Moving you ahead again.
With a comprehensive range of features for the Generation G reachstacker, Kalmar covers the complete array of business needs for today's cargo handlers – from enhancing productivity, performance and lifetime value to setting new benchmarks in safety and environmental solutions.

Descriptions & Features	Productivity & Performance	Lifetime values	Safe to operate	Environmentally Friendly
Clean High Performance Drive Lines (engines & transmissions)	✔	✔		✔
Future Green Drive Line Technologies	✔	✔		✔
Tyre Life eXtension (TLX Drive Axles)	✔	✔	✔	✔
Tyre Pressure Monitoring System	✔	✔	✔	✔
Kalmar – ECO Drive Modes	✔	✔		✔
Kalmar – Start/Stop (of engine)	✔			✔
Kalmar SmartFleet – Remote Monitoring Information (RMI)	✔	✔	✔	✔
Extensive Parts, Service & Support Network Global-Local (less downtime)	✔	✔		
Improved Maintenance & Service Intervals	✔	✔		✔
Personal Proximity System	✔	✔	✔	
Front & Reverse Warning System (cameras & sensors)	✔	✔	✔	
All lamps, blinkers and beacons of LED design	✔	✔	✔	✔
Illumination and Beeper Solution	✔	✔	✔	
Fire Supression System & Fire Extinguishers		✔	✔	
Alco-Lock System	✔		✔	
Climate & Environmental Conditions	✔	✔	✔	✔

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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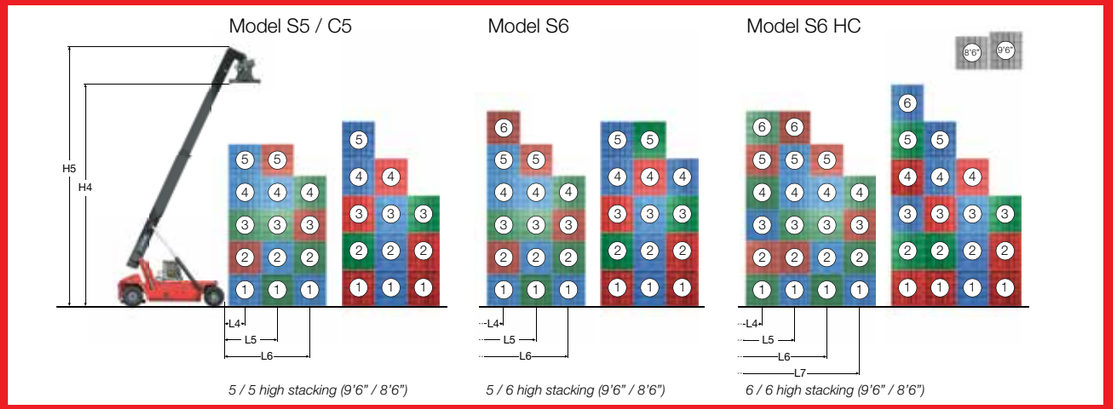


Take Gloria to new heights.

Performance-enhancing options for your Generation G reachstacker.

KALMAR

DRG Range Guide for container and intermodal handling:



5 / 5 high stacking (9'6" / 8'6") *5 / 6 high stacking (9'6" / 8'6")* *6 / 6 high stacking (9'6" / 8'6")*

