

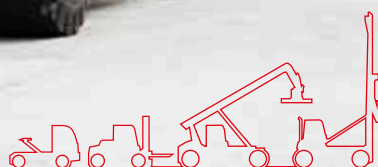


# Essential Reachstacker

DRU450 Range



Kalmar Essential Range





# More for your money

**The Kalmar Essential Reachstacker gives you more for your money without compromising on quality.**

Built on our G-Generation platform you get a machine that is reliable, robust, highly efficient and is available with either EU3 / Tier 3, EU4 / Tier 4F or EU5 emissions standards compliant engines.

## 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.



**A quality build with high availability and excellent productivity.**



# Built on a proven platform

With 1000s of machines built on our proven G-Generation platform you can expect a reachstacker 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 reachstackers are built on a proven and tested platform. You will benefit from:



**A standard driver interface** across the platform, making it easier for your operators to drive consistently and safely.



**A common electrical system** that helps with quick and easy troubleshooting by using common error codes.



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



**A colour HMI screen** and control system with improved diagnostic tools, so troubleshooting time is reduced, and high availability is maintained.



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



**More than 10,000 machines** already built on the G-Generation platform.

## 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



Benefit from 10-20% reduction in fuel consumption.

Our Essential Reachstacker comes fitted with load sensing hydraulics and there is a range of the latest generation of engines and transmissions to choose from. 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.

## Intelligent and efficient drivelines

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 newest highly efficient engine technology, in either EU3 / Tier 3, EU4 / Tier 4F or EU5 compliant alternatives, with the latest 5-speed DANA TE-30510 transmission, which is designed especially for heavy duty material handling applications, with 5 gears instead of 4 gears. With significant reductions in energy loss from the gearbox and fuel consumed from the engine, you get a smart solution that will cost you less in the long run.

## More choice

**Handle bulk materials with ease.**  
Our range of Essential Reachstackers can be fitted with a titling spreader that allows you to handle containerised bulk materials easily. With the ability to tilt lengthways or sideways up to 55 degrees and to shake the contents of 20, 30 or 40ft containers free, you will be able to handle bulk materials quickly and efficiently. Kalmar's tilting spreader is also able to open either the side door or the top hatch to ready the container for emptying. The Kalmar Essential Reachstacker can handle loads up to 32 tonnes in tilt mode and 45 tonnes in standard lifting mode when fitted with one of our special tilting spreaders.

## Three driveline combinations to choose from

All three drivelines come with a 5+3 transmission and EU3 / Tier 3, EU4 / Tier 4F or EU5/Korea Stage V emissions standards compliant engines.

Engine	Volume	Power	Transmission
Cummins QSM-11-C330 EU3	10.80L	246kW	DANA TE-30510 5+3
Volvo TAD-1150-VE EU3	10.84L	235kW	DANA TE-30510 5+3
Volvo TAD-1181-VE EU5/Korea Stage V	10.84L	265kW	DANA TE-30510 5+3





# Designed for the driver

## The Kalmar Essential Cabin

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.



**You can choose from two different joysticks:** our F-Generation joystick (Cobra) or our ergonomically designed G-Generation joystick (Kalmar EGO joystick with FNR button). Both joysticks will help keep your driver in complete control as all operations can be managed from one place.



**Our improved electronic climate control package:** ensures your drivers will be comfortable, no matter what the weather. It includes extra strong fans to remove condensation quickly and to maintain a steady temperature in the cabin. And 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.



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

## Keeping your drivers 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 mounted on the front mudguards so your operator can see behind him easily
- Overload protection system that will warn the driver if the load exceeds the specified limits.
- Kalmar designed steering axle with extra wide tracking for increased stability.
- A fail-safe seat switch that will not allow the machine to be started without the operator in the seat.
- An electrically operated hand brake that is automatically applied as soon as your engine is turned off, bringing your machine to complete stop.

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





# Upgrade options

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



**Rear mounted camera.** Knowing what's going on behind you is critical when other personnel are present. A rear mounted camera can provide real time information to an in-cabin display, helping improve personnel and driver safety. You can also add a Reverse Warning System, with both camera and rear ultrasonic sensors, to further increase your level of safety.



