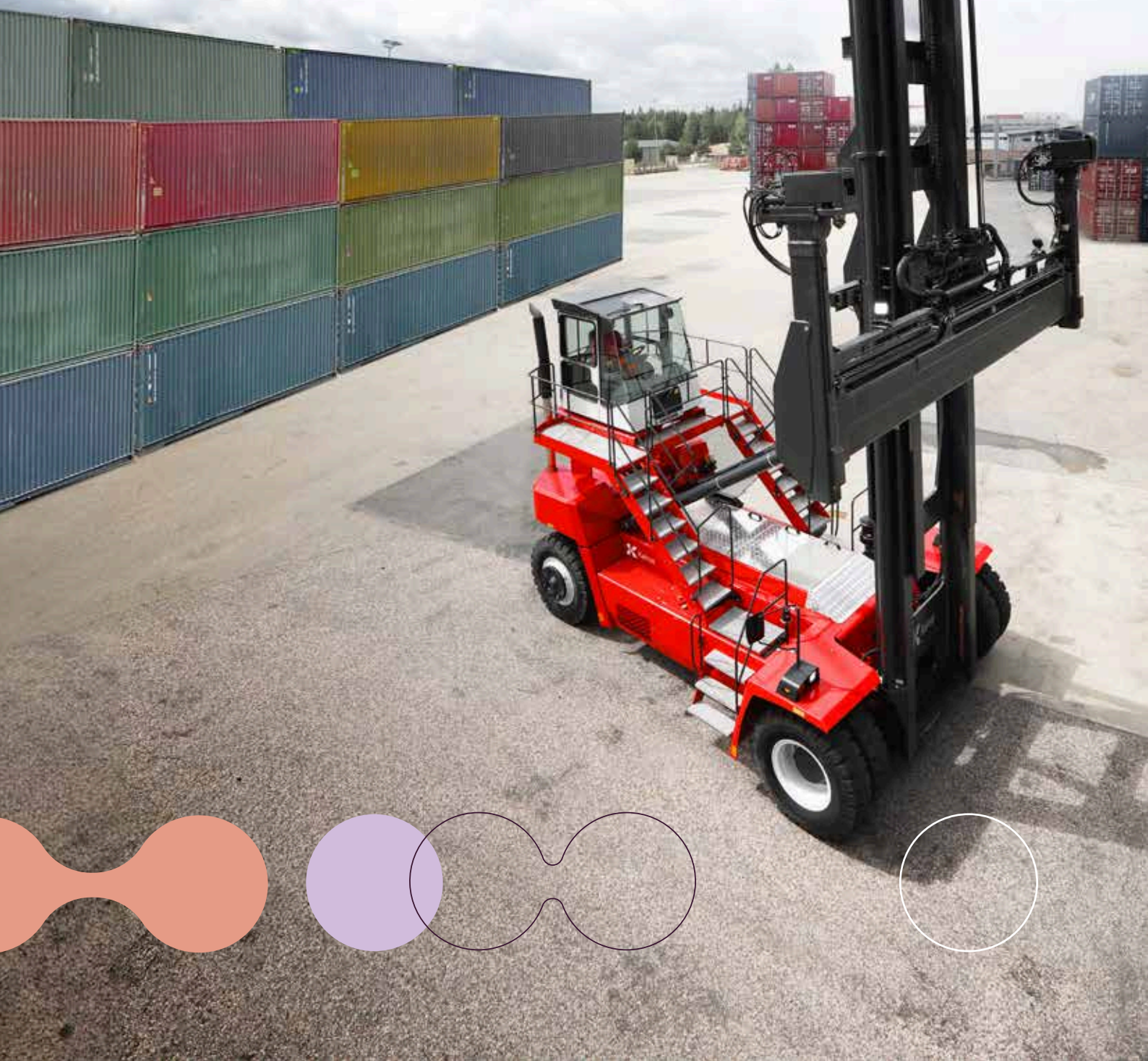




# Essential Empty Container Handler

DCU80-110 Range





# More for your money

## The Kalmar Essential Empty Container Handler gives you everything that you expect from Kalmar for a great price, without compromising on quality.

Built on our G-Generation platform you get a machine that is reliable, robust, highly efficient and is available with EU3 / Tier 3 / China Stage IV, emissions standards compliant engines. You can choose from a wider range of empty container handlers with lifting capacities from 8-10 tonnes, newer more efficient engines and an extended range of options.

## A complete line-up

The Kalmar Essential Reachstacker, joins our Gloria and heavy lifting range to give you the broadest choice of reachstackers in the market. Our Essential Range will give you everything you need to get the job done efficiently at a great price, if you need more choice or a greater range of attachments or options you should consider our Gloria Range of reachstackers.



Our Essential Range is built on our proven and tested G-Generation platform and the experience of building over 10,000 reachstackers. Your drivers will benefit from common electronics and controls across the entire range for ease of operation.



With easily accessible service points and extended servicing periods, maintenance tasks will be quicker and easier to perform. Increasing your machine availability.



Our new Essential Cabin has been ergonomically designed so everything is in easy reach for your drivers. You get a choice of joysticks, either will increase operational safety and control, as all movements can be managed from one point.



With improved load sensing hydraulics, you will be able to lift more efficiently, as exactly the right amount of power is produced to lift and lower at the optimal rate without having to over rev the engine.



 A quality build with high availability and excellent productivity.



# Built on a proven platform

With more than 10,000 machines built on our proven G-Generation platform you can expect an empty container handler that is ready to take on any task.

## Meet the Essential Range

Our Essential Range gives you everything you expect from Kalmar, at a great price. The Essential Range now has empty container handlers, forklifts and terminal tractors available, in addition to reachstackers.

We know you want a reliable machine, which is why our empty container handlers are built on a proven and tested platform. You will benefit from:



**A standardised driver control panel:** all machines have the same operator controls and interface, making it easier to move from one type of machine to another.



**Common electrical systems:** uses standardised error codes for fast and easy trouble shooting.



**Proven chassis design** with high stability and durability.



**Increased availability:** common platforms, mean more common parts, which has helped us increase parts availability through Kalmar MyParts, our 24/7 parts portal.



Only built with **branded quality components** from leading manufacturers.



**Common points of connection:** to make it easier for data to pass from your machine to external reporting systems, to Kalmar Insight or your own system.

## With Kalmar quality built in

With Kalmar you should only expect the best, as our focus is on building a machine that will offer superior safety, driver comfort and be highly reliable.



