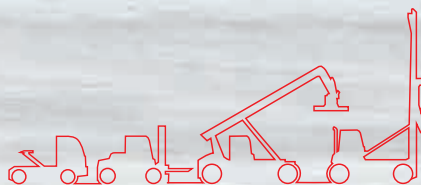


Quality for all.

The Kalmar DRU450
Essential Reachstacker.



Kalmar Essential Range



KALMAR



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.



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 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.

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.

Additional benefits of a common platform.

A standardised driver control panel: all machines built on this platform 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.

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.

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

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.



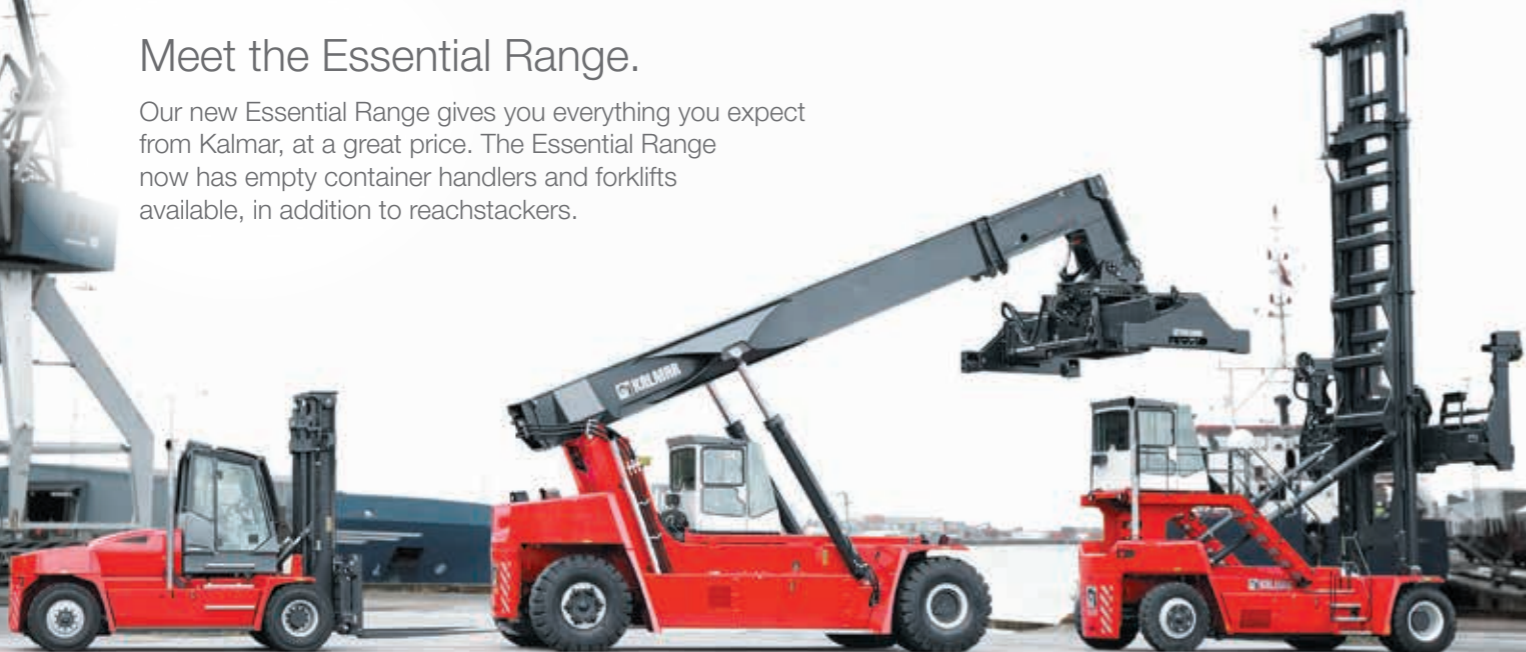
We go to great lengths to choose and test all the components used to build our reachstackers, which are only supplied from leading manufacturers, to guarantee their quality and performance.



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.

Meet the Essential Range.

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



Highly efficient.

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-30500 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.

Four driveline combinations to choose from:

all with a 5+3 transmission and EU3 / Tier 3, EU4 / Tier 4F or EU5 emissions standards compliant engines.