**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.



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



**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.

**Kalmar has a range of options that make operating 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. Active care of your tyres can result in a 10-40% increase in tyre life and up to a 10% decrease in fuel consumption.

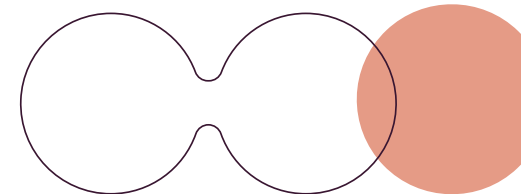
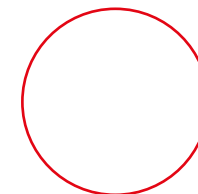


**Various speed limiters.** Allows you to program and set various speed limits to reduce fuel consumption, improve operational safety, cater for area speed restrictions, lift heights and loads to be transported. These settings cannot be exceeded by your drivers.



**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.

 A quality build with high availability and excellent productivity.





# Safety fitted as standard

**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.

## **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.



**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.** 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.



**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.



**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.



**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.



## **Anti-slip Protection Tape on fenders and tanks.**

Anti-slip Protection Tape provides additional traction on fenders and tanks to reduce any slipping hazards for driver's and maintenance personnel while working on your Kalmar Reachstacker.



**Reverse Camera System.** Knowing what is going on behind you is critical when reversing your Kalmar Reachstacker, which is why they are all fitted with a high resolution [1080p] cabin display screen and reversing camera providing excellent reward visibility.



**Speed Limiter outside transport mode.** Makes sure your Kalmar Reachstacker is always operating at a safe speed when it isn't carrying a load, helping to reduce the risk of accidents and promoting safe operating practices.



**Towing Coupling with removable pin.** Should something go wrong with your Kalmar Reachstacker we have made it safer to use both tow bars and tow slings making it quicker and easier to recover your machine.





