Standard: 4000 / optional: 4600                          |                                                                              |              |                     |               |
|            | 28                                              | Seat index point (height)                             |    | H8        | (mm)                                                      | Standard: 2800 / optional: 3400                           |                                                                              |              |                     |                                                           | Standard: 2860 / optional: 3460                           |                                                                              |              |                     |                                                           | Standard: 2860 / optional: 3460                          |                                                                              |              |                     |               |
|            | 29                                              | Truck length with spreader, MPS / HPS                 |    | L         | (mm)                                                      | 6900/6950                                                 |                                                                              |              |                     |                                                           | 6900/6950                                                 |                                                                              |              |                     |                                                           | 6900/6950                                                |                                                                              |              |                     |               |
|            | 30                                              | Spreader width, twistlocks / hooks, (min - max))      |    | Va - Vb   | (mm)                                                      | 6085-12220                                                |                                                                              |              |                     |                                                           | 6085-12220                                                |                                                                              |              |                     |                                                           | 6085-12220                                               |                                                                              |              |                     |               |
|            | 31                                              | Spreader sideshift, stroke both directions (total)    |    | V1        | (mm)                                                      | ± 600 (1200)                                              |                                                                              |              |                     |                                                           | ± 600 (1200)                                              |                                                                              |              |                     |                                                           | ± 600 (1200)                                             |                                                                              |              |                     |               |
|            | 32                                              | Spreader levelling, MPS / HPS, standard / optional    |    |           | (mm/deg)                                                  | Standard: 0 - 250 / optional: HPS: ± 5 (incl MPS)         |                                                                              |              |                     |                                                           | Standard: 0 - 250 / optional: HPS: ± 5 (incl MPS)         |                                                                              |              |                     |                                                           | Standard: 0 - 250 / optional: HPS: ± 5 (incl MPS)        |                                                                              |              |                     |               |
|            | 33                                              | Ground clearance                                      |    |           | (mm)                                                      | 250                                                       |                                                                              |              |                     |                                                           | 300                                                       |                                                                              |              |                     |                                                           | 300                                                      |                                                                              |              |                     |               |
|            | 34                                              | Aisle width, with 20' - 40' container                 |    | A1 - A2   | (mm)                                                      | 10600/14200                                               |                                                                              |              |                     |                                                           | 10850/14350                                               |                                                                              |              |                     |                                                           | 10850/14350                                              |                                                                              |              |                     |               |
|            | 35                                              | Turning radius, inner / outer 20' / outer 40'         |    | R1-R2-R3  | (mm)                                                      | 1150 / 6750 / 9350                                        |                                                                              |              |                     |                                                           | 1250 / 7000 / 9700                                        |                                                                              |              |                     |                                                           | 1250 / 7000 / 9700                                       |                                                                              |              |                     |               |
| DRIVE LINE | 36                                              | Engine type, design                                   |    |           | Diesel / 4-stroke / turbo / intercooler                   |                                                           |                                                                              |              |                     | Diesel / 4-stroke / turbo / intercooler                   |                                                           |                                                                              |              |                     | Diesel / 4-stroke / turbo / intercooler                   |                                                          |                                                                              |              |                     |               |
|            | 37                                              | Drive line - performance levels                       |    |           |                                                           | MP Medium Performance                                     |                                                                              |              | HP High Performance |                                                           | MP Medium Performance                                     |                                                                              |              | HP High Performance |                                                           | MP Medium Performance                                    |                                                                              |              | HP High Performance |               |
|            | 38                                              | Engine, power / torque, (min - max)                   |    |           | (kW/Nm)                                                   | 164 / 949                                                 |                                                                              |              | 185 / 1160          |                                                           | 164 / 949                                                 |                                                                              |              | 185 / 1160          |                                                           | 164 / 949                                                |                                                                              |              | 185 / 1160          |               |
|            | 39                                              | Fuel consumption, average diesel / AdBlue (3*)        |    |           | (L/h-%)                                                   | 5 - 15 / 1 - 5                                            |                                                                              |              | 5 - 15 / 1 - 5      |                                                           | 5 - 15 / 1 - 5                                            |                                                                              |              | 5 - 15 / 1 - 5      |                                                           | 5 - 15 / 1 - 5                                           |                                                                              |              | 5 - 15 / 1 - 5      |               |
