# Kalmar K-Motion 2.0

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All the drive. Up to 40% less fuel and emissions.

CVII.

dlast



# Changing the rules of the game.

For many years, reducing your fuel costs and emissions meant compromising on the operational efficiency of your reachstackers, as more fuel-efficient drivelines often meant less productive machines. No longer. Kalmar has developed a unique drive-train system called K-Motion, which has recently been upgraded to version 2.0.

### The upgraded Kalmar K-Motion 2.0

In our current K-Motion 2.0 upgrade you will benefit from lower power consumption when in operation and a much smoother drive. To achieve this:

- We have upgraded the hydraulics with new load sensing functionalities and optimised hydraulics functions
- And have upgraded the machine's operating software so it adapts quickly to different driving styles and applications.

K-Motion 2.0 is available with EU3 and EU4 (EPA Tier 3 and 4F) rated engines and for container, intermodal and industrial handling.

### What is Kalmar K-Motion?

K-Motion 2.0 is based on our extensive experience and knowledge of hydrostatic and mechanical drivelines which has allowed us to develop a highly innovative drive-train system for reachstackers.

With Kalmar K-Motion 2.0 you can maintain your expected levels of productivity and reduce your fuel bills and emissions by up to 40%. Your operators will benefit from an improved operating environment and the ability to more precisely control the machine.

### How does K-Motion work?

K-Motion is a combination of well proven transmission technologies, hydrostatic and mechanical drives, combined with smart programming, intelligent controls and a small, but highly efficient engine.

This new system operates by splitting the power sources depending on the operational needs of the machine. The hydrostatic slow speed drive, delivers smooth, efficient power while the mechanical high speed drive activates when additional power is needed.

The smart control system splits the power in the most intelligent way to maximise drive and lifting efficiency for every move you make. This allows the machine to operate with a much smaller engine than other reachstackers, giving you dramatically reduced fuel consumption, less noise and much lower emissions.

Kalmar K-Motion 2.0 is good for your business, good for the planet.

Fuel consumption can be reduced by up to 40%.

CO, emissions up to 40%.

"We have our Kalmar K-Motion connected to Kalmar SmartFleet. Everyday we measure the fuel used in combination with the number of moves made.

We see 30% less fuel consumption when we analyse the figures from the last 3-4 months"

### Kalmar K-Motion 2.0 can offer your business many benefits:

are reduced by



and others nearby. Ergonomically designed

Operating noise is greatly

reduced for operators

cabin for operational ASSA



Less stress and pressure on the driver's body during operations.

### A 30% fuel reduction.

Pascal Vermeulen Operational and Technical Director of the RBC Terminal



# Less fuel, less emissions.

Using less fuel will result in a direct reduction in emissions. With Kalmar K-Motion 2.0 you can expect a reduction in fuel consumption of up to 40% in comparison to older reachstackers and up to 20% with modern reachstackers. Reducing your fuel consumption means producing less CO<sub>2</sub> and particulate emissions.

### Just the right amount of power.

Kalmar K-Motion's smart programming senses the exact weight of the load being handled. By knowing the precise weight, the system can generate the right amount of power to get the job done, further helping to reduce fuel consumption and emissions.

### Further fuel savings can be achieved by installing:

- Automatic Start/Stop functionality
- Automatic Engine Shutdown
- Drive Speed Limitation
- SmartFleet Monitoring
- Eco Drive Modes (EDMs).

With Kalmar K-Motion 2.0 you can expect up to:



NOISE

### Proven in the field.

With over 70 Kalmar K-Motion machines delivered globally we have monitored their performance while operating in the field\*. Initial results have shown that fuel consumed, in relation to the work done (load lifted by the distance driven), has been significantly reduced. The reduction in fuel saved has reduced costs and emissions for the operators.

ted from Kalmar K-motion units running in field and compared with over 300 F neration reachstakers equipped with standard drivetrains, both 3A and 4F versions

K-Motion





# **SKALMAR**





# Safer and more comfortable.









### Increased safety and efficiency.

Kalmar K-Motion 2.0 uses a continuous variable transmission which provides smoother transition in shifts, drive stops and direction changes. This allows the operator to drive more precisely, resulting in increased safety levels.

### Easier to operate.

Kalmar K-Motion reachstackers are much easier to drive than other machines, as their smart programming does a lot of the work for you. Your drivers will no longer need to rev their engines to get the lifting and handling speeds they want, nor will they need to hold the brake pedal continually while lifting and lowering while stationary. This will dramatically reduce the strain and stress on their bodies.

### Increased comfort.

Kalmar K-Motion reachstackers come fitted with our ergonomically designed EGO cabin. With slim line b-pillars, adjustable seating, steering wheel and control panel, your driver will benefit from a superior operating environment and visibility. Kalmar K-Motion, with its unique driveline, is quieter and vibrates less than traditional reachstackers, further enhancing driver comfort. When you drive your Kalmar K-Motion reachstacker correctly, you will significantly reduce your fuel consumption and emissions by up to 40%.

## How you will be benefit from Kalmar K-Motion 2.0:

- Big reduction in fuel consumption
- Big reduction in exhaust emissions
- Big reduction of noise levels, inside and outside cabin
- Increased operation precision and control
- Increased driver comfort with less stresses
   and strains
- Increased driver efficiency and productivity
- Increased ease of operation.

### Kalmar Training Academy.

Driving a Kalmar K-Motion 2.0 reachstacker is different than traditional reachstackers and, to get the most out of it, our training academy offers a range of courses for both your technicians and operators. Operators will be shown how to optimise their driving performance and what needs to be checked on the machine every day. Technicians will be given the knowledge they need to be able to keep your new equipment in top condition. Courses are a mix of theory and hands on experience and can be held at Kalmar or at your site.





### 39% reduction in fuel consumption achieved.

Over a three day period it was shown that the Kalmar K-Motion DRG450 used on average 14.5 litres per hour in comparison to the Port of Tauranga's older reachstacker, which used 24 litres per hour. A reduction of over 39%.

"We were looking for reduced fuel consumption and improved operator comfort and control, as well as environmental benefits, such as lower emissions and reduced operating noise and we got them."

Shayne Jenkins General Manager, Quality Marshalling Port of Tauranga, New Zealand.

# Kalmar Care.

### Making sure your business never stops.

We offer you four different types of service and maintenance contracts, for any brand of equipment. Each is designed to help you improve your operational efficiency, drive productivity and secure financial predictability. The different contract types include a set of standardised service modules that can be tailored to meet your business needs. Opposite is an overview of the four contracts.

### When the right part matters.

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

You may also want to consider outsourcing all or part of your spare parts management and inventory control, with Kalmar Parts Care. Kalmar Parts Care makes sure that critical spare parts are always on hand so your equipment downtime is kept at a minimum. Each Kalmar Parts Care plan is based on your operational needs, talk to us today and see how we can lift your parts availability, while reducing your inventory costs.

### 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 downtime
- 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.

### Optimise your reachstacker with SmartFleet.

More support.

SmartFleet is a powerful equipment optimisation tool that can help you get more from your fleet. Data is streamed directly from your equipment, analysed and then displayed in an accessible and easy to use graphic interface. You will be able to assess the equipment's key performance data and make suitable changes to your operation processes to improve both efficiency and productivity.

Kalmar SmartFleet enables you to more effectively manage your container handling operations, decreases downtime and improves safety at your site.

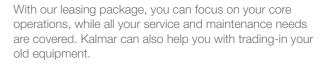
There are many standard reports to choose from, including:

Analyse View

Map View

- Calendar ViewReport View
- Financing options for you.

You may choose to buy your new K-Motion reachstacker outright or consider leasing or renting your equipment. There are a range of leasing and renting options that give you the financial predictability you need and the option to upgrade your equipment after a fixed period.



No matter what your service and support needs are, make sure that you speak to your local team first.

## The Kalmar container load measurement solution.

The accurate and reliable weighing of containers is an important part of safety at sea and is a mandatory requirement of the new SOLAS (Safety of life at sea) global weighing standards, from July 2016. The Kalmar container load measurement solution allows your machine to automatically measure the precise weight of your container to meet the SOLAS standards.

The Verified Gross Weight of your load is taken directly from your equipment's weighing systems and sent to the display screen in the cabin for recording. It is also possible to send the data to an on-board printer, cloud data service or create a direct connection to your TOS system.

The accuracy of this data has been certified by an independent third party to insure that it is compliant with the SOLAS standards.

### K-Motion options.



**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.



**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.



**Reverse Warning System (RWS).** Knowing what's going on behind you is critical when other personnel are present. Four rear sensors and a reversing camera relay real-time information to an in-cabin display, alerting the driver to any dangers, increasing personnel and driver safety. You can also add additional cameras on the spreaders or on the front of the machine.



**Fire Suppression System (FSS).** 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 highpressure 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.



**Alco-lock.** To ensure that 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.



**Reverse Beeper System.** When your staff are working side by side with moving vehicles there is always a safety risk. Installing a reverse beeper system provides a clear acoustic alert when the machine is reversing so personnel can make sure that they are out of harm's way.



**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:

- 2 or 4 on the front mud guards
- 2, 4 or 6 on the lift boom
- 2 or 4 on the spreader
- 2 more on rear counter weight.



