
A clean lift
every time.
ECG70-35E3/E4.
The new Kalmar all electric
Eco Empty Container Handler.
ECO-EFFICIENCY AT WORK
KALMAR

Be the first to reap the rewards.

Meet and exceed emissions standards.

All of our electrically powered Eco Generation solutions exceed the current EU4 and the proposed EU5 emissions standards. Being fully electric, you will also cut other emissions like NOx, SOx and other particulates, giving you a cleaner, greener machine to operate.

With rising fuel costs and tougher emissions standards, you need an eco-efficient solution that will significantly reduce your fuel costs and cut your emissions.

Our new all-electric Eco Empty Container Hander, the first of its kind, will lower your fuel costs and help you exceed emissions standards today and in the future, without compromising on operational power. Able to stack up to four high and with a choice of battery technologies, you will get a clean efficient lift every time.

A rewarding experience for everyone.

As electricity is cheaper than diesel fuel, your fuel bills will be substantially reduced the moment you start using your new electrically powered empty container handler.

Our all electric Eco Empty Container Handler is extremely quiet to operate, making it better for your drivers and ideal for operating in built up areas, where excessive noise may be a concern.

Electrically powered solutions benefit from less moving parts and lower rates of wear and tear than diesel powered machines, lowering your maintenance costs and effort.

Electrically powered solutions are also easier to drive, and provide a much smoother driving experience, which will reduce stress and strain on your driver's body.

Built on our common platform you will benefit from proven technology that is already powering our electric forklift and terminal tractor solutions.

Good for the environment, great for the bottom line.

The all-electric Kalmar Eco Empty Container Handler provides you with an eco-efficient solution that will have a positive financial impact on your business.

Even though the initial purchase price may be a little higher than a traditionally diesel powered machine, it will quickly pay for itself, making your total cost of ownership significantly lower over the lifetime of the machine. Making it as good for your bottom line as it is for the environment.

The benefits really stack up.
It isn't just your fuel costs that will be reduced, so will your servicing and maintenance costs. You can expect to spend up to 50% less time and money maintaining your machine, helping to cut your ongoing costs even further, while improving your empty containers handlers availability levels.

Efficient and highly productive.

Buying an electric empty container handler doesn't mean compromising on power, as electric drive lines provide full torque immediately and they are smoother to operate. This makes operating cycles shorter, which will increase the number of containers you can move every hour.

Feel more in control.
With all of our electric solutions you will benefit from greater control of your machine through the speed pedal. Not only do you benefit from instant smooth acceleration, you can also slow down immediately by just taking your foot off the pedal. A safe way to slow down, that reduces the wear and tear on tyres and the machine's braking system.

A better driving experience.
Our electric empty container handlers have our ergonomically designed EGO cabin fitted as standard. This cabin has been built to provide a superior driving experience for your operators. With adjustable control panels, steering wheel and seat, which can also be rotated with the push of a button, your driver will be happier and more comfortable. The slim line B-Pillars provide an exceptional level of visibility, making the machine safer to operate, especially in busy environments.

Drive modes.

Kalmar Eco Drive gives you three different performance levels to choose from:

Power
Brings out maximum performance of your machine, allowing you to increase the number of tonnes moved per hour.

Normal
Balances power and economy to optimise profitability.

Economy
If total cost of operations outweighs the need for performance, Economy mode reduces fuel consumption by up to 15%.

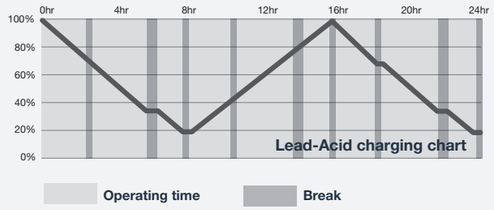
Which battery technology is right for your business?

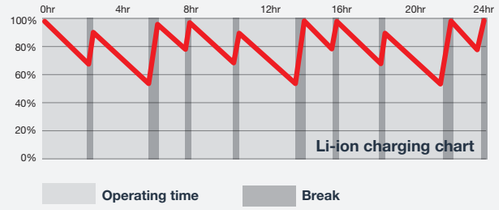
Kalmar offers two types of battery technology to power its equipment, Lead Acid and Lithium-Ion*. You will need to decide which of these is the most suited to your business. Opposite is some helpful information on both battery technologies that may help you make the right decision.

*Available mid 2019.

Battery technology comparison.