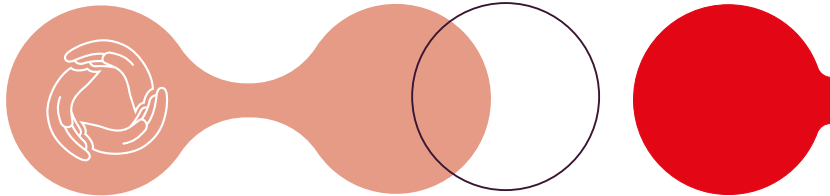
# Keep moving with Kalmar Services

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

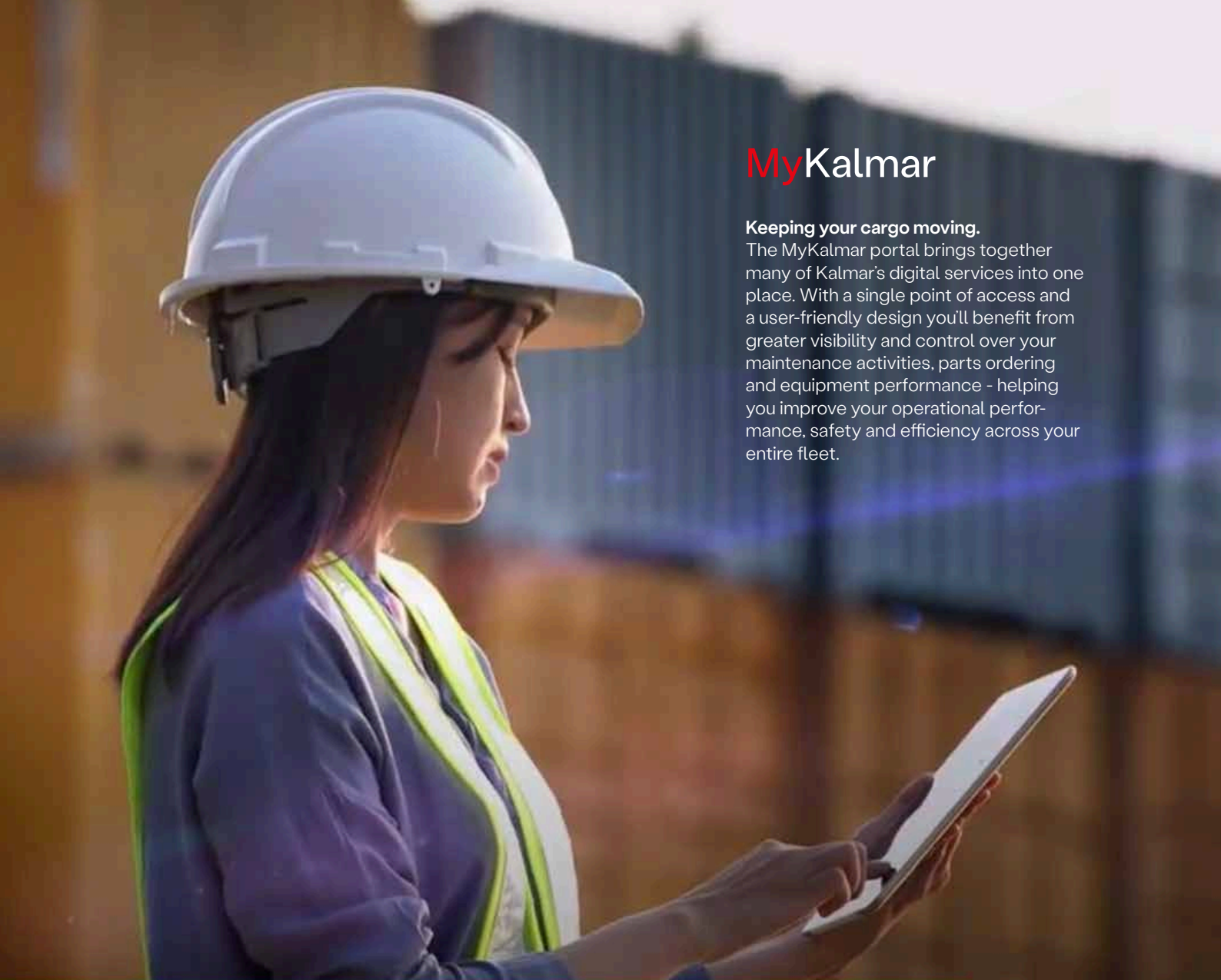
Top-of-the-line service whenever you need it.

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 Essential Reachstacker DRU450

### Norms, standards and regulations according to:

- Machinery Directive 2006/42/EC
- Safety Industrial Trucks Standard ISO 3691-2, (EN 1459+A3)
- Safety Low & High Lift Trucks Standard ANSI / ITSDF B56.1
- Stability of Reachstackers Standards ISO 22915-1, -12
- Electrics / Electronics Standard EN 1175
- Electromagnetic Compatibility Directive 2014/30/EC
- Electromagnetic Compatibility Standard EN 12895
- CE-marking (EU/EEA)
- ANSI / ITSDF-marking Forklift Trucks (USA/CAN)
- AS-marking (Australia)
- UKCA-marking (UK)
- Supply of Machinery (Safety) Regulations 2008 (UK)

### Chassis

- Strong, durable heavy-duty chassis for reachstackers
- Safe access steps, platform & handrails (LHS)
- Lifting eyes and anchor points (front & rear)
- 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 of Magnelis type
- Rear view mirrors (2x) - on front mudguards
- Strong and protective mudguards (front & rear)

### Steer Axle (rear)

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

### Drive Axle (front)

- Durable planetary drive axle
- Axle with 2-stage hub reduction and differential
- Wide axle for high side stability (4150 mm)
- Strong and powerful oil-cooled Wet Disc Brakes
- Separate brake oil tank (140 lit), cooling & breather filter

### Wheels (Tyres & Rims)

- Drive tyres (4x): 18.00x25" or 18.00x33"
- Steer tyres (2x): 18.00x25" or 18.00x33"
- Standard rim
- Wheel nut protection on steer tyres
- E4 tyres

### Drivetrain

- Volvo and Cummins diesel engines (6-cylinder)
- Durable and strong engines with pre-heater
- Emission approval EU3/EU4/EU5 or EPA Tier 3-4F
- Engine monitoring and protection system
- Fully automatic transmission DANA TE-30500 (5+3)
- Transmission monitoring and reverse protection
- Efficiency package for lower fuel consumption
- Declutch function activated by brake pressure
- Efficient radiators for engine, transmission & brakes
- Diesel tank (550 l), cooling & breather filter
- Noise efficient muffler and tall exhaust pipe