|            | 40                                              | Travel speed, fwd / rev (unloaded - at rated load)    |    |           | (km/h)                                                    | 24 - 24 / 22 - 22                                         |                                                                              |              | 25 - 25 / 25 - 25   |                                                           | 24 - 24 / 22 - 22                                         |                                                                              |              | 25 - 25 / 25 - 25   |                                                           | 24 - 24 / 22 - 22                                        |                                                                              |              | 25 - 25 / 25 - 25   |               |
|            | 41                                              | Gradeability, max / 2 km/h (unloaded - at rated load) |    |           | (%)                                                       | 29 - 22 / 24 - 19                                         |                                                                              |              | 37 - 30 / 33 - 27   |                                                           | 29 - 22 / 24 - 19                                         |                                                                              |              | 37 - 30 / 33 - 27   |                                                           | 29 - 22 / 24 - 19                                        |                                                                              |              | 37 - 30 / 33 - 27   |               |
|            | 42                                              | Lifting speed, unloaded - at 70% of rated load        |    |           | (m/s)                                                     | 0,55 - 0,50                                               |                                                                              |              | 0,65 - 0,60         |                                                           | 0,55 - 0,50                                               |                                                                              |              | 0,65 - 0,60         |                                                           | 0,55 - 0,50                                              |                                                                              |              | 0,65 - 0,60         |               |
|            | 43                                              | Lowering speed, unloaded - at rated load              |    |           | (m/s)                                                     | 0,50 - 0,60                                               |                                                                              |              | 0,55 - 0,60         |                                                           | 0,50 - 0,60                                               |                                                                              |              | 0,55 - 0,60         |                                                           | 0,50 - 0,60                                              |                                                                              |              | 0,55 - 0,60         |               |
|            | 44                                              | Transmission, gears forward / reverse                 |    |           |                                                           | 3 + 3                                                     |                                                                              |              | 4 + 4 with Lock-Up  |                                                           | 3 + 3                                                     |                                                                              |              | 4 + 4 with Lock-Up  |                                                           | 3 + 3                                                    |                                                                              |              | 4 + 4 with Lock-Up  |               |
|            | 45                                              | Transmission type, function, safety                   |    |           |                                                           | Automatic powershift / reverse protection                 |                                                                              |              |                     |                                                           | Automatic powershift / reverse protection                 |                                                                              |              |                     |                                                           | Automatic powershift / reverse protection                |                                                                              |              |                     |               |
|            | 46                                              | Drive axle type, service brakes (drive wheels)        |    |           |                                                           | Differential / hub reduction / oil-cooled wet disc brakes |                                                                              |              |                     |                                                           | Differential / hub reduction / oil-cooled wet disc brakes |                                                                              |              |                     |                                                           | Differential / hub reduction /oil-cooled wet disc brakes |                                                                              |              |                     |               |
|            | 47                                              | Drive axle, parking brake, brake release              |    |           |                                                           | Single big dry disc / hydraulic release                   |                                                                              |              |                     |                                                           | Single big dry disc / hydraulic release                   |                                                                              |              |                     |                                                           | Single big dry disc / hydraulic release                  |                                                                              |              |                     |               |
|            | 48                                              | Steer axle type, design, function                     |    |           |                                                           | Heavy-duty / single cylinder / power steering             |                                                                              |              |                     |                                                           | Heavy-duty / single cylinder / power steering             |                                                                              |              |                     |                                                           | Heavy-duty / single cylinder / power steering            |                                                                              |              |                     |               |
| OTHERS     | 49                                              | Hydraulic system, type                                |    |           | Load-sensing (power-on-demand) / working & brake oil tank |                                                           |                                                                              |              |                     | Load-sensing (power-on-demand) / working & brake oil tank |                                                           |                                                                              |              |                     | Load-sensing (power-on-demand) / working & brake oil tank |                                                          |                                                                              |              |                     |               |
|            | 50                                              | Tank volumes, diesel - AdBlue (3*) - oil              |    |           | (dm³)                                                     | 380 / 15³ / 320                                           |                                                                              |              |                     |                                                           | 380 / 15³ / 320                                           |                                                                              |              |                     |                                                           | 380 / 15³ / 320                                          |                                                                              |              |                     |               |
|            | 51                                              | Noise, inside LpAZ / outside LwAZ (EDM's)             |    |           | (dB(A))                                                   | 63 - 67 / 103 - 107                                       |                                                                              |              |                     |                                                           | 63 - 67 / 103 - 107                                       |                                                                              |              |                     |                                                           | 63 - 67 / 103 - 107                                      |                                                                              |              |                     |               |
|            | 52                                              | Overload System with warning OLS1 + OLS3              |    |           |                                                           |                                                           | Standard: OLS1 (lift monitor) / Optional: OLS3 (lift cut-off + tilt monitor) |              |                     |                                                           |                                                           | Standard: OLS1 (lift monitor) / Optional: OLS3 (lift cut-off + tilt monitor) |              |                     |                                                           |                                                          | Standard: OLS1 (lift monitor) / Optional: OLS3 (lift cut-off + tilt monitor) |              |                     |               |

Notes:  
1) MPS = Full lifting capacity with MPS (8-9-10-11 tons).  
