Make your next move one that counts.

Meet Gloria.

Kalmar DRG420-450

Technical information





1. Introducing Kalmar DRG420-450:

The next generation of productivity

Robust, versatile and efficient, Kalmar reachstackers are the most extensively tested machines in the industry and the preferred choice of cargo handlers in more than 160 countries throughout the world.

Now, with the Generation G reachstacker, we're proud to introduce an entirely new benchmark in driver productivity. One that's not only safer and more comfortable to operate, but also easier to maintain and more profitable to own.

For drivers, it offers an all-new operating experience with a panoramic view, intuitive interfaces and ergonomically designed controls. For owners and service personnel, it includes countless new improvements that ensure greater uptime with minimal total cost of ownership. Put together, it's simply our safest, most efficient reachstacker ever built.

Because if there's one thing we've learned from thousands of businesses across the globe, it's that every move – from a single lift to a lifetime of non-stop utilisation – has a direct impact on your bottom line. And that's why, once again, we're determined to make your next move one that truly counts.

Welcome to Generation G.



2. The EGO cabin:

Redefining driver performance



The new EGO cabin puts drivers in full control of our most productive driving environment to date. Fully redesigned with more comfortable ergonomic controls and a wide range of steering and seating possibilities, everything is constructed to provide a safe and stress-free driving experience in even the most demanding applications.

Total visibility

An entirely new, open cabin design ensures optimal visibility at all angles. Forward, diagonal and rearward views are all enhanced thanks to smartly refined profiles and curved windows. The overall effect is an uncompromised level of safety and operator awareness.

High-capacity wiper

To extend visibility in even the most extreme weather conditions, a redesigned horizontal wiper is capable of drying 90% of the surface area of the new, curved windscreen.

Efficient work console

All controls, switches and indicators are carefully formed and placed for smoother, more effective load handling. Control and data display panels are clear and intuitive, and the entire console is ergonomically tested to reduce both effort and unintentional errors.

Fully integrated multi-seat

The adjustable, Kalmar seat is developed to provide the most comfortable sitting posture for every driver. During long shifts and demanding operations, an optimal seat position makes it possible to achieve a consistently healthier, more enjoyable driving experience.

Patented side-tilting steering wheel

The newly designed ergonomic steering wheel has been thoroughly tested to provide a range of position settings that can be adjusted for the comfort of any driver. Equipped with a patented tilt function, it can be angled to the side or moved forward slightly to avoid obstruction. Driving, reversing and handling difficult loads in tricky positions have never been this stress-free.

Ergonomically designed comfort pedals

The new pedal system is both flexible and fail-safe. Equipped with adjustable-angle floor-based pedals, it decreases foot strain and allows you to drive harder with less fatigue.

Intuitive operator interfaces

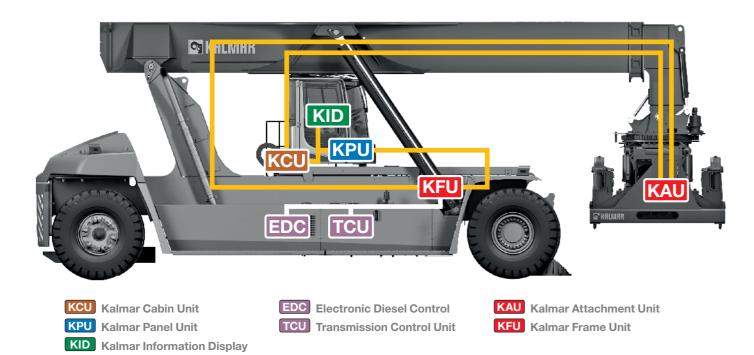
The human-machine interface (HMI) has been elevated to new heights as a result of extensive testing and R&D. One logical, user-friendly design allows you to see, hear, touch and react to all important inputs without ever losing focus on the task at hand.

New patented joystick

The new joystick with built-in gear knob is designed to improve driving efficiency. It is optimised for maximum lifting capacity and ergonomically enhanced to reduce arm fatigue.