### Standard.

Kalmar DRG 420S-450S (S = Container - Top Lift) Kalmar DRG 450C-450C (C = Intermodal - Combi Lift) Kalmar DRG 500A-540A (A = Industrial - Tool Carrier) Kalmar DRG 570Z-600Z (Z = Industrial - Lift Hook)

- Norms, Standards and Regulations
- Machinery Directive 2006/42/EC
- Safety Variable Reach Trucks EN 1459+A3
- Safety Low & High Lift Trucks ANSI/ B56.1
- Stability Variable Reach Trucks EN 1459+A3
- CE-marking for trucks within EU/EEA
   ANSI/ITSDF-marking for North America trucks

### Chassis

- Wheelbase 6,0 / 6,5 m in STD, X and XS models
- Strong and durable heavy-duty chassis
- Safe access steps, platform & hand rails (LHS)
- Long bottom access step (on both sides)
- Lifting eyes and anchor points (front & rear)
  Good rear end visibility of the truck
- Good rear end
- Towing pin (rear)

### Body

- Steps with anti-slip protection
- Rear view mirrors (2x) rear on front mudguards
- Strong and protective mudguards (front & rear)
- Basic noise insulation for the complete truck

#### Steer Axle (Rear)

- Kalmar steer axle mounted dual pivot bearings
- Orbitrol power steering with double acting cylinder

### Drive Axle (Front)

- Kessler planetary axle with differential drive
- Wide axle for high side stability (4150 mm)
- Oil-cooled Wet Disc Brakes (WDB)
- $\bullet$  High pressure filter (10 mµ) for the brakes
- Brake oil tank (140 lit), cooling & breather filter

### Wheels (Tyres & Rims)

- Drive and steer tyres 18.00x25"/PR40 (6x), for STD models
- Drive and steer tyres 18.00x33"/PR36 (6x), for X / XS models

### **Drive Train (CAN-bus)**

- Volvo D8 in EU stage 3A (EPA Tier 3)
- Volvo D8 in EU stage 4 (EPA Tier 4 Final)
- 6-cylinder diesel engines with pre-heater, displacement 7,70 Lit
- High power & torque with low fuel consumption
- Engine monitoring and protection system
- Automatic CVT transmission, DRTS R2-RS
- Hydrostatic slow-speed / mechanical high-speed
   Social and the speed speed / mechanical high-speed
- Seamless speed shifting and soft directional shifting (FWD REV)
- Transmission monitoring and reverse protectionHeavy-duty radiators for engine, transmission,
- brakes & hydraulics

### Load-Sensing Hydraulics

- Load-sensing variable piston pumps
- Pumps for boom, spreader, brakes & steering
  Vane pumps for brake & oil cooling (2x)
- Varie pumps for brake & oil cooling (2x)
   Return filters for the work hydraulics (2x/10 mµ)
- Hydraulic long-life fine filter with by-pass (5 mµ)
- Servo filter for the work hydraulics (10 mµ)
- Pressure filter for the brakes (10 mµ)
- Regeneration high-speed lifting & extension
- Boom end-damping (in-out/up-down/20-40')
- Hydraulic tank (600 lit), cooling, breather filter &
- ORFS-couplings

### Lifting Boom

Strong, durable box-type boom with guide padsBoom with 2 lift cylinders & 1 extension cylinder

Climate

settinas.

Information Systems

synchronized lift

(Pop-Up Menu)

(Pop-Up Menu)

Operator menu:

=- System voltage

=- Engine oil level

=- Clock and date

=- Engine rpm

• ECC, electronic climate control, very powerful

cooler, heater and ventilator, incl programmable

• Air-condition incl. fresh air and recirculation filter

Wipers/washers on front, rear and roof windows

Interval wiper functions on front, rear and roof

Menu control with toggle wheel & push buttons

Colour display & automatic fault analysis

LLMI Longitudinal Load Moment Indicator

• LLMC Longitudinal Load Moment Control

• Electronic safety, overload, scale &

=- Travelling speed (km/h or m/h)

=- Engine oil pressure & coolant level

=- Hydraulic oil temperature

=- Transmission oil temperature

=- Load & Load distance (LC)

=- Operating time (hours)

AC system (HVAC)

=- Trip computer / statistics

(hour/min)

=- Service indicator

=- Charging battery

=- Failure indicator

=- Low brake pressure

=- Boom extension & Boom angle

=- Service time indicator (hours)

=- Boom angle and Boom extension

=- Electronic weight scale functions

=- Status of Heating, Ventilation and

=- Fuel level (diesel and optional AdBlue)

=- Container counter with reset function

Various warning lights & signals:

=- Safety System disconnected

=- Transmission oil temperature

=- Hydraulic oil temperature

- Cabin: Iron-Grey RAL 7011

- Rims: Iron-Grey RAL 7011

**Documentation and Decals** 

• Load chart diagram inside cabin

Information & joystick stickers

- Chassis, tanks & mudguards: Red RAL 3000

- Boom, attachment & axles: Black RAL 7021

• Machine data sign on chassis incl. load chart

Warning, tyre pressure & oil pressure stickers

=- Low Engine coolant level

=- Low Engine oil pressure

=- Preheating Engine

=- Low Fuel level

Indicator lamps:

=- Parking brake

Fuse diagram

Instruction manual

Maintenance manual

Spare parts catalogue

Colour

=- Direction indication

=- high Engine coolant temperature

=- Estimated operating time before empty tank

### Attachment

- S = Top Lift, 45 tons, 20'-40', MPS, TWL + 4 lift hooks
- C = Combi Lift, 45 tons, 20'-30'-40', HPS, TWL lift legs, 4 lift hooks, length tilt & tilt lock
- A = Tool Carrier, max 65 tons, MPS, TWL
- (2,5x0,76 m) & 4 lift eyes
- Z = Lift Hook, max 70 tons, dual hook, free rotation & 4 lift eyes
- S-C-A = 4 floating twistlocks, LED indication lamps & 4 LED work lamps
- S-C-A = Safety locking, alignment pins (4x) & sensors (4x)
- S-C-A = Rotation +195/-105 deg (2 motors & 2 brakes)
- S-C-A = Lift hooks for slings on end beams (4x)
- S-A = Mechanical Pile Slope MPS  $\pm 5 \text{ deg}$
- C = Hydraulic HPS  $\pm 5 \text{ deg}$
- Large sideshift (S-C =  $\pm$ 800 mm / A =  $\pm$ 450 mm)

### Electrical System 24V

- Battery box 2x12V (24V) & main power switch
- Electric service box on chassis (LHS)
- 2 LED head lights on front fenders (one beam)
- 2 LED working lights on boom
- 2 LED working lights on front edge cabin
- 2 LED rear lights on fenders (when reversing)
  2 LED working lights on attachment (S + C + A)
- 2 LED working lights on attachment (3 + 0 +
  2 LED position lights on each side
- 2 LED tail lights / brake LED-lights
- 4 LED blinker lights (front-rear/left-right)
- 2 LED flashing brake lights (when reversing)
- 1 LED rotating warning beacon
  - 1 acoustic signal / reverse alarm (in reverse)

### Cabin (EGO)

- Structure
- Spacious, modern cabin with best ergonomics
  Large windows, good visibility, in all directions
- Large windows, good visibility, in all directions
   Manual moveable cabin (stroke 2375 mm)
- Manual moveable cabin (stroke 2375 mm)
   Step for roof access
- Step for root access
- Instep handle (left side)
- Sliding window on both sides
  Doors with air damper and key lock (L + R)
- Tinted laminated windows

#### Comfort

Controls

forward / reverse

• Double brake pedals (L + R)

switch, high/low beam)

FWD + REV

Hour meter

- Comfort seat Kalmar, mechanical spring, high back
- Adjustable armrest (RHS) & 2-point safety belt
- Inside rear view mirror (right side)
- Interior lights with fade away function
- Fully adjustable steering wheel incl tilt function
- Fully adjustable colour displayElectric adjustable operational console with
- joystick, operational buttons & armrest (RHS) • Power steering wheel with steer knob • Electric horn

• LED background light for buttons & switches

• Joystick (SmartStick) for boom, spreader &

Auto rev-up accelerator at lifting/extension

• Electric accelerator (SmartPedal) for driving

• Button for electronic hand brake (on/off)

• Safety override for hydraulic functions (by code)

• Multi-function lever LHS (horn, gear/direction

• Warning - hand brake (on/off) leaving seat

• Hydraulic door opener - for tilt spreader

• Coil ram sub frame, STD, 35 tons,

- on one side

ID / OD = 500 / 3000 mm

ID / OD = 500 / 3000 mm

Electrical System 24V

• Radio with CD/MP3/BT

cabin door columns

in cabin door columns

fenders/std pos

rearward (6-7 m)

TV-camera & monitor

(1 base/1 charger/5 tags)

Alcolock Draeger in cabin

hit cabin in front position

Head rest for the seat

**Additional Equipment** 

Lockable fuel cap

• Filter kit 2000 hrs

Cabin

Structure

Comfort

(RHS)

Controls

reverse

Climate

Tool kit

• Electric air pressure horn

**Options.** 

Chassis

Body

X and XS models

Steer Axle (Rear)

(plus 0,50 m radius).