HPS = Full lifting capacity with HPS incl MPS (8-9-10-11 tons).  
Except DCG110-45ED87, 10 tons at



TECHNICAL INFORMATION

| MANDATES   | 1          | Truck Model                                           |                                 |           | DCG100-45ED     |                                                                              |                                         |              |                     |                     |  |
|------------|------------|-------------------------------------------------------|---------------------------------|-----------|-----------------|------------------------------------------------------------------------------|-----------------------------------------|--------------|---------------------|---------------------|--|
|            | 2          | Stacking model and height                             |                                 |           | ED4/4           | ED5/5                                                                        | ED6/5                                   | ED7/6        | ED8/7               |                     |  |
|            | 3          | Type of handling                                      |                                 |           | Double Stackers |                                                                              |                                         |              |                     |                     |  |
|            | 4          | Lifting capacity, with MPS or with HPS (1*)           |                                 | Q1        | (kgs)           | 10000                                                                        | 10000                                   | 10000        | 10000               | 10000               |  |
|            | 5          | Stacking height, no. of containers (8'6" / 9'6")      |                                 |           |                 | 4+1/4+1                                                                      | 5+1/5+1                                 | 6+1/5+1      | 7+1/6+1             | 8+1/7+1             |  |
|            | 6          | Spreader locking type, standard / optional            |                                 |           |                 | Standard: Hooks + Clamps / optional: STD + Safety Wedge                      |                                         |              |                     |                     |  |
|            | 7          | Spreader type, extension stops, sensors               |                                 |           |                 | Sidelift, 20' + 40' stops, alignment & interrupt sensors                     |                                         |              |                     |                     |  |
|            | 8          | Wheelbase                                             |                                 | L3        | (mm)            | 4550                                                                         |                                         |              |                     |                     |  |
|            | 9          | Load centre, front of tyres, with MPS or HPS (2")     |                                 | L2        | (mm)            | 1210 to 1280                                                                 |                                         |              |                     |                     |  |
|            | 10         | Lost load centre, to front face of tyres              |                                 | X         | (mm)            | 700                                                                          |                                         |              |                     |                     |  |
| WEIGHTS    | 11         | Service weight, with MPS or HPS (2")                  |                                 |           | (kgs)           | 38400/39500                                                                  | 39800/40900                             | 40400/41500  | 41900/43000         | 43400/44500         |  |
|            | 12         | Axle load, front unloaded - rated load MPS            |                                 |           | (kgs)           | 22800/38100                                                                  | 24300/39700                             | 25000/40300  | 26600/42000         | 28300/43800         |  |
|            | 13         | Axle load, front unloaded - rated load HPS (2")       |                                 |           | (kgs)           | 24100/39500                                                                  | 25600/41100                             | 26300/41800  | 27900/43400         | 29600/45100         |  |
|            | 14         | Axle load, rear unloaded - rated load MPS             |                                 |           | (kgs)           | 15600/10300                                                                  | 15500/10100                             | 15400/10100  | 15300/9900          | 15100/9700          |  |
|            | 15         | Axle load, rear unloaded - rated load HPS (2")        |                                 |           | (kgs)           | 15400/10000                                                                  | 15300/9800                              | 15200/9700   | 15100/9600          | 14900/9400          |  |
| WHEELS     | 16         | Tyres, type, design, thread depth                     |                                 |           |                 | Pneumatic / Diagonal / E4                                                    |                                         |              |                     |                     |  |
|            | 17         | Tyres, dimension (front + rear)                       |                                 |           | (in)            | 14,00x24"                                                                    |                                         |              |                     |                     |  |