Technical Data Chart DRG reachstackers

Lifting Capacity	Container Handling (1-4 row)				Rail Handling (2nd rail)		Lifting height			Load Centre (1-4 row)				Load Centre (2nd rail)	
	1st row (tons)	2nd row (tons)	3rd row (tons)	4th row (tons)	A (tons)	B (tons)	H4 (mm)	H5 (mm)	Container (9'6"/8'6")	L4 (mm)	L5 (mm)	L6 (mm)	L7 (mm)	A (mm)	B (mm)
DRG420-60S5	42	25	12	–	16	11	15100	18200	5/5	1965	3815	6315	–	5200	6500
DRG450-60S5	45	27	13	–	18	12	15100	18200	5/5	1965	3815	6315	–	5200	6500
DRG450-60S5M	45	30	15	–	19	14	15100	18200	5/5	1965	3815	6315	–	5200	6500
DRG450-60S5X	45	35	18	–	24	18	15200	18200	5/5	1865	3815	6315	–	5200	6500
DRG450-65S5	45	32	16	–	20	15	15100	18200	5/5	1965	3815	6315	–	5200	6500
DRG450-65S6	45	32	16	–	20	15	16200	19250	5/6	1965	3815	6315	–	5200	6500
DRG450-65S6HC	45	33	18	10	22	16	17700	20800	6/6	2065-2965	3815	6315	8815	5200	6500
DRG450-65S5X	45	38	21	–	27	20	15200	18200	5/5	1865	3815	6315	–	5200	6500
DRG450-65S6X	45	38	21	–	27	20	16300	19350	5/6	1865	3815	6315	–	5200	6500
DRG450-65S5XS	45	38 (41)	21 (29)	–	27 (35)	20 (27)	15100	18300	5/5	1865	3815	6315	–	5200	6500
DRG450-70S5X	45	41	23	–	29	22	15100	18300	5/5	1865	3815	6315	–	5200	6500
DRG450-70S5XS	45	41	23 (31)	–	29 (35)	22 (29)	15100	18300	5/5	1865	3815	6315	–	5200	6500
DRG450-70S6HCXS	45	41	23 (31)	14 (19)	29 (35)	22 (29)	17800	20900	6/6	1865-2865	3815	6315	8815	5200	6500
DRG450-75S5XS	45	45	26 (34)	–	32 (41)	25 (33)	15200	18400	5/5	1865	3815	6315	–	5200	6500
DRG450-75S6HCXS	45	45	26 (34)	17 (22)	32 (41)	25 (33)	17800	20900	6/6	1865-2865	3815	6315	8815	5200	6500
DRG450-60C5	45	25	10	–	16	10	14900	18200	5/5	1965	3815	6315	–	5200	6500
DRG450-60C5X	45	32	15	–	21	14	15000	18200	5/5	1865	3815	6315	–	5200	6500
DRG450-65C5	45	28	13	–	18	12	14900	18200	5/5	1965	3815	6315	–	5200	6500
DRG450-65C5X	45	34	17	–	23	16	15000	18200	5/5	1865	3815	6315	–	5200	6500
DRG450-65C5XS	45	34 (38)	17 (24)	–	23 (33)	16 (23)	14900	18300	5/5	1865	3815	6315	–	5200	6500
DRG450-70C5X	45	38	20	–	26	19	14900	18300	5/5	1865	3815	6315	–	5200	6500
DRG450-70C5XS	45	38 (38)	20 (27)	–	26 (33)	19 (26)	14900	18300	5/5	1865	3815	6315	–	5200	6500
DRG450-75C5XS	45	43 (45	24 (32)	–	29 (34)	22 (30)	15000	18400	5/5	1865	3815	6315	–	5200	6500

S = Container Handling range (toplift spreader) C = Intermodal Handling range (combi spreader) Capacities within brackets are with Support Jacks Down (SJD)



Tailored to meet your needs.

In 160 countries worldwide, Kalmar reachstackers have more than earned their reputation as powerful, flexible workhorses for a vast array of container handling applications – whether for intermodal or industrial cargo, from the smallest local terminals to the largest global ports.

Ever since pioneering the world's first commercial reachstacker some thirty years ago, we've produced more than 8,000 units for cargo handlers around the world, and are proud to offer the industry's widest range of reachstacker models for every need.

Now, with Gloria, our Generation G reachstacker, our aim is to provide you with an even wider range of options to improve performance and profitability whilst ensuring the ultimate in safety and environmental enhancements for any operation.

MODEL DESIGNATION

DRG 450 – 70 S5 HC XS

- Diesel
- Reachstacker
- Generation
- First row capacity
- Wheelbase
- Spreader, type of handling: S = Container, C = Intermodal, A =Industrial
- Stacking height: 5 = 5/5 high, 6 = 5/6 high and 6HC = 6/6 high
- Extended capacity
- Support jacks included



Kalmar EDM (Eco Driving Modes)
Optimise performance when you need it with three operating modes:
- **Power:** higher productivity with normal fuel consumption.
- **Normal:** medium productivity with up to 10% fuel savings.
- **Economy:** lower productivity with up to 20% fuel savings.

Kalmar TLX (Tyre Life eXtension)
Tyres move independently, allowing for easier operation, less tyre wear and increased fuel savings.
- Extends lifetime on drive tyres by up to three times (300%).
- Extends lifetime on steer tyres by up to 1.5 times (150%).

Kalmar SmartFleet Remote Monitoring
Remotely monitors your equipment so you can increase its availability, providing optimal equipment efficiency at all times.

Get more out of every move.

To push the limits of productivity and performance even further, our engineers have developed a range of options that extend truck lifetime, reduce maintenance costs, improve safety and minimise environmental impact.

High performance on demand

Performance needs can change by the day – or even by the hour. That is why Kalmar offers three performance modes from which to choose, based on your needs for productivity, profitability and performance. With **Kalmar EDM (Eco Drive Modes)**, it's easy to select the performance level that's just right for you:
- **Power Mode** is ideal when you require maximum performance, as measured in tonnes moved per hour.
- **Normal Mode** allows for higher profitability with up to 10% fuel savings per tonne of cargo.
- **Economy Mode** lets you to save even more fuel per hour, offering up to 20% in reduced fuel consumption.

