Kalmar Electric Forklift

Electric evolution.

11,000-19,800 lbs capacity.

KALMAR

Lower your costs with an eco-efficient solution.

Kalmar offers a range of 11,000-19,800 lbs electric forklifts, with a choice of battery technology, that will cost much less to operate in the long run than traditional diesel machines. In fact, a total electrically powered solution tailored to your specific needs will lower your operating costs, improve reliability and reduce your maintenance effort.

Being electrically powered you will also produce zero emissions, have a quieter machine that will vibrate less, making it better for your driver and ideal to operate indoors or out.

G-Gen

Built on our proven and tested G-Generation platform and powered by either Lead-Acid or Lithium-ion batteries, you will benefit from a forklift that matches the power of our diesel trucks – yet completely free from emissions.

Your drivers will be safer and more comfortable with our ergonomically designed EGO Cabin, where everything is within easy reach and includes many new and additional safety features.

You can use the truck for very heavy industrial tasks the same as your current diesel forklift, without losing out on either productivity or efficiency. So the true benefits of going electric start today and will pay back within two years.

Lifetime savings.

The purchase price of your new forklift represents only a small part of the total cost of ownership. What matters in the long run is reducing your operational and maintenance costs and your carbon emissions. Our eco-efficient electric forklifts will deliver on all fronts.

A healthier working environment.

Electric forklifts have always been seen as a comparable alternative to diesel trucks, in fact they deliver many additional benefits:

Less vibrations make handling sensitive goods safer and reduce stress and strain on your operator's body.

Electric forklifts are extremely quiet, making working indoors less disruptive for both operators and pedestrians.

As electric forklifts produce no exhaust fumes they are safe to operate inside and where other staff are working or sensitive goods are stored.

Eco-efficiency at work.

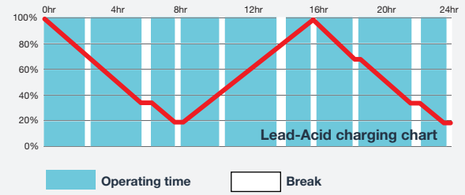
Reducing the fuel consumption of your equipment also reduces your emissions, which will enhance your environmental reputation and help you meet current and future emissions standards. Together we can shape the future of cargo handling, with safe and eco-efficient solutions that improve your every move.

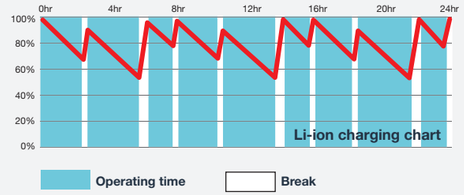
Lead Acid vs Lithium-ion.

Kalmar offers two types of battery technology to power its forklifts, Lead Acid and Lithium-ion. Here is a chart that demonstrates the difference between the two battery types so you can decide which is the right solution for your operations.

The Lead-Acid battery is generally removed after a shift and then fully charged prior to being refitted onto the forklift, it can be charged directly in a safe location. The Li-ion battery can be continuously recharged during operational downtime or statutory breaks.

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 up to **4,000** cycles
- Battery efficiency **95%**
- Is charged in place
- Does not require a ventilated charging space
- Requires minimal maintenance
- Can be opportunity charged for multi-shift operation.

YOUR OPERATIONS

What is your operational cycle?

8 hrs

Are you operating more than one shift?

Charging time

8 hrs

What is your operational cycle?

2-3hr | 2-3hr | 2-3hr | 2-3hr | 2-3hr

Are you operating more than one shift?

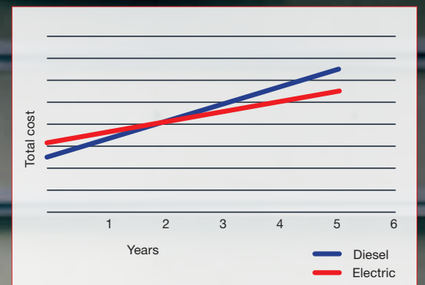
Charging time

Fully charged in less than 2 hours

A winning concept in the long run.

As your business partner, Kalmar has designed a total solution that will improve your competitiveness and help you build an eco-efficient sustainable business. A solution that will benefit both the environment and your performance – and make all of us winners in the long run.

Investing in a Kalmar electric forklift will break even in only two years time. Combined with savings from fewer and shorter standstills, faster maintenance and longer service life, this makes the truck a very attractive investment.