Each of our machines has been designed to exceed the ISO 22915 standards, so you get a very safe and stable machine to operate.



We go to great lengths to choose and test all the components used to build our reachstackers, which are only supplied from leading manufacturers, to guarantee their quality and performance.



To avoid corrosion we treat all sensitive surfaces, steps, platforms, exhaust pipes, nuts and bolts, with long-life surface coatings or highly corrosion resistant material.





# Highly efficient

**All of our Essential Empty Container Handlers come fitted with load sensing hydraulics and there is a range of the latest generation of drive lines to choose from.**

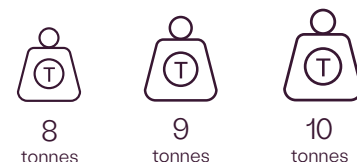
No matter which combination you specify, you will get a highly efficient and powerful machine that uses less fuel, produces less emissions, costing you less while maintaining productivity.

Our Load Sensing Hydraulic systems measures your load and then generates the required amount of power to lift or lower it efficiently. Delivering you the power you need while reducing the energy consumed.

## A broader range of machines

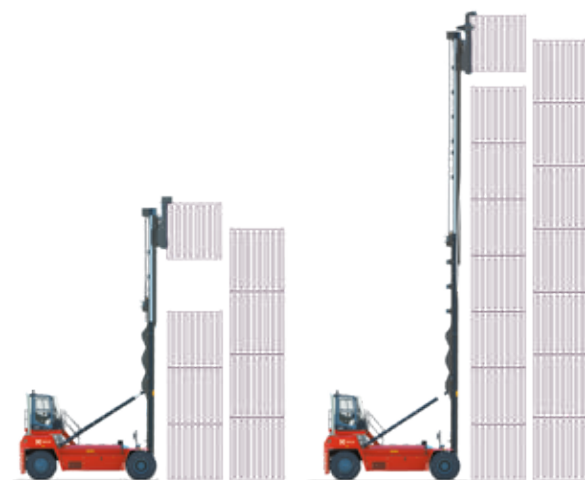
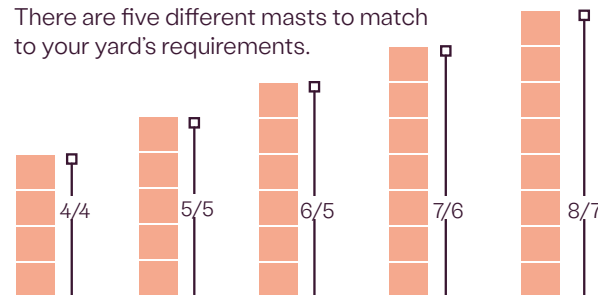
Our Essential Empty Container Handlers now come with a broader range of lifting capacities and stacking heights. You can choose from three different lifting capacities: 8, 9 and 10 tonne.

### 3 lifting capacities



### 5 lifting heights

There are five different masts to match to your yard's requirements.







# Easy to maintain and monitor

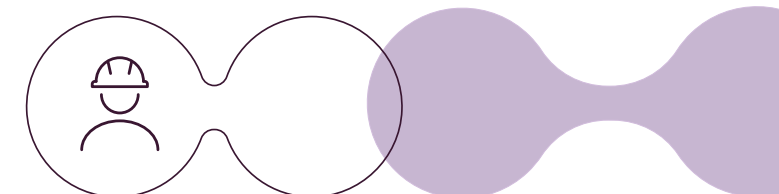


## Easy to maintain, with industry leading service intervals.

Performing daily inspections and routine servicing is quick and convenient with all check points easily and safely accessible.

The electrical cabinet is convenient to access for the maintenance technician, and when the hatch covers are raised, the hydraulic filters, servicing points and the entire driveline can be reached from one location.

With industry-leading service intervals, your machine will spend less time being maintained and regular service tasks can be done quicker and more efficiently, all helping to increase the overall availability of your machine.





# Intelligent and efficient drivelines

## Reduced fuel consumption

You will benefit from a 10-20% reduction of fuel consumption and exhaust emissions over our previous generation of machines, as we have combined the most efficient EU3 / Tier 3 / China Stage IV compliant engine technology, with the latest 3-speed DANA TE-14310 transmission. With a significant reduction in energy loss from the gearbox and a reduction in fuel consumed from the engine, you get a smart solution that will cost you less in the long run.



10 - 20% less fuel

## Improved lifting speeds

By combining load sensing hydraulics with new and improved engines and transmissions, lifting speeds have been improved up to 10% compared to our previous generation of machines, so you can get more done in less time.

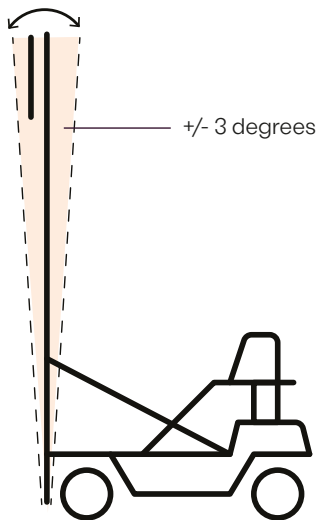
### Three driveline combinations to choose from:

all with a 3+3 transmission and EU3 / Tier 3 / China Stage IV emissions standards compliant engines.

Engine	Volume	Power	Transmission
Cummins QSB-6.7 EU3	6.7L	164kW	DANA TE-14310 3+3
Volvo TAD-850-VE EU3	7.7L	160kW	DANA TE-14310 3+3
Volvo TAD-881-VE CSIV	7.7L	185 kW	DANA TE-14310 3+3

## Tilting masts

All of our masts can be tilted both forwards and backwards by up to +/- 3 degrees. You can also opt for a +2/-3 degree (FW/BW) or +3/-6 (FW/BW) mast tilt. Tilting backwards will help to stabilise your load while moving and make it easier to lift a container off the stack. Being able to tilt forwards will make placing a container either on the stack or trailer much easier and safer.



Lifting speeds improved by 10% compared to previous generations of machines.





# Designed for the driver



## The Essential Cabin

The Kalmar Essential Cabin has everything your drivers need to operate at their best. The well-designed, spacious cabin offers great visibility both forward and backward. An adjustable seat and steering wheel, power-assisted steering, and a choice of joysticks.

With the Kalmar Essential Empty Container Handler, you get more features as standard: sliding side windows, colour operator displays, wipers on the front and roof of the cabin.