|            | 18         | Rims, dimension (front + rear)                        |                                 |           | (in)            | 10,00x24"                                                                    |                                         |              |                     |                     |  |
|            | 19         | No. of wheels, front - rear (*driven), pressure       |                                 |           | (MPa)           | 4* - 2                                                                       |                                         |              | 1.0                 |                     |  |
|            | 20         | Track width (front - rear)                            |                                 | S1 - S2   | (mm)            | Standard: 3270 - 2400 / Optional: 3780 - 2400                                |                                         |              | Standard: 3780-2400 |                     |  |
|            | 21         | Truck width drive axle, standard / optional           |                                 | B / B     | (mm)            | Standard: 4100 / Optional: 4600                                              |                                         |              | Standard: 4600      |                     |  |
|            | 22         | Drive axle (ND = Normal Duty / HD = Heavy Duty)       |                                 |           |                 | D91-HD                                                                       |                                         |              | D91-HD              |                     |  |
| DIMENSIONS | 23         | Lift mast, type, stage, cylinders and chains          |                                 |           |                 | Duplex / 2-stage / 2 cylinders / 2 lift chains                               |                                         |              |                     |                     |  |
|            | 24         | Mast tilt, forward – backward, standard / optional    |                                 | alfa-beta | (deg)           | Standard: 3-3 / optional: 3-6 or 2-3                                         |                                         |              |                     |                     |  |
|            | 25         | Lift mast height, min - max                           |                                 | H3 - H5   | (mm)            | 7040 - 12040                                                                 | 8600 - 15100                            | 9100 - 16100 | 10350 - 18600       | 11600 - 21100       |  |
|            | 26         | Lift height, min - max in twistlocks / lift hooks     |                                 | H10 - H4  | (mm)            | 2240 - 12240                                                                 | 2300 - 15300                            | 2300 - 16300 | 2300 - 18800        | 2300 - 21300        |  |
|            | 27         | Height cabin roof, standard / optional                |                                 | H6        | (mm)            | Standard: 4000 / optional: 4600                                              |                                         |              |                     |                     |  |
|            | 28         | Seat index point (height)                             |                                 | H8        | (mm)            | Standard: 2860 / optional: 3460                                              |                                         |              |                     |                     |  |
|            | 29         | Truck length with spreader, MPS / HPS                 |                                 | L         | (mm)            | 6900/6950                                                                    |                                         |              |                     |                     |  |
|            | 30         | Spreader width, twistlocks / hooks, min - max         |                                 | Va - Vb   | (mm)            | 6615-12750                                                                   |                                         |              |                     |                     |  |
|            | 31         | Spreader sideshift, stroke both directions (total)    |                                 | V1        | (mm)            | ± 600 (1200)                                                                 |                                         |              |                     |                     |  |
|            | 32         | Spreader levelling, MPS / HPS, standard / optional    |                                 |           | (mm/deg)        | Standard: 0 - 250 / optional: HPS: ± 5 (incl MPS)                            |                                         |              |                     |                     |  |
|            | 33         | Ground clearance                                      |                                 |           | (mm)            | 300                                                                          |                                         |              |                     |                     |  |
|            | 34         | Aisle width, with 20' - 40' container                 |                                 | A1 - A2   | (mm)            | 10850/14350                                                                  |                                         |              |                     |                     |  |
|            | 35         | Turning radius, inner / outer 20' / outer 40'         |                                 | R1-R2-R3  | (mm)            | 1250 / 7000 / 9700                                                           |                                         |              |                     |                     |  |
|            | DRIVE LINE | 36                                                    | Engine type, design             |           |                 |                                                                              | Diesel / 4-stroke / turbo / intercooler |              |                     |                     |  |