Using a Kalmar Electric Eco Forklift Truck pays off in the long run. In just 2 years time it will break even compared to the equivalent Diesel truck.

Note: Calculations are based on 2,500 operational hours per year, a diesel consumption of 2.1 gal/h at $2.98/gal, and electricity use of 17 kWh per hour at $0.12 /hour.

A better driving experience.

All our electric forklifts have our ergonomically designed EGO cabin fitted as standard. This cabin has been built to provide a superior driving experience. With adjustable control panels, steering wheel and a rotating seat as an option, 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.

Better control.

With all of our electric forklifts you will be able have greater control over your machine with the speed pedal. Not only will you benefit from instant acceleration, you will also be able to slow down quickly by just taking your foot off the speed pedal.

A focus on safety.

Because electric trucks are exceptionally quiet, our optional blue safety light alerts people of its approach, reducing the risk of accidents.

Efficient and productive.

Buying an electric forklift doesn't mean compromising on power, as electric drivelines provide full torque immediately and are smoother to operate. Making operating cycles shorter, driving up your operational productivity. With extended servicing cycles and improved diagnostic tools your machine will benefit from higher availability rates than the diesel alternatives.

Eight available models and features that add extra value to your forklift

1. Eco Drive Modes†
2. Shorter wheelbases
3. Blue safety light†
4. Improved driver experience
5. LED lights all around
6. High capacity model (8t@1100mm)
7. Lower energy consumption
8. Kalmar Insight‡, diagnostic systems and tools.

† Optional equipment
‡ Installation costs and/or an annual subscription fee may apply

More eco-efficient, energy saving features.

Sometimes a job must be done fast. Then you need all the speed you can get. The next day you may have to save energy to ensure your battery lasts throughout a long shift. The optional Eco Drive Modes allow you to optimize the truck's performance characteristics for speed, energy saving or normal driving. With Eco mode activated, energy consumption is reduced by 15% compared to our previous model (ECF).

A simpler design.

Electric forklifts have less moving parts than diesel models. Without the need to change the starter motor, turbo or fuel filters, servicing and maintenance on the machine will take less time and cost up to 50% less. As less parts are required, your parts replacement costs and stock levels will also be substantially reduced.

Reduce energy consumption by up to 20%.

Kalmar's optional ECO Drive allows you to optimize your truck's performance with three different modes:

Power Mode: when speed is of the essence. With full power, you will be able to move quickly about, lift and lower at full speed, without compromising on safety.

Normal Mode: when you need to retain some speed. With a slightly reduced acceleration you can expect 5-15% lower running and energy costs.

Economy Mode: when you need the lowest running costs. With acceleration reduced even further you can expect 10-20% lower running and energy costs.

Kalmar Lifetime Services.

All the support you need.

Specialist support.

Kalmar can offer specialist support for your new electric forklift as working with battery powered drivelines is different from diesel units. We can offer additional lead-acid 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.

Financing options for you.

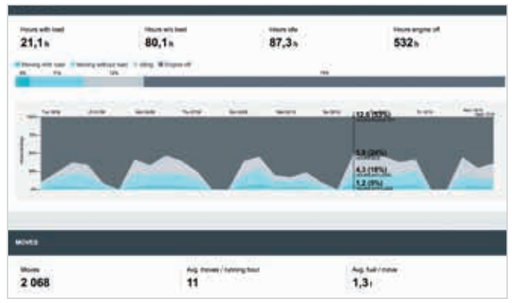
You may choose to buy your new forklift outright or consider leasing or renting your equipment. Kalmar offers a range of leasing and renting options that give you the financial predictability you need and the option to upgrade your equipment after a fixed period. With our leasing packages, you can focus on your core operations, while we perform all your service and maintenance needs. Kalmar can also look at you trading-in your old equipment.

Optimize 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.

Plan your maintenance and spare parts needs.



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

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

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

Dimensions.