## More comfortable

No matter what the weather, your drivers will be comfortable with our improved electronic climate control package with extra strong fans to remove condensation quickly and to maintain a steady temperature. You can keep your operators out of the sun with visors that can be fitted on the front, rear or roof windows of the cabin.

## Easy to operate

You can choose a linear lift lever (Kalmar EGO lever with FNR button) or you can choose our ergonomically designed G-Generation joystick (Kalmar EGO joystick with FNR button). All options will help keep your driver in complete control as all operations can be managed from one place.

## 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.

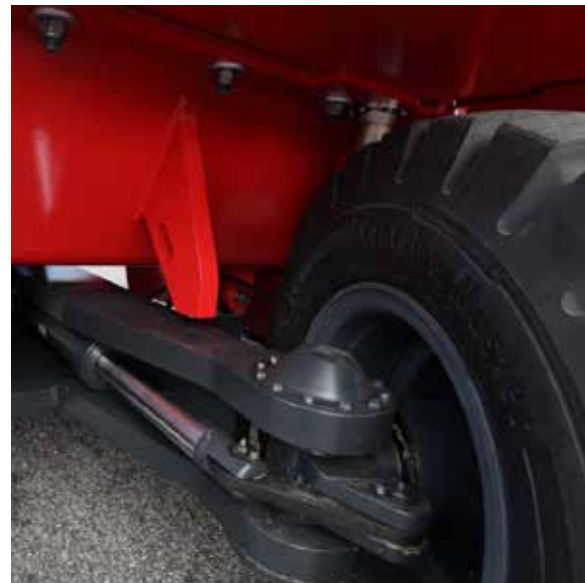


# Keeping your driver safe

The safety of your drivers is of critical importance, which is why our machines come with many more safety features fitted as standard than other machines available in the market.

- There are doors on both sides of the cabin in case your operator needs to leave the cabin quickly in case of an emergency.
- Openable side window in the cabin for easy communication.
- Rear-view mirrors are mounted on the front mudguards so your operator can see behind him easily
- Kalmar designed steering axle with extra wide tracking for increased stability.
- An electrically operated hand brake that is automatically applied as soon as your engine is turned off, bringing your machine to complete stop.
- Mechanical tilt indicator on tilt cylinder as standard, will give the driver the actual mast tilt angle when operating.
- New safety striping in the lift mast for the correct transport positioning. The driver can easily see where the optimal transport height is.

You can also enhance your employees' safety further by fitting your machine with an optional HD camera supervision system, Reverse Warning System, Alcolock, Speed Limiter or additional LED lights.





# Safety fitted as standard

## All Kalmar equipment is compliant with EN 1175:2020.

At Kalmar, the safety of people working with our machines is always at the top of our minds, which is why meeting global safety standards is important to us. The safety standard EN 1175:2020, which sets the electrical and electronic component standards for industrial trucks, has been updated to improve the safety of these machines while in operation. This update is valid from April 2023. All Kalmar counter balanced machines, including reachstackers, empty container handlers and forklifts have been updated to meet this new standard to ensure that working with a Kalmar machine is as safe as it can be.

For Kalmar, the safety of your drivers and maintenance staff is of critical importance, which is why our machines come with many more safety features fitted as standard than other machines available in the market.

The features listed here come fitted as standard on all Kalmar machines. You can enhance your employees' safety further by fitting your machine with our additional safety options listed on the following pages.



**2-point seat belt.** Ensures that your driver is safe and secure while operating our equipment, all Kalmar machines are equipped with an adjustable 2-point seat belt system.



**3-point Contact System.** Makes sure your drivers are safe when entering or exiting our equipment. All machines are fitted with steps and handles to ensure they can always maintain three points of contact with the vehicle, helping to keep them safe and preventing incidental injuries.



**Double brake pedals/ Dual brake pedals.** To avoid driver leg fatigue, every machine is equipped with dual brake pedals which require only heel to toe movements, allowing the driver to move his foot between the accelerator and brake pedals without having to move their leg.



**Steps with anti-slip protection.** To reduce the risk of your driver slipping or falling on our equipment, all entering and exiting points are fitted with non-slip surfaces giving them extra grip, so your drivers stay safe.



**Control System.** All our equipment is fitted with an electronic Control System for monitoring the machine's different functions while in operation, helping to keep your driver fully informed at all times with up-to-date Operating, Event Controlled and Error Code information.



**Operating information.** Our equipment's Control System provides several operating information menus, which give your operator and maintenance personnel a great insight into the on-going performance of the machine, allowing them to keep it running optimally.



**Event controlled information.** Provided through the Overload Protection System to warn the driver through the equipment's Control System if their load exceeds the specified safety limits.



**Error code information.** Should there be any issue with your equipment while in operation, the electronic control system will immediately alert your driver with the appropriate error code, so they know exactly what is going on and can take appropriate action.



**Display.** Cabins are fitted with a large easy to read display which keeps your drivers fully aware of the machine's on-going performance and any maintenance actions that need to be taken.



**Control Breaker System for load handling.** All of our equipment is fitted with a Control Breaker System, which automatically shuts down the load handling system should a fault occur, until the fault has been corrected. Keeping your driver, equipment and load safe.



**Operator Presence Detection System.** Maintains the highest levels of safety for both the driver and pedestrians, as all our equipment is fitted with an alarm or visual indicator that comes on automatically if:

- The driver does not fasten their seat belt while in operation.
- The driver leaves their seat without engaging the parking brake.

In addition, if the driver leaves their seat while the machine is operational, the transmission is automatically shifted to neutral and load-handling functions are disabled.



**Engine/transmission Protection and Warning Systems.** Warning systems, designed to protect your machine's driveline in case of higher than expected temperatures or a pressure build up, are standard on all equipment, avoiding unnecessary mechanical failures.



**External reverse light.** For the safety of others, all our equipment is equipped with external reversing lights that help the driver keep everyone informed that they are moving backwards.



**LED lights.** These come fitted as standard on all our equipment, providing better visibility when working in reduced light than halogen lights.



**Neutral start switch.** A neutral start switch means your driver can't start his machine while it is in gear, preventing any damage to the driveline and any uncontrolled equipment movements.



**Protection against falling objects.** Cabin roof windows on all our equipment are fitted with high strength materials which can withstand heavy blows, helping to protect your drivers from falling objects.



**Good visibility.** Kalmar cabins provide your drivers with excellent visibility, forwards, upwards, sideways and behind them to help them stay safe while in operation.