|            |            | 37                                                    | Drive line - performance levels |           |                 |                                                                              | MP Medium Performance                   |              |                     | HP High Performance |  |
| 38         |            | Engine, power - torque, min / max                     |                                 |           | (kW/Nm)         | 164 / 949                                                                    |                                         |              | 185 / 1160          |                     |  |
| 39         |            | Fuel consumption, average diesel / AdBlue (3*)        |                                 |           | (L/h-%)         | 5 - 15 / 1 - 5                                                               |                                         |              | 5 - 15 / 1 - 5      |                     |  |
| 40         |            | Travel speed, fwd / rev (unloaded - at rated load)    |                                 |           | (km/h)          | 24 - 24 / 22 - 22                                                            |                                         |              | 25 - 25 / 25 - 25   |                     |  |
| 41         |            | Gradeability, max / 2 km/h (unloaded - at rated load) |                                 |           | (%)             | 29 - 22 / 24 - 19                                                            |                                         |              | 37 - 30 / 33 - 27   |                     |  |
| 42         |            | Lifting speed, unloaded - at 70% of rated load        |                                 |           | (m/s)           | 0,55 - 0,50                                                                  |                                         |              | 0,65 - 0,60         |                     |  |
| 43         |            | Lowering speed, unloaded - at rated load              |                                 |           | (m/s)           | 0,50 - 0,60                                                                  |                                         |              | 0,55 - 0,60         |                     |  |
| 44         |            | Transmission, gears forward / reverse                 |                                 |           |                 | 3 + 3                                                                        |                                         |              | 4 + 4 with Lock-Up  |                     |  |
| 45         |            | Transmission type, function, safety                   |                                 |           |                 | Automatic powershift / reverse protection                                    |                                         |              |                     |                     |  |
| 46         |            | Drive axle type, service brakes (drive wheels)        |                                 |           |                 | Differential / hub reduction /oil-cooled wet disc brakes                     |                                         |              |                     |                     |  |
| 47         |            | Drive axle, parking brake, brake release              |                                 |           |                 | Single big dry disc / hydraulic release                                      |                                         |              |                     |                     |  |
| 48         |            | Steer axle type, design, function                     |                                 |           |                 | Heavy-duty / single cylinder / power steering                                |                                         |              |                     |                     |  |
| OTHERS     | 49         | Hydraulic system, type                                |                                 |           |                 | Load-sensing (power-on-demand) / working & brake oil tank                    |                                         |              |                     |                     |  |
|            | 50         | Tank volumes, diesel - AdBlue (3*) - oil              |                                 |           | (dm³)           | 380 / 15³ / 320                                                              |                                         |              |                     |                     |  |
|            | 51         | Noise, inside LpAZ / outside LwAZ (EDM's)             |                                 |           | (dB(A))         | 63 - 67 / 103 - 107                                                          |                                         |              |                     |                     |  |
|            | 52         | Overload System with warning OLS1 + OLS3              |                                 |           |                 | Standard: OLS1 (lift monitor) / Optional: OLS3 (lift cut-off + tilt monitor) |                                         |              |                     |                     |  |

Notes:  
1) MPS = Full lifting capacity with MPS (8-9-10-11 tons).  
HPS = Full lifting capacity with HPS incl MPS (8-9-10-11 tons).  
Except DCG110-45ED87, 10 tons at 8/7-high.  
2) MPS = Mechanical Pile Slope in end beams - by gravity.  
HPS = Hydraulic Pile Slope by 2 cylinders incl. MPS.  
3) On EU3 (EPA T3) engines there is no AdBlue/DEF package included.  
On EU4 (EPA T4F) engines AdBlue/DEF package is included.  
On EU5 (EPA T4F) engines AdBlue/DEF and DPF filter package is included.

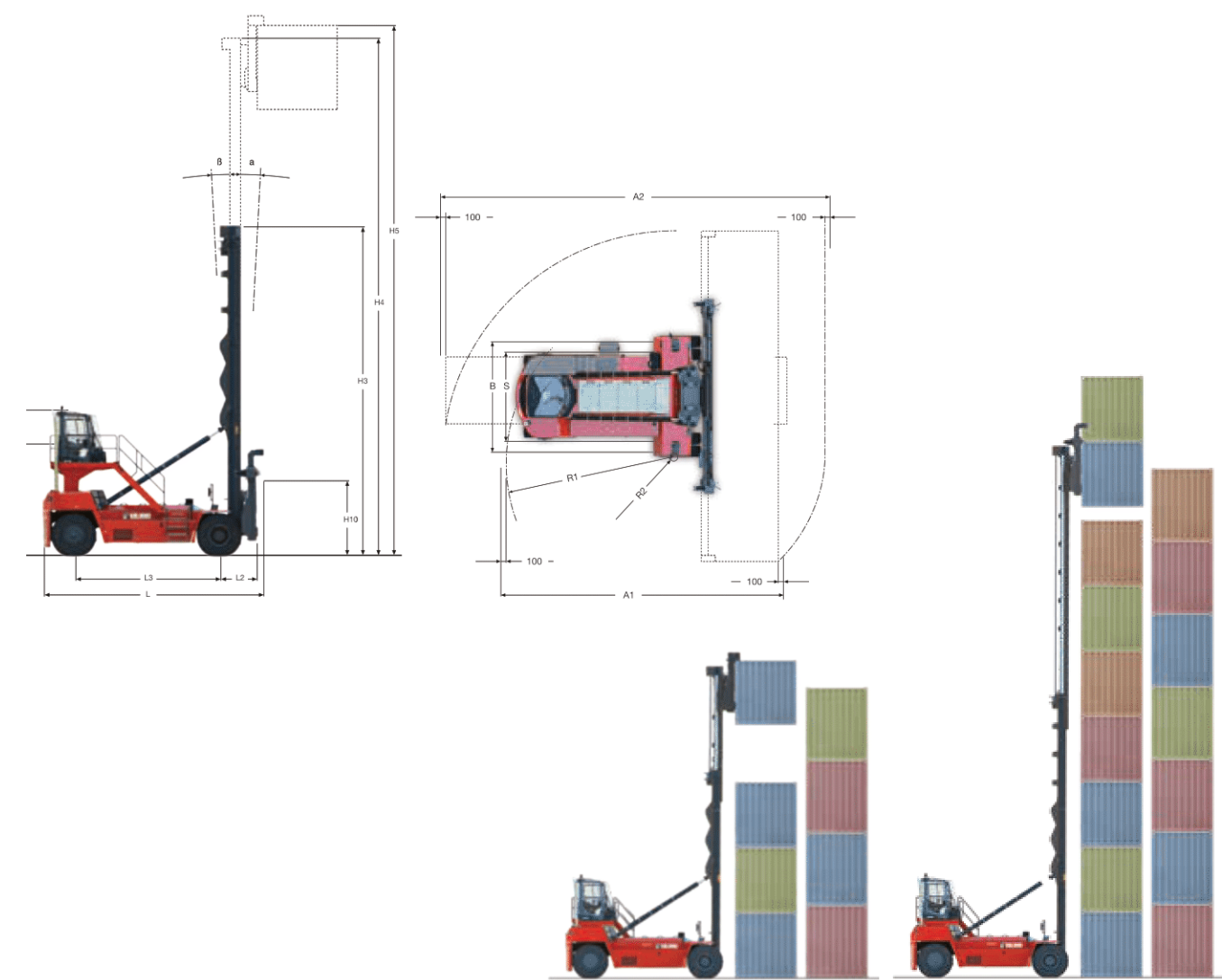
| DCG110-45ES                                                                  |              |              |               |               |
|------------------------------------------------------------------------------|--------------|--------------|---------------|---------------|
| ES4/4                                                                        | ES5/5        | ES6/5        | ES7/6         | ES8/7         |