					ECG50-6	ECG55-6	ECG60-6	ECG70-6	ECG80-6	ECG80-9	ECG80-9S	ECG80-11	ECG90-6L	ECG90-6LS
	Lifting capacity	Rated		lbs	11,000	12,100	13,200	15,400	17,600	17,600	17,600	17,600	19,800	19,800
		Load center	L4	in	24	24	24	24	24	36	36	43	24	24
DIMENSIONS		Truck length	L	in	131.7	131.7	149.2	149.2	159.3	161.6	153.7	161.8	163.0	155.1
		Truck width	B	in	61.0	61.0	78.7	78.7	78.7	78.7	78.7	78.7	78.7	78.7
		Height, base machine, EGO	H6	in	102.0	102.0	102.0	102.0	102.0	102.0	102.0	102.0	102.0	102.0
		Seat height, EGO	H8	in	56.7	56.7	56.7	56.7	56.7	56.7	56.7	56.7	56.7	56.7
		Distance between center of front axle – front face fork arm	L2	in	26.2	26.2	28.7	28.7	31.1	29.9	29.9	30.1	31.3	31.3
		Wheelbase	L3	in	82.7	82.7	96.5	96.5	102.4	110.2	102.4	110.2	110.2	102.4
		Track (c-c), front – rear	S	in	48.8 – 49.8	48.8 – 49.8	59.1 – 53.5	59.1 – 53.5	59.1 – 53.5	59.1 – 53.5	59.1 – 53.5	59.1 – 53.5	59.1 – 53.5	59.1 – 53.5
		Turning radius, outer	R1	in	117.7	117.7	131.9	131.9	141.7	145.7	141.7	159.4	145.7	141.7
		Turning radius, inner	R2	in	4.7	4.7	5.9	5.9	9.8	11.8	9.8	33.5	11.8	9.8
		Ground clearance, min.		in	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3
		Height when tilting cab, max. EGO	T1	in	118.9	118.9	118.9	118.9	118.9	118.9	118.9	118.9	118.9	118.9
		Width when tilting cab, max EGO	T2	in	118.1	118.1	127.0	127.0	127.0	127.0	127.0	127.0	127.0	127.0
		Min. aisle width for 90° stacking with forks	A1	in	199.8	199.8	215.7	215.7	228.0	253.9	246.1	275.6	232.1	224.2
	Standard duplex mast	Lifting height	H4	in	137.8	137.8	137.8	137.8	137.8	137.8	137.8	137.8	137.8	137.8
		Mast height, min	H3	in	103.3	103.3	103.3	103.3	115.6	115.6	115.6	120.5	115.6	115.6
		Mast height, max	H5	in	177.2	177.2	177.2	177.2	183.5	183.5	183.5	193.3	183.5	183.5
		Mast tilting, forward – reverse	a – ß	°	6 – 9	6 – 9	6 – 9	6 – 9	6 – 9	6 – 9	6 – 9	6 – 9	6 – 9	6 – 9
		Ground clearance, min.		in	6.7	6.7	6.7	6.7	6.7	6.7	6.7	6.7	6.7	6.7
	Forks	Width	b	in	5.9	5.9	5.9	5.9	5.9	7.9	7.9	7.9	7.9	7.9
		Thickness	a	in	2.4	2.4	2.4	2.4	2.4	2.6	2.6	2.8	2.6	2.6
		Length of fork arm	l	in	47.2	47.2	47.2	47.2	47.2	70.9	70.9	86.6	47.2	47.2
		Width across fork arms, max.	V	in	55.1	55.1	74.8	74.8	74.8	-	-	-	74.8	74.8
		Width across fork arms, min.	V	in	16.5	16.5	16.5	16.5	16.5	-	-	-	20.5	20.5
		Sideshift. ± at width across fork arms	V1 – V	in	11.8 – 31.5	11.8 – 31.5	14.8 – 45.7	14.8 – 45.7	14.8 – 45.7	-	-	-	14.8 – 47.6	14.8 – 47.6
WEIGHT	Weight	With battery		lbs	18740	19630	19630	21170	23590	25800	26680	27340	24700	25580
		Without battery		lbs	13670	14560	13230	14780	16100	17640	19190	19190	16540	18080
	Axle load front, with battery	Unloaded		lbs	9920	9930	10150	10150	11460	12130	12130	12130	11690	11690
		At rated load		lbs	27880	29760	30860	34380	38780	40550	41190	41870	41980	42530
	Axle load rear, with battery	Unloaded		lbs	8820	9700	9480	11020	12130	13670	14550	15210	13010	13890
		At rated load		lbs	1860	1970	1970	2190	2410	2850	3090	3070	2520	2850
WHEELS, BRAKES, STEERING	Wheels/tires	Type, front – rear			Pneumatic Diagonal – Pneumatic Diagonal		Pneumatic Diagonal – Pneumatic Diagonal			Air Radial/SE - Air Radial		SE – SE	Air Radial / Air Radial	
		Dimensions, front – rear		tum	315/70-15 – 225/75-15		8,25-15 – 8,25-15			8,25-R15 – 8,25-R15		8,25-15 – 300-15	8,25-R15 – 8,25-R15	
		Number of wheels, front – rear (*driven)			2* – 2		4* – 2							
		Pressure		psi	145 - 131		123 - 123			145 - 145		-	145 - 145	
	Steering	Type – maneuvering			Hydraulic Servo – Steering wheel		Hydraulic Servo – Steering wheel							
	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.		psi	2030	2100	2245	2535	2900	2900	2900	2900	3115	3115
	Hydraulic fluid volume			gal	33	33	41	41	41	41	41	41	41	41