Triple your tyre lifetime

Your ability to turn excellent performance into superior performance depends on many factors – optimized powertrains, power settings, reduced maintenance, support and more. Another key factor is the **Kalmar TLX (Tyre Life eXtension)** axle, which allows each tyre to rotate independently, thereby reducing tyre wear and improving fuel efficiency. This solution also improves manoeuvrability, since the tyres move independently and with minimal scrubbing, resulting in a much tighter turning radius and more efficient transport – not to mention fewer shipyard damages and lower downtime.





LIFETIME VALUE

Reduce your total cost of ownership.

The secret to higher productivity is not just a matter of reducing wear or improving uptime on a daily basis, but over the full lifetime of your machine. This is why we've added a range of improvements to ensure that the Generation G is the most profitable choice for your business.



Optimised tyre performance

Even small variations in tyre pressure can be costly. And the longer they go unnoticed, the more the costs add up. With our integrated **Tyre Pressure Monitoring** system, you'll stay constantly up to date on the current pressure of each individual tyre. All so you can take action to prevent blow-outs, unnecessary wear or any drag on your productivity – long before they pose a risk to your operations.

Major increase in service intervals

Of course, better service life starts with the machine itself. For the Generation G, this means we've significantly improved overall service intervals including an extension up to 500 hours for the first machine service as well as longer intervals between hydraulic oil changes and samples, engine oil, drive axle oil, servo filter and rotation motor on spreaders. This amounts to a substantial boost in non-stop performance with higher uptime than ever before.

An array of service and support options

Wherever you're moving cargo, the world's most extensive support and after-sales network is right there with you. Service agreements are tailored to meet your specific business needs, and local parts and expertise are always close at hand. From basic machine repair to business optimisation and fully automated port solutions, we provide a range of service options to boost uptime and ensure swifter response. The choice is up to you.

Broadest network for service, support and parts
Kalmar offers the world's most extensive support and after-sales network, guaranteeing rapid response for your business' every need.

Improved maintenance & service intervals
Simplified maintenance and significantly extended service intervals ensure higher uptime and lower total cost of ownership.

Kalmar Tyre Pressure Monitoring
This system, consisting of a control unit and blue-tooth sensors, allows you to increase tyre lifetime by 10-40%, depending on individual maintenance operations. Constant updates on tyre pressure also help you to improve fuel efficiency, stability and drivability.

Kalmar TLX (Tyre Life eXtension)
Allows tyres to move independently for better manoeuvrability, reduced tyre wear and increased fuel savings.
- Extends lifetime on drive tyres by up to three times (300%).
- Extends lifetime on steer tyres by up to 1.5 times (150%).



Service intervals for DRG reachstackers

Description	**Check** (hours)	**Filter** (hours)	**Oil** (hours)
First Machine service	500		
Working hydraulics (return line – no oil sample)		1 000	4 000
Working hydraulics (return line – with oil sample)		1 000	4 000 – 10 000
Working hydraulics (fine filter longlife)		500	
Engine (no oil sample) – Volvo		500	500
Engine (with oil sample) – Volvo		500 – 1 000	500 – 1 000
Engine (no oil sample) – Cummins [1]		500	500
Transmission – ZF with standard oil [2]		1 000	1 000
Transmission – ZF with longlife oil [3]		2 000	2 000
Drive axle [4]			2 000
Spreader rotation hydraulic motor [4]			2 000

1) First oil change & filter change at 250 h – then after every 500 h
2) First oil change & filter change at 500 h – then after every 1 000 h
3) First oil change & filter change at 500 h – then after every 2 000 h
4) First oil change & filter change at 500 h – then after every 2 000 h

SAFETY FEATURES

The industry's smartest safety features.

For years, we at Kalmar have prided ourselves on offering the very best built-in safety features on the market. In this same spirit, we've added a range of improvements for our Generation G reachstackers to help you take safety to the next level.

Personal Proximity System
To keep you fully aware of your operating area, an optional **Personal Proximity System** helps alert operators of potential obstacles. When the system detects a tag within its vicinity, it provides an audible and visible signal both to the vehicle operator and the person wearing the tag. Multiple detection zones ranging from 0 to 20 metres can also be set, expanded and reduced depending on the vehicle speed or type of operation. The system remains unaffected by environmental conditions such as low lighting, rain, dust or fog.

An inner danger zone (0-15m) and outer warning zone (0-20m), can easily be installed on any vehicle. Stop or Vehicle Speed Reduction can also be implemented to add another level of safety automation.

Reverse Aid Warning System
Also available with the Generation G is a **Reverse Aid Warning System** to ensure that no unnecessary risks go undetected. The system combines:
– a reverse camera
– an interior cabin display
– 4 ultrasonic rear sensors
– 3 adjustable warning zones ranging from 0.5 to 9 m

Fire extinguishers, alarm and suppression system
The Generation G can be equipped with fire extinguishers mounted for easy access outside the cabin, or an automatic fire suppression system. The automated system releases a high-pressure water mist and can be triggered automatically by multiple sensors inside the engine compartment, or manually both from inside the cabin and from the unit on the chassis. It also provides a fire alarm function, which activates a red warning lamp inside the cabin.

