



The Kalmar
**ELECTRIC
HEAVY FORKLIFT**

ECG180-330

The time is now to go

ELECTRIC

Kalmar's electrically powered forklifts can help improve the eco-efficiency of your operations while maintaining the highest levels of productivity and safety. The Kalmar Heavy Electric Forklift is ideal for lifting loads up to 33 tonnes for the metal, forestry, automotive, concrete, energy and container handling sectors.



A complete line up.

The Kalmar Heavy Electric Forklift completes our electrically powered range. Our latest electrically powered forklift can lift loads from 18 up to 33 tonnes and has a choice of modular battery options and charging solutions for you to choose from, which is dependent on your work cycle. We will work with you to design a solution that deliver for your business based on the experience and knowledge we have built up over the last 40 years of developing electrically powered solutions.

Eco-efficiency built in.

Being electrically powered, your forklifts will produce zero carbon emissions at source, making them cleaner and safer to operate. You can cut your carbon emissions even further by using green energy sources where available or start to generate and use your own power. Getting an electrically powered forklift is only the start of your eco-efficient journey. One where we will be with you every step of the way.



Productive by nature.

With an electrically powered driveline your drivers will notice a big difference with faster and smoother acceleration and more responsive handling while still being able to lift up to 33 tonnes efficiently and safely. Less time will be spent servicing and maintaining your electrically powered forklift, improving availability and uptime, as it has less moving and mechanical parts, plus you will be able to keep it running optimally within a broader range of temperatures with Kalmar's Thermal Management System fitted as standard.

Safety in focus.

Kalmar's range of electrically powered forklifts offer highly responsive handling and superior visibility from the cabin, helping to keep your driver safe and in control at all times. Your drivers will also benefit from reduced cabin noise and vibrations as our electrically powered forklift driveline is extremely quiet and smooth. There are also a large range of safety options available that can further enhance the safety of your equipment and the drivers operating them.



For complete peace of mind.

All Kalmar Electric Forklifts come with a 1 year/2000 hour warranty. Charging solutions are covered for 2 years and batteries for up to 5 years. Additional warranties between 2 and 10 years / 4.000 - 20.000 h. are available and are tailored to your individual needs.



Our electric PORTFOLIO

Kalmar's electrically powered heavy forklift is part of our complete range of eco-efficient solutions, which include electrically powered terminal tractors, reachstackers and empty container handlers.

Additional Energy Storage

You can use additional energy storage units to capture excess power that you may have produced to use at a later time when required instead of buying from the grid.

Power Cabinets

Power cabinets manage the required electricity flow from the grid to your charging points. Power cabinets are modular and the number required is dependent on the number of charging points required.



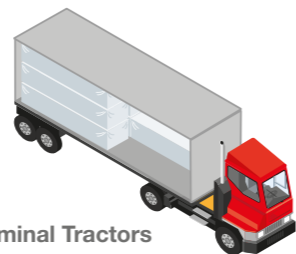
Reachstackers

Kalmar offers a choice of electrically powered reachstackers with a wide range of lifting applications, battery solutions and 42 to 45 tonne lifting capacities.