* Mast tilting Duplex: H4 80"-207"=6°F–9°R, 217"-236"=4F–4°B
Mast tilting Triplex: H4 120"-207"=6°F–5°B, 217"-254"=4°F–5°B

Drivetrain.

			ECG50-6	ECG55-6	ECG60-6	ECG70-6	ECG80-6	ECG80-9	ECG80-9S	ECG80-11	ECG90-6L	ECG90-6LS
DRIVETRAIN	**Drive axle - type**		Differential and hub reduction			Differential and hub reduction						
	Drive motor, hourly capacity	hp	2 x 14.7			2 x 14.7						
	Speed control, principle - number of steps		High frequency MOSFET, AC - Stepless			High frequency MOSFET, AC - Stepless						
	Pump motor hydraulics, intermittent capacity – duty factor		1 x 56.3 hp - S3 15%			1 x 56.3 hp - S3 15%						
	Pump motor brakes, intermittent capacity – duty factor		1 x 5.6 hp - S3 15%			1 x 5.6 hp - S3 15%						
	Pump control, principle - number of steps		High frequency MOSFET, AC - Stepless			High frequency MOSFET, AC - Stepless						
LEAD-ACID	**Dimensions (WxHxL)**	in	51.0x30.7x33.3	51.0x30.7x33.3	58.9x30.7x39.0	58.9x30.7x39.0	58.9x30.7x46.9	58.9x30.7x46.9	58.9x30.7x39.0	58.9x30.7x46.9	58.9x30.7x46.9	58.9x30.7x39.0
	Capacity at 5h discharging - voltage	Ah - V	940 - 80	940 - 80	1240 - 80	1240 - 80	1400 - 80	1550 - 80	1240 - 80	1550 - 80	1550 - 80	1240 - 80
	Max charging current	A - V	175 - 80	175 - 80	225 - 80	225 - 80	250 - 80	300 - 80	225 - 80	300 - 80	300 - 80	225 - 80
	Battery weight	lbs	5071	5071	6394	6394	7496	8158	7496	8158	8158	7496
LI-ION	**Dimensions (WxHxL)**	in	48.4x29.1x27.6	48.4x29.1x27.6	47.4x33.9x39.6	47.4x33.9x39.6	47.4x33.9x39.6	47.4x33.9x39.6	47.4x33.9x39.6	47.4x33.9x39.6	47.4x33.9x39.6	47.4x33.9x39.6
	Battery capacity	Ah - V	576	576	1080	1080	1080	1080	1080	1080	1080	1080
	Charging current	A - V	400	400	400	400	400	400	400	400	400	400
	Battery weight (1 battery)	lbs	1969	1969	3770	3770	3770	3770	3770	3770	3770	3770

Performance.

				ECG50-6	ECG55-6	ECG60-6	ECG70-6	ECG80-6	ECG80-9	ECG80-11	ECG90-6I
Performance	**Lifting speed**	**Unloaded**	fps	1.3	1.3	1.0	1.0	1.0	1.0	1.0	1.0
		At rated load	fps	1.1	1.1	1.0	1.0	1.0	1.0	1.0	1.0
	Lowering speed	**Unloaded**	fps	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
		At rated load	fps	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
	Traveling speed, F/R	**Unloaded**	mph	11	11	10	10	9	9	9	9
		At rated load	mph	9	9	9	9	8	8	8	8
	Gradeability, max	**Unloaded**	%	56	53	51	46	41	37	35	38
		At rated load	%	32	30	28	25	22	21	20	20
	Gradeability, at 1mph	**Unloaded**	%	42	40	39	36	32	29	27	30
		At rated load	%	25	23	22	20	17	16	15	16
	Drawbar pull		lbf	8990	8990	8990	8990	8990	8990	8990	8990
Noise level, inside*		**LpAZ, EGO Cabin**	dB(A)	66	66	66	66	66	66	66	66
		LpAZ, EGO Cabin OHG	dB(A)	78	78	78	78	78	78	78	78
Noise level, outside**		**LwAZ**	dB(A)	92	92	92	92	92	92	92	92

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

Lifting data.