Take full control of safety settings
The **Kalmar Control System** allows you to customise your safety settings by defining limits to drive speeds, both with and without load, as well as setting lift height restrictions, load centre controls and more. Combined with added information from your **Tyre Pressure Monitoring System**, it all adds up to more precise control of stability, handling and overall operational safety.





360 degrees of safety
Safety aid system with range of detection up to 20 metres. **Personal Proximity System** helps to protect staff and infrastructure so operators can focus on productivity.

Reverse Warning System
Cameras and ultrasound sensors are integrated with rear counterweight and display inside the cabin, providing adjustable area coverage of 50 cm to 9 metres.

Fire Suppression System & fire extinguishers
In-machine fire safety options allowing manual or semi-automated fire suppression.

Illumination and beeper solutions
The DRG reachstacker has a complete LED lamp kit, providing excellent illumination function and durability. It also has a reverse alarm and one boom mounted reverse beacon.

The following can be added to increase safety:
- Additional LED work lamps
- Additional LED warning beacons
- Additional LED flashing warning lamps

Alco-lock system
An alcohol test unit requires the operator to take a breath test before starting the reachstacker.

Diesel Engines – DRG Reachstackers							
Engines brand / series		Volvo / D-11 (TAD-1100-VE)		Volvo / D-11 (TAD-1100-VE)		Cummins / QSM-11	
Emission approval, EU / EPA		Stage 3A / Tier 3		Stage 4 / Tier 4f		Stage 3A / Tier 3	
Type of engine		4-stroke / turbo / intercooler		4-stroke / turbo / intercooler		4-stroke / turbo / intercooler	
After treatment type		Light EGR		SCR + Light EGR		EGR	
Cylinders / volume / speed	(dm3/rpm)	6-inline / 10,84 / 2000		6-inline / 10,84 / 2000		6-inline / 10,80 / 2000	
Engine models		TAD-1151	TAD-1152	TAD-1171	TAD-1172	QSM-C300	QSM-C375
Power ratings, ISO 3046	(kW)	265	285	265	285	224	277
Torque peaks, ISO 3046	(Nm)	1785	1938	1785	1938	1575	1830
Transmission brand / series		ZF / 5WG		ZF / 5WG		ZF / 5WG	
Type designation		5WG-261	5WG-311	5WG-261	5WG-311	5WG-261	
Max power rating	(kW)	280	330	280	330	280	
Clutch / Transmission, type		Torque converter / Powershift		Torque converter / Powershift		Torque converter / Powershift	
Gears, forward – reverse		5 – 3		5 – 3		5 – 3	
Drive axle, brand / type		Kessler / WDB / D102		Kessler / WDB / D102		Kessler / WDB / D102	
Steer axle, brand / type		Kalmar / single cylinder		Kalmar / single cylinder		Kalmar / single cylinder	



ENVIRONMENTAL ASPECTS

Save more than just the environment.





Having long set the benchmark in green technologies, we were especially keen on equipping the Generation G with a range of top-level options to ensure that you are always compliant with the latest emission regulations whilst keeping fuel and running costs to a minimum.

Kalmar Start/Stop System

An automated start-stop function makes it possible to achieve up to 10% in fuel savings through automatic activation and deactivation of your machine. By substantially cutting down on idle time, it also provides an effortless way to reduce emissions and unnecessary wear on components.

Kalmar EDM (Eco-Drive Modes)

Whatever your business' priorities, Kalmar EDM provides the ideal balance between productivity, performance and running costs. In Economy mode you can save as much as 20% fuel. Normal mode allows you to achieve optimal performance in the vast majority of applications, at the same time reducing fuel consumption by up to 10%.

Stronger, cleaner and more fuel-efficient drive lines

The Generation G is equipped with the cleanest, most fuel efficient high-performance drive lines. Based on diesel engines from Volvo and Cummins, they are emission-approved and certified according to EU stage 3A, 3B and 4 (US EPA Tier 3, 4i and 4f) standards.

Future Green Technology
A wide selection of environmentally advanced solutions including a **Powersplit Drive Solution**, which enables 20-40% in fuel savings. This solution combines the best of both worlds: a slow speed hydrostatic drive and high speed mechanical drive. Other features include **DualFuelDrive** or GasDrive systems that combine diesel and LNG (Liquefied Natural Gas), along with **Bio Oil options** and more.

Climate control and environmental sensors
Choose Cold, Normal or Hot climate modes to optimise performance according to environmental conditions. Choose Dusty, Dirty or Hard driving conditions for problem-free performance of filters and heaters.