### Efficient Hydraulics

- Load-sensing variable piston pumps
- Power-on-demand with high lift & lowering speeds
- Pumps for boom, spreader, brakes & steering
- Gear pumps for brake pressure & oil cooling (2x)
- 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)
- Regenerative high-speed lifting & extension
- Power steering, power brakes & ORFS-couplings
- Hydraulic tank (600 Lit), with breather filter
- Separated dual oil tanks

### Lifting boom

- Strong, durable box-type boom with guide pads
- Boom with 2 lift cylinders & 1 extension cylinder
- Boom end-damping (in-out/up-down/20-40°)
- Lift booms with an extension stroke of 7,0 m
- Duplex 2-stage 5/5 (H4 = 1:15-15,1m/1,25-15,2m)
- Duplex 2-stage 6/5 (H4 = 1:15-16,2m/1,25-16,3m)

### Attachment Toplift (S)

- Top lift 45 tons, hydraulic chain extension 20'-40'
- 4 floating twistlocks & LED-indication lamp panel
- Safety locking, alignment pins & sensors (4x)
- Large sideshift of ±800 mm
- Rotation +195/-105 deg (2 motors & 2 brakes)
- Mechanical Pile Slope (MPS) ±5 deg
- Lift hooks for slings on end beams (4x)

### Electronic System 24V (G-Generation)

- Fully redundant 24V electrical system
- Battery box 2x12V & main power switch
- Electric service box on chassis (LHS)
- 2 working LED-lights on front mudguards (head beam)
- 2 working LED-lights on boom (lift cylinders - 20ft)
- 2 working LED-lights on spreader (twistlocks)
- 2 working LED-lights on counter weight (when reversing)
- 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 (on pole / LHS)
- 1 reverse signal / alarm (buzzer when reversing)

### Essential Cabin

#### Structure

- Spacious, modern, ergonomically designed cabin
- Large windows, good visibility, in all directions
- In-step handle (left side)
- Sliding window on both sides
- Tinted tempered windows
- Manual moveable cabin (stroke 2375 mm)

#### Comfort

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

#### Safety

- Colour display TFT-7" (17 cm), inside cabin
- Reverse camera, 1x, rear on counter weight
- Speed limit outside transport mode

#### 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 and roof windows

### Information systems

- CECS 2.0 Kalmar intelligent control system
- HMI based on TFT-display 4,3" (109mm)
- Colour display (DM430E) with automatic fault analysis
- Menu control with toggle wheel & push buttons
- Electronic safety, overload, scale & synchronized lift
- Longitudinal Load Moment Indicator (LLMI) (pop-up menu)
- Longitudinal Load Moment Control (LLMC) (pop-up menu)
- Electronic weight scale in main display (LLMC)

### Operator menu:

- Container counter with reset function, trip computer and statistics
- System voltage
- Actual gear
- Engine rpm
- Travelling speed (km/h or mph)
- Combined hydraulic and brake oil temperature
- Transmission oil temperature
- Engine oil pressure & oil level (Volvo)
- Engine oil pressure only (Cummins)
- Engine coolant temperature
- Load weight (capacity) & Load distance (LC)
- Boom extension & Boom angle
- 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

#### Pop-up menu:

- Overload warning in spreader / boom
- Overload warning steering axle (high or low)

### Various warning lights & signals

- Charging battery
- Low brake pressure
- Failure indicator
- Safety system disconnected
- High engine coolant temperature
- Low engine coolant level (Volvo only)
- Low engine oil pressure
- Preheating engine
- Transmission oil temperature
- Low fuel level
- Hydraulic oil temperature
- Safety system disconnected

### Indicator lamps

- Head beam
- Direction indication
- Parking brake

### Fleet Management

- Equipped with telemetric hardware for Kalmar Insight

### Colour

- Chassis, tanks & mudguards: Red RAL 3000
- Boom, attachment & axles: Black RAL 7021
- Cabin: Light-Grey RAL 7035
- Rims: 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 & joystick stickers
- Fuse diagram
- Instruction manual
- Maintenance manual, digitally
- Spare parts catalogue, digitally