# A range of options

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



**Fire Suppression System.** To protect your operator and machine from fire you can fit a Fire Suppression System\* 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.



**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.



**Additional lighting.** Extra lighting, particularly if you operate your machine at night, as you can bring greater operational visibility and safety for personnel working on the site. You can choose additional LED working lamps on specific positions.



**Kalmar Safety Cameras.** There are a range of camera solutions available that will enhance the overall safety of your reachstacker when in operation. Cameras extend and enhance the drivers visibility range, record your reachstacker's movements and provide alerts if your reachstacker is at risk of hitting something by using radar. You can choose one solution or combine a number together.



**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.

## Kalmar has a range of solutions that will help make your equipment more eco-efficient and sustainable



**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.



**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 components, this makes it possible to achieve up to 10% in fuel savings.

\* Cannot suppress a battery fire.





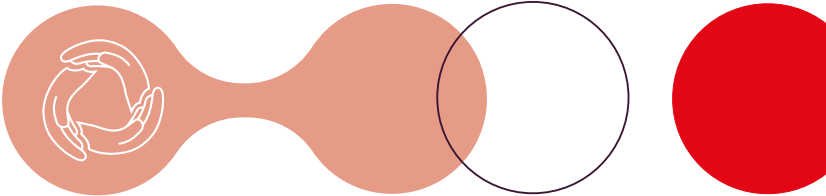
# Keep moving with Kalmar Services

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

## Kalmar Care

**Care that keeps your business moving.**  
With Kalmar Care you get a flexible service that's built around your business. Including, the experience and knowledge of Kalmar's dedicated staff, coupled with transparency and increased predictability of costs.

Kalmar Care is available in three different service models: our two customisable contracts – Essential Care and Complete Care – and our flexible solution On Demand Care.



### Service models:



#### Essential Care

A maintenance solution to keep your equipment in an optimal condition.



#### Complete Care

A complete service solution providing piece of mind and maximum equipment uptime.



#### On Demand Care

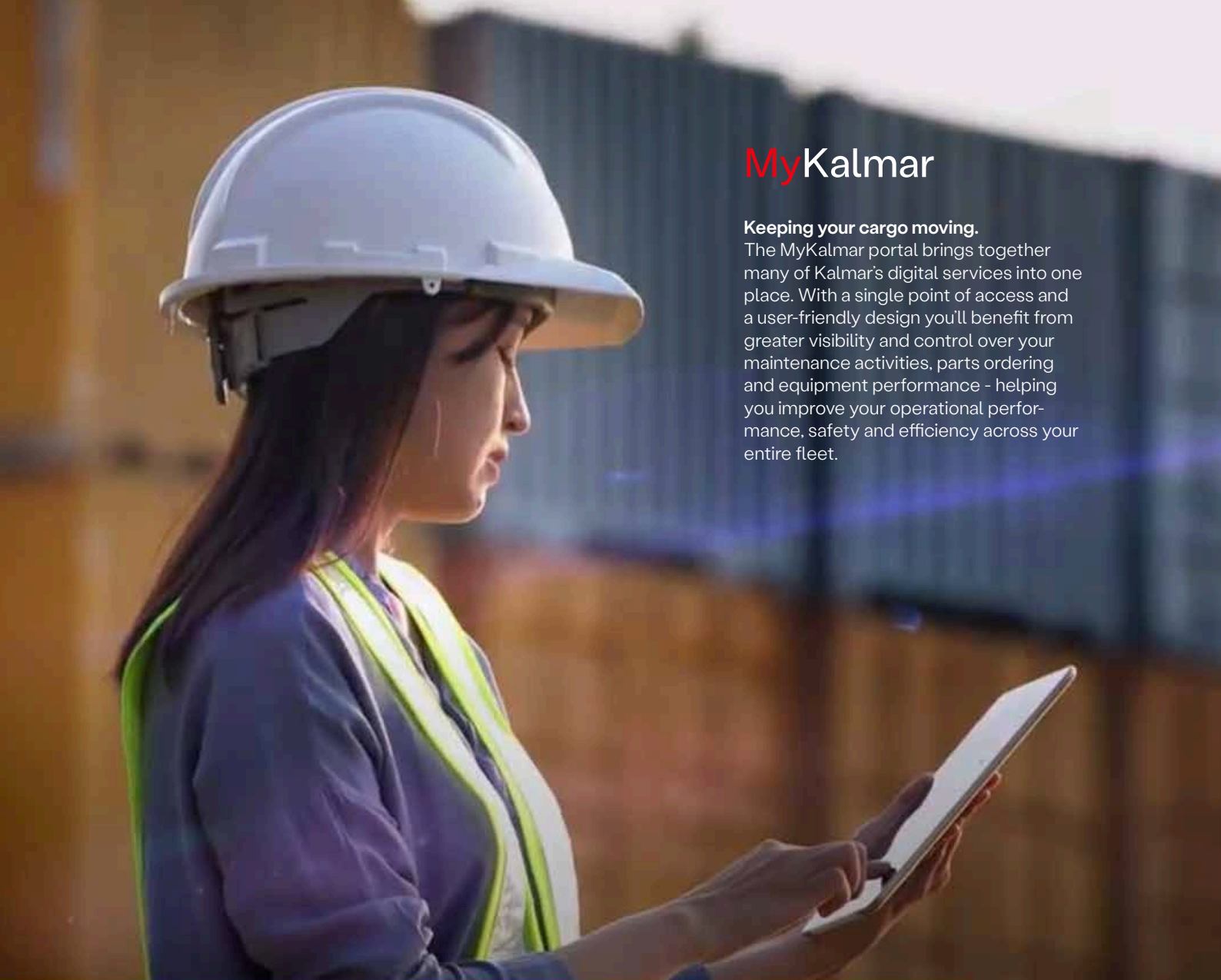
Top-of-the-line service whenever you need it.