3. Advanced electronics

Better uptime through advanced electronics



The improved Kalmar electrical control system makes the Generation G smarter, more intuitive and more reliable than ever before. Its electronics feature a distributed and redundant CAN-bus technology, developed by Kalmar, that constantly monitors the engine, gearbox, valves and more – providing you with constant real-time data to help maximise uptime. The new segmented wiring with longer lifetime, fewer wires and connection points, means that the system is both less prone to faults and far easier to configure, diagnose and service.

Simplified diagnostics

Condition-monitoring data from the CAN-bus system is constantly fed to operators via an eye-level colour display in the cabin. Pop-up notifications allow drivers to simply check the screen, perform troubleshooting and see error codes that direct them straight to the relevant section of the operator's manual.

Smart sensors for fluid levels

Most often, fluid levels are checked as part of routine maintenance, which rarely takes into account the wide ranges of use and driver skills that your machine faces. It's a simple task, but one that can have costly

consequences if performed too late. As with the previous generation of reachstackers, the Generation G solves this with sensors that alert drivers of any warning signs of low engine oil or coolant levels – long before any stoppage or component damage occurs.

Central lubrication

As an added option, a central lubrication system can be installed to ensure greater operator control over the machine's lubrication cycle. The system is electronically monitored and controlled in order to alert operators in advance whenever a blockage or other malfunction arises – anywhere in the lubrication cycle.

4. Control systems & driver interfaces

Intuitive interaction and control

The Generation G has been comprehensively re-engineered to ensure seamless interaction between the machine and its drivers. With the help of leading industrial designers, usability experts – and of course, experienced operators – countless details have been refined to ensure a single, balanced driver interface. It's a holistic approach that results in faster, intuitive understanding of the wealth of real-time information gathered by the Kalmar electrical control system. And the end result is a driver that remains informed and alert at all times.



Intuitive Kalmar Display Unit

The Kalmar Display Unit is designed to keep operators safe, effective and well informed from the comfort of their cabin. Without stepping outside or asking for assistance, it's possible to check and diagnose the performance of a range of critical factors, from fuel consumption and fluid levels to system errors and the operator action needed to resolve them. Calibration settings and diagnostic resources are always accessible and easy to understand – exactly when and where you need them most.

LED-lit Head Up Display

To complement the Kalmar Display Unit without adding unnecessary clutter to the cabin, the Generation G is also equipped with a discreet, integrated Head Up display with LED indicators. This allows you to easily monitor twist-lock and support-leg status through simple green, yellow and red indicators. The small, unobtrusive unit helps to keep you and your load safe while reducing extra costs and distractions through simplified, energy-efficient LED symbols.

5. Drive train

Power that's built to last

The Kalmar Generation G is equipped with either a Volvo stage 3B or Cummins stage 3A engine, together with ZF transmission. Reliable and fuel efficient, they are prepared for Stage 4 and Tier 4 compliance. Even from low revs, they supply ample power and torque for rapid acceleration and safer manoeuvrability.



All the components of the Generation G drive train, from the drive shaft and transmission systems to braking and other units, are proven for lifetime durability and precision. The electronically controlled gearbox, for instance, helps to ensure safe and effective driving at all speeds, together with highly precise control of lifting equipment.



Option

Draw pull

Engine	Manufacturer, type designation	Cummins QSM11
	Fuel – type of engine	Diesel - 4-stroke
	Rating ISO 3046 - at revs (kW - rpm)	277 at 1700-1800 rpm
	Peak torque ISO 3046 - at revs (Nm - rpm)	1830 Nm at 1100-1400 rpm
	Number of cylinders - displacement (cm³)	6 - 16,3:1
Gearbox	Manufacturer, type designation	ZF - 5WG261
	Clutch, type	Torque converter
	Gearbox, type	Power shift
	Number of gears, forward - reverse	5 3
Alternator	Type – power (V - A)	28 / 100
Starting battery	Voltage - capacity (V - Ah)	2x12 - 145
Driving axle	Type Kalmar – WDB	Kalmar - WDB
Noise level, inside	Noise Level in cabin according to EN12053	72