# Options

## Kalmar Essential Reachstacker DRU450

### Chassis (container handling)

- DRU reachstackers - container Toplift (S-range)
- Wheelbase 6,25 m
- DRU450-62S5 (Cap = 45-31-15 tons / 5-high 8'6"/9'6")
- DRU450-62S5X (Cap = 45-36-19 / 5-high 8'6"/9'6")
- Long bottom access step (on both sides)

### Body

- Anti-slip protection on fenders and tanks
- Mudguards in steel + rubber (front)
- Mudguards in rubber (rear)
- Noise insulation kit, for the truck, minus 1 dB(A) inside cabin and minus 3 dB(A) outside cabin

### Steer Axle (rear)

- Steer cylinder spacer (less tyre wear)

### Drive Axle (front)

- Kessler D-102 planetary drive axle
- High pressure filter (10 my) for the brakes (WDB)

### Wheels (Tyres & Rims)

- Spare tyre, rim or complete wheel of various brands
- Special packages with 6-to-12 pcs, rim or wheel
- Tyre dimension 18.00x25" or 18.00x33" for stand-ard models

### Drivetrain

- Auto engine & ignition stop, after 5 min idle
- Pre-Cleaner air intake incl. raised air intake
- DANA TE-30500 with 5+3 gears
- Cummins QSM-11-C330 - 246 kW (EU Stage 3A / EPA Tier 3)
- Volvo TAD-1150-VE - 235 kW (EU Stage 3A / EPA Tier 3)
- Volvo TAD-1181-VE - 265 kW (EU Stage 5 / EPA Tier 4f

### Load-Sensing Hydraulics

- Hydraulic longLife fine filter with by-pass (3 my)
- Hydraulic oil cooling circuit for working hydraulics Lifting booms
- Duplex 2-stage S5 (5/5, H4 = 15,1-15,2 m)\*
- Duplex 2-stage S6 (6/5, H4 = 16,1-16,2 m)

### Attachment

- Automatic extension 20ft-40ft incl 30ft stop
- Rotations stop spreader ±25 deg + override switch
- Extended twistlocks ±250 mm (clearance 300mm)
- Extended twistlocks +100 mm including rubber dampers for noise reduction
- Additional lifting eyes on spreader (2x or 4x)
- Long boom nose 1,0 / 1,6 / 2,0 m
- Forward tilt +/- 2 degrees
- Soft landing function sensor in spreader
- Cylinder extension 20-40ft (instead of chain drive)
- Hydraulic Pie Slope, HPS ±5 deg (side tilt), incl. tilt lock and speed 5 km/h
- Bulk handling tilting spreader (sideways) with side door opener
- Bulk handling tilting spreader (sideways) with hatch door opener
- Bulk handling tilting spreader (sideways) with container shaker function

### Electrical system 24V

- Extra sockets, 2x24V + 2x12V
- Extra sockets, 1x12V + USB 1x5V + 2x24V
- Extra sockets, USB 2x5V + 2x24V
- Electric air pressure horn
- Radio with CD/MP3/USB
- 1 NATO starting aid / contact
- 2 extra working LED-lights on mudguard (forward)
- 4 extra working LED-lights on mudguard (20-40ft)

- 2 extra working LED-lights on cabin roof (forward)
- 2 extra working LED-lights on mid boom (20-40ft)
- 4 extra working LED-lights on front boom (20-40ft)
- 2 extra working LED-lights on spreader (twistlocks)
- 2 extra reverse LED-lights on counter weight (rear)
- 1 extra warning LED-beacon (on pole / RHS)
- 2 extra warning LED-beacon (on C.W. / LHS+RHS)

### Speed and Lift Settings

- All settings can be changed and are programmable
- A standard default factory setting is supplied
- Boom lift height limit; standard + override button
- Boom load centre limit; standard + override button
- Speed limit; standard (default 15 km/h)
- Speed limit; over defined height (10 km/h at 7,5 m)
- Speed limit; with load outside transport position
- Speed warning; at 15 km/h