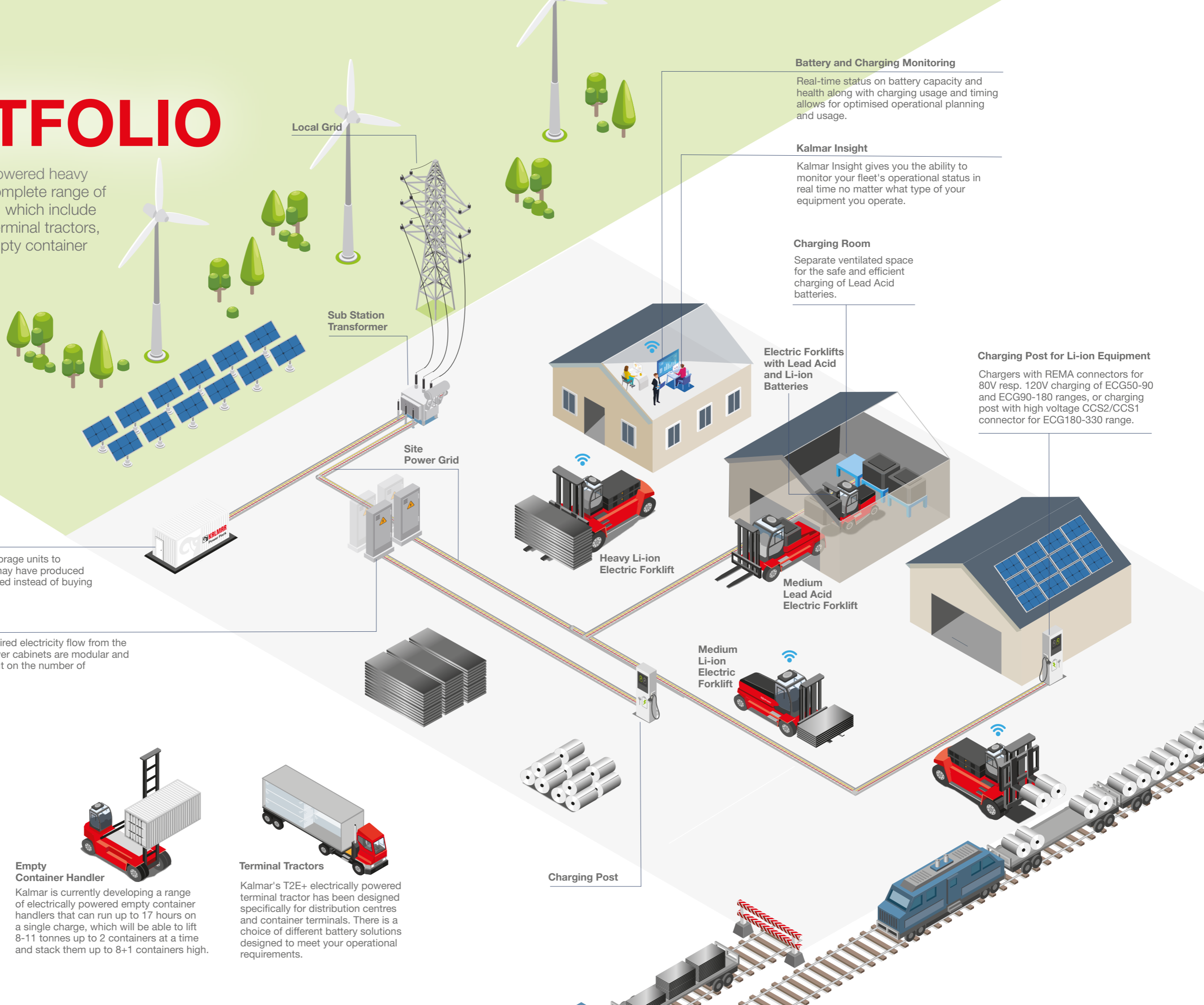
Empty Container Handler

Kalmar is currently developing a range of electrically powered empty container handlers that can run up to 17 hours on a single charge, which will be able to lift 8-11 tonnes up to 2 containers at a time and stack them up to 8+1 containers high.



Terminal Tractors

Kalmar's T2E+ electrically powered terminal tractor has been designed specifically for distribution centres and container terminals. There is a choice of different battery solutions designed to meet your operational requirements.



Battery and Charging Monitoring

Real-time status on battery capacity and health along with charging usage and timing allows for optimised operational planning and usage.

Kalmar Insight

Kalmar Insight gives you the ability to monitor your fleet's operational status in real time no matter what type of your equipment you operate.

Charging Room

Separate ventilated space for the safe and efficient charging of Lead Acid batteries.

Electric Forklifts with Lead Acid and Li-ion Batteries

Medium Lead Acid Electric Forklift

Charging Post for Li-ion Equipment

Chargers with REMA connectors for 80V resp. 120V charging of ECG50-90 and ECG90-180 ranges, or charging post with high voltage CCS2/CCS1 connector for ECG180-330 range.

Charging Post

The POWER is in your hands

Eco-efficient by nature.

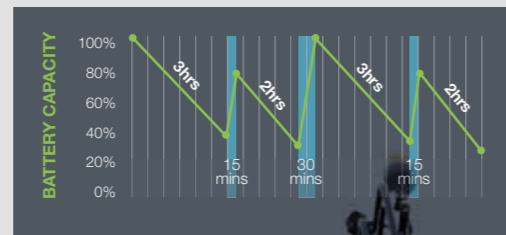
By combining powerful yet highly effective electrical motor solutions, the forklift will operate smoothly and productively giving you a highly efficient driving and cargo handling experience. While producing zero carbon emissions at source.

The complete system has been designed to minimise energy usage while maximising performance. Regenerative power from the braking system returns power to the batteries, further enhancing the overall efficiency of the system.

To meet a variety of operational work cycles we offer various combinations of battery sizes and charging capacities, to keep your electric forklift running optimally.

PRELIMINARY OPERATIONAL HOURS	ECG180-220		ECG250			ECG280-330	
	163 kWh	245 kWh	163 kWh	245 kWh	392 kWh	245 kWh	392 kWh
DRIVE CYCLE							
Light	5	7.5	4.5	7	11	6	9.5
Medium	4	6.5	4	6	9.5	5.25	8.5
Heavy	3.75	5.75	3.5	5.25	8.25	4.5	7.25

Three battery sizes to choose from.

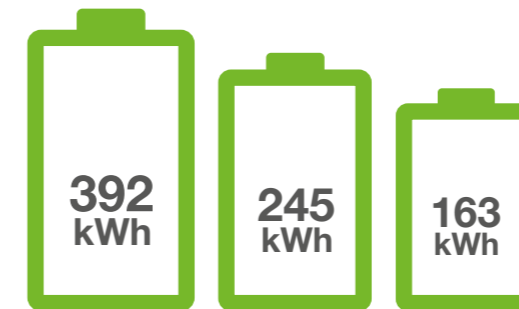


Opportunity charge to match work cycles.

Modular by design.

Batteries and chargers are a big part of your overall investment making it critical that you get a solution that is matched to your operational requirements, which is why Kalmar has taken a modular approach to our battery and charging solutions.

There are several different charging solutions with battery capacities from 50-350 kWh and three different Li-ion batteries to choose from. Our battery solutions all come with an up to 5 year warranty and have an expected 10-12 year life*. Kalmar can help you work out which battery option and charging solution is right for your business based on your current work cycles.



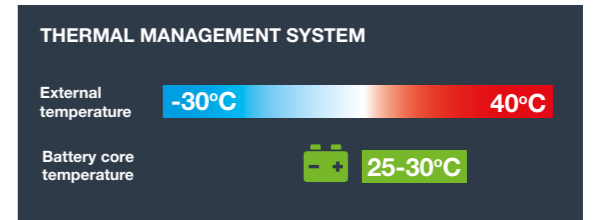
Managing your power.

Kalmar's Battery Monitoring System continually manages and monitors the voltage, temperature, coolant and current flow of your battery solution to ensure that it operates optimally over its lifetime. This system also controls the charging of the batteries by redirecting recovered energy back into the battery packs making sure you are using the power available as efficiently as possible.

Productive in extreme weather conditions.

Our portfolio of electrically powered forklifts all come fitted with a Thermal Management System as standard, which allows your equipment to run optimally even in extreme weather conditions. The system keeps your core battery temperature between 25-30°C for optimal performance even when the temperature outside gets down to -30°C or up to 40°C.

By linking the Thermal Management System to the Climate Control System, energy used to heat or cool the operator's cabin will be reduced by 5%. Not only keeping your drivers comfortable, but reducing the overall energy required to run the AC or heating.



Extra safe.

With any electrically powered high voltage system you need to be extra safe which is why we have encased and shielded all high voltage lines. Should any connection be interrupted the whole system will automatically shut down keeping your team safe. Knowing how to work with high voltage power sources is extremely important which is why Kalmar has specifically designed a High Voltage training course to enhance the skills of your workers and keep them extra safe.