Drive train		Standard
Engine	Manufacturer, type designation	Volvo TAD 1360VE
	Fuel – type of engine	Diesel - 4-stroke
	Rating ISO 3046 - at revs (kW - rpm)	256 at 1500-1900 rpm
	Peak torque ISO 3046 - at revs (Nm - rpm)	1745 Nm at 1100-1400 rpm
	Number of cylinders - displacement (cm³)	6 - 17,8:1
Gearbox	Manufacturer, type designation	ZF - 5WG261
	Clutch, type	Torque converter
	Gearbox, type	Power shift
	Number of gears, forward - reverse	5 3
Alternator	Type – power (V - A)	28 / 150
Starting battery	Voltage - capacity (V - Ah)	2x12 - 145
Driving axle	Type Kalmar – WDB	Kalmar - WDB
Noise level, inside	Noise Level in cabin according to EN12053	72

Lifting speed		eed (m/s)	Lowering	speed (m/s)	Driving sp	eed (km/h)	G	(kN)		
Performance	unloaded	at 70% of rated load	unloaded	at rated load	unloaded (F/R)	at rated load (F/R)	at 2 km/h, unloaded	at 2 km/h, at rated load	max, unloa- ded	max
DRG420-60S5	0,42	0,25	0,36	0,36	25/18	21/16	35	19	37	316
DRG450-60S5	0,42	0,25	0,36	0,36	25/18	21/16	35	19	37	316
DRG450-60S5M	0,42	0,25	0,36	0,36	25/18	21/16	35	19	37	316
DRG450-65S5	0,42	0,25	0,36	0,36	25/18	21/16	35	19	37	316
DRG450-65S6	0,42	0,25	0,36	0,36	25/18	21/16	35	19	37	316
DRG450-60C5	0,42	0,25	0,36	0,36	25/18	21/16	35	19	37	316
DRG450-65C5	0,42	0,25	0,36	0,36	25/18	21/16	35	19	37	316
DRG450-60S5X	0,42	0,25	0,36	0,36	27/20	21/16	26	15	28	316
DRG450-60C5X	0,42	0,25	0,36	0,36	27/20	21/16	26	15	28	316
DRG450-65S5X	0,42	0,25	0,36	0,36	27/20	21/16	26	15	28	316
DRG450-65S5XS	0,42	0,25	0,36	0,36	26/19	20/15	25	14	27	316
DRG450-65C5X	0,42	0,25	0,36	0,36	27/20	21/16	26	15	28	316
DRG450-65C5XS	0,42	0,25	0,36	0,36	26/19	20/15	25	14	27	316
DRG450-65S6X	0,42	0,25	0,36	0,36	27/20	21/16	26	15	28	316
DRG450-70S5X	0,42	0,25	0,36	0,36	26/19	20/15	25	14	27	316
DRG450-70C5X	0,42	0,25	0,36	0,36	26/19	20/15	25	14	27	316
DRG450-70S5XS	0,42	0,25	0,36	0,36	26/19	20/15	25	14	27	316
DRG450-70C5XS	0,42	0,25	0,36	0,36	26/19	20/15	25	14	27	316
DRG450-75S5XS	0,41	0,24	0,36	0,35	25/18	19/14	23	13	25	316
DRG450-75C5XS	0,41	0,24	0,36	0,35	25/18	19/14	23	13	25	316

6. Safety

Everything for a safer day's work

Any machine, of course, is only as safe as its driver. But even the most experienced driver needs the right working conditions to make the most of their equipment. Our goal in developing the new Generation G reachstacker was to create entirely new standards in visibility, ergonomics and overall safety – all to ensure that you, your machine and your cargo reach their destinations safely, every day.