Wheels (Tyres & Rims)

(for STD models)

(for X / XS models)

(EU 3A / EPA Tier 3)

(EU 4 / EPA Tier 4F)

Start/stop function to save fuel

Load-Sensing Hydraulics

• High pressure filter

Lifting boom

Attachment

(integral)

(2 x 22,5 ton)

(4 x 11.25 ton)

& speed limit 5 km/h

(incl override switch)

Drive train

(H4 = 13,0-17,8 m)

• Mud flaps (front or/and rear)

External rear view mirrors (2x)

• Steer cylinder space 14 mm

Wheel nut protection on steer tyres

• Spare wheel and rim 18.00x25"/PR40

• Spare wheel and rim 18.00x33"/PR36

• Volvo TAD-852-VE, 6-inline, 210 kW, 1237 Nm

• Volvo TAD-872-VE, 6-inline, 210 kW, 1237 Nm

• Automatic engine and ignition stop at idle

• Pre-cleaner air intake incl raised air intake

Various programmable speed limitations

• Duplex 2-stage S5/5 (H4 = 15,1-15,2 m)

• Duplex 2-stage S6/5 (H4 = 16,2-16,3 m)

• Duplex 2-stage C5/5 (H4 = 14,9-15,0 m)

• Tilt function ±5 deg (FWD/REV), incl tilt lock

(side tilt), incl tilt lock & speed limit 5 km/h

Automatic extension 20'-40' incl 30' stop

• Overhigh folding legs OFL = 1600 or 2000 mm

• Boom nose extension L = 1000 or 1600 mm

• Long boom nose, extension = 1600 mm

• 4 extra lift eyes in middle part of spreader

• 2 extra lift eves in centre of spreader

Soft landing with ultrasonic sensor

100 mm extension (noise reduction)

• Side Tilt Spreader 0-55 deg, 45 / 32 tons

• Length Tilt Spreader 0-55 deg, 45 / 32 tons

• Twistlock beam rubber damper,

• Extended twistlocks 300 mm

• Duplex 2-stage A5 (H4 = 15,0-15,1 m)

• Duplex 2-stage Z5 (H4 = 13,0-13,1 m)

Hydraulics Pile Slope HPS ±5 deg

• Rotations stop spreader at ±25 deg

• Duplex 2-stage S6/6 HC (H4 = 17,7-17,8 m)

Kalmar DRG 420S-450S (S = Container - Top Lift)

Kalmar DRG 450C-450C (C = Intermodal - Combi Lift)

Kalmar DRG 500A-540A (A = Industrial - Tool Carrier)

Kalmar DRG 570Z-600Z (Z = Industrial - Lift Hook)

• DRG range in Toplift (S), Intermodal (C)

• Wheelbases in 6,0 / 6,5 m - in STD,

• Duplex 2-stage booms for S+C+A+Z

Anti slip protection on fenders and tanks

Noise insulation kit for the complete truck

and Industrial handlings (A + Z)

• Coil ram sub frame, Tool Carrier, 35 tons,

• Extra sockets 2x24V + 2x12V in

• Extra sockets 2x24V + 2x5V USB's

Height limitation system for lifting boom
Load centre limitation for lifting boom
Speed limitation, please specify km/h
Container lights, LED 4x, on front mudguards
Extra working light, LED 2x, on spreader

Extra working light, LED 2x, on boom
Electric heated mirrors, front fender/std pos

• Electric heated & adjustable mirrors, front

• TV-camera with monitor in cab direction

• Reverse warning system, incl. 4x sensors,

• PPS, personal proximity safety

• Tyre pressure monitoring system (Bluetooth)

Cabin heater incl 220V outletDiesel powered cabin heater 5 kW

• Hydraulic sliding cabin (stroke 2375 mm), anti-collision function, avoid container / trailer to

Speed limitation depending on cabin position
Hydraulic elevating cab (stroke 2300 mm)

• Seat with air-cushion, heating & 3-point belt

### Armrest with adjustment (LHS )

Horizontal dampening/suspension of seat
Extra trainer seat incl 2-point safety belt (LHS)
Bracket for terminal and monitor (RHS)
Writing pad, A4 paper box and reading lamp

Lever steering incl switch for forward/reverse
Mini-wheel steering incl switch for forward/

Sun visor front-roof-rear windows (of black net)
Sun visor roof window (of reflecting film)
Microfilter in additional to std filter
AC/ECC switched off when door is open
Post-heating (break heater function)

Semi-automatic fire suppression systemFire extinguisher 6 kg, powder

• Extra sound insulation - reduction 3 dB(A)

• Central greasing (base truck / spreader)

### Colour

- Other colour than std, chassis
- Reinforced anti-corrosion protection

### **Documentation and Decals**

- Extra set of documentation
- Workshop manuals
- Volvo trouble shooting and repair kit
- Load chart lbs/inch in cab & sign "no riders"
- Documentation on cd or memory stick

### Training

- Contact Kalmar Training Centre for training programs
- Working ECO driving

### **Drivelines.**

KALMAR TRUCK MODELS		DRG 4	20 - 600	DRG 42	0 - 600
Engine emission approvals		EU stage 3A	US EPA Tier 3	EU stage 4	US EPA Tier 4-Final
Max emission norm values (NOx-HC-CO-PM)		3.5 - 0.5 - 3.5 - 0.2	3.5 - 0.5 - 3.5 - 0.2	0.4 - 0.19 - 3.5 - 0.025	0.4 - 0.19 - 3.5 - 0.020
Engine brand / series		Volvo Pe	enta / D-8	Volvo Per	nta / D-8
Engine model		TAD-8	352-VE	TAD-872-VE	
ingine after treatment type No SCR, no AdBlue, no EGR SCR + Ad		SCR + AdBlue	+ cooled EGR		
Engine fuel / type		Diesel /	4-stroke	Diesel /	4-stroke
Engine design / cylinders		6-inline / c	ommon rail	6-inline / co	ommon rail
Engine charger technology		Fixed Geome	try Turbo (FGT)	Variable Geometry Turbo (VGT)	
Engine intercooler technology		Intercoole	r (air-to-air)	Intercooler (air-to-air)	
Engine displacement	(dm3 (in3))	7,700	0 (470)	7,700	(470)
Engine bore × stroke	(mm (in))	110 × 135 (	4.33 × 5.31)	110 × 135 (4	4.33 × 5.31)
Max power @ engine speed	(kW / hp @ rpm)	210 (286) @	1,600-2,200	210 (286) @ -	,600-2,200
Max torque @ engine speed	(Nm / lb-ft @ rpm)	1,237 (912) @	21,000-1,400	1,237 (912) @	1,000-1,400
Fuel consumption – average diesel	(L/h / gall/h)	10-15	2,6-4,0)	10-15 (2	2,6-4,0)
Fuel consumption – average AdBlue	(%)		-	1 -	- 5
Alternator type – power	(VV)	AC –	3,640	AC - S	3,640
Transmission brand / name / model		DANA-Rexroth /	K-Motion / R2-RS	DANA-Rexroth / k	K-Motion / R2-RS
Transmission clutch type		CVT (Continuous Va	ariable Transmission)	CVT (Continuous Va	riable Transmission)
Transmission model		Hydrostatic + Mech	nanical (Power-Split)	Hydrostatic + Mech	anical (Power-Split)
Transmission speed range (FWD - REV)		Speed ra	ange 3 - 2	Speed ra	nge 3 - 2
Drive axle brand / series		Kessler / D	0102 (WDB)	Kessler / D	102 (WDB)
Service brake / cooling		Wet Disc Brake	s with oil cooling	Wet Disc Brakes	with oil cooling
Steer axle brand / series		Kalmar / sir	ngle cylinder	Kalmar / sin	gle cylinder



Container Handling -Top Lift (S)



Intermodal Handling -Top Lift and Trailer Lift (C)





Industrial Handling -Lift Hook (Z)