Engine	Volume	Power	Transm.
Cummins QSM-11-C330 EU3	10.80L	246kW	DANA TE-30500 5+3
Volvo TAD-1150-VE EU3	10.84L	235kW	DANA TE-30500 5+3
Volvo TAD-1170-VE EU4	10.84L	235kW	DANA TE-30500 5+3
Volvo TAD-1180-VE EU5	10.84L	235kW	DANA TE-30500 5+3

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:

- Extra safe access to the cabin with non-slip surfaces and extra safety rails that allow your operator to meet the 3-point contact rule.
- There are doors on both sides of the cabin in case your operator needs to leave the cabin quickly in case of an emergency.
- Excellent visibility from the cabin, giving you a much better view forwards and upwards.
- 2-point seat belts fitted to keep your operator secure.
- 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.
- LED lights as standard, for better visibility when working in reduced light.
- 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.





Designed for the driver.



Easy to maintain and monitor.

Introducing the new 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.



You can choose from 3 different joysticks: our F-Generation joystick (Cobra), our ergonomically designed G-Generation joystick (Kalmar EGO joystick with FNR button) or the Essential joystick (Elobau). All joysticks will help keep your driver in complete control as all operations can be managed from one place.



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 in the cabin. 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.



G-Generation joystick.



F-Generation joystick.

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 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.

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. This information is then accessed through an easy to use interface that is available on mobile, tablet or more traditional screens. You can 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 retro fitted into existing Kalmar equipment or those built by other manufacturers. Kalmar Insight, turning data into actionable, impactful insights.

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



Kalmar Training Centre.

For your team to get the most out of their new reachstacker, the Kalmar Training Centre offers a range of courses for both your technicians and operators. Operators will be shown how to optimise their day-to-day operational performance and what needs to be checked daily on the machine before operations begin. Technicians will be given the knowledge needed to keep your new machine in top condition. Courses are a mix of theory and hands-on experience and can be held at Kalmar or at your site.



A range of options.



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.



Various speed limiters. Allows you to program and set various safe speed limits; to cater for area speed restrictions, lift heights and loads to be transported. These settings cannot be exceeded by your drivers.



Additional lighting. Extra LED lighting brings greater operational visibility and safety for personnel working at your site, particularly at night. You can choose from:

- Flashing LED brake lights when reversing
- Additional LED lights on the boom (front or middle), spreader, front mudguards, cabin roof or rear.



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.



Tyre pressure monitoring. 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.



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.



Kalmar Lifetime Services.

Making sure your business never stops.

We offer four different types of service and maintenance contracts. Each is designed to help you improve your operational efficiency, drive productivity and secure financial predictability. Each contract type includes a set of standardised service modules to meet your business needs.

The four flexible types of service contracts.

Kalmar Support Care

We support your maintenance processes on demand.

- Availability of competent people with the right tools and parts
- Provides additional skills to existing maintenance organisation.

Kalmar Essential Care

We perform your agreed maintenance tasks proactively.

- Availability of competent people with the right tools and parts
- Higher degree of financial predictability
- Reduced operational risk to customer
- Improved availability of machines.

Kalmar Complete Care

We meet your complete maintenance requirements.

- Predictive maintenance planning
- Low operational risk to customer
- Reduced equipment down-time
- Reduced total cost of operation
- Increased operational predictability.

Kalmar Optimal Care

We optimise your business performance.

- Guaranteed availability
- Reduced tied-in capital
- Improved business performance
- Increased peace of mind.

Kalmar Genuine Parts, when the right part matters.

When something needs to be replaced you need a quality part that meets your exact needs – urgently. Kalmar Genuine Parts offers a rapid delivery service for over 50,000 premium-quality genuine parts to anywhere in the world, with installation support if needed.



Financing options for you.

You may choose to buy your new reachstacker outright or consider leasing or renting your equipment. Kalmar offers a range of leasing and rental options that 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. Kalmar can also look at you trading-in your old equipment.