Kalmar's Battery Management System manages and monitors:

- State Of Charge (SOC)
- Current
- Voltage
- Temperature
- Cooling & heating (summer & winter)
- Charging power
- Fast basic charging
- Slower top charging
- Cell status and information.



* First life measured as 80% capacity left in the battery.

OPTIONS



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



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



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.



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 at all times.



Reverse Warning System. Knowing what's going on behind you is critical when other personnel are present. 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 e.g. on the front of the machine, on the mast, carriage or forks.



Kalmar has a range of solutions that will help make your equipment more eco-efficient and sustainable:



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 continually. Active care of your tyres can result in a 10-40% increase in tyre life.

DESIGNED

for the driver

Ergonomically designed.

Kalmar Electric Heavy Forklifts come fitted with our ergonomically designed EGO cabin. With slim line b-pillars, adjustable seating, steering wheel and control panel, your drivers will benefit from a superior operating environment and visibility.

The Kalmar Electric Heavy Forklift with its electrically powered driveline, is quieter inside and outside the cabin, vibrates less than traditional forklifts and produces no carbon emissions, further enhancing driver comfort and safety.



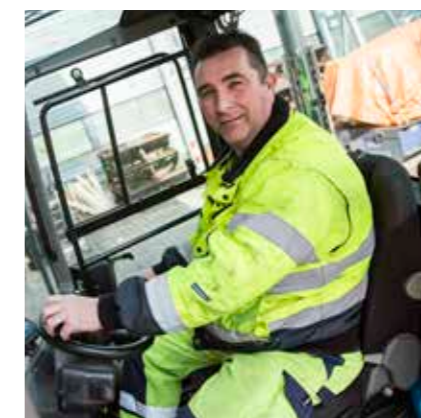
Easy to operate.

Our electrically powered heavy forklift comes with a wide choice of lifting levers or joysticks, an electronically adjustable work console and side tilting steering wheel. All designed to make operating your forklift easier and more efficient.



More comfortable.

With a choice of comfortable driver seats, a fault safe pedal system and powerful Electronic Climate Control system with smarter controls your operator will benefit from improved ventilation heating and cooling, plus a cabin with superior comfort and lowest noise level inside and outside.



Extra smart.

Our intuitive user interface combines visibility, sound and touch to create a perfectly balanced operating environment with an intelligent colour display at its heart. Advanced diagnostics, battery status overview and smart settings allow improved operational control and optimal opportunity charging planning.



KEEP MOVING

with Kalmar Service

To keep your business moving Kalmar Services offers a range of services that can help you keep your equipment moving optimally.



Kalmar Care, making sure your business never stops.

Our job doesn't stop once we deliver your new machine, as Kalmar Care offers a range of service and maintenance contracts. Each of our Service Contracts are designed to meet your exact needs and will help you improve your operational efficiency, productivity and financial predictability. You just need to decide what you require to keep your day-to-day operations moving optimally.



MyKalmar.

Keeping your cargo moving.

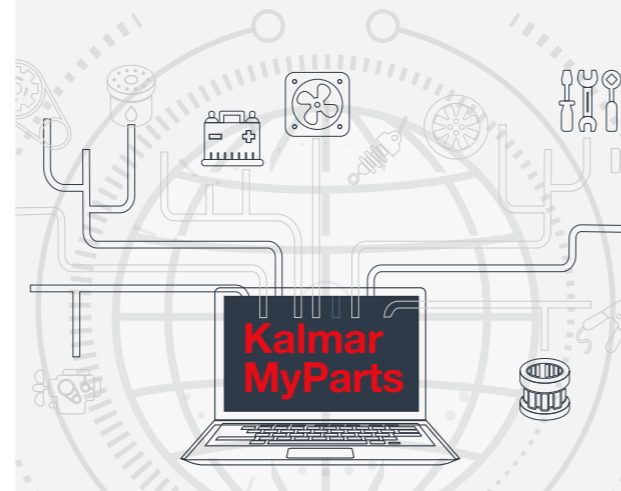
The MyKalmar portal brings together many of Kalmar's digital services into one place. With a single point of access and a user-friendly design you'll benefit from greater visibility and control over your maintenance activities, parts ordering and equipment performance - helping you improve your operational performance, safety and efficiency across your entire fleet.



Kalmar MyParts.

A smarter way to order your parts.

Kalmar MyParts is your one stop shop for all the parts you need which is accessible through MyKalmar. Open 24/7, accessible on any screen and available in different languages, MyParts stocks 100s of thousands of Kalmar Genuine Parts at any given time and we can have them delivered quickly to you, no matter where you are in the world. You can search, order and then track your order all through the same application. MyParts has been designed to make your life easier.

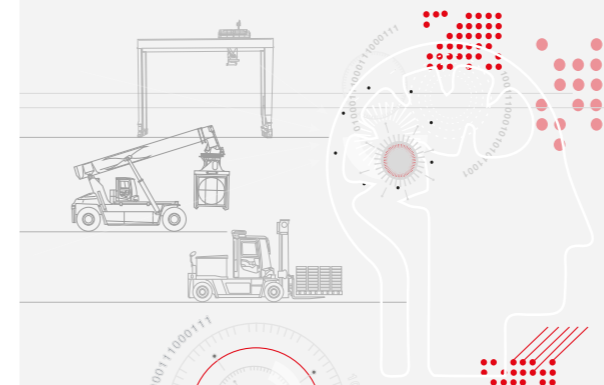


Kalmar Insight.

Optimise your operations with Insight.

Kalmar Insight* is a performance management tool for cargo handling, which gives you an easy to use overview of your fleet operations, by aggregating data from multiple sources, including equipment built by other manufacturers.

Review your entire fleet activities, schedule maintenance activities and order the required parts automatically. All enabling you to take action on real-time information, that will help improve your overall operations immediately. Kalmar Insight comes fitted and ready to be activated in all new Kalmar equipment, it can also be retrofitted into existing Kalmar equipment or those built by other manufacturers.



Kalmar Training.

Enhance your skills.