## **Container Handling.**

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KALMAR TRUCK MODELS			DRG 420-60 S5	DRG 450-60 S5	DRG 450-60 S5M	DRG 450-60 S5X			
Type of handling				Container handling v	vith Top Lift twistlocks				
Lift capacity, row 1-2-3-4 (incl jacks*)	Q1-Q2-Q3	(tons)	42 - 25 - 11	45 - 27 - 13	45 - 30 - 15	45 - 35 - 18			
Lift capacity, row 1-2-3-4 (incl jacks*), at max height	Q1-Q2-Q3	(tons)	42 - 25 - 11	45 - 27 - 13	45 - 30 - 15	45 - 35 - 18			
Load centre, from front face of tyres, row 1-2-3-4	L4-L5-L6-L7	(mm)	1,965 - 3,815 - 6,315	1,965 - 3,815 - 6,315	1,965 - 3,815 - 6,315	1,865 - 3,815 - 6,315			
Stacking capacity, in container row 1-2-3-4, of $8^{\prime}6^{\prime\prime}$ / $9^{\prime}6^{\prime\prime}$			5/5 - 5/4 - 4/3	5/5 - 5/4 - 4/3	5/5 - 5/4 - 4/3	5/5 - 5/4 - 4/3			
Spreader type, extension stops, locking			Mechanical Pile	Slope (MPS) by gravity / 2	Oft and 40ft / 4 x individual	Twistlocks (TWL)			
Lost load centre, to front face of tyres	х	(mm)	800	800	800	930			
Wheelbase	L3	(mm)	6.000	6.000	6.000	6.000			
Service weight, standard truck		(kgs)	65.500	67.400	69.400	77.500			
Axle load, front at load centre L4, unloaded - loaded		(kgs)	34,500 - 96,100	34,600 - 100,600	34,600 - 100,600	35,600 - 101,600			
Axle load, front at load centre L5, unloaded - loaded		(kgs)	38,900 - 83,300	39,000 - 86,900	39,000 - 92,200	40,200 - 102,900			
Axle load, rear at load centre L4, unloaded - loaded		(kgs)	31,000 - 11,400	32,800 - 11,800	34,800 - 13,800	41,900 - 20,900			
Axle load, rear at load centre L5, unloaded - loaded		(kgs)	26,600 - 7,200	28,400 - 7,500	30,400 - 7,300	37,300 - 9,600			
Tyre type, tyre design			Pneumatic / Diagonal						
Tyres, dimension, PLY-rating, star rating		(in)	18.00x25" / PR40 (E4)	18.00x25" / PR40 (E4)	18.00x25" / PR40 (E4)	18.00x33" / PR36 (E4			
Tyre pressure (front + rear)		(MPa)	1.0-1.0	1.0-1.0	1.0-1.0	1.0-1.0			
Rim dimension (front + rear)		(in)	13.00x25"	13.00x25"	13.00x25"	13.00x33"			
Number of wheels, driven / front + rear			4/4+2	4/4+2	4/4+2	4 / 4 + 2			
Track width (front + rear)	S1 - S2	(mm)	3,030-2,600	3,030-2,600	3,030-2,600	3,030-2,800			
Room type - cylinder design			Duralau	2 stage been with 0 - 16	window and the outproject	ovlindor			
Boom type - cylinder design Boom angle, min-max	alfa	(deg)	0-60	2-stage boom with 2 x lift 0-60	cylinders and 1 x extension 0-60	0-60			
Boom height, min-max	H3-H5	(deg) (mm)	4,600 - 18,200	4.600 - 18.200	4,600 - 18,200	4.700 - 18.200			
• ,	H2		3.925	3.925	3.925	4,700 - 10,200			
Chassis height – top of boom fixation, max		(mm)							
Lift height, min in twistlocks, row 1-2-3-4	H4a	(mm)	1.150	1.150	1.150	1.250			
Lift height, max in twistlocks, row 1-2-3-4	H4b	(m)	15,1 - 13,2 - 10,4	15,1 - 13,2 - 10,4	15,1 - 13,2 - 10,4	15,2 - 13,3 - 10,4			
Boom reach stroke		(mm)	7.000	7.000	7.000	7.000			
Truck height / seat height	H6-H8	(mm)	3,650 - 2,575	3,650 - 2,575	3,650 - 2,575	3,750 - 2,675			
Overall truck length, without and with boom	L	(mm)	8,015-11,200	8,015-11,200	8,015-11,200	8,115-11,200			
Truck width over drive axle	B	(mm)	4.150	4.150	4.150	4.150			
Spreader width, min-max	Va - Vb	(mm)	6,055-12,185	6,055-12,185	6,055-12,185	6,055-12,185			
Spreader sideshift	V1	(mm)	±800 (total 1,600)	±800 (total 1,600)	±800 (total 1,600)	±800 (total 1,600)			
Spreader rotation, no. of motors + no. of brakes	beta	(deg) (deg)	300 (+195/-105) / 2+2	300 (+195/-105) / 2+2	300 (+195/-105) / 2+2	300 (+195/-105) / 2+2			
Spreader side tilt, tilt angle, tilt power	Spreader optional length tilt, tilt angle, locking (deg)				gravity / tilt stroke ± 5 / by				
				- / 250 / -	ive tilt lock for end-on trans				
Ground clearance, steer axle – middle – front	14 10	(mm)	- / 250 / -	,,	- / 250 / -	- / 250 / -			
Aisle width, with 20 ft – 40 ft container	A1-A2	(mm)	11,200-13,600	11,200-13,600	11,200-13,600	11,200-13,600			
Turning radius, outer with 20 ft – 40 ft container Turning radius, inner	R1-R3 R2	(mm) (mm)	8,100-9,400 1.200	8,100-9,400 1.200	8,100-9,400 1.200	8,100-9,400 1.200			
······································		()							
Engine type, cylinders, design Engine power, torque, displacement		(IAM/N lass (stass Q)			and EU stage 4 (EPA Tier				
Fuel consumption, average diesel / tank volume		(kW/Nm/dm3) (L/h/dm3)	210 KW (200 Hp) at 1000-2		o-ft) at 1000 - 1400 rpm / Vol 5 / 550				
Fuel consumption, average AdBlue / tank volume		(%/dm3)			5 / 35				
Alternator, type - power, voltage / capacity		(W/V/Amp)							
Battery voltage / capacity		(V/Ah)	AC - 3,640 (28 x 130) 2x12 / 145						
Drive axle type, differential / service brakes		(1///1/)			disc brakes				
Drive axle type, single dry disc parking brake					dr. release				
Steer axle type, single cylinder / power steering				-	/ Yes				
Travel speed, forward – reverse, unloaded – loaded		(km/h)	26 - 22 / 18 - 16	26 - 22 / 18 - 16	26 - 22 / 18 - 16	26 - 22 / 18 - 16			
Gradeability, at max & at 2 km/h, unloaded – loaded		(%)	30 - 18 / 26 - 16	30 - 18 / 26 - 16	30 - 18 / 26 - 16	30 - 18 / 26 - 16			
Lifting speed, unloaded - at 70% of rated load		(n/s)	0.40-0.24	0.40-0.24	0.40-0.24	0.40-0.24			
Lowering speed, unloaded – at rated load		(m/s)	0.35-0.40	0.35-0.40	0.35-0.40	0.35-0.40			
Drawbar pull / towing capacity, max		(kN)	220	220	220	220			
Load consing hydroulis system ( as af all tasks			Voc / dual all teatra	Voo / dual ail tealua					
Load sensing hydraulic system / no. of oil tanks		(dm2)	Yes / dual oil tanks	Yes / dual oil tanks	Yes / dual oil tanks	Yes / dual oil tanks			
Tank volumes of working oil & brake oil		(dm3)	740 (600 + 140)	740 (600 + 140)	740 (600 + 140)	740 (600 + 140)			
Working pressure boom / spreader		(MPa)	23.0 / 16.0	23.0 / 16.0	23.0 / 16.0	23.0 / 16.0			
National Articles Articles and		(dB(A))	69-72	69-72	69-72	69-72			
Noise level LpAZ acc. to EN12053, inside cabin		(-ID(A))				106-108			
Noise level LwA acc. to 2000/14/EC, outside cabin		(dB(A))	106-108	106-108	106-108				
· · ·		(dB(A))	106-108 Yes Yes / yes / yes	Yes Yes / yes / yes	Yes Yes / yes / yes	Yes Yes / yes / yes			