CHARGING PATTERN





FEATURES

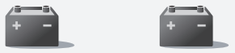
- Last for **1,200 to 1,400** cycles
- Battery efficiency **70%**
- Generally removed to be fully charged
- Requires a ventilated charging space
- Requires some regular maintenance
- Additional batteries required for multi-shift operation.

- Last for **2,400-4,000** cycles
- Battery efficiency **95%**
- Is charged in-situ
- Does not require a ventilated space
- Requires minimal maintenance
- Can be opportunity charged for multi-shift operation.

YOUR OPERATIONS

What is your operational cycle?

Are you operating more than one shift?



Charging time

8 hrs

What is your operational cycle?

Are you operating more than one shift?

Charging time

1% per minute,
fully charged in 100 minutes

Kalmar Lifetime Services.

All the support you need.

Kalmar Care, making sure your business never stops.

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

Specialist support.

Kalmar can also offer specialist support for your new electric empty container handler as working with battery drivelines is different from diesel units. We can offer additional batteries if you are working more than one shift, pockets for your batteries so they can easily be removed with a forklift and recommend what sort of charging technology you should consider.

When the right part matters.

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

Optimise your fleet with Kalmar Insight.

Kalmar Insight is a performance management tool for cargo and material handling, which gives you a valuable and easy to use overview of your daily operations based on equipment status and performance. Making it quicker for you to take action on relevant information that will help you improve your operations, your equipment's performance and your business.

Kalmar Insight* comes fitted in all new Kalmar machines and can be retrofitted to existing Kalmar machines or those built by other manufacturers.

Kalmar Insight: view each machine's movements as they occur.

Financing options for you.

You may choose to buy your new Eco Empty Container Handler outright or consider leasing or renting your equipment. Kalmar offers 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. With our leasing packages, you can focus on your core operations, while we perform all your service and maintenance needs. Kalmar can also look at you trading-in your old equipment.

Kalmar Insight: view each operator's performance in real time.

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

Kalmar Training Academy.

For your team to get the most out of their new electric Eco Empty Container Handler the Kalmar Training Academy offers a range of courses for both your technicians and operators. Operators will be shown how to optimise their day-to-day operational performance and what needs to be checked daily before operations begin.

Technicians will be given the knowledge needed to keep your new machine in top condition. Courses are a mix of theory and hands-on experience and can be held at Kalmar or at your site.

Technical information.

					ECG70-35E3	ECG70-35E4
Lifting capacity		Rated		kg	7000	7000
		Number of containers, 8'6''-9'6''			3-3	4-4
Truck dimensions		Truck length	L	mm	5940	5940
		Truck width	B	mm	2540	2900
		Height, base machine, EGO	H6	mm	2920	2920
		Seat height, EGO	H8	mm	1790	1790
		Distance between centre of front axle – front face of attachment	L2	mm	1265	1265
		Wheelbase	L3	mm	3500	3500
		Track (c-c), front – rear	S	mm	1855 / 1960	2210 / 1960
		Turning radius, outer	R1	mm	4785	4785
		Turning radius, inner	R2	mm	420	420
		Ground clearance, min.		mm	350	350
		Height when tilting cab, max. EGO	T1	mm	3390	3390
		Width when tilting cab, max EGO	T2	mm	3380	3380
		Min. aisle width for 90° stacking 20ft container/40ft container	A1/A2	mm	9300 / 14000	9300 / 14000
	Mast	Lifting height	H4	mm	7000	10000
		Mast height, min	H3	mm	5575	7075
		Mast height, max	H5	mm	9075	12075
		Mast tilting, forward – reverse	a – ß	°	3 / 5	3 / 5
		Ground clearance, min.		mm	250	250
		Width over attachment	b	mm	N/A	N/A
		Height under twistlock	H10	mm	N/A	N/A
		Sideshift. ±	V1 – V	mm	140	140
Weight	**Weight**	With battery		kg	27700	29700
	Axle load front	Unloaded		kg	16200	17800
		At rated load		kg	28200	29700
	Axle load rear	Unloaded		kg	11500	11900
		At rated load		kg	6500	7000
Wheels	**Wheels/tyres**	Type, front – rear			Pneumatic	
Brakes		Dimensions, front – rear		tum	12,00×20/20PR	
Steering		Number of wheels, front – rear (*driven)			4* – 2	4* – 2
		Pressure		MPa	0,9	0,9
	Steering system	Type – manoeuvring			Hydraulic Servo – Steering wheel	
	Service brake system	Type – affected wheels			Oil cooled disc brakes – Drive wheels	
	Parking brake system	Type – affected wheels			Dry, spring activated disc brakes – Drive wheels	
Misc.	**Hydraulic pressure**	Max.		MPa	20	20
	Hydraulic fluid volume			l	220	220

Standard.