### Essential Cabin

#### Structure

- Hydraulic sliding cabin (stroke 2375 mm), anti-colli-sion function to avoid container / trailer hitting cabin from the front
- Speed limitation relative to cabin position
- 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

- EGO joystick

#### Climate

- Electronic Climate Control (ECO) 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
- Interval wiper function on rear window

### Additional Equipment

- Fire extinguisher 6 kg, powder
- Tool kit
- Lockable fuel cap
- Central greasing (base truck + steering)
- Central greasing (entire spreader)
- Filter kit 2000 hrs
- Reverse camera in rear C.W. (1x) including display 17 cm/7"
- Spreader twistlocks cameras LHS / RHS (2x), incl display 17 cm/7"
- Reverse Warning System (sensors, rev camera & display)
- Diesel powered cabin heater 5 kW
- Cabin heater incl 220V outlet
- Engine heater incl cab heater
- Engine/hydraulic oil heater incl cab heater
- Kalmar Load Measurement System (SOLAS compliant)
- Dual storage boxes on left and right hand side of bottom access steps

### Safety

- Reverse warning system including sensors
- Tyre pressure monitoring system
- Alcolock Draeger in cabin
- Boom lift height limit; standard + override button
- Boom load centre limit; standard + override button
- Automatic Fire Suppression System
- Speed limitation, please specify km/h

- Various speed limitations (with/without load)
- Speed warning at 15km/h
- Speed limitation (default setting 19km/h)

### Information systems

- VDI - Vehicle Data Interface
- 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)

### 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 Centre for training program



# Specifications

MODELS LIFTING CAPACITY	Container Handling			DRU450-62S5	DRU450-62S5X
	Lift capacity, row 1-2-3-4	Q1 - Q2 - Q3- Q4	tons	45 - 31 - 15	45 - 36 - 19
	Lift capacity, row 1-2-3-4 (with jacks)	Q1 - Q2 - Q3- Q4	tons	-	-
	Load centre, from front face of tyres, row 1-2-3-4	L4 - L5 - L6 - L7	mm	1965 - 3815 - 6315	
	Stacking capacity, in container row 1-2-3-4 of 8'6" / 9'6"	mm		5/5 - 5/4 - 4/3	
	Lost load centre, to front face of tyres	X	mm	835	935
WEIGHTS	Wheelbase	L3	mm	6250	
	Service weight, standard truck <sup>1</sup>	kg	(kgs)	69800	76900
	Axle load, front at load centre L4, unloaded - loaded	(no jacks)	kg	35000 - 100200	36000 - 101200
	Axle load, front at load centre L5, unloaded - loaded	(no jacks)	kg	39200 - 93300	103800 - 40400
	Axle load, rear at load centre L4, unloaded - loaded	kg	(kgs)	34800 - 14600	40900 - 20700
DIMENSIONS	Axle load, rear at load centre L5, unloaded - loaded	kg	(kgs)	30600 - 7500	36500 - 9100
	Boom angle, min - max	deg		0 - 60	
	Boom height, min - max	H3 - H5	mm	4700 - 18200	
	Chassis height - top of boom fixation, max	H2	mm	3925	4050
	Lift height, max	H4	mm	1150 - 15100	1250 - 15200
	Boom reach stroke	mm	(deg)	7000	
	Truck height - seat height	H6 - H8	mm	2575	2675
	Overall truck length with boom	L	mm	11400	
	Truck width over drive axle	B	mm	4150	
	Spreader sideshift	V1	mm	+/-800	
	Spreader rotation	deg	(mm)	+195/-105	
	Number of rotation motors and rotation brakes	H6 - H8	(mm)	2 + 2	
	Ground clearance	min	mm	250	
	Aisle width with 20'-40' container	A1 - A2	mm	11400 - 13600	
	Turning radius, outer with 20'-40' container (at 90 degree turn)	R1 - R3	mm	8300 - 9400	
	Turning radius, outer (at 90 degree turn)	R1	mm	-	-
WHEELS	Wheels	Number of wheels, front – rear (x = driven)		4 – 2	
	Tires	Pneumatics, type / pressure (front - rear)	MPa	Diagonal / 1.0	
		Dimensions, front – rear	tum	18.00x25" /PR40	18.00x33" /PR40
	Rims	Dimensions, front – rear		13.00x25"/2.5	13.00x33"/2.5
AXLES		Track width (front - rear)	S1 - S2	3030 - 2600	
	Steer axle	Manufacturer, type - designation		Kalmar steer axle / hydraulic power steering / double acting single cylinder	
	Drive axle	Manufacturer, type - designation	(km/h)	Kessler - D102PL341/528-NLB	
	Service brakes	Type – affected wheels	(km/h)	Oil cooled wet disc brakes (WDB) / drive wheels	
HYDRAULICS	Parking brake	Type – affected wheels	(%)	Single dry disc / spring activated - hydraulic release / drive wheels	
	Hydraulics	System type / pump type		Load-sensing function / power-on-demand / variable piston pumps	
	Oil pressure	Max working pressure boom / spreader	MPa	23 / 16	
	Tank	Oil volume	Lit	740 (600 + 140)	
		Fuel tank, capacity	Lit	550	
		AdBlue tank, capacity	Lit	35	