DRG 450-65 S5	DRG 450-65 S5X	DRG 450-65 S5XS	DRG 450-65 S6	DRG 450-65 S6X	DRG 450-65 S6HC	DRG 450-65 S6HCX							
			Container handling with 1	Top Lift twistlocks									
45 - 32 - 16	45 - 38 - 21	45 - 38(41) - 21(29)	45 - 32 - 16 - 8	45 - 38 - 21 - 12	45 - 33 - 18 - 10	45 - 38 - 21 - 12							
45 - 32 - 16	45 - 38 - 21	43 - 38(41) - 21(29)	42 - 32 - 16 - 8	43 - 38 - 21 - 12	36 - 32 - 18 - 10	38 - 34 - 21 - 12							
1,965 - 3,815 - 6,315	1,865 - 3,815 - 6,315	1,865 - 3,815 - 6,315	1,965 - 3,815 - 6,315 - 8,815	1,865 - 3,815 - 6,315 - 8,815	2,065/2,965 - 3,815 - 6,315 - 8,815	1,965/2,865 - 3,815 - 6,315 - 8,815							
5/5 - 5/4 - 4/3	5/5 - 5/4 - 4/3	5/5 - 5/4 - 4/3	6/5 - 5/5 - 4/4 - 2/2	6/5 - 5/5 - 4/4 - 2/2	6/6 - 6/5 - 5/4 - 4/3	6/6 - 6/5 - 5/4 - 4/3							
Mechanical Pile Slope (MPS) by gravity / 20ft and 40ft / 4 x individual Twistlocks (TWL)													
800	930	930	800	930	800	930							
6.500	6.500	6.500	6.500	6.500	6.500	6.500							
69.500	76.300	80.300	70.500	77.500	70.500	77.500							
35,000 - 99,400	35,000 - 99,400	38,500 - 109,200	36,000 - 102,500	36,500 - 103,000	36,000 - 102,500	36,500 - 103,000							
39,000 - 93,900	39,200 - 105,000	42,800 - 108,600	39,500-94,400	40,200-105,900	39,500-94,400	40,200-105,900							
34,500 - 15,100	41,300 - 21,900	41,800 - 22,400	34,500-13,000	41,000-19,500	34,500-13,000	41,000-19,500							
30,500 - 7,600	37,100 - 9,300	37,500 - 9,700	31,000-8,100	37,300-9,600	31,000-8,100	37,300-9,600							
	Pneumatic / Diagonal												
18.00x25" / PR40 (E4)	18.00x33" / PR36 (E4)	18.00x33" / PR36 (E4)	18.00x25" / PR40 (E4)	18.00x33" / PR36 (E4)	18.00x25" / PR40 (E4)	18.00x33" / PR36 (E4)							
1.0-1.0	1.0-1.0	1.0-1.0	1.0-1.0	1.0-1.0	1.0-1.0	1.0-1.0							
13.00x25"	13.00x33"	13.00x33"	13.00x25"	13.00x33"	13.00x25"	13.00x33"							
4 / 4 + 2	4 / 4 + 2	4 / 4 + 2	4 / 4 + 2	4 / 4 + 2	4 / 4 + 2	4 / 4 + 2							
3,030-2,600	3,030-2,800	3,030-2,800	3,285-2,600	3,285-2,600	3,285-2,600	3,285-2,600							
		Duploy	otogo boom with 0 x lift outing	dara and 1 v outanaian aulindar									
0-60	0-60	0-60	2-stage boom with 2 x lift cylind 0-62	ders and 1 x extension cylinder 0-62	0-63	0-63							
4,600 - 18,200	4,700 - 18,200	4,700 - 18,300	4,600 - 19,250	4,600 - 19,350	4,600 - 20,800	4,600 - 21,000							
3.925	4,700 - 18,200	4,700 - 10,300	3.925	4.025	3.925	4.025							
1.150	1.250	1.150	1.250	1.250	1.150	1.250							
15,1 - 13,2 - 10,4	15,2 - 13,3 - 10,4	15,1 - 13,2 - 10,4	16,2 - 14,1 - 11,4	16,3 - 14,2 - 11,4	17,7 - 15,5 - 12,9 - 10,4	17,8 - 15,5 - 12,9 - 10,4							
7.000	7.000	7.000 3,750 - 2,675	7.700	7.700	8.500	8.500							
3,650 - 2,575 8,515-11,700	3,750 - 2,675	8,615-11,700	3,650 - 2,575 8,815-12,000	3,750 - 2,675 8,915-12,000	3,650 - 2,575 8,815-12,000	3,750 - 2,675 8,915-12,000							
4.150	8,515-11,700 4.150	4.150	4.150	4.150	4.150	4.150							
6,055-12,185	6,055-12,185	6,055-12,185	6,055-12,185	6,055-12,185	6,055-12,185	6,055-12,185							
±800 (total 1,600)	±800 (total 1,600)	±800 (total 1,600)	±800 (total 1,600)	±800 (total 1,600)	±800 (total 1,600)	±800 (total 1,600)							
300 (+195/-105) / 2+2	300 (+195/-105) / 2+2	300 (+195/-105) / 2+2	300 (+195/-105) / 2+2	300 (+195/-105) / 2+2	300 (+195/-105) / 2+2	300 (+195/-105) / 2+2							
000 (1100/ 100)/ 212	000 (1100/ 100// 212				000 (1100/ 100// 212	000 (1100/100//212							
Mechanical Pile Slope (MPS) by gravity / tilt stroke $\pm 5$ / by gravity Optional length tilt / tilt stroke $\pm 5$ / active tilt lock for end-on transport (90 deg)													
- / 250 / -	- / 250 / -	- / 250 / -	- / 250 / -	- / 250 / -	- / 250 / -	- / 250 / -							
11,600-13,600	11,600-13,600	11,600-13,600	11,600-13,600	11,600-13,600	11,600-13,600	11,600-13,600							
8,500-9,400	8,500-9,400	8,500-9,400	8,500-9,400	8,500-9,400	8,500-9,400	8,500-9,400							
1.200	1.200	1.200	1.200	1.200	1.200	1.200							
				EU stage 4 (EPA Tier 3 and Tier									
		210 kW (286 hp) at 1600		at 1000 - 1400 rpm / Volume 7,7	0 dm3 (470 in3)								
			10 - 15 / 5 1 - 5 / 35										
			AC - 3,640 (28 2x12 / 14										
			Yes / wet disc										
			Yes / wet disc Yes / hydr. rei										
			Yes / Yes										
26 - 22 / 18 - 16	26 - 22 / 18 - 16	26 - 22 / 18 - 16	26 - 22 / 18 - 16	26 - 22 / 18 - 16	26 - 22 / 18 - 16	26 - 22 / 18 - 16							
30 - 18 / 26 - 16	30 - 18 / 26 - 16	30 - 18 / 26 - 16	30 - 18 / 26 - 16	30 - 18 / 26 - 16	30 - 18 / 26 - 16	30 - 18 / 26 - 16							
0.40-0.24	0.40-0.24	0.40-0.24	0.40-0.24	0.40-0.24	0.40-0.24	0.40-0.24							
0.35-0.40	0.35-0.40	0.35-0.40	0.35-0.40	0.35-0.40	0.35-0.40	0.35-0.40							
220	220	220	220	220	220	220							
Yes / dual oil tanks	Yes / dual oil tanks	Yes / dual oil tanks	Yes / dual oil tanks	Yes / dual oil tanks	Yes / dual oil tanks	Yes / dual oil tanks							
740 (600 + 140)	740 (600 + 140)	740 (600 + 140)	740 (600 + 140)	740 (600 + 140)	740 (600 + 140)	740 (600 + 140)							
23.0 / 16.0	23.0 / 16.0	23.0 / 16.0	23.0 / 16.0	23.0 / 16.0	23.0 / 16.0	23.0 / 16.0							
69-72	69-72	69-72	69-72	69-72	69-72	69-72							
106-108	106-108	106-108	106-108	106-108	106-108	106-108							
Yes	Yes	Yes	Yes	Yes	Yes	Yes							
Yes / yes / yes	Yes / yes / yes	Yes / yes / yes	Yes / yes / yes	Yes / yes / yes	Yes / yes / yes	Yes / yes / yes							
Yes - LLMI / Yes - LLMC	Yes - LLMI / Yes - LLMC	Yes - LLMI / Yes - LLMC	Yes - LLMI / Yes - LLMC	Yes - LLMI / Yes - LLMC	Yes - LLMI / Yes - LLMC	Yes - LLMI / Yes - LLMC							