| Single Stackers                                                              |              |              |               |               |
| 11000                                                                        | 11000        | 11000        | 11000         | 11000         |
| 4/4                                                                          | 5/5          | 6/5          | 7/6           | 8/7           |
| Standard: Twistlocks / optional: Twistlocks + WTP (76 mm)                    |              |              |               |               |
| Sidelift, 20' + 40' stops, alignment & interrupt sensors                     |              |              |               |               |
| 4550                                                                         |              |              |               |               |
| 1210 to 1280                                                                 |              |              |               |               |
| 700                                                                          |              |              |               |               |
| 39700/40800                                                                  | 41200/42200  | 41700/42800  | 43200/44300   | 44700/45600   |
| 22200/39100                                                                  | 23800/40600  | 24400/41300  | 26100/42900   | 27700/44600   |
| 23500/40500                                                                  | 25100/42000  | 25700/42700  | 27400/44300   | 29000/46000   |
| 17500/11600                                                                  | 17400/11500  | 17300/11400  | 17100/11300   | 17000/11100   |
| 17300/11300                                                                  | 17100/11200  | 17100/11000  | 17100/11000   | 16800/11100   |
| Pneumatic / Diagonal / E4                                                    |              |              |               |               |
| 14,00x24"                                                                    |              |              |               |               |
| 10,00x24"                                                                    |              |              |               |               |
| 4* - 2                                                                       |              |              | 1.0           |               |
| Standard: 3270 - 2400 / Optional: 3780 - 2400                                |              |              |               |               |
| Standard: 4100 / Optional: 4600                                              |              |              |               |               |
| Standard: D91-HD                                                             |              |              |               |               |
| Duplex / 2-stage / 2 cylinders / 2 lift chains                               |              |              |               |               |
| Standard: 3-3 / optional: 3-6 or 2-3                                         |              |              |               |               |
| 7100 - 12100                                                                 | 8600 - 15100 | 9100 - 16100 | 10350 - 18600 | 11600 - 21100 |
| 2300 - 12300                                                                 | 2300 - 15300 | 2300 - 16300 | 2300 - 18800  | 2300 - 21300  |
| Standard: 4000 / optional: 4600                                              |              |              |               |               |
| Standard: 2860 / optional: 3460                                              |              |              |               |               |
| 6900/6950                                                                    |              |              |               |               |
| 6085-12220                                                                   |              |              |               |               |
| ± 600 (1200)                                                                 |              |              |               |               |
| Standard: 0 - 250 / optional: HPS: ± 5 (incl MPS)                            |              |              |               |               |
| 300                                                                          |              |              |               |               |
| 10850/14350                                                                  |              |              |               |               |
| 1250 / 7000 / 9700                                                           |              |              |               |               |
| Diesel / 4-stroke / turbo / intercooler                                      |              |              |               |               |
| HP High Performance                                                          |              |              |               |               |
| 185 / 1160                                                                   |              |              |               |               |
| 5 - 15 / 1 - 5                                                               |              |              |               |               |
| 25 - 25 / 25 - 25                                                            |              |              |               |               |
| 37 - 30 / 33 - 27                                                            |              |              |               |               |
| 0,56 - 0,56                                                                  |              |              |               |               |
| 0,55 - 0,55                                                                  |              |              |               |               |
| 4 + 4 with Lock-Up                                                           |              |              |               |               |
| Automatic powershift / reverse protection                                    |              |              |               |               |
| Differential / hub reduction /oil-cooled wet disc brakes                     |              |              |               |               |