Maintenance Planning	●	●
Preventive Maintenance	●	●
Predictive Maintenance		●
Corrective Maintenance		●
Preventive Spare Parts	●	●
Corrective Spare Parts		●
Lubricants	●	●
MyKalmar	●	●
Kalmar Insight	●	●
Tyre Maintenance		●
Battery Maintenance		●

● Included    ● Optional

Top-of-the-line service  
whenever you need it





## 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.

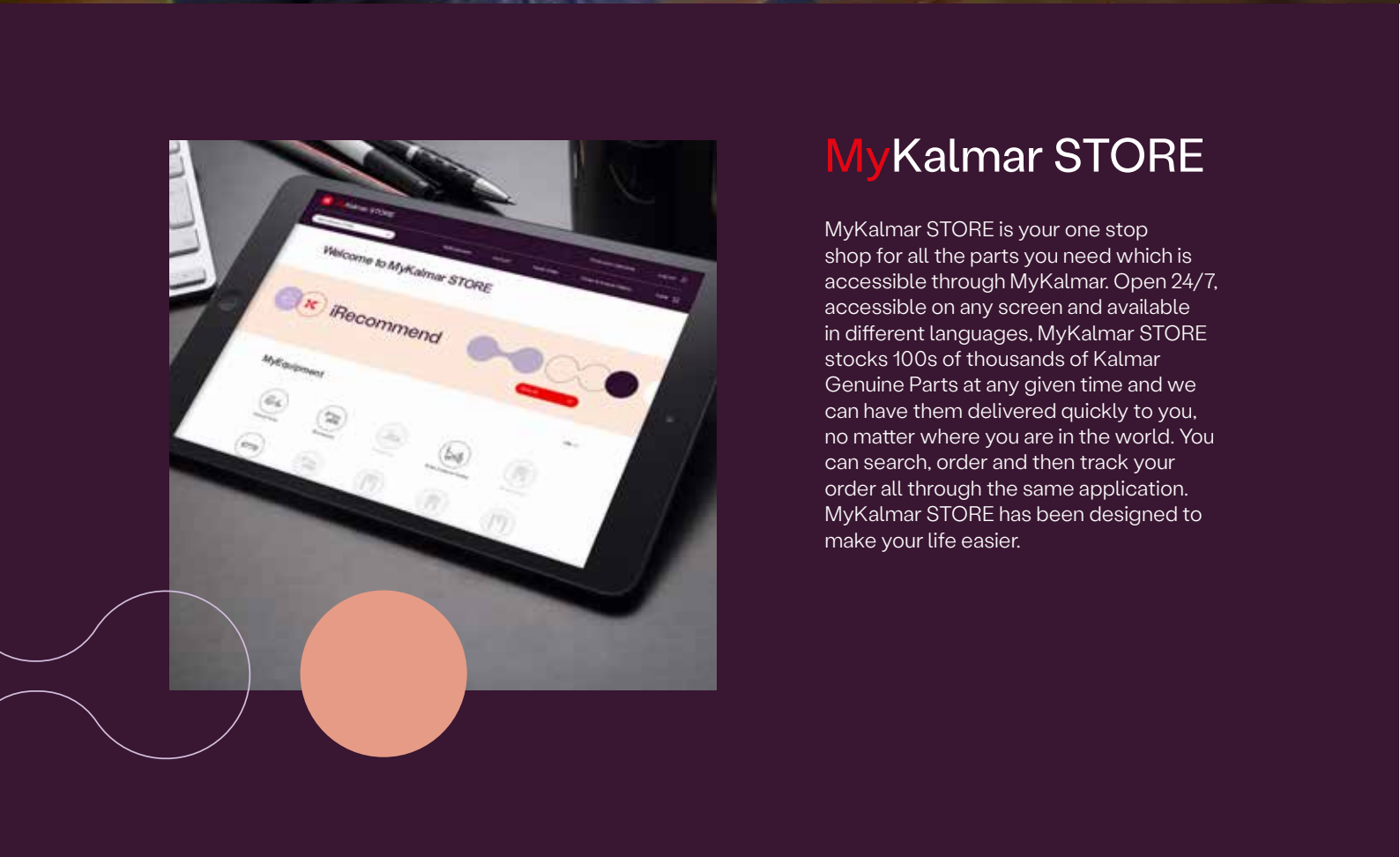
## Kalmar Insight

**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.



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



## MyKalmar STORE

MyKalmar STORE 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, MyKalmar STORE 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. MyKalmar STORE has been designed to make your life easier.

## 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.





# Standard

Kalmar DCU80-100ES4-8 (EU3 / Tier 3 / China Stage IV)

## Norms, standards and regulations according to:

- Machinery Directive 2006/42/EC
- Safety Industrial Trucks ISO 3691-1
- 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 chassis for EC-Handlers
- High/rear mounted heavy-duty tilt cylinders
- Safe access stairway (multiple steps, hand rails & platform on left side)
- Low cabin mounted at the rear of the truck
- Good visibility over rear of truck
- Open chassis with full access to the driveline
- Easy-to-open driveline cover plates (low noise)
- Lifting eyes and anchor points (front & rear)
- Towing pin (rear - incasted)

## Body

- Steps with anti-slip protection
- Rearview mirrors (2x) - mounted on front mudguards
- Strong and protective mudguards (front & rear)

## Steer Axle (rear)

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

## Drive Axle (front)

- Kessler planetary axle with hub reduction and differential
- D81-ND in normal duty for high stability (W=4,05-4,10 m)
- Strong and powerful oil-cooled Wet Disc Brakes (WDB)

## Wheels (tyres and rims)

- DCU80 ES: Tyres 12.00x24" (4x + 2x)
- DCU90-100 ES: Tyres 14.00x24" (4x + 2x)
- Wheel nut protection on steer tyres

## Driveline (CanBus)

- Volvo and Cummins diesel engines (6 cylinder)
- Durable and strong engines with pre-heater
- Emission approval EU3 / Tier 3 / China Stage IV
- Engine monitoring and protection system
- Fully automatic transmission DANA TE-14310 (3 + 3)
- Transmission monitoring and reverse protection
- Declutch function activated by the brake pressure
- Efficient radiators for engine, transmission & brakes
- Diesel tank (380 l), breather filter

## Efficient Hydraulics

- Load-sensing variable piston pumps
- Power-on-demand with high lift & lowering speeds
- Pumps for mast, spreader, brakes & steering
- Gear pumps for brake pressure
- Return filters for the work hydraulics (2x/10 my)
- Servo filter for the work hydraulics (1x/10 my)
- Pressure filter for hydraulics / brakes (2x/10 my)
- Power steering, power brakes & ORFS-couplings
- Hydraulic tank (320 l), cooling & breather filter

## Lift Mast

- Mast design for up to 8-high single stacking
- Duplex 2-stage mast with high mounted tilt cylinder
- Strong, durable lift mast, 1 pair of cylinders & chains
- Durable lift chains (mast and carriage)
- Heavy-duty mast profiles and strong cross members
- Mast with strong mast wheels, bearings & guide pads
- Large diameter shafts / bearing for mast / tilt fixations
- 2 hydraulic hoses & 1 electric 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)