### **Intermodal and Industrial Handling.**

Type of handling         Intermedial Carrbit Lift Variable Action         Intermedial Carrbit Lift Variable Action           Lift capacity, row 1-2-3 (inc) jacks <sup>1</sup> , at max height         O1 O2: 0.3 (incr)         45 - 25 - 1.0         42 - 22 - 1.5         42 - 28 - 1.3         43 - 34           Load centre, from front face of tyres, row 1-2-3 (inc) jacks <sup>1</sup> , at max height         O1 O2: 0.3 (incr)         1,265 - 3,815 - 6,315         1,965 - 3,815 - 6,315         <	- 17 - 17 - 6,315 - 4/3 WL) - 0 - 0 - 0 - 0 - 0 - 0 - 0 - 0 - 0 - 0
Lift capacity, row 1-2-3 (not jacks*), at max height         O1-02-03         (toni)           Lift capacity, row 1-2-3 (not jacks*), at max height         O1-02-03         (toni)           Lift capacity, row 1-2-3 (not jacks*), at max height         O1-02-03         (toni)           Stacking capacity, in container on 1-2-3, of 5%         0.44-15-16         (m)           Stacking capacity, in container on 1-2-3, of 5%         0.44-15-16         (m)           Lost load centre, to front face of tyres, ow 1-2-3, of 5%         3.47 - 03         55 - 544 - 4/3         50 - 544 - 4/3         50 - 544 - 4/3         50 - 544 - 4/3         50 - 544 - 4/3         50 - 544 - 4/3         50 - 544 - 4/3         50 - 544 - 4/3         50 - 544 - 4/3         50 - 544 - 4/3         50 - 544 - 4/3         50 - 544 - 4/3         50 - 544 - 4/3         50 - 544 - 4/3         50 - 544 - 4/3         50 - 54 - 4/3         50 - 54 - 4/3         50 - 54 - 4/3         50 - 54 - 4/3         50 - 56 - 50 - 50 - 50 - 50 - 50 - 50 -	- 17 - 6,315 - 4/3 - 4/3 - 4/3 - 0 - 0 - 0 - 0 - 0 - 0 - 0 - 0
Load centre, from from frank face of tyres, row 1-2-3         L4-L5-L6         (m)         1,965 - 3,815 - 6,315	- 6,315 - 4/3 - 4/3 - WL) 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Stacking capacity, in container row 1-2-3, of 9'6' / 9'6'         5/6 - 5/4 - 4/3         5	- 4/3 WL) 0 06,800 9,500 9,500 9,500 9,500 9,500 9,500 9,500 3,500
Spreader type, extension stops, locking         (t)         Hydraulic Pile Stope (HPS) by 4 cylinders / 201t, 301t and 401t / 4 x indexidual Twistlocks (	WL) 0 06,800 9,500 9,500 9,500 PR36 (E4) 0 333*
Lost load centre, to front face of tyres         x         (mm)         800         930         800         930           Wheelbase         L3         (mm)         6.000         6.000         6.500         6.500           Service weight, standard truck         (ligs)         73.500         81.800         73.500         81.800         73.500         81.20           Axie load, ront at load centre L4, unloaded – loaded         (ligs)         42.000 - 108.000         43.000 - 38.000	0 06,800 9,500 9,500 9,500 PR36 (E4) 0 33*
Wheebase         L3         (mm)         6.000         6.000         6.500         6.500           Service weight, standard truck         (figs)         73.500         81.800         73.500         81.800           Axie load, front at load centre L4, unloaded – loaded         (figs)         44.000 - 107.000         42.000 - 108.000         41.000 - 105.400         42.400 - 108.000           Axie load, rear at load centre L4, unloaded – loaded         (figs)         32.500 - 11.500         39.800 - 18.800         35.200 - 13.100         38.800 - 1           Axie load, rear at load centre L5, unloaded – loaded         (figs)         26.800 - 7.400         33.800 - 8.400         27.200 - 7.200         33.300 - 1           Tyre s, dimension, PLY-ating, star rating         (n)         18.00 × 25' / PR40 (E4)         18.00 × 25' / PR40 (E4)         18.00 × 25' / PR40 (E4)         18.00 × 33' / PR36 (E4)         18.00 × 18.200 <t< td=""><td>0 )6,800 )6,800 9,500 3,500 PR36 (E4) .0 333"</td></t<>	0 )6,800 )6,800 9,500 3,500 PR36 (E4) .0 333"
Service weight, standard truck         (kgs)         73.500         81.800         73.500         81.800           Axle load, front at load centre L4, unloaded – loaded         (kgs)         41,000 - 107,000         42,000 - 108,000         41,000 - 105,400         42,400 - 11           Axle load, roar at load centre L5, unloaded – loaded         (kgs)         32,500 - 11,500         39,800 - 18,800         35,200 - 13,100         38,900 - 14           Axle load, rear at load centre L5, unloaded – loaded         (kgs)         26,800 - 7,400         33,800 - 8,400         27,200 - 7,200         33,300 - 14           Tyre type, tyre design         Pneumatic / Diagonal         Tyres, dimension, PLY-rating, star rating         (in')         18.00 × 25' / PP40 (E4)         18.00 × 33' / PP40 (E4)         18.00 × 25'         13.0	0 )6,800 )6,800 9,500 3,500 PR36 (E4) .0 333"
Axie load, front at load centre L4, unloaded – loaded         (iqg)         41,000 - 107,000         42,000 - 108,000         41,000 - 105,400         42,000 - 108,000           Axie load, rear at load centre L5, unloaded – loaded         (iqg)         46,700 - 91,100         48,000 - 105,400         48,000 - 93,800         48,000 - 7,400         38,200 - 13,100         38,900 - 13,400         38,900 - 13,400         38,900 - 13,100         38,900 - 13,100         38,900 - 107,400         38,900 - 13,100         38,900 - 107,400         38,900 - 107,400         38,900 - 13,100         38,900 - 13,100         38,900 - 13,100         38,900 - 107,400	06,800 06,800 9,500 8,500 PR36 (E4) .0 33"
Axe load, front at load centre L5, unloaded – loaded         (kgs)         46,700 - 91,100         46,000 - 93,600         46,000 - 93,600         46,000 - 11,600         46,000 - 93,600         46,000 - 13,800         35,200 - 13,100         39,800 - 13           Axe load, rear at load centre L5, unloaded – loaded         (kgs)         26,800 - 7,400         33,800 - 8,400         27,200 - 7,200         33,300 - 10           Tyre type, tyre design         Pneumatic / Diagonal         Pneumatic / Diagonal         100 × 25* / PR40 (E4)         18.00 × 25* / PR40 (E4)         13.00 × 25* <td< td=""><td>PR36 (E4) .0 33"</td></td<>	PR36 (E4) .0 33"
Axie load, rear at load centre L4, unloaded – loaded         (kgs)         32,500 - 11,500         39,800 - 18,800         35,200 - 13,100         38,800 - 1           Axie load, rear at load centre L5, unloaded – loaded         (kgs)         26,800 - 7,400         33,800 - 8,400         27,200 - 7,200         33,300 - 1           Tyre type, tyre design         Pneumatic / Diagonal         Pneumatic / Diagonal         18.00 × 25' / PR40 (E4)         <	9,500 3,500 PR36 (E4) .0 33"
Axe load, rear at load centre L5, unloaded – loaded         (kgs)         26,800 - 7,400         33,800 - 8,400         27,200 - 7,200         33,300 - 1           Tyre type, tyre design         Pheumatic / Diagonal         Pheumatic / Diagonal         Pheumatic / Diagonal         18.00 × 25° / PR40 (E4)	PR36 (E4) .0 33"
Tyre type, tyre design         Pneumatic / Diagonal           Tyres, dimension, PLY-rating, star rating         (in)         18.00 × 25* / PR40 (E4)         10.0 - 1.0         1.0 - 1.0 <t< td=""><td>PR36 (E4) .0 33"</td></t<>	PR36 (E4) .0 33"
Tyres, dimension, PLY-rating, star rating         (in)         18.00 × 25° / PR40 (E4)         10.0 - 1.0         1.0 - 0.0         1.0 - 0.0         1.0 - 0.0         1.0 - 0.0         1.0 - 0.0         1.0 - 0.0         1.0 - 0.0	.0 33"
Tyres, dimension, PLY-rating, star rating         (in)         18.00 × 25* / PR40 (E4)         10.0 - 1.0         1.0 - 0.0         1.0 - 0.0         1.0 - 0.0         1.0 - 0.0         1.0 - 0.0         1.0 - 0.0         1.0 - 0.0         1.0 - 0.0         1.0 - 0.0         1.0	.0 33"
Tyre pressure (front + rear)         (MPa)         1.0–1.0         1.0–1.0         1.0–1.0         1.0–1.0         1.0–1.0           Rim dimension (front + rear)         (in)         13.00 × 25*         13.00 × 33*         13.00 × 25*         13.00 × 25*           Number of wheels, driven / front + rear         4/4 + 2	.0 33"
Rim dimension (front + rear)         (in)         13.00 × 25*         13.00 × 33*         13.00 × 25*         13.00 × 25*           Number of wheels, driven / front + rear         4 / 4 + 2         4 / 4 +	33"
Number of wheels, driven / front + rear         4/4+2	
Track width (front + rear)         S1 - S2         (mm)         3,030 - 2,800         3,030 - 2,	2
Boom angle, min - max         alfa         (deg)         0-60         0         0         0	800
Boom angle, min - max         alfa         (deg)         0-60         0         0         0	_
Boom height, min-max         H3-H5         (mm)         4,600 - 18,200         4,600 - 13,200         1,600         16,000         16,000         16,000         16,000         16,000         16,000         16,000         16,000         16,000         16,000         16,000         16,000         16,000         16,000         16,000         16,000         16,005         16,000         16,005	
Chassis height - top of boom fixation, max         H2         (mm)         3.925         4.025         3.925         4.025           Lift height, min in twistlocks, row 1-2-3         H4a         (mm)         950         1.050         950         1.051           Lift height, max in twistlocks, row 1-2-3         H4b         (m)         14.9 - 13.0 - 10.2         15.0 - 13.1 - 10.3         14.9 - 13.0 - 10.2         15.0 - 13.1 - 10.3         14.9 - 13.0 - 10.2         15.0 - 13.1 - 10.3         14.9 - 13.0 - 10.2         15.0 - 13.1 - 10.3         14.9 - 13.0 - 10.2         15.0 - 13.1 - 10.3         14.9 - 13.0 - 10.2         15.0 - 13.1 - 10.3         14.9 - 13.0 - 10.2         15.0 - 13.1 - 10.3         14.9 - 13.0 - 10.2         15.0 - 13.1 - 10.3         14.9 - 13.0 - 10.2         15.0 - 13.1 - 10.3         14.9 - 13.0 - 10.2         15.0 - 13.1 - 10.3         14.9 - 13.0 - 10.2         15.0 - 13.1 - 10.3         14.9 - 13.0 - 10.2         15.0 - 13.1 - 10.3         14.9 - 13.0 - 10.2         15.0 - 13.1 - 10.3         14.9 - 13.0 - 10.2         15.0 - 13.1 - 10.2         15.0 - 13.1 - 10.2         15.0 - 13.1 - 10.2         15.0 - 13.1 - 10.2         15.0 - 13.1 - 10.2         15.0 - 13.1 - 10.2         15.0 - 13.1 - 10.2         15.0 - 13.1 - 10.2         15.0 - 13.1 - 10.2         15.0 - 13.1 - 10.2         15.0 - 13.1 - 10.2         15.0 - 13.1 - 10.2         15.0 - 13.1 - 10.2         15.0 - 13.1 - 10.2         15.0 - 13.1 - 10.2	