To get the most out of your new machine our training centre offers a range of courses for both your technicians and operators. Operators can be taught how to drive the machine for optimum performance and minimum waste, and to learn what needs to be checked daily for optimal safety. Technicians can be educated with the knowledge they need to keep your new equipment in top condition in a safe way. Courses are a mix of theory and hands-on experience.



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

STANDARD

ECG180-330 (18-33 tonnes)

Norms, Standards and Regulations

- Machinery Directive 2006/42/EC
- Safety Industrial Trucks ISO 3691-1 & EN 16307-1
- Safety Low & High Lift Trucks ANSI/ITSDF B56.1
- Stability test ISO 22915
- High Voltage Directive 2014/35/EU
- CE-marking for trucks within EU/EEA
- ANSI/ITSDF-marking for North America trucks

Chassis

- Strong, durable and welded box-type chassis
- Powerful front end unit for drive axle and lift mast fixations
- Solid tilt cylinder fixations in chassis and mast
- Full access to the entire powertrain with tilting cabin
- Easy access to battery, TMS and power distribution
- Very good visibility - forward, up, sideways and rear
- Low cabin mounting for easy access on both sides
- Dual access stairways on left / right sides (steps/handles)
- Lifting eyes and achor points (front & rear)
- Towing pin through rear counter weight (long handle)

Body

- Strong and protective steel mudguards (front / rear)
- Long bottom anti-slip access step (on left side)
- Short access steps and hand rails to the cabin
- Short anti-slip access steps (2x on left side, 3x on right side)
- Big rear view mirrors on front mudguards (2x)
- Welded lamp brackets on front mudguards (2x)
- Basic noise insulation kit of the forklift

Steer Axle (Rear)

- Kalmar steer axle mounted dual pivot bearings
- Steer axle with mechanical side stops
- El-servo power steering with double acting cylinder
- Steer axle with narrow turning radius
- Steer links of "dog bone type" (easy to change)

Drive Axle (Front)

- Kessler D91 axle with differential and hub reduction
- Maintenance-free oil-cooled Wet Disc Brakes (WDB)
- Single disc parking brake, spring loaded & hydraulic release
- High pressure filter (10 my) for the brakes

Wheels (Tyres & Rims)

- ECG180-250: diagonal tyre 14.00x24"/PR28 / rim 10.00x24"
- ECG280-330: diagonal tyre 16.00x25"/PR32 / rim 11.25x25"

Powertrain

- Bosch-Rexroth electric AC-motors (PM/synchron/ 3-phase)
- Single drive motor (151/333 kW) with water cooling
- Single pump motor (110/230 kW) with water cooling
- Single auxiliary motor (23/50 kW) with water cooling
- 2-speed mechanical drive transmission with cooling
- Re-generative brake system / energy back to battery
- Water cooling and heating for motors, inverters & battery
- Electric motors and inverters are protected on the inside

Power electrics (670V)

- Electric system voltage 670V (High Voltage Directive)
- Power distribution (670V) mounted on left side
- International charging standards CCS1 and CCS2
- Charging connection plug (CCS) mounted on left side
- Charging unit with indicator lights and hatch cover

Battery (Lithium-ion)

- Lithium-Ion integral battery units with TMS and rear mount
- High capacity technology (NMC-type) up to 4-5.000 cycles
- Maintenance-free battery solution with 90-95% efficiency
- Battery with passive and active cooling and heating (TMS)
- Battery Management System (BMS) with CanBus
- ECG180-250: battery capacity 163 kWh
- ECG280-330: battery capacity 245 kWh

Thermal Management System (Lithium-ion)

- Battery Manangement System (BMS) with CanBus
- Smart controls of cooling and heating units
- TMS with cooling unit, water tank, pump and cooler
- TMS with onboard heating unit and from grid connection
- TMS with passive-active-standby cooling and heating
- TMS cooling of motors, inverters and battery
- TMS heating of motors, inverters, battery, oils and cabin
- Power limitation functions to optimize consumption
- Limp home function at low SOC% (drive speed 8 km/h)

Load-Sensing Hydraulics

- Rexroth load-sensing piston pumps (2x / electric drive)
- Power-on-demand function with high lifting speeds
- Pumps for lift mast, tilt cylinders, carriage and forks
- Pump for brake oil pressure, steering and oil cooling
- Power steering, power brakes & ORFS-couplings
- Return filters for the work hydraulics (2x/10 my)
- Pressure filter for hydraulics / brakes (10 my)
- Hydraulic tank (360 lit), cooler, breath filter & level glass
- Mast tilt angles: FW +5 / BW -10 deg (15 deg)
- Oil heater, 1 kW, 400V, 3-phase (5 conductor, 32A)

Lifting Mast

- Large selection of mast types and lifting heights
- Duplex Standard; a 2-stage mast with free-visibility design
- Strong, durable lift mast design, 1 pair of cylinders & chains
- Heavy-duty mast profiles and strong cross members
- Mast with strong mast wheels, bearings & guide pads
- Large diameter shafts / bearing for mast / strong tilt fixations

Fork Carriage

- Large selection of fork carriages, types and optionals
- Carriage with strong wheels, bearings & guide pads
- Combined hydraulic sideshift and fork positioning (SS/FP)
- Long strokes of both sideshift and fork positioning
- Carriage is connected to the mast by 2 lift chains
- ECG180-250: carriage width 3000 mm
- ECG280-330: carriage width 3400 mm

Forks

- Large selection of fork dimensions, tapering and designs
- Strong fixation of integral forks (shaft, bearing & wheel)
- High quality forks with optimized tapering and fork tip
- ECG180-250: dimension 250x110x2400 mm (WxTxL)
- ECG180-250: dimension 300x110x2400 mm (WxTxL)

Electrical System 24V

- Electric central (24V) mounted on chassis (LHS)
- Electric control cabinet behind driver (easy access)
- 2 LED working lights on front mudguards (main beam)
- 2 LED working lights on mast (first cross member)
- 2 LED working lights on rear counter weight
- 4 directional blinker lights (front / rear)
- 2 tail / 2 brake LED-lights rear in counter weight
- The tail / brake lights are flashing when reversing
- Reverse camera (wide angle/IR night light), 7" monitor, full HD resolution (1920x1080p) mounted on RHS