Unobstructed vision

The new EGO cabin ensures nearly uninhibited visibility for any type of operation. In addition to the panoramic windscreen and integrated wipers, all control panels and monitors are thoughtfully placed to ensure optimal ease of use and visibility. And when it comes to handling difficult loads from a more optimal position, an optional sliding cab function allows you to hydraulically shift the cab's position at the press of a button – yet another feature to offer a wider, more adaptable field of vision.

A revolution in ergonomics

The driver's entire surroundings have been carefully redesigned to reduce stress and enhance safety. This includes a new, adjustable Kalmar multiple steering possibilities as well as comfortably engineered control panels and hanging pedals. Whether advancing, reversing, loading or unloading at tricky angles, the driver remains in full control, with all functions intuitively within easy reach.

Optional Personal Proximity System

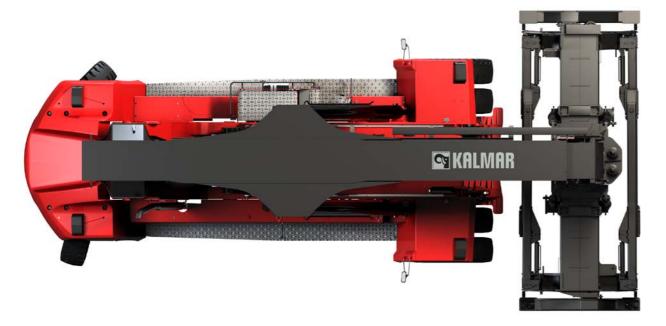
In an environment as fast-paced as a cargo terminal, the external environment is far from predictable. With the new optional Personal Proximity System, you get a complete aid system with exterior sensors that enable you to detect unexpected obstacles or colleagues approaching from out of view. A simple audio warning alerts you to their presence, allowing you to react before a dangerous situation arises.

Reverse Aid Warning System

The System includes a Reverse Aid Warning System, equipped with sensors, a reverse camera (integrated into the rear counterweight) and an interior cabin display. The ultra sound warning system, which covers an area from 50 cm up to 9 meter, is inter-adjustable in three different zone settings.

Tyre pressure monitoring

With an optional integrated tyre pressure monitoring system, drivers can continuously monitor the pressure of each individual tyre. Besides reducing tyre wear, this added information makes it simpler to avoid dangerous tyre blowouts altogether.



7. Service & Support

Global presence, local service

From the world's first commercial reachstacker to the more than 7,500 machines since delivered, no machine on the market is built with deeper knowledge than the Kalmar Generation G. It's a mindset we incorporate straight from the factory floor, where each component and spare part is designed for maximum uptime and easy serviceability with input from service technicians, support personnel and aftermarket staff.

Rapid response times

The result is a new machine for a new era, backed by the industry's most comprehensive global support and after-sales service network. This deep experience extends throughout the Kalmar supply chain, ensuring swift response times for service, support and spare parts in all corners of the globe. Wherever cargo is handled, and in whatever operating conditions, you can rest assured that our world-leading network is there to keep your business moving strong.

Longer service intervals

To further minimise your total cost of operation, the Generation G has a service life that's longer than ever before. The savings can be felt from the first service, which now is performed after 500 hours. Service intervals have doubled from 1,000 to 2,000 hours for both the drive axle oil and oil in the rotation engine spreader, while hydraulic oil is checked first at a full 4,000 hours, and again at 1,000-hour intervals. Put together, it all amounts to a significant leap forward in ease of ownership and total uptime.

Simplified maintenance

Thanks to several structural refinements, filter changes are now easier, faster and less frequent. The servo filter, which is first changed after 1,000 hours rather than 500, has been relocated to sit more closely to the high-pressure filters beneath the frame. Meanwhile, the fine filter has been moved to the outside of the frame, also to ensure quick, easy access for service personnel.

Improved internal construction

The improved Kalmar electronic control system makes your machine both more reliable and easier to diagnose. With better integrated wiring and segmented cables, service staff can quickly detect faults and carry out replacements so you can get back to work. Electrical interfaces and hydraulics systems are also streamlined, resulting in fewer components and diagnostic variables. It's a service-friendly combination that carries down to your bottom line, year in and year out.