| Single big dry disc / hydraulic release                                      |              |              |               |               |
| Heavy-duty / single cylinder / power steering                                |              |              |               |               |
| Load-sensing (power-on-demand) / working & brake oil tank                    |              |              |               |               |
| 380 / 15³ / 320                                                              |              |              |               |               |
| 63 - 67 / 103 - 107                                                          |              |              |               |               |
| Standard: OLS1 (lift monitor) / Optional: OLS3 (lift cut-off + tilt monitor) |              |              |               |               |

| DCG110-45ED                                                                  |             |             |                     |             |
|------------------------------------------------------------------------------|-------------|-------------|---------------------|-------------|
| ED4/4                                                                        | ED5/5       | ED6/5       | ED7/6               | ED8/7       |
| Double Stackers                                                              |             |             |                     |             |
| 11000                                                                        | 11000       | 11000       | 11000               | 11000       |
| 4+1/4+1                                                                      | 5+1/5+1     | 6+1/5+1     | 7+1/6+1             | 8+1/7+1     |
| Standard: Hooks + Clamps / optional: STD + Safety Wedge                      |             |             |                     |             |
| Sidelift, 20' + 40' stops, alignment & interrupt sensors                     |             |             |                     |             |
| 4550                                                                         |             |             |                     |             |
| 1210 to 1280                                                                 |             |             |                     |             |
| 700                                                                          |             |             |                     |             |
| 40100/41200                                                                  | 41500/42600 | 42100/43200 | 43600/44700         | 45100/46200 |
| 22700/39600                                                                  | 24200/41100 | 24900/41800 | 26500/43400         | 28200/45100 |
| 24000/41000                                                                  | 25500/42500 | 26200/43200 | 27900/44800         | 29500/46500 |
| 17400/11500                                                                  | 17300/11400 | 17200/11300 | 17100/11200         | 16900/11100 |
| 17200/11200                                                                  | 17100/11100 | 17000/11000 | 16800/10900         | 16700/10700 |
| Pneumatic / Diagonal / E4                                                    |             |             |                     |             |
| 14,00x24"                                                                    |             |             |                     |             |
| 10,00x24"                                                                    |             |             |                     |             |
| 4* - 2                                                                       |             |             | 1.0                 |             |
| Standard: 3270 - 2400 / Optional: 3780 - 2400                                |             |             | Standard: 3780-2400 |             |
| Standard: 4100 / Optional: 4600                                              |             |             | Standard: 4600      |             |
| D91-HD                                                                       |             |             | D91-HD              |             |
| Duplex / 2-stage / 2 cylinders / 2 lift chains                               |             |             |                     |             |
| Standard: 3-3 / optional: 3-6 or 2-3                                         |             |             |                     |             |
| 7040-12040                                                                   | 8600-15100  | 9100-16100  | 10350-18600         | 11600-21100 |
| 2240-12240                                                                   | 2300-15300  | 2300-16300  | 2300-18800          | 2300-21300  |
| Standard: 4000 / optional: 4600                                              |             |             |                     |             |
| Standard: 2860 / optional: 3460                                              |             |             |                     |             |
| 6900/6950                                                                    |             |             |                     |             |
| 6615-12750                                                                   |             |             |                     |             |
| ± 600 (1200)                                                                 |             |             |                     |             |
| Standard: 0 - 250 / optional: HPS: ± 5 (incl MPS)                            |             |             |                     |             |
| 300                                                                          |             |             |                     |             |
| 10850/14350                                                                  |             |             |                     |             |
| 1250 / 7000 / 9700                                                           |             |             |                     |             |
| Diesel / 4-stroke / turbo / intercooler                                      |             |             |                     |             |