Cabin (EGO)

Structure

- Spacious, modern cabin with great ergonomy level and content
- Strong profiles, pillars and cross members of slim-line design
- FOPS certified drivers cabin (Fall-Over-Protection-Safety)
- Fully tiltable cabin with full access to powertrain & hydraulics
- Large window sections with great visibility in all directions
- Tinted windows including laminated front window
- Large access doors on both sides with air-damper & key-lock
- Sliding windows in both access doors, instep handle on LHS

Comfort

- Kalmar drivers seat, mechanical spring suspension, high back
- Comfort seat, fully adjustable, seat sensor & 2-point safety belt
- Electric adjustable work console (up-down / forward-reverse)
- Work console; lift levers, climate controls, lamp buttons etc
- Inside rear view mirror (right side)
- Interior lights with fade away function
- Fully adjustable steering wheel incl tilt function
- Power steering wheel with steer knob
- LED background light for buttons & switches

Controls

- Electronic lift levers / joystick for mast, tilt and fork functions
- Auto rev-up accelerator at lifting / tilting / fork positioning
- Electric accelerator pedal (hanging)
- Double brake pedals (L + R)
- Button for electronic hand brake (on/off)
- Safety override for hydraulic functions (by code)
- Multi-function lever LHS (parking brake/travel direction switch)

- Combined horn and blinker lever
- Warning - hand brake (on/off) leaving seat

Climate

- ECC, electronic heating, cooling (AC) & ventilation
- Powerful cab heater, power 6.0 kW (20.500 Btu)
- Strong AC cooling unit, power 14.0 kW (47.700 Btu)
- High-capacity ventilation unit, air flow 483 m3/h
- Multiple individual blowers (8x up / 2x down)
- Fresh air and recirculation filter (replaceable)
- Double wipers / washers on front window (large area)
- Single wipers / washers on roof and rear windows
- Interval wiper functions on front, roof & rear windows

Information Systems

- Kalmar CanBus controls with 4,3" colour monitor
- Danfoss controls DM430E in RAM mounting
- Menu controller with toggle wheel & push buttons
- Programmable settings and monitoring of all systems

Accelerator / Brake settings:

- Programmable accelerator in 10 steps (1-10)
- Accelerator; from soft to fast (low to high energy)
- Programmable brake re-generation in 10 steps (1-10)
- Brake regeneration; feed energy back to the battery

Operator menu:

- System voltage
- Travelling speed (km/h or mph)
- Hydraulic and brake oil temperatures
- Clock and date
- Operating time (hour meter)
- Service time indicator (hours)
- Status of heating system & AC system
- Estimated time before empty battery (hour/min)
- Service indicator
- Trip computer / statistics

Various warning lights & signals:

- Charging battery
- Safety system disconnected
- Failure indicator
- Low brake oil pressure
- Low coolant level battery
- Low coolant level electrical components
- High coolant temp battery
- High coolant temp electric components
- Low power battery volt level
- Low/high battery cell temp
- Low/high battery cell volt level unbalanced power battery
- Hydraulic and brake oil temperature
- Low washer fluid level

Indicator lamps:

- Head beam
- Direction indicaton (blinkers)
- Parking brake

Fleet Management

- Equipped with telemetric hardware for Kalmar Insight

Colour

- Chassis, tanks & mudguards: Red RAL 3000
- Mast, carriages, forks and axles: Black RAL 7021
- Cabin: Iron-Grey RAL 7011
- Rims: Iron-Grey RAL 7011

Documentation and Decals

- Load chart diagram inside cabin
- Machine data sign on chassis (LHS) incl. load chart
- Warning, tyre pressure & oil pressure stickers
- Lift lever / joystick and functional stickers in cabin
- Fuse diagram
- Instruction manual
- Maintenance manual
- Spare parts catalogue

Warranty

- Kalmar standard warranty: 12 months / 2.000 hours
- Kalmar battery warranty: 60 months / 10.000 hours
- Kalmar charger warranty: 24 months / 4.000 hours *

OPTIONS

ECG180-330 (18-33 tonnes)

Chassis/Body

- Models with standard wheelbases
- Extra mud flaps (front and rear)
- Steel grid protections on working lights

Wheels (Tyres & Rims)

- Spare wheels, tyres and rims of various brands
- Diagonal and radial tyres of well known brands
- Diagonals from Continental (CM+)
- Radials from Michelin (XZM)
- Other brands up on request
- ECG180-250: tyre 14.00x24"/PR28 / rim 10.00x24"
- ECG280-330: tyre 16.00x25"/PR32 / rim 11.25x25"
- ECG280-330: tyre 16.00x25"/PR32 / rim 11.25x25"

Battery (Lithium-ion)

- ECG180-250: tyre 14.00x24"/PR28 / rim 10.00x24"
- ECG280-330: tyre 16.00x25"/PR32 / rim 11.25x25"
- ECG180-250: battery capacity 245 kWh
- ECG250-330: battery capacity 392 kWh

Hydraulics

- Extra hydraulic function including hoses (per function)
- Push-button controlled hydr. function via magnet valve
- Quick release couplings "aerogrip" 1/2" (per function)
- Individual fork positioning incl. 5th hydraulic function
- Hydraulic cylinder accumulator for lifting "standard"
- Hydraulic cylinder accumulator for lifting "auto on/off"
- Protection against opening arms when clamped load
- Extra functions for attachments (paper, steel, precast)

Lifting Mast

- Duplex Standard (no FL); lift heights 3.00 - 8.00 m
- Duplex Freelift (50% FL); lift heights 3.00 - 7.00 m
- Triplex Freelift (33% FL); lift heights 4.50 - 7.00 m
- Simplex lift heights upon request
- Other lift heights / closed heights on request
- Additional pair of lower mast wheels (stroger)