## Attachment

- Durable single main beam with strong design
- Side lift with hydraulic extension 20°-40°
- 2 lift heads with fixed twistlocks from the top
- Mechanical Pile Slope (MPS) by gravity (side tilt)
- MPS with spring loaded vertical lift heads (0-250 mm)
- Lowering interrupt sensors for safe handling
- Safety locking, alignment pins & sensors (2x)
- Twistlocks indication LED-lamp panel (green-yellow-red)

## Electrical System 24V (G-Generation)

- Fully redundant 24V electrical system
- Battery box 2x12V & main power switch
- Electric service box on chassis
- 2 working LED-lights on front mudguards (head beam)
- 2 working LED-lights on mast (first cross member)
- 2 working LED-lights on spreader carriage (lift head)
- 2 working LED-lights rear below cabin (when reversing)
- 2 working LED-lights on spreader (bottom)
- 2 position LED-lights on each side of the truck
- 2 tail / brake LED-lights on counter weight (rear)
- 4 blinker LED-lights (front - rear / left - right)
- Flashing LED-brake lights (when reversing)
- 1 rotating warning LED-beacon

## Essential Cabin

### Structure

- Spacious, modern, ergonomically designed cabin
- Large windows, good visibility, in all directions
- In-step handles on left side
- Sliding window on both sides
- Tinted tempered windows

### Comfort

- Comfortable seat, mechanical spring, high back
- Mechanical adjustable operational console with levers, operational buttons & armrest (right side)
- Inside rear view convex-type mirror (right side)
- Interior lights with fade away function
- Fully adjustable steering wheel column incl bottom tilt function
- 2-point safety belt
- Power steering wheel with steer knob
- Electric horn
- LED background light for buttons & switches

### Controls

- Electronic lift levers for mast & spreader (FNR incl)
- Auto rev-up accelerator at lifting / tilting / spreader
- Accelerator pedal (hanging)
- Double brake pedals (L + R / floor-mounted)
- Gear lever with electronic hand brake (on/off)
- Automatic gear shifting (P1)
- Only first gear activated (P2)
- Only second gear activated (P3)
- Safety override for hydraulic functions (by code)
- 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

- Electronically controlled heating/ventilation
- Fresh air and recirculation filter
- Single wiper/washer on front window
- Single wiper/washer on roof window
- Interval wiper functions on front, roof and rear windows

## Information systems

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

### 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 & oil level (Volvo)
- Engine oil pressure only (Cummins)
- Engine coolant temperature
- Clock and date
- Operating time (hours)
- Service time indicator (hours)
- Status of heating system & AC system
- Fuel level (diesel and optional AdBlue)
- Estimated operating time before empty tank (hour/min)
- Service indicator
- Electronic weight scale in main display

### 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: Light-Grey RAL 7035
- Chassis, tanks & mudguards: Red RAL 3000
- Mast, attachment & axles: Black RAL 7021
- Rims and wheel hubs: Light-Grey RAL 7035

## 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

# Options

Kalmar DCU80-100ES4-8 (EU3 / Tier 3 / China Stage IV)

## Chassis

- DCU 80-45 ES (L3=4550 mm)
- DCU 90-45 ES (L3=4550 mm)
- DCU 100-45 ES (L3=4550 mm)

## Body

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

## Drive Axle

- D91-HD heavy duty axle for extra high stability (W=4,6 m)

## Wheels (tyres and rims)

- Tyre dimension 14.00×24" replaces 12.00x24"
- Spare wheel of supplied brands in 12" or 14"

## Driveline

- Cummins QSB-6.7 (EU3 / Tier 3, 164 kW, 949 Nm, 6-cyl, 6.70 l)
- Volvo TAD-850-VE (EU3 / Tier 3, 160 kW, 1060 Nm, 6-cyl, 7.70 l)
- Volvo TAD-881 (China Stage IV, 185 kW, 1160 Nm, 6-cyl, 7.70 l)
- Auto engine & ignition stop after 5 min idle
- Pre-cleaner air intake incl. raised air intake
- Noise efficient muffler and tall exhaust pipe

## Hydraulics

- Hydraulic accumulator for lift mast (shock dampening)
- Hydraulic longlife fine filter with by-pass (3 my)
- Load lowering safety valve for mast / spreader

## Lift Mast

- Duplex E4 (4-high 9'6" / 4-high 8'6")
- Duplex E5 (5-high 9'6" / 5-high 8'6")
- Duplex E6 (5-high 9'6" / 6-high 8'6")
- Duplex E7 (6-high 9'6" / 7-high 8'6")
- Duplex E8 (7-high 9'6" / 8-high 8'6")
- Mast tilt angles +2 /-3 deg (FW/BW)
- Mast tilt angles +3 /-6 deg (FW/BW)

## Attachment

- Automatic extension 20-40ft incl 30ft stop
- Soft landing by inductive sensor (on twistlocks only)

## Electrical System 24V (G-Generation)

- Extra sockets, 2 x 24V sockets and 2 x 12V sockets in cabin
- Extra sockets, 2 x 24V sockets and 2 x 5V / USB sockets in cabin
- Extra sockets, 1x12V + USB 1x5V + 2x24V
- Electric air pressure horn
- Buzzer when reversing (reverse alarm)
- Radio with CD, MP3, Bluetooth, USB & speakers (24V)

- 2 extra working LED-lights on mudguard (forward)
- 4 extra working LED-lights on mudguard (20-40 ft)
- 2 extra working LED-lights on cabin roof (forward)
- 4 extra working LED-lights on cabin roof (20-40 ft)
- 2 extra working LED-lights on mast (40 ft)
- 2 extra working LED-lights on carriage (20 ft)
- 2 extra reverse LED-lights on counter weight (rear)
- 1 extra warning LED-beacon on top of mast (front)

## Electronic System

- OLS-1 (Over Loading System) monitoring lift with warning and speed limit (warning pop-up and buzzer)
- OLS-3; OLS-1 + monitoring and cut-off lift / tilt
- VDI - Vehicle Data Interface

## Speed and Lift Settings

- All settings can be changed and are programmable
- A standard default factory setting is supplied
- Lift height limit; standard incl override button (default: 7,5 m)
- Lift height limit; warning over defined height (default: 7,5 m)
- Speed limit; standard (default: 15 km/h)
- Speed limit; over defined height (10 km/h at 7,5 m)
- Speed warning at 15 km/h