Notes:  
1. Service weights / axle loading: values with standard configuration.

# Drivetrain

MODELS	Models		Cummins	Volvo	Volvo
	Wheelbase	mm	6250	6250	6250
ENGINES	Drive motor, manufacturer - type designation		QSM-11-C330	TAD-1150-VE	TAD-1181-VE
	Fuel types, motor type <sup>1</sup>		Diesel / HVO / 4-stroke	Diesel / HVO / 4-stroke	Diesel / HVO / 4-stroke
	Turbo charger / cooling		Turbo (FGT) / Intercooler	Turbo (FGT) / Intercooler	Turbo (FGT) + EPG / Intercooler
	Engine after treatment type		No AdBlue, DOC, DPF, ASC and SCR	No AdBlue, DOC, DPF, ASC and SCR	With AdBlue, DOC, DPF, ASC and SCR
	Diesel particle filter (DPF)		No DPF	No DPF	With DPF
	Emission standards		EU Stage IIIA / EPA Tier 3	EU Stage IIIA / EPA Tier 3	EU Stage 5 / EPA Tier 4f / Korea5 / China Stage IV
	Rated power / at revs (ISO 3046)	kW / rpm	246 / 2100	235/ 2100	265 / 2100
	Peak power / at revs (ISO 3046)	kW / rpm	248 / 1800	235 / 1450-2100	265 / 1450-2100
	Peak torque / at revs (ISO 3046)	Nm / rpm	1674 / 1400	1581 / 1300	1795 / 1400
	Number of cylinders / displacement	lit (in3)	6 / 10.800 (660)	6 / 10.840 (661)	6 / 10.840 (661)
TRANSMISSION	Fuel consumption, normal driving <sup>1</sup>	lit/h	14 - 18		
	AdBlue <sup>2</sup> consumption, normal driving	%	-	-	4 - 6
	Manufacturer's type designation		Dana TE-30510		
	Clutch, type		Torque converter		
	Transmission, type		Hydrodynamic Powershift		
	Numbers of gears, forward / reverse	gears	5 / 3		
	Alternator, type / power	W	AC - 3360 (28 / 120)	AC - 3080 (28 / 110)	AC - 3080 (28 / 110)
	Starting battery, voltage / capacity	V / Ah	2×12 / 145		

Notes:  
1. Regular diesel based on EN590 (ASTM D975 no. 2-D)  
Synthetic / paraffinic diesel based on EN 15940.  
2. AdBlue / Diesel Exhaust fluid (DEF) doser unit  
Diesel Oxidation Catalyst (DOC)  
Diesel Particulate Filter (DPF)  
Selective Catalyst Reduction (SCR)  
Ammonia Slip Catalyst (ASR)