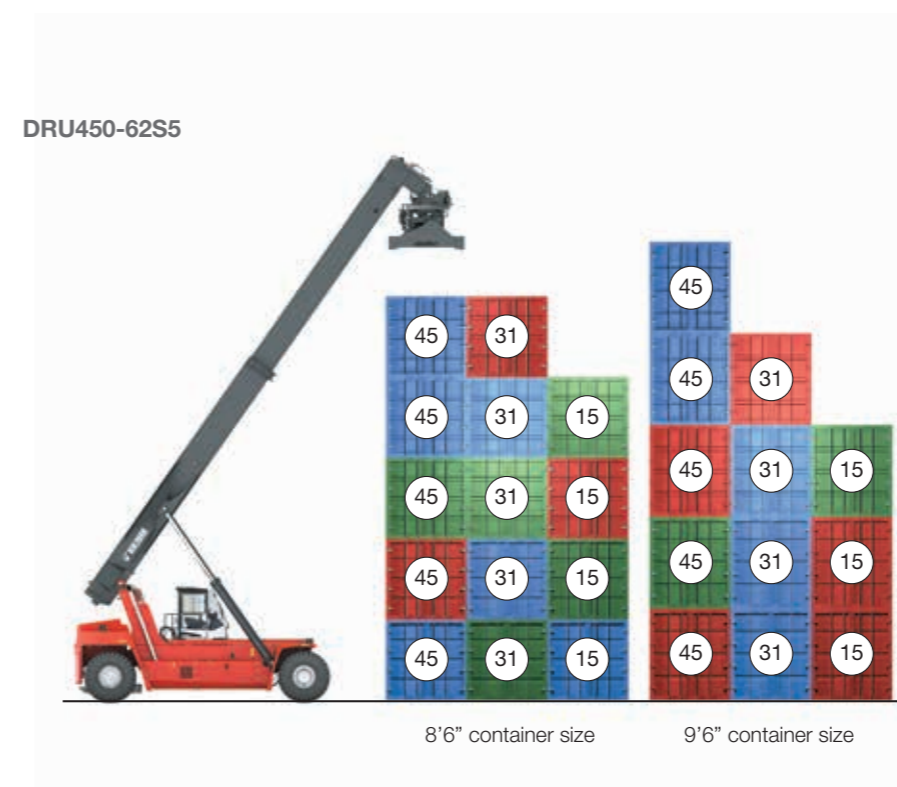
Technical information.