## Essential Cabin

### Structure

- Low-mounted cabin with dual access stairways & upper platform
  - High-mounted cabin (+600 mm), improved visibility, dual access stairways & upper platform
  - Safety cage to protect cabin from falling cargo
  - Front window in laminated glass (AS1)
- ### Comfort
- Seat alternatives (spring or air-cushion)
  - Seat with headrest
  - Adjustable armrest (LHS)
  - 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 convex-type mirror (in cabin / left side)

### Controls

- Electronic joystick for hydraulics - EGO (FNR incl)

### Climate

- Electronic Climate Control (ECC) incl AC
- Sun visor front window (black net)
- Sun visor roof window (black net)
- Sun visor rear window (black net)
- Two extra electric fans in cabin ceiling
- Single wiper/washer on rear window

## Information systems

### Operator menu

- Container counter with reset function, trip computer and statistics

### Head-Up display for twistlock indication

- LED indicators for alignment & container(s)

### Fleet Management

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

## Additional equipment

- Reverse camera (1x) including 7" HD display with the ability to add:
  - Wireless spreader cameras 2x
  - Reverse Warning System (radar sensors)
  - Digital Video Recorder (DVR)
  - Upgrade to 10" HD display
- Tyre Pressure Monitoring System (Bluetooth)
- Diesel powered cabin heater 5 kW
- Alcolock in cabin
- Automatic Fire Suppression System
- 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
- Tool kit
- Filter-kit 2000 hrs

## Colour

- Other colour than standard - on chassis (specify RAL no)
- Other colour than standard - on cabin (specify RAL no)
- Reinforced anti-corrosion protection (extra primer)

## Documentation and Decals

- Extra documentation set (SPB, MB, IB) - printed copy
- Extra documentation set (SPB, MB, IB) - digital
- Work shop manual - engine (printed or digital)
- Work shop manual - transmission (printed or digital)
- Work shop manual - drive axle (printed or digital)
- Work shop manual - all (printed or digital)

## Training

- Contact Kalmar Training Center for training programs



# Specifications

MANDATES	Truck Model		
	Stacking model and height		
	Type of handling		
	Lifting capacity, rated MPS (kg)	Q1	(kgs)
	Lifting capacity, number of containers, 8'6" – 9'6" (single mode)		
WEIGHTS	Spreader locking type, standard		
	Spreader type, extension stops, sensors		
	Wheelbase	L3	(mm)
	Load centre, front of tyres, with MPS	L2	(mm)
	Service weight		(kgs)
WHEELS	Axle load front, unloaded – at rated load		(kgs)
	Axle load rear, unloaded – at rated load		(kgs)
	Tyres, type - thread		
	Tyre dimensions, front & rear		(in)
	Rim dimensions, front & rear		(in)
DIMENSIONS	Number of wheels, front – rear (driven)		
	Pressure		(MPa)
	Track (c-c), front – rear	S1 - S2	(mm)
	Lift mast, type, stage, cylinders and chains		
	Tilting of mast, forward - backward (°)	alfa-beta	(deg)
DRIVING DATA	Lift mast height, min - max	H3 - H5	(mm)
	Lift height, min - max in twistlocks / lift hooks	H10 - H4	(mm)
	Truck height, low / *high cabin position, cabin roof	H6	(mm)
	Seat height, low / *high cabin position	H8	(mm)
	Length of truck MPS	L	(mm)
OTHERS	Sideshift	V1	(mm)
	Ground clearance, min.	G	(mm/deg)
	Width of truck	B	(mm)
	Width over attachment, min-max	B1 - B2	(mm)
	Min. aisle width for 90° stacking, 20ft container - 40ft container	A1 - A2	(mm)
	Turning radius, inner / outer 20ft / outer 40ft	R1-R2-R3	
	Type of engine		
	Drive axle		
	Travelling speed forward, unloaded – at rated load		(km/h)
	Travelling speed backward, unloaded – at rated load		(km/h)
	Gradeability max., unloaded – at rated load		(%)
	Gradeability at 2 km/h, unloaded – at rated load		(%)
	Lifting speed, unloaded – at 70% of rated load		(m/s)
	Lowering speed, unloaded – at rated load		(m/s)
	Starting battery, voltage – capacity		(V - Ah)
	Steering system, type – maneuvering		
	Service brake system, type – affected wheels		
	Parking brake system, type – affected wheels		
	Noise level EN12053 - equivalent inside cabin LpAZ		(dB(A))
	Noise level EN12053 - equivalent outside cabin LwAZ		(dB(A))
	Tank volumes, diesel - hydraulic		(dm3)
	Overload protection system with warning OLS1 + OLS2		Optional

DCU80-ES				
ES4/4	ES5/5	ES6/5	ES7/6	ES8/7
Single stacking				
8000				
4/4	5/5	6/5	7/6	8/7
Twistlocks				
Sidelift, 20 - 40ft with 30ft stop, alignment & interrupt sensors				
4550				
1210				
33300	34700	35300	36800	38300
20900 - 33100	22400 - 34700	23100 - 35300	24700 - 37000	26400 - 38600
12400 - 8100	12300 - 8000	12200 - 7900	12100 - 7800	11900 - 7600
Tube / Diagonal / E4				
12.00 x 24"				
8.50 x 24"				
4 - 2				
1.0				
3270 - 2250				
Duplex / 2-stage / 2 cylinders / 2 lift chains				
3-3 (opt. 3-6 or 2-3)				
7050 - 12050	8540 - 15040	9040 - 16040	10290 - 18540	11540 - 21040
2240 - 12250	2240 - 15200	2240 - 16200	2240 - 18740	2240 - 21240
3940 / *4540				
2800 / *3400				
6900				
± 600 (1200)				
250				
4050				
6085 - 12220				
10600 - 14200				
1150 / 6750 / 9350				
Diesel / 4-stroke / Turbo				
Axle, differential & hub reduction				
26 - 23				
26 - 23				
See Technical Data Sheet				
See Technical Data Sheet				
0.57 - 0.56				
0.53 - 0.56				
2×12 - 135-145				
Servo assisted - Steering wheel				
Wet disc brakes - Drive wheel				
Spring brake - Drive wheel				
65 - 66				
104 - 105				
380 / 320				
OLS 1: Lift Monitor, OLS 3: Lift cut-off + Tilt Monitor				