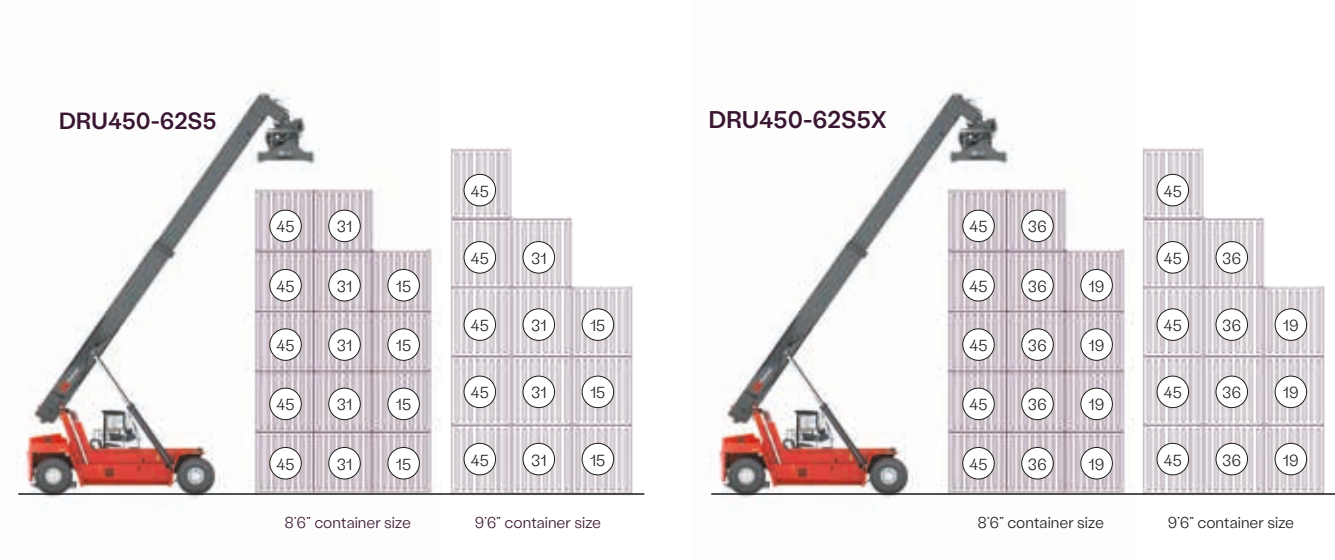
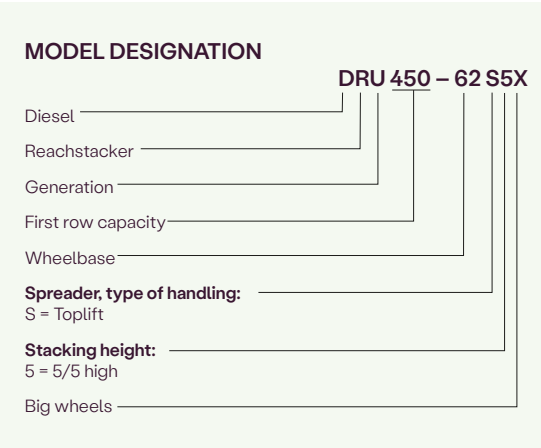




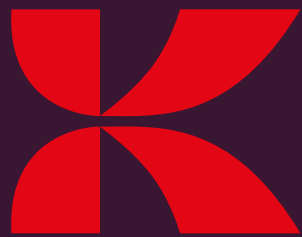
# Performance

Models				DRU450-62S5	DRU450-62S5X
Wheelbase				QSM-11-C330 & TAD-1150-VE (EU Stage IIIA / EPA Tier 3 / TAD-1181-VE (EU Stage 5 / EPA Tier 4f / Korea5 / China Stage IV)	
SPEED	Travel speed, forward - reverse	Unloaded / at rated load	km/h	26 - 22 / 18 - 16	
	Lifting speed	Unloaded / At 70 % of rated load	m/s	0.42 / 0.25	
	Lowering speed	Unloaded / At rated load	m/s	0.36 / 0.36	
POWER	Gradeability, max	Unloaded	%	45	40
		At rated load	%	24	23
	Gradeability, at 2 km/h	Unloaded	%	32	29
		At rated load	%	18	17
	Drawbar pull		kN	295	295
SOUND	Noise level, inside SD3 cabin	EN12053, LpAZ	dB(A)	70 - 72	
	Noise level, outside	EN12053, LWAZ	dB(A)	107 - 109	
	Noise level, outside	2000/14/EC, LWAZ	dB(A)	108 - 111	

# Lifting capacity







Kalmar

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2024-0324