| HP High Performance                                                          |             |             |                     |             |
| 185 / 1160                                                                   |             |             |                     |             |
| 5 - 15 / 1 - 5                                                               |             |             |                     |             |
| 25 - 25 / 25 - 25                                                            |             |             |                     |             |
| 37 - 30 / 33 - 27                                                            |             |             |                     |             |
| 0,56 - 0,56                                                                  |             |             |                     |             |
| 0,55 - 0,55                                                                  |             |             |                     |             |
| 4 + 4 with Lock-Up                                                           |             |             |                     |             |
| Automatic powershift / reverse protection                                    |             |             |                     |             |
| Differential / hub reduction /oil-cooled wet disc brakes                     |             |             |                     |             |
| Single big dry disc / hydraulic release                                      |             |             |                     |             |
| Heavy-duty / single cylinder / power steering                                |             |             |                     |             |
| Load-sensing (power-on-demand) / working & brake oil tank                    |             |             |                     |             |
| 380 / 15° / 320                                                              |             |             |                     |             |
| 63 - 67 / 103 - 107                                                          |             |             |                     |             |
| Standard: OLS1 (lift monitor) / Optional: OLS3 (lift cut-off + tilt monitor) |             |             |                     |             |



DRIVE LINES

| Truck Models                         |            | Medium Performance (MP)               | High Performance (HP)                 |                        |                        |
|--------------------------------------|------------|---------------------------------------|---------------------------------------|------------------------|------------------------|
| Engine emission approvals            |            | EU3 / Tier 3                          | EU3 / Tier 3                          | EU4 / Tier 4F          | EU5                    |
| Engine emission brand/series         |            | Cummins QSB                           | Volvo / D8                            | Volvo / D8             | Volvo / D8             |
| Engine model                         |            | QSB-6.7-C220                          | TAD-851-VE                            | TAD-871-VE             | TAD-881-VE             |
| Engine after treatment type          |            | No SCR / no AdBlue                    | No SCR / no AdBlue                    | With SCR / with AdBlue | With SCR / with AdBlue |
|                                      |            | No particle filter                    | No particle filter                    | No particle filter     | With particle filter   |
| Engine design / cylinders            |            | 6-inline / common rail                | 6-inline / common rail                |                        |                        |
| Engine displacement                  | (dm3)      | 6.700                                 | 7.700                                 |                        |                        |
| Max power @ engine speed             | (kW)       | 164 @ 2.000                           | 185 @ 1.500-2.100                     |                        |                        |
| Max torque @ engine speed            | (Nm)       | 949                                   | 1.160                                 |                        |                        |
| Max engine speed                     | (rpm)      | 2.100                                 | 1.800                                 |                        |                        |
| Fuel consumption – average diesel    | (l/h)      | 5–15                                  | 5–15                                  |                        |                        |
| Fuel consumption – average adblue    | (%)        | -                                     | -                                     | 1 - 5                  | 1 - 5                  |
| Transmission model (gears FWD + RVS) |            | Dana TE-14300 (3+3)                   | Dana TE-14400-L (4+4) with lock-up    |                        |                        |
| Transmission gear shift type         |            | Automatic powershift                  | Automatic powershift                  |                        |                        |
| Transmission clutch type             |            | Torque converter                      | Torque converter with Lock-Up         |                        |                        |
| Drive axle brand / series            |            | Kessler / D81 - D91 (WDB)             | Kessler / D81 - D91 (WDB)             |                        |                        |
| Service brake / cooling              |            | Wet Disc Brakes with oil cooling      | Wet Disc Brakes with oil cooling      |                        |                        |
| Steer axle brand / series            |            | Kalmar / single cylinder / extra wide | Kalmar / single cylinder / extra wide |                        |                        |
| Alternator, power                    | (W, V * A) | AC, 1680 (28 x 60)                    | AC, 3640 (28 x 130)                   |                        |                        |



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