Fork Carriage

- ECG180-250: carriage low profile (minus 300 mm)
- ECG180-250: carriage width 3200 mm
- Other carriage widths on request (up to 5.00 m)
- Additional pair of lower carriage wheels (stroger)
- Fork Shaft System (FSS): hook or pin type (quick-change)
- Sideshift/fork position with hydraulic center levelling
- Attachment set: carriage sides, brackets, chains & hoses
- Factory integration of various attachment

Forks

- See fork dimensions under Specifications
- ECG180-250: lengths 2400, 2500 and 3000 mm
- ECG280-330: lengths 2400, 2500 and 3000 mm
- Other fork cross sections and/or materials (on request)
- Other fork lengths on request (up to 5.00 m)
- Fork mountings: roller-type, hook-type or pin-type
- Fork Shaft System: hook-type / pin-type (quick-shift)
- FSS: forks, specials, coil ram or attachments
- Kissing forks: chamfer inside/outside (roller-type)
- Kissing forks: chamfer inside/outside (FSS hook)
- Hydraulic levelling fork, up/down, on left or/and right fork
- Tapering: 0-600 mm full thickness / 600-to tip with taper
- Tapering: various optional tapering / short or full taper

Electrical System 24V

- Tuner FM-AM, RDS, MP3, USB, Bluetooth, Stream
- Tuner FM-AM, RDS, MP3, USB, Bluetooth, Stream, DAB
- Power sockets: 2x24V and 2x12V (in door columns)
- Power sockets: 2x24V and 1x12V + 2xUSB (5V)
- Electric air pressure horn
- Reverse alarm: beeping or white noise (multi frequency)
- Mast with automatic vertical function (auto-tilt)
- Lamps
 - 2 extra LED working lights - in mast (FW)
 - 2 extra LED working lights - rear on cabin ramp (FW)
 - 4 extra LED working lights - rear on cabin ramp (mix)
 - 6 extra LED working lights - rear on cabin ramp (mix)
 - 2 extra LED working lights - front on cabin roof
 - 1 extra LED working lights - between tilt cyl. (+ step)
 - 2 Halogen working lights - high + low beam (repl LED)
 - 1 LED warning beacon (adjustable pole LHS)
 - 1 LED warning beacon (activated by reverse gear)
 - 1 LED warning beacon rear on CW (by reverse gear)
 - 1 Blue safety light, rearward (reversing) or forward
 - 1 Red safety light, rearward (reversing) or forward
 - 1 Red safety zone light, Left and Right direction
 - 1 LED light inside cabin elctric cabinet
 - 1 LED strobe light rear mouted (adjustable)
 - 1 LED strobe light rear mounted (activated by reverse gear)

Safety Functions

- Overload indication for lift/tilt incl. speed limit
- Speed limit; default 15 km/h (by service)
- Speed limit at specified load (by service)
- Speed limit at specified lift height (H4) (by service)
- Speed limit set by customer in display; default 15 km/h
- Tyre pressure monitoring system (TPMS / Bluetooth)
- Alcolock Draeger in cabin

Cabin

Structure

- Globetrotter cabin, height +200 mm, roof 12 mm (repl 6)
- Elevated cabin 300 mm for increased visibility (+1 step)
- Rotatable Driver Seat, electric 180 deg (to the left)
- Steel grid protection for front window
- Steel grid protection for roof window
- Flat front window with steel profiles, tinted and laminated
- Door opening holder (left side and / or right side)
- Roof window 12 mm (repl standard 6 mm)
- Electric cabin tilt pump (up/down)
- External cabin reverse mirrors (2x)
- External cabin reverse mirrors (2x) with heating
- Electric heated mirrors (front mudguards)
- Electric heated + adjustable mirrors (front mudguards)

Comfort

- Air cusioned driver seat with horizontal suspension
- 3-point seat belt
- Extended seat backrest
- Headrest for driver's seat
- Armrest adjustable left side
- Seat heating
- Seat cover in vinyl
- Leather reinforced seat, high back, heat, 3-p belt
- Grammer Actimo XL; air cushion, high, heat, 2-p belt
- BEGE 3700; air cushion, high, heat, 2-p belt, leather r.i.
- ISRI 6830KA/B80; air cushion, high, heat, 2-p belt
- Extra trainer seat; leather, foldable, low, 2-p belt
- Bracket for terminal and monitor (RHS)

Controls

- Travel direction button on 1st lift lever (F-N-R)
- Electronic joystick (EGO)
- Electronic lever steering (without feedback)
- Electronic mini-wheel steering
- Search light maneuverable via remote control

Climate

- Sun visors: front, roof, rear windows (other models)

Additional Equipment

- Enhanced Safety Package including:
 - Speed limit: default 15 km/h (or free by service)
 - Blue safety light backwards via back alarm
 - Rear warning radar (for rev camera / cab monitor)
 - Seat belt interlock (OK before drive/seatbelt ON)
 - Fire suppression system (semi-auto/Dafo Forrex)
 - Fire extinguisher powder 6kg (at foot steps LHS)
 - Tool kit
 - Central greasing system (14-18-24 grease pts.)
 - Tilt indicator of mechanical type
 - Tilt indicator of electronic type (in display)
 - Electronic weight indicator (machine controls)
 - Heat protection kit (incl hoses)
 - Heat protection mechanical kit
 - Wheelnut protection (steer wheels)
 - Slow vehicle warning sign (road traffic / LGF)

Camera Safety

- 1 extra front mast camera - to cab monitor
- 1 extra front carriage camera - to cab monitor
- 2 radar warning sensors - to cab monitor
- Monitor 7" Quad, 4 inputs (repl. Monitor 7" Duo)
- Monitor 10" Quad, 4 inputs (repl. Monitor 7" Duo)
- DVR recorder, 4 channels (SD-card 128 GB)

Eco Drive Modes (EDM)

- Performance mode settings: Power - Normal - Eco

Information Systems

- VDI - Vehicle Data Interface

Fleet Management

- Kalmar Insight licence (only certified countries)
- Kalmar Insight Driver Monitor (RFID reader + 10 unique driver tags)
- Kalmar Insight extra driver tags (10 tags)

Colour

- Other RAL colour than standard, chassis
- Special and multiple colours, chassis
- Other colour than standard, striping foil
- Reinforced anti-corrosion protection