Lift height, min in twistlocks, row 1-2-3         H4a         (mm)         950         1.050         950         1.050           Lift height, max in twistlocks, row 1-2-3         H4b         (m)         14,9 - 13,0 - 10,2         15,0 - 13,1 - 10,3         14,9 - 13,0 - 10,2         15,0 - 13,1 - 10,3         14,9 - 13,0 - 10,2         15,0 - 13,1 - 10,3         14,9 - 13,0 - 10,2         15,0 - 13,1 - 10,3         14,9 - 13,0 - 10,2         15,0 - 13,1 - 10,3         14,9 - 13,0 - 10,2         15,0 - 13,1 - 10,3         14,9 - 13,0 - 10,2         15,0 - 13,1 - 10,3         14,9 - 13,0 - 10,2         15,0 - 13,1 - 10,3         14,9 - 13,0 - 10,2         15,0 - 13,1 - 10,3         14,9 - 13,0 - 10,2         15,0 - 13,1 - 10,3         14,9 - 13,0 - 10,2         15,0 - 13,1 - 10,3         14,9 - 13,0 - 10,2         15,0 - 13,1 - 10,3         14,9 - 13,0 - 10,2         15,0 - 13,1 - 10,3         14,9 - 13,0 - 10,2         15,0 - 13,1 - 10,3         14,9 - 13,0 - 10,2         15,0 - 13,1 - 10,3         14,9 - 13,0 - 10,2         15,0 - 13,0 - 10,2         15,0 - 13,0 - 10,2         15,0 - 13,0 - 13,0 - 10,2         15,0 - 13,0 - 10,2         15,0 - 13,0 - 10,2         15,0 - 13,0 - 10,2         15,0 - 13,0 - 10,2         15,0 - 13,0 - 13,0 - 10,2         15,0 - 13,0 - 13,0 - 10,2         15,0 - 13,0 - 13,0 - 10,2         15,0 - 13,0 - 13,0 - 10,2         15,0 - 13,0 - 13,0 - 10,2         15,0 - 13,0 - 13,0 - 10,2         15,0 - 13,0 - 14,0 - 13,0 - 14,0 - 14,0 - 14,0 - 14,0 - 14,0 - 14,0 - 14,0 - 14	-
Lift height, max in twistlocks, row 1-2-3       H4b       (m)       14,9 - 13,0 - 10,2       15,0 - 13,1 - 10,3       14,9 - 13,0 - 10,2       15,0 - 13,1 - 10,3       14,9 - 13,0 - 10,2       15,0 - 13,1 - 10,3       14,9 - 13,0 - 10,2       15,0 - 13,1 - 10,3       14,9 - 13,0 - 10,2       15,0 - 13,1 - 10,3       14,9 - 13,0 - 10,2       15,0 - 13,1 - 10,3       14,9 - 13,0 - 10,2       15,0 - 13,1 - 10,3       14,9 - 13,0 - 10,2       15,0 - 13,1 - 10,3       14,9 - 13,0 - 10,2       15,0 - 13,1 - 10,3       14,9 - 13,0 - 10,2       15,0 - 13,1 - 10,3       14,9 - 13,0 - 10,2       15,0 - 13,1 - 10,3       14,9 - 13,0 - 10,2       15,0 - 13,1 - 10,3       14,9 - 13,0 - 10,2       15,0 - 13,1 - 10,3       14,9 - 13,0 - 10,2       15,0 - 13,1 - 10,3       14,9 - 13,0 - 10,2       15,0 - 13,1 - 10,3       14,9 - 13,0 - 10,2       15,0 - 13,1 - 10,3       14,9 - 13,0 - 10,2       15,0 - 13,1 - 10,3       14,9 - 13,0 - 10,2       15,0 - 13,1 - 10,3       14,9 - 13,0 - 10,2       15,0 - 13,1 - 10,3       15,0 - 13,1 - 10,3       15,0 - 13,1 - 10,3       15,0 - 13,1 - 10,3       15,0 - 13,1 - 10,3       15,0 - 13,1 - 10,3       15,0 - 13,1 - 10,3       15,0 - 13,1 - 10,3       15,0 - 13,1 - 10,3       15,0 - 13,1 - 10,3       15,0 - 14,1 - 10,3       15,0 - 14,1 - 10,3       15,0 - 14,1 - 10,3       15,0 - 14,1 - 10,3       15,0 - 14,1 - 10,3       15,0 - 14,1 - 10,3       15,0 - 14,1 - 10,3       15,0 - 14,1 - 10,3       15,0 - 14,1 - 10,3 - 14,0 - 14,1 - 10,0 - 14,1 -	
Boom reach stroke         (mm)         7.000         8.515-11         7.00         8.515-11         7.00         8.515-11         7.00         8.515-11         7.00         8.515-11         7.00         8.515-11         7.00         8.515-11         7.00         8.515-11         7.00         8.515-11         7.00         8.515-11         7.00         8.50         9.50         9.50	
Truck height / seat height         H6-H8         (mm)         3,650 - 2,575         3,750 - 2,675         3,650 - 2,575         3,750 - 2,675         3,650 - 2,575         3,750 - 2,675         3,650 - 2,575         3,750 - 2,675         3,750 - 2,675         3,650 - 2,575         3,750 - 2,675         3,650 - 2,575         3,750 - 2,675         3,650 - 2,575         3,750 - 2,675         3,650 - 2,575         3,750 - 2,675         3,650 - 2,575         3,750 - 2,675         3,650 - 2,575         3,750 - 2,675         3,650 - 2,575         3,750 - 2,675         3,650 - 2,575         3,750 - 2,675         3,650 - 2,575         3,750 - 2,675         3,650 - 2,575         3,750 - 2,675         3,750 - 2,675         3,750 - 2,675         3,650 - 2,575         3,750 - 2,675         3,750 - 2,675         3,750 - 2,675         3,750 - 2,675         3,750 - 2,675         3,750 - 2,675         3,750 - 2,675         3,750 - 2,675         3,750 - 2,675         3,750 - 2,675         3,750 - 2,675         3,750 - 2,675         3,750 - 2,675         3,750 - 2,675         3,750 - 2,675         3,650 - 2,575         3,750 - 2,675         3,650 - 2,575         3,750 - 2,675         3,650 - 2,575         3,650 - 2,575         3,650 - 2,575         3,650 - 2,575         3,650 - 2,575         3,650 - 2,575         3,650 - 2,575         3,650 - 2,575         3,650 - 2,575         3,650 - 2,575         3,650 - 2,575         3,650 - 2,57	
Overall truck length, without and with boom         L         (mm) $8,015-11,200$ $8,115-11,200$ $8,515-11,700$ $8,515-11$ Truck width over drive axle         B         (mm) $4.150$	
Truck width over drive axle         B         (mm)         4.150	
Spreader width, min-max         Va - Vb         (mm)         6,055-12,185 <td></td>	
Spreader sideshift         V1         (mm)         ±800 (total 1,600)         ±	
Spreader rotation, no. of motors + no. of brakes         beta         (deg)         300 (+195/-105) / 2+2         3	-
Spreader side tilt, tilt angle, tilt power         (deg)         Hydraulic Pile Slope (HPS) by 4 cylinders / tilt stroke ± 5 / by hydraulic power           Spreader optional length tilt, tilt angle, locking         (deg)         Standard with length tilt / tilt stroke ± 5 / active tilt lock for end-on transport (90 deg)           Ground clearance, steer axle – middle – front         (mm)         - / 250 / -         - / 300 / -         - / 250 / -         - / 300           Aisle width, with 20 ft – 40 ft container         A1 – A2         (mm)         11,200–13,600         11,200–13,600         11,600–13,600         11,600–13,600         8,500–9,400         <	
Spreader optional length tilt, tilt angle, locking         (deg)         Standard with length tilt / tilt stroke ± 5 / active tilt lock for end-on transport (90 deg)           Ground clearance, steer axle – middle – front         (mm)         - / 250 / -         - / 300 / -         - / 250 / -         - / 300           Aisle width, with 20 ft – 40 ft container         A1 – A2         (mm)         11,200 – 13,600         11,200 – 13,600         11,600 – 13,600	,0), , 2.12
Ground clearance, steer axle - middle - front         (mm)         - / 250 / -         - / 300 / -         - / 250 / -         - / 300 / -           Aisle width, with 20 ft - 40 ft container         A1 - A2         (mm)         11,200 - 13,600         11,200 - 13,600         11,600 - 13,600         11,600 - 13,600           Turning radius, outer with 20 ft - 40 ft container         R1 - R3         (mm)         8,100 - 9,400         8,100 - 9,400         8,500 - 9,400         8,500 - 9	
Aisle width, with 20 ft - 40 ft container         A1 - A2         (mm)         11,200 - 13,600         11,200 - 13,600         11,600 - 13,600         11,600 - 13,600           Turning radius, outer with 20 ft - 40 ft container         R1 - R3         (mm)         8,100 - 9,400         8,100 - 9,400         8,500 - 9,400         8,500 - 9,400	
Turning radius, outer with 20 ft - 40 ft container         R1-R3         (mm)         8,100-9,400         8,100-9,400         8,500-9,400         8,500-9	3.600
	-
Turning radius, inner         R2 (mm)         1.200         1.200         1.200	
Engine type, cylinders, design Diesel / 4-stroke / 6-cylinder / EU stage 3A and EU stage 4 (EPA Tier 3 and Tier 4-Fin	50
Engine power, torque, displacement (kW/Nm/dm3) 210 kW (286 hp) at 1600-2200 rpm / 1,237 Nm (912 lb-ft) at 1000 - 1400 rpm / Volume 7,70 dm2	,
Fuel consumption, average diesel / tank volume (L/h/dm3) 10 - 15 / 550	(470 110)
Fuel consumption, average AdBlue / tank volume     (%/dm3)     1 - 5 / 35	
Alternator, type - power, voltage / capacity     (W/V/Amp)     AC - 3,640 (28 x 130)	
Battery voltage / capacity (V/Ah) 2x12 / 145	
Drive axle type, service brakes (on drive wheels) Yes / wet disc brakes	
Drive axle type, service brakes (on drive wheels) Drive axle type, parking brake Yes / hydr. release	
Steer axle type, function Yes / Yes	
Travel speed, forward - reverse, unloaded - loaded         (km/h)         26 - 22 / 18 - 16         26 - 2	8 - 16
Gradeability, at max & at 2 km/h, unloaded – loaded         (%)         30 - 18 / 26 - 16         30 - 18	
Lifting speed, unloaded - at 70% of rated load (m/s) 0.40-0.24 0.40-0.24 0.40-0.24 0.40-0.24 0.40-0.24	
Lowering speed, unloaded - at rated load         (m/s)         0.35-0.40 <t< td=""><td></td></t<>	
Drawbar pull / towing capacity, max         (kN)         220         220         220         220         220	-
	l tor l in
Hydraulic system, no. of oil tanks Yes / dual oil t	
Tank volumes of working oil & brake oil         (dm3)         740 (600 + 140)	-
Working pressure boom / spreader         (MPa)         23.0 / 16.0         23.0 / 10.0         23.0 / 10.0         23.0 / 10.0         23.0 /	
Noise level LpAZ acc. to EN12053, inside cabin         (dB(A))         69-72         69-72         69-72         69-72	
Noise level LwA acc. to 2000/14/EC, outside cabin         (dB(A))         106-108         106-108         106-108         106-108	
Towing hook Yes Yes Yes Yes Yes	
Electronic overload, monitoring & safety system Yes / yes / yes / yes Yes / yes / yes Yes / yes	8