Cabin, EGO
- Machinery Directive 2006/42/EC
- Standard seat including 2-point belt
- Clear windows including sliding windows in left and right door
- Complete doors with locks left and right side
- Complete manoeuvre system right hand console including standard display (electric adjustable)
- Multi function level left side including horn, direction indicator, high and low beam
- Brake system with pedal left and right side
- Internal comfort including mirrors, handles, interior lighting.
- Wiper and washers front/rear and roof window
- Hydraulic steering system including steering wheel with steering wheel knob
- External reverse lights
- Cab tilting
- Heat and ventilation ECH with fresh air inlet filter
- Speed control pedal right side
- Kalmar standard key system
- Head up display with indicator lamps for twistlocks

Driveline
- Steering axle: Kalmar
- Drive axle: Kessler hub end with wet disc brakes
- Motor: Drive motor, 2x37 kW
- Hydraulics pump motor, 2 x 50kW
- Accumulator pump motor, 5,1 kW
- Power electrics: 120V AC-technology

Hydraulics
- Electric servo
- 2 functions
- Environment-friendly breather filter, hydraulic tank

Body
- Tiltable cab
- Steps with anti-slip protection
- Tilt angles standard 5/10
- Lifting eyes in mast

Electrical system
- Electrical system 24 V
- Rear lights and brake lights, LED
- Working light front fenders 2 pieces, LED
- Working light mast 2 pieces, LED
- Flashing brake lights when reversing
- Indicator lamps including hazard lights, LED
- Main power switch
- Battery for 8 hours normal intensity operating time and central water topping system

Spreader
- Bromma integrally mounted empty container frame, 20 - 40' including twistlocks with indicator lamps

Wheels
- ECG70-35 E3 /4: 12,00×20/20PR

Fleet management
- Equipped with telemetric hardware for Kalmar Insight

Colour
- Cabin: Kalmar Grey (Base ref RAL 7037/75)
- Chassis: Kalmar Red 2012 (Base ref RAL 3000/75)
- Lifting equipment: Kalmar Black (Base ref RAL 7021/30)

Documentation and decals
- Operators manual (electronic)
- Maintenance manual (electronic)
- Parts catalogue (electronic)
- Load diagram in cabin
- Warning decals
- Information decals
- Diagram, fuses
- Sound plate (legal requirement in EU/EEC)

Drive Train.

			ECG70-35E3	ECG70-35E4
Drivetrain	Drive axle - type		Differential and hub reduction	
	Drive motor, hourly capacity	kW	2 x 37 kW	
	Speed control, principle - number of steps		High frequency MOSFET, AC - Stepless	
	Pump motor hydraulics, intermittent capacity – duty factor		2 x 50 kW - S3 15%	
	Pump motor brakes, intermittent capacity – duty factor		1 x 5,1 kW - S3 15%	
	Pump control, principle - number of steps		High frequency MOSFET, AC - Stepless	
Battery	Number of batteries		2	2
	Dimensions (WxHxL)	mm	1638x1150x780	1638x1150x780
	Capacity at 5h discharging - voltage	Ah - V	2x1085 - 120	2x1085 - 120
	Max charging current	A - V	215 - 120	215 - 120
	Battery weight (1 battery)	kg	3920	3920

Performance.

				ECG70-35E3	ECG70-35E4
Performance	Lifting speed @ 70%	Unloaded	m/s	0,50	0,50
		At rated load	m/s	0,50	0,50
	Lowering speed	Unloaded	m/s	0,45	0,45
		At rated load	m/s	0,50	0,50
	Traveling speed, F/R	Unloaded	km/h	20	20
		At rated load	km/h	18	18
	Gradeability, max	Unloaded	%	20	19
		At rated load	%	16	15
	Gradeability, at 5 km/h	Unloaded	%	18	16
		At rated load	%	14	13
	Drawbar pull	Max	kN	53	53
Noise	Noise level, inside*	LpAZ, EGO Cabin	dB(A)	-	-
		LpAZ, EGO Cabin OHG	dB(A)	-	-
	Noise level, outside**	LwAZ	dB(A)	-	-

* According to EN12053
** According to 2000/14/EG

KALMAR

Making your every move count

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