Documentation and Decals

- Extra set of documentation
- Workshop manuals
- Load chart lbs/inch in cab & sign "no riders"
- Documentation on memory stick

Training

- Various training packages (drivers, service, maintenance, software)
- Contact Kalmar Training Centre for more information

Warranty

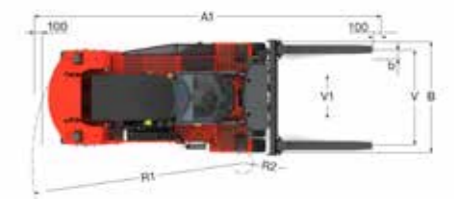
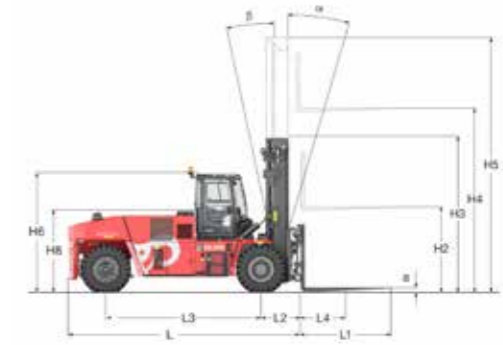
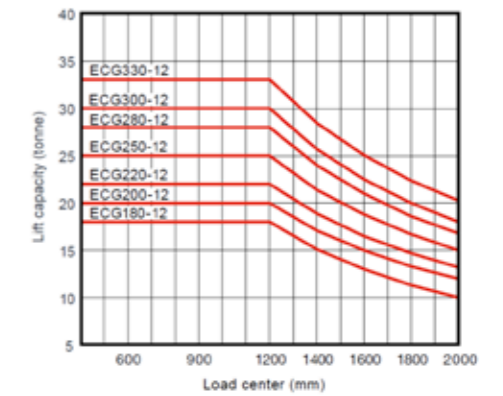
- Additional warranty packages available:
 - Gold, Silver and Bronze packages
 - (5-10 yr / 10-20.000 hours)
 - Contact Kalmar for more information

^[1] * Subject to change depending on brand and supplier

SPECIFICATIONS*

				ECG180-12	ECG200-12	ECG220-12	ECG250-12	ECG280-12	ECG300-12	ECG330-12	
LIFTING CAPACITY	Rated		kg	18000	20000	22000	25000	28000	30000	33000	
	Load centre	L4	mm	1200	1200	1200	1200	1200	1200	1200	
DIMENSIONS	Truck length	L	mm	6090	6090	6090	6340	6925	6925	6925	
	Truck width	B	mm	3050	3050	3050	3050	3430	3430	3430	
	Height, base machine, EGO	H6	mm	3290	3290	3290	3290	3450	3450	3450	
	Seat height, EGO	H8	mm	2150	2150	2150	2150	2300	2300	2300	
	Distance between centre of front axle – front face fork arm	L2	mm	1070	1070	1070	1070	1140	1140	1140	
	Wheelbase	L3	mm	4000	4000	4000	4250	4750	4750	4750	
	Track (c-c), front – rear	S	mm	2200 / 2200	2200 / 2200	2200 / 2200	2200 / 2200	2440 / 2540	2440 / 2540	2440 / 2540	
	Turning radius, outer	R1	mm	5600	5600	5600	5875	6650	6650	6650	
	Turning radius, inner	R2	mm	425	425	425	550	950	950	950	
	Ground clearance, min.		mm	300	300	300	300	300	300	300	
	Height when tilting cab, max. EGO	T1	mm	3800	3800	3800	3800	3800	3800	3800	
	Width when tilting cab, max EGO	T2	mm	3700	3700	3700	3700	3800	3800	3800	
	Min. aisle width for 90° stacking with forks	A1	mm	9270	9270	9270	9550	10325	10325	10325	
	Standard duplex mast	Lifting height	H4	mm	5000	5000	5000	5000	5000	5000	5000
		Mast height, min	H3	mm	4320	4320	4320	4320	4520	4520	4520
		Mast height, max	H5	mm	6820	6820	6820	6820	7020	7020	7020
		Mast tilting, forward – reverse	a – β	°	5/10	5/10	5/10	5/10	5/10	5/10	5/10
		Ground clearance, min.		mm	-	-	-	-	-	-	-
	Forks	Width	b	mm	250	250	250	250	300	300	300
		Thickness	a	mm	110	110	110	110	110	110	110
		Length of fork arm	l	mm	2400	2400	2400	2400	2400	2400	2400
Width across fork arms, max.		V	mm	2700	2700	2700	2700	3150	3150	3150	
Width across fork arms, min.		V	mm	800	800	800	800	850	850	850	
Sideshift. ± at width across fork arms		V1 – V	mm	557 / 1585	557 / 1585	557 / 1585	557 / 1585	625 / 1900	625 / 1900	625 / 1900	
WEIGHT	Weight	With standard battery	kg	31200	31200	33300	34900	40100	39500	43200	
	Axle load front	Unloaded	kg	17100	17100	17100	17600	22000	22000	22000	
		At rated load	kg	45700	48500	51400	56000	63800	66800	71300	
	Axle load rear	Unloaded	kg	14100	15000	16200	17300	18100	19200	21200	
At rated load		kg	3800	3600	3800	3900	4400	4500	5000		
WHEELS	Wheels/tyres	Type, front – rear		Pneumatic / Pneumatic		Pneumatic / Pneumatic					
		Dimensions, front – rear	tum	14.00x24	14.00x24	14.00x24	14.00x24	16.00x25	16.00x25	16.00x25	
		Number of wheels, front – rear (*driven)		4* – 2	4* – 2	4* – 2	4* – 2	4* – 2	4* – 2	4* – 2	
		Pressure	MPa	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
STEERING	Steering system	Type – manoeuvring		Hydraulic Servo – Steering wheel		Hydraulic Servo – Steering wheel					
BRAKES	Service brake system	Type – affected wheels		Oil cooled disc brakes – Drive wheels		Oil cooled disc brakes – Drive wheels					
	Parking brake system	Type – affected wheels		Dry, spring activated disc brakes – Drive wheels		Dry, spring activated disc brakes – Drive wheels					
MISC.	Hydraulic pressure	Max.	MPa	16.5	18	20	22	19.5	20.5	22	
	Hydraulic fluid volUme		l	360	360	360	360	360	360	360	

Load capacity in tonnes



* All data is correct at time of publication.