Yes - LLMI / Yes - LLMC Yes - LLMI / Yes - LLMC Yes - LLMI / Yes - LLMC Yes - LLMI / Yes - LLMC

	DRG 450-65 C5XS	DRG 500-60 A5	DRG 540-60 A5X	DRG 540-65 A5XS
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	DHG 500-60 A5	DHG 540-00 A5A	DHG 540-05 A5A5	DRG 570-05 25	DHG 000-05 25X	DhG 000-05 2575
	Industrial	handling / Tool Carrier for	multi-tool	Industria	al handling / Lift Hook and	Lift eyes
45 - 34 (38) - 17 (24)*	50 - 27 - 16 - 11	54 - 32 - 20 - 14	54 - 38 - 25 - 17	57 - 31 - 19 - 14	60 - 38 - 25 - 18	60 - 38 - 25 - 18
43 - 34 (38) - 17 (24)*			(54 - 42 - 34 - 23)*			(60 - 45 - 34 - 24)*
1,865 - 3,815 - 6,315	2,0 - 4,0 - 6,0 - 8,0	2,0 - 4,0 - 6,0 - 8,0	2,0 - 4,0 - 6,0 - 8,0	1,5 - 4,0 - 6,0 - 8,0	1,5 - 4,0 - 6,0 - 8,0	1,5 - 4,0 - 6,0 - 8,0
5/5 - 5/4 - 4/3	-	-	-	-	-	-
	Mechanical Pile Slope (	MPS) / 2500 x 760 mm / 4 x	Twistlocks + 4 Lift eyes	Dual Lift	Hook (free rotation) / 4 fixed	Lift Eyes
930	800	930	930	800	930	930
6.500	6.000	6.000	6.500	6.500	6.500	6.500
83.500	63.000	70.700	75.500	60.500	67.500	68.000
44,500 - 108,900	29,500 - 102,800	29,600 - 108,800	32,500 - 109,800			
50,200 - 109,000						
39,000 - 19,600	33,500 - 10,200	41,100 - 15,900	43,000 - 19,700			
39,000 - 8,500						
			Pneumatic / Diagonal			
18.00 × 33" / PR36 (E4)	18.00 × 25" / PR40 (E4)	18.00 × 33" / PR36 (E4)	18.00 × 33" / PR36 (E4)	18.00 × 25" / PR40 (E4)	18.00 × 33" / PR36 (E4)	18.00 × 33" / PR36 (E4
1.0-1.0	1.0-1.0	1.0-1.0	1.0-1.0	1.0-1.0	1.0-1.0	1.0-1.0
13.00 × 33"	13.00 × 25"	13.00 × 33"	13.00 × 33"	13.00 × 25"	13.00 × 33"	13.00 × 33"
4 / 4 + 2	4/4+2	4/4+2	4 / 4 + 2	4/4+2	4 / 4 + 2	4/4+2
3,030-2,800	3,030-2,600	3,030-2,800	3,030-2,800	3,030-2,600	3,030-2,800	3,030-2,800
		Duplex 2-stage boo	m with 2 x lift cylinders and 1	x extension cylinder		
0-60	0-60	0-60	0-60	0-60	0-60	0-60
4,700 - 18,300	4,600 - 18,200	4,600 - 18,200	4,600 - 18,200	4,600 - 18,200	4,600 - 18,200	4,600 - 18,200
4.025	3.925	4.025	4.025	3.925	3.925	4.025
1.150	1.300	1.300	1.300	1.150	1.150	1.250
14,9 - 13,0 - 10,2	15,0 - 13,6 - 11,4 - 7,7	15,0 - 13,6 - 11,4 - 7,7	15,0 - 13,6 - 11,4 - 7,7	13,0 - 13,0 - 11,4 - 7,7	13,0 - 13,0 - 11,4 - 7,7	13,0 - 13,0 - 11,4 - 7,7
7.000	7.000	7.000	7.000	7.000	7.000	7.000
3,750 - 2,675	3,650 - 2,575	3,750 - 2,675	3,750 - 2,675	3,650 - 2,575	3,650 - 2,575	3,750 - 2,675
8,615-11,700	8,015-11,200	8,115-11,200	8,515-11,700	8,515-11,700	8,515-11,700	8,515-11,700
4.150	4.150	4.150	4.150	4.150	4.150	4.150
6,055-12,185	2.730	2.730	2.730	6,055-12,185	6,055-12,185	6,055-12,185
±800 (total 1,600)	±450 (total 900)	±450 (total 900)	±450 (total 900)			
300 (+195/-105) / 2+2	300 (+195/-105) / 2+2	300 (+195/-105) / 2+2	300 (+195/-105) / 2+2	360 /	360 /	360 /
	Mechanical Pile SI	ope (MPS) by gravity / tilt stro	oke ± 5 / by gravity			
	Optional length tilt / tilt st	roke $\pm$ 5 / active tilt lock for e	end-on transport (90 deg)			
- / 300 / -	- / 250 / -	- / 300 / -	- / 300 / -	- / 250 / -	- / 300 / -	- / 300 / -
	11,200-13,600	11,200-13,600	11,600-13,600	11,600-13,600	11,600-13,600	11,600-13,600
11,600-13,600						0 500 0 500
11,600-13,600 8,500-9,400	8,100-8,100	8,100-8,100	8,500-8,500	8,500-8,500	8,500-8,500	8,500-8,500

Diesel / 4-stroke / 6-cylinder / EU stage 3A and EU stage 4 (EPA Tier 3 and Tier 4-Final)

		L	Diesel / 4-stroke / 0-cyllindel /	LO Slage SA and LO Slage		y	
)		210 kW	(286 hp) at 1600-2200 rpm / 1	,237 Nm (912 lb-ft) at 1000 -	1400 rpm / Volume 7,70 dm3	(470 in3)	
				10 - 15 / 550			
				1 - 5 / 35			
				AC - 3,640 (28 x 130			
				2x12 / 145			
				Yes / wet disc brakes			
				Yes / hydr. release			
				Yes / Yes			
	26 - 22 / 18 - 16	26 - 22 / 18 - 16	26 - 22 / 18 - 16	26 - 22 / 18 - 16	26 - 22 / 18 - 16	26 - 22 / 18 - 16	26 - 22 / 18 - 16
	30 - 18 / 26 - 16	30 - 18 / 26 - 16	30 - 18 / 26 - 16	30 - 18 / 26 - 16	30 - 18 / 26 - 16	30 - 18 / 26 - 16	30 - 18 / 26 - 16
	0.40-0.24	0.40-0.24	0.40-0.24	0.40-0.24	0.40-0.24	0.40-0.24	0.40-0.24
	0.35-0.40	0.35-0.40	0.35-0.40	0.35-0.40	0.35-0.40	0.35-0.40	0.35-0.40
	220	220	220	220	220	220	220
	Yes / dual oil tanks	Yes / dual oil tanks	Yes / dual oil tanks	Yes / dual oil tanks	Yes / dual oil tanks	Yes / dual oil tanks	Yes / dual oil tanks
	740 (600 + 140)	740 (600 + 140)	740 (600 + 140)	740 (600 + 140)	740 (600 + 140)	740 (600 + 140)	740 (600 + 140)
	23.0 / 16.0	23.0 / 16.0	23.0 / 16.0	23.0 / 16.0	23.0 / 16.0	23.0 / 16.0	23.0 / 16.0
	69-72	69-72	69-72	69-72	69-72	69-72	69-72
	106-108	106-108	106-108	106-108	106-108	106-108	106-108
	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	Yes / yes / yes	Yes / yes / yes	Yes / yes / yes	Yes / yes / yes	Yes / yes / yes	Yes / yes / yes	Yes / yes / yes
С	Yes - LLMI / Yes - LLMC	Yes - LLMI / Yes - LLMC	Yes - LLMI / Yes - LLMC	Yes - LLMI / Yes - LLMC	Yes - LLMI / Yes - LLMC	Yes - LLMI / Yes - LLMC	Yes - LLMI / Yes - LLMC

Longitudinal load monitoring info / controls

### KS DRG 570-65 Z5 DRG 600-65 Z5X DRG 600-65 Z5XS



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