Enhanced exterior protection

In the long run, a more durable exterior is one that pays off. Not just in terms of maintenance costs, but also in added resale value. And the Generation G is no exception. From improved anchor points for safer transport to faster-folding support jacks, it includes a range of new details designed to boost the lifetime of your machine. For good measure, we've also added thicker paint layers to the exterior and new surface treatment to bolts and screws, providing superior protection against wear, rust and damage in all climates and weather conditions.



8. Environment & fuel economy

Smarter fuel savings

With the Generation G, idle fuel consumption is a thing of the past. Features include standard technologies like smart LED lighting, three optimised Kalmar Eco Driving Modes and a range of options designed to make fuel savings as effortless as possible.



Kalmar EDM (Eco Driving Modes)

Depending on the priorities of your business, drivers can now choose and switch between three optimised driving modes: Power, Normal and Economy. Each is designed to automatically maximise output, either in terms of tonnes moved, fuel economy or total cost of operations. Whichever you choose, you can rest assured that your machine is finely tuned, with the possibility to save up to 20% on fuel consumption.

Energy-efficient LED lighting

From the in-cabin Head Up display to the twist lock indicators on the boom and on chassis as well as for the Rotating beacon (warning lamp on boom) LED is now standard. The LED lights are incorporated to ensure minimal energy usage. In addition to their total life span of up to 30,000 hours, LED lights are far more tolerant to vibrations than traditional halogen or Xenon fixtures, thus reducing lifetime maintenance costs.

Powerful variable pumps

The Generation G uses highly efficient variable pumps to get the most power from every piston movement. Variable pumps save fuel and reduce noice levels.

Tyre pressure sensors

Low tyre pressure can have a significant impact on fuel savings. By choosing the optional tyre pressure monitoring system, you can gain full control over the air pressure of all tyres, at all times. For drivers, this is just one more automated system to help boost safety while saving fuel.

Start-stop function with up to 10% fuel savings

An optional start-stop function can also be added to automatically activate and deactivate the machine. This automatic start-stop function reduces unnecessary emissions and extends the lifespan of components, which makes it possible to achive up to 10% in fuel savings.

9. Driver training & customisation

More ways to get the most from your machine

Ultimately, a successful day's work boils down to one thing: a safer, healthier, more productive driving experience. And since no two operators – or operations – are alike, the Generation G is supported by a wide range of customisation options and driver training services.



Tailor-made for your business

Based on your specific needs, the Generation G reachstacker is available with a complete range of standard and customised cabin features, attachments and more. Your machine can be configured with a 6, 6.5, 7 or 7.5 metre wheelbase, together with one of two powerful, fuel-efficient drivelines: the Volvo 1360 ZF step 3B and Cummins ZF step 3A. Whatever your application, our aim is to help adapt your reachstacker for the best possible lifetime utilisation.

Hone your driving skills with Kalmar Training Academy

Along with a high-quality machine, skilled drivers are our customers' greatest assets. With the Kalmar Training Academy, we help to make both of these investments more profitable for your business. Operator training courses, which teach safer, more efficient operating skills, can be held anywhere in the world – and even on-site with customers in realistic working environments.

In particular, our EcoDriving courses help drivers to extend component life, minimise maintenance costs and reduce fuel consumption by up to 30%. Simply by learning new techniques, every driver can help make a measurable impact on your machine's total cost of operation – for years to come.