POWERTRAIN*

		ECG180-12	ECG200-12	ECG220-12	ECG250-12	ECG280-12	ECG300-12	ECG330-12	
Motor	Drive motor, manufacturer - type designation	BoschRexroth EMS-series (Permanent Magnet Synchronous Motor)			BoschRexroth EMS-series (Permanent Magnet Synchronous Motor)				
	Type of motor	AC				AC			
	Drive motor power, rated continuous (S9) - max	kW	151 - 337	151 - 337	151 - 337	151 - 337	151 - 337	151 - 337	151 - 337
	Drive motor Torque, rated continuous (S9) - max	Nm	240 - 530	240 - 530	240 - 530	240 - 530	240 - 530	240 - 530	240 - 530
	Pump motor hydraulics, rated continuous (S9) - max	kW	110 - 230	110 - 230	110 - 230	110 - 230	110 - 230	110 - 230	110 - 230
Auxiliary motor, rated continuous (S9) - max	kW	23 - 50	23 - 50	23 - 50	23 - 50	23 - 50	23 - 50	23 - 50	
Transmission	Transmission, manufacturer - type designation	BoschRexroth 2-speed							
	Driving axle, manufacturer - type	Kessler D91 - Differential and hub reduction							
	Energy consumption, normal driving (preliminary)	kWh/h	30	32	33	35	40	42	45
	Energy consumption according EN 16796	kWh/h	34	36	38	41	48	51	54
Battery	Battery technology	Li-ion - NMC (LiNiMnCoO2)							
	Battery nominal capacity - standard	kWh	163	163	163	163	245	245	245
	Battery usable capacity - @25C; +/-5% (BoL)	kWh	139	139	139	139	210	210	210
	Battery nominal capacity - Optional kWh 245	kWh	245	245	245	245 & 392	392	392	392
	System voltage, rated - max	V	565 - 754						
	Charging inlet capacity	kW	0 - 300						
	Charging inlet standard		CCS1 or CCS2						

PERFORMANCE*

		ECG180-12	ECG200-12	ECG220-12	ECG250-12	ECG280-12	ECG300-12	ECG330-12	
Lifting speed	Unloaded	m/s	0.40	0.40	0.40	0.40	0.35	0.35	0.35
	At 70% rated load	m/s	0.40	0.40	0.40	0.40	0.35	0.35	0.35
Lowering speed	Unloaded	m/s	0.34	0.34	0.34	0.34	0.32	0.32	0.32
	At rated load	m/s	0.40	0.40	0.40	0.40	0.40	0.40	0.40
Travelling speed, F/R	Unloaded	km/h	25 / 25	25 / 25	25 / 25	25 / 25	25 / 25	25 / 25	25 / 25
	At rated load	km/h	25 / 25	25 / 25	25 / 25	25 / 25	23 / 23	23 / 23	23 / 23
Gradeability, max	Unloaded	%	57	54	51	48	42	41	38
	At rated load	%	33	30	28	26	23	22	21
Gradeability, at 5 km/h	Unloaded	%	26	25	24	23	20	20	19
	At rated load	%	16	15	14	13	12	11	10
Drawbar pull	Max	kN	150	150	150	150	155	155	155
Noise level, inside*	LpAZ, EGO Cabin	dB(A)							
	LpAZ, EGO Cabin OHG	dB(A)							
Noise level, outside**	LwAZ	dB(A)							

* All data is correct at time of publication.



LIFTING EQUIPMENT*

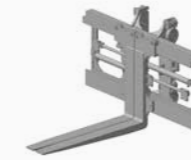
	Lift height	Mast height		Free lift	Mast height		Free lift
	H4	H3 min	H5 max	H2	H3 min	H5 max	H2
DUPLEX STANDARD		ECG180-250			ECG280-330		
	3000	3320	4820	-	3520	5020	
	3500	3570	5320	-	3770	5520	-
	4000	3820	5820	-	4020	6020	-
	4500	4070	6320	-	4270	6520	-
	5000	4320	6820	-	4520	7020	-
	5500	4570	7320	-	4770	7520	-
	6000	4820	7820	-	5020	8020	-
	6500	5070	8320	-	5270	8520	-
	7000	5320	8820	-	5520	9020	-
DUPLEX FFL	3000	3420	4920	1500	3520	5020	1500
	3500	3670	5420	1750	3770	5520	1750
	4000	3920	5920	2000	4020	6020	2000
	4500	4170	6420	2250	4270	6520	2250
	5000	4420	6920	2500	4520	7020	2500
	5500	4670	7420	2750	4770	7520	2750
	6000	4920	7920	3000	5020	8020	3000
	6500	5170	8420	3250	5270	8520	3250
7000	5420	8920	3500	5520	9020	3500	
TRIPLEX	4550	3500	6350	1700	X	X	X
	4625	X	X	X	3680*	6630*	1625
	5150	3700	6950	1900	X	X	X
	6000	X	X	X	4130*	8010*	2100
	6500	4150	8300	2350	X	X	X
	6950	4300	8750	2500	X	X	X

* All data is correct at time of publication.

ATTACHMENTS



Carriage sideshift / fork positioning



Carriage with kissing forks for steel handling



Fork shaft system (Hook on type or roller type)



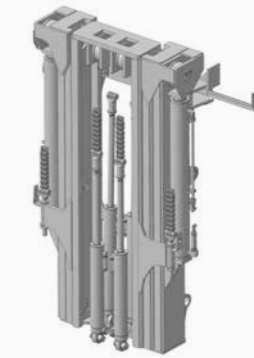
Coil ram



Duplex standard



Duplex free lift



Triplex full free lift





KALMAR

Making your every move count

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