DUPLEX STANDARD, CLEAR VIEW

Lift height	Mast height		Free lift	Lift height	Mast height		Free lift
H4	H3 min	H5 max	H2	H4	H3 min	H5 max	H2
		ECG50-70				**ECG80-90**	
-	-	-	-	108	101	154	-
-	-	-	-	118	106	164	-
-	-	-	-	128	111	174	-
138	103	177	-	138	116	183	-
148	108	187	-	148	120	193	-
157	113	197	-	157	125	203	-
167	118	207	-	167	130	213	-
177	123	217	-	177	135	223	-
187	128	226	-	187	140	233	-
197	133	236	-	197	145	243	-
207	138	246	-	207	150	252	-
217	143	256	-	217	155	262	-
226	148	266	-	226	160	272	-
236	152	276	-	236	165	282	-

DUPLEX FULL FREE LIFT, CLEAR VIEW

Lift height	Mast height		Free lift	Lift height	Mast height		Free lift
H4	H3 min	H5 max	H2	H4	H3 min	H5 max	H2
		ECG50-70				**ECG80-90**	
-	-	-	-	108	101	154	56
-	-	-	-	118	106	164	61
128	103	171	60	128	111	174	66
138	108	181	65	138	116	183	71
148	113	191	70	148	120	193	76
157	118	201	75	157	125	203	80
167	123	211	80	167	130	213	86
177	128	220	85	177	135	223	91
187	133	230	90	187	140	233	95
197	138	240	95	197	145	243	100
207	143	250	100	207	150	252	105
217	148	260	105	217	155	262	110
226	152	270	109	226	160	272	115
236	157	280	114	236	165	282	120

TRIPLEX FFL, CW

Lift height	Mast height		Free lift	Lift height	Mast height		Free lift
H4	H3 min	H5 max	H2	H4	H3 min	H5 max	H2
		ECG50-70				**ECG80-90**	
195	101	237	60	165	102	210	58
215	108	256	67	185	108	229	65
234	115	276	73	205	115	249	71
254	121	296	80	224	121	269	78
-	-	-	-	244	128	289	84

Duplex Standard

Duplex Freelift

Triplex

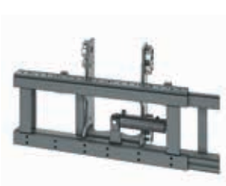
Forks for manual adjustment

Roller fittings for hydraulic adjustments

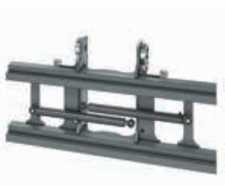
For shaft system

Hydraulic levelling

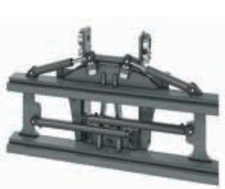
Fixed for manually moveable forks



Sideshift



Fork positioning and sideshift



Center levelling

Standard.

Cabin, EGO
- Safety Low & High Lift Trucks ANSI/ B56.1
- Standard seat including 2-point belt
- Clear windows including sliding windows in left and right door
- Complete maneuver system right hand console including standard display (electric adjustable)
- Multi function lever left side including horn, direction indicator, high and low beam
- Brake system with pedal left and right side
- Speed control pedal right side
- Internal comfort including mirrors, handles, interior lighting etc
- 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
- Complete doors with locks left and right side
- Kalmar standard key system

Driveline
- Steering axle: Kalmar
- Drive axle: Kessler hub end with wet disc brakes
- Motor: Drive motor, 2x14.7 hp
- Hydraulics pump motor, 1 x 56.3 hp
- Accumulator pump motor, 5.6 hp
- Power electrics: 80 V AC-technology

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

Body
- Tiltable cab
- Steps with anti-slip protection
- Tilt angles standard 6F / 9B
- 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

Wheels
- ECG50-55: front 315/70-15 PD; rear 225/75-15 PD
- ECG60-90: front & rear 8.25-15 PD/PR/SE
- ECG80: front 8.25-15; rear 300-15 SE

Fleet management
- Equipped with telemetric hardware for Kalmar Insight.

Color
- 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 catalog (electronic)
- Load diagram in cabin
- Warning decals
- Information decals
- Diagram, fuses

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