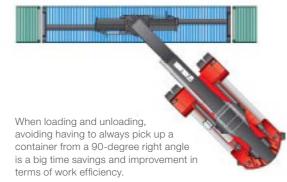
10. Flexible container handling

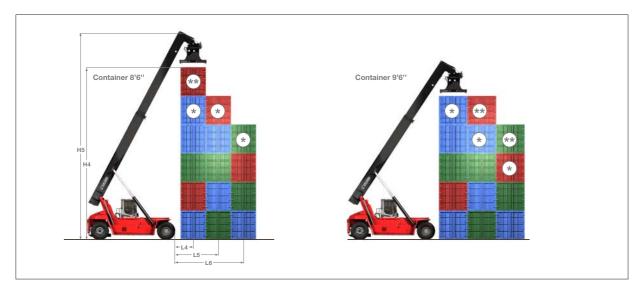
Easy to use, easy to choose

What kind of turning radius do you need? Which size vehicle is best suited to your operational requirements? With our broad range of model sizes, options and handy designation system, it's easy to find just the right solution.



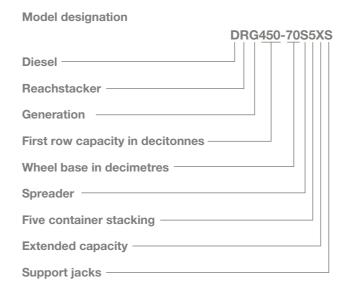
It's easy to lift containers lengthwise from a low, longitudinal position – through workshop doors, port shed gates and other tight openings.

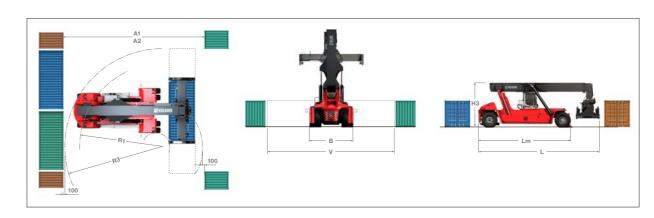




	Container 8'6"		С	Container 9'6"			Lifting height		Load centre		
Model/capacity	1:st row	2:nd row	3:rd row	1:st row	2:nd row	3:rd row	H4 (mm)	H5 (mm)	L4 (mm)	L5 (mm)	L6 (mm)
DRG420-60S5	41*/42	25*	11*	40*/42	25*	11*	15100	18200	1965	3815	6315
DRG450-60S5	43*/45	27*	13*	42*/45	27*	13*	15100	18200	1965	3815	6315
DRG450-60S5M	43*/45	30*	15*	42*/45	30*	15*	15100	18200	1965	3815	6315
DRG450-65S5	43*/45	32*	16*	42*/45	32*	16*	15100	18200	1965	3815	6315
DRG450-65S6	42**/44*/45	22*	16*	43*/45	32**	16**	16200	19250	1965	3815	6315
DRG450-60C5	41*/45	25*	10*	40*/45	25*	10*	14900	18200	1965	3815	6315
DRG450-65C5	41*/45	28*	13*	40*/45	28*	13*	14900	18200	1965	3815	6315
DRG450-60S5X	43*/45	35*	18*	42*/45	35*	18*	15200	18200	1965	3815	6315
DRG450-60C5X	42*/45	32**	14**	41**/49*/45	32*	14*	15000	18200	1965	3815	6315
DRG450-65S5X	45*	36*/38*	21*	43*/45	37*/38	21*	15200	18200	1965	3815	6315
DRG450-65S5XS	45*	38*/(41)	21*/(29*)	45*	38*/(41*)	21*/(29*)	15100	18300	1965	3815	6315
DRG450-65C5X	42*/45	33**/34*	16**	41**/44*/45	34*	16*	15000	18200	1965	3815	6315
DRG450-65C5XS	42*/45	34*/(36*)/ (38)	16*/(24*)	41*/45	34*/(38*)	16*/(24*)	14900	18300	1965	3815	6315
DRG450-65S6X	42**/45*	35*/38	21*	43*/45	34**/36*/38	21**	16300	19350	1965	3815	6315
DRG450-70S5X	45*	39*/41	23*	45*	40*/41	23*	15100	18300	1965	3815	6315
DRG450-70C5X	45*	36*/38	20*	43/45*	41*	20*	14900	18300	1965	3815	6315
DRG450-70S5XS	45*	39*/41	23*/(31*)	45*	40*/41	23*/(31*)	15100	18300	1965	3815	6315
DRG450-70C5XS	45*	36**/38*	20**/(27**)	43**/45*	37*/38	20*/(27*)	14900	18300	1965	3815	6315
DRG450-75S5XS	45*	43*/45	26*/(34*)	45	45*	26*/(34*)	15200	18400	1965	3815	6315
DRG450-75C5XS	45*	40**/42*/43	24**/(32**)	45**	41*/43	24/(32*)	15000	18400	1965	3815	6315