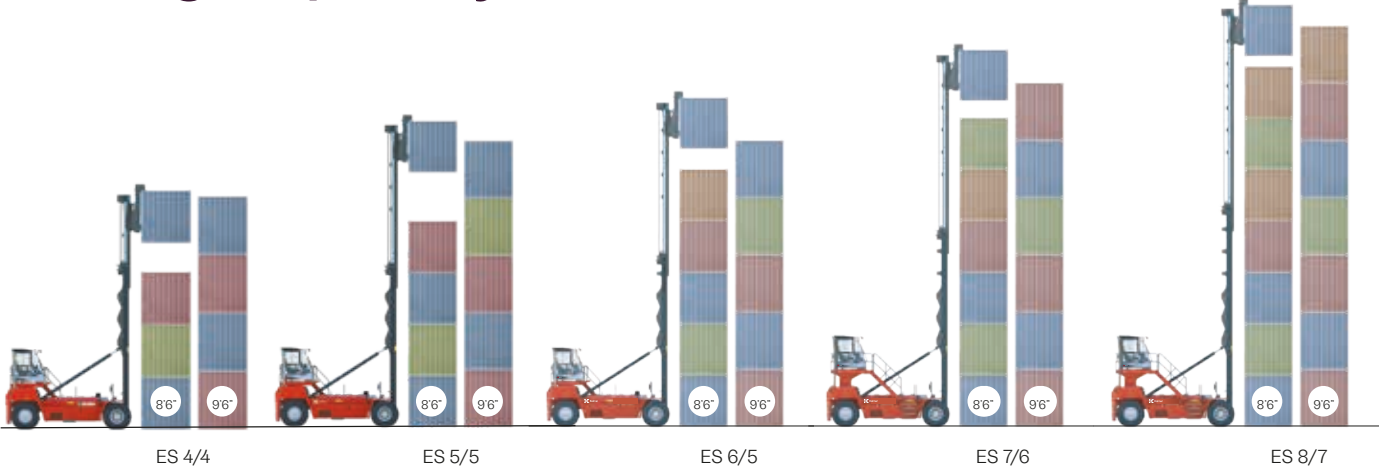
DCU90-ES				
ES4/4	ES5/5	ES6/5	ES7/6	ES8/7
Single stacking				
9000				
4/4	5/5	6/5	7/6	8/7
Twistlocks				
Sidelift, 20 - 40ft with 30ft stop, alignment & interrupt sensors				
4550				
1210				
35300	36700	37300	38800	40300
21400 - 35200	22900 - 36700	23600 - 37400	25200 - 39000	26900 - 40700
13900 - 9100	13800 - 9000	13700 - 8600	13600 - 8800	12400 - 8600
Tubeless / Diagonal / E4				
14.00 x 24"				
10.00 x 24"				
4 - 2				
1.0				
3270 - 2200				
Duplex / 2-stage / 2 cylinders / 2 lift chains				
3-3 (opt. 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
4000 / *4600				
2860 / *3460				
6900				
± 600 (1200)				
250				
4100				
6085 - 12220				
10850 - 14350				
1250 / 7000 / 9700				
Diesel / 4-stroke / Turbo				
Axle, differential & hub reduction				
26 - 23				
26 - 23				
See Technical Data Sheet				
See Technical Data Sheet				
0.57 - 0.56				
0.53 - 0.56				
2×12 - 135-145				
Servo assisted - Steering wheel				
Wet disc brakes - Drive wheel				
Spring brake - Drive wheel				
65 - 66				
104 - 105				
380 / 320				
OLS 1: Lift Monitor, OLS 3: Lift cut-off + Tilt Monitor				

DCU100-ES				
ES4/4	ES5/5	ES6/5	ES7/6	ES8/7
Single stacking				
10000				
4/4	5/5	6/5	7/6	8/7
Twistlocks				
Sidelift, 20 - 40ft with 30ft stop, alignment & interrupt sensors				
4550				
1210				
38000	39400	40000	41500	43000
22300 - 37700	23800 - 39200	24500 - 39900	26200 - 41500	27800 - 43200
15700 - 10400	15600 - 10200	15500 - 10200	15400 - 10000	15200 - 9900
Tubeless / Diagonal / E4				
14.00 x 24"				
10.00 x 24"				
4 - 2				
1.0				
3270 - 2200				
Duplex / 2-stage / 2 cylinders / 2 lift chains				
3-3 (opt. 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
4000 / *4600				
2860 / *3460				
6900				
± 600 (1200)				
250				
4100				
6085 - 12220				
10850 - 14350				
1250 / 7000 / 9700				
Diesel / 4-stroke / Turbo				
Axle, differential & hub reduction				
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Spring brake - Drive wheel				
65 - 66				
104 - 105				
380 / 320				
OLS 1: Lift Monitor, OLS 3: Lift cut-off + Tilt Monitor				

## Drivelines

Engine emission approvals		EU3 / Tier 3	EU3 / Tier 3	China Stage IV
Engine emission brand/series		Cummins / QSB	Volvo / D-8	Volvo / D-8
Engine model		QSB-6.7-C220	TAD-850-VE	TAD-881-VE
Engine after treatment type		No SCR / no AdBlue	No SCR / no AdBlue	With SCR / with AdBlue
		No particle filter	No particle filter	With particle filter
Engine design / cylinders		6-inline / common rail	6-inline / common rail	6-inline / common rail
Engine displacement	(dm3)	6.700	7.700	7.700
Max power @ engine speed	(kW)	172 @ 2000	160 @ 1500-2100	185 @ 1600-2100
Max torque @ engine speed	(Nm)	949 @ 1500	1060 @ 1000-1400	1160 @ 1100-1500
Max engine speed	(rpm)	2100	2100	1800
Fuel consumption - average diesel	(l/h)	5 - 15	5 - 15	5 - 15
Fuel consumption - average AdBlue	%	-	-	3 - 7
Transmission model (gears FWD + RVS)		Dana TE-14310 (3+3)		
Transmission gear shift type		Hydrodynamic automatic (Power-shift)		
Transmission clutch type		Torque converter		
Drive axle brand / series		Kessler / D81 - D91 (WDB)		
Service brake / cooling		Wet Disc Brakes with oil cooling		
Steer axle brand / series		Kalmar / single cylinder / extra wide		
Alternator, power	(V/A)	AC, 1960 (28/70)	AC, 3080 (28/110)	AC, 3080 (28/110)

## Lifting capacity







Kalmar

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