1 Truck Model			DRU450			
MANDATES	2 Stacking model and height			DRU450-62S5		
	3 Type of handling			Container handling		
	4 Lift capacity, row 1-2-3			45 / 31 / 15		
	5 Load centre, from front face of tyres			(mm) 1965 / 3815 / 6315		
	6 Stacking capacity in container row 1-2-3 of 8'6" / 9'6"			5/5 - 5/4 - 4/3		
	7 Spreader type, extension stops, locking			(ft) Mechanical Pile Slope (MPS) by gravity / 20ft, 30ft and 40ft / 4 Twistlocks		
	8 Wheelbase			L3 (mm) 6250		
	WEIGHTS	9 Service weight			(kgs) 69500	
10 Axle load front at load centre L4, unloaded – at rated load			(kgs) 34700 - 99900			
11 Axle load rear at load centre L4, unloaded – at rated load			(kgs) 34800 - 14600			
12 Axle load front of driving position according to EN 1459 - at rated load			(kgs) 88500			
13 Axle load rear at driving position according to EN 1459 - at rated load			(kgs) 26000			
WHEELS	14 Tyres, type - thread			Diagonal / Pneumatic / Tubeless		
	15 Tyre dimensions, front & rear			(in) 18.00x25 - 18.00x25, PR40 E4		
	16 Rim dimensions, front & rear			(in) 13.00x25 - 13.00x25		
	17 Number of wheels, front – rear (*driven)			4* - 2		
	18 Pressure			(MPa) 1.0		
	19 Track (c-c), front – rear			S1 - S2 (mm) 3030-2600		
	DIMENSIONS	20 Boom type - cylinder design			Duplex 2-stage boom with 2 lift cylinders and 1 extension cylinder	
21 Boom angle, min - max			alfa-beta (deg) 0 - 60			
22 Boom height, min - max			H3 - H5 (mm) 4600 - 18200			
23 Boom reach stroke, max			(mm) 7000			
24 Attachment/hook rotation, CW – CCW			(deg) 195 - 105			
25 Sideshift ±			V1 (mm) ±800			
26 Number of rotation motors and rotation brakes			2 + 2			
27 Spreader lifting hooks/eyes			4			
28 Mechanical Pile slope stroke (MPS), side tilt in spreader			(deg) ±5			
29 Lift height, min-max			H4 (mm) 1150 - 15100			
30 Truck height / seat height			H6 - H8 (mm) 3650 / 2575			
31 Overall truck length, without and with boom			H6 - H8 (mm) 8265 - 11450			
32 Ground clearance, min.			(mm) 250			
33 Width of truck			B (mm) 4150			
34 Width over attachment, min-max			B1 - B2 (mm) 6055 - 12185			
35 Aisle width for 90° stacking, 20ft container - 40ft container			A1 - A2 (mm) 11400 - 13600			
36 Turning radius, inner / outer 20ft / outer 40ft			R1-R2-R3 (mm) 8300 / 1200 / 9400			
37 Distance front axle – front of attachment MPS			L2 (mm) 835			
DRIVING DATA		38 Type of engine			Diesel / 4-stroke / Turbo	
	39 Drive axle			Axletech PRC-7545 or Kessler D-102, WDB, differential & hub reduction		
	40 Travelling speed forward, unloaded – at rated load			(km/h) 26 - 22		
	41 Travelling speed backward, unloaded – at rated load			(km/h) 18 - 16		
	42 Gradeability max., unloaded – at rated load			(%) 35 - 26		
	43 Gradeability at 2 km/h, unloaded – at rated load			(%) 30 - 17		
	44 Lifting speed, unloaded – at 70% of rated load			(m/s) 0,36 - 0,22		
	45 Lowering speed, unloaded – at rated load			(m/s) 0,45 - 0,50		
	46 Starting battery, voltage – capacity			(V - Ah) 2x12 - 135-145		
	47 Steering system, type – maneuvering			Servo assisted - Steering wheel		
48 Service brake system, type – affected wheels			Wet disc brakes - Drive wheel			
49 Parking brake system, type – affected wheels			Spring brake - Drive wheel			
MIS.	50 Noise level EN12053 - equivalent inside cabin LpAZ			75 - 77 (optional 74 - 76)		
	51 Noise level EN12053 - equivalent outside cabin LwAZ			110 - 113 (optional 108 - 111)		
	52 Tank volumes, diesel - AdBlue - oil			(dm3) 550 / 35 / 740 (600+140)		
	53 Overload protection system			Electronic		

Drivelines.

Truck Model	DRU450			
	EU3 / Tier 3	EU3 / Tier 3	EU4 / Tier 4F	EU5
Engine emission approvals	Cummins	Volvo	Volvo	Volvo
Engine emission brand/series	QSM-11-C330	TAD-1150-VE	TAD-1170-VE	TAD-1180-VE
Engine model	No SCR / no AdBlue	No SCR / no AdBlue	SCR / AdBlue	SCR / AdBlue
Engine after treatment type	No particle filter	No particle filter	No particle filter	With particle filter
Engine design / cylinders	6-inline / common rail	6-inline / common rail	6-inline / common rail	6-inline / common rail
Engine displacement (dm3)	10.800	10.840	10.840	10.840
Max power @ engine speed (kW)	246 @ 2000	235 @ 1450 - 2000	235 @ 1450 - 2000	235 @ 1450 - 2000
Max torque @ engine speed (Nm)	1674 @ 1100 - 1400	1581 @ 950 - 1450	1581 @ 950 - 1450	1581 @ 950 - 1450
Drawbar pull, max (kN)	300	300	300	300
Fuel consumption - average diesel (l/h)	14 - 18			
Fuel consumption - average AdBlue (%)	-	-	1 - 5	1 - 5
Transmission model (gears FWD + RVS)	Dana TE-30500 (5 gears forward + 3 gears reverse)			
Transmission gear shift type	Automatic powershift			
Transmission clutch type	Torque converter			
Drive axle brand / series	Axletech PRC-7545 (WDB) or Kessler D-102 (WDB)			
Service brake / cooling	Wet Disc Brakes with oil cooling			
Alternator, power (V/A)	AC, 2800 (28 x 100)	AC, 3080 (28 x 110)	AC, 3080 (28 x 110)	AC, 3080 (28 x 110)

Lifting capacity - container handling.





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Making your every move count

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