For more detailed information please see the technical data sheet





	Aisle wi	dth (mm)	Turning ra	adius (mm)	Main dimensions (mm)							Service
Dimensions	A1-20 ft	A2-40 ft	R1-20 ft	R3-40 ft	В	V	Lm	L	Н3	Clearance	Wheels	weight (kg)
DRG420-60S5	11200	13600	8100	9400	4150	6055-12185	8000	11200	4600	250	18.00x25/36	65500
DRG450-60S5	11200	13600	8100	9400	4150	6055-12185	8000	11200	4600	250	18.00x25/40	67400
DRG450-60S5M	11200	13600	8100	9400	4150	6055-12185	8000	11200	4600	250	18.00x25/40	69400
DRG450-65S5	11600	13600	8500	9400	4150	6055-12185	8500	11700	4600	250	18.00x25/40	69500
DRG450-65S6	11900	13900	8500	9450	4150	6055-12185	8500	12000	4500	250	18.00x25/40	70500
DRG450-60C5	11200	13600	8100	9400	4150	6055-12185	8000	11200	4600	250	18.00x25/40	73500
DRG450-65C5	11600	13600	8500	9400	4150	6055-12185	8500	11700	4600	250	18.00x25/40	74100
DRG450-60S5X	11200	13600	8100	9400	4150	6055-12185	8100	11200	4600	300	18.00x33	77500
DRG450-60C5X	11200	13600	8100	9400	4150	6055-12185	8100	11200	4600	300	18.00x33	81100
DRG450-65S5X	11600	13600	8500	9400	4150	6055-12185	8600	11700	4600	300	18.00x33	76300
DRG450-65S5XS	11600	13600	8500	9400	4150	6055-12185	8600	11700	4700	300	18.00x33	81600
DRG450-65C5X	11600	13600	8500	9400	4150	6055-12185	8600	11700	4600	300	18.00x33	80500
DRG450-65C5XS	11600	13600	8500	9400	4150	6055-12185	8600	11700	4700	300	18.00x33	85000
DRG450-65S6X	11900	13900	8500	9450	4150	6055-12185	8600	12000	4600	300	18.00x33	77500
DRG450-70S5X	12100	13600	9000	9400	4150	6055-12185	9100	12200	4700	300	18.00x33	77800
DRG450-70C5X	12100	13600	9000	9400	4150	6055-12185	9100	12200	4700	300	18.00x33	82800
DRG450-70S5XS	12100	13600	9000	9400	4150	6055-12185	9100	12200	4700	300	18.00x33	79300
DRG450-70C5XS	12100	13600	9000	9400	4150	6055-12185	9100	12200	4700	300	18.00x33	84200
DRG450-75S5XS	12500	13600	9400	9400	4150	6055-12185	9600	12700	4750	300	18.00x33	81800
DRG450-75C5XS	12500	13600	9400	9400	4150	6055-12185	9600	12700	4750	300	18.00x33	88100



Notes			

Kalmar offers the widest range of cargo handling solutions and services to ports, terminals, distribution centres and to heavy industry. Kalmar is the industry forerunner in terminal automation and in energy efficient container handling, with one in four container movements around the globe being handled by a Kalmar solution. Through its extensive product portfolio, global service network and ability to enable a seamless integration of different terminal processes, Kalmar improves the efficiency of every move. **www.kalmarglobal.com**



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